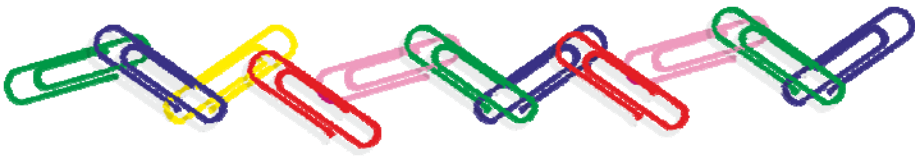
# Version 9

## Interface Guide



**Revision 1.08**

## Copyright notice



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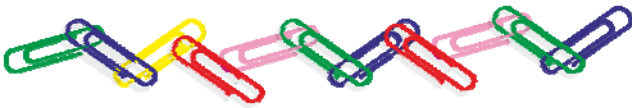
# Welcome to the Version 9 Interface Guide



## 1. Introduction

This guide describes how to import and export data to and from the V9 Optimising and Production software. It gives the details for interfacing with the program and extracting data from the system

### What does V9 do?

V9 is a comprehensive software package that covers most aspects of optimisation and production for the Furniture, Woodworking, and other Sheet processing industries. It is Windows software which runs on most computers. It provides all the information to keep control of costs, cut down errors, and cut material efficiently and effectively.

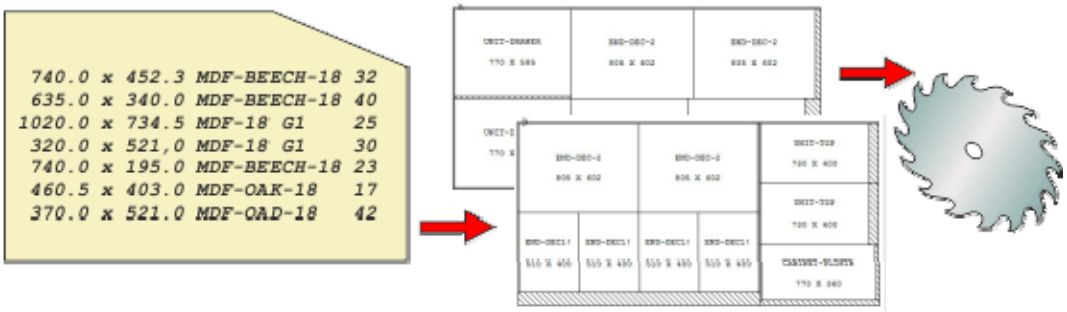
*V9 deals with a variety of products.*

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

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

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

The basic steps are:-




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

## Why do I need this Interface guide ?

*This guide is NOT required for everyday operation*

Use this guide to integrate the Optimising program with other computer operations. Some typical situations are listed below.

**Import parts lists or product requirements lists** - part lists or lists of product requirements may be stored on another database / system and need to be transferred to the Optimising software ready for optimisation.

**Export results for further analysis -** export the summary results of each optimisation to another database or spread sheet for further analysis.

**Stand alone operation** - run a sub-set of the Optimising software. For example, one customer enters lists of parts to be cut at remote sites using a text editor and transfers the results to a central location to be optimised.

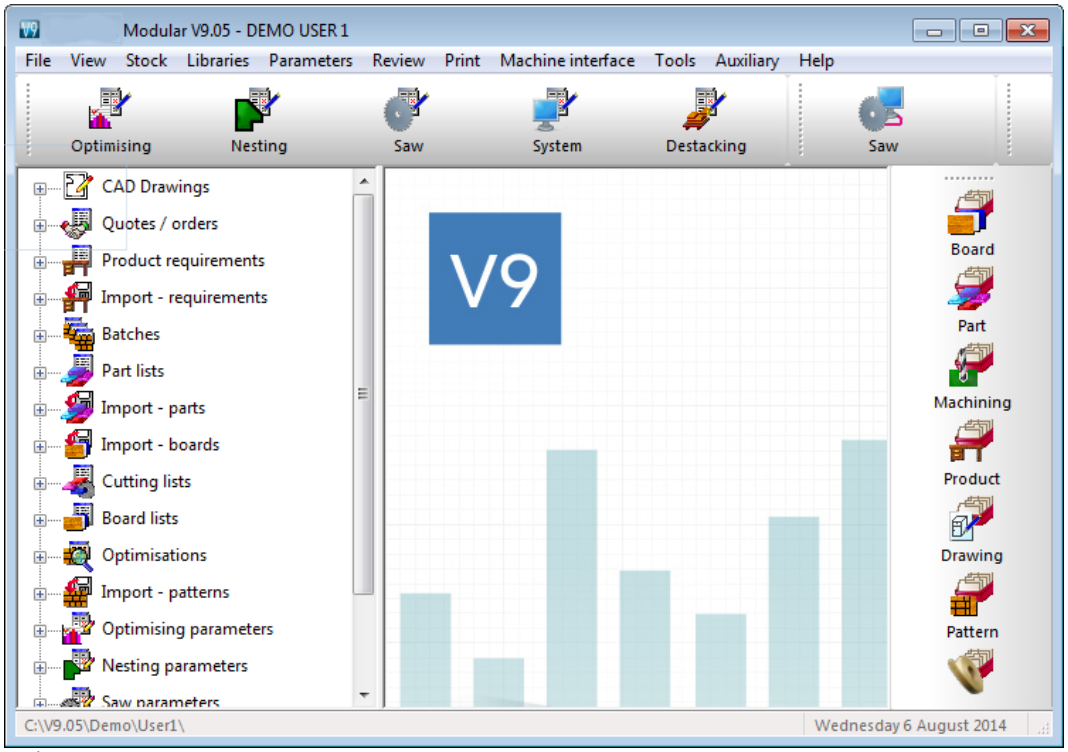
**Interfacing with special machinery-** to export data in a special format so that it can be used by other machinery. e.g. specialist loading or destacking equipment.

**Interfacing with saws and machine centres not covered by the software -** the Optimising software covers a wide range of saws and machining centres but it may be

necessary to do extra work to link to specialist machines or machines not covered by the standard software.

## 1.1 Overview of the program

Start at the main screen, this is the command centre of the system. Access all the options from here.




*Main screen*

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

At the left is a tree showing the various options and existing data. Click on an item in the tree to see the files in a category. There are also traditional menus and buttons to access all the options.

## Part lists

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

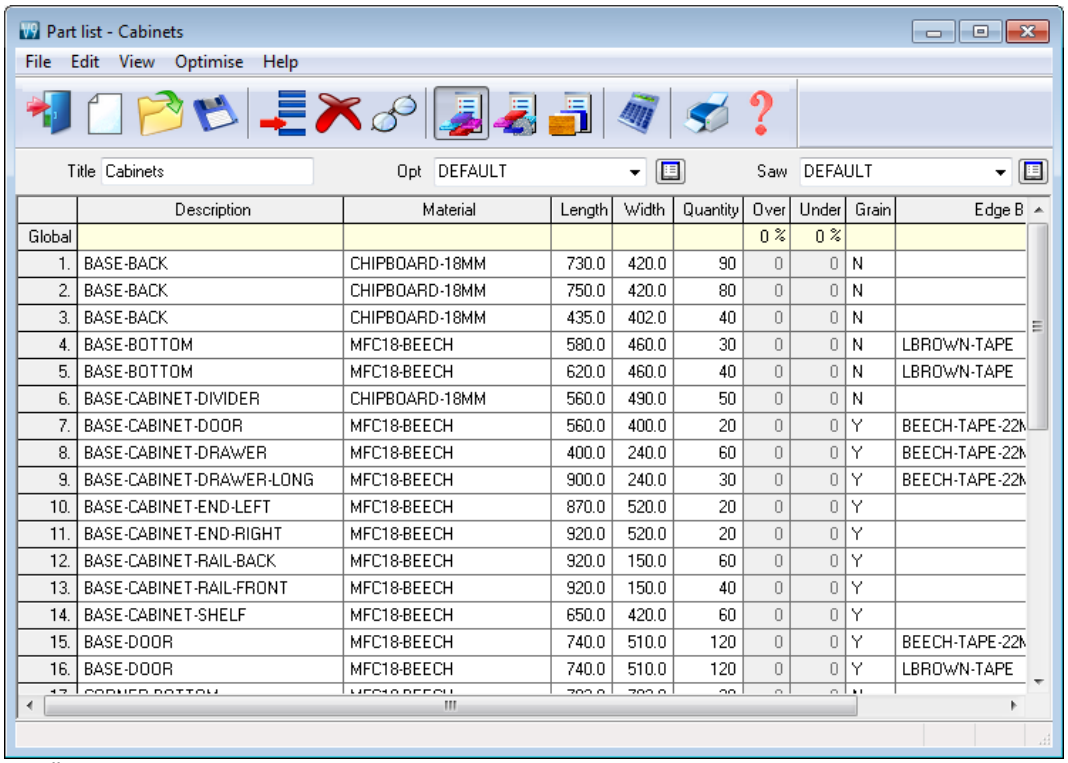
Select a part list by opening the Part list branch of the file tree and double clicking on a part list.

The program may prompt: *'Patterns exist - significant changes will delete patterns'* - this happens because in the demo data (installed with the system) many of the part lists are already optimised.

It is Ok to ignore this message as the next step is to optimise the part list and re-create the patterns.

The program moves on to the Part list editor screen. This is a spread sheet like grid listing part sizes and quantities and other information about each part type.

The part list contents are displayed.




| | Description | Material | Length | Width | Quantity | Over | Under | Grain | Edge B |
|---|---|---|---|---|---|---|---|---|---|
| Global | | | | | | 0 % | 0 % | | |
| 1. | BASE-BACK | CHIPBOARD-18MM | 730.0 | 420.0 | 90 | 0 | 0 | N | |
| 2. | BASE-BACK | CHIPBOARD-18MM | 750.0 | 420.0 | 80 | 0 | 0 | N | |
| 3. | BASE-BACK | CHIPBOARD-18MM | 435.0 | 402.0 | 40 | 0 | 0 | N | |
| 4. | BASE-BOTTOM | MFC18-BEECH | 580.0 | 460.0 | 30 | 0 | 0 | N | LBROWN-TAPE |
| 5. | BASE-BOTTOM | MFC18-BEECH | 620.0 | 460.0 | 40 | 0 | 0 | N | LBROWN-TAPE |
| 6. | BASE-CABINET-DIVIDER | CHIPBOARD-18MM | 560.0 | 490.0 | 50 | 0 | 0 | N | |
| 7. | BASE-CABINET-DOOR | MFC18-BEECH | 560.0 | 400.0 | 20 | 0 | 0 | Y | BEECH-TAPE-22M |
| 8. | BASE-CABINET-DRAWER | MFC18-BEECH | 400.0 | 240.0 | 60 | 0 | 0 | Y | BEECH-TAPE-22M |
| 9. | BASE-CABINET-DRAWER-LONG | MFC18-BEECH | 900.0 | 240.0 | 30 | 0 | 0 | Y | BEECH-TAPE-22M |
| 10. | BASE-CABINET-END-LEFT | MFC18-BEECH | 870.0 | 520.0 | 20 | 0 | 0 | Y | |
| 11. | BASE-CABINET-END-RIGHT | MFC18-BEECH | 920.0 | 520.0 | 20 | 0 | 0 | Y | |
| 12. | BASE-CABINET-RAIL-BACK | MFC18-BEECH | 920.0 | 150.0 | 60 | 0 | 0 | Y | |
| 13. | BASE-CABINET-RAIL-FRONT | MFC18-BEECH | 920.0 | 150.0 | 40 | 0 | 0 | Y | |
| 14. | BASE-CABINET-SHELF | MFC18-BEECH | 650.0 | 420.0 | 60 | 0 | 0 | Y | |
| 15. | BASE-DOOR | MFC18-BEECH | 740.0 | 510.0 | 120 | 0 | 0 | Y | BEECH-TAPE-22M |
| 16. | BASE-DOOR | MFC18-BEECH | 740.0 | 510.0 | 120 | 0 | 0 | Y | LBROWN-TAPE |

*Part list*

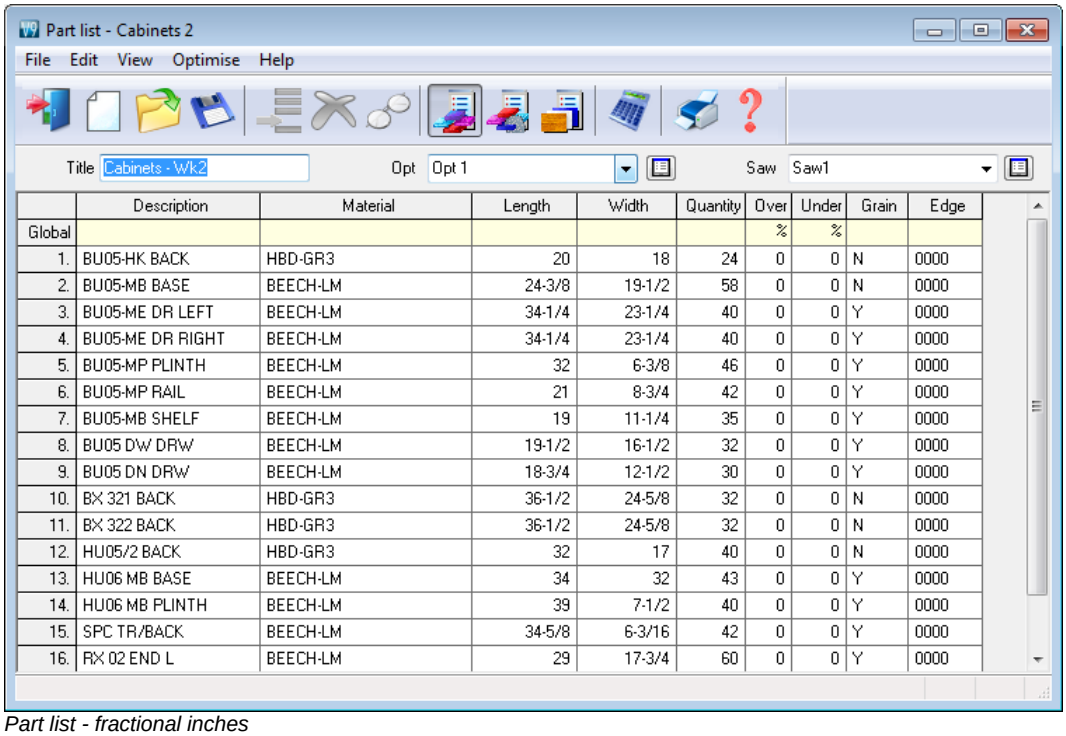
- Review and/or enter the required part list items. The basic information is:-

```
Description (or code)
Material code
Length
Width
Quantity
```

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

**MATERIAL CODE:** This is important because it determines the material for a part. The program uses this to extract candidate boards from the board library and create a board list. The board list is simply the list of available board sizes and quantities for the job.

The program also supports fractional inches and decimal inches.

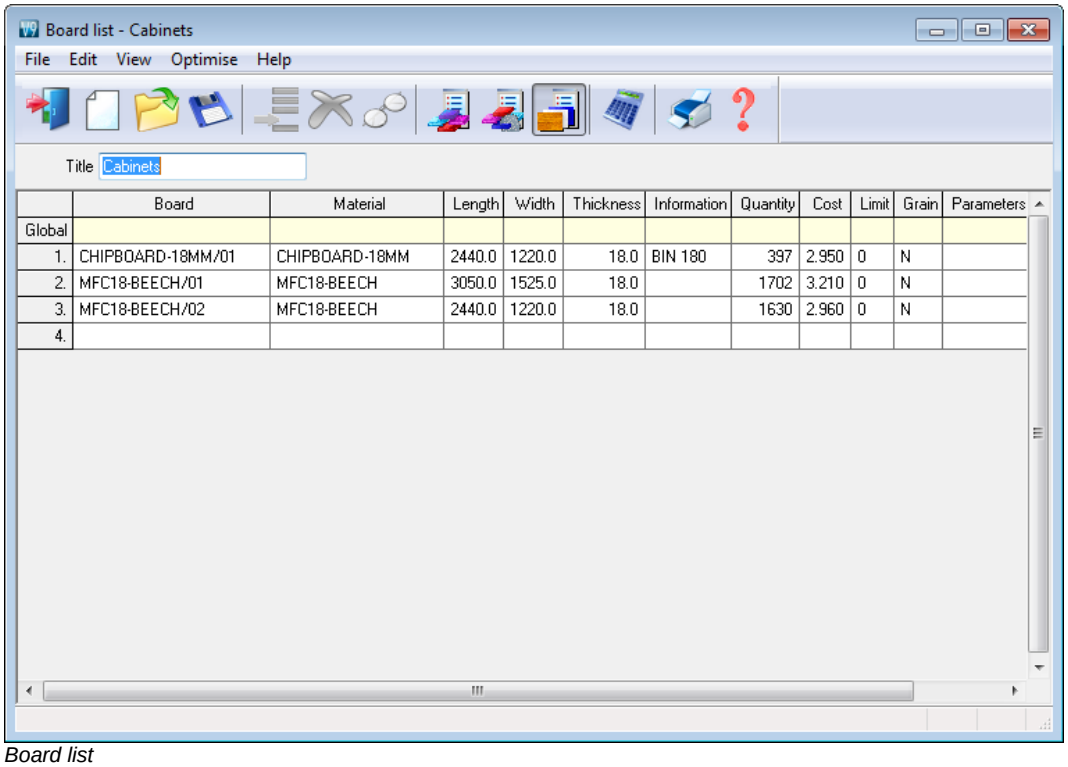



| | Description | Material | Length | Width | Quantity | Over | Under | Grain | Edge |
|---|---|---|---|---|---|---|---|---|---|
| Global | | | | | | % | % | | |
| 1. | BU05-HK BACK | HBD-GR3 | 20 | 18 | 24 | 0 | 0 | N | 0000 |
| 2. | BU05-MB BASE | BEECH-LM | 24-3/8 | 19-1/2 | 58 | 0 | 0 | N | 0000 |
| 3. | BU05-ME DR LEFT | BEECH-LM | 34-1/4 | 23-1/4 | 40 | 0 | 0 | Y | 0000 |
| 4. | BU05-ME DR RIGHT | BEECH-LM | 34-1/4 | 23-1/4 | 40 | 0 | 0 | Y | 0000 |
| 5. | BU05-MP PLINTH | BEECH-LM | 32 | 6-3/8 | 46 | 0 | 0 | Y | 0000 |
| 6. | BU05-MP RAIL | BEECH-LM | 21 | 8-3/4 | 42 | 0 | 0 | Y | 0000 |
| 7. | BU05-MB SHELF | BEECH-LM | 19 | 11-1/4 | 35 | 0 | 0 | Y | 0000 |
| 8. | BU05 DW DRW | BEECH-LM | 19-1/2 | 16-1/2 | 32 | 0 | 0 | Y | 0000 |
| 9. | BU05 DN DRW | BEECH-LM | 18-3/4 | 12-1/2 | 30 | 0 | 0 | Y | 0000 |
| 10. | BX 321 BACK | HBD-GR3 | 36-1/2 | 24-5/8 | 32 | 0 | 0 | N | 0000 |
| 11. | BX 322 BACK | HBD-GR3 | 36-1/2 | 24-5/8 | 32 | 0 | 0 | N | 0000 |
| 12. | HU05/2 BACK | HBD-GR3 | 32 | 17 | 40 | 0 | 0 | N | 0000 |
| 13. | HU06 MB BASE | BEECH-LM | 34 | 32 | 43 | 0 | 0 | Y | 0000 |
| 14. | HU06 MB PLINTH | BEECH-LM | 39 | 7-1/2 | 40 | 0 | 0 | Y | 0000 |
| 15. | SPC TR/BACK | BEECH-LM | 34-5/8 | 6-3/16 | 42 | 0 | 0 | Y | 0000 |
| 16. | RX 02 END L | BEECH-LM | 29 | 17-3/4 | 60 | 0 | 0 | Y | 0000 |

*Part list - fractional inches*

## Board list

 Click on the toolbar symbol to view the Board list



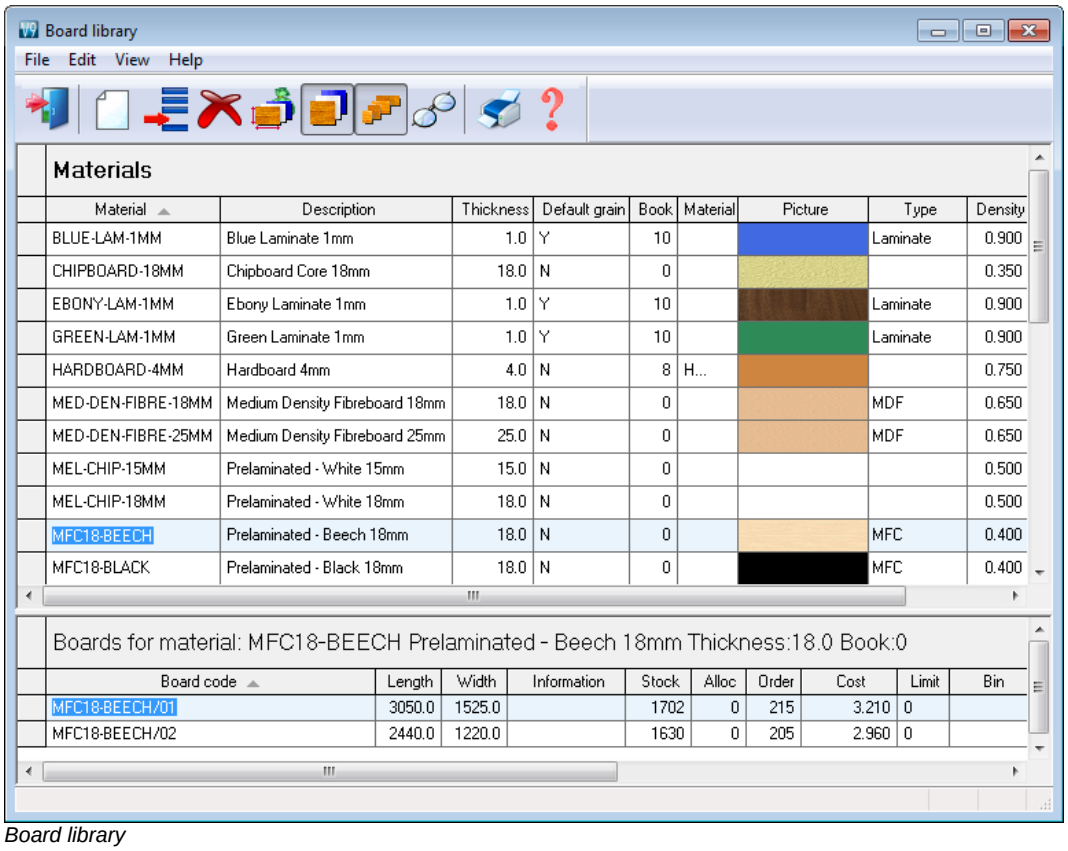

| | Board | Material | Length | Width | Thickness | Information | Quantity | Cost | Limit | Grain | Parameters |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Global | | | | | | | | | | | |
| 1. | CHIPBOARD-18MM/01 | CHIPBOARD-18MM | 2440.0 | 1220.0 | 18.0 | BIN 180 | 397 | 2.950 | 0 | N | |
| 2. | MFC18-BEECH/01 | MFC18-BEECH | 3050.0 | 1525.0 | 18.0 | | 1702 | 3.210 | 0 | N | |
| 3. | MFC18-BEECH/02 | MFC18-BEECH | 2440.0 | 1220.0 | 18.0 | | 1630 | 2.960 | 0 | N | |
| 4. | | | | | | | | | | | |

*Board list*

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

## Board library

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



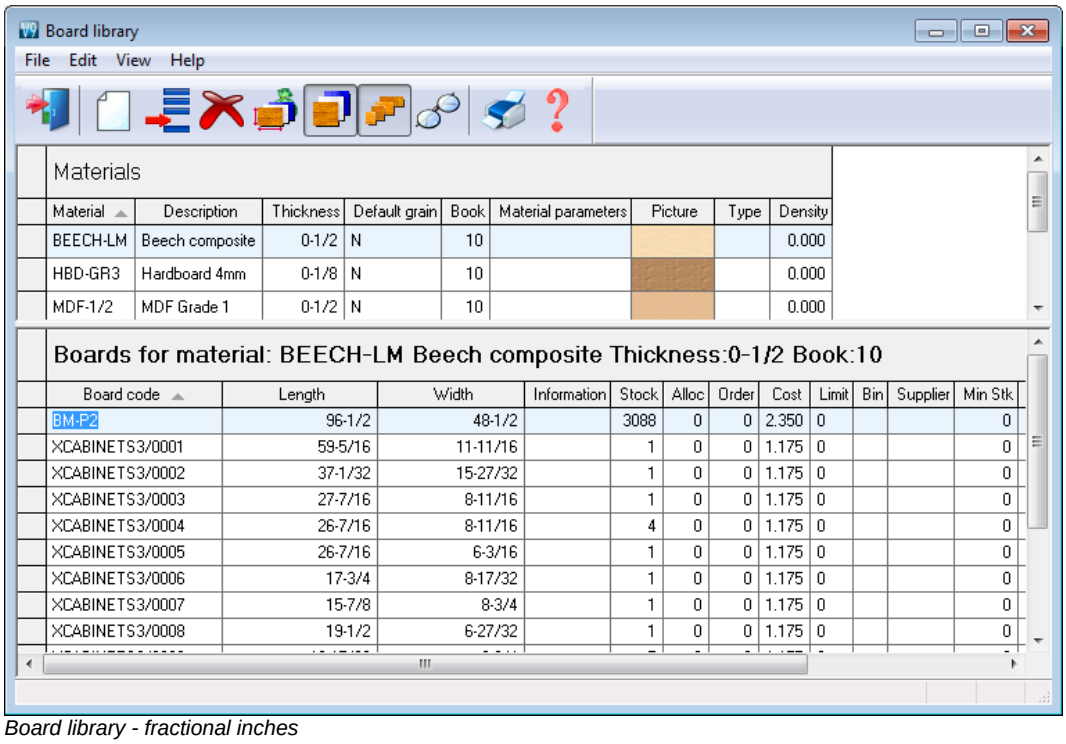
*Board library*

In this example there are two board sizes available for material MFC18-BEECH.

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

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

The Board library also supports decimal and fractional inches.




*Board library - fractional inches*

## Optimise

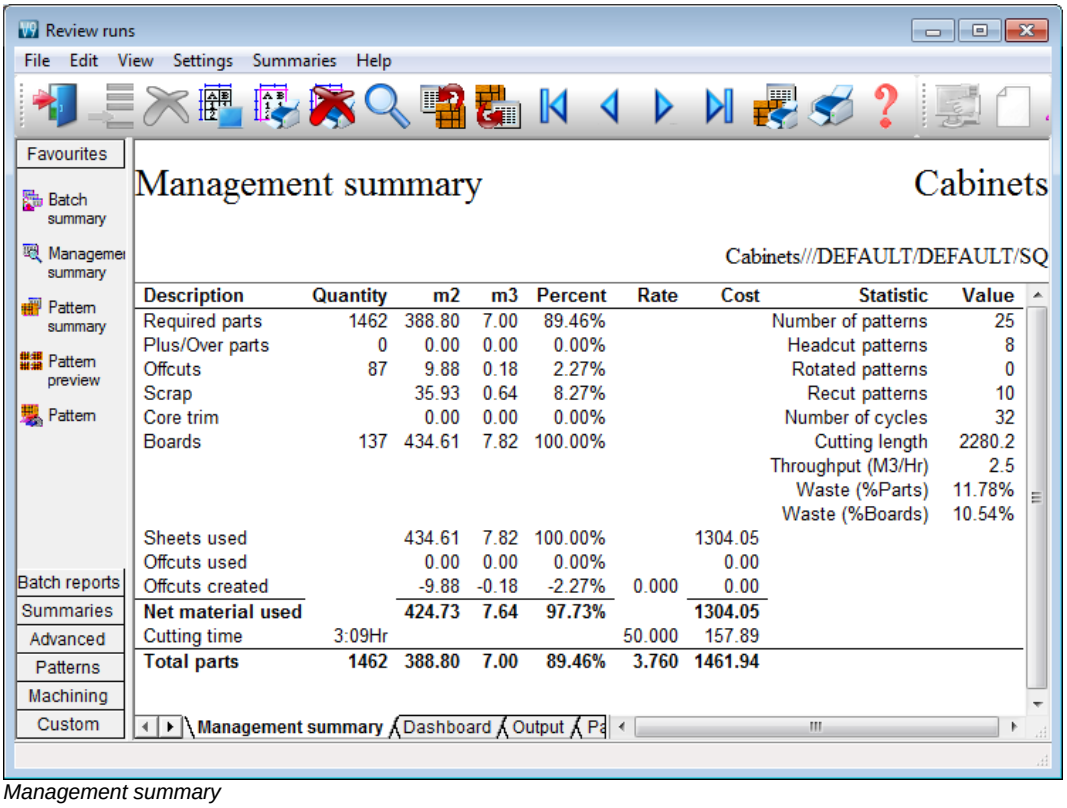
Once the Part list and Board list are created the job is ready to be optimised.

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

 Select the optimise symbol

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

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



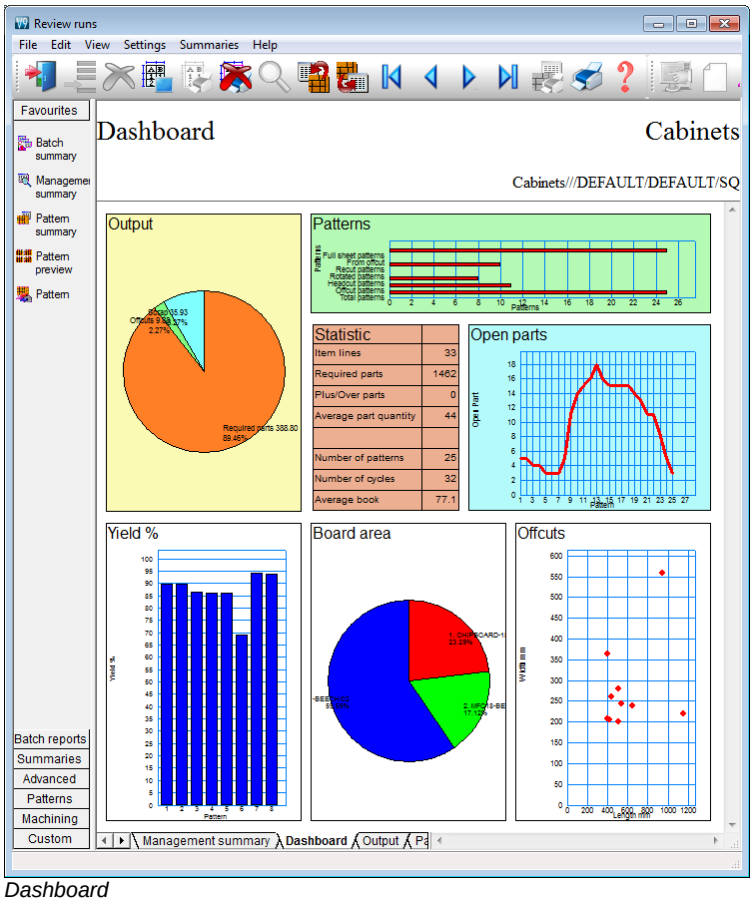

| Description | Quantity | m2 | m3 | Percent | Rate | Cost | Statistic | Value |
|---|---|---|---|---|---|---|---|---|
| Required parts | 1462 | 388.80 | 7.00 | 89.46% | | | Number of patterns | 25 |
| Plus/Over parts | 0 | 0.00 | 0.00 | 0.00% | | | Headcut patterns | 8 |
| Offcuts | 87 | 9.88 | 0.18 | 2.27% | | | Rotated patterns | 0 |
| Scrap | | 35.93 | 0.64 | 8.27% | | | Recut patterns | 10 |
| Core trim | | 0.00 | 0.00 | 0.00% | | | Number of cycles | 32 |
| Boards | 137 | 434.61 | 7.82 | 100.00% | | | Cutting length | 2280.2 |
| | | | | | | | Throughput (M3/Hr) | 2.5 |
| | | | | | | | Waste (%Parts) | 11.78% |
| | | | | | | | Waste (%Boards) | 10.54% |
| Sheets used | | 434.61 | 7.82 | 100.00% | | 1304.05 | | |
| Offcuts used | | 0.00 | 0.00 | 0.00% | | 0.00 | | |
| Offcuts created | | -9.88 | -0.18 | -2.27% | 0.000 | 0.00 | | |
| **Net material used** | | **424.73** | **7.64** | **97.73%** | | **1304.05** | | |
| Cutting time | 3:09Hr | | | | 50.000 | 157.89 | | |
| **Total parts** | **1462** | **388.80** | **7.00** | **89.46%** | **3.760** | **1461.94** | | |

*Management summary*

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

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

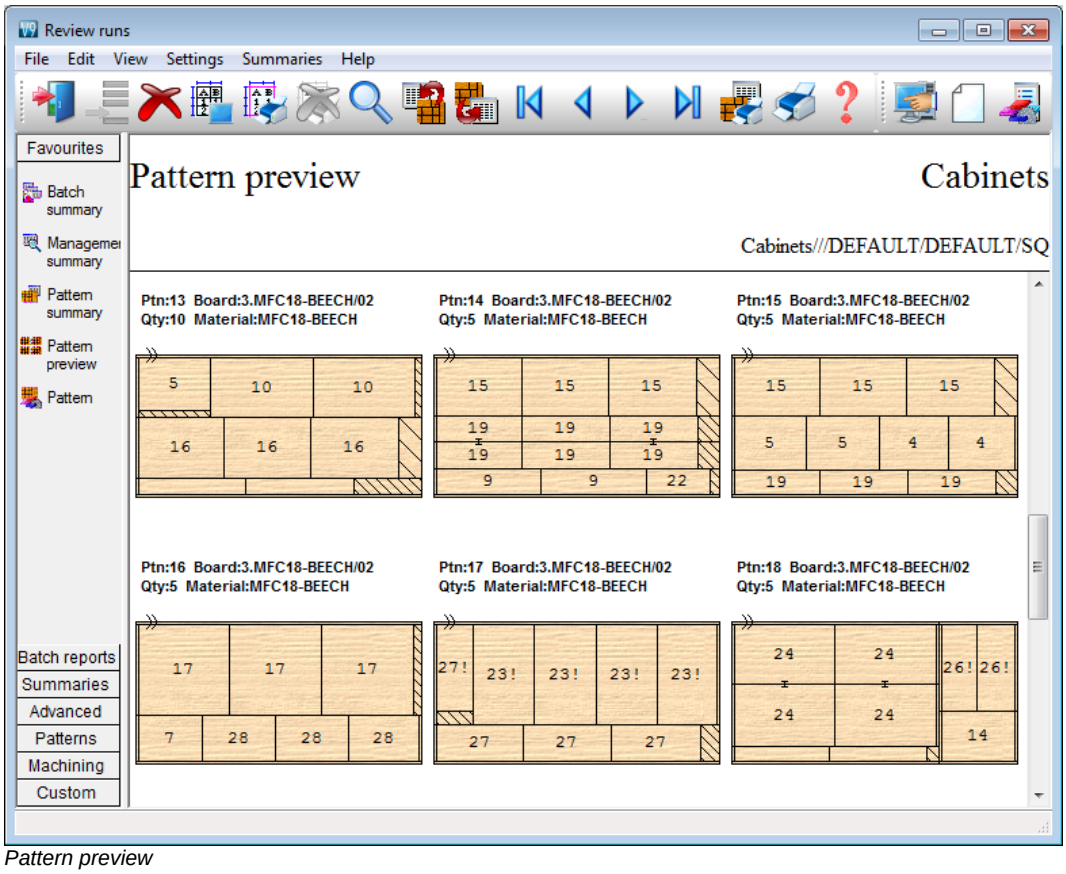
At the foot of the report are a set of tabs with more information. For example, the 'Dashboard' gives a graphical view of the data.




*Dashboard*

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

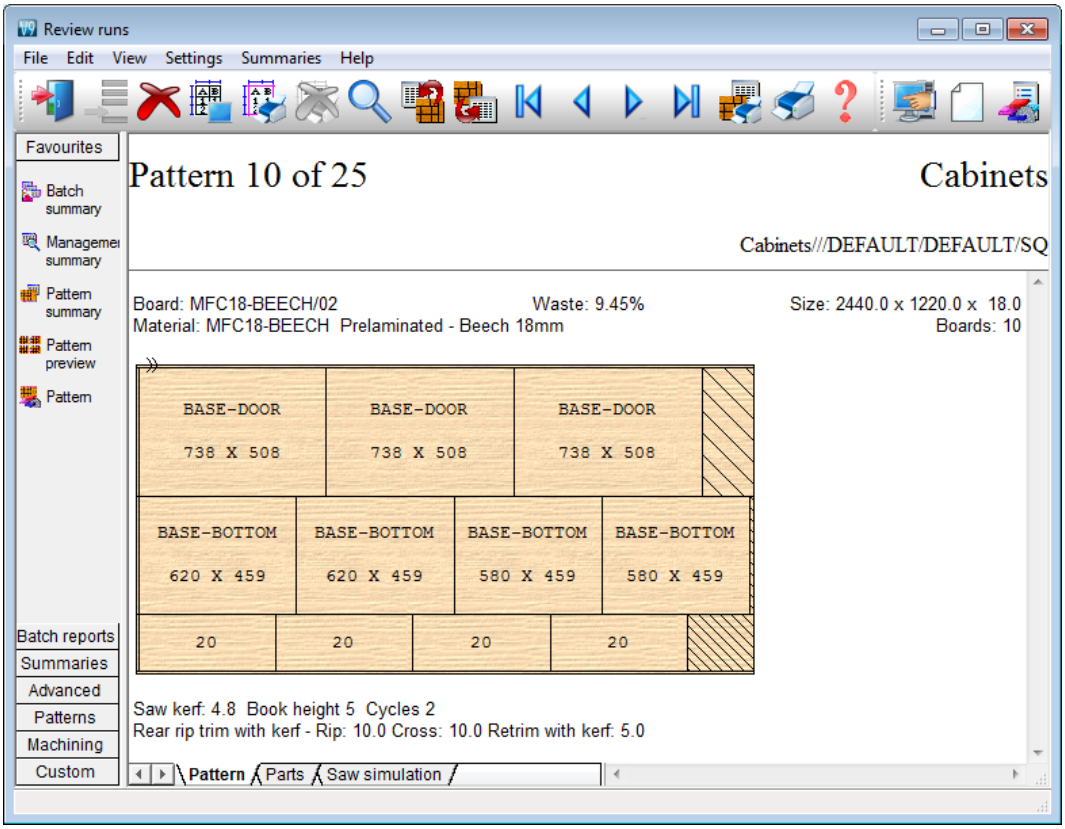
Pattern preview




*Pattern preview*

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

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

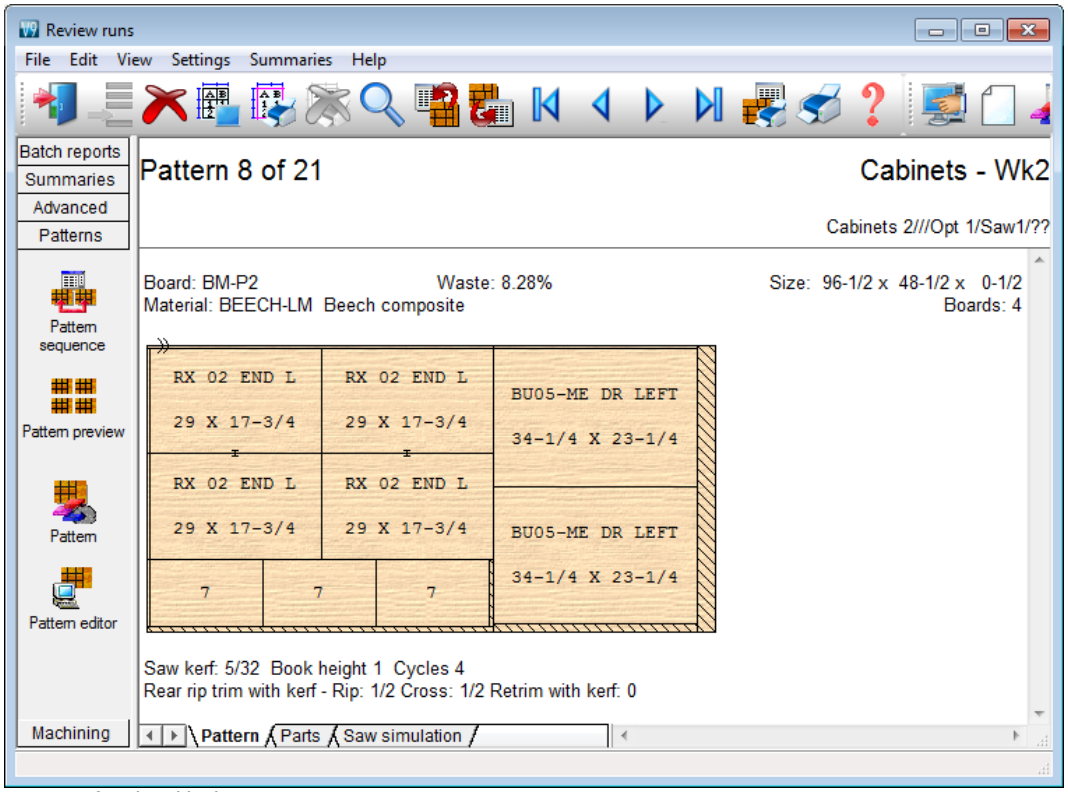



*Pattern*

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

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

The program also supports decimal and fractional inches.




*Pattern - fractional inches*

## Transfer to Saw or Machining centre

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

The program supports a wide range of saw controllers:-

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

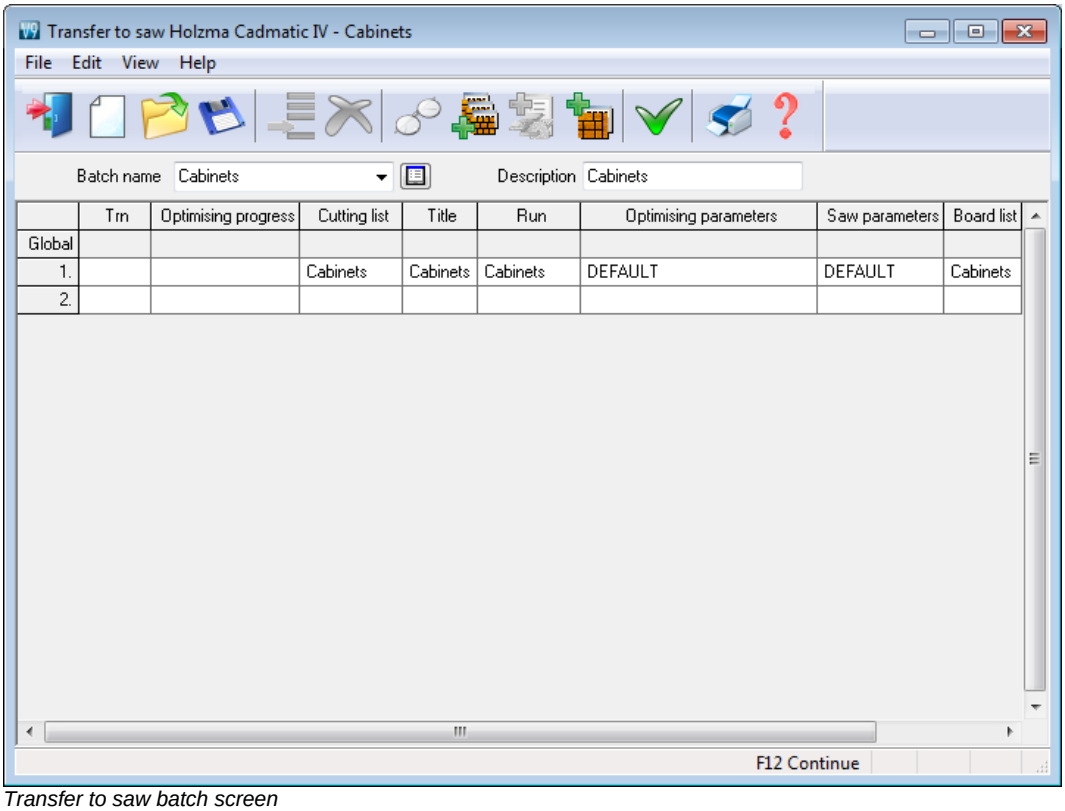
Some of the Machining centre transfer options are:-

2D DXF non-layered (DXF)
Busellato Autolink (DXF)
Weeke WoodWop V2.5 (MPR)
2D DXF layered (DXF)
Biesse RoverCAD (CID)
Morbidelli Aspan V3.2 (ASC)
Morbidelli Aspan V4.0 (ASC)
3D DXF layered (DXF)
Weeke WoodWop V4/V5 (MPR)
2D DXF nested layered (DXF)
2D DXF Biesse layered (DXF)
ASCII (PTX)
MDB (PTX)

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

 Saw Transfer  Machining interface

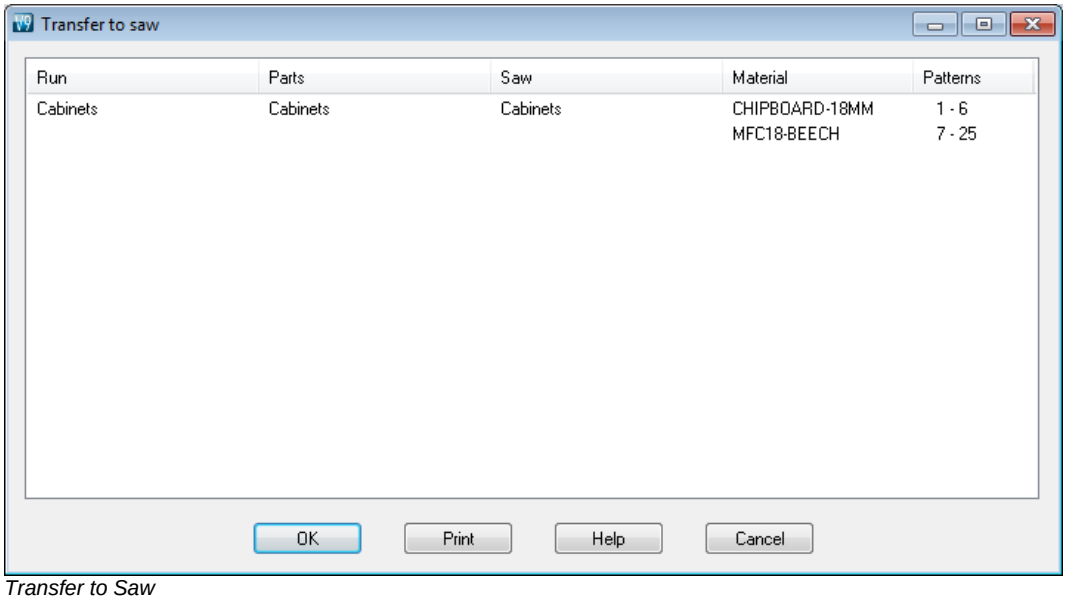
For Saw transfer, for example, the program prompts with the current job.




*Transfer to saw batch screen*

Select the 'Continue' option

The program displays the data to transfer.




*Transfer to Saw*

**- OK** to confirm

The transfer is finished.

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

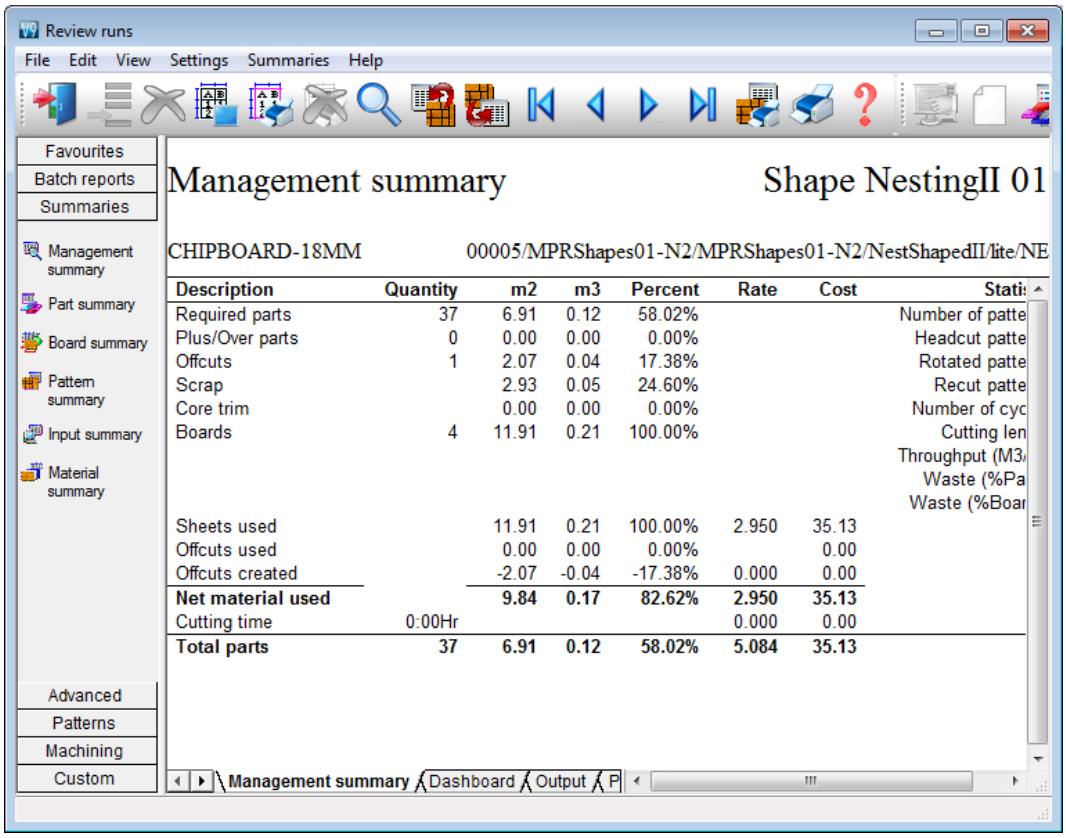
Typically the saw or machining centre transfer sends data to a location on the Network (Path for Saw data) and a separate program provided by the machinery manufacturer runs and sends the data to the machine.

## 1.2 Nested Optimising

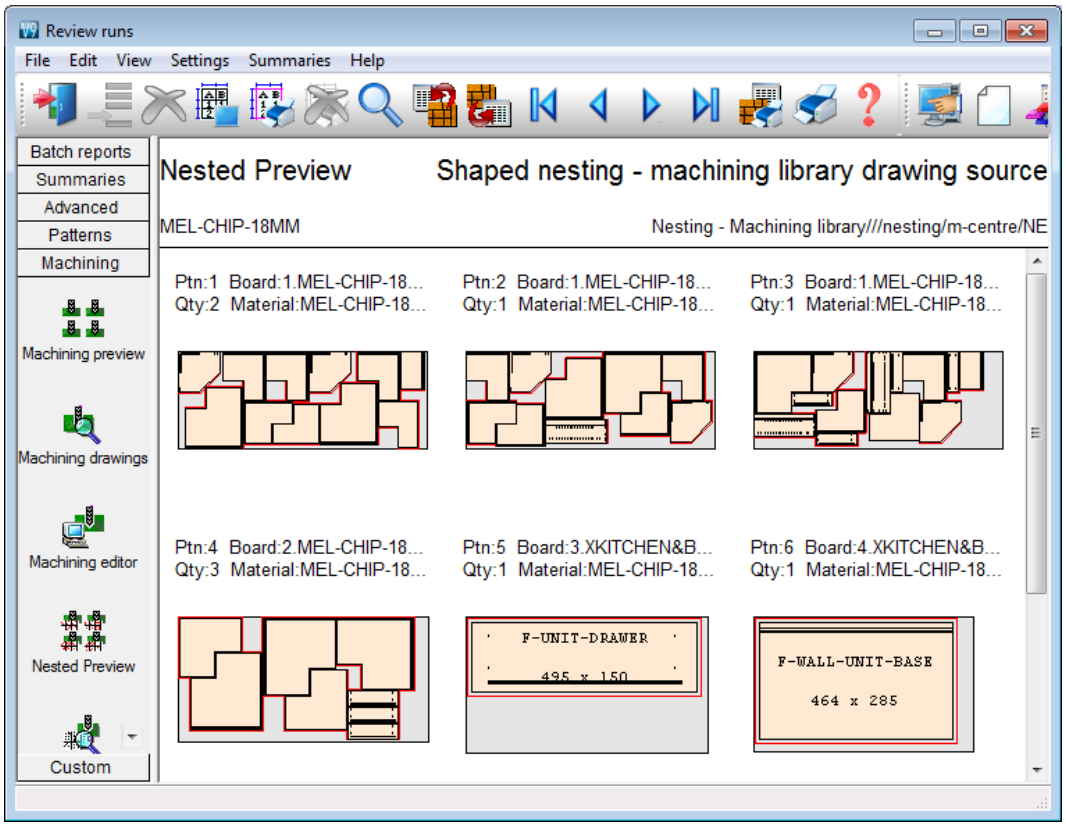
The program also provides Nested optimising - in this case the transfer is usually to a Machine centre to both divide the patterns and machine the parts.

The Nested optimiser deals with Rectangular and Shaped parts.

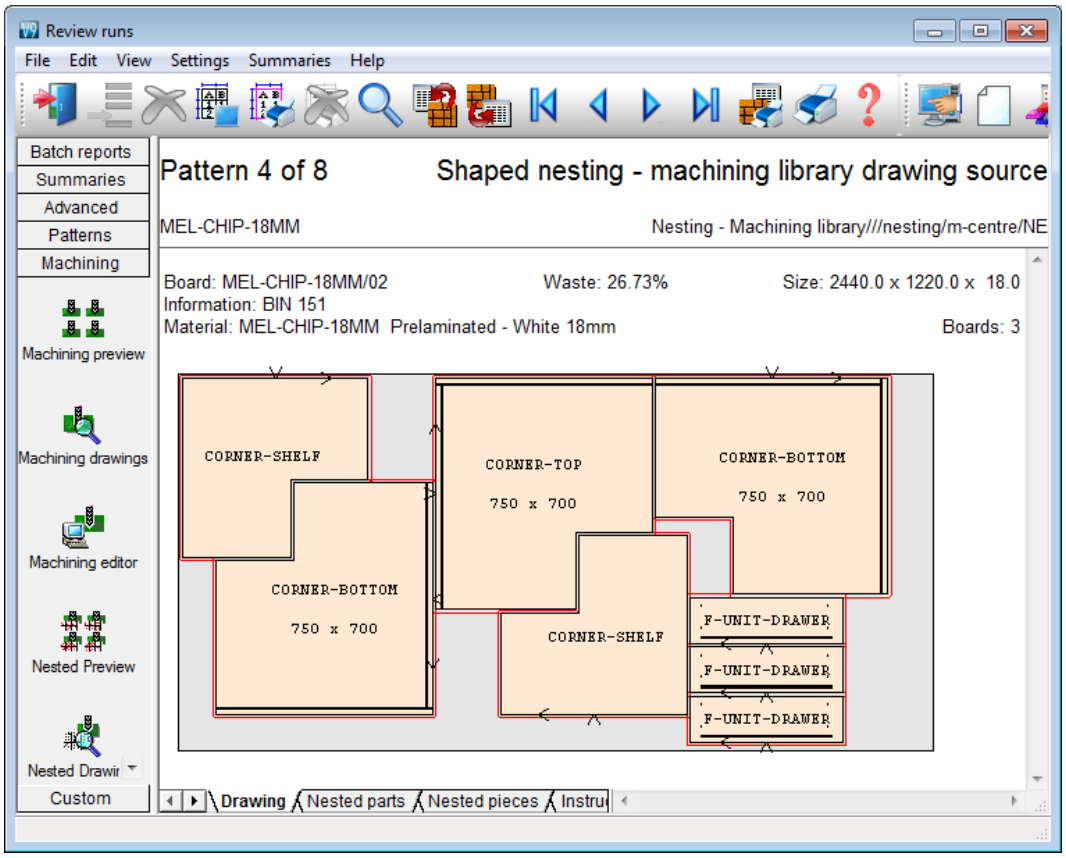
Import and Export operate in the same way for Optimising and Nested Optimising and the program operations and reports are the same, for example, the Management summary.



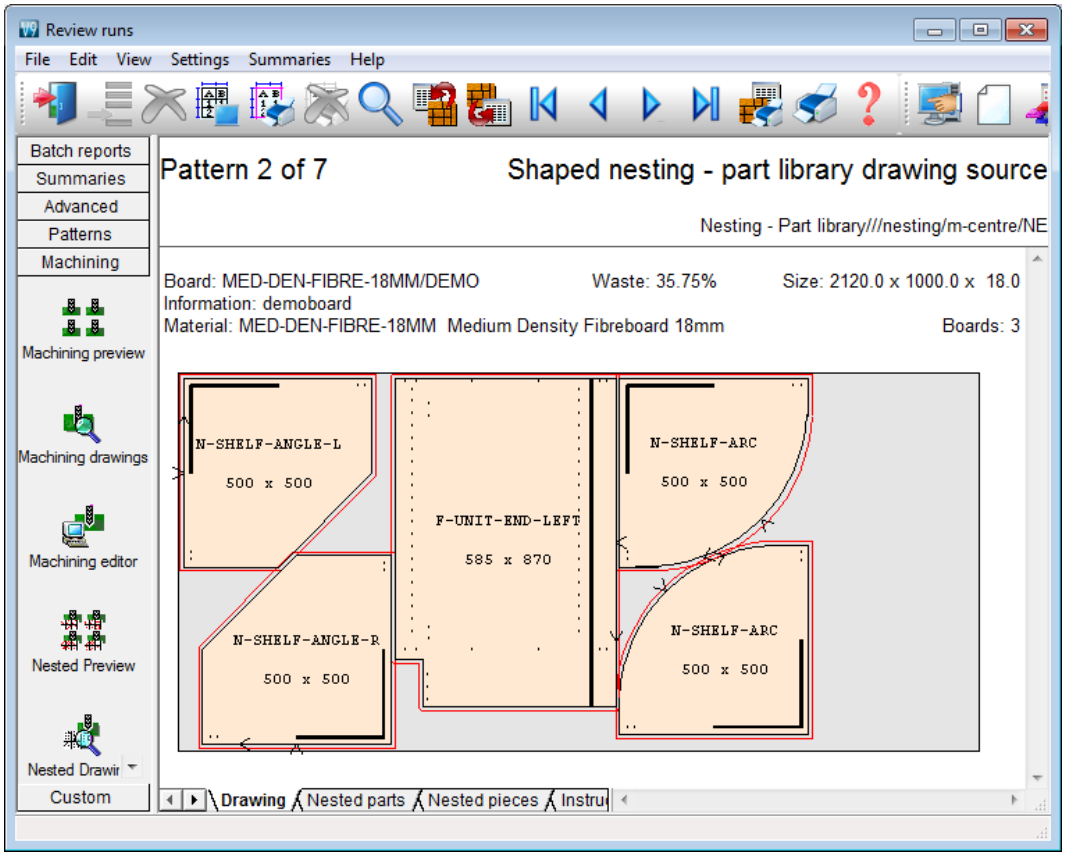
The runs are typically based on rectangular and shaped parts and are usually for smaller run quantities, processed one high.



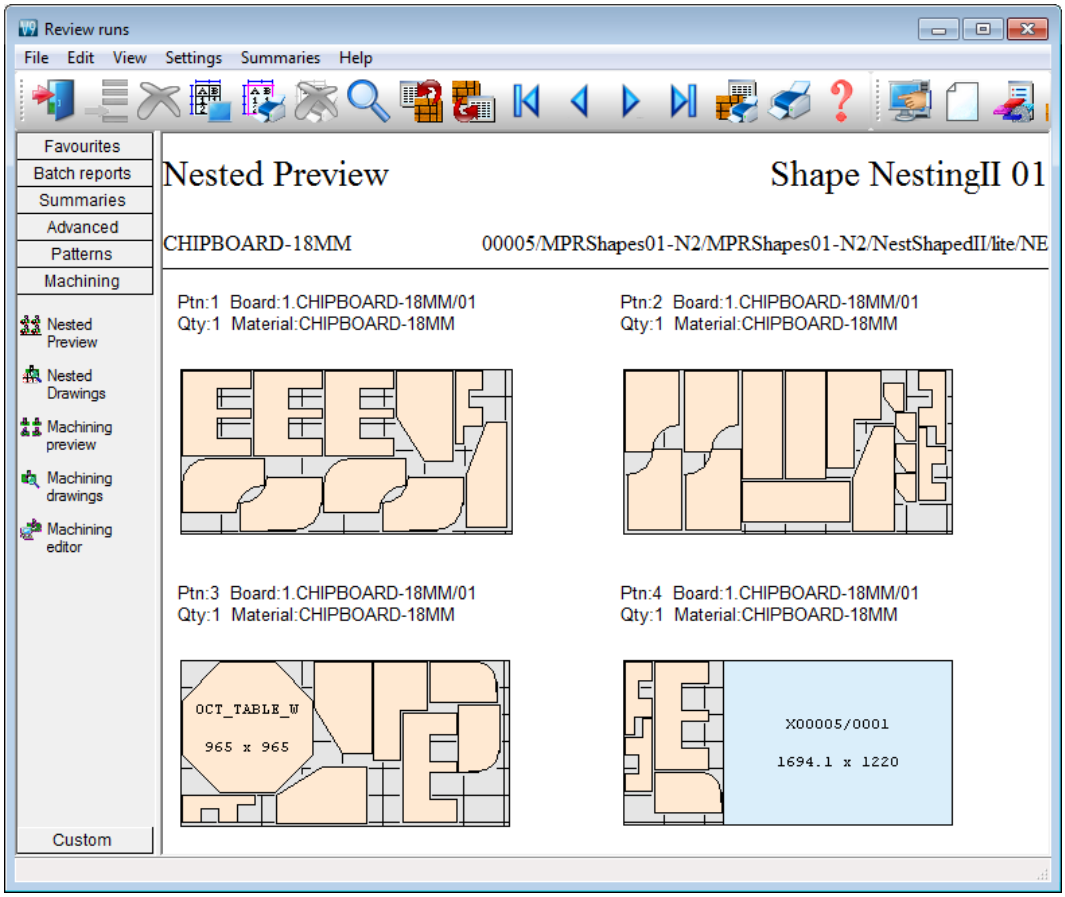
The pattern contains the cutting instructions for the pattern and the machining for each part.



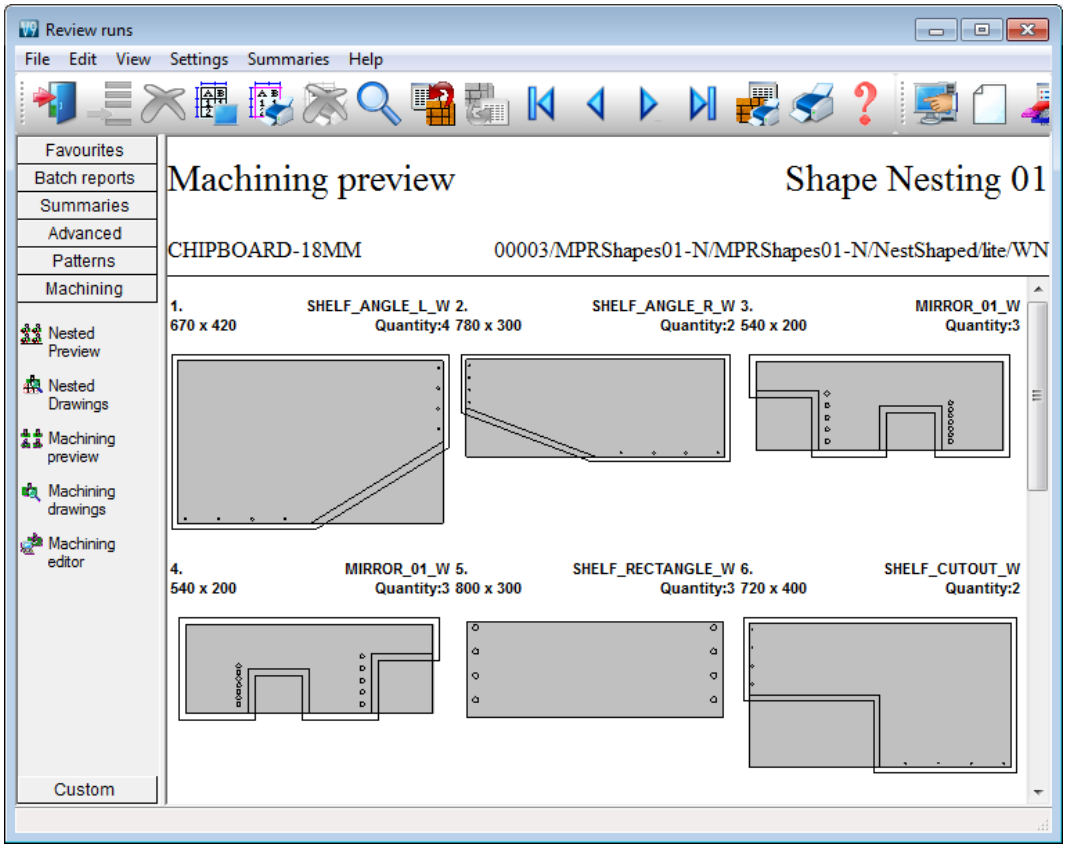
Patterns can include complex shapes and mchining.



The nesting option can be used and integrated with Weeke WoodWop and MPR files.



In this example the patterns are based on MPR drawings.




*Note* - When dealing with MPR parts import can be a bit tricky as it has to take account of the variables in the MPR files.

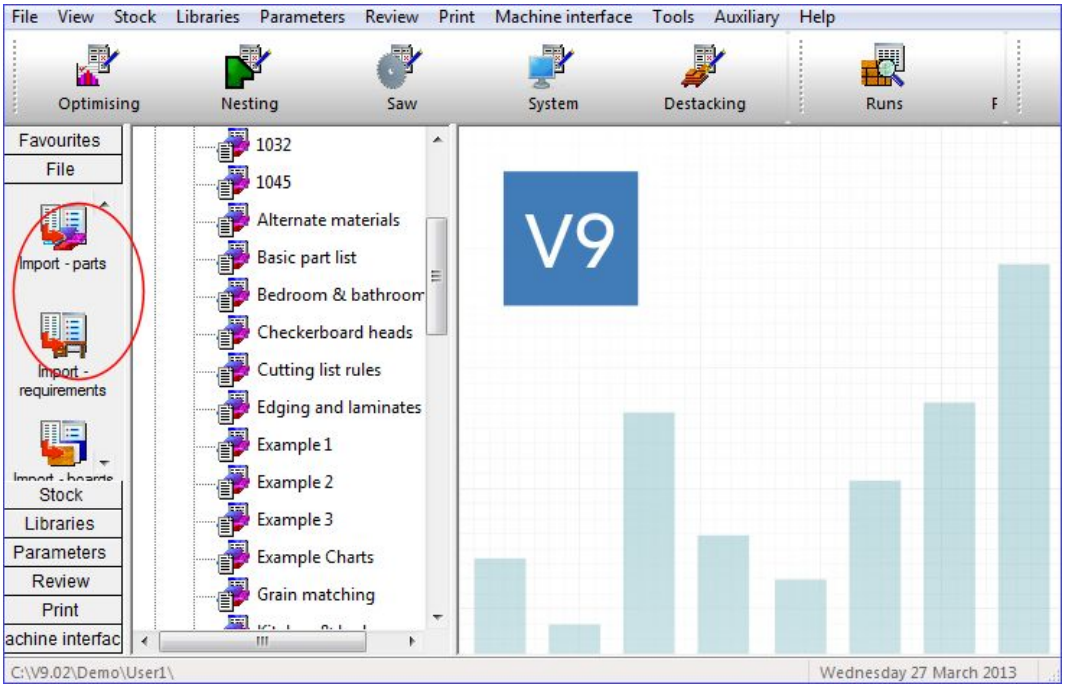
## 2. Import data

These days it is more common for programs to interact with other files and systems. For example, part lists or product requirements may be created by a separate Sales order system; Boards may need to be imported from a stock control database.

Several different types of data can be imported.

Import parts
Import product requirements
Import boards
Import patterns (including parts and boards)

These options are also available on the File Toolbar.



*Import options*

Most common is to import parts lists created by another system, for example, an order or sales system.

When working with products it is quite likely the product requirements are generated by an external sales system.

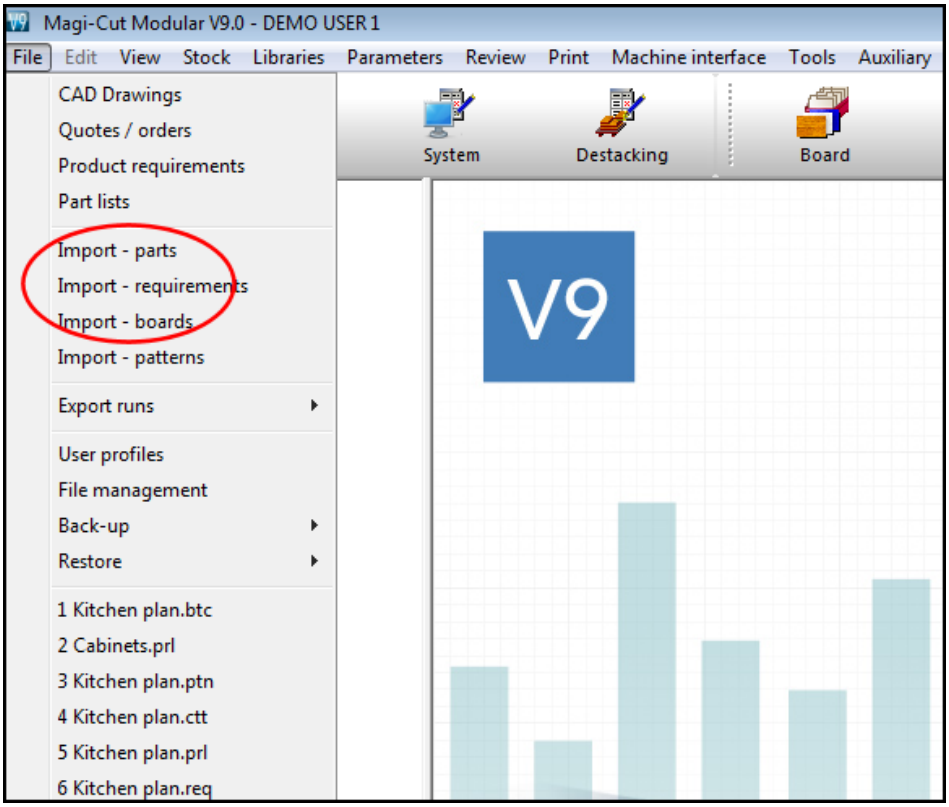
For boards is it sometimes necessary to import boards to the board library (the Stock control module is required for this). The system can also be set up to synchronise with external board databases e.g. Bargstedt SQL.

Sometimes users with one-off jobs with special board sizes prefer to import the board list rather than add those items to the board library.

## 2.1 Import parts

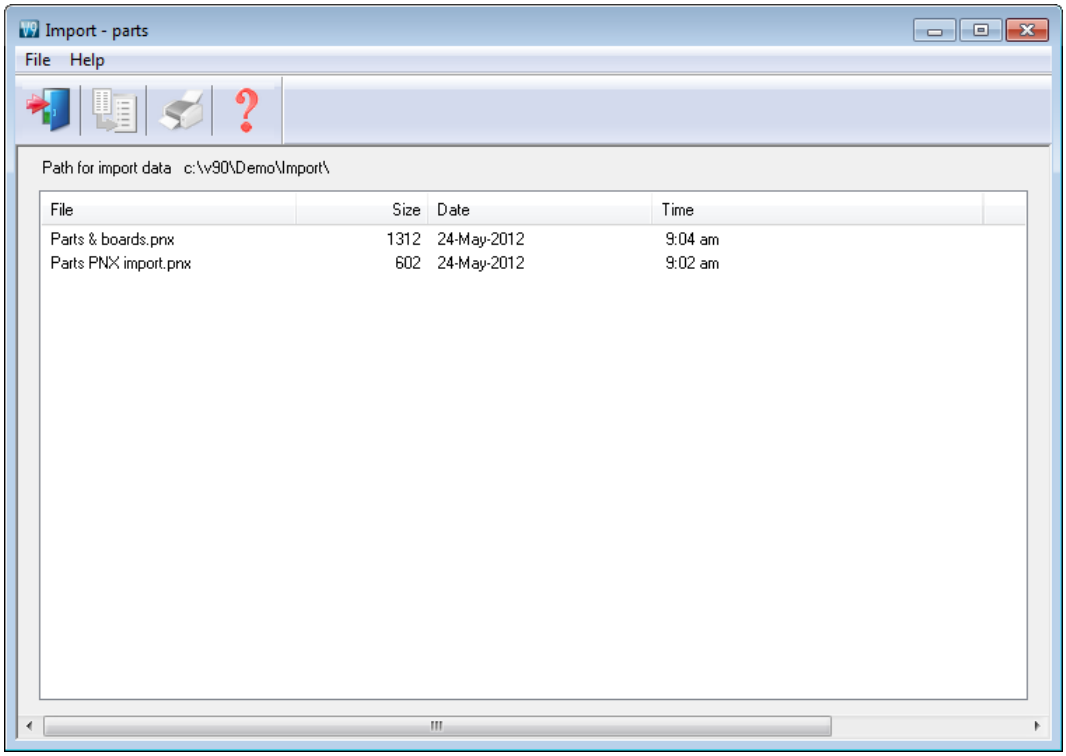
### Import parts - operation

Part lists can be quickly imported. At the main menu there are direct options on the File menu.




*Import parts*

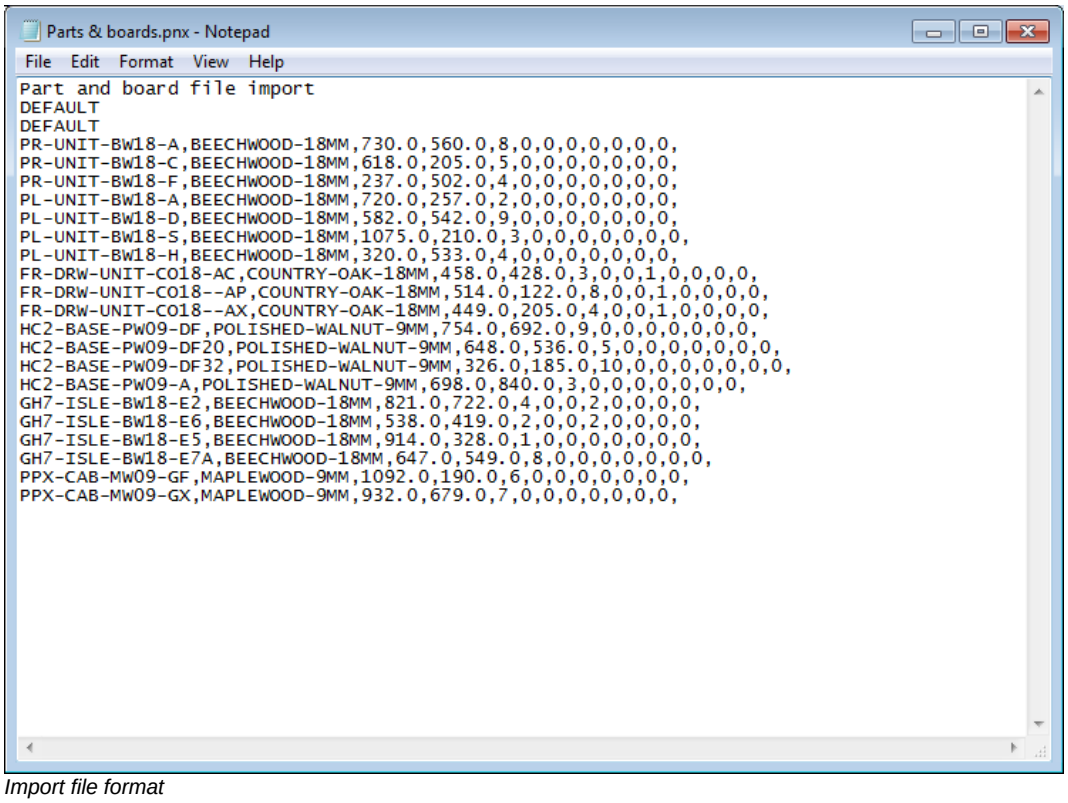
The program moves to the Import screen.




*Import parts*

- Select a file to import

In this example the import format is the program's format (named PNX; an ASCII file with the fields in a fixed order.



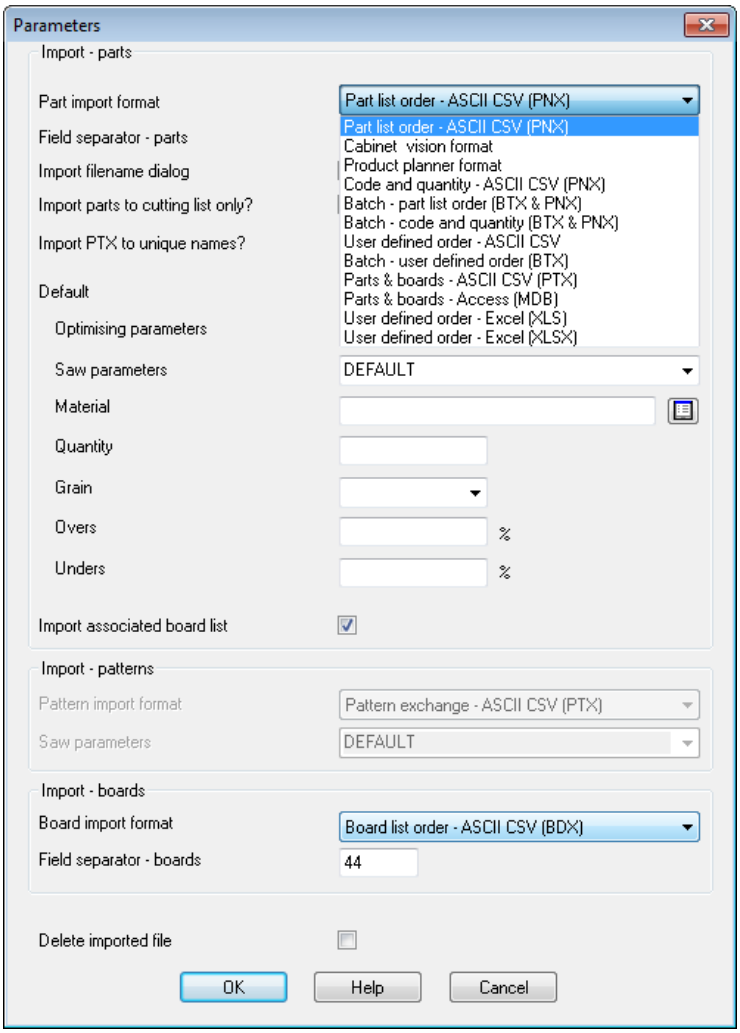

*Import file format*

For importing parts there are two basic settings to consider.

- Set the System parameter: *Path for import data* to specify where the files to import are located.

- Set the 'Import parameters' to describe the import format and other features of the import.

The import parameters are accessed from the Import dialog (*File - Import parts - File - Parameters)*.




*Import parameters*

One of the simplest options is: *Part list order - ASCII CSV (PNX)*

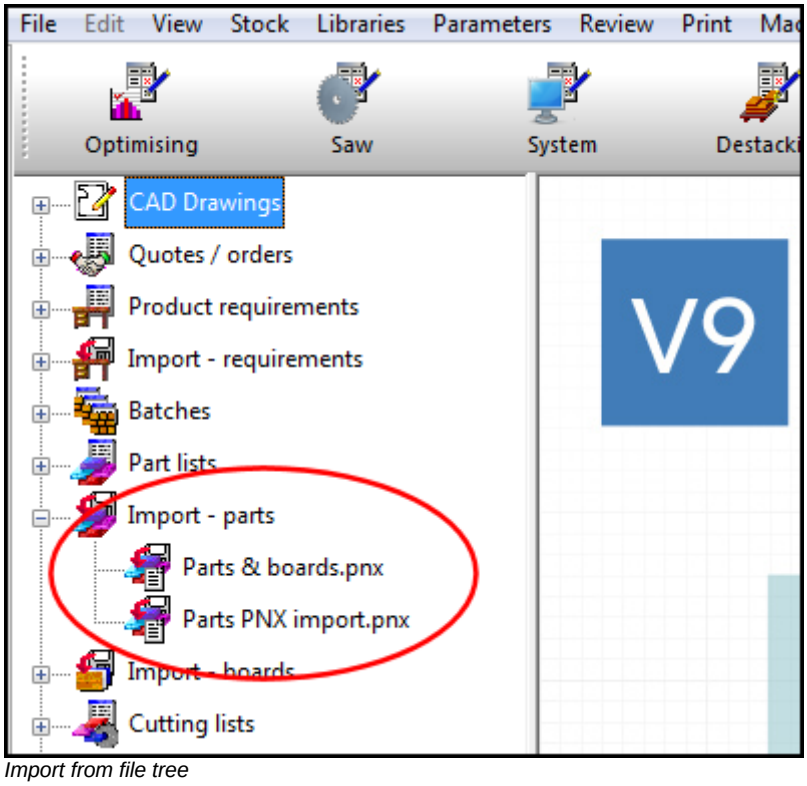
The standard format is PNX but there are several other formats to choose from. Some are more complex imports where part and board sizes can be imported in one go or a batch of part lists can be imported, for example, 'Batch, part list order'. The options are:-

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

There are several other parameters to control the import of parts, for example, to set the separator character and to set whether the import files are deleted after import …

*Custom import formats* - It is also possible to use a custom format (user defined format). This can be useful where there is limited control over the format of the external file (see: *Part list import parameters'*)

Once the format is set files can be quickly imported from the File tree at the main screen.




*Import from file tree*

## Part list details

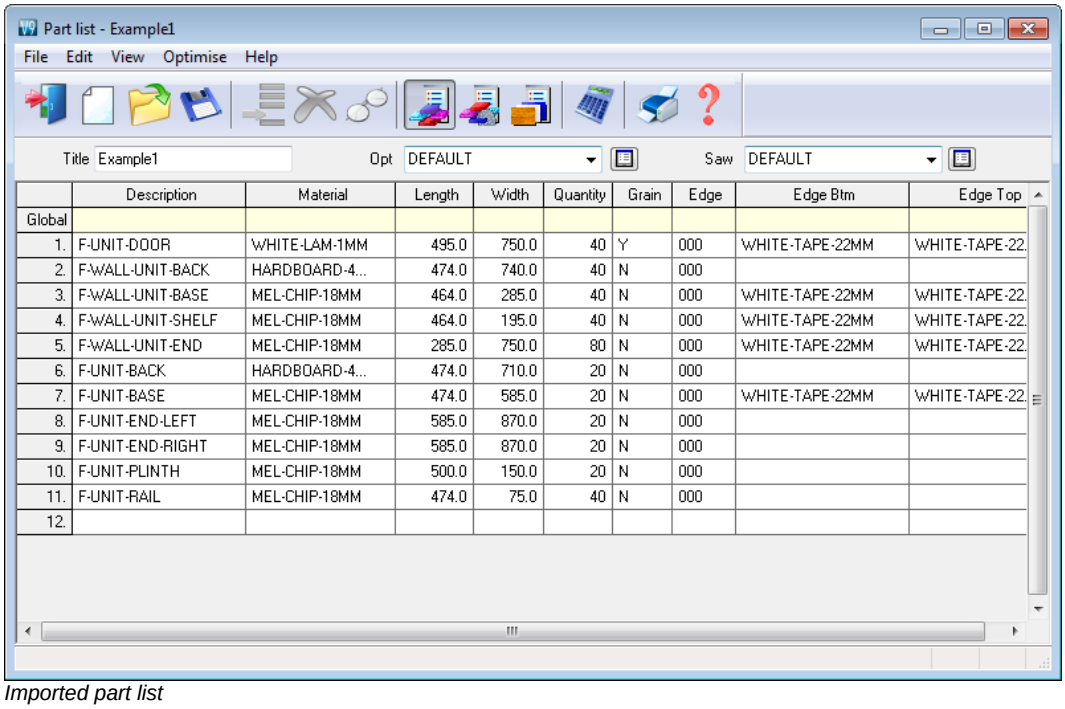
A part list is a list of part sizes and quantities to cut. 'Import parts' is the process of importing a list of sizes and quantities. The parts can then be optimised to produce cutting patterns. A simple import file:-

```
F-UNIT-DOOR,WHITE-LAM-1MM,495.000000,750.000000,40
F-WALL-UNIT-BACK,HARDBOARD-4MM,474.000000,740.000000,40
F-WALL-UNIT-BASE,MEL-CHIP-18MM,464.000000,285.000000,40
F-WALL-UNIT-SHELF,MEL-CHIP-18MM,464.000000,195.000000,40
F-WALL-UNIT-END,MEL-CHIP-18MM,285.000000,750.000000,80
F-UNIT-BACK,HARDBOARD-4MM,474.000000,710.000000,20
F-UNIT-BASE,MEL-CHIP-18MM,474.000000,585.000000,20
F-UNIT-END-LEFT,MEL-CHIP-18MM,585.000000,870.000000,20
F-UNIT-END-RIGHT,MEL-CHIP-18MM,585.000000,870.000000,20
F-UNIT-PLINTH,MEL-CHIP-18MM,500.000000,150.000000,20
F-UNIT-RAIL,MEL-CHIP-18MM,474.000000,75.000000,40
```

This is the basic data for a part: Part code, Material code, Length, Width, Quantity *with the fields in the same order as displayed at the part list screen.*

This format (called PNX) is automatically recognised by the Optimising software - use this format if possible. The import file extension is PNX e.g. JOB1.PNX

Part list screen after import of the above example:-




| | Description | Material | Length | Width | Quantity | Grain | Edge | Edge Btm | Edge Top |
|---|---|---|---|---|---|---|---|---|---|
| Global | | | | | | | | | |
| 1. | F-UNIT-DOOR | WHITE-LAM-1MM | 495.0 | 750.0 | 40 | Y | 000 | WHITE-TAPE-22MM | WHITE-TAPE-22 |
| 2. | F-WALL-UNIT-BACK | HARDBOARD-4... | 474.0 | 740.0 | 40 | N | 000 | | |
| 3. | F-WALL-UNIT-BASE | MEL-CHIP-18MM | 464.0 | 285.0 | 40 | N | 000 | WHITE-TAPE-22MM | WHITE-TAPE-22 |
| 4. | F-WALL-UNIT-SHELF | MEL-CHIP-18MM | 464.0 | 195.0 | 40 | N | 000 | WHITE-TAPE-22MM | WHITE-TAPE-22 |
| 5. | F-WALL-UNIT-END | MEL-CHIP-18MM | 285.0 | 750.0 | 80 | N | 000 | WHITE-TAPE-22MM | WHITE-TAPE-22 |
| 6. | F-UNIT-BACK | HARDBOARD-4... | 474.0 | 710.0 | 20 | N | 000 | | |
| 7. | F-UNIT-BASE | MEL-CHIP-18MM | 474.0 | 585.0 | 20 | N | 000 | WHITE-TAPE-22MM | WHITE-TAPE-22 |
| 8. | F-UNIT-END-LEFT | MEL-CHIP-18MM | 585.0 | 870.0 | 20 | N | 000 | | |
| 9. | F-UNIT-END-RIGHT | MEL-CHIP-18MM | 585.0 | 870.0 | 20 | N | 000 | | |
| 10. | F-UNIT-PLINTH | MEL-CHIP-18MM | 500.0 | 150.0 | 20 | N | 000 | | |
| 11. | F-UNIT-RAIL | MEL-CHIP-18MM | 474.0 | 75.0 | 40 | N | 000 | | |
| 12. | | | | | | | | | |

*Imported part list*

The import file can also contain up to three header lines which contain:-

- Title for part list
- Name of optimising parameter list
- Name of saw parameter list

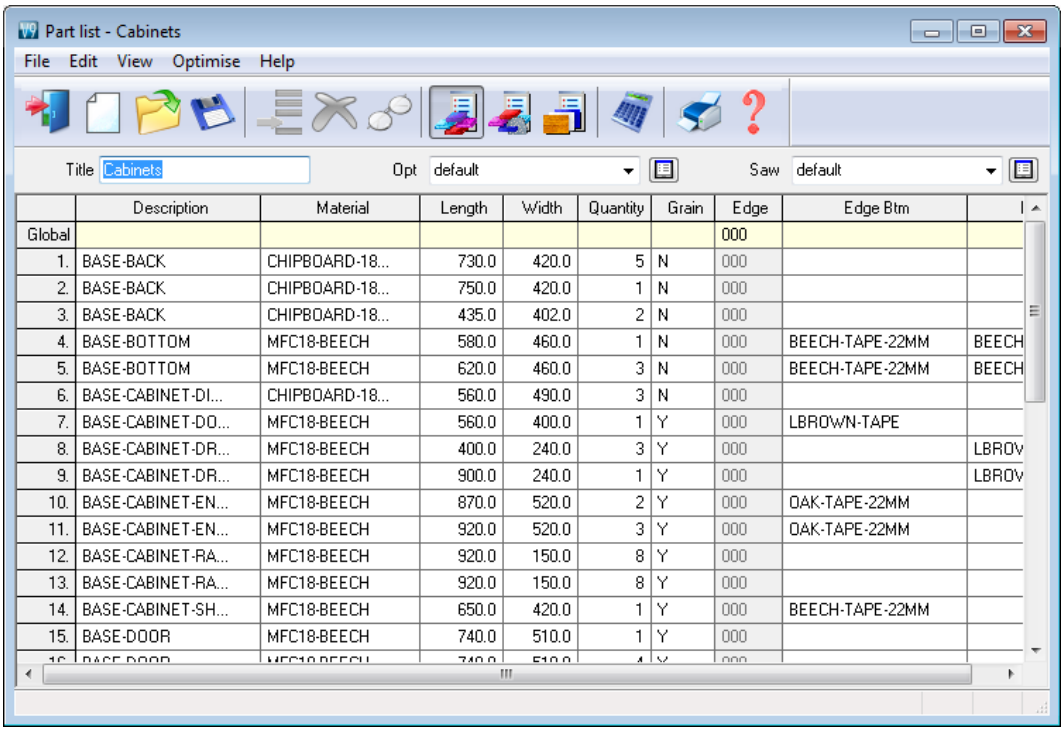
```
WORK FOR WEEK 26
STD2
ANGULAR
WU05WD-WHITE-DOOR,WHITE-LAM-1MM,495.0,750.0,40,,,Y
WU05HK-BACK,HARDBOARD-4MM,474.0,740.0,40,,,N
WU05MB-BASE,MEL-CHIP-18MM,464.0,285.0,40,,,N
```

*Header lines* - must not contain a separator (e.g. comma).

Title, optimising and saw parameter list names are imported from the import file.

## Part list data

A part list is essentially a list of part sizes, quantities and the material to use for each part.




| | Description | Material | Length | Width | Quantity | Grain | Edge | Edge Btm | |
|---|---|---|---|---|---|---|---|---|---|
| Global | | | | | | | 000 | | |
| 1. | BASE-BACK | CHIPBOARD-18... | 730.0 | 420.0 | 5 | N | 000 | | |
| 2. | BASE-BACK | CHIPBOARD-18... | 750.0 | 420.0 | 1 | N | 000 | | |
| 3. | BASE-BACK | CHIPBOARD-18... | 435.0 | 402.0 | 2 | N | 000 | | |
| 4. | BASE-BOTTOM | MFC18-BEECH | 580.0 | 460.0 | 1 | N | 000 | BEECH-TAPE-22MM | BEECH |
| 5. | BASE-BOTTOM | MFC18-BEECH | 620.0 | 460.0 | 3 | N | 000 | BEECH-TAPE-22MM | BEECH |
| 6. | BASE-CABINET-DI... | CHIPBOARD-18... | 560.0 | 490.0 | 3 | N | 000 | | |
| 7. | BASE-CABINET-DO... | MFC18-BEECH | 560.0 | 400.0 | 1 | Y | 000 | LBROWN-TAPE | |
| 8. | BASE-CABINET-DR... | MFC18-BEECH | 400.0 | 240.0 | 3 | Y | 000 | | LBROV |
| 9. | BASE-CABINET-DR... | MFC18-BEECH | 900.0 | 240.0 | 1 | Y | 000 | | LBROV |
| 10. | BASE-CABINET-EN... | MFC18-BEECH | 870.0 | 520.0 | 2 | Y | 000 | OAK-TAPE-22MM | |
| 11. | BASE-CABINET-EN... | MFC18-BEECH | 920.0 | 520.0 | 3 | Y | 000 | OAK-TAPE-22MM | |
| 12. | BASE-CABINET-RA... | MFC18-BEECH | 920.0 | 150.0 | 8 | Y | 000 | | |
| 13. | BASE-CABINET-RA... | MFC18-BEECH | 920.0 | 150.0 | 8 | Y | 000 | | |
| 14. | BASE-CABINET-SH... | MFC18-BEECH | 650.0 | 420.0 | 1 | Y | 000 | BEECH-TAPE-22MM | |
| 15. | BASE-DOOR | MFC18-BEECH | 740.0 | 510.0 | 1 | Y | 000 | | |

*Part list*

The basic part list data is described below.

*Part list title* - a description for the part list. Use this to identify part lists - the title is shown on most screens and printed on most reports.

*Optimising parameter list name* **-** parameter list to use when optimising a part list. The optimising parameter list describes features such as the saw kerf, trims, and type of recuts to use when optimising.

*Saw parameter list name* - name of the saw parameter list to use when optimising a part list. Saw parameters describe the features of a saw, such as, overall cutting length, minimum trims, method of re-cutting etc.

*Optimising and saw parameter names default* **-** optimising and saw parameter names are automatically defaulted to the first entry in the list of parameters files if they are not otherwise specified.

*Part description* - a description or code for each part.

*Material* **-** a unique material code. For example, 15mm melamine faced chipboard could have a code like MFC15 or 3/4 inch particle board might be PB3/4. The materials are stored in the Board library. There is a material code against each part in the part list so that the program uses the correct boards for each part.

*Part sizes* **-** The part sizes are the Length and Width of the part. The length is usually the longest edge of the part and if the part is grained the length is the dimension running along the grain direction. The width is usually the shortest edge of the part but if the material is grained the width is the dimension running across the grain direction.

The order in which the length and width columns are displayed depends on the setting of the System parameter: *Order of dimensions for parts.* If possible keep the order of length and width fields in the import file the same as that set in the system parameters.

In the program the 'length' and 'width' are the dimensions set by the 'length' and 'width' fields regardless of the relative sizes of the dimensions.

*Part quantity* - quantity required

*Over/under production* - allowed under or over production of a part. If they are set for each part they represent the absolute number of over or under produced parts. If they are set in the global header line they represent the percentage of over or under produced parts for every part in the list.

*Grain - parts - d*escribes the grain of the part.

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

In an import file the grain value is represented by a number '0' - no grain, '1' grain along length, '2' grain along width.

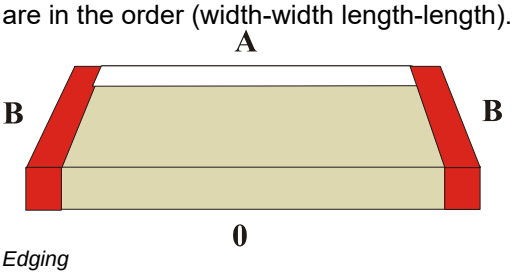
*Quick Edging field* - This field stores the ‘Quick Edging’ codes for a part. These codes are a simple way of describing the edging requirements for a part where the edging is

straightforward, for example, tape. A single code describes the edging on each edge, for example.

```
0 - No edging
A - White tape 1mm
B - Red tape 1mm

A0BB - (length-length width-width)
```

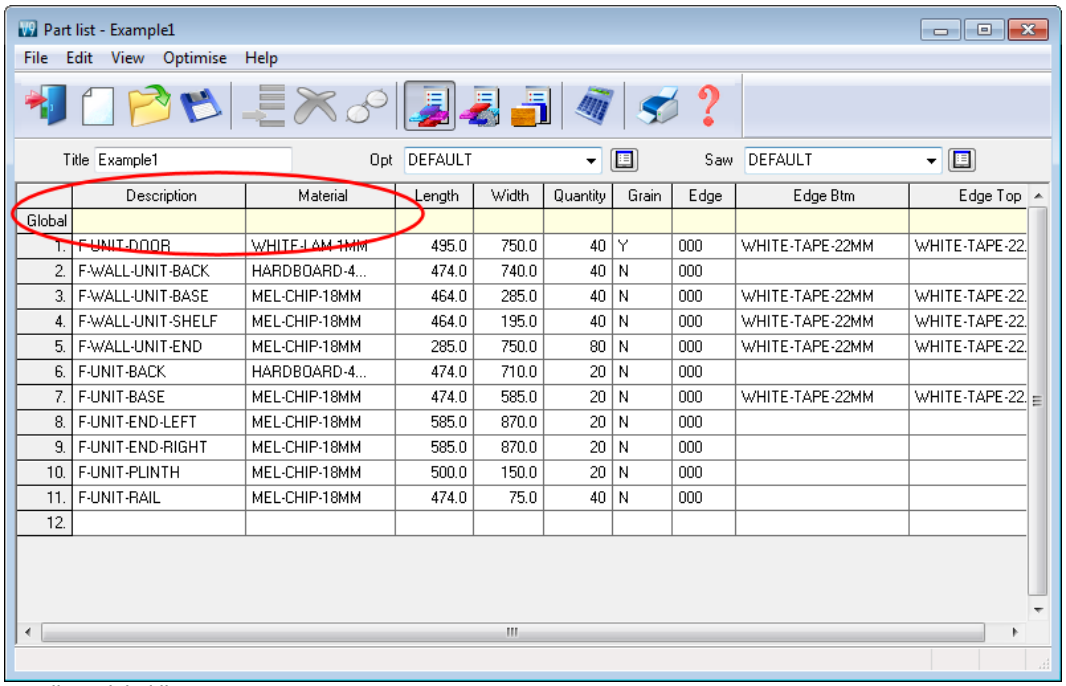
The order of edges follows the part list order. If part list order is Width-Length then edges are in the order (width-width length-length).




*Edging*

*Global header line - part list* - At the top of the part list screen is a header line labelled 'global'. If there is an entry in this line for a column this defines the value in that column for every part in the list.

It is useful where a field is not used or has a constant value.

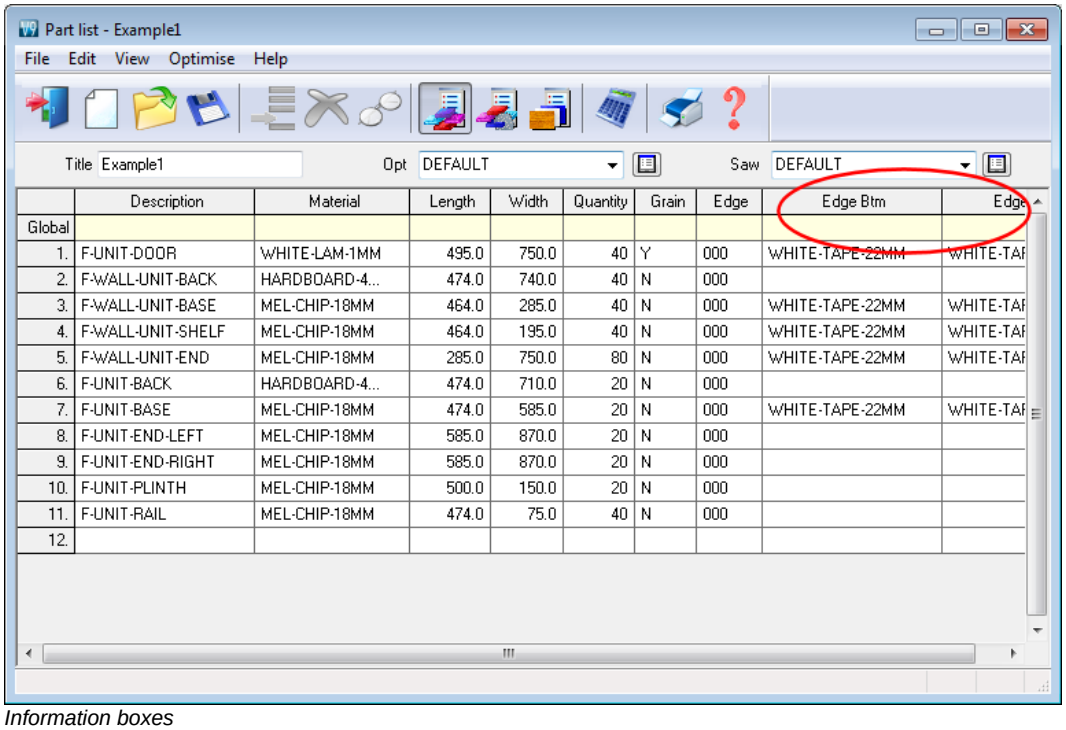



| | Description | Material | Length | Width | Quantity | Grain | Edge | Edge Btm | Edge Top |
|---|---|---|---|---|---|---|---|---|---|
| Global | | | | | | | | | |
| 1. | F-UNIT-DOOR | WHITE-LAM-1MM | 495.0 | 750.0 | 40 | Y | 000 | WHITE-TAPE-22MM | WHITE-TAPE-22 |
| 2. | F-WALL-UNIT-BACK | HARDBOARD-4... | 474.0 | 740.0 | 40 | N | 000 | | |
| 3. | F-WALL-UNIT-BASE | MEL-CHIP-18MM | 464.0 | 285.0 | 40 | N | 000 | WHITE-TAPE-22MM | WHITE-TAPE-22 |
| 4. | F-WALL-UNIT-SHELF | MEL-CHIP-18MM | 464.0 | 195.0 | 40 | N | 000 | WHITE-TAPE-22MM | WHITE-TAPE-22 |
| 5. | F-WALL-UNIT-END | MEL-CHIP-18MM | 285.0 | 750.0 | 80 | N | 000 | WHITE-TAPE-22MM | WHITE-TAPE-22 |
| 6. | F-UNIT-BACK | HARDBOARD-4... | 474.0 | 710.0 | 20 | N | 000 | | |
| 7. | F-UNIT-BASE | MEL-CHIP-18MM | 474.0 | 585.0 | 20 | N | 000 | WHITE-TAPE-22MM | WHITE-TAPE-22 |
| 8. | F-UNIT-END-LEFT | MEL-CHIP-18MM | 585.0 | 870.0 | 20 | N | 000 | | |
| 9. | F-UNIT-END-RIGHT | MEL-CHIP-18MM | 585.0 | 870.0 | 20 | N | 000 | | |
| 10. | F-UNIT-PLINTH | MEL-CHIP-18MM | 500.0 | 150.0 | 20 | N | 000 | | |
| 11. | F-UNIT-RAIL | MEL-CHIP-18MM | 474.0 | 75.0 | 40 | N | 000 | | |
| 12. | | | | | | | | | |

*Part list - global line*

## Information boxes - part list

As well as the standard data items such as part code, length, width there are many other useful pieces of information to record for each part, for example, machining data, storage instructions, colours, complex edging, and so on. This data varies for each customer - some use a lot some use none at all. The Optimising program provides extra user defined fields (called 'Information boxes') for each part.




| | Description | Material | Length | Width | Quantity | Grain | Edge | Edge Btm | Edge |
|---|---|---|---|---|---|---|---|---|---|
| Global | | | | | | | | | |
| 1. | F-UNIT-DOOR | WHITE-LAM-1MM | 495.0 | 750.0 | 40 | Y | 000 | WHITE-TAPE-22MM | WHITE-TAI |
| 2. | F-WALL-UNIT-BACK | HARDBOARD-4... | 474.0 | 740.0 | 40 | N | 000 | | |
| 3. | F-WALL-UNIT-BASE | MEL-CHIP-18MM | 464.0 | 285.0 | 40 | N | 000 | WHITE-TAPE-22MM | WHITE-TAI |
| 4. | F-WALL-UNIT-SHELF | MEL-CHIP-18MM | 464.0 | 195.0 | 40 | N | 000 | WHITE-TAPE-22MM | WHITE-TAI |
| 5. | F-WALL-UNIT-END | MEL-CHIP-18MM | 285.0 | 750.0 | 80 | N | 000 | WHITE-TAPE-22MM | WHITE-TAI |
| 6. | F-UNIT-BACK | HARDBOARD-4... | 474.0 | 710.0 | 20 | N | 000 | | |
| 7. | F-UNIT-BASE | MEL-CHIP-18MM | 474.0 | 585.0 | 20 | N | 000 | WHITE-TAPE-22MM | WHITE-TAI |
| 8. | F-UNIT-END-LEFT | MEL-CHIP-18MM | 585.0 | 870.0 | 20 | N | 000 | | |
| 9. | F-UNIT-END-RIGHT | MEL-CHIP-18MM | 585.0 | 870.0 | 20 | N | 000 | | |
| 10. | F-UNIT-PLINTH | MEL-CHIP-18MM | 500.0 | 150.0 | 20 | N | 000 | | |
| 11. | F-UNIT-RAIL | MEL-CHIP-18MM | 474.0 | 75.0 | 40 | N | 000 | | |
| 12. | | | | | | | | | |

*Information boxes*

This data can also be imported from a file. In the following example the PNX file includes data for the information boxes.

```
F-UNIT-DOOR,WHITE-LAM-1MM,495.0,570.0,20,,,N,,,,,WHITE-TAPE-22MM,WHITE-TAPE-
22MM,WHITE-TAPE-22MM, WHITE-TAPE-22MM
```

## Pre-defined information

This is information that is already stored by the system or is created during optimisation.

| | |
|---|---|
| **User** | Edging diagram |
| User Defined | Program - bottom edge |
| | Program - top edge |
| **Part** | Program - left edge |
| Part description | Program - right edge |
| Duplicate reference | |
| Colour names | **Laminating** |
| Part Number | Front laminate |
| Variable | Back laminate |
| Alternative materials | Front laminate description |
| Outfeed direction | Back laminate description |
| Optimising parameters | Material combination |
| Saw parameters | Core material code |
| | Core length and width |
| **Part sizes** | |
| Finished sizes | **Product information** |
| Finished length | Product information |
| Finished width | Product description |
| Second cut sizes | Order description |
| Minimum cut size | Product code |
| | Product width |
| **Part requirements** | Product height |
| Quantity of overs | Product depth |
| Pre-aggregated quantity | Product number in room |
| | Room / floor number |
| **Edging** | Product qty |
| Length edge bottom | Sub-assembly |
| Length edge top | |
| Width edge left | **Destacking** |
| Width edge right | Part layout |
| Length edge bottom description | Part orientation |
| Length edge top description | Stack height (pieces) |
| Width edge left description | Stack height (dim) |
| Width edge right description | Station number |

| | |
|---|---|
| **Destacking** | **Nesting** |
| Destack type | Step angle |
| Bottom layout | Mirrored |

| | |
|---|---|
| Bottom material | Do not place part on edge |
| Top layout | MPR path |
| Top material | Part library code |
| Length | Part ID |
| Width | Template router |
| Overhang/oversize (len) | |
| Overhang/oversize (wid) | **Grain** |
| Thickness | Grain matching |
| Baseboards per stack | Pattern for master part |
| Support type | |
| Support material | **Tracking** |
| Support thickness | Quote ID |
| Support length | Product req ID |
| Support width | Part list ID |
| Support layout | Cutting list ID |
| Use secondary station | Tracking number |
| Stacks per station | |
| | **Other** |
| **Costing** | Label quantity |
| Unit price | Bar code 1 |
| Machine time | Bar code 2 |
| Material cost | MPR path |
| | Part library code |
| **Machining Drawing** | Part ID |
| Drawing name import | Template router |
| Drawing name transfer | MPR path |
| Transfer name - back | Part library code |
| Transfer name-horizontal | MPR path |
| Transfer name - common | Part library code |
| Machine before edging | Part ID |
| Picture filename | |
| Create file (un-m/c parts) | |
| Stop position | |

The information boxes can be set with pre-defined information or user defined information.

For example, to print a label for each part and make sure that the original product code is on the label - set the 'Product code' information box for the part list. When the part list is created from the product requirements the correct product code is automatically stored against each part.

This type of information is provided as customisable information boxes since the use of this information varies a lot between users and can be unique to each user. For example, a user entering only part lists would not have use for the Product code field.

Information boxes can also be set up for user defined (free format) information.

**Import from custom file formats**

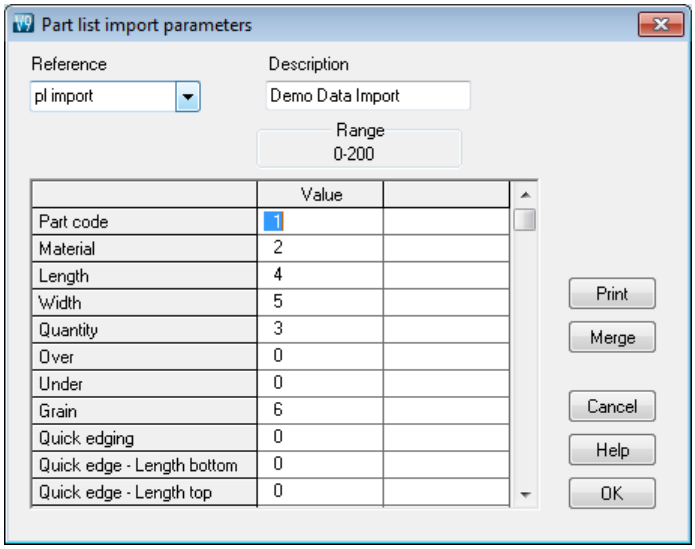
In some cases there is no control over the format of the import file or it is preferable to leave the format unchanged as the file is used elsewhere in the production process. In this case the format of the import file has to be set up in the Optimising program so it can be interpreted correctly by the import process.

To do this use the Part list import parameters (*Main screen - Parameters - Part list import parameters*).

In this example the data is not in PNX format because the order of fields is: Part Code, Length, Width, Quantity, Material.

```
END/2,600.0,750.0,25,MFC15
TOP,1200.0,690.0,30,MDF18
PLINTH,1500.0,150.0,10,MDF18
```

Use the parameter values to describe this:-.




*Part list import parameters*

Each parameter is a field in the part list and the parameter value is the position of that field in the external ASCII file. There are two other parameters that need to be set.

*Header lines* **-** number of header lines to ignore

```
R1.003./6678
Product line 31/76
-----------------
Work for Week 27     < Start of part list format
STANDARD
ANGULAR
WU05WD-WHITE-DOOR,WHITE-LAM-1MM,495.0,750.0,40,,,Y
```

In the above example the first three lines are not relevant to optimising and can be ignored by setting header lines to '3'. *This parameter only applies to the user defined import types (options 6 and 7).*

*Extension for CSV file* - set this to the file extension for the file, for example, CSV, ASC, TXT etc.

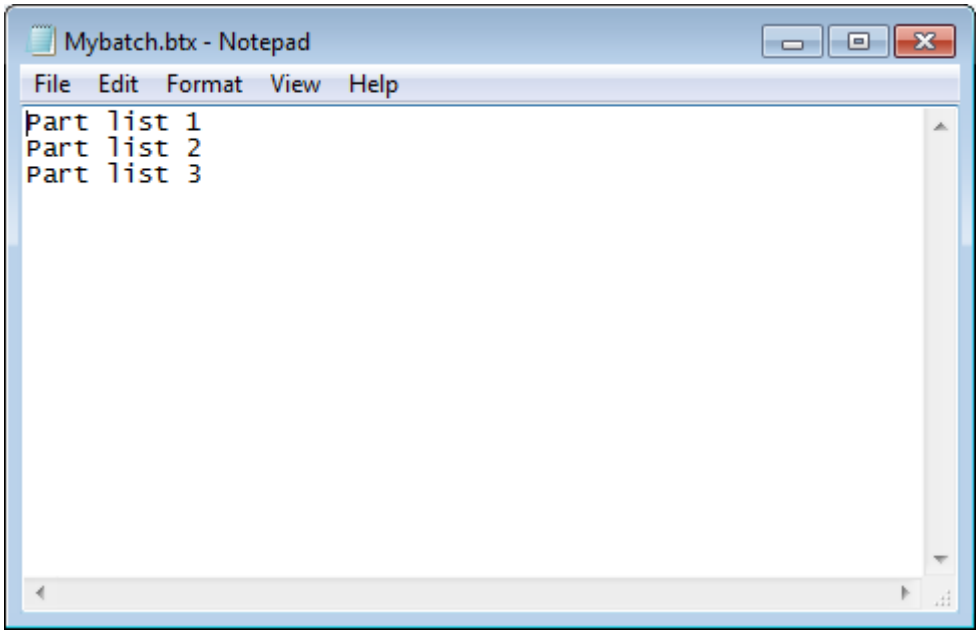
*Field separator* - enter an ASCII value for character defining each field e.g. '44'

= comma

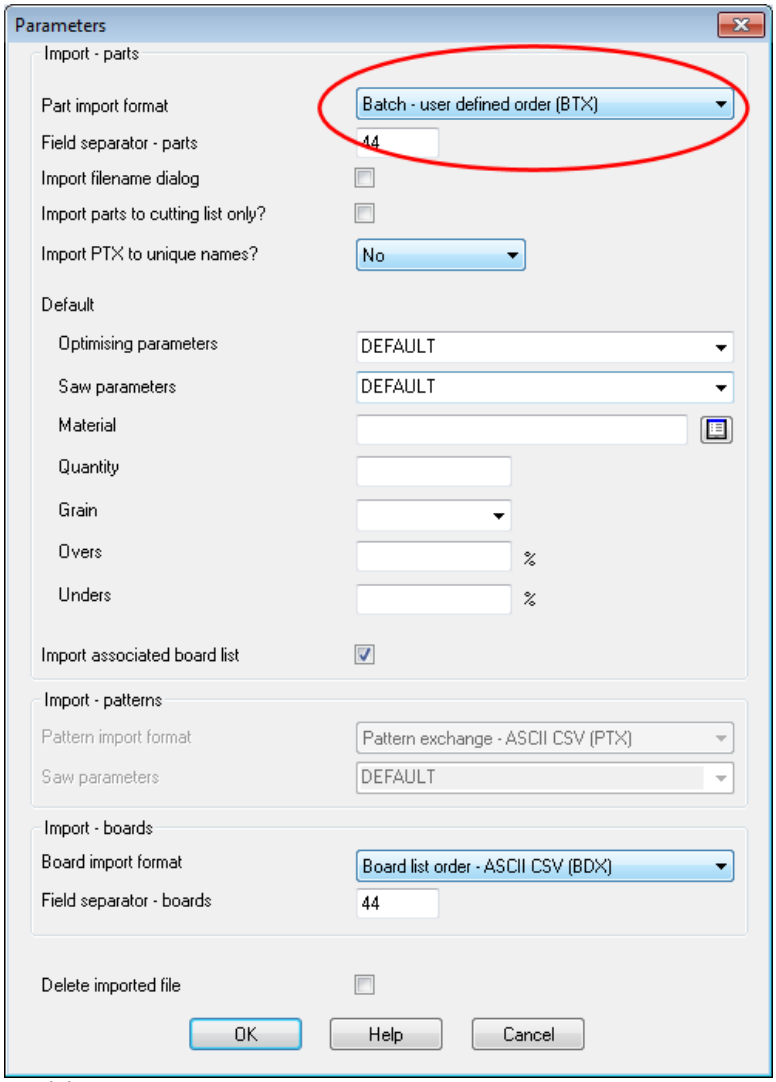
**Import parts - batch of part lists**

To do this create a batch file (BTX) containing the part list names *as well as creating the part list import files*. The part list import files can be in PNX format, PNX part code and quantity format, or a user defined format (the format options are set in the *Import parameters)*.

In its simplest form the batch file is just a list of files to import.

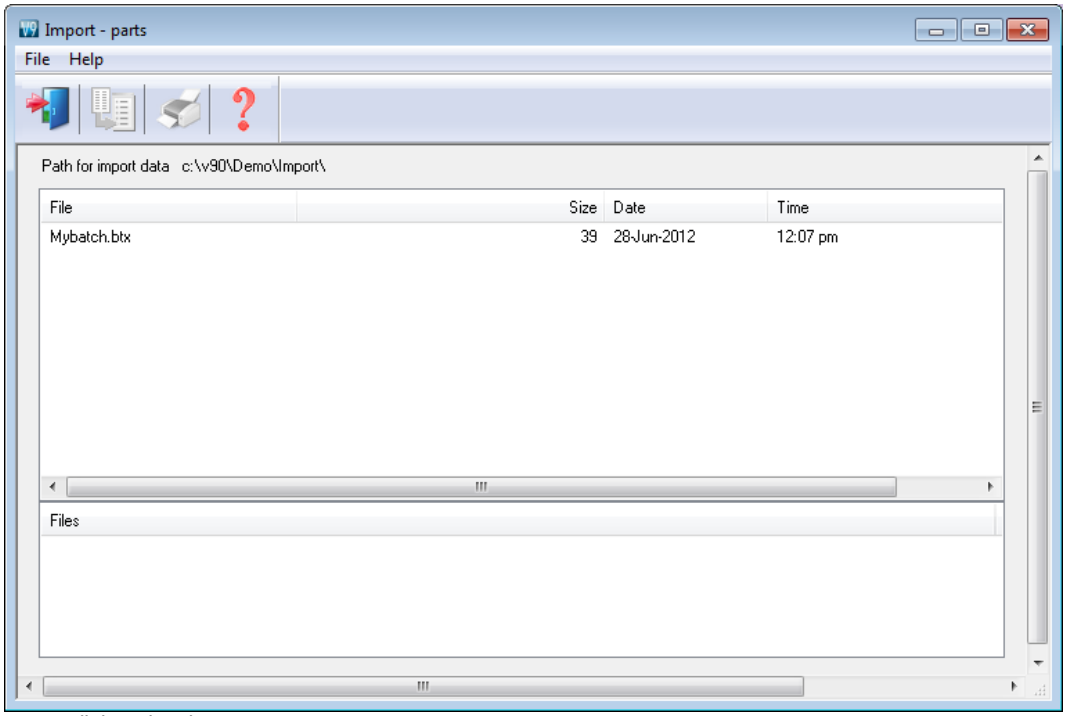


Set the Import format to a batch setting.




*Batch import*

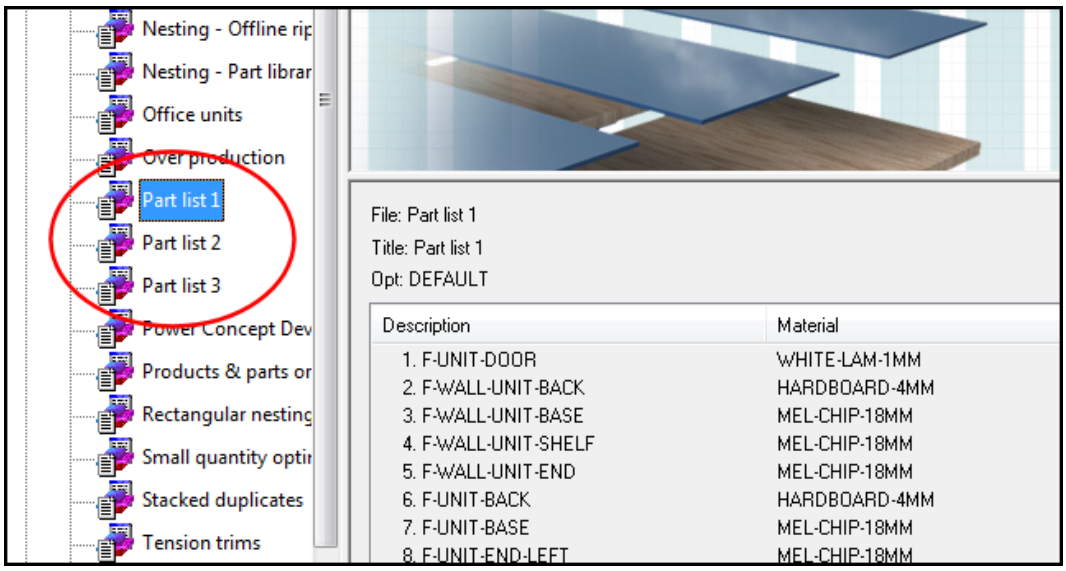
Move to the Import dialog. The files offered are now Batch (btx) files.




*Import dialog - batches*

 - Select a batch file and select the import button

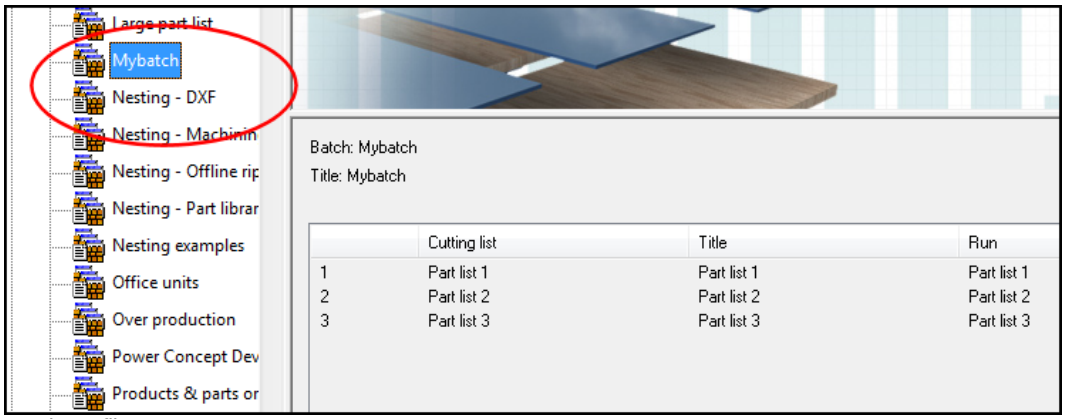
The parts lists are imported and appear in the file tree on the main screen:-




The batch file (BTX) can also include other items as well as the Part list name.

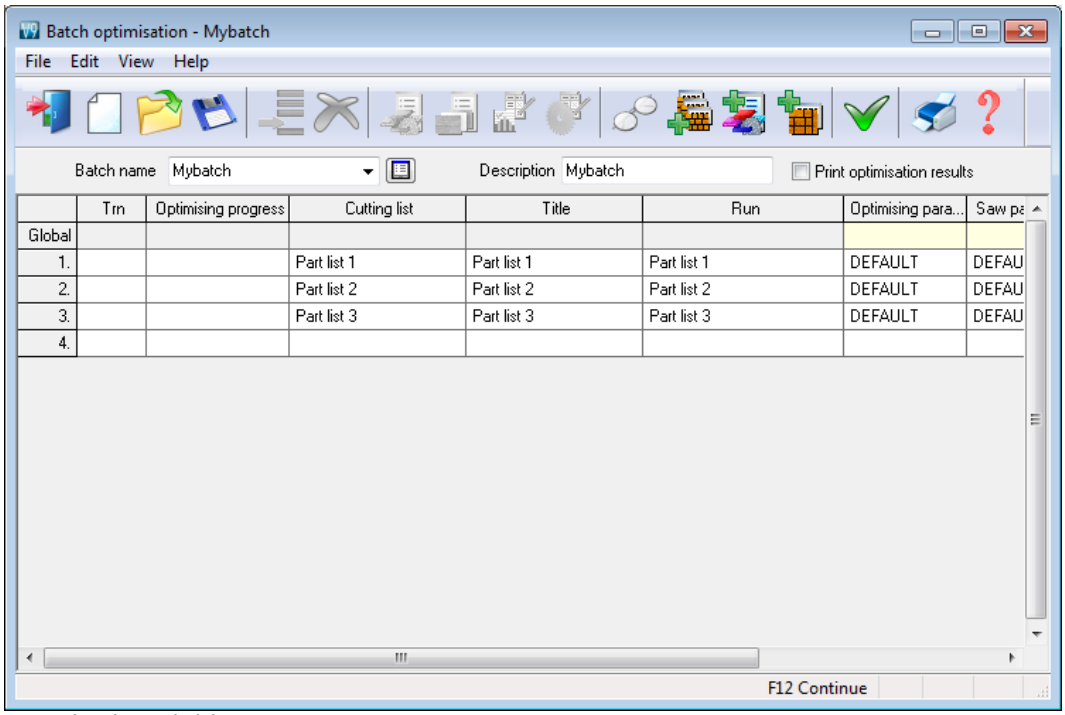
The process of batch import also creates the batch in the File tree at the main screen.

The part list are ready for optimising with a single click of a button.




*Batches - file tree*

The batch is ready to optimise.




*Import batch - optimising*

In the above example the default optimising and saw parameter names are used but these can also be specified in the imported batch file:-

- Part list name
- Run number
- Optimising parameter list name
- Saw parameter list name

*Note* - If a run number is not included the program assigns a run number automatically. If parameter list names are not included these can be entered before optimising. The board list name is set equal to the part list name.

**MPR Variables - import parts**

When working with Nesting optimising the imported list may contain variables related to the Weeke MPR drawing format.

MPR variables and answers can be imported during a part list import process. This only applies to the following two import formats:-

```
User defined order
Batch - user defined order
```

Each line in the import file refers to a line in the part list. The variables for each part are specified in the same line as the standard fields (e.g. part code, material, length, width etc....). A variable can appear in any field position on a line and is denoted by surrounding the variable name with @ symbols.

```
@DOORMAT@
```

The answer is always the next field and must not be surrounded by @ symbols. So a sequence of variable and answer would be as follows:

```
@DOORMAT@,MDF-18
```

The variable and answer pairs can occur at any point in the line:-

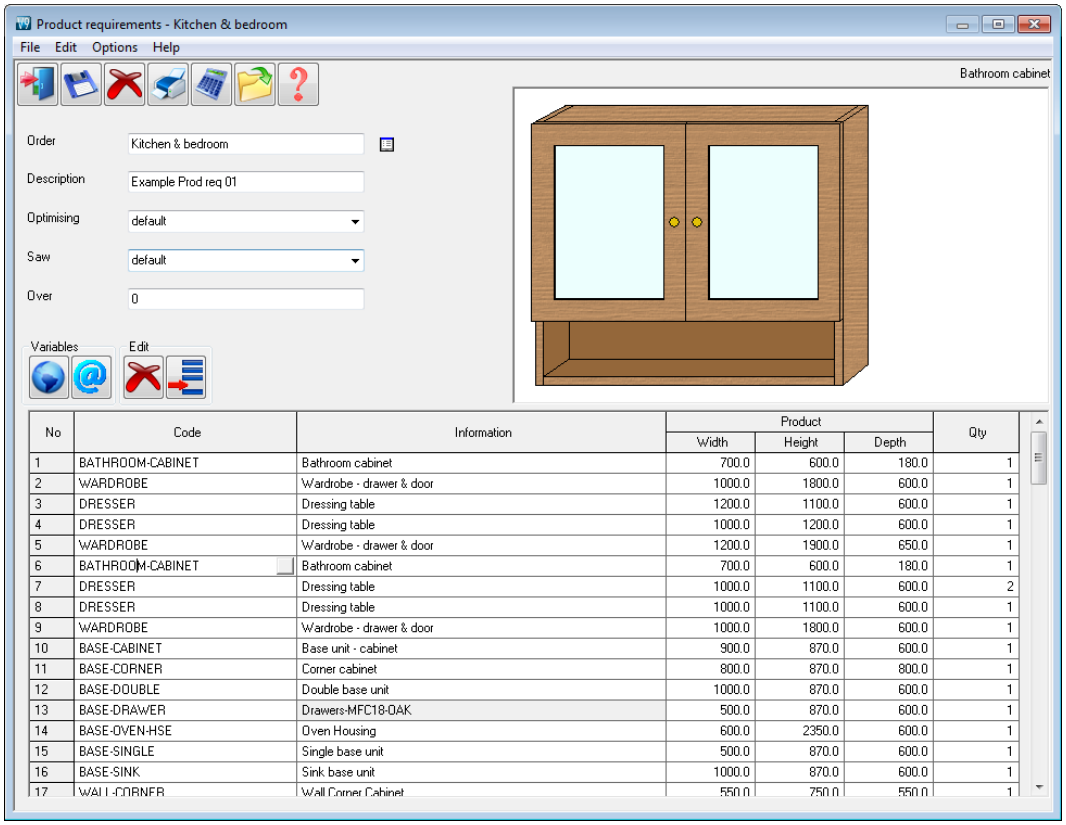
```
PARTCODE,@DOORMAT@,MDF-18,MEL-CHIP-
18MM,123,17,15,,,@CARCASEMAT@,MELCHIP15,@HINGE@,1
```

If a variable answer is blank, the variable is not placed into the generated part list.

## 2.2 Import product requirements

When working with Products (PQ module) it can be the case that the list of requirements is generated elsewhere, for example, in a Sales system.

Product requirements are a list of products and quantities.



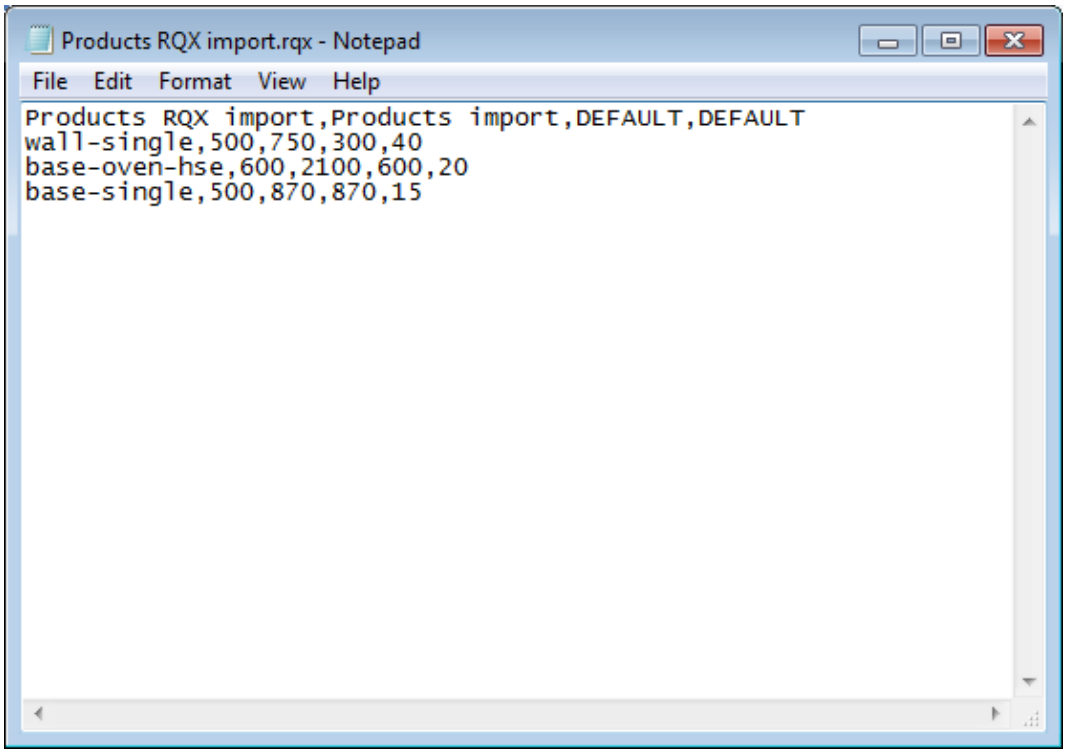

| No | Code | Information | Product | | | Qty |
|---|---|---|---|---|---|---|
| | | | Width | Height | Depth | |
| 1 | BATHROOM-CABINET | Bathroom cabinet | 700.0 | 600.0 | 180.0 | 1 |
| 2 | WARDROBE | Wardrobe - drawer & door | 1000.0 | 1800.0 | 600.0 | 1 |
| 3 | DRESSER | Dressing table | 1200.0 | 1100.0 | 600.0 | 1 |
| 4 | DRESSER | Dressing table | 1000.0 | 1200.0 | 600.0 | 1 |
| 5 | WARDROBE | Wardrobe - drawer & door | 1200.0 | 1900.0 | 650.0 | 1 |
| 6 | BATHROOM-CABINET | Bathroom cabinet | 700.0 | 600.0 | 180.0 | 1 |
| 7 | DRESSER | Dressing table | 1000.0 | 1100.0 | 600.0 | 2 |
| 8 | DRESSER | Dressing table | 1000.0 | 1100.0 | 600.0 | 1 |
| 9 | WARDROBE | Wardrobe - drawer & door | 1000.0 | 1800.0 | 600.0 | 1 |
| 10 | BASE-CABINET | Base unit - cabinet | 900.0 | 870.0 | 600.0 | 1 |
| 11 | BASE-CORNER | Corner cabinet | 800.0 | 870.0 | 800.0 | 1 |
| 12 | BASE-DOUBLE | Double base unit | 1000.0 | 870.0 | 600.0 | 1 |
| 13 | BASE-DRAWER | Drawers-MFC18-OAK | 500.0 | 870.0 | 600.0 | 1 |
| 14 | BASE-OVEN-HSE | Oven Housing | 600.0 | 2350.0 | 600.0 | 1 |
| 15 | BASE-SINGLE | Single base unit | 500.0 | 870.0 | 600.0 | 1 |
| 16 | BASE-SINK | Sink base unit | 1000.0 | 870.0 | 600.0 | 1 |
| 17 | WALL-CORNER | Wall Corner Cabinet | 550.0 | 750.0 | 550.0 | 1 |

*Product requirements list*

At the simplest a product requirement list for import is just an ASCII list of product codes and the quantities required.

```
wall-single,40
base-oven-hse,20
base-single,15
```

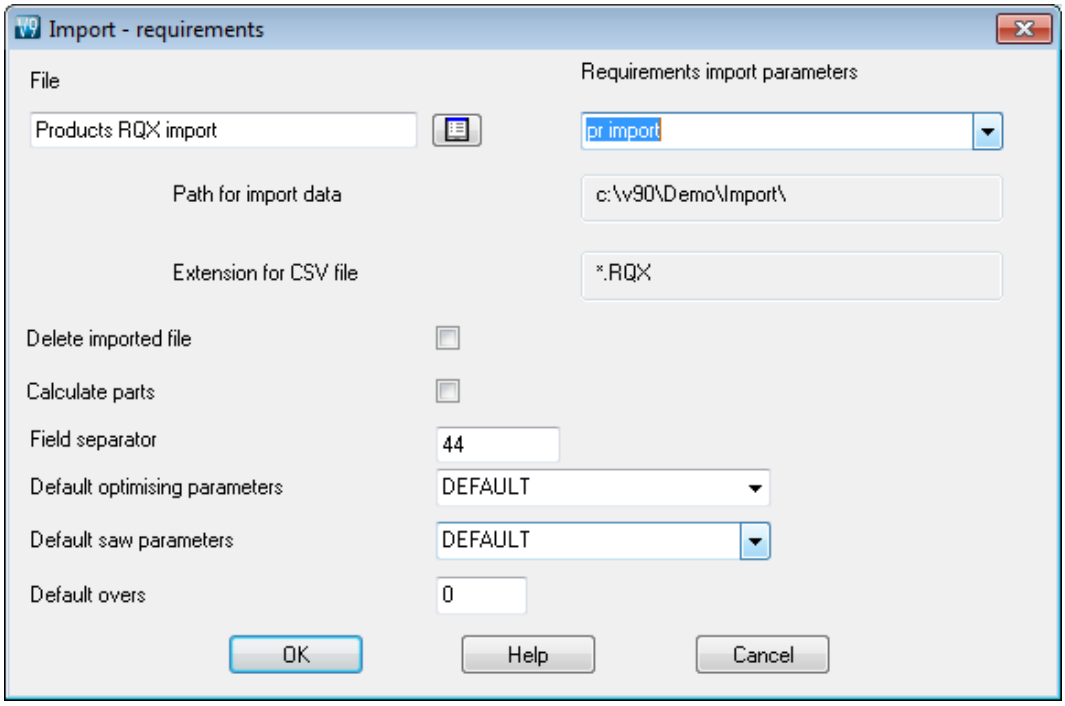
Below is a more detailed example.



The import process is as follows:-

At the main screen:-

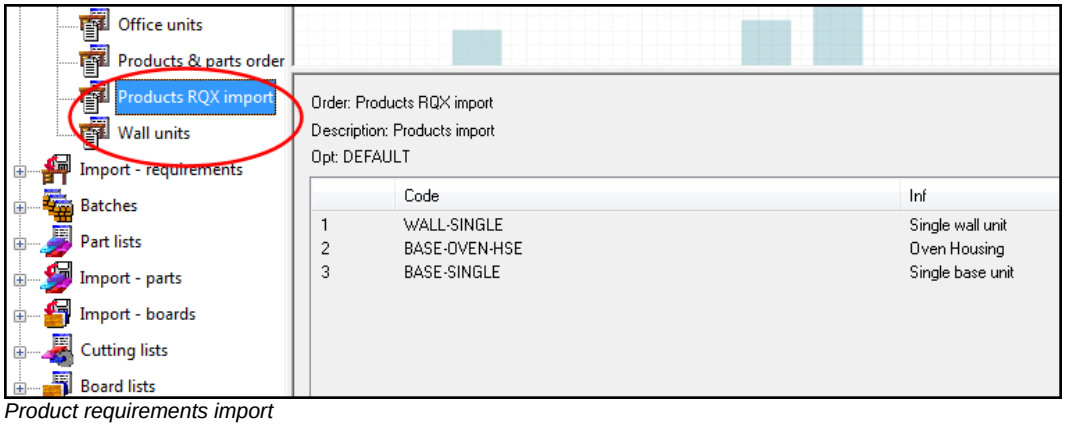
- Select: **File - Import product requirements**




- Select OK to import

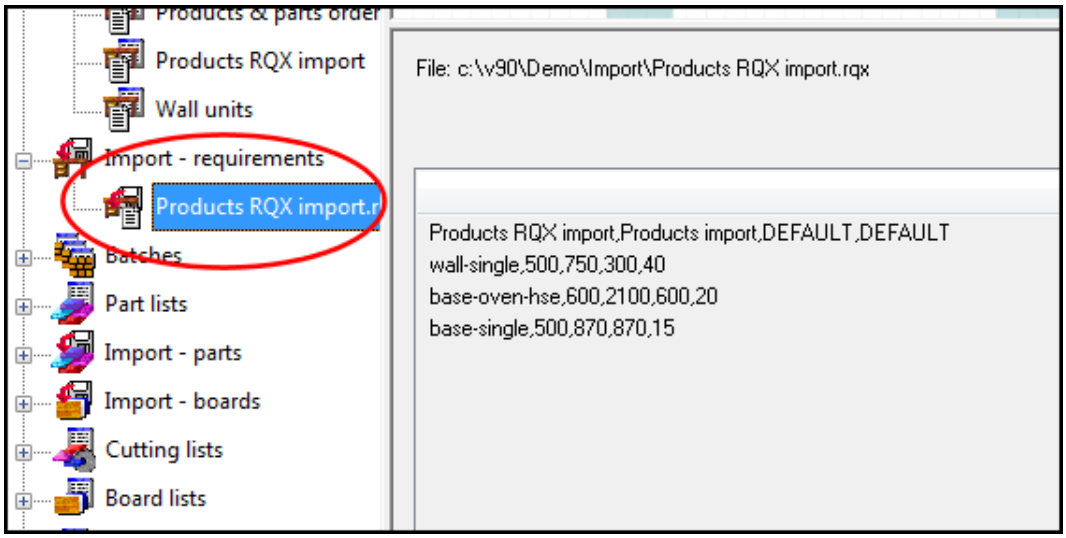
(There are settings to control the import, for example, to set the separator character and whether to delete import files after import or not).

The requirements file is shown in the File tree at the main screen.



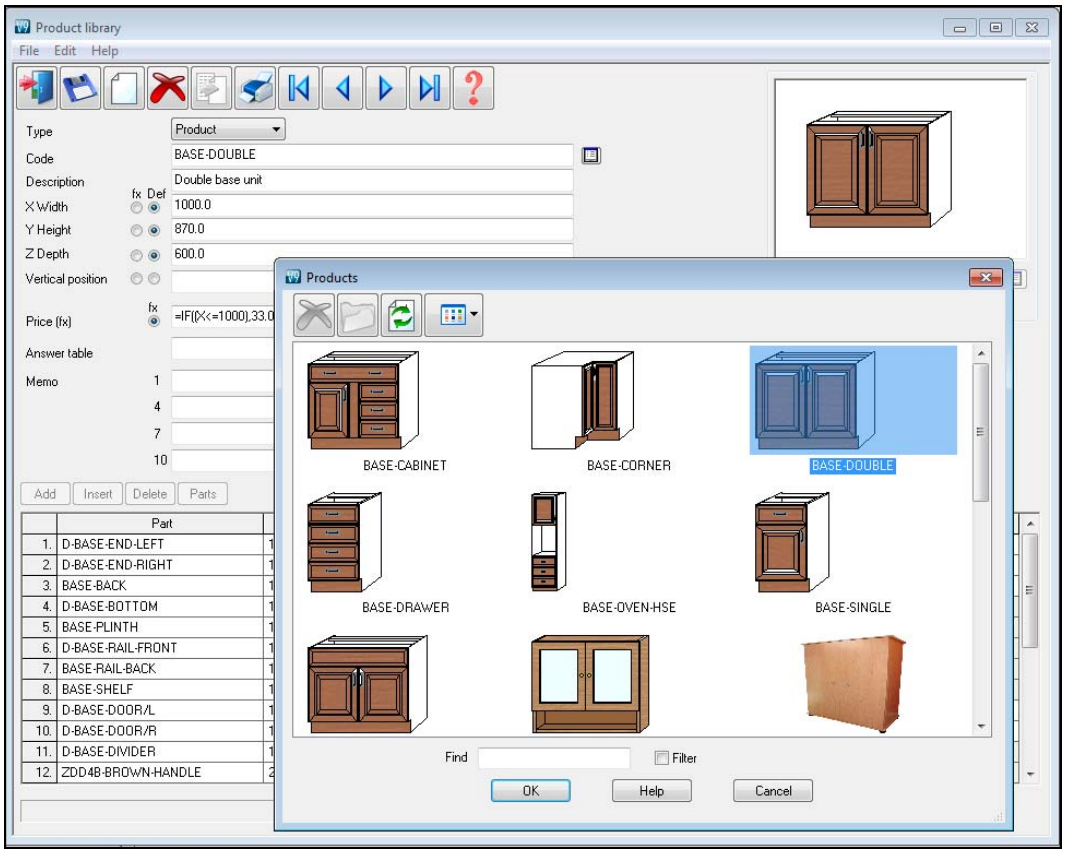

*Product requirements import*

Once the format is set up RQX files can also be imported directly from the File tree.




*Import product requirements - File tree*

For a product requirements import to work correctly the product codes in the list must represent products already set up in the product library.



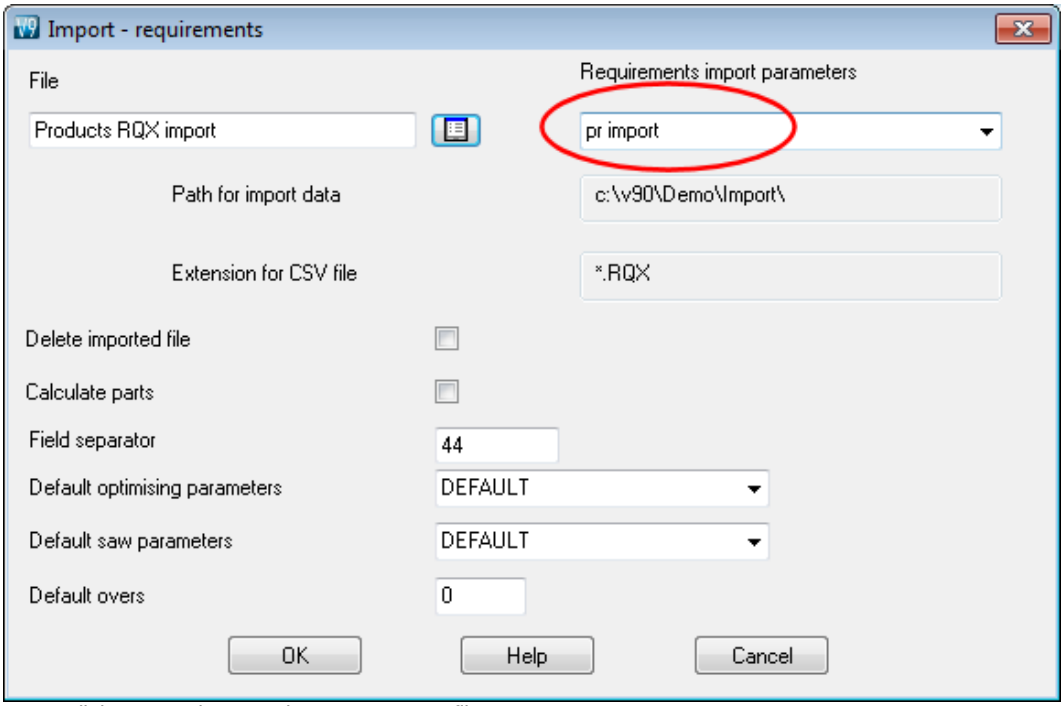

In the above example there are fixed size products and one code represents one product so the import file can be set up quite simply. However, one of the reasons for using a product library is to create 'variable products' where one 'layout' might cover a number of different sizes, colours, and styles of cabinet.

In this case the product requirements list needs to include answers for those variables (e.g.720.0 x 450.0, Teak, Modern) as they vary for each customer or order.

## File format for Product requirements import

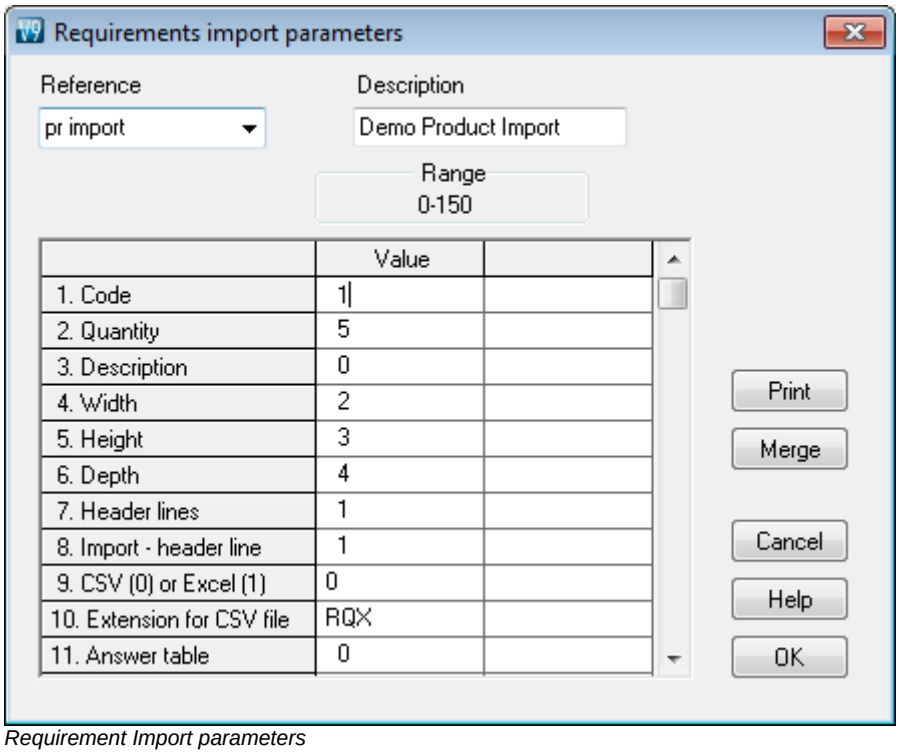
Because the contents of a product requirements file can be so varied and include variables there is no standard format for import. Instead the format is defined by one or more sets of '*Product requirements Import parameters*'.

This is set at the Import dialog.




*Import dialog - Requirements import parameter file*

The parameter values are set via the option (*Main screen - Parameters - Requirements Import parameters*)




*Requirement Import parameters*

The left hand column shows the various fields for a product and the middle column sets the position of the field in the import file. The last column is the name of the product variable (where required).

For example, the fields in the file below are: Product code, Product quantity, and Product width

```
KTUNIT,1,1950.0
KTUNIT,3,1750.0
KYUNIT,1,1350.0
```

Parameter values to describe this:-

| Parameter | Value | |
|---|---|---|
| Product code | 1 | |
| Quantity | 2 | |
| Description | 0 | |
| Width | 3 | |
| Height | 0 | |
| Depth | 0 | |

*Data for variables*

More complex products may contain variable data. Variable data is information that changes for each item or customer e.g. the delivery date or type of door handle. If the external file already contains the answers for this variable data this can be specified in remaining variable lines.

```
...Variable 1 ---------------------- #6,DELIVERY
...Variable 2 ---------------------- 9,DOORMATERIAL
...Variable 3 ---------------------- 10,CARCASEMATERIAL
```

The # symbol is used to indicate the item is in the imported header line and the number indicates the position in the header line.

The other items are the fields where the variable answer for each item is located e.g, DOORMATERIAL may be TEAK for one product and OAK for another.

The above values can be used to import the following file:-

```
Import file (complex.txt)
Example1,Week 32/A,standard,single,0,20/12/2011
DRESSER,2,Dressing table,Urgent,Line AS,1000.0,1100.0,600,OAK-
18,OAK-15
WARDROBE,7,Wardrobe - drawer & door,Urgent, Line
AP,1000.0,1800.0,600.0,OAK-18,OAK-15
BATHROOM-CABINET,4,Bathroom cabinet,Priority,Line
AS,700.0,600.0,180.0,MARBLE-15,MEL-15
WARDROBE,4,Wardrobe - drawer & door,Standard,Line
AP,1000.0,1800.0,600.0,TEAK-18,TEAK-15
```

For the import to be correct the relevant products and variables must already be set up in the product library and variables table

*Header lines and file Extension parameters*

The parameter list contains parameters to set the Header lines and the extension of the import file.

*Header lines* - describes the number of header lines (any lines before the lines of data) in the import file. This is useful where not all the header line are related to optimising.

*Import - header line* - specifies which (if any) of the header lines is the header line to import. Only one header line can be imported.

*Extension for CSV file* - specifies the file extension of the import file - default: RQX.

*Field separator* - enter an ASCII value for character defining each field e.g. '44'
= comma

In this example above there are four header lines and the header line to import is on line 2.

```
9093:/77/24-002
WK7,ORDERS FOR WEEK 7
BATCH:093221
RX RUN - TY
KTUNIT,1,1950,RED      < Start of product lines
KTUNIT,3,1750,WHITE
KYUNIT,1,1350,GREY
```

The values are:-

| Parameter | Value | |
|---|---|---|
| Header lines | 4 | |
| Import - header line | 2 | |
| Extension for CSV file | ASC | |

*Calculate parts*

On import the program can automatically create the list of parts for the product requirements. This avoids the step of moving to the Product requirements screen and optimising from that screen. This allows the parts to be optimised as part of a batch or for the part list to be optimised with a 'stand alone' process.

*Import from Excel files*

Set the parameter value for 'CSV or Excel' to '1' for Excel. If there are two files with the same name (e.g. IMPORT.XLS and IMPORT.XLSX) the XLSX file is imported.

*Answer table*

For custom products it may also be necessary to import the answers to product variables. For example, if a customer has ordered RED doors for the product that answer can be imported. It is also possible to import a set of predefined answers for a product (called an answer table), for example, a product with red doors may also include red trims, a certain type of handle ... The field for the name of the answer table is set in the 'Answer table' parameter.

**Product requirements data**

The information for requirements is outlined below.

**Order number or code** - Each order or requirements list has a unique number or code. The order code is set to the name of the import file.

**Reference** - The Reference is a descriptive reference for the requirements list or order which is used as a cross reference by the optimising program. This reference can be printed on product or part labels and other documents.

*Optimising parameters* - This is the name of the optimising parameter file for this optimisation. Optimising parameters are used to set items such as the saw kerf, type of cuts and trims.

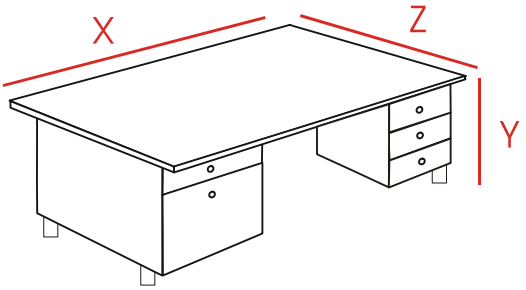
*Saw parameters* - This is the name of the saw parameter file for this optimisation. Saw parameters set items such as the type of saw, cutting length, stack height and so on.

*Overs* - This is the percentage of over-production allowed for each product. If it is set it applies to each product line in the requirements list.

*Product code* - Each product in the product library is identified by a unique code. Note that the same product code can be repeated in the requirements list for example, where the order is for a different customer, or where sizes or other features of the same basic product vary.

*Product information* - This is extra information about the product. Sometimes this is used for the product description but can be used for other information like a product identity number or details specific to that line of the requirements.

*Product width, depth, height*




These are the external measurements of each product.

The diagram defines the width X as the leading edge of the product but this is just an example. The width can be assigned to any edge for each product - this is determined by the product formulae and the drawing in the product library. The program always uses X - for Width, Y - for Height, and Z for Depth.

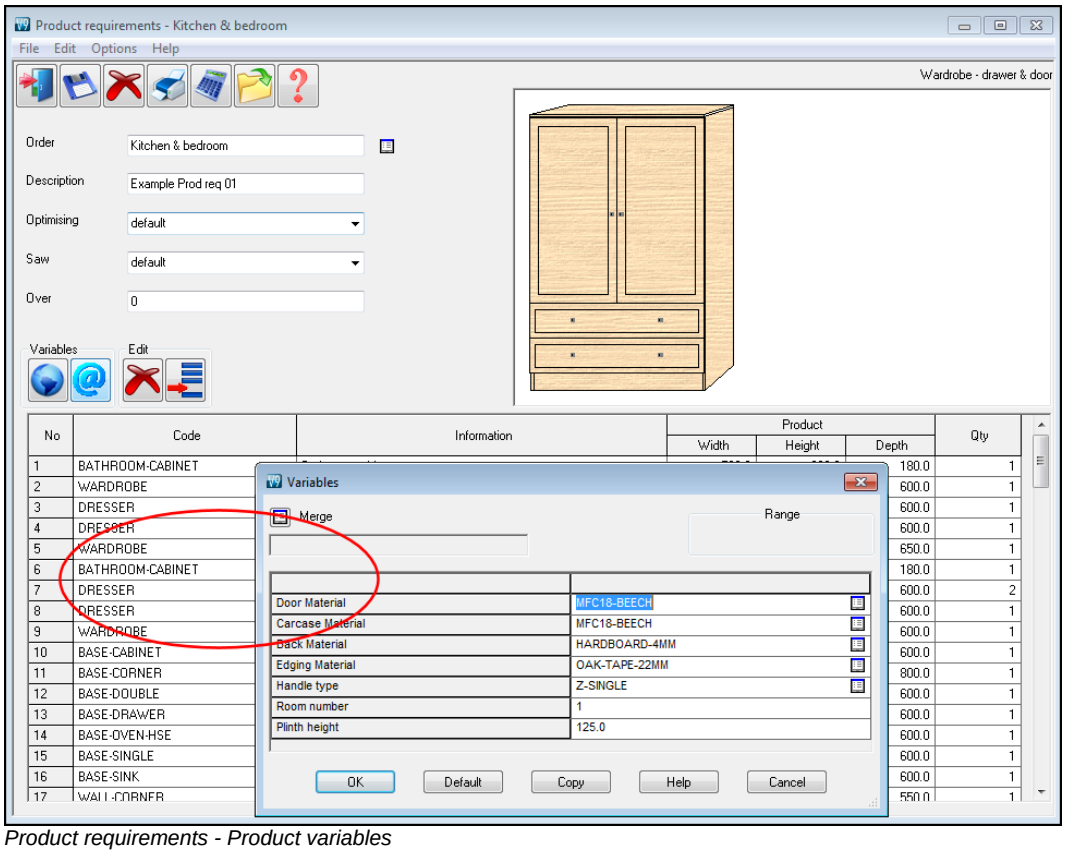
*Quantity* - quantity required

**Product variables**

'Product variables' are used to define the portions of a custom product that vary for each customer; items like colour, measurements, number of drawers ...

For custom products the product may contain several ‘product variables’ with each standing for a variable item.

The answers to these variables for each order or customer are entered as a Product requirement.




*Product requirements - Product variables*

For example, for the Wardrobe the door material is MFC18-BEECH

Where the requirements are imported the answers to the variables for each product can be included in the import file.

There are two sorts of product variables.

- *Global variables* - apply to every item in the list
- *Product variables* - apply to individual products

In the file below the answers for global variables are included in the top line (the header line) and answer for variables for each product and included on each requirements line.

```
WK7,ORDER FOR WEEK 7,STANDARD,SINGLE,W/E 28/07/2006,935-1072/35
UNIT/01,Kitchen cabinet,600.0,720.0,690.0,2,WHITE,GREY,BLACK
UNIT/01,Kitchen cabinet,800.0,6800.0,690.0,5,RED,CREAM,WHITE
```

There are also some fixed fields for the header line:-

*File name*
*Reference*
*Optimising parameter list name*
*Saw parameter list name*
*Overs percentage*

The following file contains a header line with fixed information and global data.

```
WEEK7, ORDERS FOR WEEK 7,STANDARD,HOLZMA,JONES & SON
KTUNIT,1,1950,450,RED
KTUNIT,3,1750,650,WHITE
KYUNIT,1,1350,450,GREY
```

The values are:-

| Parameter | Value | |
|---|---|---|
| Product code | 1 | |
| Quantity | 2 | |
| Description | 0 | |
| Width | 3 | |
| Height | 0 | |
| Depth | 4 | |
| Variable 1 | #5 | CUSTOMER |
| Variable 2 | 5 | DOORCOLOR |

Variable 1 is a global variable named CUSTOMER (the # symbol indicates that it is a global variable and not a product variable) and the data is located in position 5 of the header line (the data that reads ‘Jones & Son’).

For importing answers to variables set the position in the file and give the name of the variable.

| Parameter | Value | |
|---|---|---|
| Product code | 1 | |
| Quantity | 2 | |
| Description | 0 | |
| Width | 3 | |
| Height | 0 | |
| Depth | 0 | |
| Variable 1 | 4 | DOORCOLOR |

The third column contains the variable name (e.g. DOORCOLOR)

*Importing variables not set in the requirements parameters*

To do this enter the variable name and the answer on the product line.

```
PRODDESK,200,300,400,GREEN,OAK,@PLINTH@,500,@BACKMAT@,TEAK
```

Items up to 'OAK' are defined by the Requirements import parameters and the remaining items are other product variables. Variables must be in the product definition e.g. of PRODDESK.

The variable name must be surrounded by @ symbols and the answer must be in the next field and must not be surrounded by @ symbols. The variable/answer pairs can occur at any point, if necessary.

```
PRODUCT1,@CARCASEMAT@,MDF-15MM,,,110,220,50,15
```

## 2.3 Import boards

All the information on materials and board (or sheet) sizes is held in the Board library. Typically the Board library is maintained manually or with the Stock control module (SC) stock is updated from optimising and from orders and receipts from suppliers.

With the Bargstedt SQL database and the Stock control module the board library is synchronised automatically with an external database.

There are two main requirements for importing boards.

- Updating the board library from an external file (for example, a list of sizes and costs provided by a supplier)

- Importing boards to a board list (bypassing the Board library)

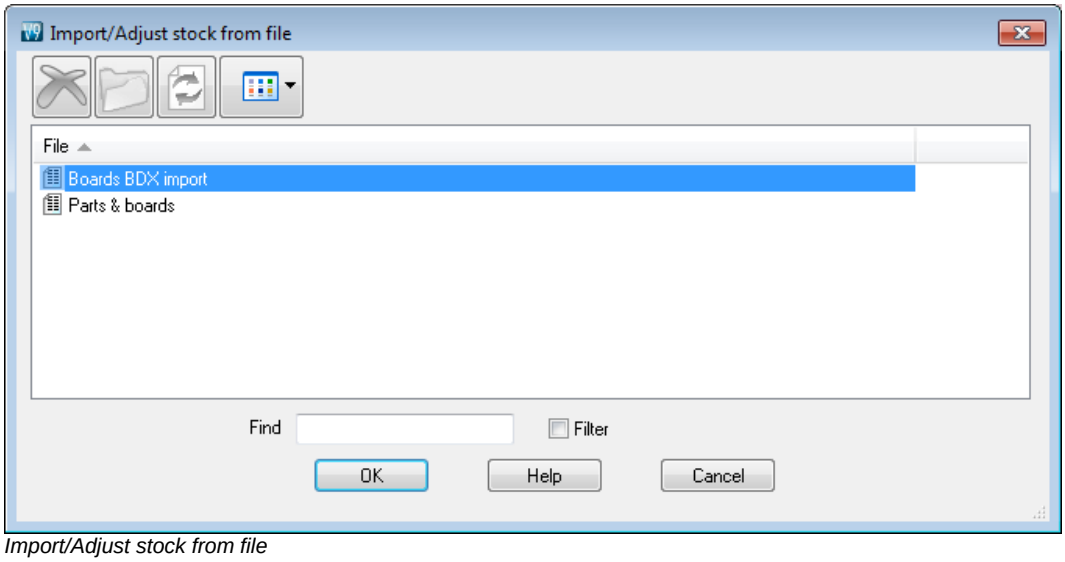
### Import boards to Board library

*The stock control module (SC) is required for this method*

At the main screen:-

- Select: **Stock**
- Select**: Import/Adjust stock from file**

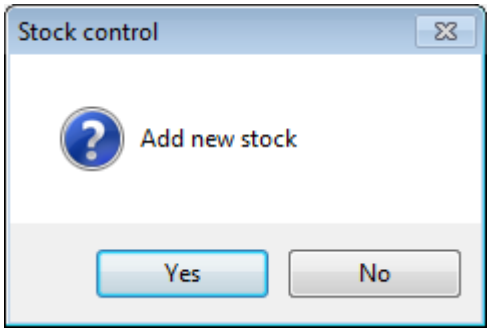
The import dialog is shown.




*Import/Adjust stock from file*

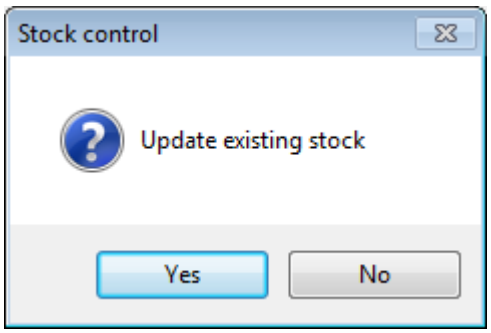
- Select the file to import

The program prompts:-




Sometimes it is useful to ignore new stock as it may not be relevant to the Board library.

The program prompts:-




A file may contain both new items and updates to existing items in the library.

*Note* - there is also an option at the Main screen: *Stock - Overwrite stock* which overwrites existing stock values rather than adding to them or subtracting from them.

The format for the import file should be one of the following:-

```
Board list (BRD)
ASCII CSV (BDX)
User defined format - ASCII CSV
User defined format - Excel (XLS)
User defined format - Excel (XLSX)
Bargstedt (BESTAND.STK file)
Bargstedt (SQL Server database)
```

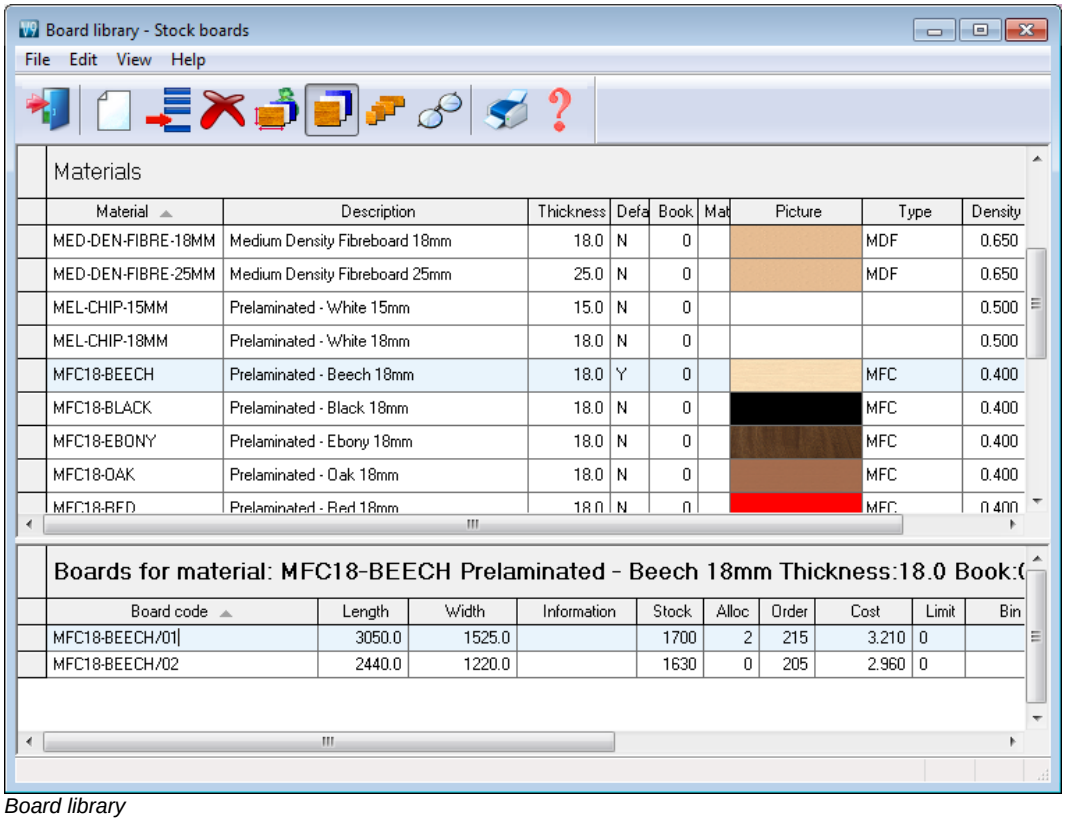
This is set by the System parameter: *Board library import format*

If a ‘User defined’ format is selected also set the name of the Board import parameter file to use. This file is used to define the format of the external file and match up the fields in the external file to the Board library fields.

Use the system parameter: *Parameters for Import* to set the file name.

(See below for details of how to set up the Board library import parameters).

The result is an updated set of materials, boards and quantities in the Board library.



*Board library*

## Board library data

The following sections describe the board library data.

*Board code* - Each board has unique board code for each board size.

```
3/4V1S-2
1/2PB96x40
MDF18/2
```

*Board sizes* - are the length and width of the board. The length is normally the longest edge of the board but should follow the grain if the board is grained. The width is normally

the shortest edge of the board but should be the edge running against the grain if the board is grained.

*Board information* - descriptive information about each board

*Board quantity* - quantity of the board in stock. This is the physical quantity of stock in the board library.

*Quantity - allocations* - shows the number of boards already allocated. Allocations act as a way of reserving boards for future use because the optimisers work on the physical quantity minus the allocation. This ensures that there are always the correct boards available for jobs that are already optimised and waiting to be cut. *Only available with the Stock Control module*

*Quantity - On order* - shows the number of boards 'On order', that is, boards that have been recorded in the 'Record orders' section of the Stock control module. *Only available with the Stock Control module*

*Board cost* - cost per square area of material, for example, a cost per square foot or a cost per square metre.

*Board limit* - used to restrict the use of each board when the program produces a set of cutting patterns.

0 - do not exceed the quantity in stock
8 - assume unlimited stock (ignore the quantity in stock)
9 - exceed stock quantity if there are no other boards

The limit is also used to determine the ratio in which boards are used. For example, to use two boards sizes in approximately the same proportion 1:1 or 50:50 enter a figure of '1' as the limit setting against each board type. (1, ratio 1:1, 2, ratio 2;1, 3 ratio 3:1). There are also other settings for sundry or non-optimised parts.

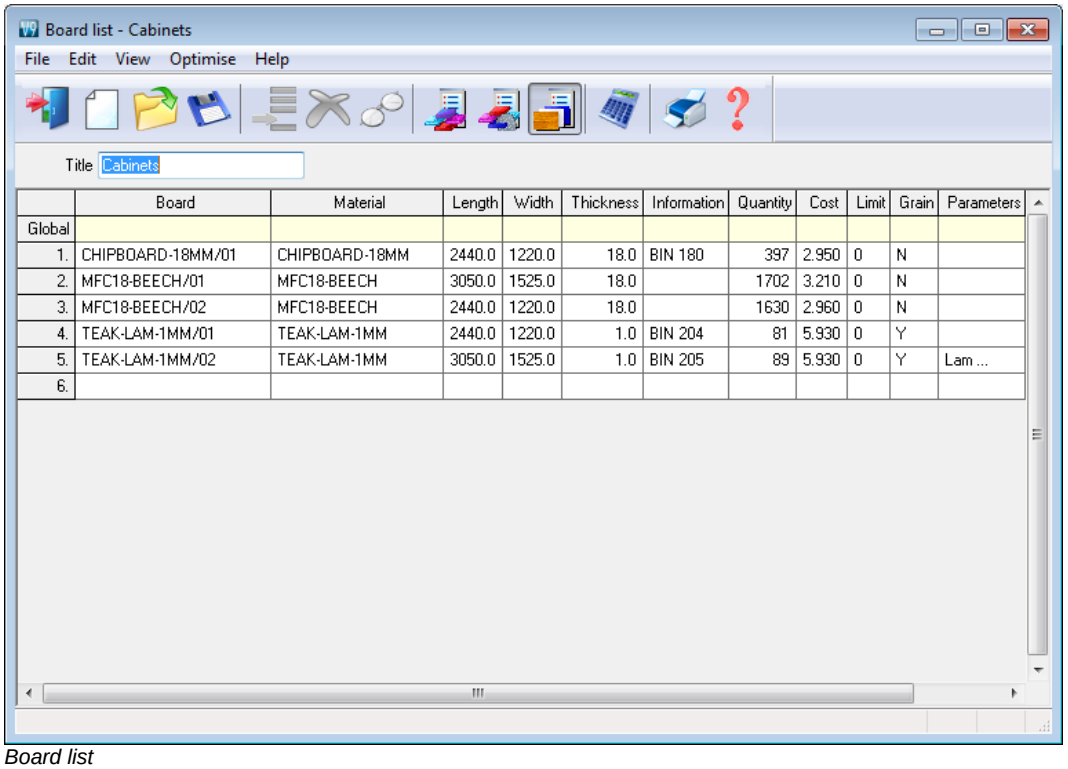
- For NO LIMIT set a value of or quantity of 99999
- Do NOT set a ratio for ONE board ONLY
- Do NOT use ratios for small amounts of stock
- cannot set a limit for an offcut - it is always 0
- cannot use ratios with the small quantity optimiser
- With one dimensional optimisers (2,3) and strip optimiser (6) cannot use the limit values 8 or 9 if ratios set.

*Note* - the cost is only overwritten if the cost is set to a value greater than zero and is not left blank.

*Note* - there are other descriptive fields for the Board library, such as 'Bin' and 'Supplier'. These are not used in the BDX format.

## Import boards to Board list

A board list is the list of board sizes used for optimising. This is created automatically during optimisation by extracting the materials required for parts from the board library.




| | Board | Material | Length | Width | Thickness | Information | Quantity | Cost | Limit | Grain | Parameters |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Global | | | | | | | | | | | |
| 1. | CHIPBOARD-18MM/01 | CHIPBOARD-18MM | 2440.0 | 1220.0 | 18.0 | BIN 180 | 397 | 2.950 | 0 | N | |
| 2. | MFC18-BEECH/01 | MFC18-BEECH | 3050.0 | 1525.0 | 18.0 | | 1702 | 3.210 | 0 | N | |
| 3. | MFC18-BEECH/02 | MFC18-BEECH | 2440.0 | 1220.0 | 18.0 | | 1630 | 2.960 | 0 | N | |
| 4. | TEAK-LAM-1MM/01 | TEAK-LAM-1MM | 2440.0 | 1220.0 | 1.0 | BIN 204 | 81 | 5.930 | 0 | Y | |
| 5. | TEAK-LAM-1MM/02 | TEAK-LAM-1MM | 3050.0 | 1525.0 | 1.0 | BIN 205 | 89 | 5.930 | 0 | Y | Lam ... |
| 6. | | | | | | | | | | | |

*Board list*

It is sometimes useful to create the board list directly (manually or by import), for example, for 'one-off' jobs where the materials are not in the board library and are not required on a long term basis. Also it is sometimes necessary to make manual changes to the Board list to take account of shortages and bypass the values in the Board library.

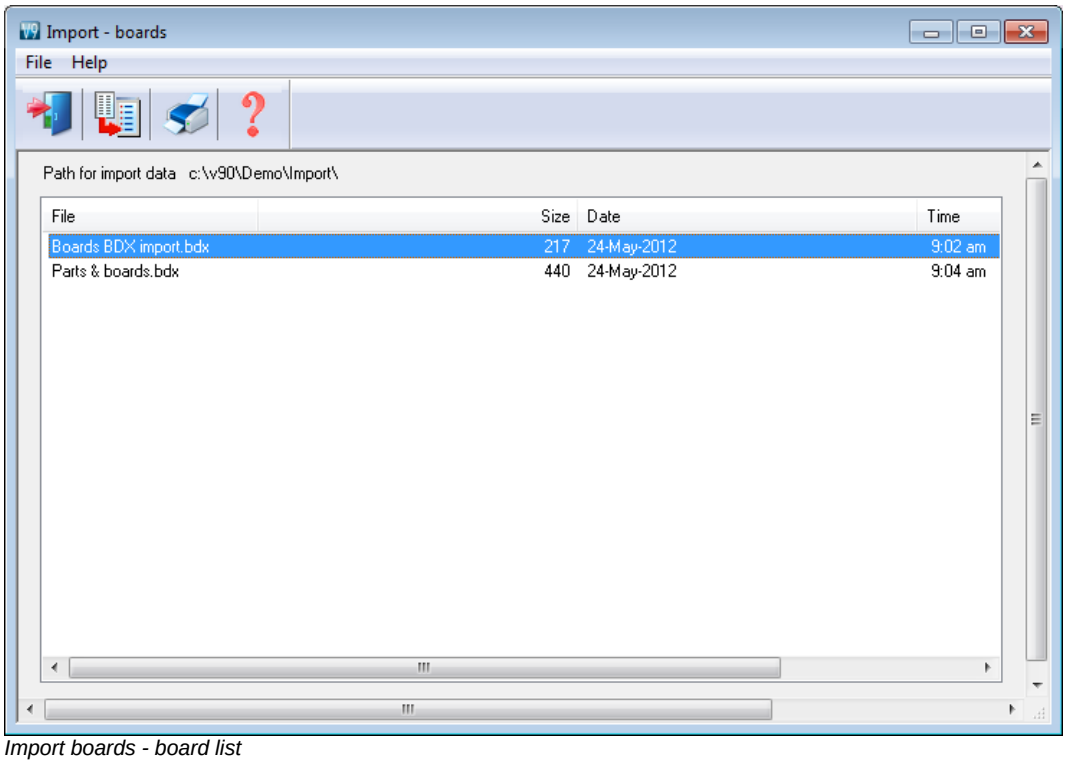
The import file can have the following formats:-

```
Board list (BRD)
ASCII CSV (BDX)
User defined format - ASCII CSV
User defined format - Excel (XLS)
User defined format - Excel (XLSX)
```

(The custom format is described by the *Board import parameters*)

To import boards into the board list (NOT into the board library), at the main screen:-

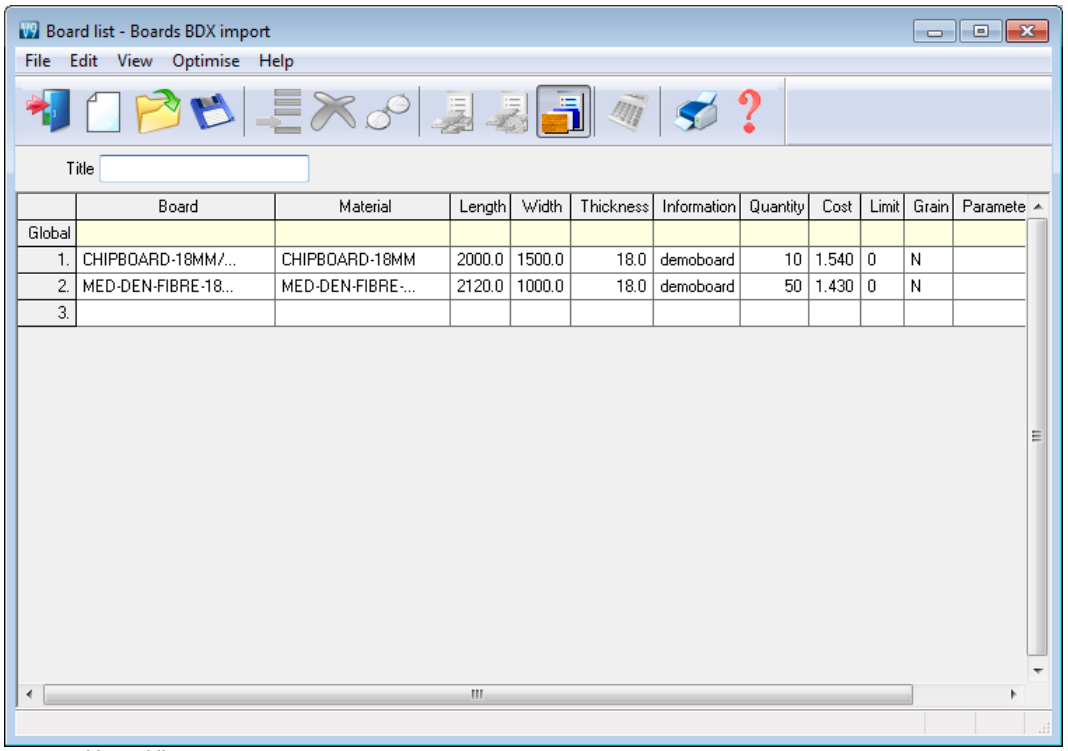
- Select: **File - Import boards**




*Import boards - board list*

 - Select a file and select the import button

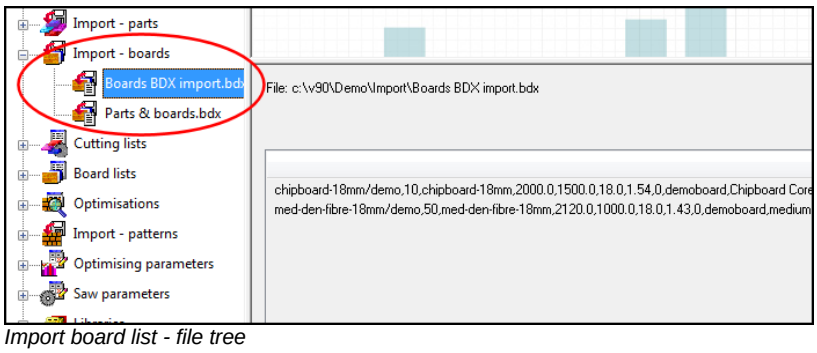
The board list is imported




| | Board | Material | Length | Width | Thickness | Information | Quantity | Cost | Limit | Grain | Paramete |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Global | | | | | | | | | | | |
| 1. | CHIPBOARD-18MM/... | CHIPBOARD-18MM | 2000.0 | 1500.0 | 18.0 | demoboard | 10 | 1.540 | 0 | N | |
| 2. | MED-DEN-FIBRE-18... | MED-DEN-FIBRE-... | 2120.0 | 1000.0 | 18.0 | demoboard | 50 | 1.430 | 0 | N | |
| 3. | | | | | | | | | | | |

*Imported board list*

The file can also be imported from the file tree at the main screen.

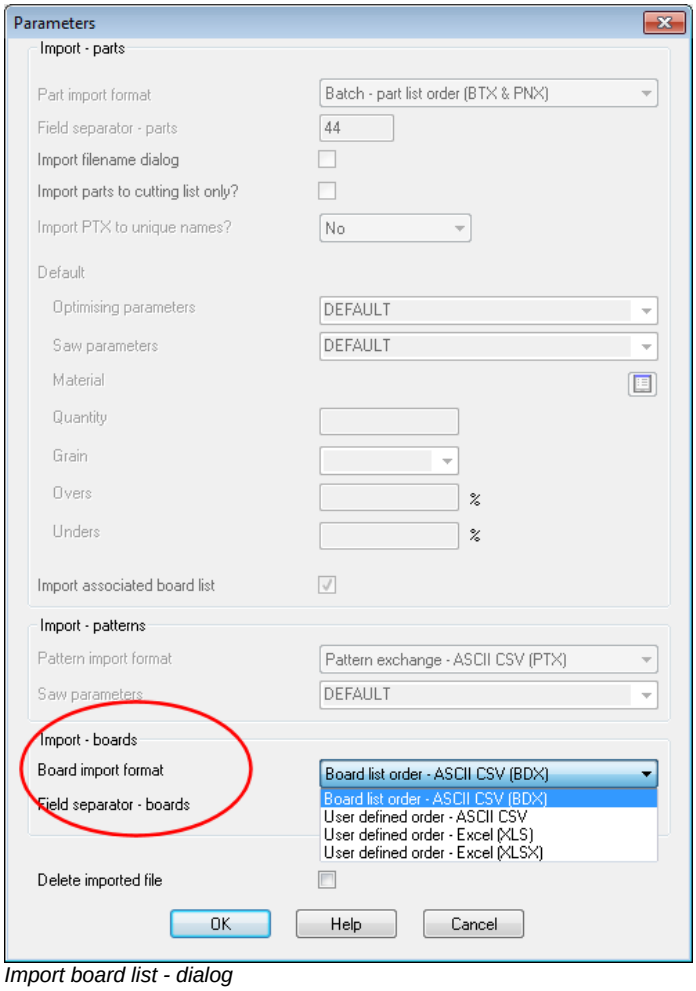



*Import board list - file tree*

## Board import format

Use the Import parameters to set up the format for the board import file.

The Board options are towards the foot of the dialog.




*Import board list - dialog*

The formats are:-

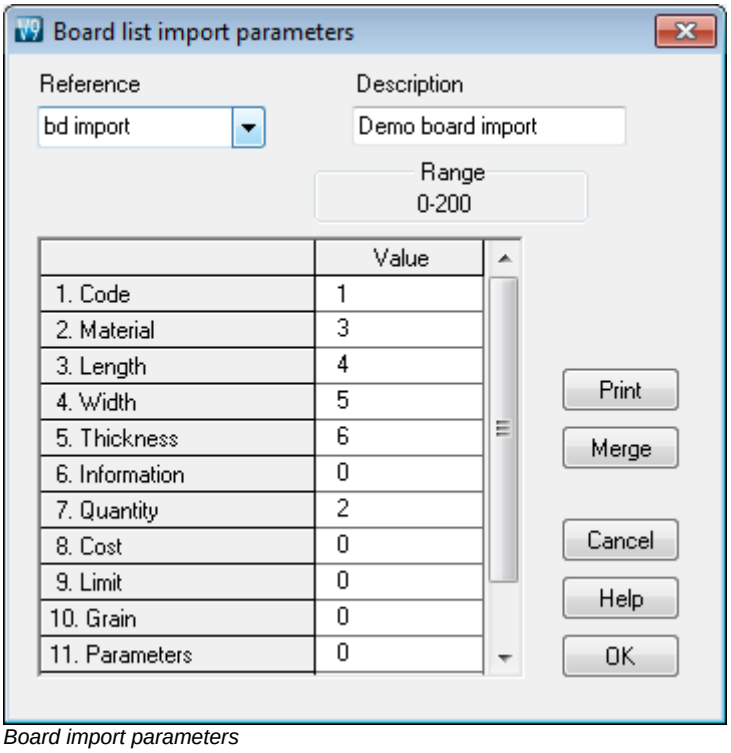
Board list order - ASCII CSV (BDX)
User defined order - ASCII CSV
User defined order - Excel (XLS)
User defined order - Excel (XLSX)

For the user defined formats the format is set via the Board import parameters (*Main screen - Parameters - Board import parameters*)

**Board import parameters**

These files define how the fields in the external file to import map on to the board library or board list fields.

It is possible to create as many parameters files as required; for example, separate files for different external file formats. If importing to the Board library and to Board lists different files may be required for each type of import as the external files are likely to be different.



*Board import parameters*

Use the parameters to describe the format of the external (file to import). A simple ASCII external file is, for example:-

```
BRD1,MFC15,2440.0,1220.0,25,18
BRD2,MDF18,2440.0.0,1220.0,30,15
BRD3,MDF18,1830.0,1230.0,10,18
```

In this example there is one line for each board and the information shown on each line is:-

- board code
- material code
- length (millimetres)
- width (millimetres)
- quantity
- thickness

This format is described, by the parameters, as follows:-

```
...Code --------------------- 1
...Material ----------------- 2
...Length ------------------- 3
...Width -------------------- 4
...Thickness ---------------- 6
...Information -------------- 0
...Quantity ----------------- 5
```

Each parameter is a field in the part list and the parameter value is the position of that field in the external ASCII file. Here is the same data in another format:

```
25,BRD1,MFC15,2440.0,1220.0,18
30,BRD2,MDF18,2440.0.0,1220.0,15
10,BRD3,MDF18,1830.0,1230.0,18
```

This is the same data as the first example but the items are now in a different order:-

- quantity
- board code
- material
- width
- length
- thickness

```
...Code ----------------------- 2
...Material ----------------- 3
...Length ------------------- 4
...Width -------------------- 5
```

```
...Thickness ------------------- 6
...Information ----------------- 0
...Quantity -------------------- 1
```

Here is a similar example for importing boards measured in inches.

```
25,BRD1,MFC15,96-1/2,48
30,BRD2,MDF18,96-1/2,48
10,BRD3,MDF18,72,48-3/4

...Extension for CSV file -- BDX
```

*Note* - at the foot of the list that there is a parameter to specify the extension for the import file; the default is BDX. The path for the file is specified in the program as the Path for Import

*Number of header lines* - Enter the number of header lines. Default value is 0 and the range is 0-99. Only applies when the Import parameter: *Board import format* is set for user defined formats.

- The value column specifies a field position in the import file. This can be in the range 0 to 200. There are less fields to import than this but in some import files there will be fields that have to be ignored.

- The 'Extension for CSV file' parameter is used to specify the file extension of the files to be imported.

e.g. CSV, BDX, XLS, XLSX

*Field separator* - enter an ASCII value for character defining each field e.g. '44' = comma

*Notes*

- When importing to a board list the following fields are not used.

Material description
Maximum book height

**Board import file format (BDX)**

The BDX import file for boards has a fixed format (there are no parameters to describe it).

```
Board code (50)
Quantity (5)
Material (50)
Length (9)
Width (9)
Thickness (7)
Cost (5)
Limit (1)
Board information (25)
Material description (50)
Grain (1) Yes=1, No=0, 2=X
Maximum book height (4)
Material parameter name (50)
Material density
```

The number in brackets shows the maximum length of each field but each field must also be comma separated and can be shorter than the maximum.

Only the first two items (board code and quantity) are essential the other items are optional.

```
B27/1,250
B28/1,3000
B35/021/009-ASH,-150
B36,0,MFC15,2440.0,1220.0,15.0,42.25,0
SP8,345
```

*Note* - not all the fields specified in the BDX format are used when importing into a Board list (as these fields are not used in the Board list). The fields NOT imported are:-

```
Material description (extra description field in Board library)
Max book height
Material density
```

These fields must be present where there are following fields.

**Import parameter to include the list of boards on import**

For the import of external part lists it is sometimes convenient to also import the board list at the same time, Quite often the two lists are created together in the external system. At the Import parameters screen:-

- Check the box to also import the board list

The program automatically works out the correct board list name and extension from the settings for the import type for parts and boards and the extension used (this is either implied by the import type or taken from the Board import parameters).

```
Import part format: Part list order - ASCII CSV (PNX)
Import board format: Board list order - ASCII CSV (BDX)
Part list name: MyBoards.pnx
Board list name: MyBoards.bdx
```

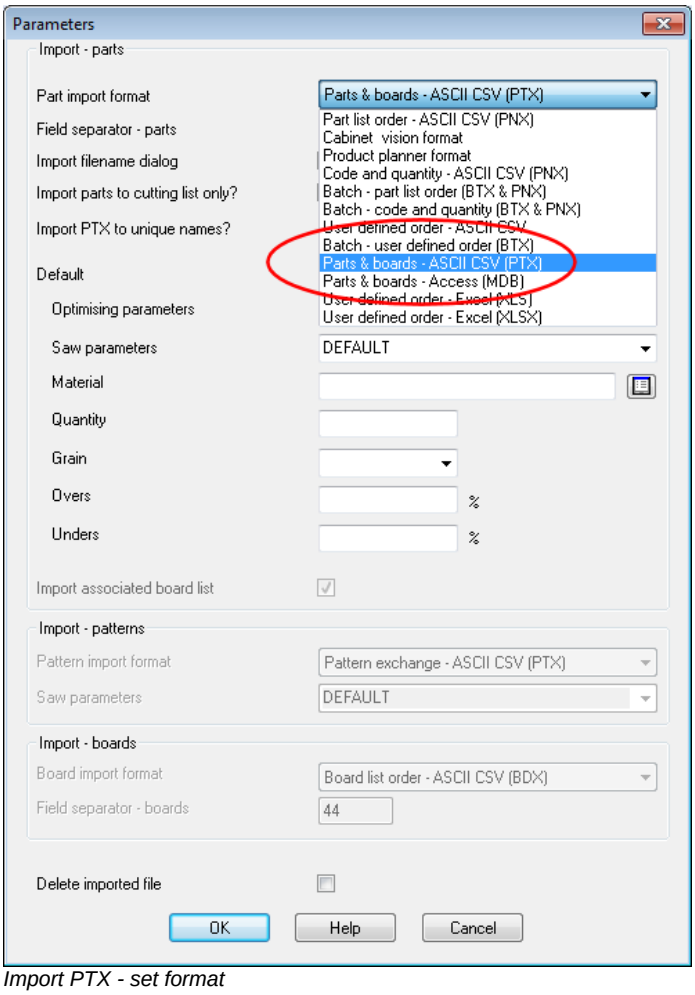
## 2.4 Import Parts / Boards / Patterns - Pattern Exchange Format (PTX)

The Pattern Exchange format is a standard format for describing parts, boards, patterns and cutting information and can be used for both Import and Export. The file can be either an ASCII file or an Access MDB database file (the full details for the format are in Section 3).

## Import Parts and Boards (PTX)

Several manufacturers use the PTX format for exchanging data.

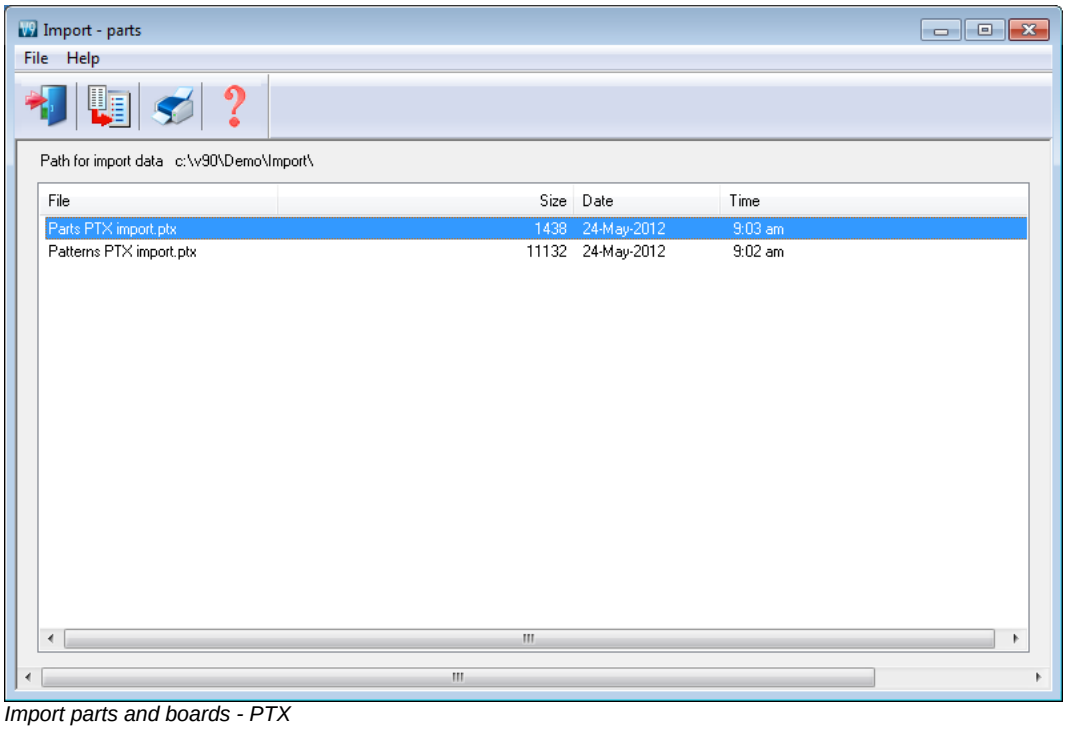
The import format is set at the Import dialog (*Main screen - File - Import parts (boards) - File Parameters*)




*Import PTX - set format*

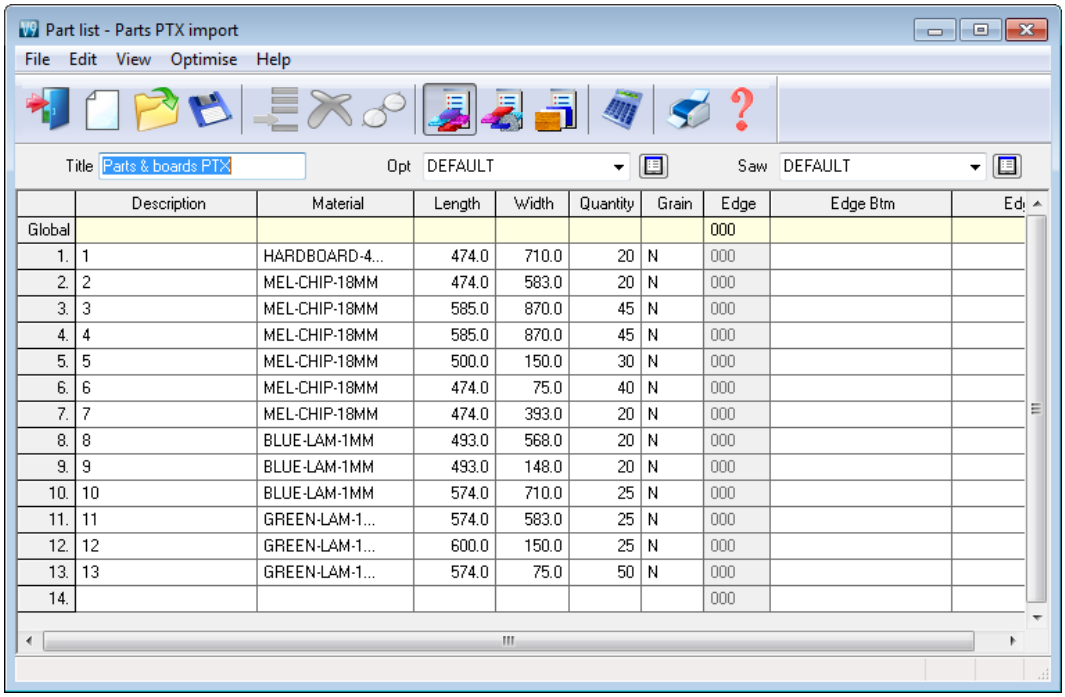
The format for PTX is: Parts & Boards ASCII CSV (PTX). The PTX file can contain both parts and boards. To import (once the format is set):-

- Select: **File - Import parts**




*Import parts and boards - PTX*

The part list and board list are imported.

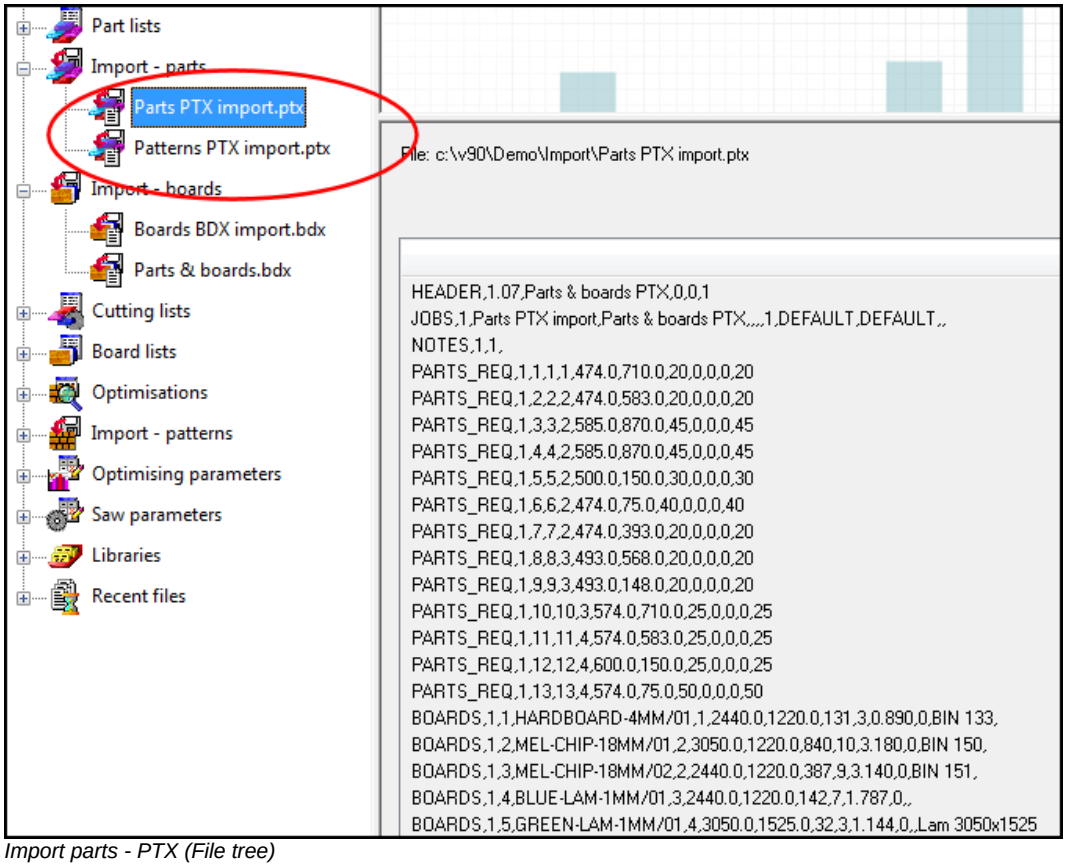



| | Description | Material | Length | Width | Quantity | Grain | Edge | Edge Btm | Ed |
|---|---|---|---|---|---|---|---|---|---|
| Global | | | | | | | 000 | | |
| 1. | 1 | HARDBOARD-4... | 474.0 | 710.0 | 20 | N | 000 | | |
| 2. | 2 | MEL-CHIP-18MM | 474.0 | 583.0 | 20 | N | 000 | | |
| 3. | 3 | MEL-CHIP-18MM | 585.0 | 870.0 | 45 | N | 000 | | |
| 4. | 4 | MEL-CHIP-18MM | 585.0 | 870.0 | 45 | N | 000 | | |
| 5. | 5 | MEL-CHIP-18MM | 500.0 | 150.0 | 30 | N | 000 | | |
| 6. | 6 | MEL-CHIP-18MM | 474.0 | 75.0 | 40 | N | 000 | | |
| 7. | 7 | MEL-CHIP-18MM | 474.0 | 393.0 | 20 | N | 000 | | |
| 8. | 8 | BLUE-LAM-1MM | 493.0 | 568.0 | 20 | N | 000 | | |
| 9. | 9 | BLUE-LAM-1MM | 493.0 | 148.0 | 20 | N | 000 | | |
| 10. | 10 | BLUE-LAM-1MM | 574.0 | 710.0 | 25 | N | 000 | | |
| 11. | 11 | GREEN-LAM-1... | 574.0 | 583.0 | 25 | N | 000 | | |
| 12. | 12 | GREEN-LAM-1... | 600.0 | 150.0 | 25 | N | 000 | | |
| 13. | 13 | GREEN-LAM-1... | 574.0 | 75.0 | 50 | N | 000 | | |
| 14. | | | | | | | 000 | | |

*Import parts - PTX*

The PTX format can also be imported from an MDB file:*Parts & Boards - Access (MDB)*.

Once the format is set Parts and Boards can also be imported from the file tree.




*Import parts - PTX (File tree)*

In the example above a section of the ASCII PTX file is shown at the right.

*Notes*

- The File tree extension (PTX) matches the import format setting.
- PTX files can contain more than one part list or board list

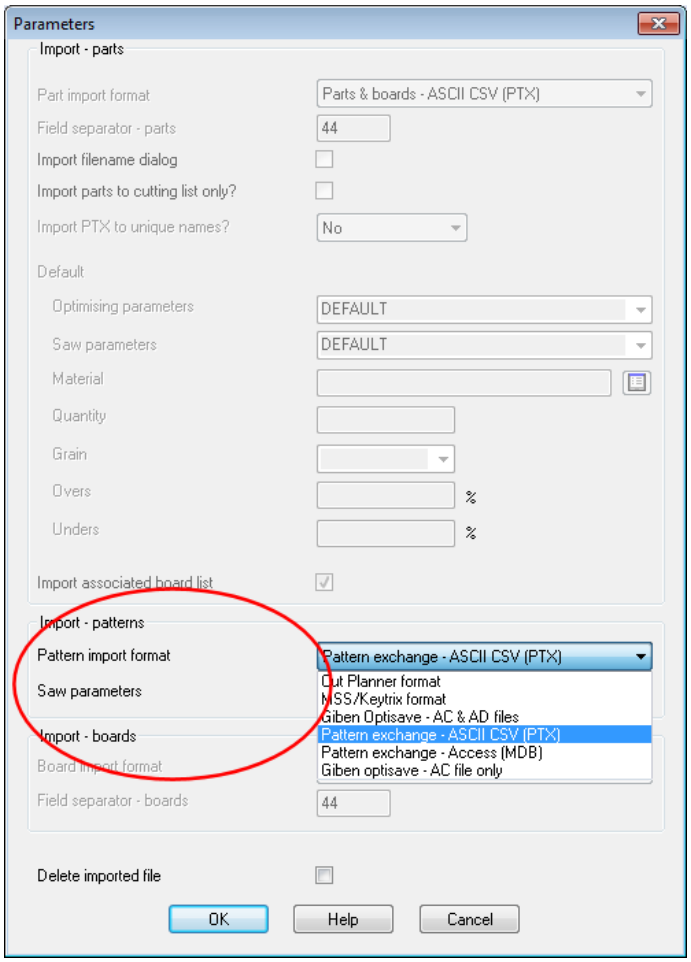
**Import patterns - Pattern Exchange Format**

The optimising program usually produces patterns so it is rare to need to import patterns to the program.

(The main use for the Pattern Exchange format is to export data for patterns to other systems and machines, or, for manufacturers to use sections of the PTX data for controlling other production processes).

However, in some cases it is useful to import patterns to the Optimising software, for example, where special patterns have been created manually and do not need to be optimised.

Use the Pattern Exchange format for this import (*Main screen - Import patterns - File - Parameters*)




*Import parameters - Patterns*

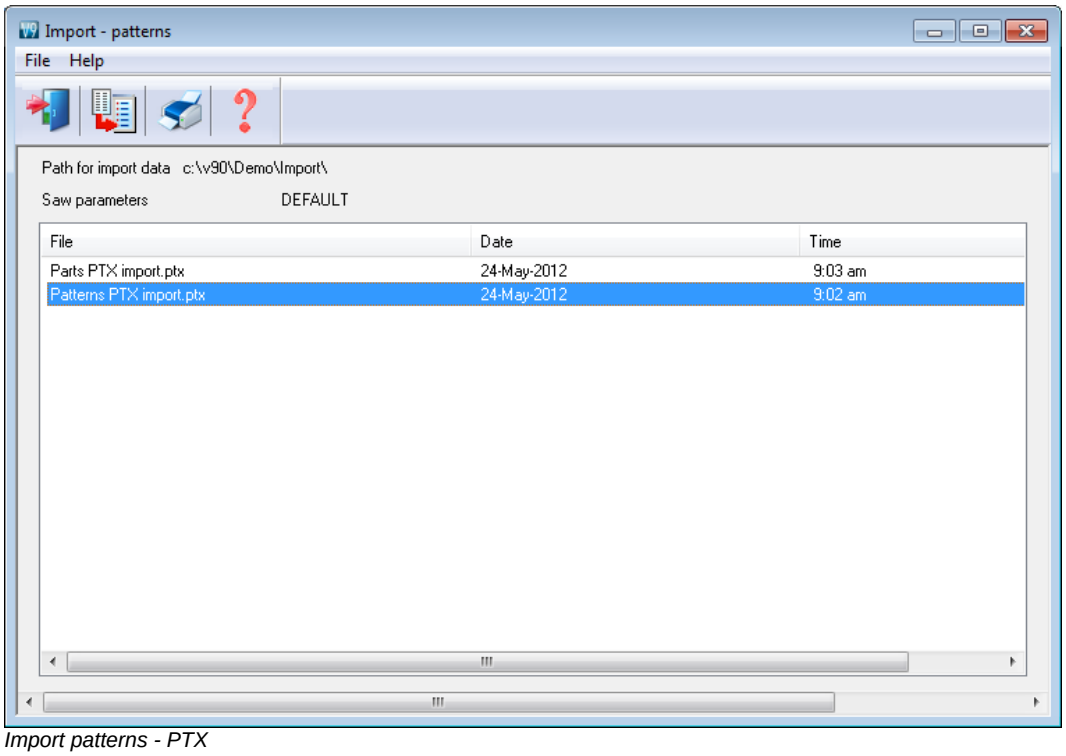
The pattern import parameters are towards the foot of the dialog. Select the one of the pattern exchange formats, for example: Pattern Exchange - ASCII CSV (PTX)

(The other options are for special situations where patterns are imported from other systems for further processing).

To import patterns (once the format is set), at the main menu:-

- Select: **File - Import patterns**

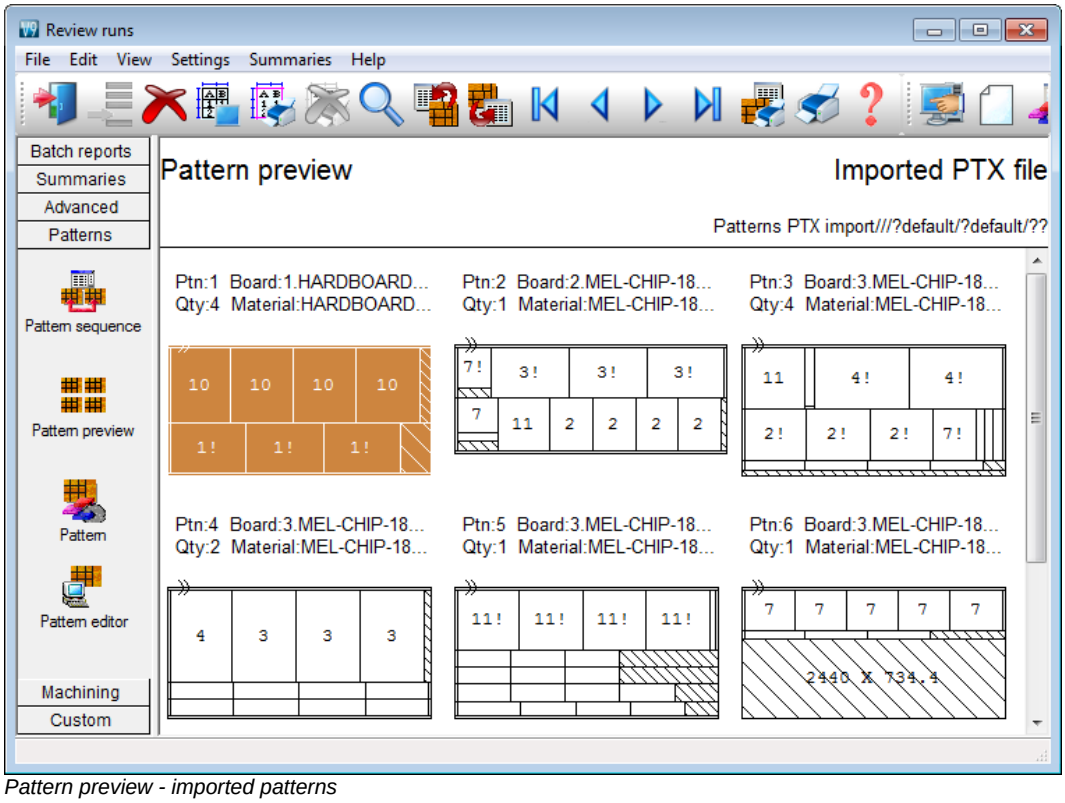
The screen displays an Import dialog select the pattern exchange file (PTX) to import.




*Import patterns - PTX*

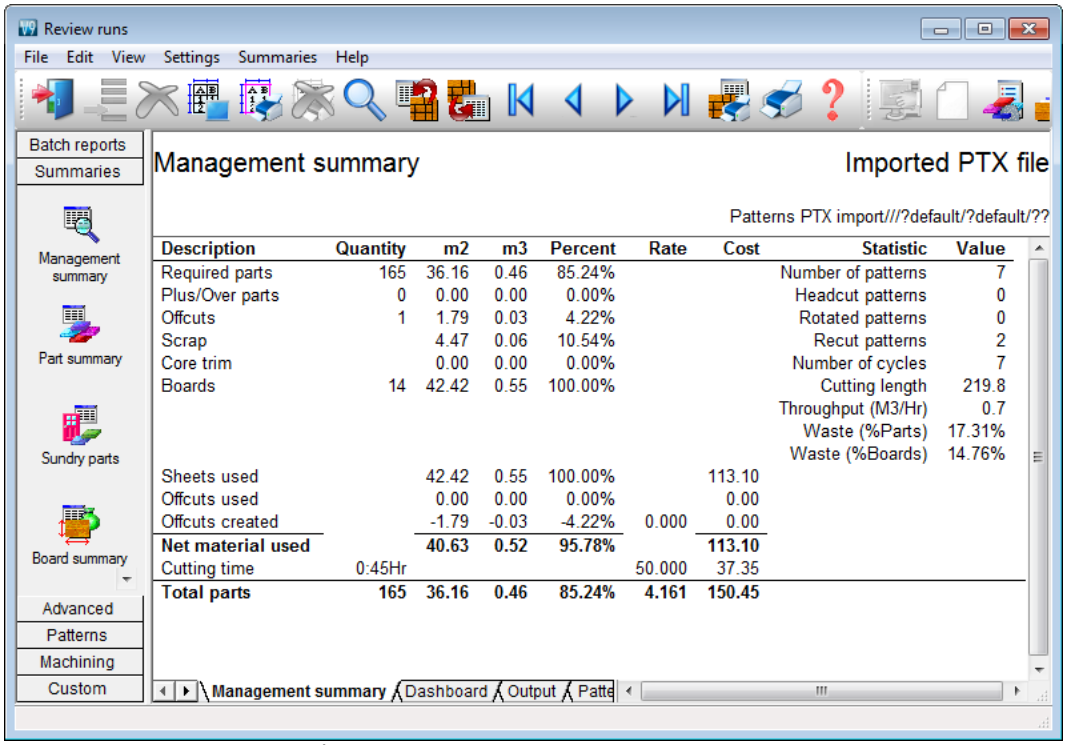
 - Select a file and select the import button

The result is an imported run (set of patterns).




*Pattern preview - imported patterns*

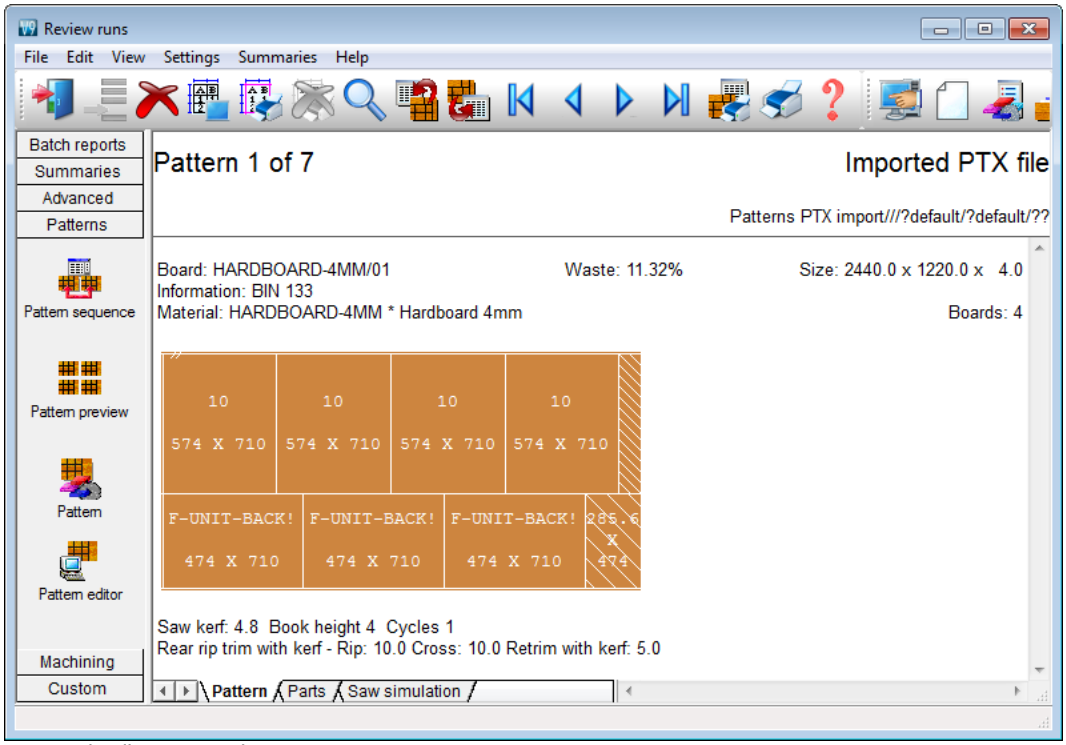
The run is the same as any optimised run with summaries and full pattern details.




| Description | Quantity | m2 | m3 | Percent | Rate | Cost | Statistic | Value |
|---|---|---|---|---|---|---|---|---|
| Required parts | 165 | 36.16 | 0.46 | 85.24% | | | Number of patterns | 7 |
| Plus/Over parts | 0 | 0.00 | 0.00 | 0.00% | | | Headcut patterns | 0 |
| Offcuts | 1 | 1.79 | 0.03 | 4.22% | | | Rotated patterns | 0 |
| Scrap | | 4.47 | 0.06 | 10.54% | | | Recut patterns | 2 |
| Core trim | | 0.00 | 0.00 | 0.00% | | | Number of cycles | 7 |
| Boards | 14 | 42.42 | 0.55 | 100.00% | | | Cutting length | 219.8 |
| | | | | | | | Throughput (M3/Hr) | 0.7 |
| | | | | | | | Waste (%Parts) | 17.31% |
| | | | | | | | Waste (%Boards) | 14.76% |
| Sheets used | | 42.42 | 0.55 | 100.00% | | 113.10 | | |
| Offcuts used | | 0.00 | 0.00 | 0.00% | | 0.00 | | |
| Offcuts created | | -1.79 | -0.03 | -4.22% | 0.000 | 0.00 | | |
| **Net material used** | | **40.63** | **0.52** | **95.78%** | | **113.10** | | |
| Cutting time | 0:45Hr | | | | 50.000 | 37.35 | | |
| **Total parts** | **165** | **36.16** | **0.46** | **85.24%** | **4.161** | **150.45** | | |

*Management summary - Imported patterns*

The patterns operate in the normal way.

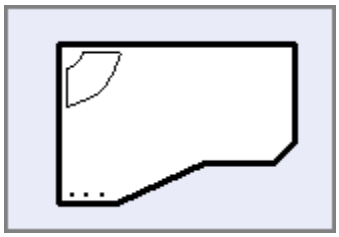



*Pattern details - Imported pattern*

*Note* - import patterns also imports the parts and boards as these are needed for the patterns.

*File tree* - also import patterns by selecting the file at the file tree on the main screen under the branch 'Import patterns'.

## 2.5 Import/Export DXF drawings for Patterns and Parts



DXF is a common format for part and pattern drawings. To use this format the Optimising program has to import or read part and pattern drawings in the DXF format and after optimisation output patterns and machining instructions to a file in a defined DXF format.

- For import use the 'DXF import - layer name rules' to describe the DXF format (*Main screen - Parameters - 'DXF import - layer name rules'* )

- For transfer to a machining centre the program uses a pre-defined DXF format (*Main screen - Machine Interface - 2D DXF Nested Layered*)

The DXF format is essentially a drawing format describing the geometry of a drawing. The information for machining (drilling, routing, etc.) is stored separately in different 'Layers'. Typically there is a layer for drilling, a layer for borders and so on.

*Layering* **-** Layering is a mechanism in the DXF format which separates the drawing elements into series of layers or overlays. Each layer can be identified and its contents separated from the other layers. The layer names and the layer contents can be chosen by the user so that is a very flexible way of structuring the information in a DXF file. The different layer options available are just the different conventions that manufacturers and users have set up for naming layers and deciding what information is in each layer.

These layers are typically named and defined differently by each user depending the type and quantity of information they use. Within a DXF file there can also be many other 'Layers' containing information on the drawing or the project which are not used by the Optimising program.

**Working with DXF based parts**

Where parts are based on DXF files there are a number of ways of working.

- Use DXF parts directly in part lists
- Import DXF parts into the Part library
- Import DXF parts into the Machining library

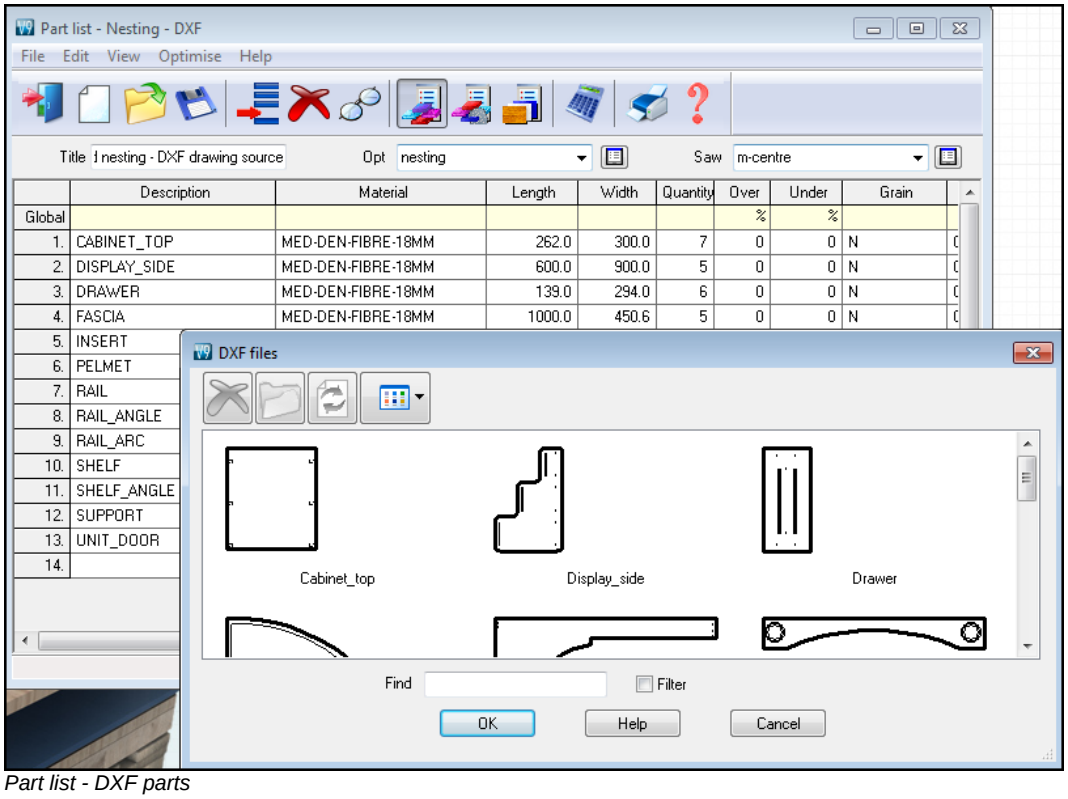
Once the parts are in a part list they can be optimised and transferred to a machining centre in the usual way.

*Use DXF parts directly in part lists*

- Copy the DXF files to the directory set by the system parameter: *Path for Import data*

- Move to a part list
- Select: *File - Properties*
- Set the drawing source for the part list as: *DXF files* (this can be different for each part list)

At the part list the DXF parts are now available from the selection dialog.




*Part list - DXF parts*

When using the DXF drawing source (Part list parameters) the setting for *'DXF import - layer name rules'* must also be set to describe the DXF format.

*Import DXF parts to the Part library*

- Copy the DXF files to the directory set by the system parameter: *Path for Import data*

- Move to the Part library
- Select: *Edit - Import DXF drawings*
- Select the required DXF drawing

The item is now stored in the Part library and there is a drawing in the Machining library.

- Move to a part list
- Select: *File - Properties*
- Set the drawing source for the part list as: *Part library* (this can be different for each part list)

At the part list the DXF parts in the Part library are now available from the selection dialog.

*Import DXF parts to the Machining library*

- Copy the DXF files to the directory set by the system parameter: *Path for Import data*

- Move to the Machining library
- Select: *File - Merge DXF*
- Choose the directory with the DXF files
- Select the required DXF drawing

The item is now stored in the Machining library.

- Move to a part list
- Select: *File - Properties*
- Set the drawing source for the part list as: Machining libr*ary* (this can be different for each part list)

At the part list the DXF parts in the Machining library are now available from the selection dialog.

*Machining instructions*

For parts processed at a Machining centre the DXF file also contains machining instructions. This format can be different for each user. Use the *'DXF import - layer name rules'* to describe this format.

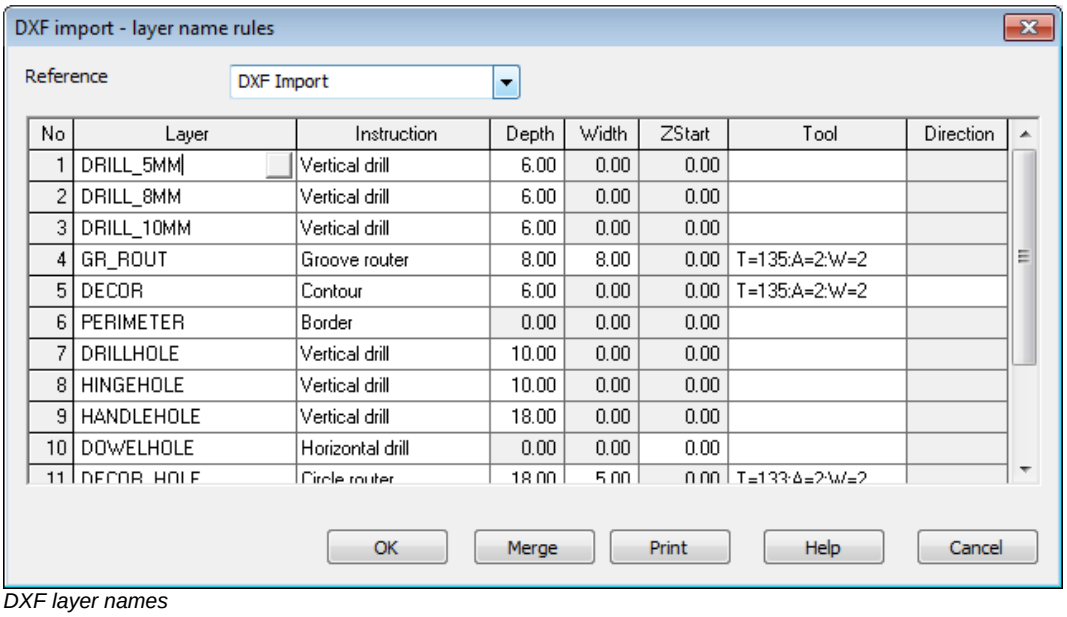
**DXF import - layer name rules**

Use these parameters to describe the layer structure of a DXF file for machining information. This information is required if DXF files are used as a source for parts, in the part list, part library or machining library.

At the main menu:-

- Select: **Parameters - DXF import - layer name rules**

The program displays a dialog.



*DXF layer names*

- Enter a layer name
*or*
- Select a layer name via the list box

(Click on the Layer column to pop up the select button)

Initially the program prompts to select the folder containing the DXF files. Select the required folder. This selection is retained for future sessions.

If no names are available or more layer names are required a list of layer names can be prepared by scanning existing DXF files - for details see: *Scan - DXF.*

*Instruction*

Enter the type of instruction stored in the layer name. Some examples of available types are:-

```
Vertical drill
Horizontal drill
Saw groove
Circle router
Groove router
Arc router
End groove
Contour
Text
Border
Safety Border
Free form pocket
```

In the next columns enter the information for Depth, Width, Zstart and Tool where it applies for each instruction type. This is information that is NOT in the DXF layer but needs to be set for Machining.

The information required for each machining type is.

```
Vertical drill:    Depth, Tool
Horizontal drill:  ZStart, Tool
Saw groove:        Width, Depth, Tool
Circle router:     Depth, Width, Tool
Groove router:     Width, Depth, Tool
Arc router:        Width, Depth, Tool
End groove;        Width, Tool
Contour:           Depth
Text:
Border:
```

- At the Tool column click on the button to pop up the tool dialog to enter the Tool information.

*Direction of imported contours / free form pockets*

The column 'Direction' is for specifying the direction of contours and free form pockets. This is available where the instruction is a contour or a free form pocket. Enter one of the following values:-

**Blank** - contour/pocket direction depends on the way it was drawn in the original DXF drawing)
**CW** - contour/pocket is drawn in the machining library in a clockwise direction 
**CCW** - contour/pocket is drawn in the machining library in a counter clockwise direction 

*Notes*

- Layer name maximum length is 100 characters
- Up to 100 parameters lines allowed
- Machining centre parameter: *Import - DXF format* must be set to ' Layered - user defined'
- Only layer names that are used for geometry are shown in the selection dialog

- When transferring a machining drawing in 2D DXF nested layered DXF format any fixed pockets (not free form pockets) appear on a layer starting with the text 'POCKET'

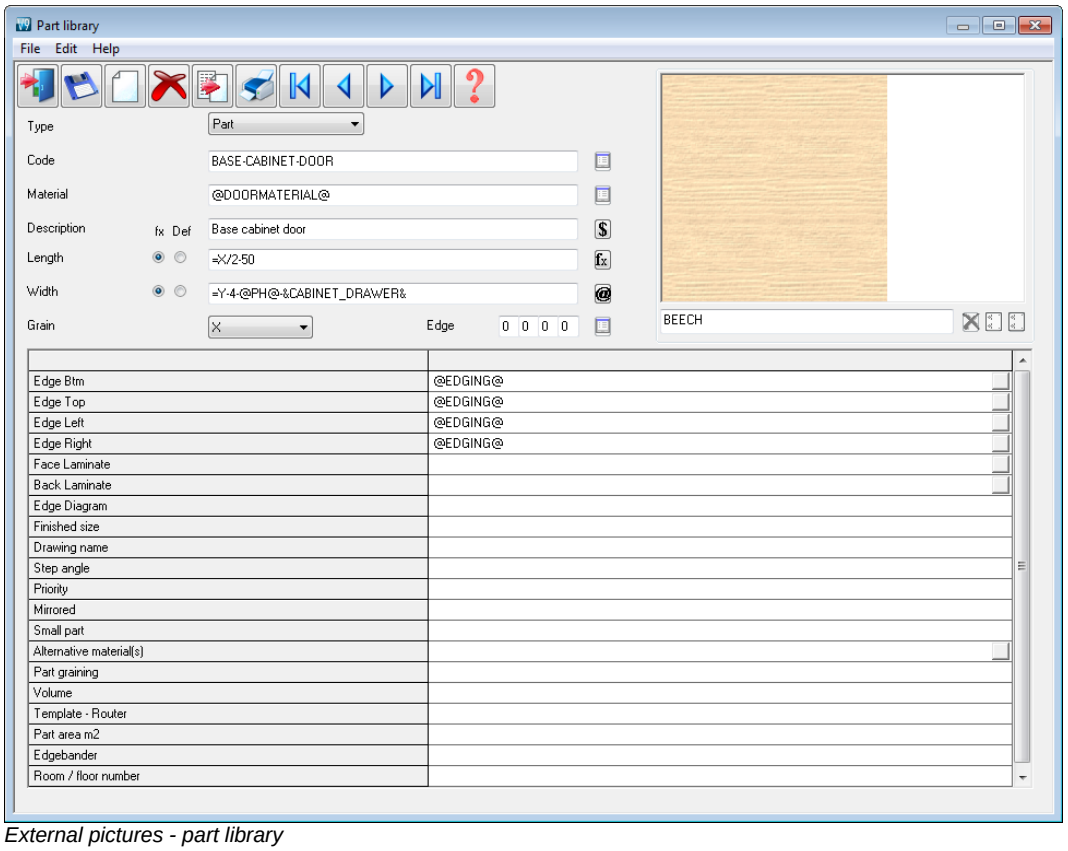
## 2.6 External drawings - Part library and Product library

For the part library and product library a drawing can be associated with each item. The drawing can be selected from one of several different sources:-

- Machining library
- MPR file
- Drawing library
- External graphics file (BMP, WMF, EMF, JPG)

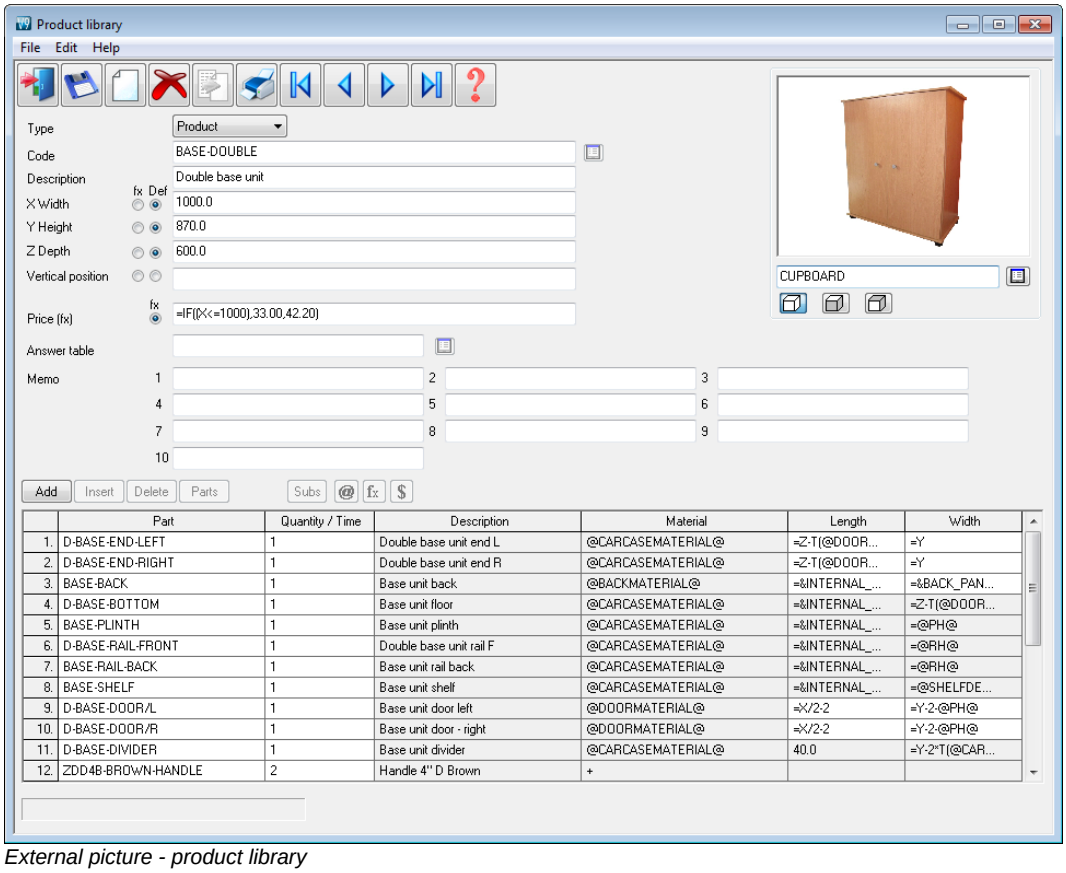
## *Drawing - part library*

In this example the part drawing shows the material from a bitmap (bmp) file.




*External pictures - part library*

In this example the product drawing is from an external picture (jpg) file.




*External picture - product library*

- External graphics files are placed in directory set by the system parameter: *Path for pictures.* If this path is not set the files are in the directory set by the system parameter: *Path for data*

- MPR files are located in the directory set by the system parameter: *Path for MPR files*

- Different parts can be linked to the same drawing or there can be a one to one link between parts and drawings.

## 2.7 Import from file - part library

At the Part library screen:-

- Select: **Edit - Import from file**

The program displays a list of files (from path set by the System Parameter:
Path for data'

- Select a part list to import

If a part code already exists in the part library the program prompts to overwrite the code or stop the import.

*Setup of External files* - The file type can be CSV (ASCIII text file) or the Excel formats XLS, XLSX; this is set via (Part library screen - File - Parameters). To import an external file directly to the part library the format of the external file must follow a fixed layout.

```
part code
material
description
default length
length
default width
width
grain
quick edge codes
cost
drawing type
drawing code
information boxes
```

*Default length?; default width?* - used to set the default check box beside the length and width fields at the part library

0 = default box is not set
1 = default box is set

Material code starts with + record is a fitting
Material code starts with - record is an operation

Grain 0=No, 1=Yes, 2=X, 3=Variable

Cost - only applies to fittings and operations

Drawing type - 0=file name, 1=machining library, 2=drawing library

Drawing code - where the drawing type is 0 the drawing code is a file name and extension, otherwise it is a drawing code

Part library - Import part lists

Part lists can also be imported to the part library via the option: **Edit - Import from Part list**

## 2.8 Import product data

At the product library screen there are several options to export data.

- Import product
- Import library

### *Import product*

The program has an option to export data for a single product to a PLE file. This file can be imported to any product library using this import option.

If the product is BASE-OVEN-HSE the file is typically: BASE-OVEN-HSE.PLE

*The PLE format is an internal format.*

***Import library***

This option imports an MDB file and creates the following libraries/tables:

Product library
Part library
Variable table
Lookup table
Formula table

The structure of the MDB file must match the specification for the librar. For details of the format see the section on 'Export product data'.

# 3. Pattern Exchange File - Specification - V1.12

## 1. Introduction

This section describes a data structure for the exchange of cutting lists and patterns for sheet material between various design programs, optimising packages, and panel saw controllers.

This data structure contains the information that is required for transferring cutting lists to an optimising package and for transferring optimised cutting patterns with label information to a panel saw. The data structure can be created in two formats as follows.

*ASCII comma-separated file*
*Access database*

The data structure consists of several record types each with a number of fields. In the ASCII file each record type is represented by a token which begins each line and in the database each record type is a separate table.

Each record type and each field name are in uppercase and use underscores between separate words. No table name or field name is more than 10 characters.

## 2. Record types and table names

The 'cutting list' record types are as follows.

**HEADER** - general information describing the complete data structure (or file)
**JOBS** - header data for each job (cutting list or optimised run)
**PARTS_REQ** - basic requirement details for each item in the cutting list
**PARTS_INF** - standard information about each part
**PARTS_UDI** - user-defined information about each part
**PARTS_DST** - destacking information about each part
**BOARDS** - information about each item in the board (stock) list
**MATERIALS** – information about each material type
**NOTES** - other information for a job

The 'post-optimisation' records are:

**OFFCUTS** - record describing each off-cut produced
**PATTERNS** - pattern header records - one for each cutting pattern
**PTN_UDI -** information used to match parts in a strip - one for each strip in the pattern

**CUTS** - cutting instructions – occur many times per pattern – once for each cut required

**VECTORS –** vector graphics describing the pattern

## 3. Format

The ASCII version of the file uses standard comma-separated format, and has the suffix .PTX (PaTtern eXchange). The main part of the filename could be the job/order number or batch name if the file contains multiple jobs. Examples:-

01234.PTX ABC123-1.PTX

Note that the structure allows for the ASCII file to contain more than 1 cutting list or run if necessary, for example it could contain a batch of runs. Note that there may be restrictions on the file name because some controllers will, for example, only accept 5 digits for the job number.

All normal CSV format conventions apply, including optional use of quotation marks around text data. Leading spaces are ignored. Trailing commas (separators) are not necessary. Text fields containing commas must be enclosed in quotes.

The format and size restrictions for each field are tabulated in section 18. Note, that the limitations (eg. max length of material code) will vary according to the implementation and specification of the saw.

All ‘index numbers’ must be integer values, starting at 1 for the first record, and incrementing consecutively up to the maximum specified. Note, in particular that all part, board, pattern and cutting records must contain the appropriate job index number showing which job they relate to.

The Access database version stores each record type in a separate table. The file has the standard extension of MDB. Examples:

01234.MDB BATCH32.MDB

## 4. HEADER - General information

HEADER – VERSION, TITLE, UNITS, ORIGIN, TRIM_TYPE

The header record contains descriptive and global information for the job. This record appears as a line in the ASCII file. In the Access database this information will be stored in the database properties.

**VERSION** - File version (1.08)
**TITLE -** File title
**UNITS -** Measurement mode = 0 (metric), 1(decimal inches).

**ORIGIN -** This field indicates the origin for the VECTOR drawing records. The origin for the CUT records is assumed to be 0 (top left).

0 = top to bottom - left to right
1 = top to bottom – right to left
2 = bottom to top – left to right
3 = bottom to top – right to left

**TRIM_TYPE -** Indicates whether the waste strip/piece is cut first or last. That is, is the fixed trim done on the leading edge or as a final trim?

0 = trim waste piece first
1 = trim fixed trim first

### ASCII & Database examples

```
HEADER,1,''This is an example'',0,0,1
```

HEADER TABLE

| VERSION | TITLE | UNITS | ORIGIN | TRIM_TYPE |
|---|---|---|---|---|
| 1 | This is an example | 0 | 0 | 1 |

## 5. JOBS - Job record

JOBS, - JOB_INDEX, NAME, DESC, ORD_DATE, CUT_DATE, CUSTOMER, STATUS, OPT_PARAM, SAW_PARAM, CUT_TIME, WASTE_PCNT

This record contains data about each job contained in the file. These records are optional and in the absence of job records all parts and patterns are assumed to belong to the same job.

**JOB_INDEX -** Unique index number used to link other records to an appropriate job
**NAME -** Job number/name – reference for job
**DESC -** Job description/title - title of job
**ORD_DATE –** Date of order (DD/MM/YYYY)
**CUT_DATE –** Date for cutting/delivery (DD/MM/YYYY)
**CUSTOMER -** Customer code or name

**STATUS** - Status of the job.

0 - not optimised
1 - optimised
2 - optimise failed

Note: there may be a range of other error codes

**OPT_PARAM** - Optimising parameter file name
**SAW_PARAM -** Saw parameter file name
**CUT_TIME** - Total cutting time for the job in seconds
**WASTE_PCNT** - Overall percentage waste as a percentage of board area

### ASCII & Database examples

```
JOBS,1,ORD1234,SAMPLE JOB - CUSTOMER WOODCO,17/01/1999,
22/01/1999,WOODCO,1,STANDARD,ANGLE,821,12.36
```

JOBS TABLE

| JOB_INDEX | NAME | DESC | ORD_DATE | ..... |
|---|---|---|---|---|
| 1 | ORD1234 | SAMPLE JOB - CUSTOMER WOODCO | 17/01/1999 | ..... |

## 6. PARTS_REQ - Part requirement record

PARTS_REQ - JOB_INDEX, PART_ INDEX, CODE, MAT_INDEX, LENGTH, WIDTH, QTY_REQ, QTY_OVER, QTY_UNDER, GRAIN, QTY_PROD

This record contains data about each different size (or line item) in the cutting list. This record is used to provide details about each part (over and above cut sizes).

**JOB_INDEX -** Index number used to link this record to other records for this job.
**PART_INDEX -** Index number to link this record with other associated part records
**CODE -** Part code or description.
**MAT_INDEX -** Index of material used for this part.
**LENGTH** - Cut length of part shown in appropriate measurement unit
**WIDTH -** Cut length of part shown in appropriate measurement unit
**QTY_REQ** - number of pieces this size
**QTY_OVER** - allowed over production
**QTY_UNDER** - allowed under production.

**GRAIN** –
0 = No grain/part can be rotated,
1 = grain along the length of the board/part cannot be rotated
2 = grain along the width of the board/part must be rotated

**QTY_PROD** - quantity of parts produced by patterns

### ASCII & Database examples

```
PARTS_REQ,1,1,SD900X,1,890.0,645.5,50,0,2,0,50
```

PARTS_REQ TABLE

| JOB_INDEX | PART_INDEX | CODE | MAT_INDEX | LENGTH | WIDTH | ..... |
|---|---|---|---|---|---|---|
| 1 | 1 | SD900X | 1 | 890.0 | 645.5 | ..... |

## 7. PARTS_INF – Standard part inf record

PARTS_INF - JOB_INDEX, PART_INDEX, DESC, LABEL_QTY, FIN_LENGTH, FIN_WIDTH, ORDER, EDGE1, EDGE2, EDGE3, EDGE4, EDG_PG1, EDG_PG2, EDG_PG3, EDG_PG4, FACE_LAM, BACK_LAM, CORE, DRAWING, PRODUCT, PROD_INFO, PROD_WIDTH, PROD_HGT, PROD_DEPTH, PROD_NUM, ROOM, BARCODE1, BARCODE2, COLOUR, SECOND_CUT_LENGTH, SECOND_CUT_WIDTH

This optional record contains standard information about each different size (or line item) in the cutting list. One use of this record is to hold data for label printing.

**JOB_INDEX -** Index number used to link this record to other records for this job.
**PART_INDEX -** Index number linking this record with other part records.

**DESC -** A second part description
**LABEL_QTY -** Number of copies of the label for this part.
0 = no labels for this part
default if not specified =1

**FIN_LENGTH -** Length of part after edging and trimming
**FIN_WIDTH -** Width of part after edging and trimming
**ORDER -** Original order/job/work number which part relates to
**EDGE1 -** Code or description of edging for bottom (length) edge
**EDGE2 -** Code or description of edging for top (length) edge
**EDGE3 -** Code or description of edging for left (width) edge
**EDGE4 -** Code or description of edging for right (width) edge
**EDG_PG1 –** Program or operation code for bottom (length) edge
**EDG_PG2 -** Program or operation code for top (length) edge
**EDG_PG3 -** Program or operation code left (width) edge
**EDG_PG4 -** Program or operation code for right (width) edge
**FACE_LAM -** Code/description of laminate material for face (topside) of part
**BACK_LAM -** Code /description of laminate material for back (underside) of part
**CORE_MAT -** Code or description of core material
**PALLET** – Pallet layout (stacks in length and width)
**DRAWING -** Name of drawing file, drill program or CNC program for machine centre
**PRODUCT -** Product or cabinet code or template name to which part belongs
**PROD_INFO -** Description of product or cabinet
**PROD_WIDTH -** External dimension of product or cabinet
**PROD_HGT -** External dimension of product or cabinet
**PROD_DEPTH -** External dimension of product or cabinet

**PROD_NUM -** Item number of cabinet in room
**ROOM -** Room or floor or group item number for cabinet
**BARCODE1 -** data for 1st barcode – as text string
**BARCODE2 -** data for second bar code – as text string
**COLOUR** - The extended colour name.
**SECOND_CUT_LENGTH -** Length of part prior to second cut
**SECOND_CUT_WIDTH -** Width of part prior to second cut

**ASCII & Database examples**

```
PARTS_INF,1,2,BOTTOM,1,690.0,475.0,ORD1234,GREY-1MMPVC,,
GREY-1MMPVC,,GREYLAM,GREYLAM,MDF18,BU-SIDE-CNC,BU4DW,
4 Dwr Base Unit,600.0,890.0,570.0,1,1,0690004750,0012301,WHITE-
ASH-325,700.0,485.0
```

PARTS_INF TABLE

| JOB_INDEX | PART_INDEX | DESC | LABEL_QTY | FIN_LENGTH | FIN_WIDTH | ..... |
|---|---|---|---|---|---|---|
| 1 | 2 | BOTTOM | 1 | 690.0 | 475.0 | ..... |

## 8. PARTS_UDI - USER DEFINED PART INFO RECORD

PARTS_UDI - JOB_INDEX, PART_INDEX, INFO1, INFO2, …. INFO60

This optional record contains user-defined information about each different size (or line item) in the cutting list. One use of this data is for label printing.

**JOB_INDEX -** Index number used to link this record to other records for this job.
**PART_INDEX -** Index number linking this record with other part records

**INFO*n***
There are up to 60 information fields. The name of each field is INFO followed by the field number. The fields may be used for any purpose such as customer details, dates, CNC operations, and other items not included in the other part records.

### ASCII & Database examples

```
PARTS_UDI,1,3,CNC84,Smith & Co,20-APR-1999
```

PARTS_UDI TABLE

| JOB_INDEX | PART_INDEX | INFO1 | INFO2 | INFO3 | ..... |
|---|---|---|---|---|---|
| 1 | 3 | CNC84 | Smith & Co | 20-APR-1999 | ..... |

## 9. PARTS_DST - Destacking part info record

PARTS_DST - JOB_INDEX, PART_INDEX, PART_LAY_L,PART_LAY_W, PART_LAY_O,STK_HGHT_Q, STK_HGHT_D, STATION, QTY_STACKS, BTM_TYPE, BTM_DESC, BTM_MATL, BTM_LENGTH, BTM_WIDTH, BTM_THICK, OVER_LEN, OVER_WID, BTM_LAY_L, BTM_LAY_W, TOP_TYPE, TOP_DESC, TOP_MATL, TOP_LENGTH, TOP_WIDTH, TOP_THICK, TOP_LAY_L, TOP_LAY_W, SUP_TYPE, SUP_DESC, SUP_MATL, SUP_LENGTH, SUP_WIDTH, SUP_THICK, SUP_LAY_L, SUP_LAY_W,STATION2

This optional record contains destacking information about each different size (or line item) in the cutting list.

**JOB_INDEX -** Index number used to link this record to other records for this job.
**PART_INDEX -** Index number linking this record with other part records
**PART_LAY_L** - Part layout - number of parts per stack in length
**PART_LAY_W** - Part layout - number of parts per stack in width
**PART_LAY_O** - Part layout – orientation
**STK_HGHT_Q -** Stack height – quantity of pieces
**STK_HGHT_D -** Stack height – dimension
**STATION** - Station number
**QTY_STACKS -** Total number of stacks (pallets) for this part
**BTM_TYPE** - Bottom destacking type
**BTM_DESC -** Bottom description
**BTM_MATL -** Bottom baseboard material
**BTM_LENGTH -** Length of bottom baseboard/pallet
**BTM_WIDTH -** Width of bottom baseboard/pallet
**BTM_THICK -**Thickness of bottom baseboard/pallet
**OVER_LEN** - Overhang/oversize per side in length
**OVER_WID -** Overhang/oversize per side in width
**BTM_LAY_L -** Layout of bottom baseboards/pallets in station in length
**BTM_LAY_W -** Layout of bottom baseboards/pallets in station in width
**TOP_TYPE** - Top cover type
**TOP_DESC -** Top baseboard/cover description
**TOP_MATL** - Top baseboard material
**TOP_LENGTH -** Length of top baseboard/cover
**TOP_WIDTH -** Width of top baseboard/cover
**TOP_THICK -**Thickness of top baseboard/cover
**TOP_LAY_L -** Layout of top baseboards in length
**TOP_LAY_W -** Layout of top baseboards in width
**SUP_TYPE** - Support type

**SUP_DESC -** Support description
**SUP_MATL -** Support material
**SUP_LENGTH** – Length of support
**SUP_WIDTH -** Width of support
**SUP_THICK -** Thickness of support
**SUP_LAY_L -** Support layout in length
**SUP_LAY_W -** Support layout in width
**STATION2** - Alternative station number

**ASCII & Database examples**

```
PARTS_DST,1,3,3,2,1,30,600,…
```

PARTS_DST TABLE

| JOB_INDEX | PART_INDEX | PART_LAY_L | PART_LAY_W | PART_LAY_O | ..... |
|---|---|---|---|---|---|
| 1 | 3 | 3 | 2 | 1 | ..... |

## 10. BOARDS - Board record

BOARDS - JOB_INDEX, BRD_INDEX, CODE, MAT_INDEX, LENGTH, WIDTH, QTY_STOCK, QTY_USED, COST, STK_FLAG, INFORMATION, MAT_PARAM, GRAIN

These records contain details of the board/sheet sizes to be used; one record for each different size/material.

**JOB_INDEX -** Index number used to link this record to other records for this job.
**BRD_INDEX - i**ndex number linking this record with the **PATTERNS** records for this job.

**CODE –** Board code - usually the stock code for the sheet size.
**MAT_INDEX -** Index of material used for this part.
**LENGTH -** Size of sheet in appropriate measurement unit.
**WIDTH -** Size of sheet in appropriate measurement unit.
**QTY_STOCK -** Total number of sheets available – default 99999 (0=none)
**QTY_USED -** Total number of sheets this size used in patterns
**COST -** Cost per sq. metre or sq. foot according to measurement unit
**STK_FLAG –** Flag to indicate action if insufficient stock
**INFORMATION** - Extra descriptive details about the sheet
**MAT_PARAM** - Material parameters file name

**GRAIN** –
0 = No grain,
1 = grain along the length of the board
2 = grain along the width of the board

### ASCII & Database examples

```
BOARDS,1,1,WLAM15MM-1,1,2550.0,1525.0,100, 7, 8.50,0
```

BOARDS TABLE

| JOB_INDEX | BRD_INDEX | CODE | MAT_INDEX | LENGTH | WIDTH | ..... |
|---|---|---|---|---|---|---|
| 1 | 1 | WLAM15MM-1 | 1 | 2550.0 | 1525.0 | ..... |

## 11. MATERIALS - Material records

MATERIALS - JOB_INDEX, MAT_INDEX, CODE, DESC, THICK, BOOK, KERF_RIP, KERF_XCT, TRIM_FRIP, TRIM_VRIP, TRIM_FXCT, TRIM_VXCT, TRIM_HEAD, TRIM_FRCT, TRIM_VRCT, RULE1, RULE2, RULE3, RULE4, MAT_PARAM, GRAIN

These records define the different material types. There should be a least one of these records in data structure. This record is used to pass a detailed material description, the thickness and other parameters which may vary according to material type.

**JOB_INDEX -** Index number used to link this record to other records for this job.
**MAT_INDEX -** Unique index of material used to link this record to other records
**CODE -** Material code
**DESC -** Material description
**THICK -** Material thickness in appropriate measurement mode
**BOOK -** Max sheets per book, reflects cutting height of saw
**KERF_RIP -** Rip saw kerf – in unit of measurement
**KERF_XCT -** Crosscut saw kerf – in unit of measurement
**TRIM_FRIP -** Fixed rip trim – includes saw kerf – amount sheet size is reduced by
**TRIM_VRIP** - Minimum waste rip trim - minimum size of falling waste including saw kerf
**TRIM_FXCT -** Fixed crosscut trim – includes saw kerf
**TRIM_VXCT -** Minimum waste crosscut trim - min. size of falling waste inc. saw kerf
**TRIM_HEAD -** Internal head cut trim – includes saw kerf
**TRIM_FRCT -** Fixed recut trim – includes saw kerf
**TRIM_VRCT -** Minimum waste recut trim - min. size of falling waste inc. saw kerf

**RULE1 -** Optimisation rule 1 – cut nesting limit – 1 to 9 (e.g. 3 = allow third phase recuts)

**RULE2** - Optimisation rule 2 **–** head cuts allowed (0=No, 1 =Yes)
**RULE3 -** Optimisation rule 3 – board rotation allowed (short rip) (0=No, 1=Yes)
**RULE4** - Optimisation rule 4 – show separate patterns for duplicate parts (0=No 1=Yes)
**MAT_PARAM** - Material parameters file name

**GRAIN** –
0 = No grain,
1 = grain along the length of the board
2 = grain along the width of the board

The saw kerf and trims are optional. Note that it is assumed that one of the two rip trims will be constant and the other rip trim includes the waste strip. Either (a) the leading edge is trimmed and the waste strip comes out last, or (b) the waste strip is removed by

the first rip and the last rip is a constant trim. This assumption also applies to cross cut trims and recut trims.

**ASCII & Database examples**

```
MAT,1,1,WHITE18,"White laminate chipboard 18mm",18,4,4.8,4.8,
10,10,8,8,8,8,8,4,1,1,1,WLAM18
```

MATERIALS TABLE

| JOB_INDEX | MAT_INDEX | CODE | DESC | THICK | ..... |
|---|---|---|---|---|---|
| 1 | 1 | WHITE18 | White Laminate - chipboard 18mm | 18 | ..... |

## 12. NOTES - Note records

NOTES - JOB_INDEX, NOTES_INDEX, TEXT

This record is optional and holds any messages or notes that need to be associated with a job, for example customer details, special instructions, etc, or any details that are job related rather than part or material related. As many lines as required can be stored for each job.

**JOB_INDEX -** index linking note to job
**NOTES_INDEX** - index storing order of notes
**TEXT** - text of note

Maximum length of text field is 250 characters.

**ASCII & Database examples**

```
NOTES,1,1,''Customer ref. A1234-0987 - Smith Cabinets''
```

NOTES TABLE

| JOB_INDEX | NOTES_INDEX | TEXT |
|---|---|---|
| 1 | 1 | Customer ref. A1234-0987 - Smith Cabinets |

## 13. OFFCUTS – Records for offcuts

OFFCUTS - JOB_INDEX, OFC_INDEX, CODE, MAT_INDEX, LENGTH, WIDTH

This record is optional and can occur once for each different off-cut size per material created by the cutting patterns.

**JOB_INDEX -** Index number used to link this record to other records for this job.
**OFC_INDEX -** Unique index number of offcut used to link this record to the CUT record.
**CODE -** Offcut code or description - used to identify offcut.

**MAT_INDEX -** Index of material used for this offcut. Enables offcuts of similar material composition, thickness and colour, but different size to be grouped together.

**LENGTH -** Length of offcut in appropriate measurement unit
**WIDTH** - Width of offcut in appropriate measurement unit

**OFC_QTY –** Quantity of this size produced

### ASCII & Database examples

```
OFFCUTS,1,1,WHITE15-123,2,1450.0, 425.0,1
```

OFFCUTS TABLE

| JOB_INDEX | OFC_INDEX | CODE | MAT_INDEX | LENGTH | ..... |
|---|---|---|---|---|---|
| 1 | 1 | WHITE15-123 | 2 | 1450.0 | ..... |

## 14. PATTERNS - Pattern records

PATTERNS - JOB_INDEX, PTN_INDEX, BRD_INDEX, TYPE, QTY_RUN, QTY_CYCLES, MAX _BOOK, PICTURE, CYCLE_TIME, TOTAL_TIME

This record occurs once per pattern. It is used to describe header detail for the pattern, such as board size used, number of sheets to be cut etc.

**JOB_INDEX -** Index number used to link this record to other records for this job.
**PTN_INDEX -** Sequential number incrementing by 1 for each pattern record for each job.
**BRD_INDEX -** Index number from the Boards records.

**TYPE -** determines the direction of the first cut, and the type of pattern

Fixed Pattern
0 = rip length first – non-head cut pattern
1 = turn board before ripping - non-head cut pattern
2 = head cut pattern – head cut across width
3 = head cut pattern – head cut along length
4 = crosscut only
Template Pattern
5 = Create master part - divide at saw
6 = Create master part - divide at machining centre
7 = Cut parts in main pattern
8 = Cut parts in separate pattern

**QTY_RUN -** Run quantity – number of sheets to be cut to this pattern
**QTY_CYCLES -** Number of cycles or books
**MAX_BOOK -** Maximum number of sheets per book (cutting height)
**PICTURE -** Name of file containing picture of cutting pattern
**CYCLE_TIME** - The time in seconds to cut a single cycle
**TOTAL_TIME** - The total time in seconds to cut all cycles

### ASCII & Database examples

```
PATTERNS,1,1,2,0,20,4,5,Pattern1
```

PATTERNS TABLE

| JOB_INDEX | PTN_INDEX | BRD_INDEX | TYPE | QTY_RUN | QTY_CYCLES |
|---|---|---|---|---|---|
| 1 | 1 | 2 | 0 | 20 | 4 |

## 15. PTN_UDI - Info used to match parts in a strip

PTN_UDI, JOB_INDEX, PTN_INDEX, BRD_INDEX, STRIP_INDEX, INFO1, INFO2,...INFO99

These records are used to indicate the matching information used when inserting parts in a strip. This record only applies when all parts in the strip must have the same information.

**JOB_INDEX -** Index number used to link this record to other records for this job.
**PTN_INDEX -** Sequential number incrementing by 1 for each pattern record for each job.
**BRD_INDEX -** Index number from the Boards records.
**STRIP_INDEX -** Strip number (top to bottom, left to right).
**INFO*n* -** Info fields for matching parts in a strip

## 16. CUTS - Cutting instructions

CUTS - JOB_INDEX, PTN_INDEX, CUT_INDEX, SEQUENCE, FUNCTION, DIMENSION, QTY_RPT, PART_INDEX, QTY_PART, COMMENT

These records define each cut for the saw and determine the parts produced by each cut. This is used, for example, so that the correct labels can be printed at the saw in synchronisation with the cutting.

**JOB_INDEX -** Index number used to link this record to other records for this job.
**PTN_INDEX -** Index number used to link this record with pattern records

**CUT_INDEX -** Sequential index number incrementing by 1 for each cut record for each job

**SEQUENCE -** Cut sequence number indicating order in which cuts are processed by saw

**FUNCTION -** The type of cut:
0 = head cut
1 = rip cut
2 = cross cut
3 = 3rd phase / recut
4 = 4th phase /recut
Maximum phase = 9
90,91,92,93 = trim / waste cut corresponding to phase of cut (to override defaults)

**DIMENSION -** The size of cut in measurement units
**QTY_RPT -** The repeat quantity for this cut
**PART_INDEX -** 0 if no part produced or part index number in part or offcut records
**QTY_PARTS -** Quantity of this part produced by this cut for all cycles of this pattern.
**COMMENT** - optional field to store narrative about the cut instruction

Some points about the cut record

Some cuts produce several parts with different item numbers because although the parts may have the same size they will be labelled uniquely. This occurs when cutting multiple sheets in a book where the parts on different sheets have different item numbers. These duplicate parts are represented with dummy CUTS records showing the part index and part quantity but a zero dimension and zero cut quantity.

When cutting exact fit patterns (e.g. no trims, strip fits exactly in length of the board) some cuts will produce two parts side by side (e.g. the last cross cut in a strip). If this is the case the cut quantity of the last part will be set to zero, the dimension remains unchanged. Note that it is important that these records have a dimension so as to differentiate them from the dummy cut records for duplicate parts.

The Sequence number allows definition of different parts in a stack produced from the same cut. Note, the cuts are not listed in cut sequence because it is necessary to nest the 2nd, 3rd and later phase cuts. The SEQUENCE number is optional, and if not given then the cutting sequence should be determined by the saw or a post-processor.

The PART_INDEX (if not 0) points to the PARTS_REQ records of relevant part or 'X' + OFC_INDEX in OFFCUTS records.

The QTY_PARTS field allows for the display of the correct part quantities for duplicate parts. In a pattern with run quantity 20, and cut 6 sheets at a time, then there will be 4 cycles or books (3 with 6 sheets and 1 with 2 sheets). Say the first part in the top left corner is a mixture of 14 parts item 1, and 6 parts item 2. The first book at the appropriate cut will produce quantity 6 labels of item 1, the second book also 6 of 1, the third book will produce 2 labels of item1 and 4 of item 2, and the last book will give 2 of item 2. In this example, the CUTS records would show two cut lines, item 1 quantity 14, and item 2 quantity 6. The saw takes care of counting the cycles.

Note that the Sequence number will increment by the repeat quantity for that cut. In example below, CUTS 1,1,2 has repeat 3, indicating three cuts, so sequence number 4 implies 4/5/6 and the next sequence number is incremented by 3.

**ASCII & database example**

*Notes in italics are for information only and not part of the file*

```
CUTS,1,1,1,1,1,500.0,1,0,0,"Job 1 - Ptn 1 – Rip"      - rip 1
strip 500 wide
CUTS,1,1,2,3,2,800.0,3,1,14  - crosscut 500 strip at 800mm x3 >
part 1 qty 14
CUTS,1,1,3,0,2,0.0,0,2,1                                - and part
2  x qty 1
CUTS,1,1,4,2,1,200.0,1,0,0,"Rip"                     - rip 1 strip
200mm wide
CUTS,1,1,5,4,2,1400.0,1,8,5             - crosscut at 1400mm
producing part 8
```

`CUTS,1,1,6,0,2,0,0,X3,20` -
*and offcut 3*

CUTS TABLE

| JOB_INDEX | PTN_INDEX | CUT_INDEX | SEQUENCE | FUNCTION | DIMENSION | ..... |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 500.0 | ..... |
| 1 | 1 | 2 | 3 | 2 | 800.0 | ..... |
| 1 | 1 | 3 | 0 | 2 | 0.0 | ..... |
| 1 | 1 | 4 | 2 | 1 | 200.0 | ..... |
| 1 | 1 | 5 | 4 | 2 | 1400.0 | ..... |
| 1 | 1 | 6 | 0 | 2 | 0.0 | ..... |

## 17. VECTORS - INSTRUCTIONS FOR PATTERN DRAWING

VECTORS - JOB_INDEX, PTN_INDEX, CUT_INDEX, X_START, Y_START, X_END, Y_END

This table holds an optional description of the pattern as a set of vectors.

**JOB_INDEX** - Index number used to link this record to other records for this job
**PTN_INDEX** - This is an index number used to link this to the PATTERN record
**CUT_INDEX** - This is an index number to relate the vector to the CUT record
**X_START** - Start co-ordinate of cut in X (always positive)
**Y_START** - Start co-ordinate of cut in Y (always positive)
**X_END** - End co-ordinate of cut in X (always positive)
**Y_END** - End co-ordinate of cut in Y (always positive)

The origin of the drawing is defined in the HEADER record. The x and y positions specify the distance to include the saw kerf, away from origin. So, a 10 mm trim would result in a vector at x=10, where if saw kerf is 4.5, then waste removed is 5.5. The position for cuts producing parts must include all saw kerfs. Note that unlike the CUT records where all dimensions are relative, in these records all dimensions are absolute values.

### ASCII & Database examples

*Notes in italics are for information only and not part of the file.*

```
VECTORS,1,1,1,0.0,0.0,3660.0,10.0
VECTORS,1,1,2,0.0,315.0,3660.0,315.0 - rip 300 wide strip -
absolute dimension
VECTORS,1,1,5,5.2,10.0,10.0,315.0
```

VECTORS TABLE

| JOB_INDEX | PTN_INDEX | CUT_INDEX | X_START | Y_START | X_END | Y_END |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 0.0 | 0.0 | 3660.0 | 10.0 |
| 1 | 1 | 2 | 0.0 | 315.0 | 3660.0 | 315.0 |
| 1 | 1 | 5 | 5.2 | 10.0 | 10.0 | 315.0 |

## 18. EXAMPLE OF PATTERN EXCHANGE STRUCTURE

The following example relates to example order batch A123 containing one job number 00011 comprising 6 sample patterns for which printouts are included. The patterns are designed to show a variety of different cutting situations in as few patterns as possible, and therefore are unusual and non-optimal rather than typical examples. Text in italics enclosed in square brackets[] is for information only. The fields have been spaced out for ease of reading.

*Notes in [] are for information only and not part of the file.*

Filename = A123.PTX

*[file starts with header record]*

```
HEADER,1,"This is a sample PTX file for batch A123",0,0,1
[version1,   millimetres,…     …top-to-bottom, fixed first trim]
JOBS,1,00010,"Example run 10",,,,1,1432,16.14

[data for parts – would also include data for label]
PARTS_REQ,1,1,P1,1, 1200.0, 725.0, 9,0,0,0,9
PARTS_REQ,1,2,P2,1, 1200.0, 725.0, 8,0,0,0,8
PARTS_REQ,1,3,P3,1, 1272.6, 600.0, 7,0,0,0,7
PARTS_REQ,1,4,P4,1,  790.0, 450.0, 4,0,0,0,4
PARTS_REQ,1,5,P5,1,  580.0, 200.0,20,2,0,0,20
PARTS_REQ,1,6,P6,2, 1400.0, 300.0, 5,0,0,0,5
PARTS_REQ,1,7,P7,2,  650.0, 275.0,14,0,0,0,14
PARTS_REQ,1,8,P8,2,  480.0, 230.0,20,3,0,0,23

PARTS_REQ,1,9,P9,1,  600.0, 200.0, 7,2,0,0,9
PARTS_REQ,1,10,P10,2,480.0, 400.0, 3,0,0,0,3

[data for board (sheet) sizes]
BOARDS,1,1,WHLAM15MM-1, 1, 2550.0,  1525.0, 436,  6, 2.540,0,Bin 1,
BOARDS,1,2,WHLAM15MM-2, 1, 3660.0,  1830.0, 178,  1, 2.430,0,Bin 1, WLAM15-1
BOARDS,1,3,MDF18-97,    2, 2440.0,  1220.0, 371,  3, 4.320,0,Bin 2,

[definition of materials]
MATERIALS,1,1,WHITE15, "White laminated chipboard 15mm", 15.0, 4,
4.8, 4.8, 10.0, 0.0, 10.0, 0.0, 5.0, 10.0, 10.0, 4, 1, 1, 0, WLAM15
MATERIALS,1,2,MDF18,   "Medium density fibreboard 18mm", 18.0, 3,
4.8, 4.8, 10.0, 0.0, 10.0, 0.0, 5.0, 10.0, 10.0, 4, 1, 1, 0,

[data for off-cut sizes]
OFFCUTS,1,1, X00010/0001,1,675.8,1830.0,1
OFFCUTS,1,2, X00010/0002,1,1140.4,450.0,1

[patterns]
PATTERNS,1,1,1,0,2,1,2,83,83   [Job 1, Pattern 1, Board 1, Long rip, Qty 2]
PATTERNS,1,2,1,1,3,1,3,128,128 [Job 1, Pattern 2, Board 1, Short rip, Qty 3]
```

```
PATTERNS,1,3,1,0,1,1,1,204,204 [Job 1, Pattern 3, Board 1, Long rip, Qty 1]
PATTERNS,1,4,2,2,1,1,1,414,414 [Job 1, Pattern 4, Board 2, Head cut, Qty 1]
PATTERNS,1,5,3,2,2,1,2,301,301 [Job 1, Pattern 5, Board 3, Head cut, Qty 2]
PATTERNS,1,6,3,2,1,1,1,302,302 [Job 1, Pattern 6, Board 3, Head cut, Qty 1]

[cuts]
CUTS, 1,   1,   1,   0, 0,2550.0,    0,   0,    0,MAIN [cut record for job 1, pattern 1]
CUTS, 1,   1,   2,   1,91,   5.2,    1,   0,    0
CUTS, 1,   1,   3,   2, 1, 725.0,    1,   0,    0,RIP               [1 rips at 725 mm]
CUTS, 1,   1,   4,   4,92,   5.2,    1,   0,    0             [cross cut trim 5.2 mm]
CUTS, 1,   1,   5,   5, 2,1200.0,    2,   1,    4         [xcut at 1200 producing part1]
CUTS, 1,   1,   6,   0,92, 130.4,    0,   0,    0       [falling waste length 130.4mm]
CUTS, 1,   1,   7,   3, 1, 725.0,    1,   0,    0,RIP               [1 rip at 725 mm]
CUTS, 1,   1,   8,   4,92,   5.2,    1,   0,    0             [cross cut trim 5.2 mm]
CUTS, 1,   1,   9,   5, 2,1200.0,    2,   1,    4   [crosscuts at 1200 producing part 1]
CUTS, 1,   1,  10,   0,92, 130.4,    0,   0,    0       [falling waste length 130.4mm]
CUTS, 1,   1,  11,   0,91,  55.4,    0,   0,    0         [falling waste width 55.4mm]

CUTS, 1,   2,   1,   0, 0,1525.0,    0,   0,    0,MAIN
CUTS, 1,   2,   2,   1,91,   5.2,    1,   0,    0                           [rip trim]
CUTS, 1,   2,   3,   2, 1,1200.0,    1,   0,    0,RIP
CUTS, 1,   2,   4,   4,92,   5.2,    1,   0,    0
CUTS, 1,   2,   5,   5, 2, 725.0,    1,   1,    1      [xcut at 725 producing part 1 x 1…
CUTS, 1,   2,   6,   0, 2,   0.0,    0,   2,    2                    … and part 2 x 2]
CUTS, 1,   2,   7,   6, 2, 725.0,    1,   2,    3      [xcut at 725 producing part 1 x 3]
CUTS, 1,   2,   8,   0,92,  55.4,    0,   0,    0
CUTS, 1,   2,   9,   3, 1,1272.6,    1,   0,    0,RIP
CUTS, 1,   2,  10,   7,92,   5.2,    1,   0,    0
CUTS, 1,   2,  11,   8, 2, 600.0,    1,   3,    3
CUTS, 1,   2,  12,   9, 2, 725.0,    1,   0,    0
CUTS, 1,   2,  13,  10,93,   5.2,    1,   0,    0
CUTS, 1,   2,  14,  11, 3,1200.0,    1,   2,    3      [recut to 1200mm producing part 2]
CUTS, 1,   2,  15,   0,93,  57.8,    0,   0,    0
CUTS, 1,   2,  16,   0,92, 180.4,    0,   0,    0
CUTS, 1,   2,  17,   0,91,  57.8,    0,   0,    0

CUTS, 1,   3,   1,   0, 0,2550.0,    0,   0,    0,MAIN
CUTS, 1,   3,   2,   1,91,   5.2,    1,   0,    0                           [rip trim]
CUTS, 1,   3,   3,   2, 1, 600.0,    1,   0,    0,RIP
CUTS, 1,   3,   4,   6, 2,1272.6,    1,   3,    1
CUTS, 1,   3,   5,   0, 2,1272.6,    0,   3,    1
CUTS, 1,   3,   6,   3, 1, 450.0,    1,   0,    0,RIP
CUTS, 1,   3,   7,   7,92,   5.2,    1,   0,    0                          [xcut trim]
CUTS, 1,   3,   8,   8, 2, 790.0,    1,   4,    1      [cross cut producing part 4 x 1]
CUTS, 1,   3,   9,   9, 2, 600.0,    1,   0,    0
CUTS, 1,   3,  10,  10,93,   5.2,    1,   0,    0                        [recut trim]
CUTS, 1,   3,  11,  11, 3, 200.0,    1,   9,    1
CUTS, 1,   3,  12,  12, 3, 200.0,    1,   0,    0
CUTS, 1,   3,  13,  13,94,   5.2,    1,   0,    0                [4th phase recut trim]
CUTS, 1,   3,  14,  14, 4, 580.0,    1,   5,    1      [4th phase cut to produce part 5]
CUTS, 1,   3,  15,   0,94,   5.2,    0,   0,    0
CUTS, 1,   3,  16,   0,93,  30.4,    0,   0,    0
CUTS, 1,   3,  17,   0, 2,1140.4,    0,  X2,    1        [cut 9 also produces off-cut 2]
CUTS, 1,   3,  18,   4, 1, 200.0,    1,   0,    0,RIP
CUTS, 1,   3,  19,  15,92,   5.2,    1,   0,    0                           [xcut trim]
CUTS, 1,   3,  20,  16, 2, 580.0,    4,   5,    4
CUTS, 1,   3,  21,   0,92, 200.8,    0,   0,    0
CUTS, 1,   3,  22,   5, 1, 200.0,    1,   0,    0,RIP
CUTS, 1,   3,  23,  15,92,   5.2,    1,   0,    0
```

```
CUTS, 1,   3,  24,  16, 2, 580.0,    4,   5,    4
CUTS, 1,   3,  25,   0,92, 200.8,    0,   0,    0
CUTS, 1,   3,  26,   0,91,  45.8,    0,   0,    0

CUTS, 1,   4,   1,   1, 0,2979.4,    1,   0,    0,MAIN
CUTS, 1,   4,   2,   2,91,   5.2,    1,   0,    0                              [rip trim]
CUTS, 1,   4,   3,   3, 1, 600.0,    1,   0,    0,RIP
CUTS, 1,   4,   4,   8,92,   5.2,    1,   0,    0                             [xcut trim]
CUTS, 1,   4,   5,   9, 2,1272.6,    2,   3,    2          [2 xcuts producing part 3 x 2]
CUTS, 1,   4,   6,  11, 2, 200.0,    2,   9,    2          [2 xcuts producing part 9 x 2]
CUTS, 1,   4,   7,   0,92,   5.0,    0,   0,    0
CUTS, 1,   4,   8,   4, 1, 450.0,    1,   0,    0,RIP
CUTS, 1,   4,   9,  13,92,   5.2,    1,   0,    0                             [xcut trim]
CUTS, 1,   4,  10,  14, 2, 790.0,    3,   4,    3          [3 xcuts producing part 4 x 3]
CUTS, 1,   4,  11,  17, 2, 580.0,    1,   0,    0
CUTS, 1,   4,  12,  18,93,   5.2,    1,   0,    0                            [recut trim]
CUTS, 1,   4,  13,  19, 3, 200.0,    2,   5,    2    [3rd phase cuts producing part 5 x 2]
CUTS, 1,   4,  14,   0,93,  30.4,    0,   0,    0
CUTS, 1,   4,  15,   0,92,   0.2,    0,   0,    0
CUTS, 1,   4,  16,   5, 1, 200.0,    1,   0,    0,RIP   [first of 3 strips xcut together]
CUTS, 1,   4,  17,  21,92,   5.2,    1,   0,    0                             [xcut trim]
CUTS, 1,   4,  18,  22, 2, 580.0,    3,   5,    3          [3 xcuts producing part 5 x 3]
CUTS, 1,   4,  19,  25, 2, 600.0,    2,   9,    2         [2 xcuts producing part 9 x 2]
CUTS, 1,   4,  20,   0,92,   5.4,    0,   0,    0
CUTS, 1,   4,  21,   6, 1, 200.0,    1,   0,    0,RIP
CUTS, 1,   4,  22,  21,92,   5.2,    1,   0,    0
CUTS, 1,   4,  23,  22, 2, 580.0,    3,   5,    3 [xcuts with same sequence as record 18]
CUTS, 1,   4,  24,  25, 2, 600.0,    2,   9,    2 [xcuts with same sequence as record 19]
CUTS, 1,   4,  25,   0,92,   5.4,    0,   0,    0
CUTS, 1,   4,  26,   7, 1, 200.0,    1,   0,    0,RIP
CUTS, 1,   4,  27,  21,92,   5.2,    1,   0,    0
CUTS, 1,   4,  28,  22, 2, 580.0,    3,   5,    3 [xcuts with same sequence as record 18]
CUTS, 1,   4,  29,  25, 2, 600.0,    2,   9,    2 [xcuts with same sequence as record 18]
CUTS, 1,   4,  30,   0,92,   5.4,    0,   0,    0
CUTS, 1,   4,  31,   0,91, 146.0,    0,   0,    0
CUTS, 1,   4,  32,   0, 0, 675.8,    0,  X1,    1,HEAD                [offcut produced]

CUTS, 1,   5,   1,   1, 0,1415.0,    1,   0,    0,MAIN              [head cut at 1415.0]
CUTS, 1,   5,   2,   2,91,   5.2,    1,   0,    0                              [rip trim]
CUTS, 1,   5,   3,   3, 1, 300.0,    1,   0,    0,RIP   [first of 2 strips xcut together]
CUTS, 1,   5,   4,   7,92,   5.2,    1,   0,    0                             [xcut trim]
CUTS, 1,   5,   5,   8, 2,1400.0,    1,   6,    2
CUTS, 1,   5,   6,   0,92,   0.2,    0,   0,    0
CUTS, 1,   5,   7,   4, 1, 300.0,    1,   0,    0,RIP
CUTS, 1,   5,   8,   7,92,   5.2,    1,   0,    0                             [xcut trim]
CUTS, 1,   5,   9,   8, 2,1400.0,    1,   6,    2
CUTS, 1,   5,  10,   0,92,   0.2,    0,   0,    0
CUTS, 1,   5,  11,   5, 1, 275.0,    1,   0,    0,RIP   [first of 2 strips xcut together]
CUTS, 1,   5,  12,   9,92,   5.2,    1,   0,    0                             [xcut trim]
CUTS, 1,   5,  13,  10, 2, 650.0,    2,   7,    4
CUTS, 1,   5,  14,   0,92,  95.4,    0,   0,    0
CUTS, 1,   5,  15,   6, 1, 275.0,    1,   0,    0,RIP
CUTS, 1,   5,  16,   9,92,   5.2,    1,   0,    0                             [xcut trim]
CUTS, 1,   5,  17,  10, 2, 650.0,    2,   7,    4
CUTS, 1,   5,  18,   0,92,  95.4,    0,   0,    0
CUTS, 1,   5,  19,   0,91,  40.8,    0,   0,    0
CUTS, 1,   5,  20,   0, 0,1020.2,    0,   0,    0,HEAD           [start of head section]
CUTS, 1,   5,  21,  12,91,   5.2,    1,   0,    0                              [rip trim]
CUTS, 1,   5,  22,  13, 1, 650.0,    1,   0,    0,RIP
```

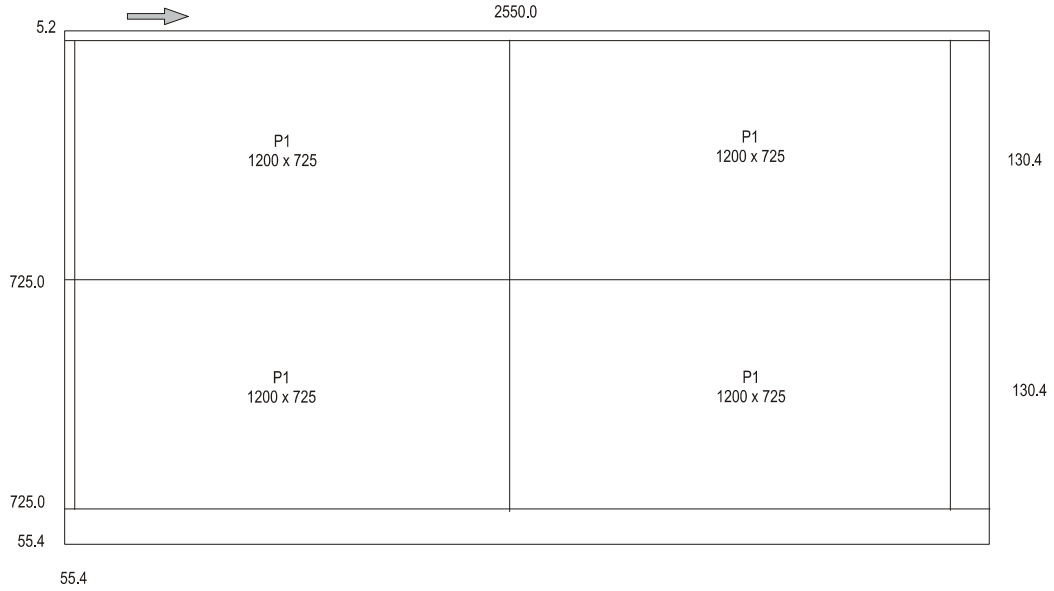
```
CUTS, 1,   5,  23,  16,92,   0.2,    1,   0,    0          [xcut trim…head retrim - kerf]
CUTS, 1,   5,  24,  17, 2, 275.0,    3,   7,    6
CUTS, 1,   5,  25,   0,92, 175.8,    0,   0,    0
CUTS, 1,   5,  26,  14, 1, 230.0,    1,   0,    0,RIP
CUTS, 1,   5,  27,  20,92,   0.2,    1,   0,    0
CUTS, 1,   5,  28,  21, 2, 480.0,    2,   8,    4
CUTS, 1,   5,  29,   0,92,  45.6,    0,   0,    0
CUTS, 1,   5,  30,  15, 1, 230.0,    1,   0,    0,RIP
CUTS, 1,   5,  31,  20,92,   0.2,    1,   0,    0
CUTS, 1,   5,  32,  21, 2, 480.0,    2,   8,    4
CUTS, 1,   5,  33,   0,92,  45.6,    0,   0,    0
CUTS, 1,   5,  34,   0,91,  85.6,    0,   0,    0

CUTS, 1,   6,   1,   1, 0,1464.6,    1,   0,    0,MAIN             [head cut at 1464.6]
CUTS, 1,   6,   2,   3,91,   5.2,    1,   0,    0                            [rip trim]
CUTS, 1,   6,   3,   4, 1, 300.0,    1,   0,    0,RIP               [rip main 300 x 1]
CUTS, 1,   6,   4,   8,92,   5.2,    1,   0,    0                          [xcut trim]
CUTS, 1,   6,   5,   9, 2,1400.0,    1,   6,    1
CUTS, 1,   6,   6,   0,92,  49.8,    0,   0,    0
CUTS, 1,   6,   7,   5, 1, 400.0,    1,   0,    0,RIP  [first of 3 strips xcut together]
CUTS, 1,   6,   8,  10,92,   5.2,    1,   0,    0                          [xcut trim]
CUTS, 1,   6,   9,  11, 2, 480.0,    3,  10,    3
CUTS, 1,   6,  10,   0,92,   0.2,    0,   0,    0
CUTS, 1,   6,  11,   6, 1, 230.0,    1,   0,    0,RIP
CUTS, 1,   6,  12,  10,92,   5.2,    1,   0,    0
CUTS, 1,   6,  13,  11, 2, 480.0,    3,   8,    3
CUTS, 1,   6,  14,   0,92,   0.2,    0,   0,    0
CUTS, 1,   6,  15,   7, 1, 230.0,    1,   0,    0,RIP
CUTS, 1,   6,  16,  10,92,   5.2,    1,   0,    0
CUTS, 1,   6,  17,  11, 2, 480.0,    3,   8,    3
CUTS, 1,   6,  18,   0,92,   0.2,    0,   0,    0
CUTS, 1,   6,  19,   0,91,  30.8,    0,   0,    0
CUTS, 1,   6,  20,   2, 0, 480.0,    1,   0,    0,HEAD                  [head section]
CUTS, 1,   6,  21,  14,91,   5.2,    1,   0,    0                           [rip trim]
CUTS, 1,   6,  22,  15, 1, 230.0,    5,   8,    5,RIP
CUTS, 1,   6,  23,   0,91,  36.0,    0,   0,    0
CUTS, 1,   6,  24,   0, 0, 485.8,    0,   0,    0,HEAD
CUTS, 1,   6,  25,  20,91,   5.2,    1,   0,    0
CUTS, 1,   6,  26,  21, 1, 480.0,    1,   0,    0,RIP   [first of 2 strips xcut together]
CUTS, 1,   6,  27,  23, 2, 230.0,    2,   8,    2
CUTS, 1,   6,  28,   0,92,  16.2,    0,   0,    0
CUTS, 1,   6,  29,  22, 1, 480.0,    1,   0,    0,RIP  [second of 2 strips xcut together]
CUTS, 1,   6,  30,  23, 2, 230.0,    2,   8,    2
CUTS, 1,   6,  31,   0,92,  16.2,    0,   0,    0
CUTS, 1,   6,  32,   0,91, 240.4,    0,   0,    0
```

## 19. Examples

### PATTERN 1

Board: WHLAM-15MM-1 2550 x 1525 x 15.0 Material: WHITE15 No. of Boards: 2




Saw kerf: 4.8 Book Height: 2 Cycles: 1
Rear trim (inc kerf) Rip: 10.0 Cross: 10.0 Retrim (inc kerf): 5.0

| No | Part | Length | Width | Total Prod | Cut so Far | Qty Brd | Qty Ptn | Still To cut |
|---|---|---|---|---|---|---|---|---|
| 1. | P1 | 1200.0 | 725.0 | 9 | NIL | 4 | 8 | 1 |

ADR/PRG: [41]

| Cut | Size | Qty | Part | Cut | Size | Qty | Part |
|---|---|---|---|---|---|---|---|
| MAIN | | | | Trim | 5.2 | 1 | |
| Trim | 5.2 | 1 | | Cross cut | 1200.0 | 2 | P1 |
| Rip | 725.0 | 2 | | | | | |

```
CUTS, 1,   1,   1,   0, 0,2550.0,    0,   0,    0,MAIN [cut record for job 1, pattern 1]
CUTS, 1,   1,   2,   1,91,   5.2,    1,   0,    0
CUTS, 1,   1,   3,   2, 1, 725.0,    1,   0,    0,RIP              [1 rips at 725 mm]
CUTS, 1,   1,   4,   4,92,   5.2,    1,   0,    0             [cross cut trim 5.2 mm]
CUTS, 1,   1,   5,   5, 2,1200.0,    2,   1,    4        [xcut at 1200 producing part1]
CUTS, 1,   1,   6,   0,92, 130.4,    0,   0,    0       [falling waste length 130.4mm]
CUTS, 1,   1,   7,   3, 1, 725.0,    1,   0,    0,RIP              [1 rip at 725 mm]
CUTS, 1,   1,   8,   4,92,   5.2,    1,   0,    0             [cross cut trim 5.2 mm]
CUTS, 1,   1,   9,   5, 2,1200.0,    2,   1,    4   [crosscuts at 1200 producing part 1]
CUTS, 1,   1,  10,   0,92, 130.4,    0,   0,    0       [falling waste length 130.4mm]
```

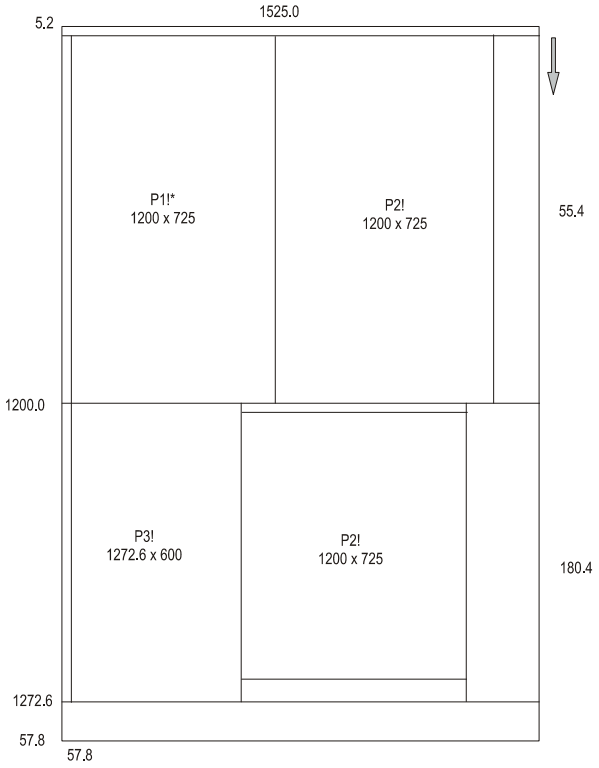
**CUTS, 1, 1, 11, 0,91, 55.4, 0, 0, 0** *[falling waste width 55.4mm]*

## PATTERN 2

Material: WHITE15

Board: WHLAM15MM-1 1525 x 2550 x 15.0

No. of Boards: 3




Saw kerf: 4.8 Book Height: 3 Cycles: 1
Rear trim (inc kerf) Rip: 10.0 Cross: 10.0 Retrim (inc kerf): 5.0

| No | Part | Length | Width | Total Prod | Cut so Far | Qty Brd | Qty Ptn | Still To cut |
|---|---|---|---|---|---|---|---|---|
| 1. | P1 | 1200.0 | 725.0 | 9 | 8 | - | 1 | NIL |
| 2. | P2 | 1200.0 | 725.0 | 8 | NIL | - | 8 | NIL |
| 3. | P3 | 1250.0 | 600.0 | 7 | NIL | 1 | 3 | 4 |

ADR/PRG: [41]

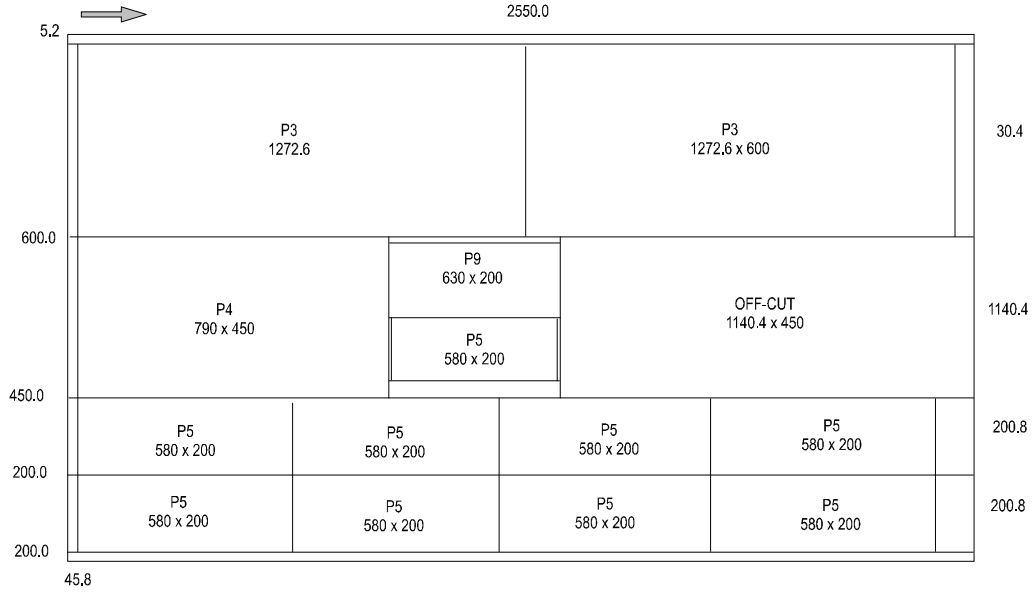
| Cut | Size | Qty | Part | Cut | Size | Qty | Part |
|---|---|---|---|---|---|---|---|
| MAIN | | | | Rip | 1272.6 | 1 | |
| Trim | 5.2 | 1 | | Trim | 5.2 | 1 | |
| Rip | 1200.0 | 1 | | Cross cut | 600.0 | 1 | P3 |
| Trim | 5.2 | 1 | | Cross cut | 725.0 | 1 | |
| Cross cut | 725.0 | 1 | P1 | Recut | 5.2 | 1 | |

```
  Cross cut  725.0   1  P2       Recut    1200.0   1  P2

CUTS, 1,   2,   1,   0, 0,1525.0,    0,   0,    0,MAIN
CUTS, 1,   2,   2,   1,91,   5.2,    1,   0,    0                          [rip trim]
CUTS, 1,   2,   3,   2, 1,1200.0,    1,   0,    0,RIP
CUTS, 1,   2,   4,   4,92,   5.2,    1,   0,    0
CUTS, 1,   2,   5,   5, 2, 725.0,    1,   1,    1      [xcut at 725 producing part 1 x 1…
CUTS, 1,   2,   6,   0, 2,   0.0,    0,   2,    2                        … and part 2 x 2]
CUTS, 1,   2,   7,   6, 2, 725.0,    1,   2,    3      [xcut at 725 producing part 1 x 3]
CUTS, 1,   2,   8,   0,92,  55.4,    0,   0,    0
CUTS, 1,   2,   9,   3, 1,1272.6,    1,   0,    0,RIP
CUTS, 1,   2,  10,   7,92,   5.2,    1,   0,    0
CUTS, 1,   2,  11,   8, 2, 600.0,    1,   3,    3
CUTS, 1,   2,  12,   9, 2, 725.0,    1,   0,    0
CUTS, 1,   2,  13,  10,93,   5.2,    1,   0,    0
CUTS, 1,   2,  14,  11, 3,1200.0,    1,   2,    3      [recut to 1200mm producing part 2]
CUTS, 1,   2,  15,   0,93,  57.8,    0,   0,    0
CUTS, 1,   2,  16,   0,92, 180.4,    0,   0,    0
CUTS, 1,   2,  17,   0,91,  57.8,    0,   0,    0
```

## PATTERN 3

Board: WHLAM15MM-1 2550 x 1525 x 15.0 Material: WHITE15 No. of Boards: 1




Saw kerf: 4.8 Book Height: 1 Cycles: 1
Rear trim (inc kerf) Rip: 10.0 Cross: 10.0 Retrim (inc kerf): 5.0

| No | Part | Length | Width | Total Prod | Cut so Far | Qty Brd | Qty Ptn | Still To cut |
|---|---|---|---|---|---|---|---|---|
| 3. | P3 | 1272.6 | 600.0 | 7 | 3 | 2 | 2 | 2 |
| 4. | P4 | 790.0 | 450.0 | 4 | NIL | 1 | 1 | 3 |
| 5. | P5 | 580.0 | 200.0 | 20 | NIL | 9 | 9 | 11 |
| 9. | P9 | 600.0 | 200.0 | 7 | NIL | 1 | 1 | 8 |

ADR/PRG: [41]

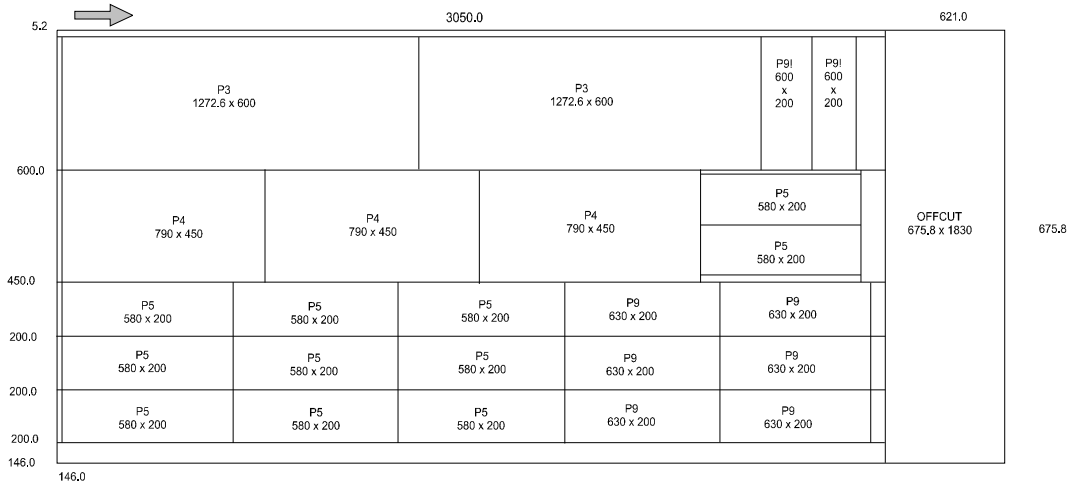
| Cut | Size | Qty | Part | Cut | Size | Qty | Part |
|---|---|---|---|---|---|---|---|
| MAIN | | | | Recut | 5.2 | 1 | |
| Trim | 5.2 | 1 | | Recut | 200.0 | 1 | P9 |
| Rip | 600.0 | 1 | | Recut | 200.0 | 1 | |
| Cross cut | 1250.0 | 1 | P3 | Recut | 5.2 | 1 | |
| | | | P3 | Recut | 580.0 | 1 | P5 |
| Rip | 450.0 | 1 | | Rip | 200.0 | 2 | |
| Trim | 5.2 | 1 | | Trim | 5.2 | 1 | |
| Cross cut | 790.0 | 1 | P4 | Cross cut | 580.0 | 4 | P5 |
| Cross cut | 630.0 | 1 | | | | | |

```
CUTS, 1,   3,   1,   0, 0,2550.0,    0,   0,    0,MAIN
CUTS, 1,   3,   2,   1,91,   5.2,    1,   0,    0                    [rip trim]
CUTS, 1,   3,   3,   2, 1, 600.0,    1,   0,    0,RIP
CUTS, 1,   3,   4,   6, 2,1272.6,    1,   3,    1
CUTS, 1,   3,   5,   0, 2,1272.6,    0,   3,    1
```

```
CUTS, 1,   3,   6,   3, 1, 450.0,    1,   0,    0,RIP
CUTS, 1,   3,   7,   7,92,   5.2,    1,   0,    0                          [xcut trim]
CUTS, 1,   3,   8,   8, 2, 790.0,    1,   4,    1      [cross cut producing part 4 x 1]
CUTS, 1,   3,   9,   9, 2, 600.0,    1,   0,    0
CUTS, 1,   3,  10,  10,93,   5.2,    1,   0,    0                        [recut trim]
CUTS, 1,   3,  11,  11, 3, 200.0,    1,   9,    1
CUTS, 1,   3,  12,  12, 3, 200.0,    1,   0,    0
CUTS, 1,   3,  13,  13,94,   5.2,    1,   0,    0               [4th phase recut trim]
CUTS, 1,   3,  14,  14, 4, 580.0,    1,   5,    1      [4th phase cut to produce part 5]
CUTS, 1,   3,  15,   0,94,   5.2,    0,   0,    0
CUTS, 1,   3,  16,   0,93,  30.4,    0,   0,    0
CUTS, 1,   3,  17,   0, 2,1140.4,    0,  X2,    1        [cut 9 also produces off-cut 2]
CUTS, 1,   3,  18,   4, 1, 200.0,    1,   0,    0,RIP
CUTS, 1,   3,  19,  15,92,   5.2,    1,   0,    0                          [xcut trim]
CUTS, 1,   3,  20,  16, 2, 580.0,    4,   5,    4
CUTS, 1,   3,  21,   0,92, 200.8,    0,   0,    0
CUTS, 1,   3,  22,   5, 1, 200.0,    1,   0,    0,RIP
CUTS, 1,   3,  23,  15,92,   5.2,    1,   0,    0
CUTS, 1,   3,  24,  16, 2, 580.0,    4,   5,    4
CUTS, 1,   3,  25,   0,92, 200.8,    0,   0,    0
CUTS, 1,   3,  26,   0,91,  45.8,    0,   0,    0
```

**PATTERN 4**

Board: WHLAM15MM-1 3660 x1830 x 15.0 Material: WHITE15 No. of Boards: 1




Saw kerf: 4.8 Book Height: 1 Cycles: 1
Rear trim (inc kerf) Rip: 10.0 Cross: 10.0 Retrim (inc kerf): 5.0

| No | Part | Length | Width | Total Prod | Cut so Far | Qty Brd | Qty Ptn | Still To cut |
|---|---|---|---|---|---|---|---|---|
| 3. | P3 | 1276.6 | 600.0 | 7 | 5 | 2 | 2 | NIL |
| 4. | P4 | 790.0 | 450.0 | 4 | 1 | 3 | 3 | NIL |
| 5. | P5 | 580.0 | 200.0 | 20 | 9 | 11 | 11 | NIL |
| 9. | P9 | 600.0 | 200.0 | 7 | 1 | 8 | 8 | NIL |

ADR/PRG: [41]

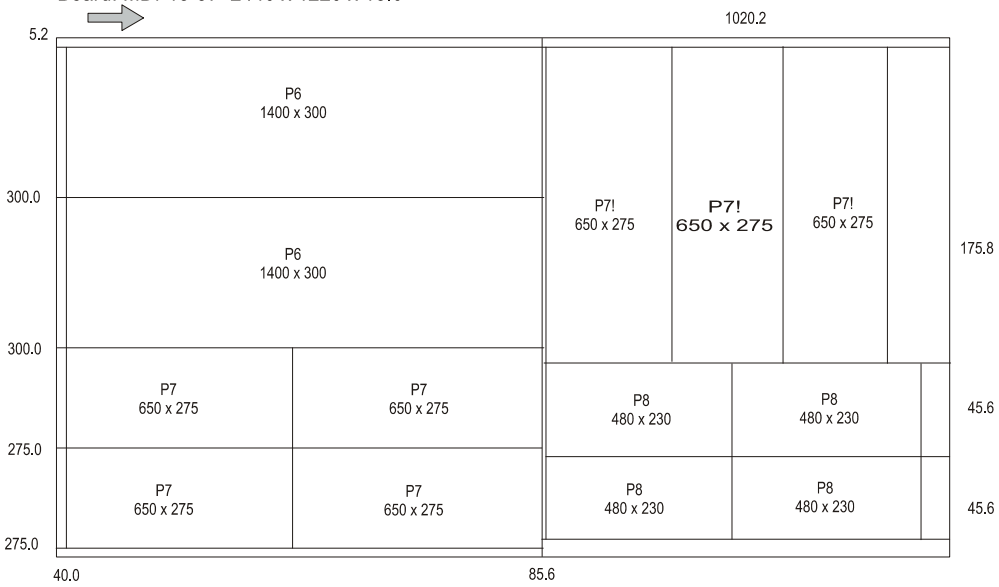
| Cut | Size | Qty | Part | Cut | Size | Qty | Part |
|---|---|---|---|---|---|---|---|
| Head cut | 2979.4 | 1 | | Cross cut | 790.0 | 3 | P4 |
| MAIN | | | | Cross cut | 580.0 | 1 | |
| Trim | 5.2 | 1 | | Recut | 5.2 | 1 | |
| Rip | 600.0 | 1 | | Recut | 200.0 | 2 | P5 |
| Trim | 5.2 | 1 | | Rip | 200.0 | 3 | |
| Cross cut | 1276.2 | 2 | P3 | Trim | 5.2 | 1 | |
| Cross cut | 200.0 | 2 | P9 | Cross cut | 580.0 | 3 | P5 |
| Rip | 450.0 | 1 | | Cross cut | 630.0 | 2 | P9 |
| Trim | 5.2 | 1 | | | | | |

```
CUTS, 1,   4,   1,   1, 0,2979.4,    1,   0,    0,MAIN
CUTS, 1,   4,   2,   2,91,   5.2,    1,   0,    0                          [rip trim]
CUTS, 1,   4,   3,   3, 1, 600.0,    1,   0,    0,RIP
CUTS, 1,   4,   4,   8,92,   5.2,    1,   0,    0                         [xcut trim]
CUTS, 1,   4,   5,   9, 2,1272.6,    2,   3,    2          [2 xcuts producing part 3 x 2]
CUTS, 1,   4,   6,  11, 2, 200.0,    2,   9,    2          [2 xcuts producing part 9 x 2]
CUTS, 1,   4,   7,   0,92,   5.0,    0,   0,    0
CUTS, 1,   4,   8,   4, 1, 450.0,    1,   0,    0,RIP
```

```
CUTS, 1,   4,   9,  13,92,   5.2,    1,   0,    0                              [xcut trim]
CUTS, 1,   4,  10,  14, 2, 790.0,    3,   4,    3          [3 xcuts producing part 4 x 3]
CUTS, 1,   4,  11,  17, 2, 580.0,    1,   0,    0
CUTS, 1,   4,  12,  18,93,   5.2,    1,   0,    0                             [recut trim]
CUTS, 1,   4,  13,  19, 3, 200.0,    2,   5,    2    [3rd phase cuts producing part 5 x 2]
CUTS, 1,   4,  14,   0,93,  30.4,    0,   0,    0
CUTS, 1,   4,  15,   0,92,   0.2,    0,   0,    0
CUTS, 1,   4,  16,   5, 1, 200.0,    1,   0,    0,RIP   [first of 3 strips xcut together]
CUTS, 1,   4,  17,  21,92,   5.2,    1,   0,    0                              [xcut trim]
CUTS, 1,   4,  18,  22, 2, 580.0,    3,   5,    3          [3 xcuts producing part 5 x 3]
CUTS, 1,   4,  19,  25, 2, 600.0,    2,   9,    2         [2 xcuts producing part 9 x 2]
CUTS, 1,   4,  20,   0,92,   5.4,    0,   0,    0
CUTS, 1,   4,  21,   6, 1, 200.0,    1,   0,    0,RIP
CUTS, 1,   4,  22,  21,92,   5.2,    1,   0,    0
CUTS, 1,   4,  23,  22, 2, 580.0,    3,   5,    3 [xcuts with same sequence as record 18]
CUTS, 1,   4,  24,  25, 2, 600.0,    2,   9,    2 [xcuts with same sequence as record 19]
CUTS, 1,   4,  25,   0,92,   5.4,    0,   0,    0
CUTS, 1,   4,  26,   7, 1, 200.0,    1,   0,    0,RIP
CUTS, 1,   4,  27,  21,92,   5.2,    1,   0,    0
CUTS, 1,   4,  28,  22, 2, 580.0,    3,   5,    3 [xcuts with same sequence as record 18]
CUTS, 1,   4,  29,  25, 2, 600.0,    2,   9,    2 [xcuts with same sequence as record 18]
CUTS, 1,   4,  30,   0,92,   5.4,    0,   0,    0
CUTS, 1,   4,  31,   0,91, 146.0,    0,   0,    0
CUTS, 1,   4,  32,   0, 0, 675.8,    0,  X1,    1,HEAD                [offcut produced]
```

## PATTERN 5

Board: MDF18-97 2440 x 1220 x 18.0 Material: MDF18 No. of Boards: 2




Saw kerf: 4.8 Book Height: 2 Cycles: 1
Rear trim (inc kerf) Rip: 10.0 Cross: 10.0 Retrim (inc kerf): 5.0

| No | Part | Length | Width | Total Prod | Cut so Far | Qty Brd | Qty Ptn | Still To cut |
|---|---|---|---|---|---|---|---|---|
| 6. | P6 | 1400.0 | 300.0 | 5 | NIL | 2 | 4 | 1 |
| 7. | P7 | 650.0 | 275.0 | 14 | NIL | 7 | 14 | NIL |
| 8. | P8 | 480.0 | 230.0 | 23 | NIL | 4 | 8 | 15 |

ADR/PRG: [41]

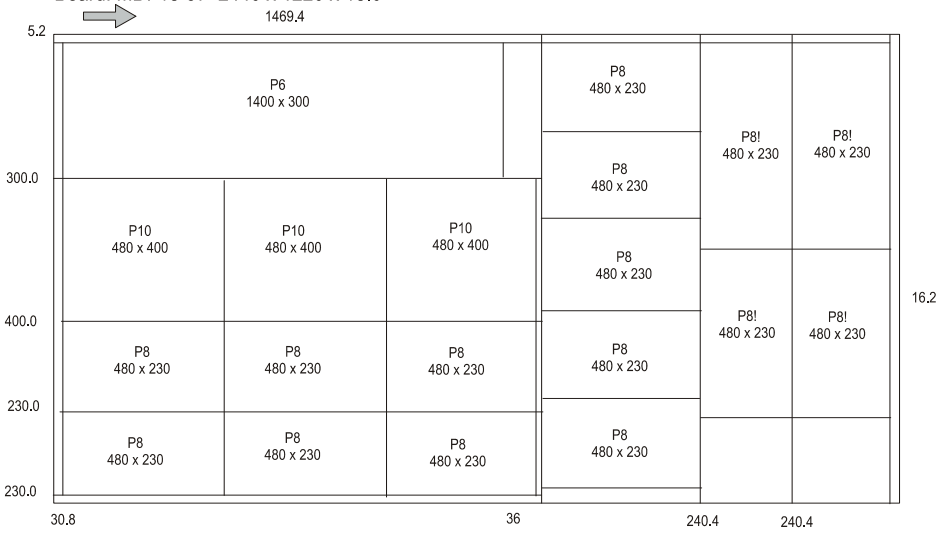
| Cut | Size | Qty | Part | Cut | Size | Qty | Part |
|---|---|---|---|---|---|---|---|
| Head cut | 1415.0 | 1 | | HEAD 1 | | | |
| MAIN | | | | Trim | 5.2 | 1 | |
| Trim | 5.2 | 1 | | Rip | 650.0 | 1 | |
| Rip | 300.0 | 2 | | Trim | 0.2 | 1 | |
| Trim | 5.2 | 1 | | Cross cut | 275.0 | 3 | P7 |
| Cross cut | 1400.0 | 1 | P6 | Rip | 230.0 | 2 | |
| Rip | 275.0 | 2 | | Trim | 0.2 | 1 | |
| Trim | 5.2 | 1 | | Cross cut | 480.0 | 2 | P8 |
| Cross cut | 650.0 | 2 | P7 | | | | |

```
CUTS, 1,   5,   1,   1, 0,1415.0,    1,   0,    0,MAIN              [head cut at 1415.0]
CUTS, 1,   5,   2,   2,91,   5.2,    1,   0,    0                          [rip trim]
CUTS, 1,   5,   3,   3, 1, 300.0,    1,   0,    0,RIP   [first of 2 strips xcut together]
CUTS, 1,   5,   4,   7,92,   5.2,    1,   0,    0                         [xcut trim]
CUTS, 1,   5,   5,   8, 2,1400.0,    1,   6,    2
CUTS, 1,   5,   6,   0,92,   0.2,    0,   0,    0
CUTS, 1,   5,   7,   4, 1, 300.0,    1,   0,    0,RIP
CUTS, 1,   5,   8,   7,92,   5.2,    1,   0,    0                         [xcut trim]
```

```
CUTS, 1,   5,   9,   8, 2,1400.0,    1,   6,    2
CUTS, 1,   5,  10,   0,92,   0.2,    0,   0,    0
CUTS, 1,   5,  11,   5, 1, 275.0,    1,   0,    0,RIP   [first of 2 strips xcut together]
CUTS, 1,   5,  12,   9,92,   5.2,    1,   0,    0                              [xcut trim]
CUTS, 1,   5,  13,  10, 2, 650.0,    2,   7,    4
CUTS, 1,   5,  14,   0,92,  95.4,    0,   0,    0
CUTS, 1,   5,  15,   6, 1, 275.0,    1,   0,    0,RIP
CUTS, 1,   5,  16,   9,92,   5.2,    1,   0,    0                              [xcut trim]
CUTS, 1,   5,  17,  10, 2, 650.0,    2,   7,    4
CUTS, 1,   5,  18,   0,92,  95.4,    0,   0,    0
CUTS, 1,   5,  19,   0,91,  40.8,    0,   0,    0
CUTS, 1,   5,  20,   0, 0,1020.2,    0,   0,    0,HEAD            [start of head section]
CUTS, 1,   5,  21,  12,91,   5.2,    1,   0,    0                               [rip trim]
CUTS, 1,   5,  22,  13, 1, 650.0,    1,   0,    0,RIP
CUTS, 1,   5,  23,  16,92,   0.2,    1,   0,    0          [xcut trim…head retrim - kerf]
CUTS, 1,   5,  24,  17, 2, 275.0,    3,   7,    6
CUTS, 1,   5,  25,   0,92, 175.8,    0,   0,    0
CUTS, 1,   5,  26,  14, 1, 230.0,    1,   0,    0,RIP
CUTS, 1,   5,  27,  20,92,   0.2,    1,   0,    0
CUTS, 1,   5,  28,  21, 2, 480.0,    2,   8,    4
CUTS, 1,   5,  29,   0,92,  45.6,    0,   0,    0
CUTS, 1,   5,  30,  15, 1, 230.0,    1,   0,    0,RIP
CUTS, 1,   5,  31,  20,92,   0.2,    1,   0,    0
CUTS, 1,   5,  32,  21, 2, 480.0,    2,   8,    4
CUTS, 1,   5,  33,   0,92,  45.6,    0,   0,    0
CUTS, 1,   5,  34,   0,91,  85.6,    0,   0,    0
```

## PATTERN 6

Board: MDF18-97 2440 x 1220 x 18.0 Material: MDF18 No. of Boards: 1




Saw kerf: 4.8 Book Height: 1 Cycles: 1
Rear trim (inc kerf) Rip: 10.0 Cross: 10.0 Retrim (inc kerf): 5.0

| No | Part | Length | Width | Total Prod | Cut so Far | Qty Brd | Qty Ptn | Still To cut |
|---|---|---|---|---|---|---|---|---|
| 6. | P6 | 1400.0 | 300.0 | 5 | 4 | 1 | 1 | NIL |
| 8. | P8 | 480.0 | 230.0 | 23 | 8 | 15 | 15 | NIL |
| 10. | P10 | 480.0 | 400.0 | 3 | NIL | 3 | 3 | NIL |

ADR/PRG: [41]

| Cut | Size | Qty | Part | Cut | Size | Qty | Part |
|---|---|---|---|---|---|---|---|
| Head cut | 1464.6 | 1 | | Cross cut | 480.0 | 3 | P8 |
| MAIN | | | | Head cut | 480.0 | 1 | |
| Trim | 5.2 | 1 | | HEAD 1 | | | |
| Rip | 300.0 | 1 | | Trim | 5.2 | 1 | |
| Trim | 5.2 | 1 | | Rip | 230.0 | 5 | P8 |
| Cross cut | 1400.0 | 1 | P6 | HEAD 2 | | | |
| Rip | 400.0 | 1 | | Trim | 5.2 | 1 | |
| Trim | 5.2 | 1 | | Rip | 480.0 | 2 | |
| Cross cut | 480.0 | 3 | P10 | Cross cut | 230.0 | 2 | P8 |

*Rip 230.0 2*
Trim 5.2 1

**CUTS, 1, 6, 1, 1, 0,1464.6, 1, 0, 0,MAIN** *[head cut at 1464.6]*
**CUTS, 1, 6, 2, 3,91, 5.2, 1, 0, 0** *[rip trim]*
**CUTS, 1, 6, 3, 4, 1, 300.0, 1, 0, 0,RIP** *[rip main 300 x 1]*
**CUTS, 1, 6, 4, 8,92, 5.2, 1, 0, 0** *[xcut trim]*
**CUTS, 1, 6, 5, 9, 2,1400.0, 1, 6, 1**
**CUTS, 1, 6, 6, 0,92, 49.8, 0, 0, 0**

```
CUTS, 1,   6,   7,   5, 1, 400.0,    1,   0,    0,RIP  [first of 3 strips xcut together]
CUTS, 1,   6,   8,  10,92,   5.2,    1,   0,    0                            [xcut trim]
CUTS, 1,   6,   9,  11, 2, 480.0,    3,  10,    3
CUTS, 1,   6,  10,   0,92,   0.2,    0,   0,    0
CUTS, 1,   6,  11,   6, 1, 230.0,    1,   0,    0,RIP
CUTS, 1,   6,  12,  10,92,   5.2,    1,   0,    0
CUTS, 1,   6,  13,  11, 2, 480.0,    3,   8,    3
CUTS, 1,   6,  14,   0,92,   0.2,    0,   0,    0
CUTS, 1,   6,  15,   7, 1, 230.0,    1,   0,    0,RIP
CUTS, 1,   6,  16,  10,92,   5.2,    1,   0,    0
CUTS, 1,   6,  17,  11, 2, 480.0,    3,   8,    3
CUTS, 1,   6,  18,   0,92,   0.2,    0,   0,    0
CUTS, 1,   6,  19,   0,91,  30.8,    0,   0,    0
CUTS, 1,   6,  20,   2, 0, 480.0,    1,   0,    0,HEAD                   [head section]
CUTS, 1,   6,  21,  14,91,   5.2,    1,   0,    0                            [rip trim]
CUTS, 1,   6,  22,  15, 1, 230.0,    5,   8,    5,RIP
CUTS, 1,   6,  23,   0,91,  36.0,    0,   0,    0
CUTS, 1,   6,  24,   0, 0, 485.8,    0,   0,    0,HEAD
CUTS, 1,   6,  25,  20,91,   5.2,    1,   0,    0
CUTS, 1,   6,  26,  21, 1, 480.0,    1,   0,    0,RIP   [first of 2 strips xcut together]
CUTS, 1,   6,  27,  23, 2, 230.0,    2,   8,    2
CUTS, 1,   6,  28,   0,92,  16.2,    0,   0,    0
CUTS, 1,   6,  29,  22, 1, 480.0,    1,   0,    0,RIP  [second of 2 strips xcut together]
CUTS, 1,   6,  30,  23, 2, 230.0,    2,   8,    2
CUTS, 1,   6,  31,   0,92,  16.2,    0,   0,    0
CUTS, 1,   6,  32,   0,91, 240.4,    0,   0,    0
```

## 20. Summary of data structure

This section summarises the position and format of each field in each record type. The maximum length of each text field is listed in the comment column. The range of acceptable values for other field types is listed where applicable. Please refer to earlier comments for a fuller explanation of fields.

Each field can be categorised by one of the following types.

DIM Dimension. Number single. When working in millimetres these range from 0.0 to 9999.9. When working in decimal inches dimensions must range from 0.000 to 999.9
FLT Number single. Floating point value.
IDX Index. Number integer. These are integer values which are used to link records. For example all data for a particular job must have the same job index.
INT Number integer.
QTY A long integer used to store quantity. No quantity can be greater than 99999.
TXT A text field used to store information

Note that spaces are not allowed in the material code, and any spaces will be converted to an underscore ('_') on import. Also note that material, part and board codes are converted to upper case on import.

The job records must have unique job index numbers starting at 1, and incrementing consecutively within specified range. The part, board and pattern records must each have their respective index numbers unique within the job, and again be numbered from 1 and incremented consecutively.

'HEADER' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | VERSION | File version | TXT | Set to 1.06 | Text |
| 2 | TITLE | File title | TXT | 25 chars max. | Text |
| 3 | UNITS | Measurement mode | INT | 0,1 | Number-Integer |
| 4 | ORIGIN | Pattern origin | INT | 0-3 | Number-Integer |
| 5 | TRIM_TYPE | Fixed trim front or rear? | INT | 0,1 | Number-Integer |

'JOBS' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | JOB_INDEX | Job index | IDX | 1-250 | Number-Int |
| 2 | NAME | Job number/name | TXT | 50 chars max. | Text |
| 3 | DESC | Job description | TXT | 50 chars max | Text |
| 4 | ORD_DATE | Date of order | TXT | DD/MM/YYYY | |
| 5 | CUT_DATE | Date for cutting | TXT | DD/MM/YYYY | |
| 6 | CUSTOMER | Customer code | TXT | 100 chars max. | Text |
| 7 | STATUS | Job status | INT | 0,1,2 | Number- Int |
| 8 | OPT_PARAM | Optimising parameters | TXT | 50 chars max. | Text |
| 9 | SAW_PARAM | Saw parameters | TXT | 50 chars max. | Text |
| 10 | CUT_TIME | Total cut time | INT | | Number-Long Int |
| 11 | WASTE_PCNT | Waste percentage | FLT | | Number-Single |

'PARTS_REQ' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | JOB_INDEX | Job index | IDX | 1-250 | Number- Integer |
| 2 | PART_INDEX | Part index | IDX | 1-9999 | Number- Integer |
| 3 | CODE | Part code | TXT | 50 chars max. | Text |
| 4 | MAT_INDEX | Material index | IDX | 1-9999 | Number- Integer |
| 5 | LENGTH | Part length | DIM | | Number-Single |
| 6 | WIDTH | Part width | DIM | | Number-Single |
| 7 | QTY_REQ | Number of pieces | QTY | Max 99999 | Number-Long Int |
| 8 | QTY_OVER | Max over production | QTY | Max 99999 | Number-Long Int |
| 9 | QTY_UNDER | Max under production | QTY | Max 99999 | Number-Long Int |
| 10 | GRAIN | Grain | INT | 0,1,2 | Number-Integer |
| 11 | QTY_PROD | Num pieces produced | QTY | Max 99999 | Number-Long Int |

'PARTS_INF' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | JOB_INDEX | Job index | IDX | 1-250 | Number-Integer |
| 2 | PART_INDEX | Part index | IDX | 1-9999 | Number-Integer |
| 3 | DESC | Second part desc | TXT | 200 chars max | Text |
| 4 | LABEL_QTY | Label quantity | TXT | 200 chars max | Text |
| 5 | FIN_LENGTH | Finished length | TXT | 200 chars max | Text |
| 6 | FIN_WIDTH | Finished width | TXT | 200 chars max | Text |
| 7 | ORDER | Original order | TXT | 200 chars max | Text |
| 8 | EDGE1 | Btm length edge code | TXT | 200 chars max | Text |
| 9 | EDGE2 | Top length edge code | TXT | 200 chars max | Text |
| 10 | EDGE3 | Left width edge code | TXT | 200 chars max | Text |
| 11 | EDGE4 | Right width edge code | TXT | 200 chars max | Text |
| 12 | EDG_PG1 | Bottom edge program | TXT | 200 chars max | Text |
| 13 | EDG_PG2 | Top edge program | TXT | 200 chars max | Text |
| 14 | EDG_PG3 | Left edge program | TXT | 200 chars max | Text |
| 15 | EDG_PG4 | Right edge program | TXT | 200 chars max | Text |
| 16 | FACE_LAM | Face laminate | TXT | 200 chars max | Text |
| 17 | BACK_LAM | Back laminate | TXT | 200 chars max | Text |
| 18 | CORE_MAT | Core material | TXT | 200 chars max | Text |
| 19 | PALLET | Pallet layout | TXT | 200 chars max | Text |
| 20 | DRAWING | Name of drawing file | TXT | 200 chars max | Text |
| 21 | PRODUCT | Product code | TXT | 200 chars max | Text |
| 22 | PROD_INFO | Product description | TXT | 200 chars max | Text |
| 23 | PROD_WIDTH | Product width | TXT | 200 chars max | Text |
| 24 | PROD_HGT | Product height | TXT | 200 chars max | Text |
| 25 | PROD_DEPTH | Product depth | TXT | 200 chars max | Text |
| 26 | PROD_NUM | Product number | TXT | 200 chars max | Text |
| 27 | ROOM | Room/group | TXT | 200 chars max | Text |
| 28 | BARCODE1 | Data for first barcode | TXT | 200 chars max | Text |
| 29 | BARCODE2 | Data for second barcode | TXT | 200 chars max | Text |
| 30 | COLOUR | Extended colour name | TXT | 200 chars max | Text |
| 31 | SECOND_CUT_LENGTH | Length prior to second cut | TXT | 200 chars max | Text |
| 32 | SECOND_CUT_WIDTH | Width prior to second cut | TXT | 200 chars max | Text |

'PARTS_UDI' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | JOB_INDEX | Job index | IDX | 1-250 | Number-Integer |
| 2 | PART_INDEX | Part index | IDX | 1-9999 | Number-Integer |
| 3 | INFO1 | Information field 1 | TXT | 200 chars max | Text |
| 4 | INFO2 | Information field 2 | TXT | 200 chars max | Text |
| 5 | INFO3 | Information field 3 | TXT | 200 chars max | Text |
| 6 | INFO4 | Information field 4 | TXT | 200 chars max | Text |
| 7 | INFO5 | Information field 5 | TXT | 200 chars max | Text |
| 8 | INFO6 | Information field 6 | TXT | 200 chars max | Text |
| 9 | INFO7 | Information field 7 | TXT | 200 chars max | Text |
| 10 | INFO8 | Information field 8 | TXT | 200 chars max | Text |
| 11 | INFO9 | Information field 9 | TXT | 200 chars max | Text |
| 12 | INFO10 | Information field 10 | TXT | 200 chars max | Text |
| 13 | INFO11 | Information field 11 | TXT | 200 chars max | Text |
| 14 | INFO12 | Information field 12 | TXT | 200 chars max | Text |
| 15 | INFO13 | Information field 13 | TXT | 200 chars max | Text |
| 16 | INFO14 | Information field 14 | TXT | 200 chars max | Text |
| 17 | INFO15 | Information field 15 | TXT | 200 chars max | Text |
| 18 | INFO16 | Information field 16 | TXT | 200 chars max | Text |
| 19 | INFO17 | Information field 17 | TXT | 200 chars max | Text |
| 20 | INFO18 | Information field 18 | TXT | 200 chars max | Text |
| 21 | INFO19 | Information field 19 | TXT | 200 chars max | Text |
| 22 | INFO20 | Information field 20 | TXT | 200 chars max | Text |
| 23 | INFO21 | Information field 21 | TXT | 200 chars max | Text |
| 24 | INFO22 | Information field 22 | TXT | 200 chars max | Text |
| 25 | INFO23 | Information field 23 | TXT | 200 chars max | Text |
| 26 | INFO24 | Information field 24 | TXT | 200 chars max | Text |
| 27 | INFO25 | Information field 25 | TXT | 200 chars max | Text |
| 28 | INFO26 | Information field 26 | TXT | 200 chars max | Text |
| 29 | INFO27 | Information field 27 | TXT | 200 chars max | Text |
| 30 | INFO28 | Information field 28 | TXT | 200 chars max | Text |
| 31 | INFO29 | Information field 29 | TXT | 200 chars max | Text |
| 32 | INFO30 | Information field 30 | TXT | 200 chars max | Text |
| 33 | INFO31 | Information field 31 | TXT | 200 chars max | Text |
| 34 | INFO32 | Information field 32 | TXT | 200 chars max | Text |
| 35 | INFO33 | Information field 33 | TXT | 200 chars max | Text |
| 36 | INFO34 | Information field 34 | TXT | 200 chars max | Text |
| 37 | INFO35 | Information field 35 | TXT | 200 chars max | Text |
| 38 | INFO36 | Information field 36 | TXT | 200 chars max | Text |
| 39 | INFO37 | Information field 37 | TXT | 200 chars max | Text |
| 40 | INFO38 | Information field 38 | TXT | 200 chars max | Text |
| 41 | INFO39 | Information field 39 | TXT | 200 chars max | Text |
| 42 | INFO40 | Information field 40 | TXT | 200 chars max | Text |
| 43 | INFO41 | Information field 41 | TXT | 200 chars max | Text |
| 44 | INFO42 | Information field 42 | TXT | 200 chars max | Text |
| 45 | INFO43 | Information field 43 | TXT | 200 chars max | Text |

| | | | | | |
|---|---|---|---|---|---|
| 46 | INFO44 | Information field 44 | TXT | 200 chars max | Text |
| 47 | INFO45 | Information field 45 | TXT | 200 chars max | Text |
| 48 | INFO46 | Information field 46 | TXT | 200 chars max | Text |
| 49 | INFO47 | Information field 47 | TXT | 200 chars max | Text |
| 50 | INFO48 | Information field 48 | TXT | 200 chars max | Text |
| 51 | INFO49 | Information field 49 | TXT | 200 chars max | Text |
| 52 | INFO50 | Information field 50 | TXT | 200 chars max | Text |
| 53 | INFO51 | Information field 51 | TXT | 200 chars max | Text |
| 54 | INFO52 | Information field 52 | TXT | 200 chars max | Text |
| 55 | INFO53 | Information field 53 | TXT | 200 chars max | Text |
| 56 | INFO54 | Information field 54 | TXT | 200 chars max | Text |
| 57 | INFO55 | Information field 55 | TXT | 200 chars max | Text |
| 58 | INFO56 | Information field 56 | TXT | 200 chars max | Text |
| 59 | INFO57 | Information field 57 | TXT | 200 chars max | Text |
| 60 | INFO58 | Information field 58 | TXT | 200 chars max | Text |
| 61 | INFO59 | Information field 59 | TXT | 200 chars max | Text |
| 62 | INFO60 | Information field 60 | TXT | 200 chars max | Text |

'PARTS_DST' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | JOB_INDEX | Job index | IDX | 1-250 | Number-Integer |
| 2 | PART_INDEX | Part index | IDX | 1-9999 | Number-Integer |
| 3 | PART_LAY_L | Parts per stack length | INT | 1-99 | Number-Integer |
| 4 | PART_LAY_W | Parts per stack width | INT | 1-99 | Number-Integer |
| 5 | PART_LAY_O | Part orientation | INT | 0,1 (0=rotated) | Number-Integer |
| 6 | STK_HGHT_Q | Stack height - pieces | INT | 0-999 | Number-Integer |
| 7 | STK_HGHT_D | Stack height - dim | INT | 0-9999 | Number-Integer |
| 8 | STATION | Station number | INT | 0-99 | Number-Integer |
| 9 | QTY_STACKS | Total number of stacks | QTY | Max 99999 | Number-Long Int |
| 10 | BTM_TYPE | Bottom destack type | INT | 0,1,2,3,4 | Number-Integer |
| 11 | BTM_DESC | Bottom description | TXT | 25 chars max | Text |
| 12 | BTM_MATL | Bottom material | TXT | 25 chars max | Text |
| 13 | BTM_LENGTH | Baseboard/pallet len | DIM | | Number-Single |
| 14 | BTM_WIDTH | Baseboard/pallet wid | DIM | | Number-Single |
| 15 | BTM_THICK | Baseboard/pallet thk | DIM | | Number-Single |
| 16 | OVER_LEN | Overhang/oversize | DIM | | Number-Single |
| 17 | OVER_WID | Overhang/oversize | DIM | | Number-Single |
| 18 | BTM_LAY_L | Bsb/pallets per length | INT | 0-99 | Number-Integer |
| 19 | BTM_LAY_W | Bsb/pallets per width | INT | 0-99 | Number-Integer |
| 20 | TOP_TYPE | Top destack type | INT | 0,1,2,3,4 | Number-Integer |
| 21 | TOP_DESC | Top description | TXT | 25 chars max | Text |
| 22 | TOP_MATL | Top material | TXT | 25 chars max | Text |
| 23 | TOP_LENGTH | Baseboard length | DIM | | Number-Single |
| 24 | TOP_WIDTH | Baseboard width | DIM | | Number-Single |
| 25 | TOP_THICK | Baseboard thk | DIM | | Number-Single |
| 26 | TOP_LAY_L | Baseboards per length | INT | 0-99 | Number-Integer |
| 27 | TOP_LAY_W | Baseboards per width | INT | 0-99 | Number-Integer |
| 28 | SUP_TYPE | Support destack type | INT | 0,1,2,3,4 | Number-Integer |
| 29 | SUP_DESC | Support description | TXT | 25 chars max | Text |
| 30 | SUP_MATL | Support material | TXT | 25 chars max | Text |
| 31 | SUP_LENGTH | Support length | DIM | | Number-Single |
| 32 | SUP_WIDTH | Support width | DIM | | Number-Single |
| 33 | SUP_THICK | Support thickness | DIM | | Number-Single |
| 34 | SUP_LAY_L | Supports length | INT | 0-99 | Number-Integer |
| 35 | SUP_LAY_W | Supports per width | INT | 0-99 | Number-Integer |
| 36 | STATION2 | Alternative station | INT | 0-99 | Number-Integer |

'BOARDS' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | JOB_INDEX | Job index | IDX | 1-250 | Number-Integer |
| 2 | BRD_INDEX | Board index | IDX | 1-5000 | Number-Integer |
| 3 | CODE | Board code | TXT | 50 chars max | Text |
| 4 | MAT_INDEX | Material index | IDX | 1-9999 | Number-Integer |
| 5 | LENGTH | Board length | DIM | | Number-Single |
| 6 | WIDTH | Board width | DIM | | Number-Single |
| 7 | QTY_STOCK | Number of sheets | QTY | Max 99999 | Number-Long Int |
| 8 | QTY_USED | Number of sheets used | QTY | Max 99999 | Number-Long Int |
| 9 | COST | Cost per sq metre/foot | FLT | 0-9.99 | Number-Single |
| 10 | STK_FLAG | Board limit/ratio | INT | 0-9 | Number-Integer |
| 11 | INFORMATIO N | Board information | TXT | 25 chars max | Text |
| 12 | MAT_PARAM | Parameter file name | TXT | 50 max chars | Text |
| 13 | GRAIN | Grain | INT | 0,1,2 | Number-Integer |

'MATERIALS' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | JOB_INDEX | Job index | IDX | 1-250 | Number-Integer |
| 2 | MAT_INDEX | Material index | IDX | 1-9999 | Number-Integer |
| 3 | CODE | Material code | TXT | 50 chars max | Text |
| 4 | DESC | Material description | TXT | 50 chars max | Text |
| 5 | THICK | Material thickness | DIM | | Number-Single |
| 6 | BOOK | Max sheets per book | QTY | | Number-Long Int |
| 7 | KERF_RIP | Saw kerf (rip) | DIM | | Number-Single |
| 8 | KERF_XCT | Saw kerf (crosscut) | DIM | | Number-Single |
| 9 | TRIM_FRIP | Fixed rip trim | DIM | | Number-Single |
| 10 | TRIM_VRIP | Min variable rip trim | DIM | | Number-Single |
| 11 | TRIM_FXCT | Fixed crosscut trim | DIM | | Number-Single |
| 12 | TRIM_VXCT | Min var. crosscut trim | DIM | | Number-Single |
| 13 | TRIM_HEAD | Internal Head trim | DIM | | Number-Single |
| 14 | TRIM_FRCT | Fixed recut trim | DIM | | Number-Single |
| 15 | TRIM_VRCT | Min variable recut trim | DIM | | Number-Single |
| 16 | RULE1 | Optimising rule 1 | INT | 1-9 | Number-Integer |
| 17 | RULE2 | Optimising rule 2 | INT | 0,1 | Number-Integer |
| 18 | RULE3 | Optimising rule 3 | INT | 0,1 | Number-Integer |
| 19 | RULE4 | Optimising rule 4 | INT | 0,1 | Number-Integer |
| 20 | MAT_PARAM | Parameter file name | TXT | 50 max chars | Text |
| 21 | GRAIN | Grain | INT | 0,1,2 | Number-Integer |

'OFFCUTS' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | JOB_INDEX | Job index | IDX | 1-250 | Number-Integer |
| 2 | OFC_INDEX | Offcut index | IDX | 1-7500 | Number-Integer |
| 3 | CODE | Offcut code | TXT | 50 chars max | Text |
| 4 | MAT_INDEX | Material index | IDX | 1-9999 | Number-Integer |
| 5 | LENGTH | Offcut length | DIM | | Number-Single |
| 6 | WIDTH | Offcut width | DIM | | Number-Single |
| 7 | OFC_QTY | Offcut quantity | QTY | Max 99999 | Number-Long Int |

'PATTERNS' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | JOB_INDEX | Job index | IDX | 1-250 | Number-Integer |
| 2 | PTN_INDEX | Pattern index | IDX | 1-5000 | Number-Integer |
| 3 | BRD_INDEX | Board index | IDX | 1-5000 | Number-Integer |
| 4 | TYPE | Pattern type | INT | 0-8 | Number-Integer |
| 5 | QTY_RUN | Run quantity | QTY | | Number-Long Int |
| 6 | QTY_CYCLES | Cycle quantity | QTY | | Number-Long Int |
| 7 | MAX_BOOK | Max sheets per book | QTY | | Number-Long Int |
| 8 | PICTURE | Pattern picture file | TXT | 255 chars max | Text |
| 9 | CYCLE_TIME | Cycle cut time | INT | | Number-Long Int |
| 10 | TOTAL_TIME | Total cut time | INT | | Number-Long Int |

'PTN_UDI' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | JOB_INDEX | Job index | IDX | 1-250 | Number-Integer |
| 2 | PTN_INDEX | Pattern index | IDX | 1-5000 | Number-Integer |
| 3 | BRD_INDEX | Board index | IDX | 1-5000 | Number-Integer |
| 4 | STRIP_INDEX | Strip number | INT | | Number-Integer |
| 5 | INFO1 | Information field 1 | TXT | 200 chars max | Text |
| 6 | INFO2 | Information field 2 | TXT | 200 chars max | Text |
| 7 | INFO3 | Information field 3 | TXT | 200 chars max | Text |
| 8 | INFO4 | Information field 4 | TXT | 200 chars max | Text |
| 9 | INFO5 | Information field 5 | TXT | 200 chars max | Text |
| 10 | INFO6 | Information field 6 | TXT | 200 chars max | Text |
| 11 | INFO7 | Information field 7 | TXT | 200 chars max | Text |
| 12 | INFO8 | Information field 8 | TXT | 200 chars max | Text |
| 13 | INFO9 | Information field 9 | TXT | 200 chars max | Text |
| 14 | INFO10 | Information field 10 | TXT | 200 chars max | Text |
| 15 | INFO11 | Information field 11 | TXT | 200 chars max | Text |
| 16 | INFO12 | Information field 12 | TXT | 200 chars max | Text |
| 17 | INFO13 | Information field 13 | TXT | 200 chars max | Text |
| 18 | INFO14 | Information field 14 | TXT | 200 chars max | Text |
| 19 | INFO15 | Information field 15 | TXT | 200 chars max | Text |
| 20 | INFO16 | Information field 16 | TXT | 200 chars max | Text |
| 21 | INFO17 | Information field 17 | TXT | 200 chars max | Text |
| 22 | INFO18 | Information field 18 | TXT | 200 chars max | Text |
| 23 | INFO19 | Information field 19 | TXT | 200 chars max | Text |
| 24 | INFO20 | Information field 20 | TXT | 200 chars max | Text |
| 25 | INFO21 | Information field 21 | TXT | 200 chars max | Text |
| 26 | INFO22 | Information field 22 | TXT | 200 chars max | Text |
| 27 | INFO23 | Information field 23 | TXT | 200 chars max | Text |
| 28 | INFO24 | Information field 24 | TXT | 200 chars max | Text |
| 29 | INFO25 | Information field 25 | TXT | 200 chars max | Text |
| 30 | INFO26 | Information field 26 | TXT | 200 chars max | Text |
| 31 | INFO27 | Information field 27 | TXT | 200 chars max | Text |
| 32 | INFO28 | Information field 28 | TXT | 200 chars max | Text |
| 33 | INFO29 | Information field 29 | TXT | 200 chars max | Text |
| 34 | INFO30 | Information field 30 | TXT | 200 chars max | Text |
| 35 | INFO31 | Information field 31 | TXT | 200 chars max | Text |
| 36 | INFO32 | Information field 32 | TXT | 200 chars max | Text |
| 37 | INFO33 | Information field 33 | TXT | 200 chars max | Text |
| 38 | INFO34 | Information field 34 | TXT | 200 chars max | Text |
| 39 | INFO35 | Information field 35 | TXT | 200 chars max | Text |
| 40 | INFO36 | Information field 36 | TXT | 200 chars max | Text |
| 41 | INFO37 | Information field 37 | TXT | 200 chars max | Text |
| 42 | INFO38 | Information field 38 | TXT | 200 chars max | Text |
| 43 | INFO39 | Information field 39 | TXT | 200 chars max | Text |
| 44 | INFO40 | Information field 40 | TXT | 200 chars max | Text |
| 45 | INFO41 | Information field 41 | TXT | 200 chars max | Text |

| | | | | | |
|---|---|---|---|---|---|
| 46 | INFO42 | Information field 42 | TXT | 200 chars max | Text |
| 47 | INFO43 | Information field 43 | TXT | 200 chars max | Text |
| 48 | INFO44 | Information field 44 | TXT | 200 chars max | Text |
| 49 | INFO45 | Information field 45 | TXT | 200 chars max | Text |
| 50 | INFO46 | Information field 46 | TXT | 200 chars max | Text |
| 51 | INFO47 | Information field 47 | TXT | 200 chars max | Text |
| 52 | INFO48 | Information field 48 | TXT | 200 chars max | Text |
| 53 | INFO49 | Information field 49 | TXT | 200 chars max | Text |
| 54 | INFO50 | Information field 50 | TXT | 200 chars max | Text |
| 55 | INFO51 | Information field 51 | TXT | 200 chars max | Text |
| 56 | INFO52 | Information field 52 | TXT | 200 chars max | Text |
| 57 | INFO53 | Information field 53 | TXT | 200 chars max | Text |
| 58 | INFO54 | Information field 54 | TXT | 200 chars max | Text |
| 59 | INFO55 | Information field 55 | TXT | 200 chars max | Text |
| 60 | INFO56 | Information field 56 | TXT | 200 chars max | Text |
| 61 | INFO57 | Information field 57 | TXT | 200 chars max | Text |
| 62 | INFO58 | Information field 58 | TXT | 200 chars max | Text |
| 63 | INFO59 | Information field 59 | TXT | 200 chars max | Text |
| 64 | INFO60 | Information field 60 | TXT | 200 chars max | Text |
| 65 | INFO61 | Information field 61 | TXT | 200 chars max | Text |
| 66 | INFO62 | Information field 62 | TXT | 200 chars max | Text |
| 67 | INFO63 | Information field 63 | TXT | 200 chars max | Text |
| 68 | INFO64 | Information field 64 | TXT | 200 chars max | Text |
| 69 | INFO65 | Information field 65 | TXT | 200 chars max | Text |
| 70 | INFO66 | Information field 66 | TXT | 200 chars max | Text |
| 71 | INFO67 | Information field 67 | TXT | 200 chars max | Text |
| 72 | INFO68 | Information field 68 | TXT | 200 chars max | Text |
| 73 | INFO69 | Information field 69 | TXT | 200 chars max | Text |
| 74 | INFO70 | Information field 70 | TXT | 200 chars max | Text |
| 75 | INFO71 | Information field 71 | TXT | 200 chars max | Text |
| 76 | INFO72 | Information field 72 | TXT | 200 chars max | Text |
| 77 | INFO73 | Information field 73 | TXT | 200 chars max | Text |
| 78 | INFO74 | Information field 74 | TXT | 200 chars max | Text |
| 79 | INFO75 | Information field 75 | TXT | 200 chars max | Text |
| 80 | INFO76 | Information field 76 | TXT | 200 chars max | Text |
| 81 | INFO77 | Information field 77 | TXT | 200 chars max | Text |
| 82 | INFO78 | Information field 78 | TXT | 200 chars max | Text |
| 83 | INFO79 | Information field 79 | TXT | 200 chars max | Text |
| 84 | INFO80 | Information field 80 | TXT | 200 chars max | Text |
| 85 | INFO81 | Information field 81 | TXT | 200 chars max | Text |
| 86 | INFO82 | Information field 82 | TXT | 200 chars max | Text |
| 87 | INFO83 | Information field 83 | TXT | 200 chars max | Text |
| 88 | INFO84 | Information field 84 | TXT | 200 chars max | Text |
| 89 | INFO85 | Information field 85 | TXT | 200 chars max | Text |
| 90 | INFO86 | Information field 86 | TXT | 200 chars max | Text |
| 91 | INFO87 | Information field 87 | TXT | 200 chars max | Text |
| 92 | INFO88 | Information field 88 | TXT | 200 chars max | Text |
| 93 | INFO89 | Information field 89 | TXT | 200 chars max | Text |

| | | | | | |
|---|---|---|---|---|---|
| 94 | INFO90 | Information field 90 | TXT | 200 chars max | Text |
| 95 | INFO91 | Information field 91 | TXT | 200 chars max | Text |
| 96 | INFO92 | Information field 92 | TXT | 200 chars max | Text |
| 97 | INFO93 | Information field 93 | TXT | 200 chars max | Text |
| 98 | INFO94 | Information field 94 | TXT | 200 chars max | Text |
| 99 | INFO95 | Information field 95 | TXT | 200 chars max | Text |
| 100 | INFO96 | Information field 96 | TXT | 200 chars max | Text |
| 101 | INFO97 | Information field 97 | TXT | 200 chars max | Text |
| 102 | INFO98 | Information field 98 | TXT | 200 chars max | Text |
| 103 | INFO99 | Information field 99 | TXT | 200 chars max | Text |

'CUTS' RECORD

| No. | Name | Description | Type | Comment | MDB |
|---|---|---|---|---|---|
| 1 | JOB_INDEX | Job index | IDX | 1-250 | Number-Integer |
| 2 | PTN_INDEX | Pattern index | IDX | 1-5000 | Number-Integer |
| 3 | CUT_INDEX | Cut index | IDX | 1-5000 | Number-Integer |
| 4 | SEQUENCE | Cut sequence | INT | | Number-Integer |
| 5 | FUNCTION | Cut type | INT | 0-9, 90-99 | Number-Integer |
| 6 | DIMENSION | Size of cut | DIM | | Number-Single |
| 7 | QTY_RPT | Cut quantity | QTY | | Number-Long Int |
| 8 | PART_INDEX | Part/Offcut Index | TXT | 1-9999 or X1-X7500 | Text |
| 9 | QTY_PARTS | Total part quantity | QTY | Max 99999 | Number-Long Int |
| 10 | COMMENT | Additional comment | TXT | 100 chars max | Text |

# 4. Export data

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

Other typical exports are:-

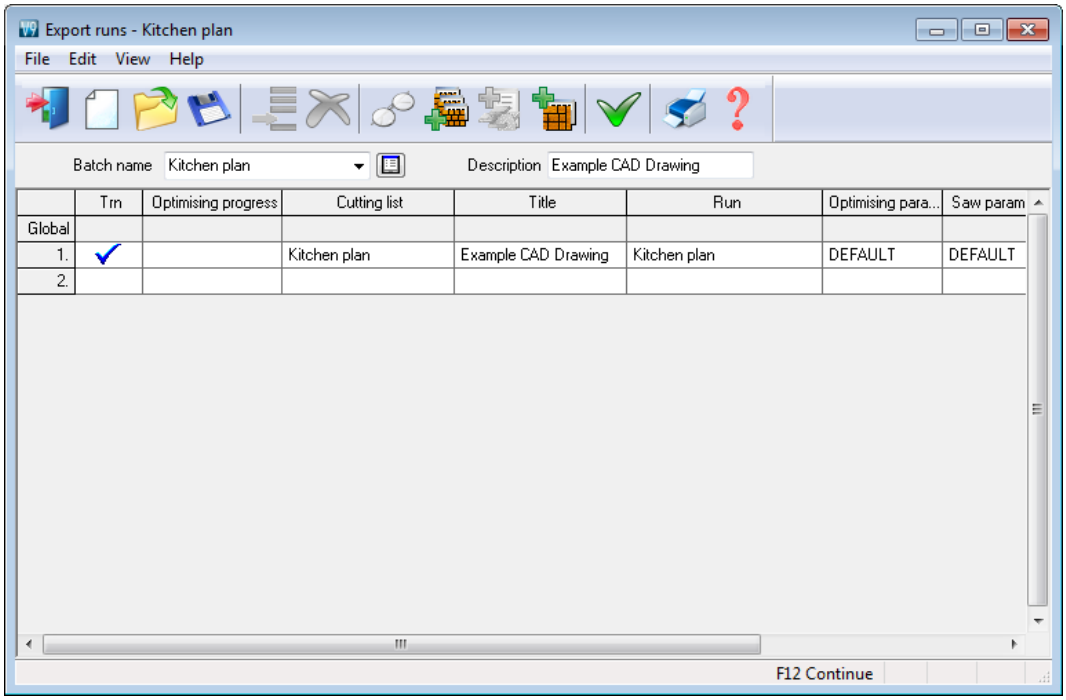
- Job and product costing reports
- Fittings and operations
- Cutting lists

## 4.1 Export runs

To export runs (optimisations), at the main screen:-

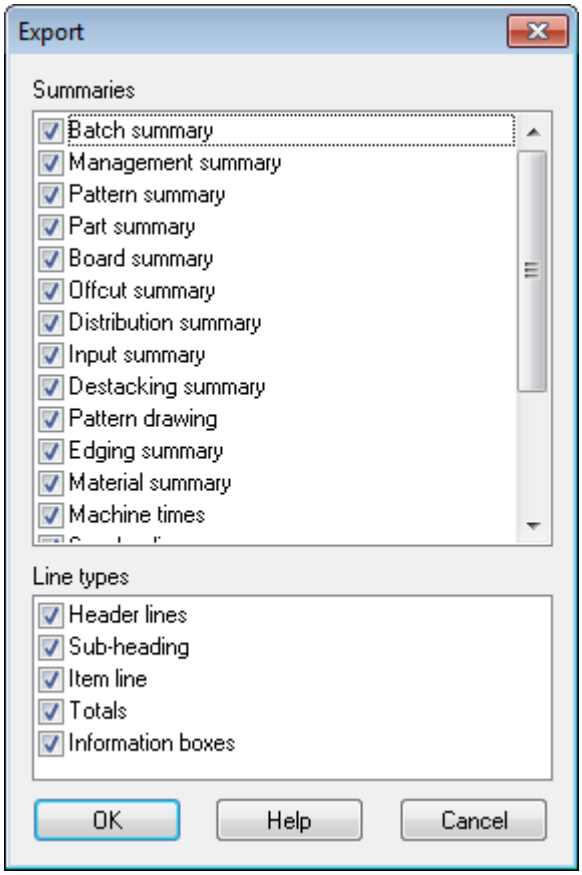
- Select: **File- Export runs**
- Choose the export format (ASCII, MDB, XLS, XLSX)

(XLS and XLSX are Excel formats).




*Export runs*

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

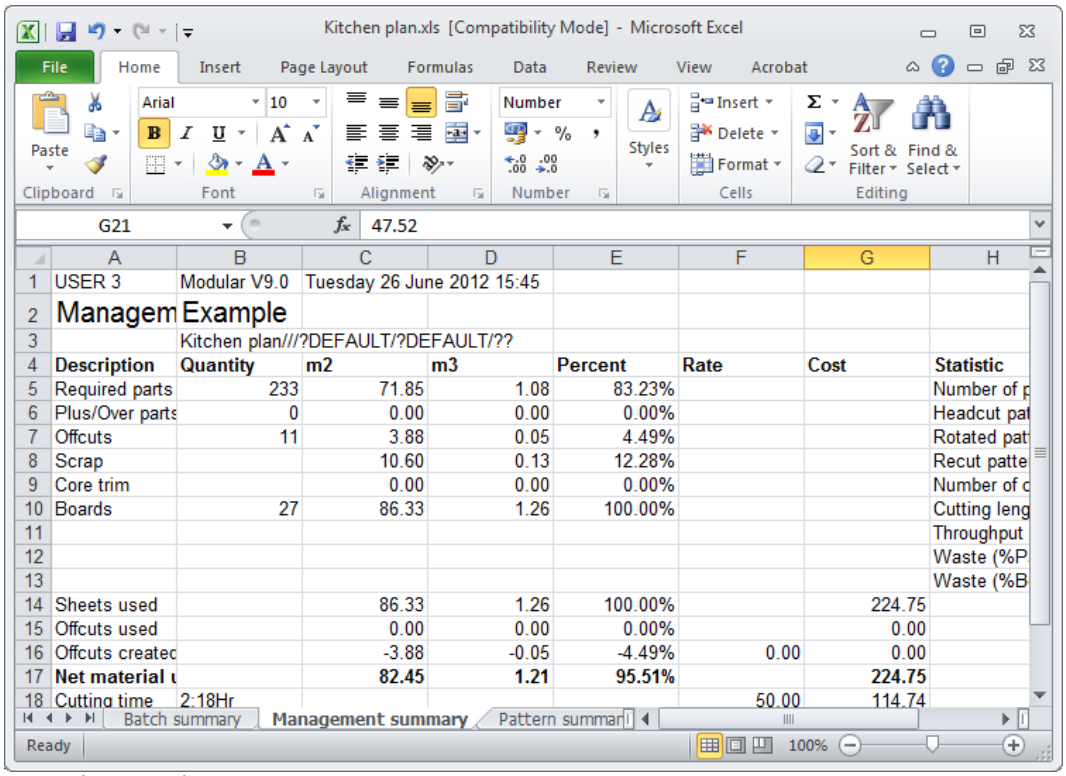



*Summaries to Export*

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

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

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



*Export data - Excel*

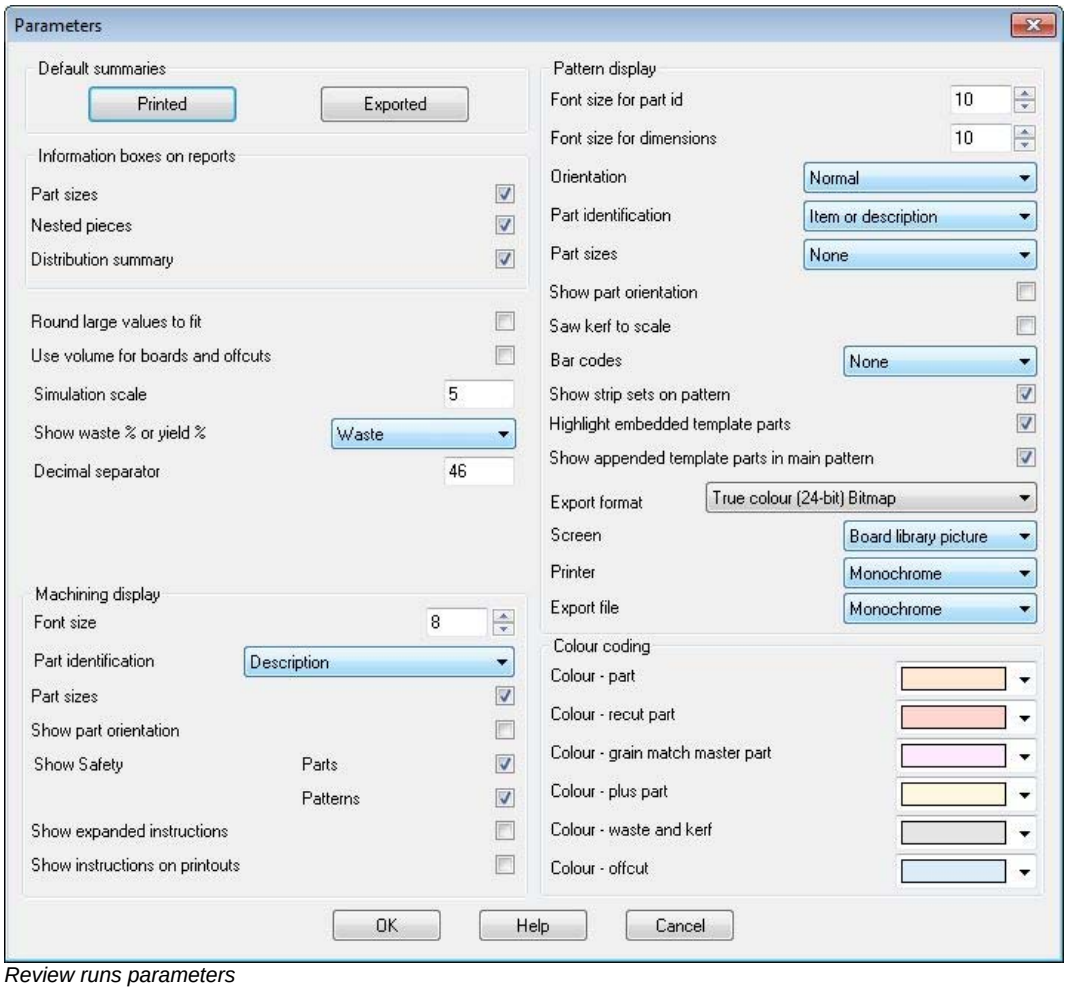
For Export to an ASCII file each report is sent to a separate ASCII file with the data types identified by a token at the start of each line. Here is an example of the board summary data.

```
%1,DEMO USER 1,Modular V9.1,Friday 26 January 2007
%1,Board summary,Kitchen layout
%1,,00009/BSR CD-81/BSR CD-81/?DEFAULT/?DEFAULT/5
%1,No,Board,Length,Width,Information,Qty in Stock,Qty Used,Length m,Area m2,Cost
Rate,Total Cost
%2,HARDBOARD-4MM* Hardboard 4mm Thickness  4.0 Book 8 Parameters HBD04
%3,1.,HARDBOARD-4MM/01,2000.0,1000.0,Spec. Order,795,2,,4.00,0.890,3.56
%3,2.,HARDBOARD-4MM/02,2440.0,1220.0,BIN 133,131,6,,17.86,0.750,13.40
%4,,,,,,,8,,21.86,,16.96
%2,MED-DEN-FIBRE-18MM Medium Density Fibreboard 18mm Thickness 18.0 Book 5
```

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

The export choices can be set at the Review runs parameters dialog.

At any Review runs screen:-The data to export for each report can be customised for each report.



*Review runs parameters*

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

This shows the Export settings dialog.

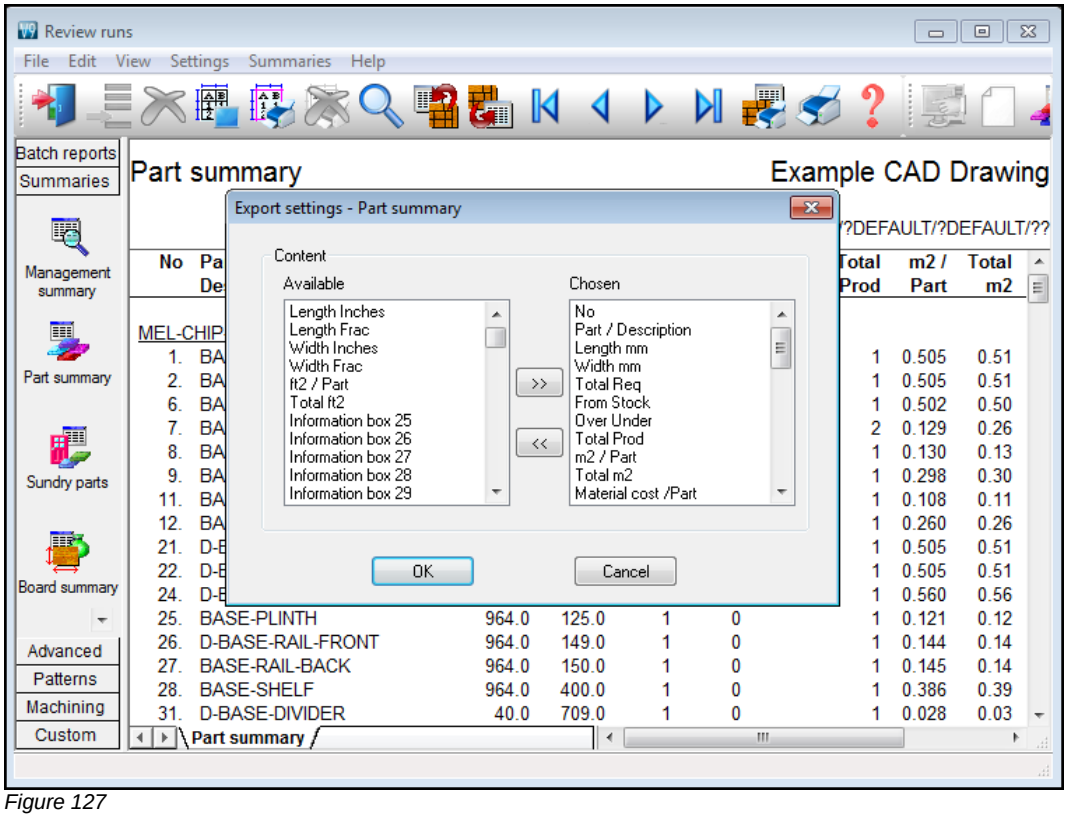
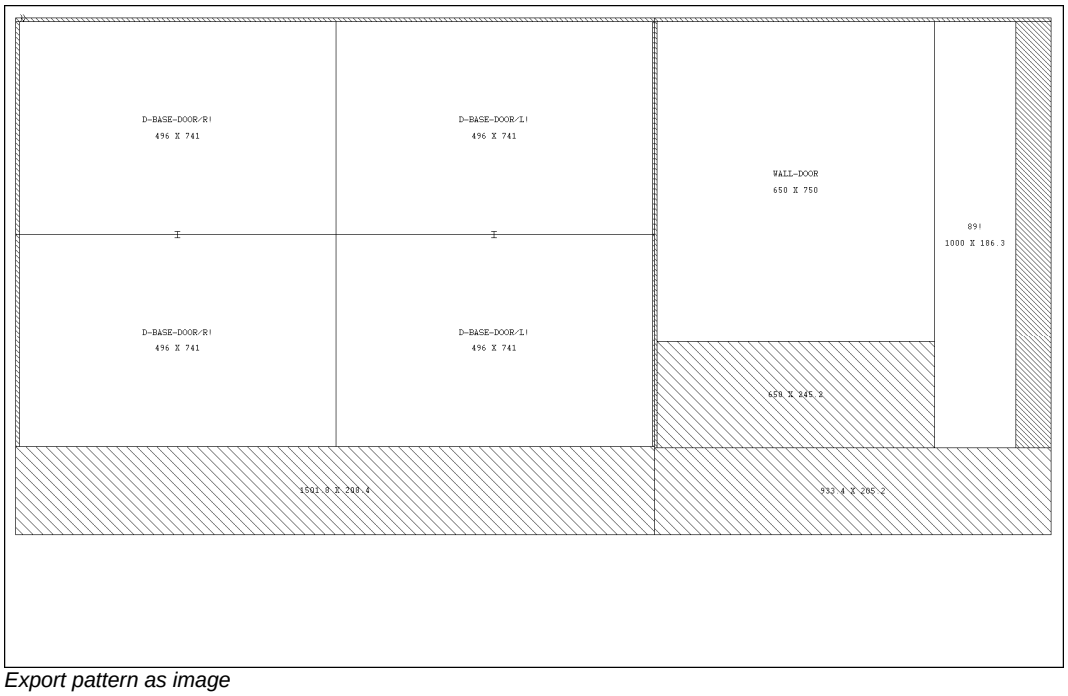



*Figure 127*

The above example shows fields for the Part summary.

*Pattern images* - at any on-screen pattern there is an option to export the pattern image. The formats available are:-

```
Windows Bitmap (.bmp)
Windows Metafile (.wmf)
Windows Enhanced metafile (.emf)
```



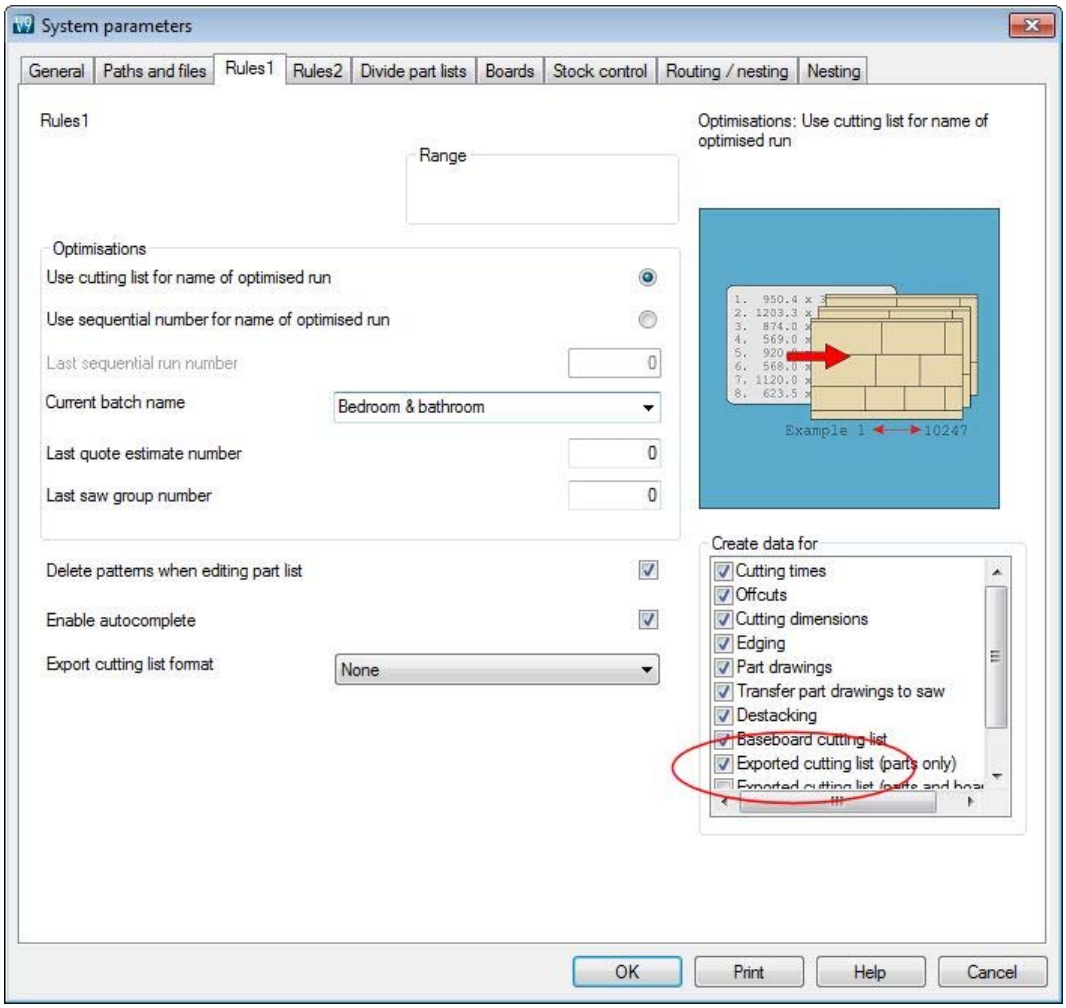

*Export pattern as image*

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

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

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

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



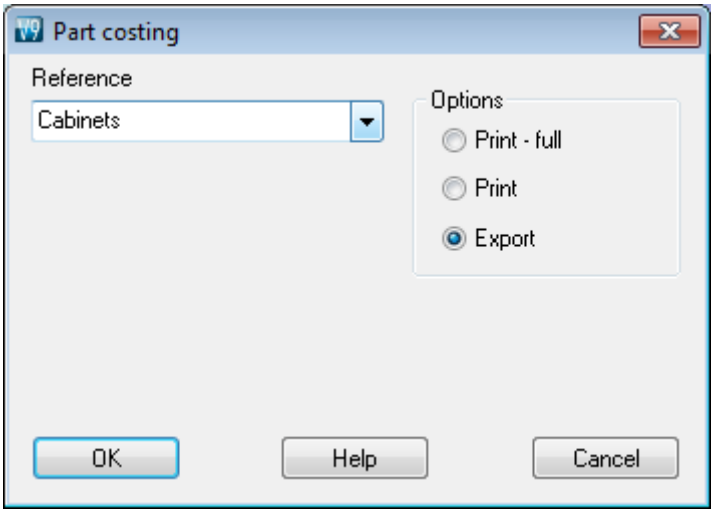

*Export - system parameters*

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

## 4.2 Export Part and Product costing reports

To export the part costing or product costing summary to an external file. Select:-

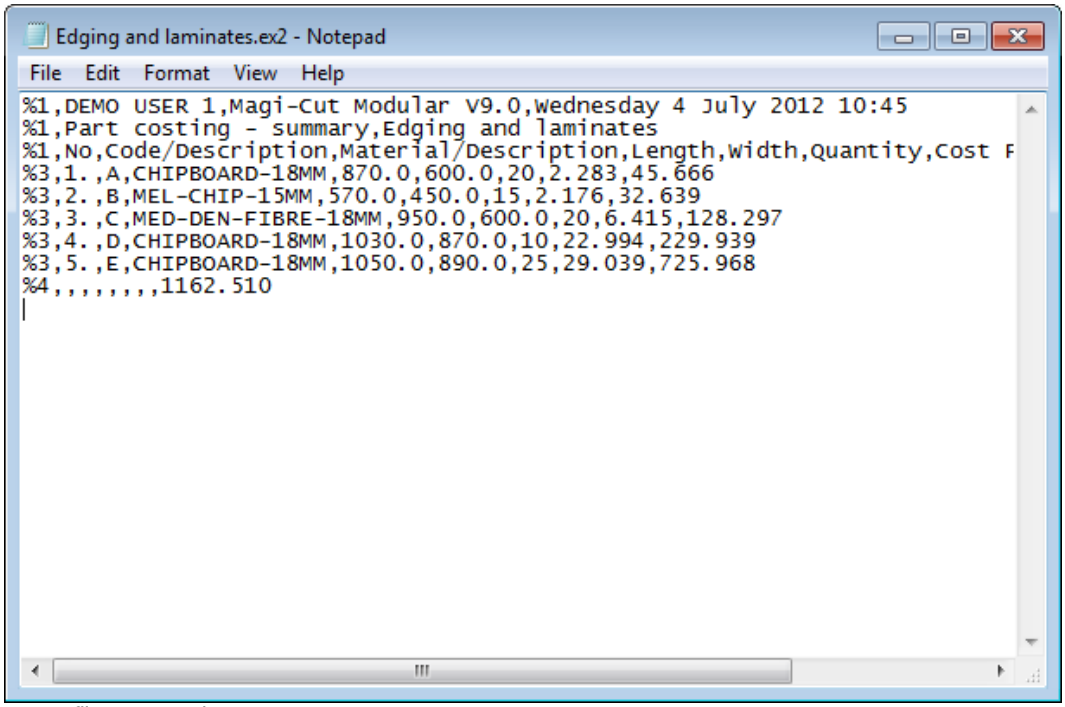
- Print
- Part costing (or Product costing)




*Export part costing*

Select the part list and the Export option and select OK. An export file is created, for example:-

Edging and laminates.EX2




*Export file - part costing*

Product costing exports a file with the extension: EX1
Part costing exports a file with the extension EX2

The export files are placed in the directory set by the System parameter: *Path for Export data*

The export file can contain three types of data:

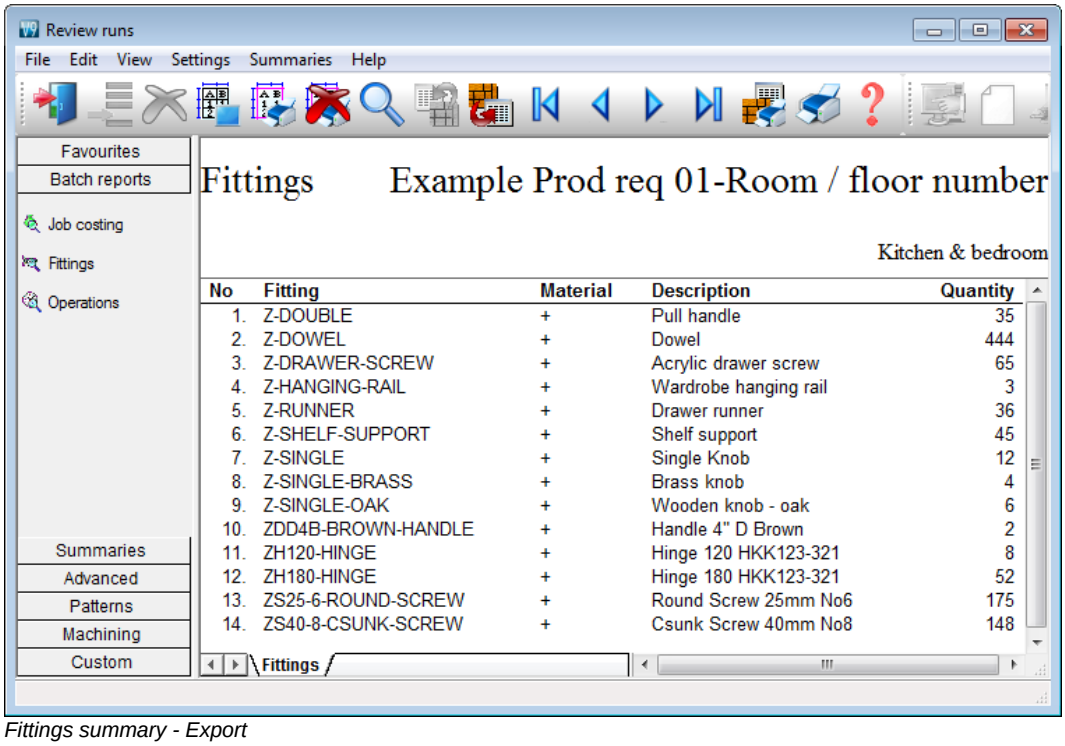
```
1 - header line (no comma separated fields)
3 - data line with comma separated fields
4 - total line with comma separated fields
```

The data type for each line in the export file is shown by a % and number at the beginning of each line. Select which data types to export in the *Review runs parameters*.

If errors occur during export, no export file is produced.

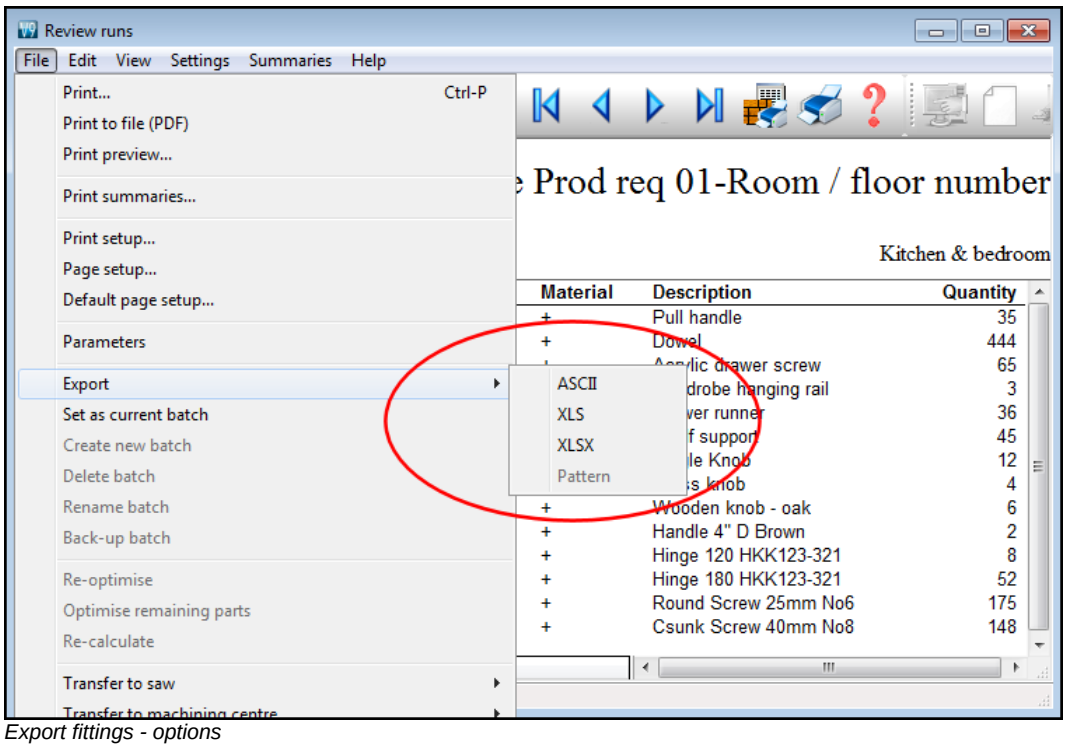
## 4.3 Export fittings and operations

Export fittings or operations reports for any optimisation (run). Move to the fittings or operations report in Review runs.



*Fittings summary - Export*

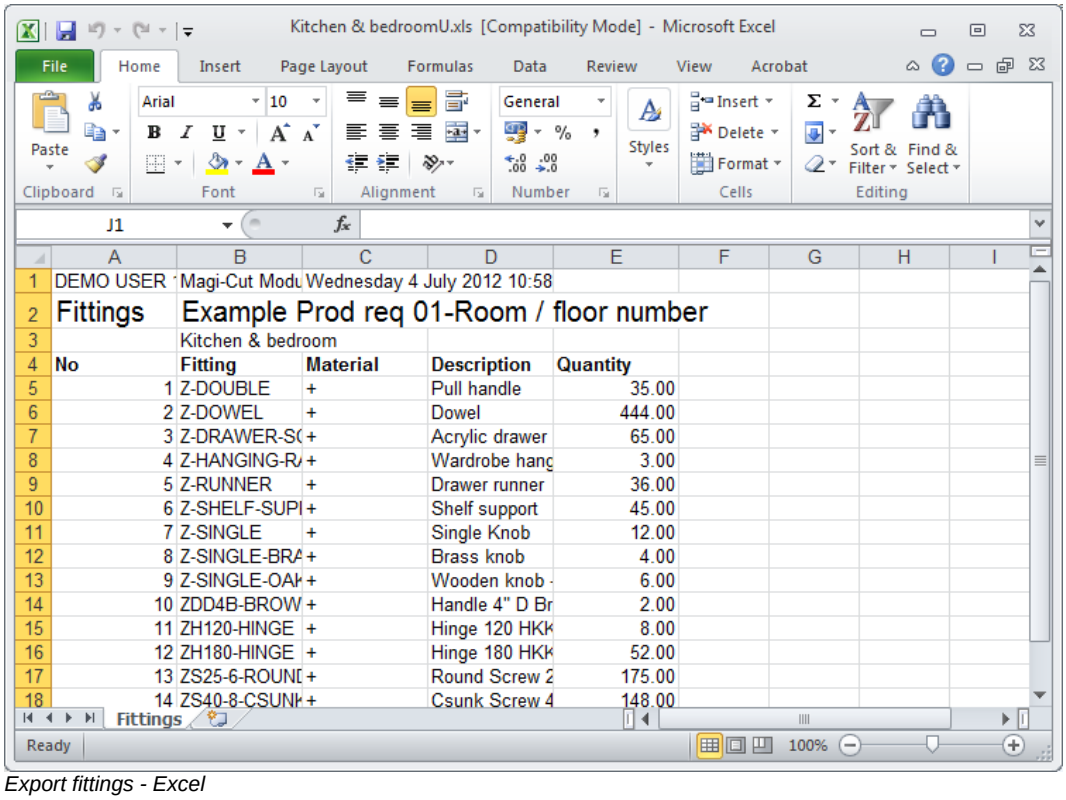
- Select: **File - Export**




*Export fittings - options*

- Select the export format

The Excel formats (XLS and XLSX) export to an Excel file.



*Export fittings - Excel*

*ASCII export* - the data is exported to a file with the same name as the fitting or operations list with the report letter appended and extension exd (e.g. BSR81-CDU.exd for fittings).

The export files are placed in the directory set by the System parameter: *Path for Export data*

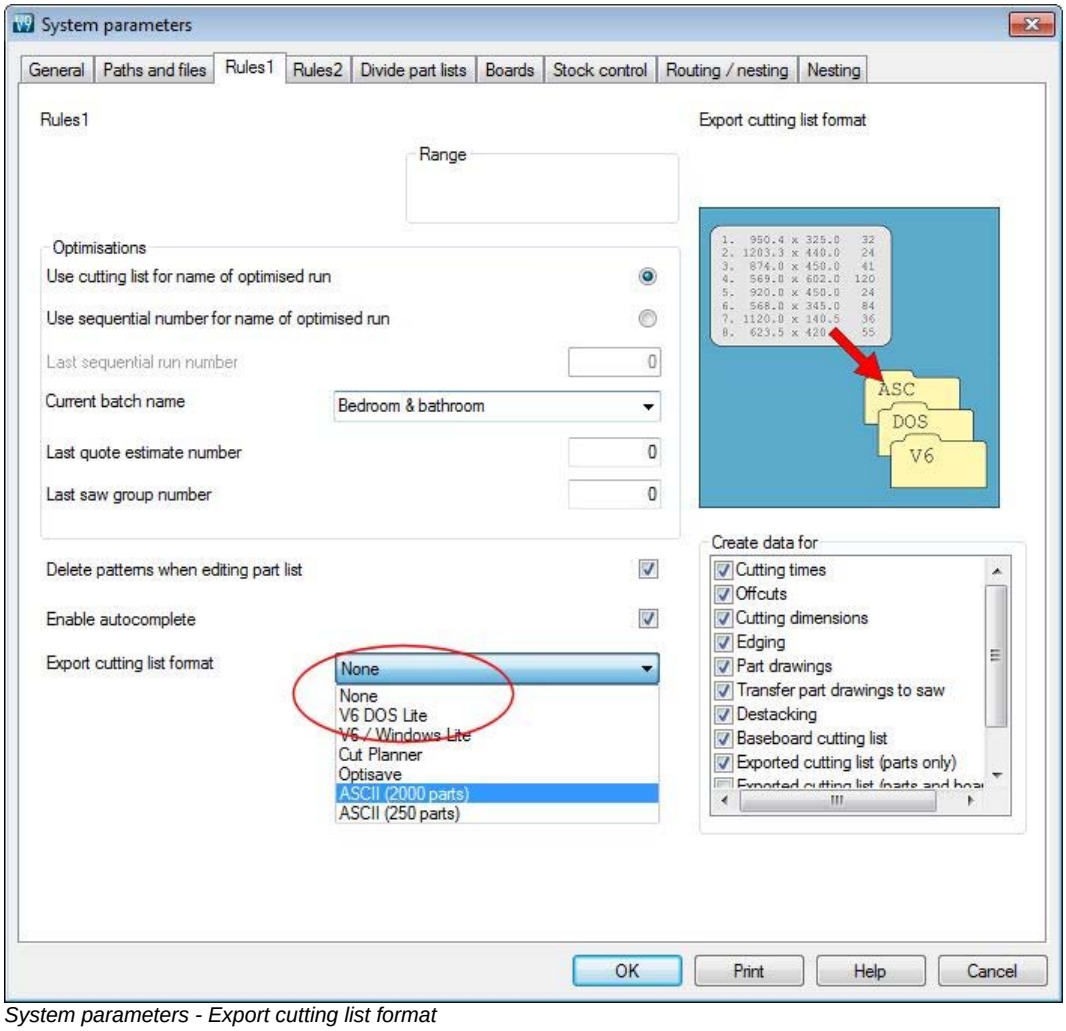
## 4.4 Export cutting lists

Export cutting lists and boards lists as part of the optimisation or recalculation process.

To do this set the System parameter: *Create data for* to create to one of the following:-

Exported cutting list - parts only
Exported cutting list - parts and boards

Also set System parameter: *Export cutting list format*




*System parameters - Export cutting list format*

ASCII - large lists
ASCII

These options produce cutting lists and/or board lists in an ASCII format. This is useful if the lists are going to be used by other systems.

| Option | Max parts | Max boards |
|---|---|---|
| 5 ASCII | 2000 | 200 |
| 6 ASCII | 250 | 200 |
| ..... | | |

The export occurs automatically when the part list is optimised. The ASCII format is the PNX and/or BDX format.

```
Kitchen layout
DEFAULT
DEFAULT
BASE-BACK,HARDBOARD-4MM,976.000000,735.000000,1,0,0,0,0,0,0,0,,,,,,,976.0 x
735.0,00000449*
BASE-BACK,HARDBOARD-4MM,476.000000,735.000000,1,0,0,0,0,0,0,0,,,,,,,,476.0 x
735.0,00000450*
BASE-BACK,HARDBOARD-4MM,876.000000,735.000000,1,0,0,0,0,0,0,0,,,,,,,876.0 x
735.0,00000451*
BASE-BACK,HARDBOARD-4MM,976.000000,735.000000,1,0,0,0,0,0,0,0,,,,,,,976.0 x
735.0,00000452*
BASE-BACK,HARDBOARD-4MM,976.000000,735.000000,1,0,0,0,0,0,0,0,,,,,,,976.0 x
735.0,00000453*
BASE-BACK,HARDBOARD-4MM,476.000000,735.000000,1,0,0,0,0,0,0,0,,,,,,,476.0 x
735.0,00000454*
BASE-BACK,HARDBOARD-4MM,976.000000,735.000000,1,0,0,0,0,0,0,0,,,,,,,976.0 x
735.0,00000455*
BASE-BACK,HARDBOARD-4MM,976.000000,735.000000,1,0,0,0,0,0,0,0,,,,,,,976.0 x
735.0,00000456*
BASE-BACK,HARDBOARD-4MM,476.000000,735.000000,1,0,0,0,0,0,0,0,,,,,,,476.0 x
735.0,00000457*
BASE-BACK,HARDBOARD-4MM,476.000000,735.000000,1,0,0,0,0,0,0,0,,,,,,,476.0 x
735.0,00000458*
BASE-BOTTOM,MED-DEN-FIBRE-18MM,564.000000,581.000000,3,0,0,0,0,0,0,0,OAK-TAPE-
22MM,,,,,,564.0 x 582.0,00000459*
BASE-BOTTOM,MED-DEN-FIBRE-18MM,464.000000,581.000000,1,0,0,0,0,0,0,0,OAK-TAPE-
22MM,,,,,,464.0 x 582.0,00000460*
BASE-BOTTOM,MED-DEN-FIBRE-18MM,464.000000,581.000000,1,0,0,0,0,0,0,0,OAK-TAPE-
22MM,,,,,,464.0 x 582.0,00000461*
BASE-BOTTOM,MED-DEN-FIBRE-18MM,464.000000,581.000000,1,0,0,0,0,0,0,0,OAK-TAPE-
22MM,,,,,,464.0 x 582.0,00000462*
BASE-BOTTOM,MED-DEN-FIBRE-18MM,464.000000,581.000000,1,0,0,0,0,0,0,0,OAK-TAPE-
22MM,,,,,,464.0 x 582.0,00000463*
BASE-CABINET-BOTTOM,MED-DEN-FIBRE-18MM,864.000000,581.000000,1,0,0,0,0,0,0,0,OAK-
TAPE-22MM,,,,,,864.0 x 582.0,00000464*
BASE-CABINET-DIVIDER,MED-DEN-FIBRE-
18MM,559.000000,533.250000,1,0,0,0,0,0,0,0,,,OAK-TAPE-22MM,,,,560.0 x
533.3,00000465*
BASE-CABINET-DOOR,MFC18-OAK,398.000000,554.750000,1,0,0,2,0,0,0,0,OAK-TAPE-
22MM,OAK-TAPE-22MM,OAK-TAPE-22MM,OAK-TAPE-22MM,,,,400.0 x 556.8,00000466*
.....

HARDBOARD-4MM/01,795,HARDBOARD-4MM,2000.000000,1000.000000,4.000000,0.890000,9
```

```
HARDBOARD-4MM/02,131,HARDBOARD-4MM,2440.000000,1220.000000,4.000000,0.750000,0
MED-DEN-FIBRE-18MM/01,1090,MED-DEN-FIBRE-
18MM,3660.000000,1550.000000,18.000000,4.500000,0
MED-DEN-FIBRE-18MM/02,767,MED-DEN-FIBRE-
18MM,2440.000000,1220.000000,18.000000,4.350000,0
MFC18-OAK/01,430,MFC18-OAK,3050.000000,1220.000000,18.000000,3.300000,0
MFC18-OAK/02,111,MFC18-OAK,2440.000000,1220.000000,18.000000,2.970000,0
WHAC12/01,436,WHITE-ACRYLIC-12MM,2440.000000,1220.000000,12.000000,1.320000,4
```

The other options for 'Export cutting list format' are for special situations where part list are exported after processing to other systems.

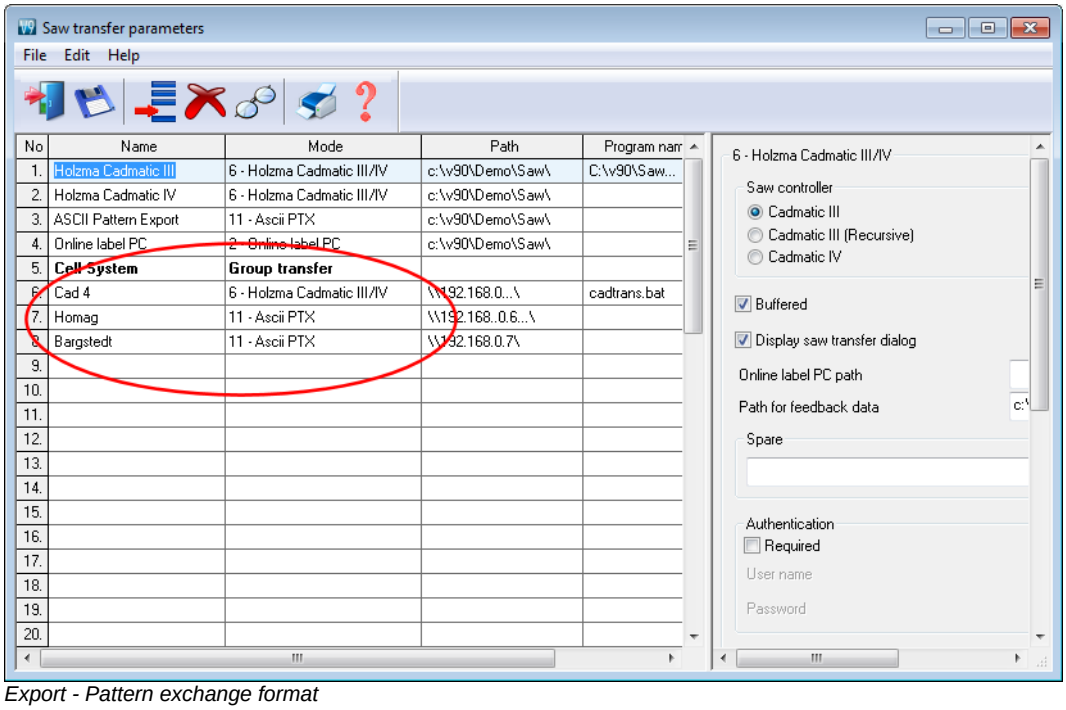
## 4.5 Export - Pattern Exchange Format

The Pattern exchange format contains all the part sizes, board sizes, parameter settings, cutting instructions and drawing information for a run and most of the summary data. Use this to export optimisations (runs) for use by other systems such as a spread sheet, database, or report generator.

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

It is a public format and fully described in Section 3 (above).

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




*Export - Pattern exchange format*

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

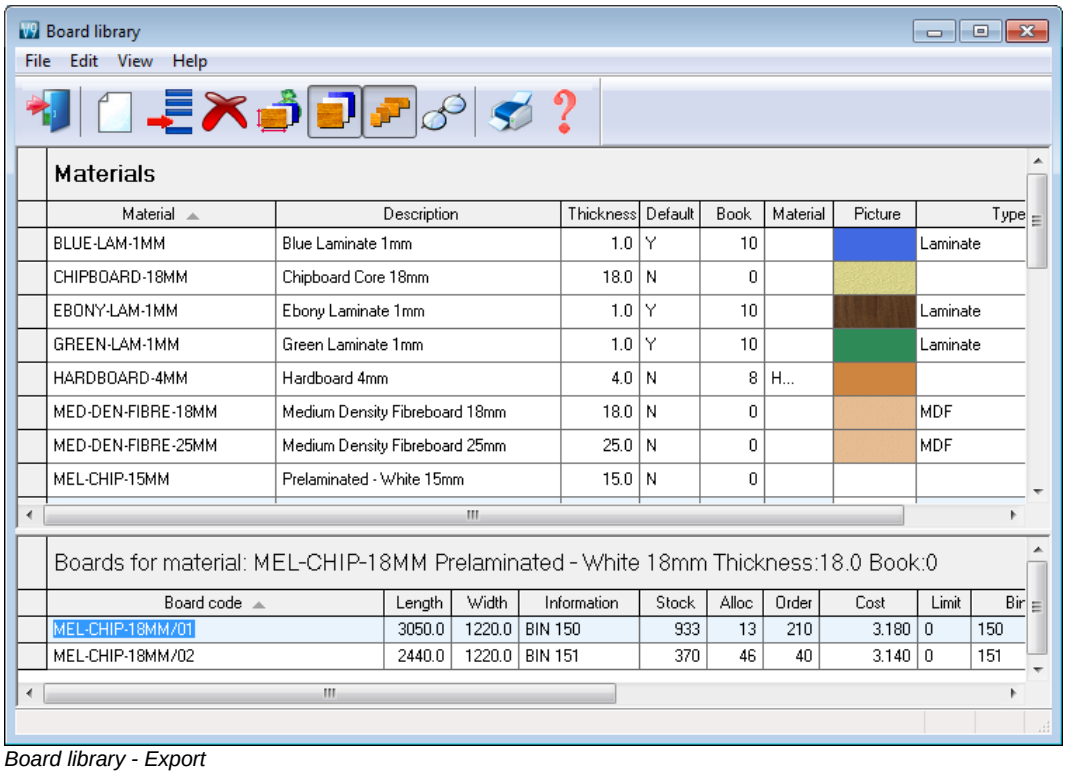
This option is also available for transfer to Machining centres.

An example of the ASCII PTX file:-

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

## 4.6 Export - Board library data

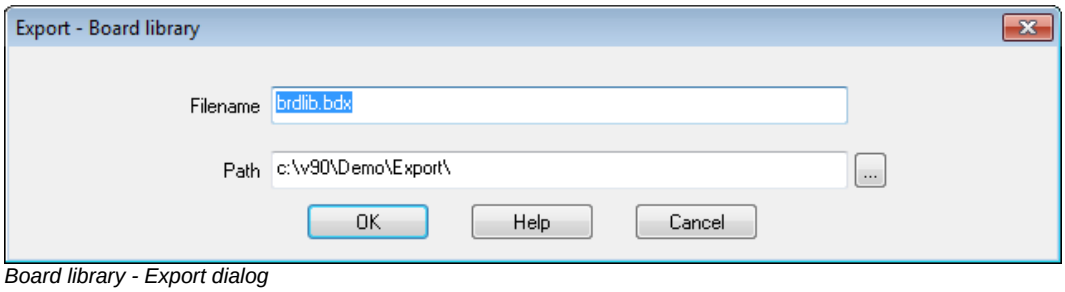
It is sometimes useful to export the entire contents of the board library to an external file, for example, to update a supporting system. At the Board library screen:-



*Board library - Export*

- Select: **File - Export**

The program prompts for a path and file name.




*Board library - Export dialog*

*BDX format*

This is a special format for Boards; one line per board including material information. It can be useful for external processing and data can also be re-imported to the Board library via the Import options with this format. BDX is the current format.

The data can either be exported to a Fixed file (BRDLIB.BDX) in the directory set by the System parameter: *Path for export data* or to a selected file path and name.

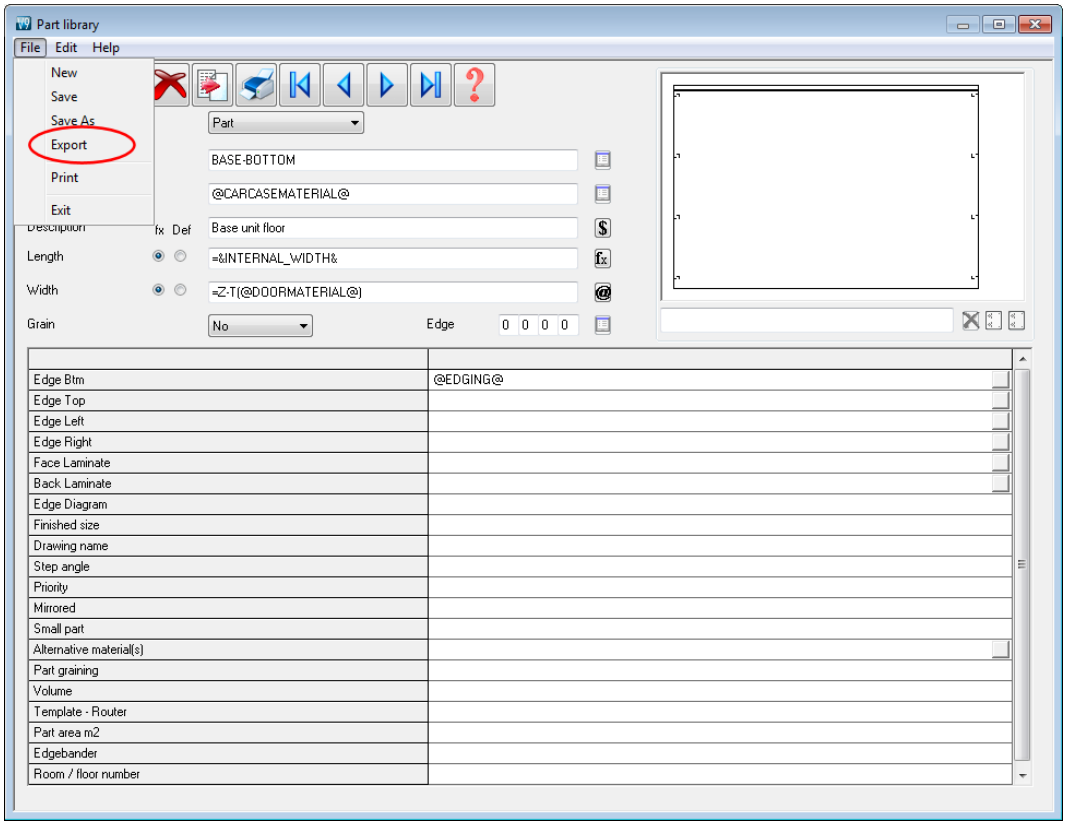
(*See section 2.3 above for details of the BDX format*).

## 4.7 Export - Part library data

It is sometimes useful to export all the Part library data, for example, for updating external systems.

At the Part library screen:-

Select: **File - Export**




The library data is exported to a comma separated value file with a fixed name. PARTLIB.CSV

The file is located in the folder set by the System parameter: *Path for Export data*

If the parameter setting is blank or there is some other problem with the file an error is reported.

File format

Each line contains a record from the part library. The order of the fields is as follows:-

```
Code
Material
Description
Length
Width
Grain
Edge
Cost
Drawing code
Information boxes
Notes
```

- Grain values in the file are:-

```
0=No
1=Yes
2=X
3=Variable
```

- Quick/Short edge codes are exported as one 4 digit field (e.g. 0000)

- Grain and edge fields are blank for fitting and operations and the cost field is blank for parts.

## 4.8 Export - Product data

At the product library screen there are several options to export data.

- Export product
- Export library
- Export product list

***Export product***

The export product option is used to export a single product from the library, which includes the part details and any variables, formulae or lookups used.

When the option is selected a .PLE file is created in the path for export data based on the name of the currently selected product.

e.g. If the current product is BASE-OVEN-HSE the file is:BASE-OVEN-HSE.PLE

This file can then be subsequently imported into another user profile or into the same user profile if the product is modified and needs to be reset.

*The PLE format is an internal format.*

***Export library***

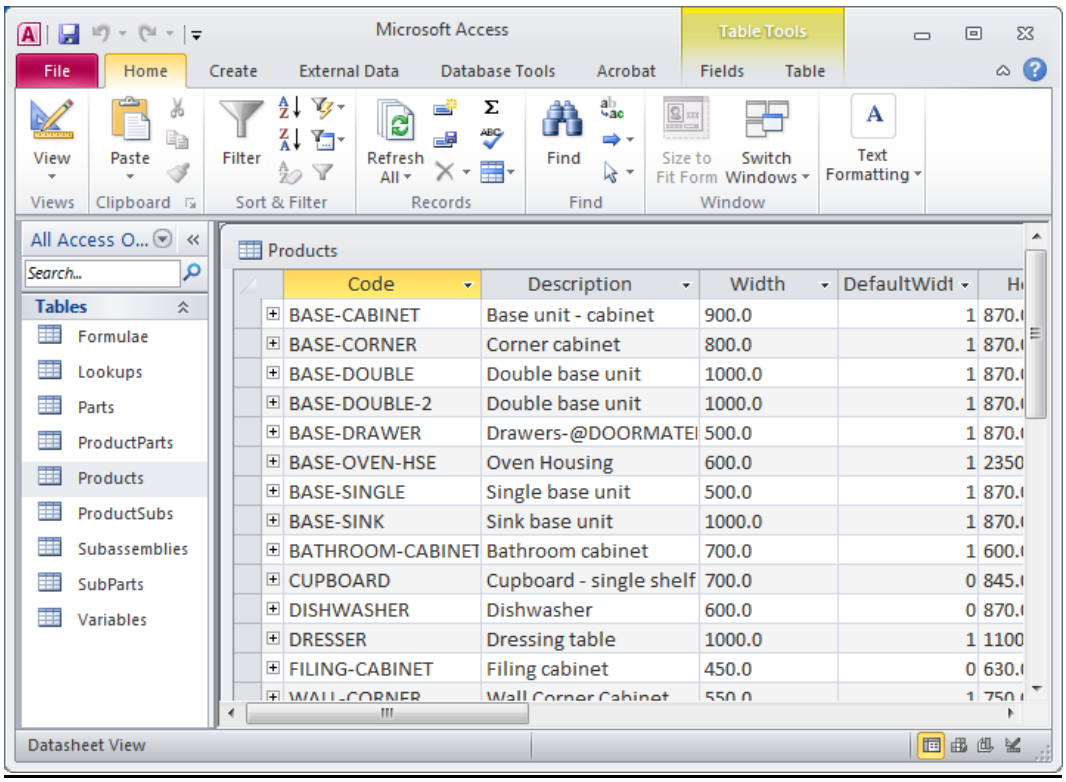
The export is to an 'Access' MDB format database

There are 9 tables named as follows:

Products - Contains product details (not the part grid at the bottom of product library)
Subassemblies - Contains the subassembly details (not the part grid information)
Parts - Contains the part details from the part library

ProductParts - Contains which parts appear in which products (part grid information)
ProductSubs - Contains which subassemblies appear in which products (part grid inf.)
SubParts - Contains which parts appear in which subassemblies (part grid inf.)

Variables - Contains the variable table details
Formulae - Contains the formulae table details
Lookups - Contains the lookup table details




The fields for each table are:-

*Products*

Code, Description, Width, Default width, Height, Default height, Depth, Default depth, VerticalPos, DefaultVerticalPos, Drawing, Planview, Elevationview, Price, AnswerTable, Memo1 to Memo10

*Subassemblies*

Code, Description, Width, Default width, Height, Default height, Depth, Default depth, Drawing

*Parts*

Code, Material, Description, Length, DefaultLength, Width, DefaultWidth, Grain, Edging, DrawingType, Drawing, Cost, Infobox1 to Infobox99

*Productparts*

Product, Part, Qty/time, Material, Length, Width

*ProductSubs*

Product, Subassembly, Qty/time, Material, Length, Width

*SubParts*

Subassembly, Part, Qty/time, Material, Length, Width

*Variables*

Name, Format, Directory, Type, InformationBox, Description, Default, Range

*Formulae*

Name, Description, Formula

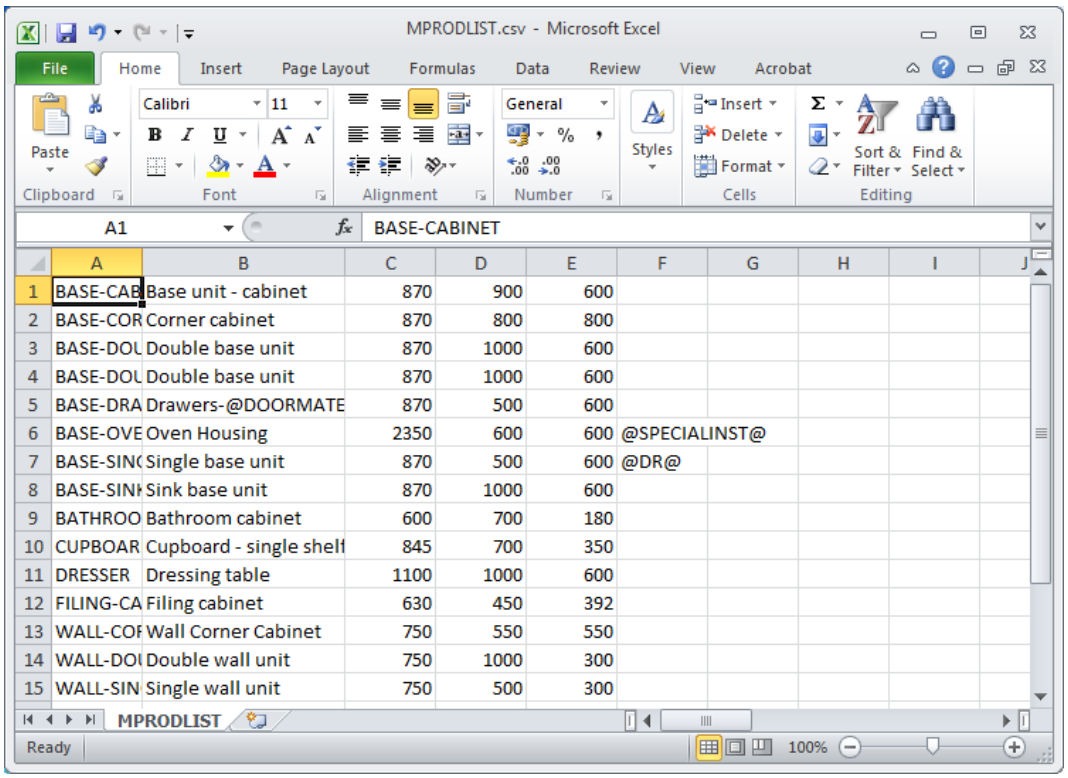
*Lookups*

Name, Description, Value

***Export product list***

This creates a file:  MPRODLIST.csv (for millimeters) or IPRODLIST.CSV (for inches).

The file is located in the 'Path for Export'.




| | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | BASE-CAB | Base unit - cabinet | 870 | 900 | 600 | | | | | |
| 2 | BASE-COR | Corner cabinet | 870 | 800 | 800 | | | | | |
| 3 | BASE-DOU | Double base unit | 870 | 1000 | 600 | | | | | |
| 4 | BASE-DOU | Double base unit | 870 | 1000 | 600 | | | | | |
| 5 | BASE-DRA | Drawers-@DOORMATE | 870 | 500 | 600 | | | | | |
| 6 | BASE-OVE | Oven Housing | 2350 | 600 | 600 | @SPECIALINST@ | | | | |
| 7 | BASE-SIN | Single base unit | 870 | 500 | 600 | @DR@ | | | | |
| 8 | BASE-SIN | Sink base unit | 870 | 1000 | 600 | | | | | |
| 9 | BATHROO | Bathroom cabinet | 600 | 700 | 180 | | | | | |
| 10 | CUPBOAR | Cupboard - single shelf | 845 | 700 | 350 | | | | | |
| 11 | DRESSER | Dressing table | 1100 | 1000 | 600 | | | | | |
| 12 | FILING-CA | Filing cabinet | 630 | 450 | 392 | | | | | |
| 13 | WALL-COF | Wall Corner Cabinet | 750 | 550 | 550 | | | | | |
| 14 | WALL-DOU | Double wall unit | 750 | 1000 | 300 | | | | | |
| 15 | WALL-SIN | Single wall unit | 750 | 500 | 300 | | | | | |

A line is produced for each product in the library with the fields in the following order:

*Code, Description, Height, Width, Depth, Memo1, Memo2, Memo3, Memo4, Memo5,Price,Drawing name,Variable1,default answer1,Variable2,default answer 2...*

The drawing name field contains the sketch name, not the plan or elevation names. This field can be blank (empty) but there may still be a product drawing which matches the product name.

The product variables and default answers repeat as many times as required. Default answers are taken from the variables table. If there is no default answer, the answer field is blank (e.g. @variable1@,,@variable2@...). Global variables will appear in the list against each product.

If a product contains parts / machine drawings which have variables, these variables also appear in the list. This also applies to variables which occur in formulae or look-ups which occur in the product, parts or machine drawings.

Sub-assemblies and accessories are not exported. The list of parts that comprise a product are also not exported.

### 4.9 Export variables deployment list

This option lists where variables names are used across the product library, part library, machining library and drawing library. At the main screen:-

- Select: File - Export variables deployment list
- Select the file format for the file.

CSV
XLS
XLSX

If the file already exists the program prompts to overwrite the file.

The file is located in the 'Path for Export data' the file name is based on the date.
e.g. VARDEPLIST 2013-11-19 1420.xls

The file line of the file contains the following 5 text headings:

Product, Part, Machining, Drawing, Variable

The following lines list all the places where a variable is used, for example:-

1. BASE-CABINET,,, BCAB1

This means the variable BCAB1 is used in the product BASE-CABINET (and not in any part, machining or drawing)

2. BASE-CABINET,BASEPART1,,BCAB2

This means variable BCAB2 is used in product BASE-CABINET and part BASEPART1, but not in a machining item or drawing.

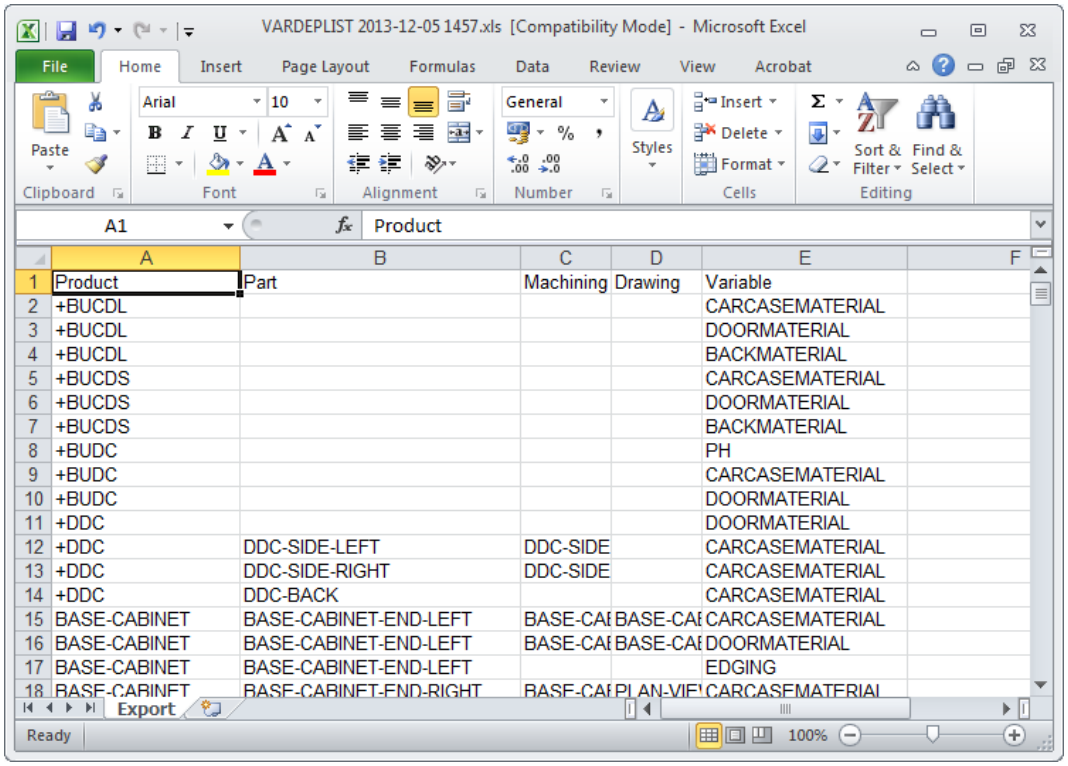
3. BASE-CABINET,,MCH1,,BCAB3

This means variable BCAB3 is used in product BASE-CABINET and machining drawing MCH1, but not in a part or a drawing

4. ,TPART1,,,VAR2

This means the variable VAR2 is not in any product, machining item or drawing but is used in part TPART1.

The first items in the file are based on product variables and below (parts belonging to the product and associated drawings), then variables used for any remaining unused parts and below, next any remaining machining drawing and finally any remaining drawing library items.




| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | Product | Part | Machining | Drawing | Variable | |
| 2 | +BUCDL | | | | CARCASEMATERIAL | |
| 3 | +BUCDL | | | | DOORMATERIAL | |
| 4 | +BUCDL | | | | BACKMATERIAL | |
| 5 | +BUCDS | | | | CARCASEMATERIAL | |
| 6 | +BUCDS | | | | DOORMATERIAL | |
| 7 | +BUCDS | | | | BACKMATERIAL | |
| 8 | +BUDC | | | | PH | |
| 9 | +BUDC | | | | CARCASEMATERIAL | |
| 10 | +BUDC | | | | DOORMATERIAL | |
| 11 | +DDC | | | | DOORMATERIAL | |
| 12 | +DDC | DDC-SIDE-LEFT | DDC-SIDE | | CARCASEMATERIAL | |
| 13 | +DDC | DDC-SIDE-RIGHT | DDC-SIDE | | CARCASEMATERIAL | |
| 14 | +DDC | DDC-BACK | | | CARCASEMATERIAL | |
| 15 | BASE-CABINET | BASE-CABINET-END-LEFT | BASE-CAI | BASE-CAI | CARCASEMATERIAL | |
| 16 | BASE-CABINET | BASE-CABINET-END-LEFT | BASE-CAI | BASE-CAI | DOORMATERIAL | |
| 17 | BASE-CABINET | BASE-CABINET-END-LEFT | | | EDGING | |
| 18 | BASE-CABINET | BASE-CABINET-END-RIGHT | BASE-CAI | PLAN-VIE | CARCASEMATERIAL | |

# 5. Stand alone operation

It is sometimes useful to run portions of the Optimising software as ‘stand alone’ programs. For example, to automate the process of importing and optimising or to automate a stock update or to interface with other systems.

**Optimising program setup** - stand alone operation is a way of running the program with no operator input *BUT a lot of information still comes from the Optimising program which has to be set up in the usual way*. That is, parameters set and co-ordinated, boards and materials available in the Board library, drawings available in the Machining library etc.

*Make sure that the operations work using the FULL program before attempting to create the stand alone operation*

**Instructions** - these are specific for each stand alone item so follow the examples carefully .

***Running the Import program - example***

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

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

**User profile** - It is important to run the program from a user profile to locate the system parameter settings for paths and other values required.

**Errors** - when a program runs in 'silent' mode this means that the usual method of reporting errors is not available because the on-screen list of errors cannot be displayed. Any errors are stored in the file IMPORT.ERR

## 5.1 Import parts / boards / patterns - stand alone

Using program Import services with other systems via the command line or a batch file

Use the program: IMPORT

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

*filename* - path and name of the file to import

*Format*

Set the import type

```
/FORMAT:nn
```

The import types for parts and boards are as follows:-

0 - Part list order - ASCII CSV (PNX)
1 - Cabinet Vision format
2 - Product Planner format
3 - Code and quantity - ASCII CSV (PNX)
4 - Batch - part list order (BTX & PNX)
5 - Batch - Code and quantity (BTX & PNX)
6 - User defined order - ASCII CSV (PNX)
7 - Batch - user defined order (BTX)
8 - Parts & boards - ASCII CSV (PTX)
9 - Parts & boards - Access (MDB)

10 - Cut Planner format
11 - MSS/Keytrix format
12 - Giben Optisave AC & AD files
13 - Pattern exchange - ASCII CSV (PTX)
14 - Pattern exchange - Access (MDB)
15 - Giben Optisave - AC file only

16 - BDX format
17 - Board list - User defined order ASCII / CSV

20 - XLS parts
21 - XLSX parts
30 - XLS boards
31 - XLSX boards

For example:

```
IMPORT c:\importdir\files\parts.pnx /FORMAT:3
IMPORT jobs.ptx /FORMAT:13
```

When using /FORMAT the program runs in silent mode (same as /AUTO) and any errors are sent to a .ERR file.

*Delete*

Delete original files

```
/DELETE
```

*Overwrite*

Overwrite or replace existing files

```
/OVERWRITE
```

Only applies to types 12 and 15. /OVERWRITE command means overwrite all existing files.

*Rename*

```
/RENAME
```

Batch name is allocated a unique number from the same series as quotes/requirements (sonumber.ctl). The part list names are created by using the first five digits of the batch number and the first 3 characters of the job list name.

e.g. BRJOB.PTX contains jobs WRK and NST

```
IMPORT BRJOB.PTX /RENAME /PARTS /AUTO
```

Batch file created:-

```
    00004.BTC
       00004WRK.PRL
       00004NST.PRL
```

It is important to ensure that, when using this option, the first three characters of each job name are unique within that PTX file. You cannot have, for example, 'BSR10' and 'BSR15' as job names unless these are placed in separate PTX files.

*Silent*

Run without prompts etc.

```
/AUTO
```

*Alternative commands*

```
/PARTS /BOARDS /PATTERNS
```

These commands can be used as an alternative to the FORMAT command. When using these commands the relevant import parameter is used for the import format and the System parameter: *Path for import data* must be set

*Errors* **-** When you work with a command like '/AUTO' so that a program runs in 'silent' mode this means that the usual method of reporting errors is not available because the on-screen list of errors cannot be displayed. Any errors are stored in the file IMPORT.ERR

*Delete product requirement import files* **-** these can be deleted after import. This is done at the Import - Requirements dialog box. Check the box 'Delete files after import'.

Import files can also be deleted when running the program in the stand-alone mode. Use argument /DELETE to give the command line:

```
PRODIMP.EXE ["file name.ext"] [/AUTO] [/DELETE]
```

Omit /DELETE if deletion is not required
Quotation marks are not needed if the file name does not contain spaces
Use /AUTO for stand-alone operation.

*User defined*

```
/UDF
```

Where there is an import parameter for user defined parts or boards the parameter file can be specified on the command line with the UDF option.

```
IMPORT.EXE TESTFILE.IMP /FORMAT:6 /UDF:Myparts
```

Where the file name includes spaces the name must be enclosed in quotes.

```
IMPORT.EXE TESTFILE.IMP /FORMAT:6 /UDF:"My parts"
```

The /UDF argument only applies if /FORMAT:6 or /FORMAT:7 are also set.

*Separator*

```
/SEP:<separator>
```

Specify the separator for the file. e.g.

```
/SEP:58
/SEP:":"
```

The separator is either the decimal Ascii number or the character enclosed in quotes

The separator can be any ASCII code between 32 and 127 except the following (0 to 9, A to Z or a to z).

If the separator is not valid an error is reported.

*Existing board list*

```
/NOWRTBRD
```

Only applies to part list import

Stops the program deleting the existing board list - this allows the program to re-use a board list.

## 5.2 Export reports - stand alone

Using program Output services via the command line or a batch file to print or export data

Use program: OUTPUT

This allows printing or export of runs / summaries. There are several different options available:-

```
/PRINT          - print
/EXPORT         - export to ASCII files
/EXPORT /MDB    - export to Access database
```

*Printing*

```
/PRINT=<printername>      - specify the printer
/REPORTS=<reportletters>  - set the reports to print
```

```
/RUN=<runumber>           - set the run name / number
```

Reports are specified with a report letter (see below).

For example:-

```
OUTPUT /PRINT /REPORTS=BCE
OUTPUT /PRINT=\\SERVER\LASERJET4 /RUN=00027 /REPORTS=BCE
```

*Export to ASCII file(s)*

```
/EXPORT                   - export to ASCII files
/REPORTS=<reportletters>  - set the reports to print
/RUN=<runumber>           - set the run name / number
```

Reports are specified with a report letter (see below).

For example:-

```
OUTPUT /EXPORT /REPORTS=BCE
OUTPUT /EXPORT /RUN=00027 /REPORTS=BCE
```

*Export to MDB file*

```
/EXPORT /MDB              - export to Access database
/REPORTS=<reportletters>  - set the reports to print
/RUN=<runumber>           - set the run name / number
```

Reports are specified with a report letter (see below).

For example:-

```
OUTPUT /EXPORT /MDB /REPORTS=BCE
OUTPUT /EXPORT /MDB /RUN=00027 /REPORTS=BCE
```

*Export to XLS/XLSX*

```
/EXPORT /XLS             - export to Excel
/EXPORT /XLSX            - export to Excel
```

*Errors*

Any errors are sent to a .ERR file.

*Report letters*

```
A Batch Summary
B Management Summary
C Pattern Summary
D Part Summary
E Board Summary
F Offcut summary
G Distribution summary
H Input summary
I Destacking summary
J Pattern drawing
N Edging summary
O Material summary
P Machine times
Q Saw loading summary
R Station summary
T Job costing
U Fittings
V Operations
Y Sundry parts
1 Nested Preview
2 Nested Drawings
3 Saw simulation
4 Nested pieces
5 Nested parts
```

*Override export path*

The location of exported files can be temporarily overridden when exporting review runs data by using the OUTPUT program in stand alone mode.

The command line argument is /EXPORTPATH followed by the path for export data. This path can also be a UNC path, for example:-

```
..\OUTPUT.EXE /EXPORT /REPORTS=J /EXPORTPATH=O:\EXPORT\
..\OUTPUT.EXE /EXPORT /REPORTS=J /EXPORTPATH=\\SERVER\EXPORT\
```

If a path contains spaces then the path must be surrounded with quotes, for example:

```
..\OUTPUT.EXE /EXPORT /REPORTS=BCD /EXPORTPATH="O:\SPACED PATH\"
```

If the path specified is not valid the export does not take place

*Send to PDF*

Send to PDF

Create a printout as a PDF file. Use the /PDF argument:-

```
..\OUTPUT.EXE /PDF /REPORTS:BC
```

'/PRINT' is not needed if '/PDF' is used. To use PDF there must be at least one printer driver installed on the system.

***Running the Output program - example***

A typical task is to export some of the reports to an ASCII file Run the program OUTPUT.EXE from a user profile. This can be from a batch file or from a shortcut or by using the Windows option Start - Run. For example, using a Windows batch file the commands are:-

```
..\output /export /reports=CD
```

In this example the reports exported are the Pattern Summary (C) and the Part summary (D). The current run is used unless the /RUN option specifies a different run.

**User profile** - It is important to run the program from a user profile to locate the system parameter settings for paths and other values required.

**Errors** - when a program runs in 'silent' mode this means that the usual method of reporting errors is not available because the on-screen list of errors cannot be displayed. Any errors are stored in the file OUTPUT.ERR

## 5.3 Export Library data - stand alone

Board library

Use the program: BOARD

BOARD [ /BDX]

This creates the file brdlib.bdx in the path set by the system parameter: *Path for Export data*

```
..\BOARD /BDX
```

The program should be run from a 'User profile' either by running the program from

that profile (with the Windows Run command or a Batch file) or by setting the 'Start in' option on a shortcut.

An example of a batch file is the following.

```
CD \USER1
C:\USER1\BOARD.EXE /BDX
```

Export part and product library data

Stand alone options to export the full libraries

Part library

Use the /EXPORT command line argument. This creates a file:  PRTLIB.csv

```
c:\v90\PARTS.EXE /EXPORT
```

The file is located in the 'Path for Export'.

Product library

Use the /EXPORT command line argument. This creates a file:  MPRODLIST.csv (for millimeters) or IPRODLIST.CSV (for inches).

```
c:\v90\PRODLIB.EXE /EXPORT
```

The file is located in the 'Path for Export'.

### 5.4 Batch operations - stand alone

Many operations such as optimising work as a batch operation - even if, for example, only one cutting list is optimised.

For stand alone operation you often need to run the batch process - the following are the instructions to achieve this.

The program for batch operations is BATCH.EXE. The command syntax is as follows.

```
BATCH [filename] [/AUTO] [/OPTIMISE]
```

*filename* - the name of the file to apply batch operations to. Batch file (*filename*.BTC), part list (*filename*.PRL), or cutting list (*filename*.CTT).

Square brackets [ ] indicate that the command is optional. If no filename is specified the current batch is used.

*Note* - option '/OPTIMISE' can also be spelt as '/OPTIMIZE'

For example:-

```
BATCH DEMO1.PRL /AUTO /OPTIMISE
```

(Optimises the part list DEMO1).

/AUTO - silent operation - no dialogs or error messages are displayed.

/OPTIMISE - optimisation of the named file

The /AUTO argument is needed with /OPTIMISE.

For example:

A batch file to import parts from a pattern exchange file (ptx) , optimise the batch and transfer information to the saw and machining centre.

```
..\IMPORT %1 /AUTO /PARTS
..\BATCH /AUTO /OPTIMISE
..\SAWLINK /AUTO /1
..\MCHLINK
```

*Note* - during optimisation any cutting lists or board lists that do not exist are automatically created.

If no name is specified for a batch optimisation (e.g. BATCH.EXE /AUTO /OPTIMISE), the current batch is used and any cutting lists that do not exist for the batch are created.

If a filename is specified for a batch optimisation but there is no file extension the program looks for <filename>.BTC first, <filename>.CTT next and <filename.PRL last. If none of these exists, an error message is placed in the error file (!.ERR)

The system of automatically dividing cutting lists that apply when optimising from the part list program also applies for BATCH.EXE standalone optimising. This is based on the 'Optimise options' and 'Category for part list divide' system parameters.

*Import user defined parts* **-** import parameter file for user defined parts can be specified on the command line. This is handled with the /UDF command line argument.

```
IMPORT.EXE TESTFILE.IMP /FORMAT:6 /UDF:02
```

This uses the user defined format 02 which has .IMP as its file extension. Errors are output if the user defined format file does not exist.

The /UDF argument only applies if /FORMAT:6 or /FORMAT:7 is used, any other format will generate an error message.

*Import user defined product requirements* - The /UDF command line argument can also be used to specify the product requirement import parameter file when import products.

*Remaining parts* - in /AUTO mode there is no dialog to save any remaining or invalid parts (if they exist). Invalid parts are reported in the error file.

- For stand alone operation - the parameter 'Prompt before modifying existing list' parameter is ignored and all board lists are updated if possible.

***Example using batch operations***

A Windows batch file to import parts from a pattern exchange file (ptx) , optimise the batch and transfer information to the saw and machining centre.

```
..\IMPORT %1 /FORMAT:8
..\BATCH /AUTO /OPTIMISE
..\SAWLINK /AUTO /1
```

*Note* - during optimisation any cutting lists or board lists that do not exist are automatically created.

%1 is the usual Windows batch command line variable which is a place holder for the file name.

**User profile** - It is important to run the programs from a user profile to locate the system parameter settings for paths and other values required

**Errors** - when a program runs in 'silent' mode this means that the usual method of reporting errors is not available because the on-screen list of errors cannot be displayed. Any errors are stored in the file !.ERR

**Ignore errors**

```
/IGNOREBRDERR
```

The optimisation may report errors but continues.

```
BATCH DEMO1.PRL /AUTO /OPTIMISE /IGNOREBRDERROR
```

This can be useful where the list contains boards of zero dimension ( 0 x 0 ) which remain in the board list, for example, when using combination materials.

## 5.5 Stock update and stock issue - stand alone

Using program Stock control services via the command line / batch file

Use program: STOCK

There are several different options available:-

```
/IMPORTSTOCK    - import stock
/OVERWRITESTOCK - overwrite stock
/ISSUESTOCK     - issue stock
/ALLOCSTOCK     - allocate stock
/RESET          - month/year end report
/UDF            - user defined import
```

These are separate options for the Stock program.

Import stock

```
STOCK <filename> /IMPORTSTOCK [/FORMAT:n] [/UPDATEEXISTING]
[/ADDNEWSTOCK] [/SEP:<separator>]
```

*filename* - file with stock information. This must include the correct file extension.

```
STOCK MyBoards.bdx /IMPORTSTOCK
```

The basic operation is to add incoming values to existing ones.

```
Import file
MFC15-03   2440 x 1220    98
MFC15-04   3660 x 1830    15
MFC15-05   2010 x 1680    61

Board library          BEFORE                          AFTER
MFC15-03   2440 x 1220   320     MFC15-03   2440 x 1220   418
MFC15-04   3660 x 1830    26     MFC15-04   3660 x 1830    41
```

The format can be set via the System parameters in the user profile or via the /FORMAT switch. The format must match the file name extension.

```
STOCK MyBoards.bdx /IMPORTSTOCK /FORMAT:1
```

The numbers for the /FORMAT switch are:- 0 - BRD format, 1 - BDX format, 2 - Bargstedt stock file BESTAND.STK.

To also add any new stock (Board and offcuts) use the /ADDNEWSTOCK switch.

```
STOCK MyBoards.bdx /IMPORTSTOCK /FORMAT:1 /ADDNEWSTOCK

Import file
MFC15-03   2440 x 1220    98
MFC15-04   3660 x 1830    15
MFC15-05   2010 x 1680    61

Board library          BEFORE                          AFTER
MFC15-03   2440 x 1220   320     MFC15-03   2440 x 1220   418
MFC15-04   3660 x 1830    26     MFC15-04   3660 x 1830    41
                                 MFC15-05   2010 x 1680    61
```

To replace any existing stock values with those in the import file use the /UPDATEEXISTING
switch

```
STOCK MyBoards.bdx /IMPORTSTOCK /FORMAT:1 /ADDNEWSTOCK /UPDATEEXISTING

Import file
MFC15-03   2440 x 1220    98
MFC15-04   3660 x 1830    15
MFC15-05   2010 x 1680    61

Board library          BEFORE                          AFTER
MFC15-03   2440 x 1220   320     MFC15-03   2440 x 1220    98
MFC15-04   3660 x 1830    26     MFC15-04   3660 x 1830    15
                                 MFC15-05   2010 x 1680    61
```

For the BDX format only - a separator can be specified; this is useful where the BDX fields are separated by a character other than a comma, for example a colon.

```
STOCK MyBoards.bdx /IMPORTSTOCK /FORMAT:1 /SEP:":"
```

The separator can be specified as a character or a number e.g. /SEP:58 or /SEP:":"

**Overwrite stock**

```
STOCK <filename> /OVERWRITESTOCK [/FORMAT:n] [/OVERWRITEEXISTING]
[/SEP:<separator/]
```

*filename* - file with stock information. This must include the correct file extension.

```
STOCK MyBoards.bdx /OVERWRITESTOCK
```

The basic operation is to add new stock (Boards and offcuts) to the library.

```
Import file
MFC15-03   2440 x 1220    98
MFC15-04   3660 x 1830    15
MFC15-05   2010 x 1680    61

Board library          BEFORE                          AFTER
MFC15-03   2440 x 1220   320     MFC15-03   2440 x 1220   320
MFC15-04   3660 x 1830    26     MFC15-04   3660 x 1830    26
                                 MFC15-05   2010 x 1680    61
```

The format can be set via the System parameters in the user profile or via the /FORMAT switch. The format must match the file name extension

```
STOCK MyBoards.bdx /OVERWRITESTOCK /FORMAT:1
```

The numbers for the /FORMAT switch are:- 0 - BRD format, 1 - BDX format, 2 - Bargstedt stock file BESTAND.STK.

To overwrite the quantities of existing board codes use the /OVERWRITEEXISTING switch.

```
STOCK MyBoards.bdx /OVERWRITESTOCK /FORMAT:1 /OVERWRITEEXISTING

Import file
MFC15-03   2440 x 1220    98
MFC15-04   3660 x 1830    15
```

```
MFC15-05   2010 x 1680    61

Board library          BEFORE                          AFTER
MFC15-03   2440 x 1220   320     MFC15-03   2440 x 1220    98
MFC15-04   3660 x 1830    26     MFC15-04   3660 x 1830    15
                                  MFC15-05   2010 x 1680    61
```

For the BDX format only - a separator can be specified; this is useful where the BDX fields are separated by a character other than a comma, for example a colon.

```
STOCK MyBoards.bdx /OVERWRITESTOCK /FORMAT:1 /SEP:":"
```

The separator can be specified as a character or a number e.g. /SEP:58 or /SEP:":"

Can also include the /BOARDOPTIONS and /OFFCUTOPTIONS commands to control the overwrite process. e.g.

```
STOCK.EXE /OVERWRITESTOCK /BOARDOPTIONS:1  /OFFCUTOPTIONS:0
```

The options are:-

0 = do nothing
1 = clear quantities
2 = remove items

*Import or Overwrite stock from external SQL database*

This follows the rules in the above sections. An example is:-

```
STOCK /IMPORTSTOCK /FORMAT:3 /UPDATEEXISTING /ADDNEWSTOCK
STOCK /OVERWRITESTOCK /FORMAT:3
```

The relevant system parameters must be set to make the link to the external database.

**Issue stock**

```
STOCK /ISSUESTOCK
```

This issues stock for the current run. This can also include the command: /OPT to control the stock update, e.g.

```
STOCK /ISSUESTOCK /OPT:23
```

Options are:-

1 - Adjust boards
2 - Adjust offcuts
3 - Add offcuts
4 - Adjust edging
5 - Adjust fittings
6 - Adjust monthly summary

**Allocate stock**

```
STOCK /ALLOCSTOCK
```

Allocation records are assigned the current date in the 'cut date' field.

This allocates stock for the current run.

**Reset Transactions**

```
STOCK /RESET
```

Produces the End of Month / Year report. Stock transactions (audit trail) are automatically exported to an external file. The external file is located in the: Path for Stock libraries (if set) other it is located in the Path for library data. For example:-

```
Transactions 2007-07-25 1305.csv
```

*Notes*

- separator can be any ASCII code between 32 and 127 except the following (0 to 9, A to Z or a to z).

- for /FORMAT the program runs in silent mode and any errors are sent to a .ERR file.

*Stand alone Minimum free stock report*

Use program: STOCK

```
STOCK /MINFREESTOCK
```

The output defaults to all materials rather than prompting for a range. The minimum free stock report appears on screen and may be printed in the usual way.

## 5.6 Import product requirements - stand alone

Use program: PRODIMP

```
PRODIMP [filename] [/AUTO] [/DELETE] [/UDF:<parameter filename>]
/[SEP:<separator]
```

*filename* - file with requirements information

/AUTO - silent running

/DELETE - delete import file

*User defined*

Import stock from file in user defined format

```
/UDF
```

Example:  /UDF:"board import"

The default extension is ubx. If the file name is not set the program uses the file specified in system parameters.

Other options are:

```
[/UPDATEEXISTING] [/ADDNEWSTOCK] [/SEP:<separator>]
```

The /SEP option takes precedence over the separator specified in the board import parameters.

*Separator*

```
/SEP:<separator>
```

Specify the separator for the file.

```
/SEP:58
/SEP:":"
```

The separator is either the decimal Ascii number or the character enclosed in quotes. The separator can be any ASCII code between 32 and 127 except the following (0 to 9, A to Z or a to z).

If the separator is not valid an error is reported.

*Calculation of parts*

```
/CALCPARTS
```

Creates the part list and cutting list automatically

File format

```
/FORMAT:nn

0 - CSV
1 - XLS
2 - XLSX

e.g. /FORMAT:1
```

## 5.7 Saw transfer - stand alone

Use the program: SAWLINK

```
SAWLINK [/Switches]
```

Use the various switch options to specify the details of the transfer, for example:-

```
..\sawlink /AUTO
..\sawlink /AUTO /SAWPATH="c:\Saw transfer" /TRANSMODE=6 /CADMATIC=CAD4
```

*Switches*

| *Switch* | *Options* | *Example* | *Default* |
|---|---|---|---|
| /SAWPATH=*name* | Full path name | /SAWPATH="c:\saw transfer" | current directory |
| /TRANSMODE=*number* | Saw transfer mode number (2 - 14) | /TRANSMODE=3 | 6 (Cadmatic III) |
| /WARNING=*number* | Retransfer warning level (1 or 2) | /WARNING=1 | 0 (not set) |
| /ONLINEPATH=*name* | Full path for online data | /ONLINE=c:\MySawData | blank (no path set) |
| /LOGIN=*number:name:password* | Authentication required<br>User name | /LOGIN=1:userjones:dfxgy | 0 (login not used) |

| | | | |
|---|---|---|---|
| | Password | | |
| /SAFE=n*umber:value:value* | Safe transfer enabled (0-1)<br>Timeout 1<br>Timeout 2 | /SAFE=1:3:5 | 0 (not used) |
| /SPARE=text | | | blank |
| /PTXOPTIONS=*command* | P - prompt before overwrite<br>R - one file per run | /PTXOPTIONS=P<br>/PTXOPTIONS=PR | blank (not set) |
| /CPOUT=*number* | Cpout naming method (0-1) | /CPOUT=1 | 0 |
| /ILENIA=number Ilenia controller | Use Ilenia controller (0-1) | /ILENIA=1 | 0 |
| /CADMATIC=*code* | Type of Cadmatic<br>CADR - Cadmatic III recursive<br>CAD4 - Cadmatic 4 | /CADMATIC=CAD4 | blank (Cadmatic III) |
| /IMAGE=*format code,color code* | Colour codes<br>(BMP,BMP24,BMP,<br>BMP16,BMP256,WMF,EMF)<br>Use colour (0-1) | /IMAGE=BMP256,1 | blank (not set) |
| /ALPHA=number | Allow alphanumeric runs for Cadmatic 1/II (0-1) | /ALPHA=1 | 0 (not set) |
| /COMMSPORT=port code | Communication port for saw | /COMMSPORT=COM1 | blank (not set) |
| /GROUP=number | Transfer to group (group number) | /GROUP=1 | blank (not set) |
| /RUN-name | Run number to use | /RUN=10023 | current batch |
| /AUTO | Stand alone (silent) operation | /AUTO | |
| /DELETE | Delete runs after transfer | /DELETE | |
| /*number* | Saw number (line number of saw transfer parameters (0-6) | /1 | |

Refer to the Saw transfer parameters for full details of each option

*Notes*

- For file names and commands with spaces use quotation marks to enclose the text

- Specifying a run to transfer. The run can be either a name or a run number:-

```
/RUN=00001
/RUN="Week 1"
```

If any run files are missing an error is reported

- The format of the commands reflects the usage in the previous *Options* command

- /GROUP - this refers to the number of the group in the saw transfer parameter list. The first group in the list is group 1 and the next group 2 etc.

*Previous commands*

- /AUTO, /DELETE, and /number are the previous commands - these can still be used in the same way. But do NOT use with any of the other commands; in this case /number means that any other command options are ignored. This also applies to the new /GROUP command.

/AUTO  automatic and silent transfer of files

*'Automatic and silent'* - means that the transfer program does not use screen displays or report prompts and errors on screen. Transfers the current batch of runs.

/DELETE - remove original files

Run files are deleted from the directory set by the System parameter: Path for data, when the whole batch is successfully transferred to the saw. Only files associated with the current batch are deleted (<run>.*).

/n  saw number

The 'n' stands for the number of the item in the saw transfer parameter list.

e.g. ..\SAWLINK /AUTO /1 /delete

Previously for saw transfer the /DELETE option also deleted any parameter files associated
with run. This is no longer done. The files deleted are:-

Run name.*  - any file matching the run name in the Path for data
Cutting list (.ctt)  - from 'Path for part lists' if set or 'Path for data' otherwise
Part list (.prl)  - from 'Path for part lists' if set or 'Path for data' otherwise
Board list (.brd)  - board list associated with the run
Batch file (.btc)

- Cadmatic saws in a group must all use the same controller
- Machines using PTX transfer must export the same pattern image format

*Separate offcut patterns*

Use this switch for stand alone saw transfer to separate offcut patterns to a different run (/SEPARATEOFCRUNS=1).

```
..\sawlink /AUTO /SAWPATH="c:\Saw transfer" /TRANSMODE=6
/CADMATIC=CAD4 /SEPARATEOFCRUNS=1
```

## 5.8 Back up User profile - stand alone

Take a copy of a user profile.

The backup process can also be activated from the command line. Program must run from a User profile

BACKUP /AUTO /PATH=<path name>

/AUTO - silent operation (any errors are stored in a backup.err file in the user profile).

/PATH - override current System parameter: Path for backup and place the backup file in a different directory/folder

```
BACKUP /AUTO /PATH=E:\BACKUPS
```

If no path specified or invalid path and error is reported

## 5.9 Stand alone operation - examples

Example of stand alone operation - 1

In this example a Windows batch file is used to control the process of importing a part list from a pattern exchange file and optimising the part list.

The batch file (example2.bat) contains:-

```
..\import %1 /format:8
..\batch %1 /optimise /auto
```

It is located in a user profile (in this case V9demo).

%1 is the usual Windows batch file place holder

The batch file example2.bat is run from a Windows shortcut which provides the name of the file to import.

The 'Start in' box is important since the batch file must be located in or start in the V9 user profile.

**Errors** - if an error occurs .ERR files are created in the user profile, for example, IMPORT.ERR. These are text files and can be viewed with any Windows text editor or Word processor.

Example of stand alone operation - 2

In this example a part list is imported from a pattern exchange file, optimised and the Board summary exported to a spread sheet. The batch file (example4.bat) contains:-

```
..\import %1 /format:8
..\batch %1 /optimise /auto
..\output /export /reports=E

copy ..\V9demo\import\%1e.exd ..\V9demo\import\%1e.csv
"c:\program files\Microsoft office\office10\excel.exe" ..\V9demo\import\%1e.csv
```

The last two lines copy the resulting EXD file to CSV and load it into a spread sheet. The spread sheet commands will vary depending on the system used.

The batch file is located in a user profile (in this case V9demo).

%1 is the usual Windows batch file place holder

*Note* - the second value of the system parameter: *Run - last, use part list* must be set so that the output files (ptn and exd) have the same name as the part list that is imported and optimised.

The batch file example4.bat is run from a Windows shortcut which provides the name of the file to import.

In this case the file extensions are not used (they are not needed) as they would clash with the operation of the batch file.

The result is the board summary data loaded into a spread sheet ready for use.

**Other stand alone options**

There are various stand alone options for the Online label PC, the Saw Queue, and Saw Simulation programs but these are part of the operation of the programs themselves and are covered in the Help.

Most of the portions of the Optimising software can be run directly from the command line but there is not really any purpose in this and it is safer to run the full program in the usual way. To restrict access to some parts of the program use System parameters or purchase security keys with a restricted set of modules available e.g. Parts Only.

Use the Auxiliary menu on the main menu screen to set up links to other programs. This is usually a better method than using a batch file to achieve the same result.

## 5.10 CadLink program

Stand alone program for direct conversion from Pattern Exchange to Cadmatic III/IV (recursive)

- To install - copy the *cadlink.exe* program to the required location
- Check the Cadlink security key is plugged in

The format of the command line for Cadlink is:-

```
cadlink filename [destination] [/options]
```

***filename*** - argument to specify the input file(s) (e.g. `c:\V92\import\week1.ptx` )

Input files are Pattern exchange files (.ptx .mdb)
Wildcards can be included (e.g. `c:\V92\import\*.mdb`)
If only name and extension are used (e.g. `week3.ptx`)program assumes current directory as the location
If including a path do not use the relative path format (e.g. `..\`)
[ ] - indicates an optional value or argument

Maximum length for *filename:* 150 characters - within this the name has a maximum length of 50 characters (e.g. `c:\V92\import\`**`job325-exchangefile-01`**`.ptx` )

There are several different types of path:-

Mapped drive - c:\V92\user1
UNC (Universal naming convention) - \\mainsrv\N\V92\user1

Relative path - ..\V92\user1

The program and most dialogs for paths support all these types of path specification. There are restrictions on the overall length of the path and some characters are not allowed in path names. Paths can include spaces and dots.

```
\\Testbed09\os (c)\V92.gt6\V9.exe
```

***destination*** - argument to specify the path where .saw files are created (e.g. `c:\cadv40\data\saw`)

Specify path only
Trailing '\' is not required
If no destination is specified the same directory as the input files is assumed
Do not use the relative path format (e.g. `..\`)
Program creates path specified if it does not exist
Maximum length for *destination*: 150 characters
Destination argument is optional

***options*** - settings to control Cadlink operation.

Only specify the options required (if any).

/BACKGROUND[:*n*]
/DELETE
/HIDE
/RESULT=[*path*]
/INF=[*n-m*]
/UDI=[*n-m*]

[ ] - indicates an optional value or argument

The following can also be used as an alternative to the *filename* and *destination* arguments.

/FILENAME=*filename*
/DESTINATION=*destination*

See below for full details for each option.

*Example*

```
cadlink c:\V92\import\week1.ptx c:\cadv40\data\saw /BACKGROUND:10
/DELETE
```

*Note*

If no options are used program looks for '*.ptx' in the current working directory. This allows the program to run just by double-clicking in Windows Explorer.

*.* is allowed - this means *.ptx and *.mdb

*Cadlink initialisation errors*

Irrespective of foreground / background mode, the program must pass certain tests before it can begin processing files. If these tests fail the program terminates with one of the following (negative) exit codes.

-1 No security key
-2 Access denied to source path (read)
-3 Access denied to destination path (write)
-4 Program initialisation error

*Cadlink error return / result files*

When converting a single pattern exchange file Cadlink returns the result in the program exit code. The exit code is zero for a successful import or non zero to indicate an error.

If a wildcard is used (e.g. *.ptx) then for each pattern exchange file which matches the wildcard pattern the program creates a result file (<ptx name>.rlt).

A result file is created even if an import is successful.

If all imports are successful, the program exits with code zero otherwise the exit code is the first error encountered. Pattern exchange files which already have a result file in the destination path are ignored.

If the program is running in background mode result files are always created / checked since the program has no exit code. The existence of the .rlt file prevents the program from continuously importing a bad pattern exchange file.

The result file (.rlt) contains three lines as follows:

*Ascii PTX*
[error number]
[field number]
[line number]

*MDB PTX*
[error number]
[field number]
[table name]

Successful imports have zeros on all three lines. A line number or table name may not always be applicable, in which case these fields will be zero.

*List of error numbers*

-1 - No security key
-2 - Access denied to source path (read)
-3 - Access denied to destination path (write)
-4 - Program initialisation error
 0 - Import successful
 1 - File not found
 2 - Bad format (General catch-all)
 3 - Too many jobs
 4 - Duplicate jobs
 5 - Too many part types
 6 - Too many board types
 7 - Too many patterns
 8 - Too many cuts
 9 - Illegal part index
10 - Illegal board index
11 - Illegal pattern index
12 - Illegal cut index
13 - Illegal Offcut index
14 - Cadplan - Too many parts to optimise
15 - Cadplan - Too many boards to optimise
16 - Cadplan - Optimiser fatal error
17 - Illegal material index

*Job naming / multiple jobs*

The PTX format allows for multiple jobs so more than one .saw file may be created. Job names are listed in the JOBS record and these names are used to name the saw files.

*Note* - the program does not attempt to split runs for the saw.

***Options***

*Input files (/FILENAME)*

Full path to the input file(s). Format is:-

/FILENAME=*filename*

```
/FILENAME=c:\V92\import\week1.ptx
```

Format and restrictions the same as the *filename* argument (see above)

*Location for .saw files (/DESTINATION)*

Location where .saw files are created. Format is:-

/DESTINATION=*destination*

```
/DESTINATION=c:\cadv40\data\saw
```

Format and restrictions the same as the *destination* argument (see above)

*Background mode (/BACKGROUND)*

In this mode the program does not terminate. It periodically checks the specified path for PTX files which match and automatically converts new files as they are found. To ensure that Cadlink does not consume too much of the processor time there is a configurable 'sleep' time between checks (n seconds). Format is:-

/BACKGROUND[*:n*]

```
/BACKGROUND
/BACKGROUND:10
```

If no value follows the /BACKGROUND option the program assumes a default of 5 seconds.

*Delete (/DELETE)*

Delete successfully imported PTX files. Format is:-

/DELETE

This option also deletes any results (rlt) files matching the pattern exchange files.

*Results file (/RESULT)*

Specify the location for the results (.rlt) file(s). Format is:-

/RESULT=[*path*]

e.g.

```
/RESULT
/RESULT=c:\ResultsFiles
```

If this option is not set the results files are created in the same location as the input files. If the option is set but no path is specified this forces the program to create results files (in the same location as the Input files).

*Note* - where a single named file is imported the results file is not automatically created as the results are returned in the exit codes (see above).

*Run hidden (/HIDE)*

Running Cadlink with the /HIDE option runs the program in hidden mode. If Cadlink is also running in background mode (/BACKGROUND) then it can only be terminated via the Windows Task Manager. Format is:-

/HIDE

*Order and range of information boxes (/INF /UDI)*

The pattern exchange format has two forms of part information box:

PARTS_UDI = 60  user defined information boxes
PARTS_INF = 28  fixed fields of information

When V9 imports the PTX, information box parameters allow the fields in PARTS_INF to be directed to nominated information boxes. These then take precedence over fields in the PARTS_UDI which would otherwise populate that box.

Cadlink does not have the information box settings required to map PARTS_INF fields to specific information boxes. Instead this is done by the following options.

/INF=n-m
/UDI=n-m

Where n=1st field, m = last field

*Note* - these options also appear in cadlink.ini

The relative order of these commands is important, whether they appear in the .ini file or on the command line. They can be mixed with other arguments but if /INF comes before /UDI then this dictates the order in the final information boxes in the .SAW file.

The internal default is /UDI /INF, so this results in 60 PARTS_UDI fields followed by 28 PARTS_INF.

*Note* - if no options are specified this results in 60 PARTS_UDI fields followed by 28 PARTS_INF

*Examples for /INF and /UDI*

```
/INF /UDI           - all 28 PARTS_INF followed by all PARTS_UDI
(88 boxes in total)
/INF                - all 28 PARTS_INF, no PARTS_UDI
/INF=1-10 /UDI=5-60 - first 10 PARTS_INF followed by PARTS_UDI fields 5-60
(65 boxes in total)
/INF=9 /UDI         - PARTS_INF field 9 (only) followed by all PARTS_UDI
(61 boxes in total)
```

**Allow options to be entered in Cadlink.ini**

As an alternative to running with command-line arguments the options can be set up in a file: *cadlink.ini*. This feature allows Cadlink to run from Windows Explorer.

If the program finds *cadlink.ini* in the program directory (folder containing cadlink.exe), it ignores any command-line options and uses this instead.

Lines in the file are identified by the relevant option keyword (e.g. /FILENAME) and can be in any order.

Each option must occupy a different line in the file.

/FILENAME=*filename*
/DESTINATION=*destination*
/BACKGROUND[:*n]*
/DELETE
/HIDE
/RESULT=[*path]*
/INF=[*n-m*]
/UDI=[*n-m*]

An example *cadlink.ini* file is shown below:

```
/FILENAME=c:\import\*.*
/DESTINATION=z:\cadpool\online
/BACKGROUND:15
/DELETE
/HIDE
```

**Notes**

*Passing supplementary optimising, saw, and destacking parameters to the .saw file*

Only a few parameters are given in the .ptx file format (mainly in the MATERIALS record). These are passed directly to the Cadmatic in the .saw file but the saw controller may need additional optimising, saw, and destacking parameters in order to obtain finer control over the cutting patterns and destacking functions.

To facilitate this, if optimising, saw and material parameter filenames are specified in the PTX file, the program searches for these files in the program directory (the folder containing cadlink.exe). Values from these files are passed to the .saw file.

If no parameters are specified in the PTX (the files do not exist or fail to be read) default values are used.

Parameters in the PTX take precedence over supplementary parameters.

Similarly the program attempts to read destacking parameters from the program directory if they are available.

File type Extension / name
Optimising parameters .prm
Saw parameters .spm
Material parameters .mpm
Destacking parameters mdestack.ctl (metric) idestack.ctl (inches)

*Supported keys*

Cadlink can run with the Cadplan key. The full list of supported keys is:- Cadlink, Cadplan, Modular (SI module) and Master keys. Single keys or network keys are supported.

*Tension trims*

Specify rip tension trims by using function code '81' in the CUTS record of a PTX file. The dimension specified in these records represents the tension trim dimension (less kerf) output to the CAD4 SAW file.

## 6. Useful system and other parameters

This is a brief overview of parameters that are important for stand alone, import or export operations. Full details of each parameter are available in the on-screen help.

*Even when parts of the program are running in 'stand alone' mode the parameters must be set up in the same way as for the full program. So System parameters, Import parameters, Machine centre parameters etc. must be set for the stand alone options to operate correctly.*

### System parameters

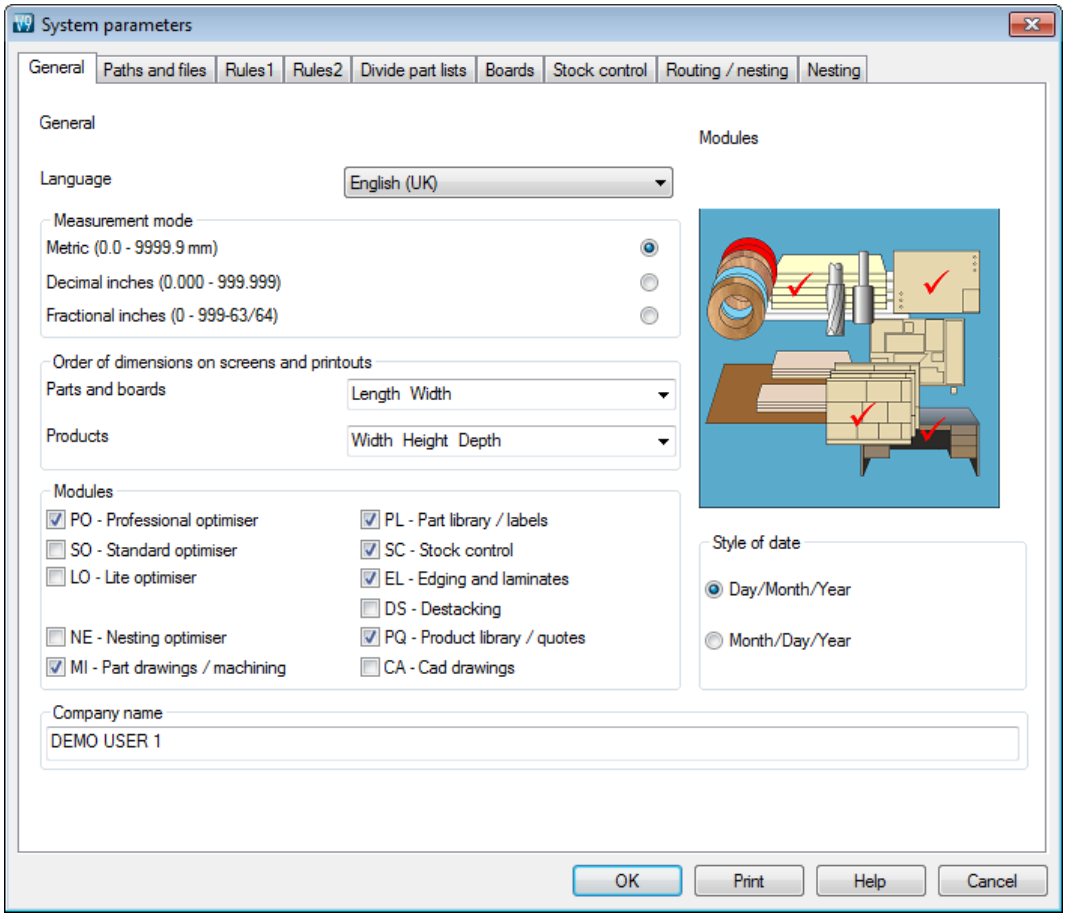
For any import, export or stand alone option to work correctly set up the relevant system parameters. The sub-sets described in this section are the ones that typically require attention.

To locate the system parameters select the following at the main screen.

- Parameters - System parameters
- System parameters

There is just one set of system parameters for each User profile.

The settings apply to all the data and operations in a user profile.



*System parameters*

Important parameters for the Interface guide are listed below.

**Measurement mode**

- millimetres
- decimal inches
- fractional inches

*Millimetres* are the standard metric measure to one decimal place. e.g.1230.5mm 96.5mm

*Decimal* inches are inches expressed as decimals. e.g. 60.125 in. 12.500 in.

*Fractional* inches are inches expressed as imperial fractions. e.g. 3-1/4 in. 25-3/16 in.

Enter fractional inches in the style 99-99/99.

The measurement mode is usually the same measurement mode as the saw, machining centre or other machinery.

**Path for import data**

System parameter to set directory containing data for import

For example:- C:\VER\IMPORT

If the path does not exist the program prompts to create the path.

*Note* - if the path contains names of two or more directories that do not exist the program does not create the directories

Typical data to import are part lists, board lists and product requirements.

**Path for Export data**

System parameter to set directory used by program for exporting data to

For example:-

C:\VER\EXPORT

If the path does not exist the program prompts to create the path

*Note* - if the path contains names of two or more directories that do not exist the program does not create the directories

Data available for export:-

Summaries

Part and product costing data
Operations and fittings
Cutting list

There are separate paths for import and export so files can be imported from one directory and exported to another.

- The choice of layout and data exported are set in the *Review runs - Parameters* ('Exported' button)

**Create data for**

Generate extra data for reports

*Some data and reports are only available with the appropriate module*

- no extra data
- cutting times
- offcuts
- cutting dimensions
- edging
- part drawings
- transfer part drawings to saw
- destacking
- baseboard cutting list
- exported cutting list (parts only)
- exported cutting list (parts and boards)
- convert destack data for Cadmatic (BSB/SDS)

**Lite** - cutting dimensions are created automatically - no need to set a value for this parameter.

The program uses the extra data when producing reports, such as, the offcut, edging, and destacking summaries. Only select those items you need as this speeds up the operation of the program. For example, if not making use of offcuts there is no need to create the data for the offcut report.

- Check all the options required

*Note* - For cutting length value on the Management summary select *Cutting times*

**Order of dimensions**

| Length | Width | Width | Length |
|---|---|---|---|
| 540.0 | 345.5 | 345.5 | 540.0 |
| 240.0 | 682.0 | 682.0 | 250.0 |
| 921.0 | 750.0 | 750.0 | 821.0 |

The part 'Dimensions' are the Length and Width of the part. Set this parameter to choose which order the length and width columns appear on the screen.

- Length Width
- Width Length

In Europe most lists of sizes appear in the order Length-Width but the order Width-Length is more frequently used in the USA and Canada.

The order applies wherever the part length and width are displayed e.g. Board library, Part list, Review runs reports.

**Export cutting list format**

Set the format for exported cutting lists.

The formats available are.-

| Export format | Max parts | Max boards |
|---|---|---|
| DOS Lite | 60 | 50 |
| V6 / Windows Lite | 250 | 200 |
| Cut Planner | 100 | 20 |
| Optisave | 225 | 20 |
| ASCII | 2000 | 200 |
| ASCII | 250 | 200 |

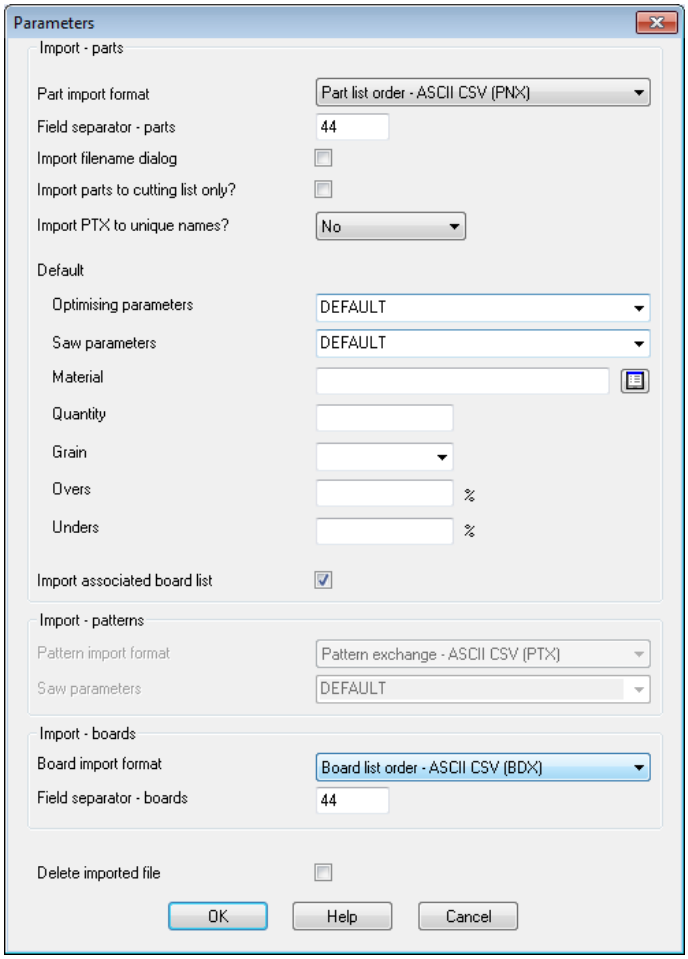
The columns 'Max. Parts' and 'Max. Boards' show the maximum values for part and board lists for each format. The software automatically divides lists that have more than the maximum parts into smaller units. Control the maximum number of board types by editing the board list or board library.

- For the 'Optisave' format the length of each information box is limited to 30 characters.

Also set the System parameter: *Create data for* so that exported data is created. If lists are divided the type of division is set in: *System parameters*

## Import parameters

These control the type of import for parts, patterns and boards. They are available at the Import dialog (e.g. File - Import parts). Then select: **File - Parameters.**



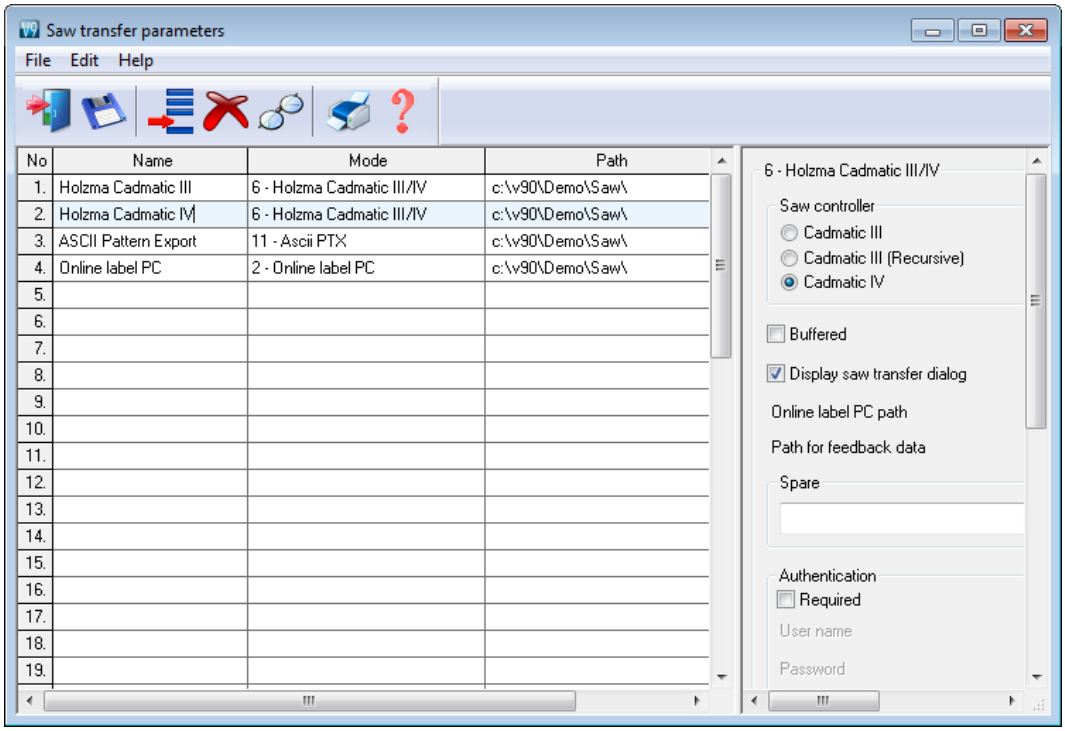

*Import parameters*

These can be used to, for example, set the type of Import (e.g. from PTX) and specify the separator used between fields.

## Saw transfer parameters

For transfer to the saw set the saw transfer parameters for each saw.

- Parameters
- Saw transfer parameters



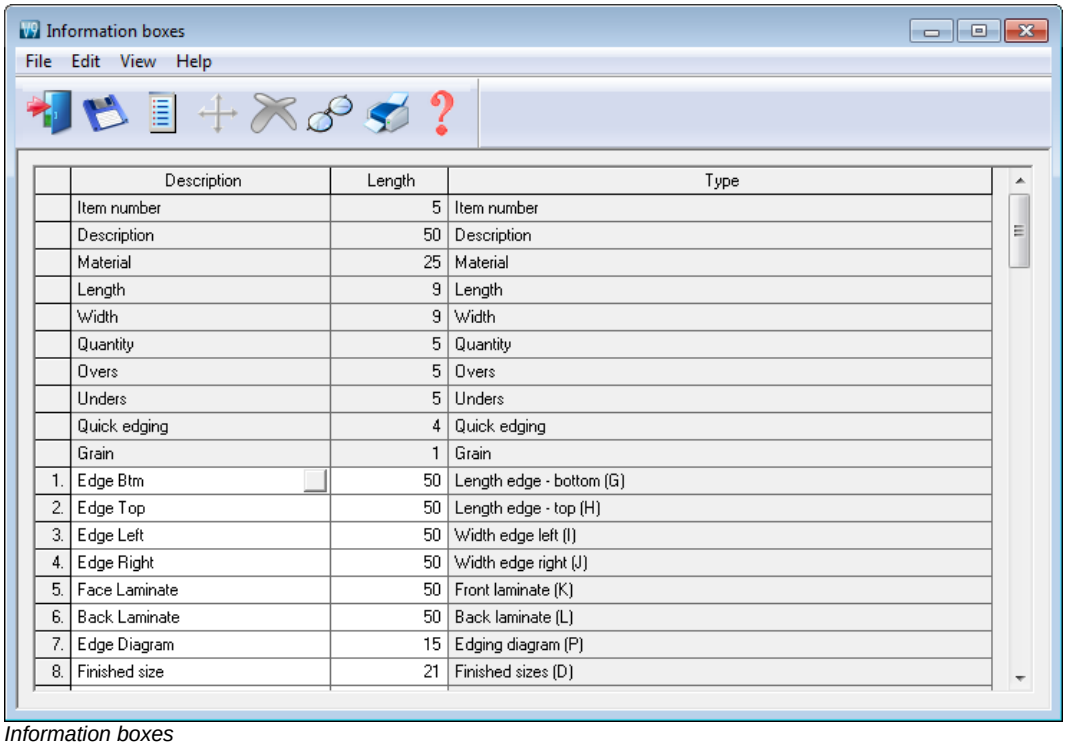
*Saw transfer parameters*

Make sure the 'Path' and 'Mode' are correct for the saw.

## Information boxes

Where the data for parts includes extra information such as detailed edging data, tracking numbers, finished sizes etc.  make sure that the Information boxes are correctly set up to cope with the incoming data for import.

Use the Information box parameters for this. Add pre-defined or user defined boxes as necessary.



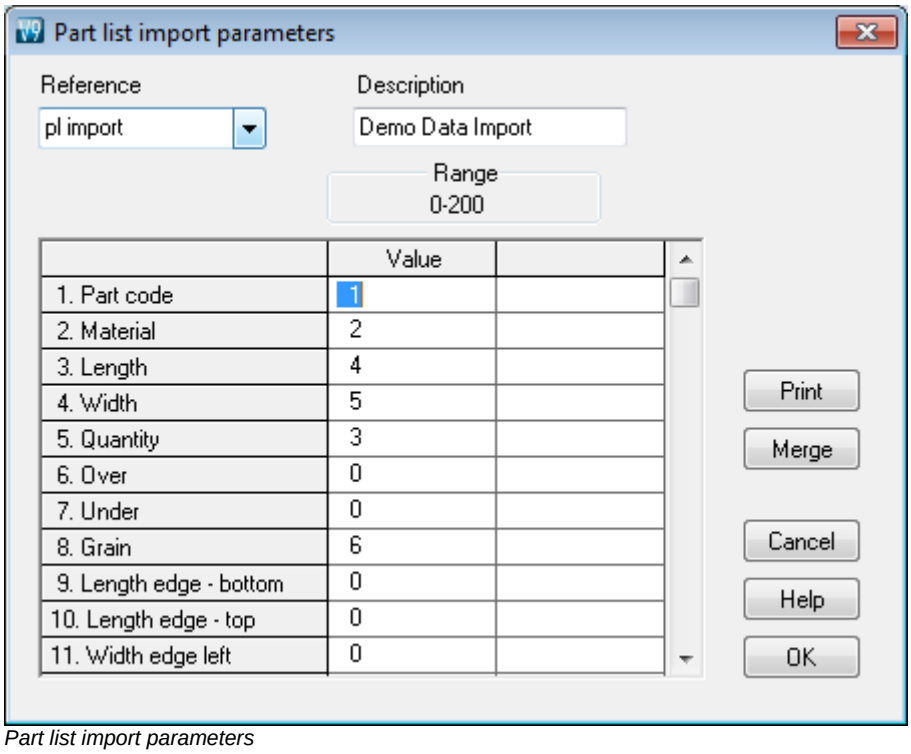

| | Description | Length | Type |
|---|---|---|---|
| | Item number | 5 | Item number |
| | Description | 50 | Description |
| | Material | 25 | Material |
| | Length | 9 | Length |
| | Width | 9 | Width |
| | Quantity | 5 | Quantity |
| | Overs | 5 | Overs |
| | Unders | 5 | Unders |
| | Quick edging | 4 | Quick edging |
| | Grain | 1 | Grain |
| 1. | Edge Btm | 50 | Length edge - bottom (G) |
| 2. | Edge Top | 50 | Length edge - top (H) |
| 3. | Edge Left | 50 | Width edge left (I) |
| 4. | Edge Right | 50 | Width edge right (J) |
| 5. | Face Laminate | 50 | Front laminate (K) |
| 6. | Back Laminate | 50 | Back laminate (L) |
| 7. | Edge Diagram | 15 | Edging diagram (P) |
| 8. | Finished size | 21 | Finished sizes (D) |

*Information boxes*

Take care when changing these parameters since they apply to all part lists. It is often OK to add new items but deleting or changing an existing item may cause a problem with part lists already using that item.

## Part list import parameters

Where data is imported from an external file use the 'Part list import' parameters to define that file format so that it can be correctly imported by the program.

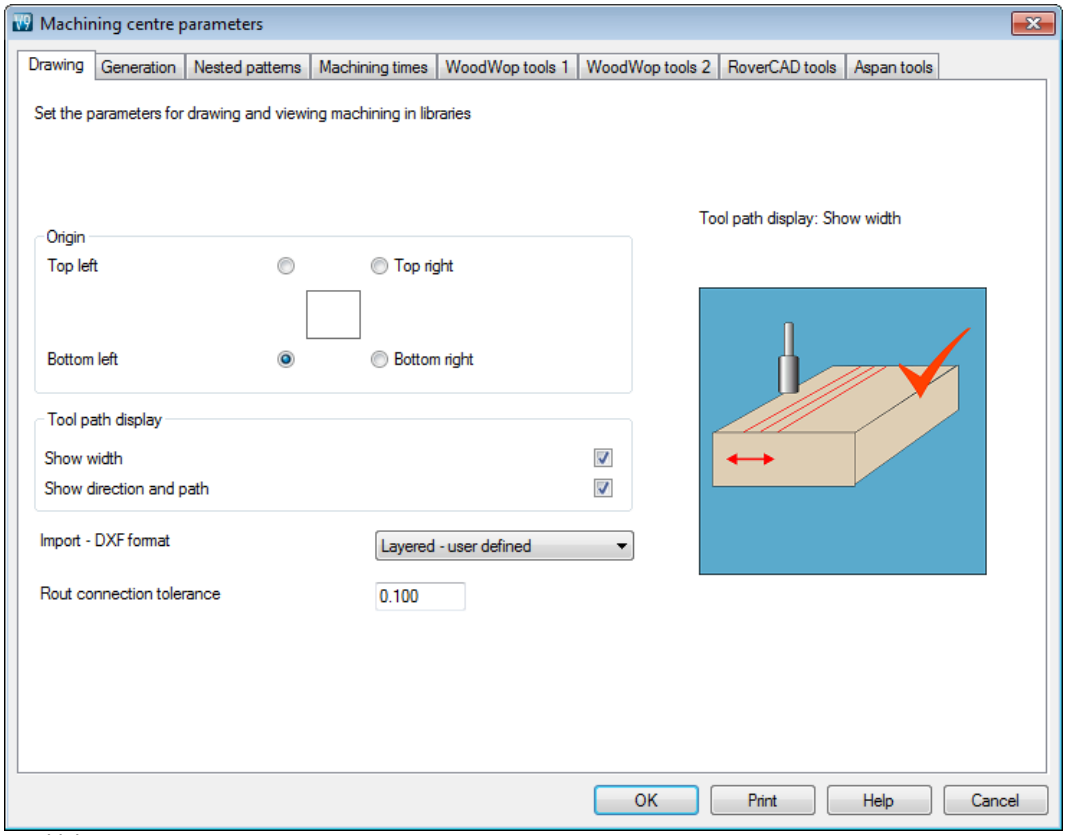



*Part list import parameters*

This sets up the link between the fields in the external file and the fields in the part list including information boxes.

## Machining centre parameters

Where transfer to a machining centre is involved make sure that the Machining centre is correctly described in the Machining centre parameters (*Main screen - Parameters - Machining centre parameters*)

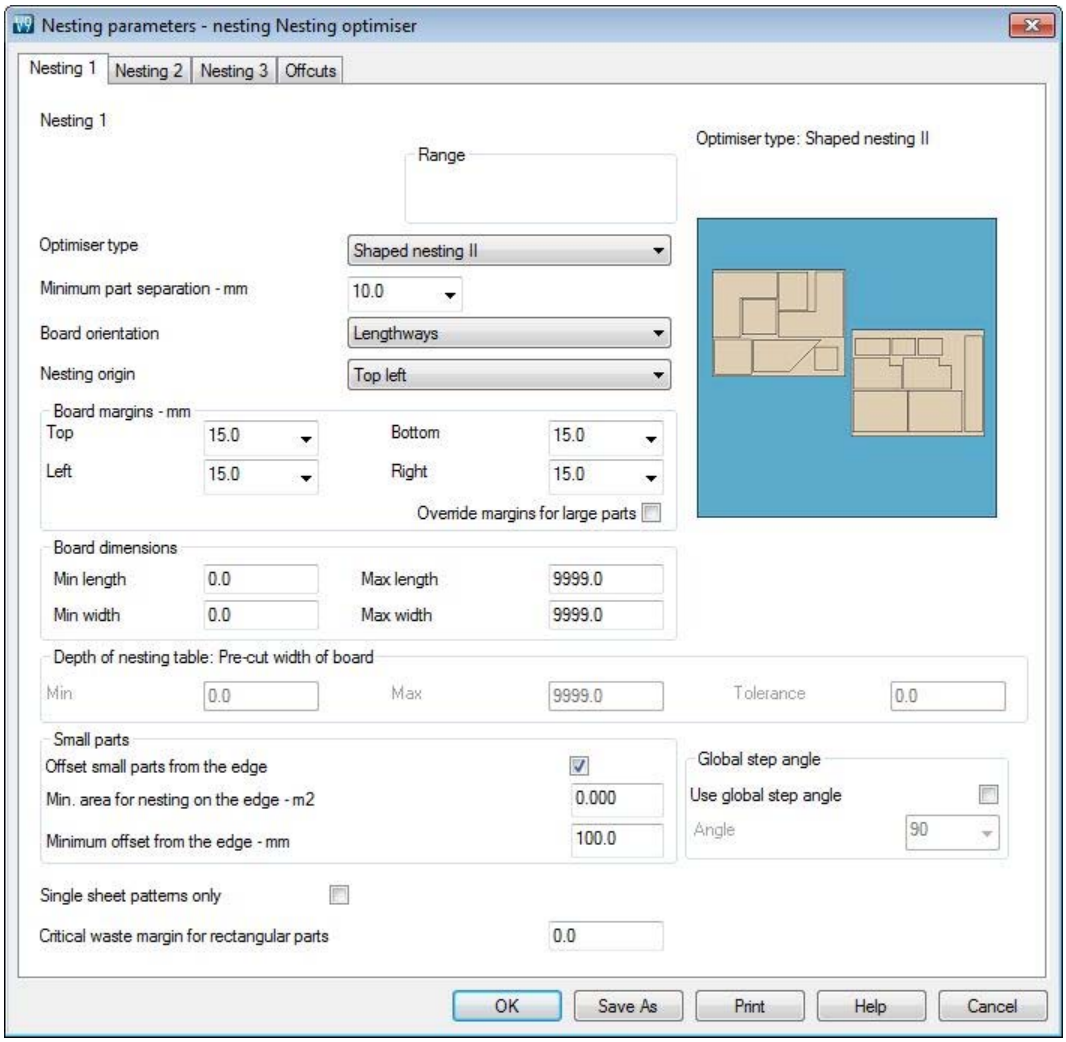



*Machining centre parameters*

Click on a tab for each set of parameters.

## Nesting parameters

These are used with the Nesting optimisers. They describe the constraints on the nesting machinery and operation.




*Nesting parameters*

These are used instead of the Optimising parameters for the Nesting optimisers. There are also some System parameters that need to be set for Nesting.

Nesting also uses the Machining centre parameters to describe the Machining centre.

## Limits and maximum sizes

The following list shows the most important limits on list sizes, field lengths etc. These limits apply to the Professional Optimiser.

| *Item* | *Limit* |
|---|---|
| Max items in part list | 20000 |
| Max items in cutting list | 20000 |
| Max items in board list | 5000 |
| Max items in cutting list per optimization (saw) | 9999 |
| Max items in cutting list per optimization(nesting) | 4000 |
| Max items in board list per optimization (saw) | 5000 |
| Max items in board list per optimization (nesting) | 2000 |
| Max material types per run (saw) | 5000 |
| Max material types per run (nesting) | 2000 |
| Max offcuts in run | 7500 |
| Max patterns in run (saw) | 5000 |
| Max patterns in run (nesting) | 2000 |
| Max dimension for parts and board (mm) | 9999.0 |
| Max parts in a pattern (saw) | 5000 |
| Max shapes in a nested pattern | 500 |
| Max value for quantity part / board list | 99999 |
| Max run quantity per pattern | 99999 |
| Max runs in batch | 250 |
| Max length of product code | 25 |
| Max length of part code | 50 |
| Max length of material code | 50 |
| Max length of material code (edging library) | 25 |
| Max length of board code | 50 |
| Max length of edge code | 25 |
| Max length of destacking code | 8 |
| Max length of machining code | 25 |
| Max length of drawing code | 25 |
| Max length of pattern code | 25 |
| Max length of machine drawing file ref | 9 |
| Max length of run number | 8 |
| Max length of Order or Allocation code | 8 |
| Max length for Stock order number | 8 |
| Max length of variable name | 25 |
| Max length of formula name | 25 |
| Max length of part description (part library) | 25 |
| Max length of product description (prod. library) | 25 |
| Max length of memo field (product library) | 100 |
| Max. records in product library | 99999 |

| | |
|---|---|
| Max. records in material library | 99999 |
| Max. capacity of Board library | Access mdb |
| Max. records in order library | 99999 |
| Max. records in stock allocations library | 99999 |
| Max. records in orders library | 99999 |
| Max. records in edging library. | 99999 |
| Max. records in destacking library | 99999 |
| Max. records in part library | 99999 |
| Max items in variables table | 2000 |
| Max items in formula table | 5000 |
| Max items in lookup table | 5000 |
| Max items in product definition. | 500 |
| Max sub-assembly items in product (inc above) | |
| Max variables in product definition | 500 |
| Max global variables in product definition. | 100 |
| Max length of product inf. in req. list | 50 |
| Max number of information boxes | 99 |
| Max length of information box data | 200 |
| Max length of information box title | 30 |
| Max length of formula - general | 80 |
| Max length of formula - formula table | 300 |
| Max length of file names | 50 |
| Max items in Quotes/Orders list | 999 |
| Max items in Requirements list | 999 |
| Max length of file name | 50 |
| Max length of path | 150 |
| Max length of file extension | 4 |