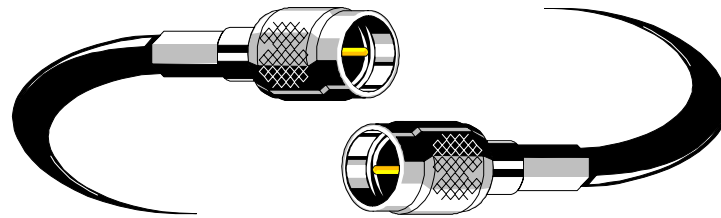


Version 8

Interface Guide



Revision 1.18

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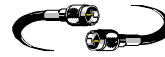
Notices & Acknowledgements

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Welcome to the Version 8 Interface Guide



1. Introduction

This guide describes how to import and export data to and from the V8 Optimising software and gives the details for interfacing with the program and extracting data from the system. The guide also describes the basic databases and records used.



What does V8 Modular do?

V8 Modular is a comprehensive software package that covers most aspects of optimisation and production for the Woodworking industry. It is Windows software and runs on PC's.

V8 Modular deals with a variety of products.

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

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 spreadsheet 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.

World wide links - ask your supplier for advice for any problems with technical aspects of the Optimising software. We are in constant touch with agents via phone, fax and Internet.

2. Import data

Several different types of data can be imported.

- Product requirements
- Part lists
- Batch of part lists
- Boards

Part lists, boards and patterns can also be imported from a pattern exchange file (PTX)

The choice of which data to import depends on how the optimising program is being used and how it integrates with other systems. For example, if orders or product requirements are taken on another system it may be best to export the product requirements from that system and import them to the Optimising software - this avoids re-entering the requirements manually.

The following sections discuss the various formats for each type of data and describe the methods for importing data.

2.1 Import product requirements

At the simplest a product requirement import file is a list of product codes and the quantities required.

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

The following example shows the product requirements screen after importing this data.

Product requirements screen after importing above example:-

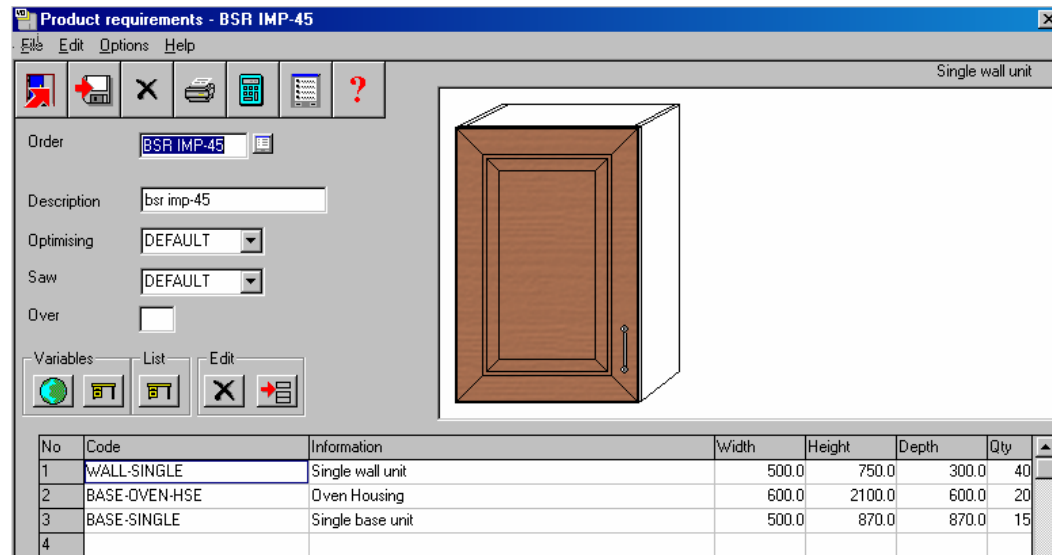


Figure 101

The screen shows a lot of information that is not in the import file. This is because the other information such as width, depth, and height is already defined in the system - in the Product library.

Custom products - some customers work with 'Custom products'. In this case only the style and perhaps a few other features of the product are fixed and others such as overall width or height or material for doors can be varied for each customer.

When importing information for this sort of product the customer requirements also need to be in the import file.

The file shown below is set up to import products with variable widths.

```
wall-singleC,40,1520.0  
base-oven-hseC,20,1420.0  
base-singleC,15,1200.0
```

For some custom products there can be several different items of information to import as well as the items shown on the main product requirements screen. Note too that the order of items in the

import file is not fixed. In the example below the quantity is the sixth field not the second (as in the examples above).

```
CAB/02,Kitchen cabinet,600.0,450.0,800,2,WHITE,GREY  
CAB/03,Kitchen cabinet,600.0,450.0,800,2,RED,BEIGE  
CAB-DK1,Modern drs,1020.0,,,25,WHITE,,OFFSET,BAY2
```

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

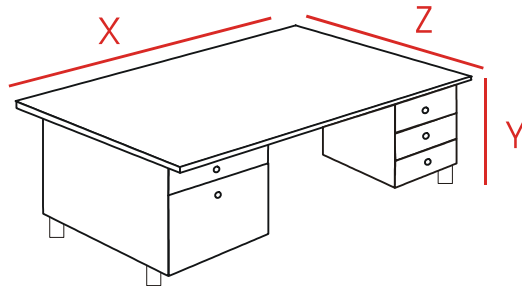


Figure 102

These are the external measurements of each product.

Note that 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. Often items like colour, measurements, number of drawers etc. The answers to the variables for each customer are entered at the Product Requirements screen in the 'Variables' dialog.

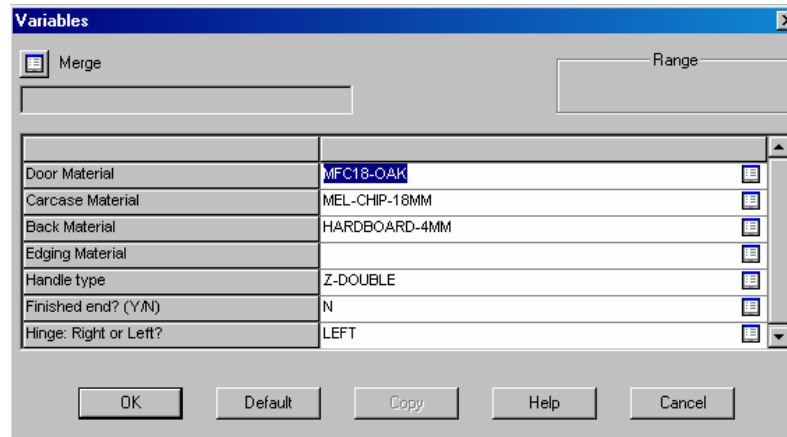


Figure 103

When importing - the answers for each product come from the import file.

Global variables - variables that apply to the whole list of requirements. Typically information like batch number, delivery date, style settings etc.

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

```

Requirements import parameters

The import file can contain a wide variety of data and the order of the fields can vary. Use the Requirement import parameters to define the order of the fields in the import file.

At the main screen:-

- Select: **Parameters - Requirements Import parameters**
- Select or enter a parameter file number in the Reference box

The screen displays the Requirements import parameters.

Use the cursor keys or ENTER/RETURN key to move between parameters. Overwrite the existing values to make a change.

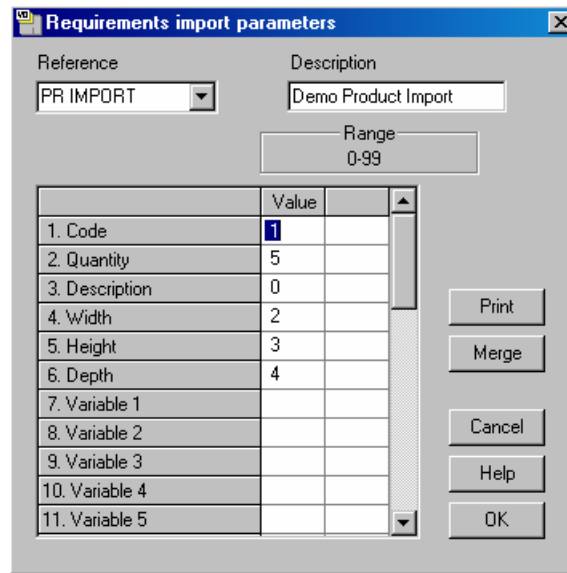


Figure 104

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).

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	
Variable 1	0	

The following file includes answers to product variables.

KTUNIT,1,1950,RED
 KTUNIT,3,1750,WHITE
 KYUNIT,1,1350,GREY

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
```

Header lines and file Extension parameters

At the foot of the parameter list are 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 import file - specifies the file extension of the import file - default: RQX.

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	
Product code	1	
Quantity	2	
.....		
Variable 25	0	
Header lines	4	
Import - header line	2	
Extension for import file	ASC	

Import global variables

The header line can be used to import other information for product requirements, for example, the product requirements reference or answers to global variables.

- 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 25	0	
Header lines	1	
Import - header line	1	
Extension for import file	RQX	

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').

Import product requirements

To import product requirements:-

At the mains screen:-

- Select: **File - Import requirements**
- Click on List box to select a file

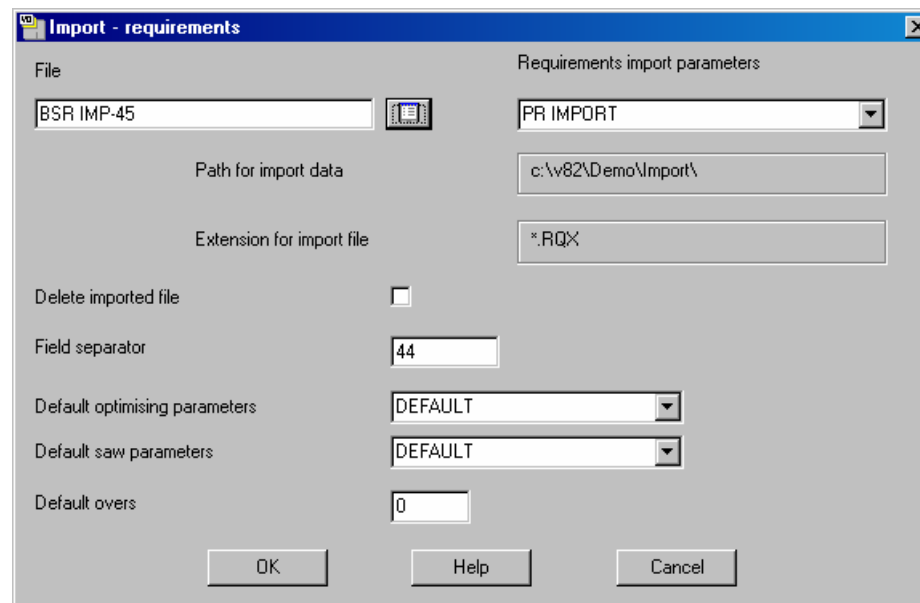


Figure 105

- Check settings and select OK to import.

Requirements import parameters - shown at the right. Use the list box to select alternatives

Path for import data - set System parameter: *Path for Import data*

Extension for import file - set by Requirements import parameters

Delete imported file - whether to remove file after import

Field separator (e.g. comma)

Also enter default parameter list and default overs.

The option 'Import - requirements' is also available on the file tree at the left of the main screen.

2.2 Import parts

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	Over	Under	Grain	Edge	Inf
Global						%	%			
1	F-UNIT-DOOR	WHITE-LAM-1MM	495.0	750.0	40	0	0	Y	0000	
2	F-WALL-UNIT-BACK	HARDBOARD-4MM	474.0	740.0	40	0	0	N	0000	
3	F-WALL-UNIT-BASE	MEL-CHIP-18MM	464.0	285.0	40	0	0	N	0000	
4	F-WALL-UNIT-SHELF	MEL-CHIP-18MM	464.0	195.0	40	0	0	N	0000	
5	F-WALL-UNIT-END	MEL-CHIP-18MM	285.0	750.0	80	0	0	N	0000	
6	F-UNIT-BACK	HARDBOARD-4MM	474.0	710.0	20	0	0	N	0000	
7	F-UNIT-BASE	MEL-CHIP-18MM	474.0	585.0	20	0	0	N	0000	
8	F-UNIT-END-LEFT	MEL-CHIP-18MM	585.0	870.0	20	0	0	N	0000	
9	F-UNIT-END-RIGHT	MEL-CHIP-18MM	585.0	870.0	20	0	0	N	0000	
10	F-UNIT-PLINTH	MEL-CHIP-18MM	500.0	150.0	20	0	0	N	0000	
11	F-UNIT-RAIL	MEL-CHIP-18MM	474.0	75.0	40	0	0	N	0000	
12										

Figure 106

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.

Setup - The Optimising program needs to be set up to understand the type and format of the import file. To do this set the system parameter: *Path for import data* to specify where the files to

import are located. Also at the import dialog there are parameters to control the overall import operation (see below).

Part list data

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

Describes 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

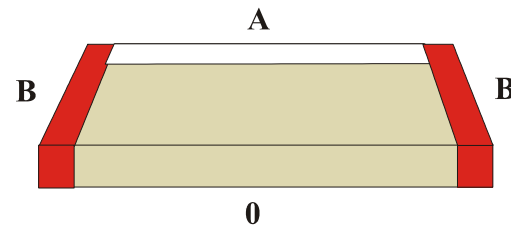


Figure 107

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).

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	Over	Under	Grain
	Global					%	%	
1.	F-UNIT-DOOR	WHITE-LAM-1MM	495.0	750.0	40	0	0	Y
2.	F-WALL-UNIT-BACK	HARDBOARD-4MM	474.0	740.0	40	0	0	N

Figure 108

Note - cannot import data into this line.

On import the program automatically sets the global line if the data for incoming fields is identical in each record.

Information boxes - part list

As well as the standard data items such as Part code, length, width (the fields shown on the Part list screen) 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.

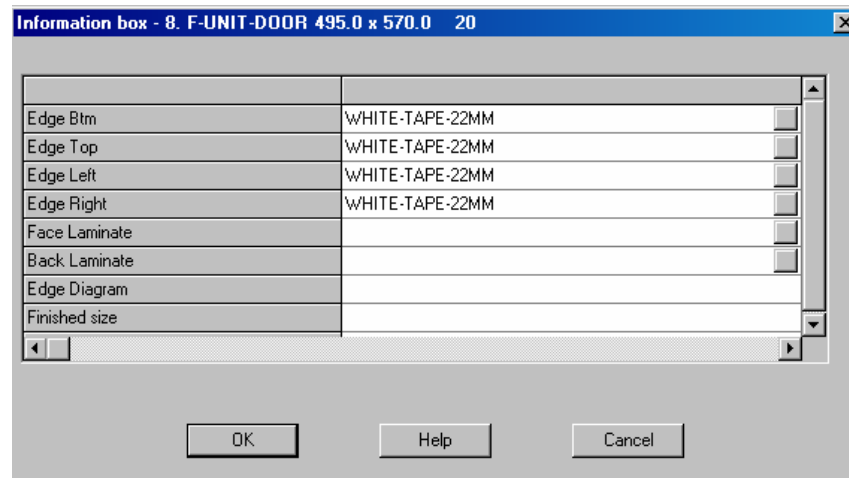


Figure 109

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
```

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

Pre-defined information

This is information that is already stored by the system or is created during optimisation. For example:- Cut sizes, finished sizes, tracking numbers, product code, product description etc.

User	Product information	Costing
User defined	Product information	Unit price
Part	Product description	Machine time
Part description	Order description	Machining Drawing
Duplicate reference	Product code	Drawing name import
Part number	Product width	Drawing name transfer
Colour names	Product height	Transfer name - back
Variable	Product depth	Transfer name-horizontal
Alternative material(s)	Product number in room	Machine before edging
Part sizes	Room / floor number	Picture filename
Finished sizes	Product qty	Create file (un-m/c parts)
Finished length	Sub-assembly	Nesting
Finished width	Destacking	Step angle
Second cut sizes	Part layout	Mirrored
Minimum cut sizes	Part orientation	Do not place part on edge
Part requirements	Stack height (pieces)	MPR path
Quantity of overs	Stack height (dim)	Part library code
Pre-aggregated quantity	Station number	Part ID
Edging	Destack type	Template router
Length edge bottom	Bottom layout	Grain
Length edge top	Bottom material	Grain matching
Width edge left	Top layout	Pattern for master part
Width edge right	Top material	Tracking
Length edge bottom - description	Length	Quote ID
Length edge top - description	Width	Product req ID
Width edge left - description	Overhang/oversize (len)	Part list ID
Width edge right - description	Overhang/oversize (wid)	Cutting list ID
Edging diagram	Thickness	Tracking number
Program - bottom edge	Baseboards per stack	Other
Program - top edge	Support type	Label quantity
Program - left edge	Support material	Bar code 1
Program - right edge	Support thickness	Bar code 2
Laminating	Support length	
Front laminate	Support width	
Back laminate	Support layout	
Front laminate description	Use secondary station	
Back laminate description	Stacks per station	
Material combination		
Core material code		
Core length and width		

So, 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 (customised) information.

Part list import - parameters

These are for defining formats other than PNX or one of the other pre-defined formats.

To select these parameters:-

- Parameters
- Part list import parameters
- Select or enter a file number at the Reference box

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 parameter values to describe this:-

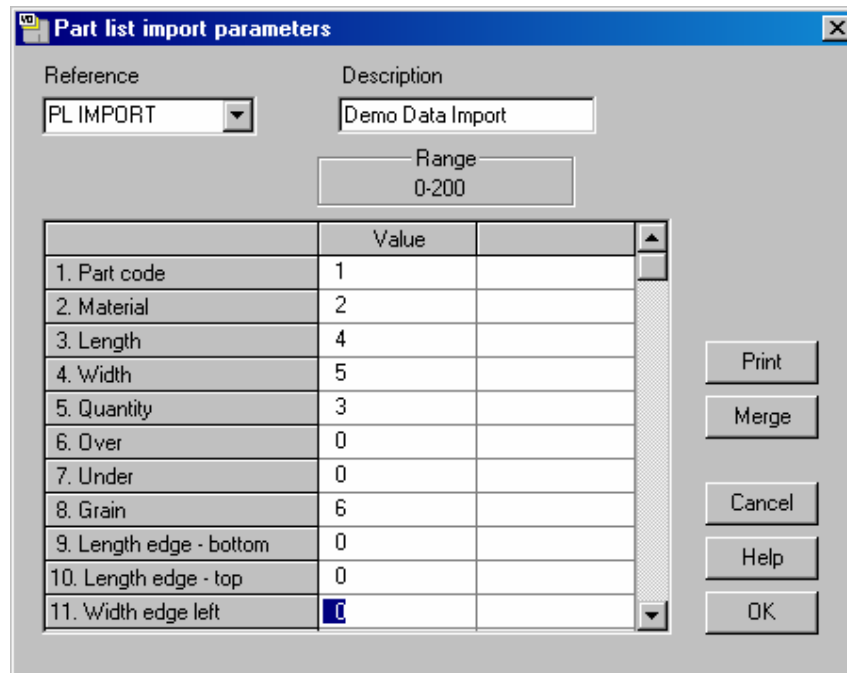


Figure 110

Each parameter is a field in the part list and the parameter value is the position of that field in the external ASCII file. At the foot of the list 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 import file - set this to the file extension for the import file, for example, CSV, ASC, TXT etc.

Parameter	Value	
Part code	1	
Material	2	
.....		
Header lines	3	
Extension for import file	ASC	

MPR Variables - import

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:-

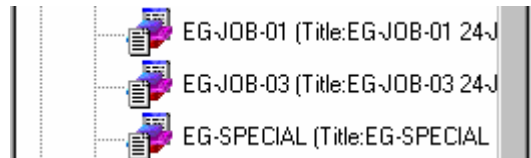
```
PARTCODE ,@DOORMAT@ ,MDF-18 ,MEL-CHIP-
18MM,123,17,15,, ,@CARCASEMAT@ ,MELCHIP15 ,@HINGE@ ,1
```

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

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. 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.

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

The run number is the number of name of the results file - this can be different from the part list name. These items are used when creating a batch:-

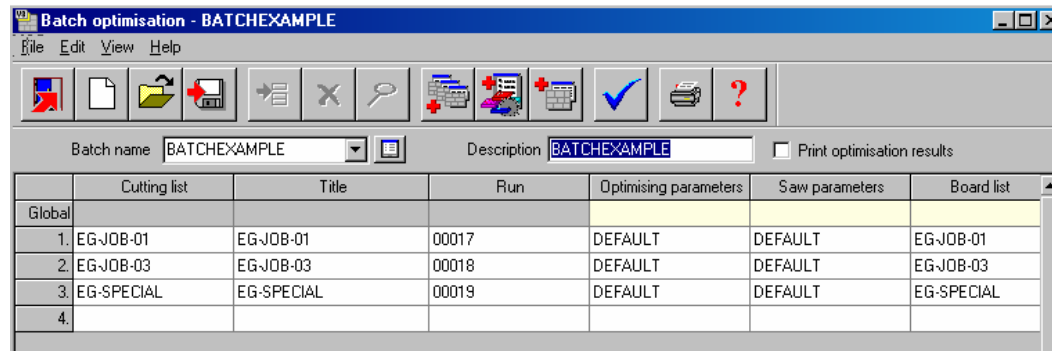


Figure 111

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.

Import Parts - Pattern Exchange

Pattern Exchange is an export and import file format standard for Optimising software. It allows optimising and other software to export or import (exchange) all the data for an optimisation (run) including patterns and cutting instructions. There are two types of file that use pattern exchange.

ASCII file (ptx)
ACCESS database (mdb)

The import format is set in the *Import parameters*.

Import parts - operation

Applies to single part lists and batches of part lists

To import parts choose at the main screen.

- **File**
- **Import - parts**

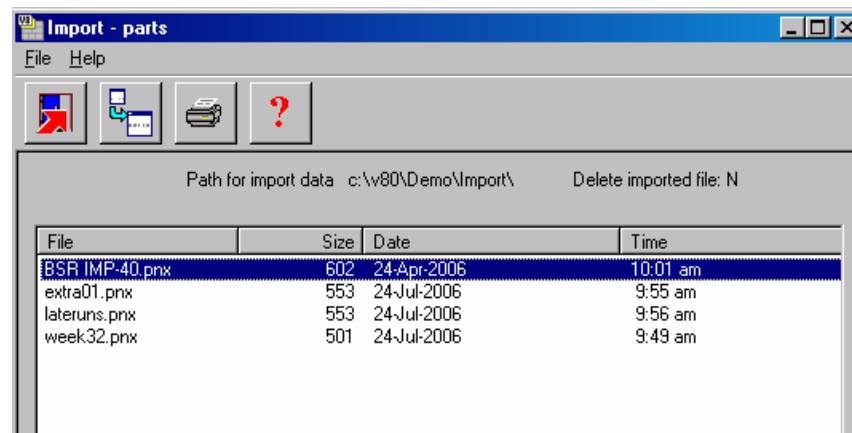


Figure 112

Select a list to import and select the Import button. (can select more than one file if required).

Part list import parameters - when using these for import (options 6 or 7) there is an extra box: *Parameters for Import* to select the parameter list to use for the import.

Note - move off the box 'Parameter for import' to confirm any change to the box

Viewing the result - there is an option to view the part list after import (shows the first set of results if more than one)

Import from main screen - select 'Part list import' branch and click on the part list required

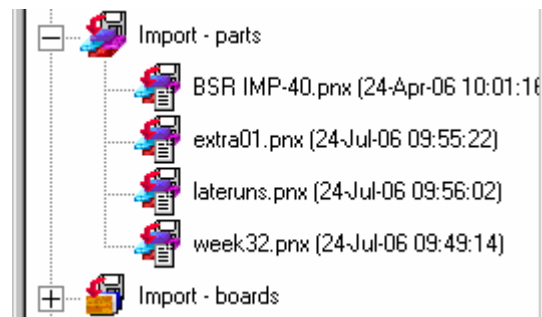


Figure 113

Set up for Import parts

To set how import parts operates

At the main screen:-

- Select: **File - Import Parts**
- Select: **File - Parameters**

The Import parameters are displayed. Any parameters that do not apply to parts are greyed out.

The image shows a 'Parameters' dialog box with three main sections: 'Import - parts', 'Import - patterns', and 'Import - boards'. Each section contains dropdown menus for import format and field separator, and checkboxes for additional options. At the bottom, there is a 'Delete imported file' checkbox and three buttons: 'OK', 'Help', and 'Cancel'.

Section	Parameter	Value
Import - parts	Part import format	Part list order - ASCII CSV (PNX)
	Field separator - parts	44
	Import parts to cutting list only?	<input type="checkbox"/>
	Import PTX to unique names?	No
	Default optimising parameters	DEFAULT
	Default saw parameters	DEFAULT
Import - patterns	Pattern import format	Pattern exchange - ASCII CSV (PTX)
	Saw parameters	DEFAULT
	Field separator - boards	44
Import - boards	Board import format	User defined order - ASCII CSV
	Field separator - boards	44
Delete imported file		<input type="checkbox"/>

Figure 114

Set the type of import - this must match the format of the file being imported.

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)

There are options for importing the standard format (set by the optimising program - PNX) and also options for importing customised formats allowing any fields in an external file to be mapped to the format required by the Optimising program (user defined formats).

The field separator can also be set.

Set other parameters as necessary.

Delete imported file - delete import file after import

Note - for batch import only the BTX file is deleted not the PNX files.

Import PTX to unique names - check this box to automatically rename imported cutting lists. - pattern exchange only

Part import format - sets style of import (e.g. from PTX file)

Import parts to cutting list only - parts are only added to the cutting list (not the part list)

Field separator - parts (e.g. comma)

2.3 Import boards

All the information on materials and board (or sheet) sizes is held in the Board library. On optimising part lists (or product requirements lists) the software automatically extracts the correct boards, matched on the material code, from the board library

At the main screen:-

- Select: **Libraries - Board library**

Board sizes for the current material are shown in the lower pane.

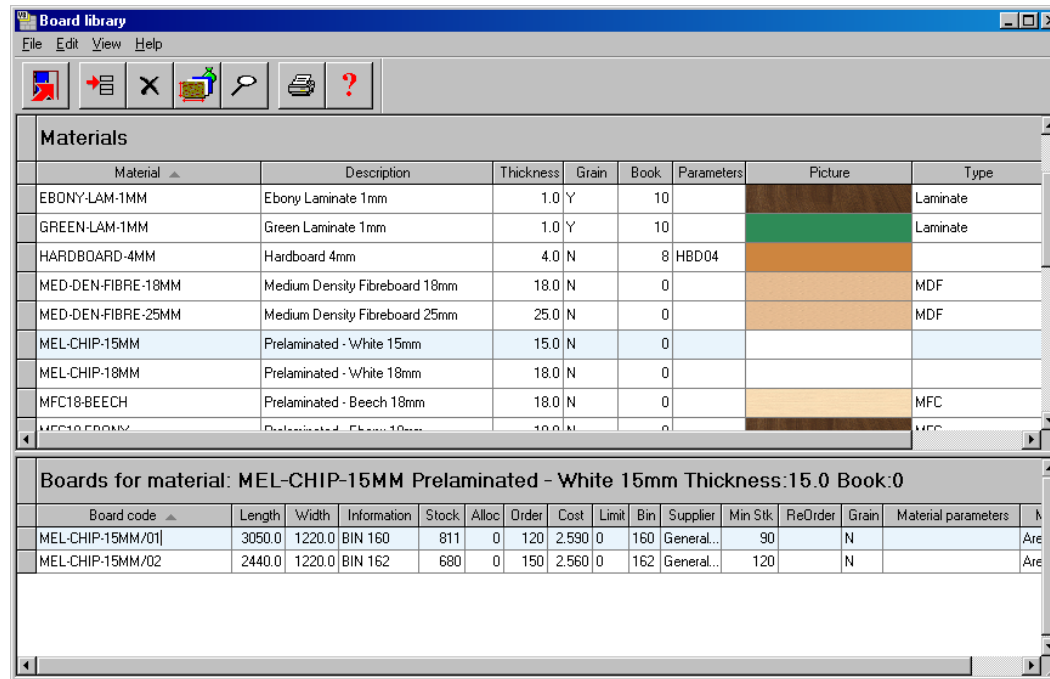


Figure 115

There are several methods for importing board sizes into the optimising program.

- Import or update boards directly in the Board library (Stock - Import stock)
- Import boards to a board list (File - Import boards)

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 that 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 library

The stock control module is required for this method

At the main screen:-

- Select: **Stock**
- Select: **Import stock**

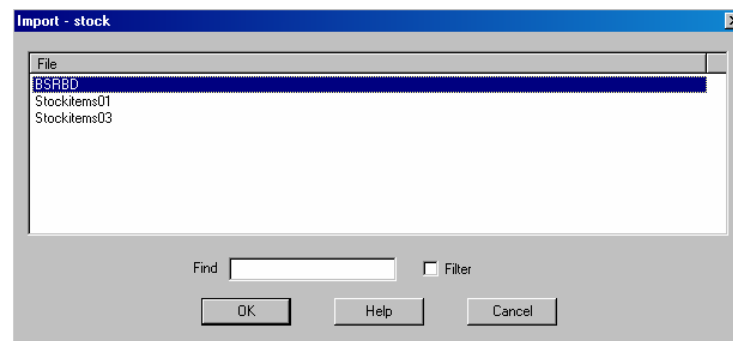


Figure 116

Select the file to import. The program prompts:-

- Add new stock
- Adjust existing stock

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 must be one of the following:-

Interface Guide

- 0 - BRD (format used by optimising program)
- 1 - BDX (standard format)
- 2 - STK (Bargstedt stock file BESTAND.STK)

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

Notes

- The BDX format is a fixed format ASCII file (see later for details).

Import boards to board list

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

- Select: **File - Import boards**

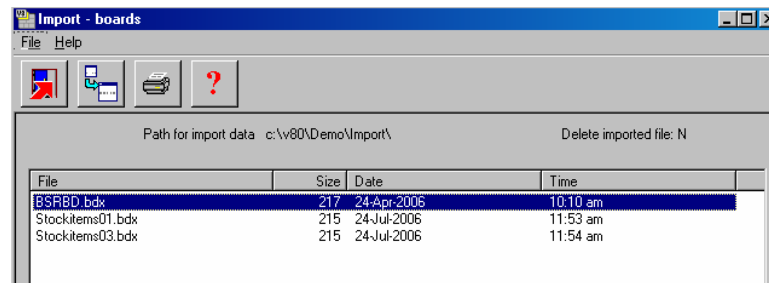


Figure 117

Select the board list (or lists) to import - the program warns if a board list with that name already exists.

If a file contains errors a list of errors is shown and that board list is not imported.

Select: *File - Parameters* to set the parameters that control the import process for boards.

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

There are two formats for importing board sizes to a Board list:-

- external file use the BDX format
- user defined format

The user defined format is set up via the: *Board list import parameters*

Notes

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

Material description
Maximum book height

- Pattern Exchange - boards can also be imported from a pattern exchange file - see below for details.

Board import file format (BDX)

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

Board code (25)
Quantity (5)
Material (25)
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)

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 BDY 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

These fields must be present where there are following fields.

Board list import parameters

Parameters to describe import files containing board list data. At the main screen:-

Select: Parameters - Board list import parameters

Select an existing list from the drop down or enter a name for a new list.

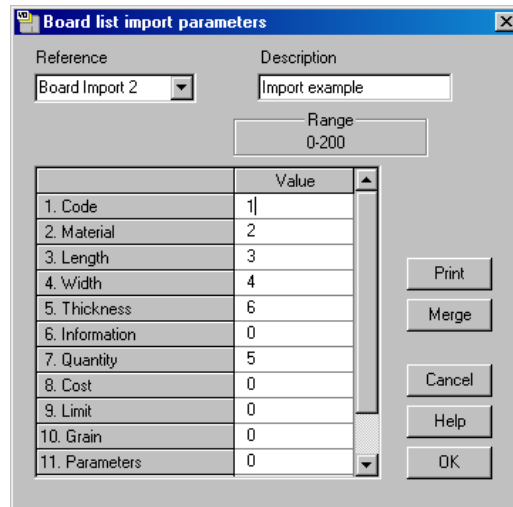


Figure 118

- Use the cursor keys/Enter key or mouse to move between parameters.
- Overwrite the existing values to make a change.

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:-

```
1. Code ----- 1
2. Material ----- 2
3. Length ----- 3
4. Width ----- 4
5. Thickness ----- 6
6. Information ----- 0
7. 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

```
1. Code ----- 2
2. Material ----- 3
3. Length ----- 4
4. Width ----- 5
5. Thickness ----- 6
6. Information ----- 0
7. 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
```

28. Extension for import 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 list 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 import file parameter is used to specify the file extension of the files to be imported.

e.g. CSV, BDX

- if there is more than one board import parameter file the first file in the list is used as the default for the file tree.

2.4 Import parts / boards / patterns - Pattern Exchange Format

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.

Import parts is the same as that described in previous sections.

At the import dialog: Select: *File - Parameters* to check the settings - make sure that the correct import type is set.

- Parts & boards - ASCII CSV (PTX)
- Parts & boards - Access (MDB)

At the main screen:-

- Select: **File - Import parts**

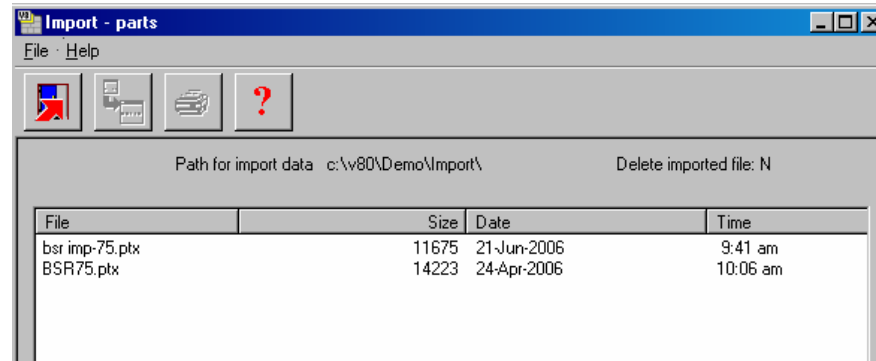


Figure 119

Also import a PTX file directly from the file tree at the main screen.

Note - this imports BOTH parts and boards and creates a part list and board list

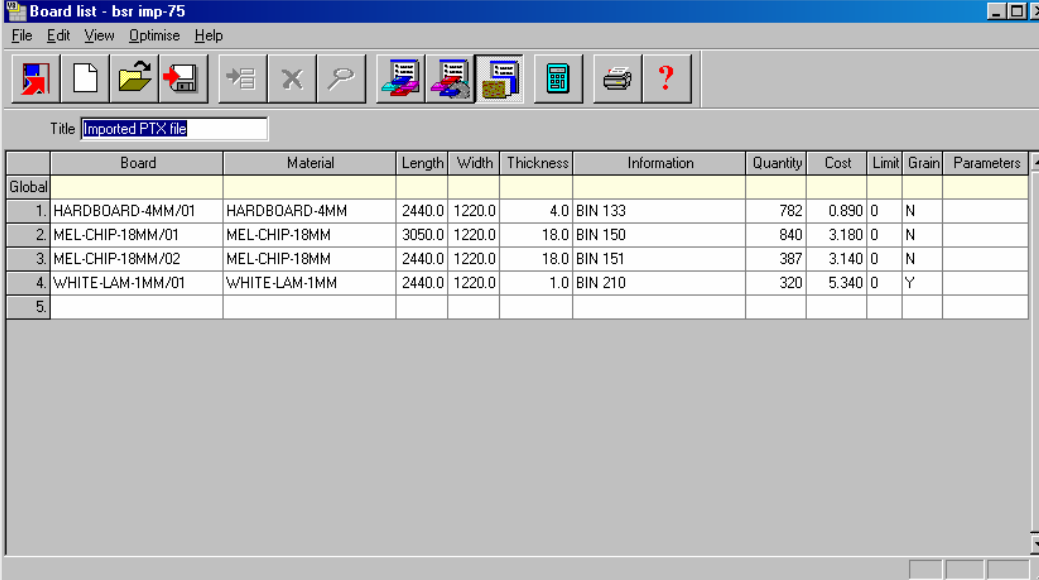
The result is a part list and related board list.

The screenshot shows a software window titled "Part list - bsr imp-75" with a menu bar (File, Edit, View, Optimise, Help) and a toolbar. Below the toolbar, there are input fields for "Title" (Imported PTX file), "Opt" (default), and "Saw" (default). The main area contains a table with the following data:

	Description	Material	Length	Width	Quantity	Over	Under	Grain	Inf
Global						%	%		
1.	F-UNIT-BACK	HARDBOARD-4MM	474.0	710.0	12	0	0	N	
2.	F-UNIT-BASE	MEL-CHIP-18MM	474.0	581.0	16	0	0	N	
3.	F-UNIT-END-LEFT	MEL-CHIP-18MM	585.0	870.0	9	0	0	N	
4.	F-UNIT-END-RIGHT	MEL-CHIP-18MM	585.0	870.0	10	0	0	N	
5.	F-UNIT-PLINTH	MEL-CHIP-18MM	500.0	150.0	13	0	0	N	
6.	F-UNIT-RAIL	MEL-CHIP-18MM	474.0	75.0	17	0	0	N	
7.	F-UNIT-SHELF	MEL-CHIP-18MM	474.0	391.0	11	0	0	N	
8.	F-UNIT-DOOR	WHITE-LAM-1MM	491.0	566.0	7	0	0	N	
9.	F-UNIT-DRAWER	WHITE-LAM-1MM	491.0	146.0	8	0	0	N	
10.	F-HOUSING-BACK	HARDBOARD-4MM	574.0	710.0	16	0	0	N	
11.	F-HOUSING-BASE	MEL-CHIP-18MM	574.0	581.0	9	0	0	N	
12.	F-HOUSING-PLINTH	MEL-CHIP-18MM	600.0	150.0	17	0	0	N	
13.	F-HOUSING-RAIL	MEL-CHIP-18MM	574.0	75.0	20	0	0	N	
14.									

Figure 120

The related board list is shown below:-



	Board	Material	Length	Width	Thickness	Information	Quantity	Cost	Limit	Grain	Parameters
Global											
1.	HARDBOARD-4MM/01	HARDBOARD-4MM	2440.0	1220.0	4.0	BIN 133	782	0.890 0	N		
2.	MEL-CHIP-18MM/01	MEL-CHIP-18MM	3050.0	1220.0	18.0	BIN 150	840	3.180 0	N		
3.	MEL-CHIP-18MM/02	MEL-CHIP-18MM	2440.0	1220.0	18.0	BIN 151	387	3.140 0	N		
4.	WHITE-LAM-1MM/01	WHITE-LAM-1MM	2440.0	1220.0	1.0	BIN 210	320	5.340 0	Y		
5.											

Figure 121

Note - PTX files can contain more than one part list or board list

Import patterns - Pattern Exchange Format

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.

Set the import format in the *Import parameters*

- 3 - ASCII file (pattern exchange)
- 4 - Access database (pattern exchange)

The other options are for special situations - *refer to supplier for details*.

At the main menu:-

- Select: **File - Import patterns**

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

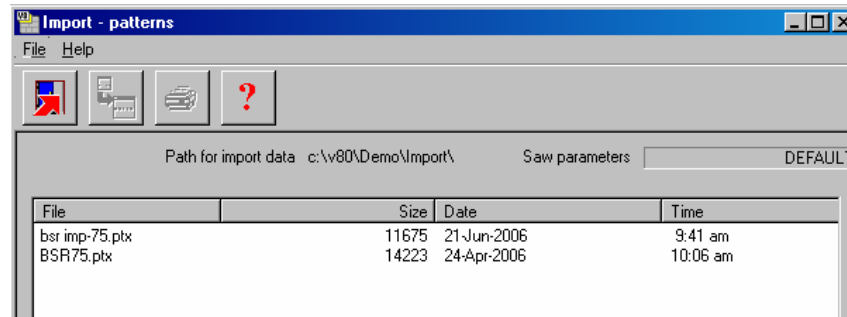


Figure 122

At the Import screen select: **File - Parameters** to change the import settings. The result is an imported run (set of patterns).

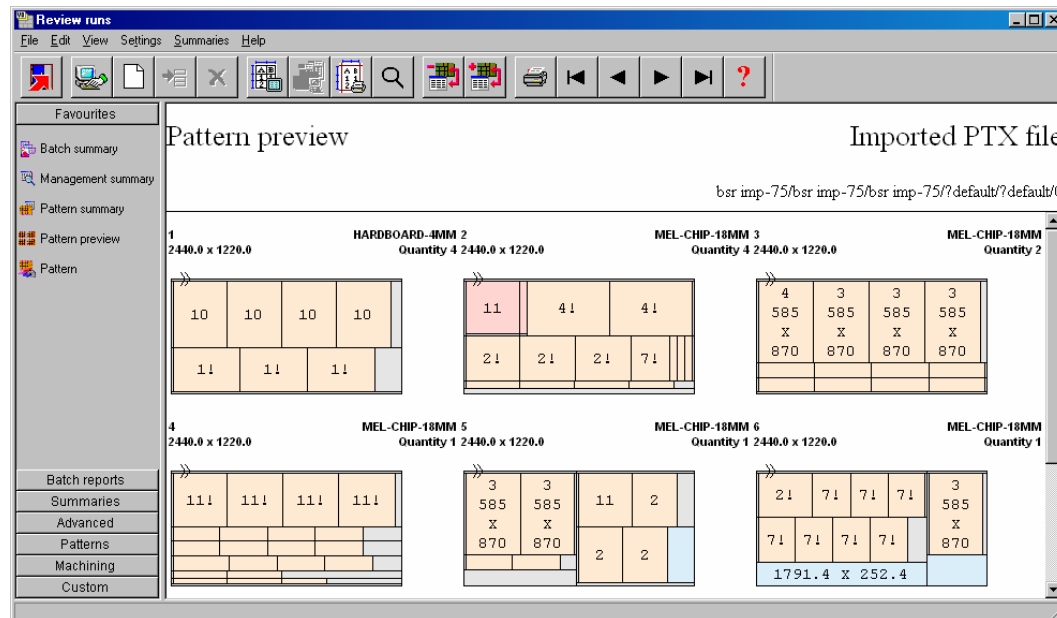


Figure 123

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

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

3. Pattern Exchange File - Specification - V1.09

This document 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 12 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 & 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 (e.g. 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 INFO 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

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.

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

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

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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 - index 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 variable rip trim – includes saw kerf

TRIM_FXCT - Fixed crosscut trim – includes saw kerf

TRIM_VXCT - Minimum variable cross cut trim – includes saw kerf

TRIM_HEAD - Internal head cut trim – includes saw kerf

TRIM_FRCT - Fixed recut trim – includes saw kerf

TRIM_VRCT - Minimum variable recut trim – includes 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 OFF-CUTS

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

OFFCUT 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 item 1 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_IND EX	PTN_INDE X	CUT_INDE X	X_STAR T	Y_STAR T	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]

```

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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 [Xcuts at 1200 prod. 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 1x1...
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 1x3]
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 prod. 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	[3 rd phase cuts prod. part 5x2]								
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	[1st 3 strip 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 - same sequence as 18]								
CUTS, 1, 4, 24, 25, 2, 600.0, 2, 9, 2	[xcuts - same sequence as 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 - same sequence as 18]								
CUTS, 1, 4, 29, 25, 2, 600.0, 2, 9, 2	[xcuts - same sequence as 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	[1st 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									

Interface Guide

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CUTS, 1, 5, 11, 5, 1, 275.0, 1, 0, 0,RIP [1st 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 [1st 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 [1st 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

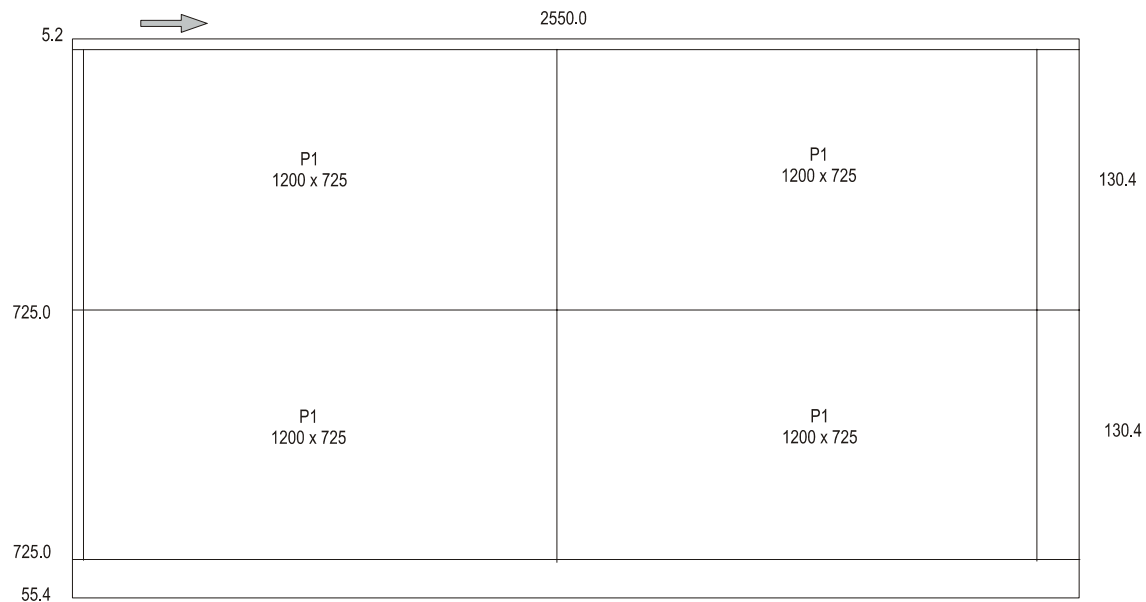
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CUTS, 1, 6, 29, 22, 1, 480.0, 1, 0, 0,RIP [2nd 2 strips xcut together]
CUTS, 1, 6, 30, 23, 2, 230.0, 2, 8, 2
CUTS, 1, 6, 31, 0,92, 16.2, 0, 0, 0
CUTS, 1, 6, 32, 0,91, 240.4, 0, 0, 0
```

19. EXAMPLES

PATTERN 1

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



55.4

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 [record for job 1, ptn 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]
    
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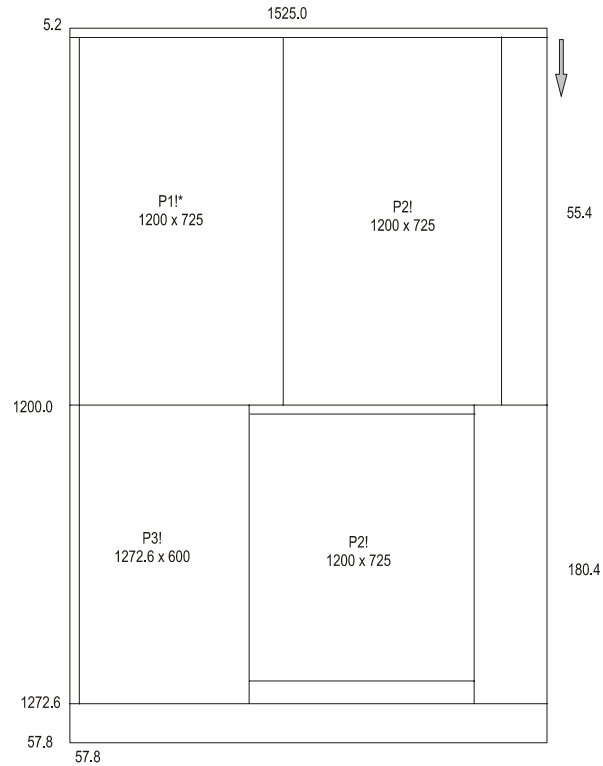
CUTS, 1, 1, 5, 5, 2,1200.0, 2, 1, 4 [xcut at 1200 producing part1]
CUTS, 1, 1, 6, 0,92, 130.4, 0, 0, 0 [falling waste length 130.4mm]
CUTS, 1, 1, 7, 3, 1, 725.0, 1, 0, 0,RIP [1 rip at 725 mm]
CUTS, 1, 1, 8, 4,92, 5.2, 1, 0, 0 [cross cut trim 5.2 mm]
CUTS, 1, 1, 9, 5, 2,1200.0, 2, 1, 4 [xcuts at 1200 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

Interface Guide

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

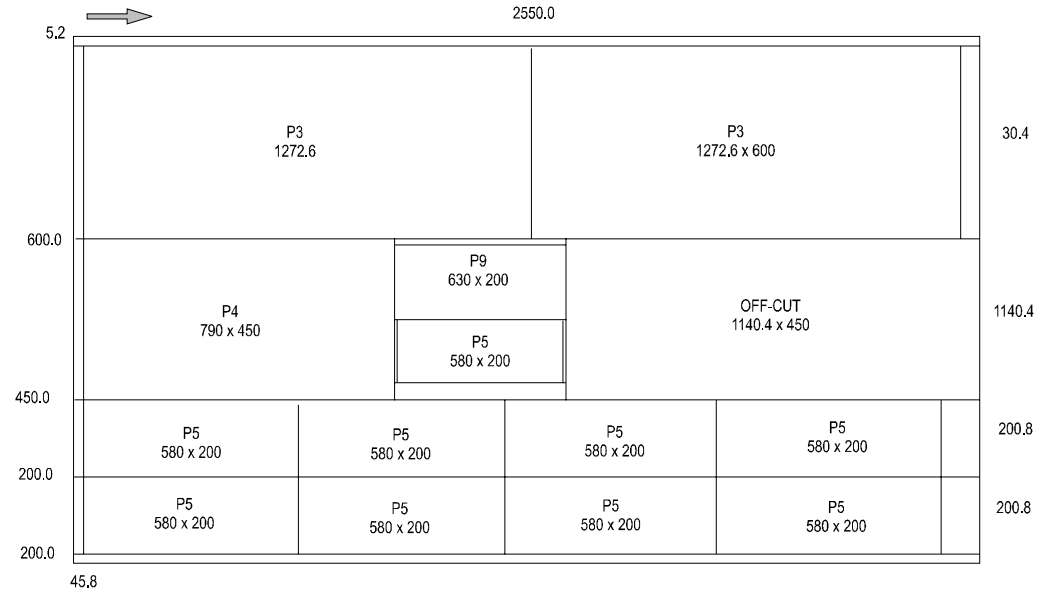
CUTS, 1,	2,	1,	0,	0,	1525.0,	0,	0,	0,	MAIN	
CUTS, 1,	2,	2,	1,	91,	5.2,	1,	0,	0		[rip trim]
CUTS, 1,	2,	3,	2,	1,	1200.0,	1,	0,	0,	RIP	
CUTS, 1,	2,	4,	4,	92,	5.2,	1,	0,	0		
CUTS, 1,	2,	5,	5,	2,	725.0,	1,	1,	1		[xcut at 725 producing part 1x1...
CUTS, 1,	2,	6,	0,	2,	0.0,	0,	2,	2		... and part 2 x 2]
CUTS, 1,	2,	7,	6,	2,	725.0,	1,	2,	3		[xcut at 725 producing part 1x3]
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 prod. 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
	Cross cut	630.0	1				P5

CUTS, 1, 3, 1, 0, 0, 2550.0, 0, 0, 0, MAIN
 CUTS, 1, 3, 2, 1, 91, 5.2, 1, 0, 0
 CUTS, 1, 3, 3, 2, 1, 600.0, 1, 0, 0, RIP

[rip trim]

Interface Guide

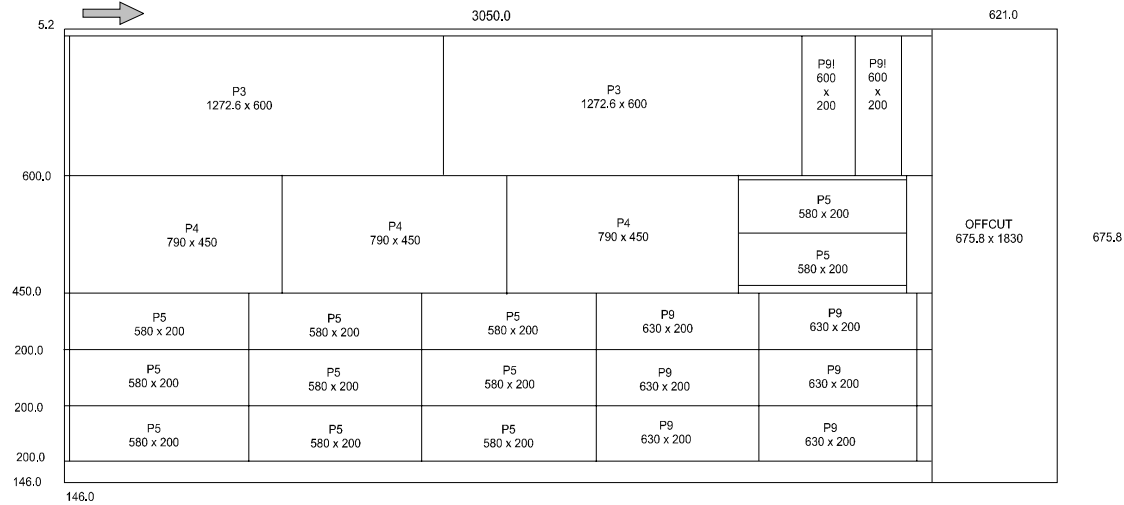
CUTS, 1,	3,	4,	6,	2,1272.6,	1,	3,	1	
CUTS, 1,	3,	5,	0,	2,1272.6,	0,	3,	1	
CUTS, 1,	3,	6,	3,	1, 450.0,	1,	0,	0,RIP	
CUTS, 1,	3,	7,	7,92,	5.2,	1,	0,	0	[xcut trim]
CUTS, 1,	3,	8,	8,	2, 790.0,	1,	4,	1	[cross cut producing part 4x1]
CUTS, 1,	3,	9,	9,	2, 600.0,	1,	0,	0	
CUTS, 1,	3,	10,	10,93,	5.2,	1,	0,	0	[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	[4 th phase recut trim]
CUTS, 1,	3,	14,	14,	4, 580.0,	1,	5,	1	[4 th 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]

Interface Guide

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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 [3rdphase cuts prod. part 5x2]
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 - same sequence as 18]
CUTS, 1, 4, 24, 25, 2, 600.0, 2, 9, 2 [xcuts - same sequence as 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 - same sequence as 18]
CUTS, 1, 4, 29, 25, 2, 600.0, 2, 9, 2 [xcuts - same sequence as 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]

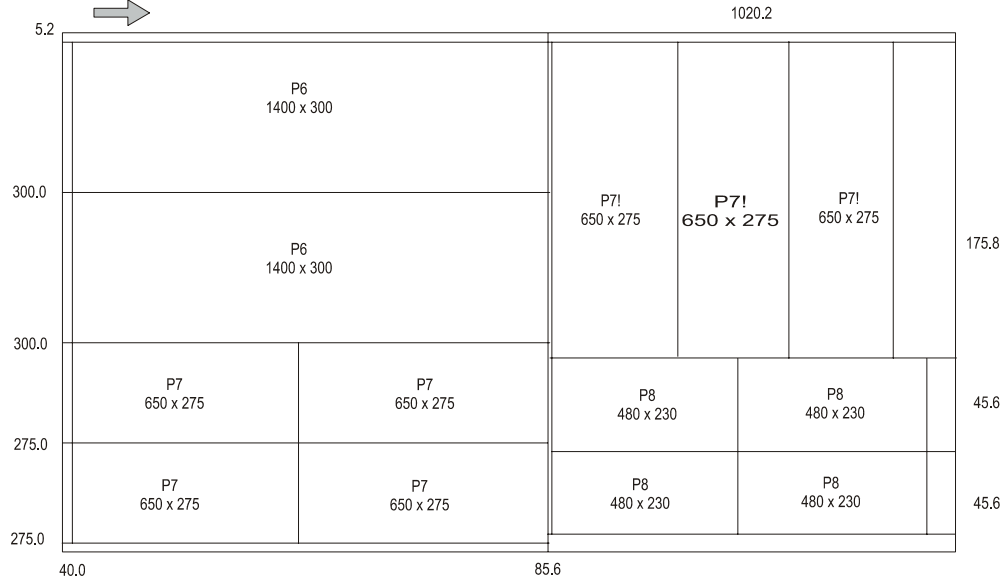
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PATTERN 5

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 [1st 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

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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 [1st 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

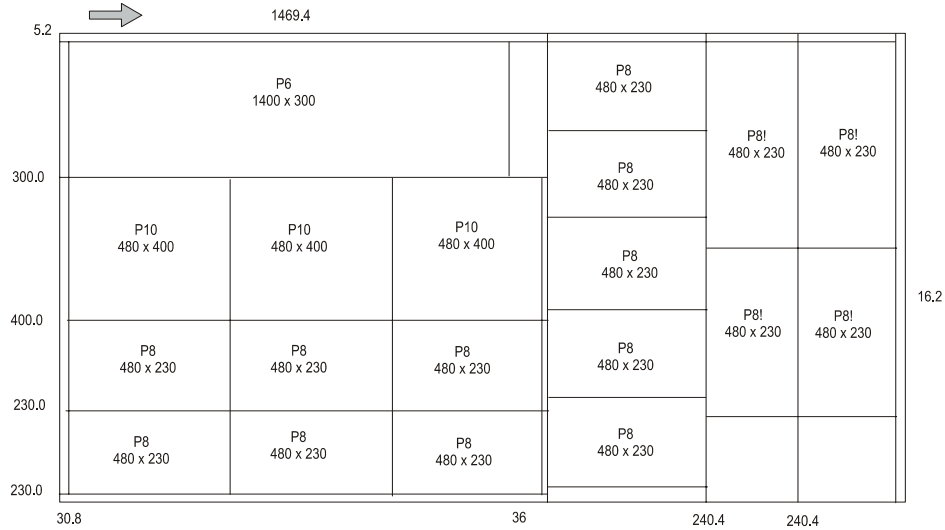
```


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]

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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 [1st 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 [1st 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 [2nd 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-Integer
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	

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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- Integer
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	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

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30	COLOUR	Extended colour name	TXT	200 chars max	Text
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'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

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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

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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	INFORMATION	Board information	TXT	25 chars max	Text
12	MAT_PARAM	Parameter file name	TXT	50 max chars	Text

'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	25 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

'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

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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

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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

Interface Guide

'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

4.1 Export runs / summaries

Sets of data for runs (optimisations) can be exported to external files (not using the Pattern Exchange format). There are several different types of data to export

- Run summaries (including pattern images)
- Job and product costing reports
- Fittings and operations
- Cutting lists (in various formats)

Export runs / summaries

Export results of any optimisation (run).

At the main screen:-

- Select: **File - Export runs - ASCII (or MDB)**

The data can either be exported to a set of ASCII files (on per summary) or all the data (apart from images) can be sent to an Access MDB file.

The program prompts for the run or batch of runs to export.

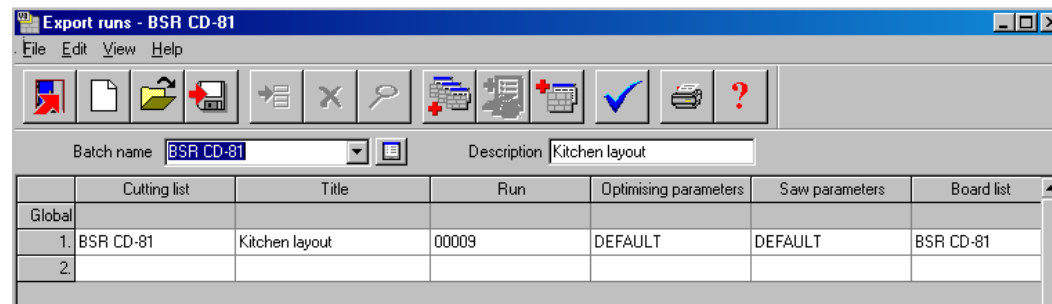


Figure 124

Use the Batch options to select the required batches or select Continue. The program prompts for the summary reports for export.

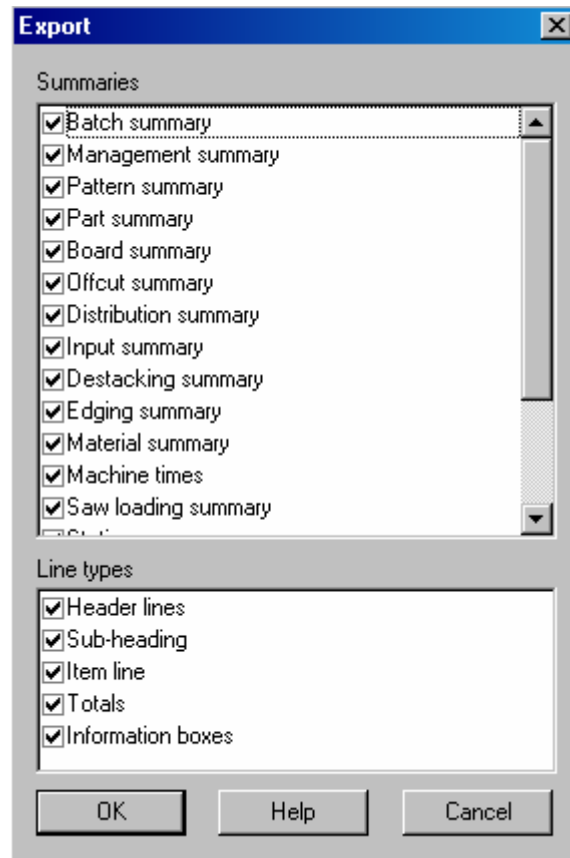


Figure 125

The default choices can be set with Review runs parameters.

The program completes the export and returns to the main screen.

A separate file is created for each report based on the run number and the report letter or number, for example, 10042E.EXD is the exported file for the board summary (letter E).

10023C.EXD - file for pattern summary
 10023D.EXD - file for part summary
 10023E.EXD - file for board summary

Pattern drawings are exported as image files (e.g. bmp) 1 file per drawing. The format is set by the Review runs parameter: *Pattern display - Export format*

Here is an example of the board summary data.

```
%1,DEMO USER 1,Modular V8.1,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
```

In this example all the data types (%1 %2 %3 %4) including heading lines were exported.

The export choices can also be set at the Review runs parameters dialog. At any Review runs screen:-

Select: **File - Parameters**

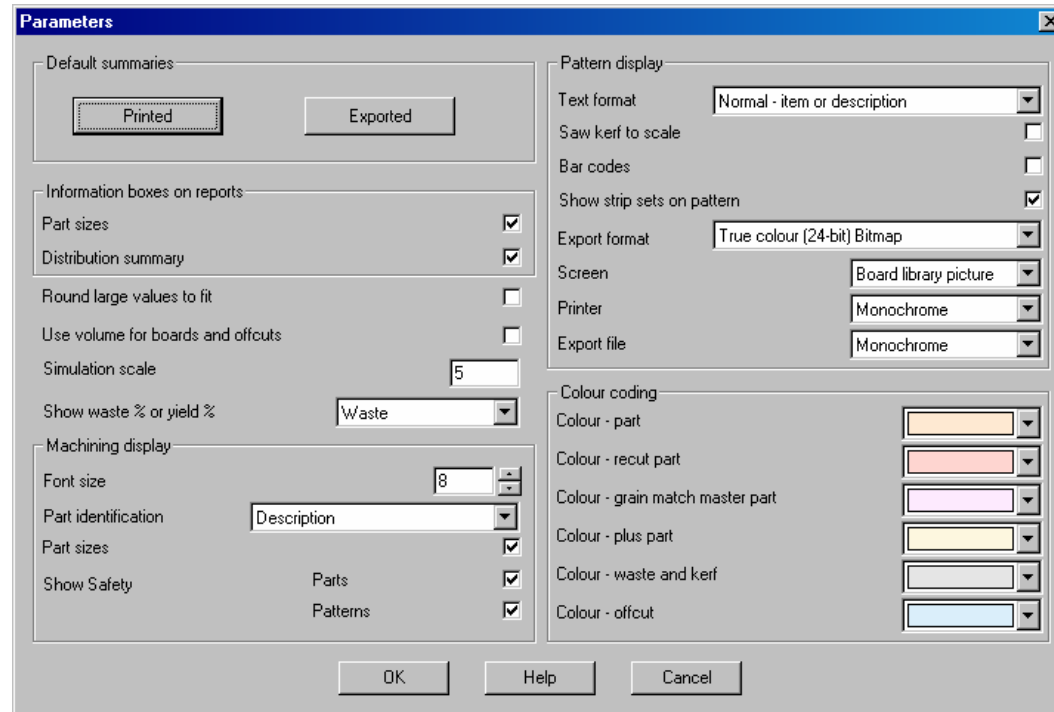


Figure 126

Use the options: *Export - Summaries* and *Export - Line types* to set the export data.

The data is exported to the directory set by the System parameter: *Path for Export data*

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

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

This shows the Export settings dialog.

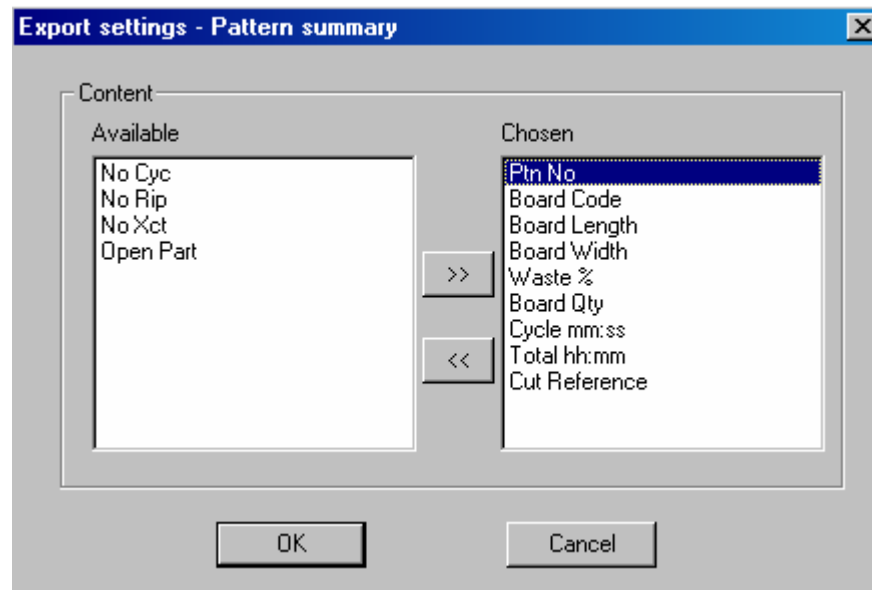


Figure 127

The above example shows fields for the Pattern summary.

Use this to select for each summary the fields exported and the sequence of the fields. The fields available will vary for each report.

```
%1,DEMO USER 2,Modular V8.1,Friday 26 January 2007
%1,Pattern summary,Sample pattern
%1,CHIPBOARD/01,sample/sample/sample/default/default/*
%1,Ptn No,Board Code,Board Length,Board Width,Waste %,Board Qty,Cycle mm:ss,Total
hh:mm,Cut Reference
%1,Average book 1.0 (18.0),,Bundle loading and pattern setup time,,,,,,0:02
%2,CHIPBOARD/01 Chipboard Thickness 18.0 Book 5
%3,1,BOARD/201,3020.0,1220.0,18.67,1,8:36,0:09,00000093*
%3,2,BOARD/201,3020.0,1220.0,71.30,1,2:39,0:03,00000094*
%4,Total,,,44.98,2,5:37,0:14,
```

Note - The export settings for the summary reports are retained between sessions and the default export is all fields in the sequence of the default summary.

Export single reports

At any on-screen report there is an option to Export the report data (as in the previous section).

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

Windows Bitmap (.bmp)
Windows Metafile (.wmf)

The name of the export image file is based on the run number and the summary letter.

<Run number>-<pattern number>J. <format type>
e.g. 00123-0010J.bmp

The export file is located in the path set by the System parameter: *Path for export data*.

Notes

- only the diagram is exported (not headers or other data)

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)

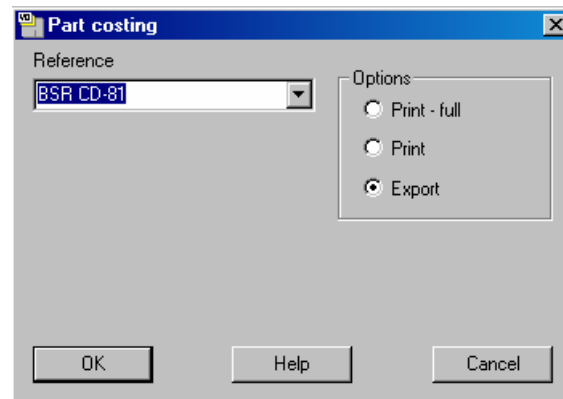


Figure 128

Select the part list and the Export option then OK. An export file is created, for example:- JB-103.EX2

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.

This is an example of the part costing data export.

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```
%1,DEMO USER 1,Magi-Cut Modular V8.1,Friday 26 January 2007
%1,Part costing - summary,BSR CD-81
%1,No,Code/Description,Material/Description,Length,Width,Quantity,Cost Per
part,Total Cost
%3,1.,BASE-BACK,HARDBOARD-4MM,976.0,735.0,1,1.520,1.520
%3,2.,BASE-BACK,HARDBOARD-4MM,476.0,735.0,1,0.896,0.896
%3,3.,BASE-BACK,HARDBOARD-4MM,876.0,735.0,1,1.392,1.392
%3,4.,BASE-BACK,HARDBOARD-4MM,976.0,735.0,1,1.520,1.520
%3,5.,BASE-BACK,HARDBOARD-4MM,976.0,735.0,1,1.520,1.520
%3,6.,BASE-BACK,HARDBOARD-4MM,476.0,735.0,1,0.896,0.896
%3,7.,BASE-BACK,HARDBOARD-4MM,976.0,735.0,1,1.520,1.520
%3,8.,BASE-BACK,HARDBOARD-4MM,976.0,735.0,1,1.520,1.520
%3,9.,BASE-BACK,HARDBOARD-4MM,476.0,735.0,1,0.896,0.896
%3,10.,BASE-BACK,HARDBOARD-4MM,476.0,735.0,1,0.896,0.896
%3,11.,BASE-BOTTOM,MED-DEN-FIBRE-18MM,564.0,582.0,3,3.515,10.544
%3,12.,BASE-BOTTOM,MED-DEN-FIBRE-18MM,464.0,582.0,1,3.273,3.273
%3,13.,BASE-BOTTOM,MED-DEN-FIBRE-18MM,464.0,582.0,1,3.273,3.273
%3,14.,BASE-BOTTOM,MED-DEN-FIBRE-18MM,464.0,582.0,1,3.273,3.273
%3,15.,BASE-BOTTOM,MED-DEN-FIBRE-18MM,464.0,582.0,1,3.273,3.273
%3,16.,BASE-CABINET-BOTTOM,MED-DEN-FIBRE-18MM,864.0,582.0,1,5.215,5.215
%3,17.,BASE-CABINET-DIVIDER,MED-DEN-FIBRE-18MM,560.0,533.3,1,4.014,4.014
%3,18.,BASE-CABINET-DOOR,MFC18-OAK,400.0,556.8,1,3.941,3.941
%3,19.,BASE-CABINET-DRAWER,MFC18-OAK,400.0,184.3,3,2.282,6.847
%3,20.,BASE-CABINET-DRAWER-LONG,MFC18-OAK,900.0,184.3,1,3.967,3.967
%3,21.,BASE-CABINET-END-LEFT,MED-DEN-FIBRE-18MM,582.0,870.0,1,5.682,5.682
%3,22.,BASE-CABINET-END-RIGHT,MED-DEN-FIBRE-18MM,582.0,870.0,1,5.682,5.682
%3,23.,BASE-CABINET-RAIL-BACK,MED-DEN-FIBRE-18MM,864.0,150.0,1,1.704,1.704
%3,24.,BASE-CABINET-RAIL-FRONT,MED-DEN-FIBRE-18MM,864.0,150.0,2,2.476,4.951
%3,25.,BASE-CABINET-SHELF,MED-DEN-FIBRE-18MM,464.0,560.0,1,1.705,1.705
%3,26.,BASE-DOOR,MFC18-OAK,500.0,743.0,1,5.169,5.169
%3,27.,BASE-DOOR,MFC18-OAK,500.0,554.8,1,4.386,4.386
%3,28.,BASE-DOOR,MFC18-OAK,500.0,743.0,1,5.169,5.169
%3,29.,BASE-DRAWER,MFC18-OAK,500.0,184.3,4,2.553,10.212
%3,30.,BASE-DRAWER,MFC18-OAK,600.0,245.2,3,3.150,9.450
%3,31.,BASE-DRAWER,MFC18-OAK,500.0,186.3,1,2.770,2.770
%3,32.,BASE-END-LEFT,MED-DEN-FIBRE-18MM,582.0,870.0,1,5.821,5.821
%3,33.,BASE-END-LEFT,MED-DEN-FIBRE-18MM,582.0,870.0,1,5.682,5.682
%3,34.,BASE-END-LEFT,MED-DEN-FIBRE-18MM,582.0,870.0,1,5.682,5.682
%3,35.,BASE-END-LEFT,MED-DEN-FIBRE-18MM,582.0,870.0,1,5.821,5.821
%3,36.,BASE-END-RIGHT,MED-DEN-FIBRE-18MM,582.0,870.0,1,5.682,5.682
%3,37.,BASE-END-RIGHT,MED-DEN-FIBRE-18MM,582.0,870.0,1,5.821,5.821
%3,38.,BASE-END-RIGHT,MED-DEN-FIBRE-18MM,582.0,870.0,1,5.821,5.821
%3,39.,BASE-END-RIGHT,MED-DEN-FIBRE-18MM,582.0,870.0,1,5.682,5.682
```

The export is to a standard ASCII file.

4.3 Export fittings and operations

Export fittings or operations reports for any optimisation (run).

To do this:-

Move to the fittings or operations report in Review runs.

- Select: **File - 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*

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*.

```
%1,DEMO USER 1,Modular V8.1,Friday 26 January 2007
%1,Fittings,Kitchen layout
%1,,BSR CD-81
%1,No,Fitting,Material,Description,Quantity
%3,1.,Z-DOWEL,+,Dowel,485
%3,2.,Z-DRAWER-SCREW,+,Acrylic drawer screw,65
%3,3.,Z-RUNNER,+,Drawer runner,24
%3,4.,Z-SHELF-SUPPORT,+,Shelf support,85
%3,5.,Z-SINGLE,+,Single Knob,47
%3,6.,ZDD4B-BROWN-HANDLE,+,Handle 4" D Brown,8
%3,7.,ZH180-HINGE,+,Hinge 180 HKK123-321,82
%3,8.,ZS25-6-ROUND-SCREW,+,Round Screw 25mm No6,283
%3,9.,ZS40-8-CSUNK-SCREW,+,Csunk Screw 40mm No8,88

%1,DEMO USER 1,Modular V8.1,Friday 26 January 2007
%1,Operations,Kitchen layout
%1,,BSR CD-81
%1,No,Operation,Material,Description,Duration
%3,1.,Y-ASSEMBLY,-OP,Cabinet Assembly,1:21
```

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:-

- 9 exported cutting list - parts only
- A exported cutting list - parts and boards

Also set System parameter: *Export cutting list format*

5 ASCII - large lists

6 ASCII

Options 5 and 6 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,,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 are for special situations - refer to the supplier for details.

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 spreadsheet, database, or report generator.

Export the pattern exchange data using the Machine Interface option.

Set up an option in the Saw Transfer parameters for this:-

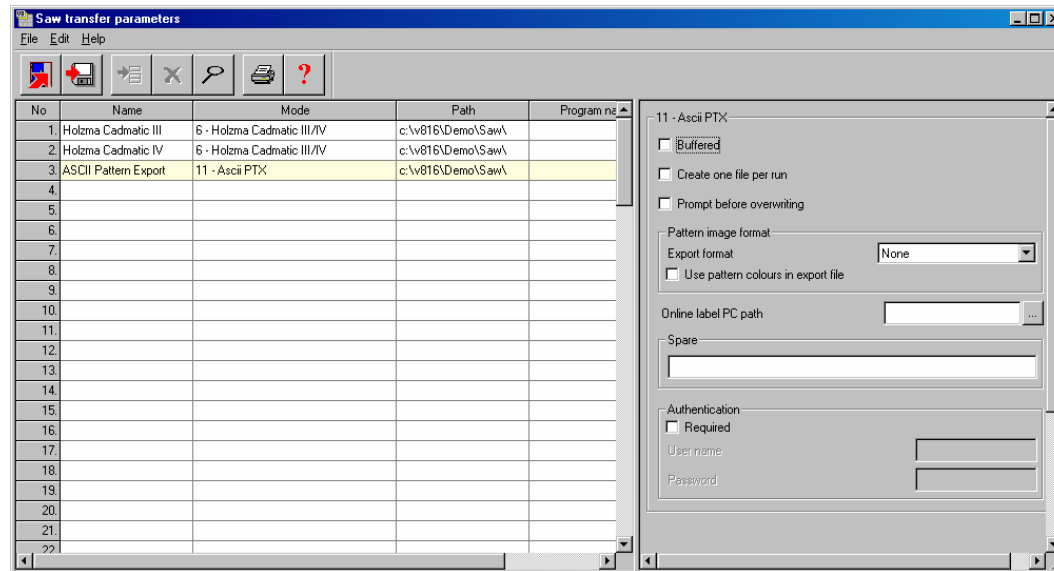


Figure 129

Set the path to the path to export data to and make sure that the 'Mode' is one of the following.

- 11 - Transfer to ASCII file (pattern exchange)
- 12 - Transfer to Access database (pattern exchange)

Optimise the part lists or product requirement lists in the usual way and select:-

- Machine Interface
- Transfer to Saw
- Select the 'saw' type (ASCII Pattern Export)

- Select 'Transfer to saw'

The PTX file is created in the directory set by 'Path' (c:\v8\v8demo\export in this case)

```

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

At the Board library screen:-

- Select: **File - Export**

The program prompts for a path and file name.

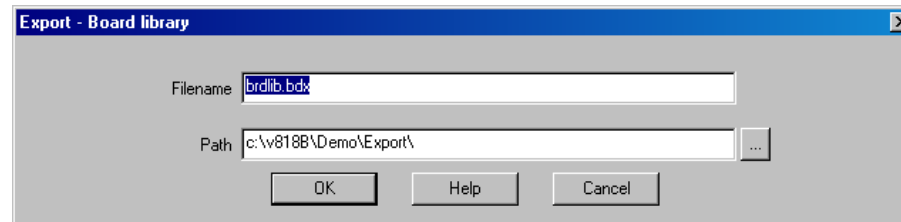


Figure 130

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.

4.7 Export - Part library data

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.

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 directory. This can be from a batch file or from a shortcut or by using the Windows option Start - Run. For example, using a Windows batch file the commands are:-

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

User directory - It is important to run the program from a user directory 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

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

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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=<printrname> - 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
```

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```
/REPORTS=<reportletters> - set the reports to print  
/RUN=<runnumber>         - 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=<runnumber>        - 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
```

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
```

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 directory. This can be from a batch file or from a shortcut or by using the Windows option Start - Run. For example, using a Windows batch file the commands are:-

```
..\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 directory - It is important to run the program from a user directory 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 Board library - stand alone

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
```

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

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.

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 directory - It is important to run the programs from a user directory 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
```

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
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 directory 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
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
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          MFC15-05  2010 x 1680  61
```

The format can be set via the System parameters in the user directory 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          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:" : "

Issue stock

```
STOCK /ISSUESTOCK
```

This issues stock for the current run.

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. 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.

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

/UDF

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

```
PRODIMP testfile /AUTO /DELETE /UDF:prodprm
```

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.

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

Refer to the Saw transfer parameters for full details of each option

<i>Switch</i>	<i>Options</i>	<i>Example</i>	<i>Default</i>
/SAWPATH= <i>name</i>	Full path name	/SAWPATH="c:\saw transfer"	current directory
/TRANSMODE= <i>number</i>	Saw transfer mode number (2 - 14)	/TRANSMODE=3	6 (Cadmatic III)
/WARNING= <i>number</i>	Retransfer warning level (1 or 2)	/WARNING=1	0 (not set)
/ONLINEPATH= <i>name</i>	Full path for online data	/ONLINE=c:\MySawData	blank (no path set)
/LOGIN= <i>number:name:password</i>	Authentication required User name Password	/LOGIN=1:userjones:dfxgy	0 (login not used)
/SAFE= <i>number:value:value</i>	Safe transfer enabled (0-1) Timeout 1 Timeout 2	/SAFE=1:3:5	0 (not used)
/SPARE= <i>text</i>			blank
/PTXOPTIONS= <i>command</i>	P - prompt before overwrite R - one file per run	/PTXOPTIONS=P /PTXOPTIONS=PR	blank (not set)
/CPOUT= <i>number</i>	Cpout naming method (0-1)	/CPOUT=1	0
/ILENIA= <i>number</i> Ilenia controller	Use Ilenia controller (0-1)	/ILENIA=1	0
/CADMATIC= <i>code</i>	Type of Cadmatic CADR - Cadmatic III recursive CAD4 - Cadmatic 4	/CADMATIC=CAD4	blank (Cadmatic III)
/IMAGE= <i>format code,color code</i>	Colour codes (BMP,BMP24,BMP, BMP16,BMP256,WMF,EMF) Use colour (0-1)	/IMAGE=BMP256,1	blank (not set)
/ALPHA= <i>number</i>	Allow alphanumeric runs for Cadmatic 1/II (0-1)	/ALPHA=1	0 (not set)
/COMMSPORT= <i>port code</i>	Communication port for saw	/COMMSPORT=COM1	blank (not set)

Interface Guide

/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	

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

5.8 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 directory (in this case v8demo).

%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 V8 user directory.

Errors - if an error occurs .ERR files are created in the user directory, 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 spreadsheet. The batch file (example4.bat) contains:-

```
..\import %1 /format:8
..\batch %1 /optimise /auto
..\output /export /reports=E

copy ..\v8demo\import\%1e.exd ..\v8demo\import\%1e.csv
"c:\program files\microsoft office\office10\excel.exe" ..\v8demo\import\%1e.csv
```

The last two lines copy the resulting EXD file to CSV and load it into a spreadsheet. The spreadsheet commands will vary depending on the system used.

The batch file is located in a user directory (in this case v8demo).

%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 spreadsheet 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.

5.9 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:\v82\import\week1.ptx*)

Input files are Pattern exchange files (.ptx .mdb)

Wildcards can be included (e.g. *c:\v82\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:\v82\import\job325-exchange-file-01.ptx*)

UNC paths are not allowed

destination - argument to specify the path where .saw files are created (e.g.

c:\cadv40\data\saw)

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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:\v82\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]

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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

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:\v82\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.

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`/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 V8 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.

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 usually 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 directory so the settings apply to all the data and operations.

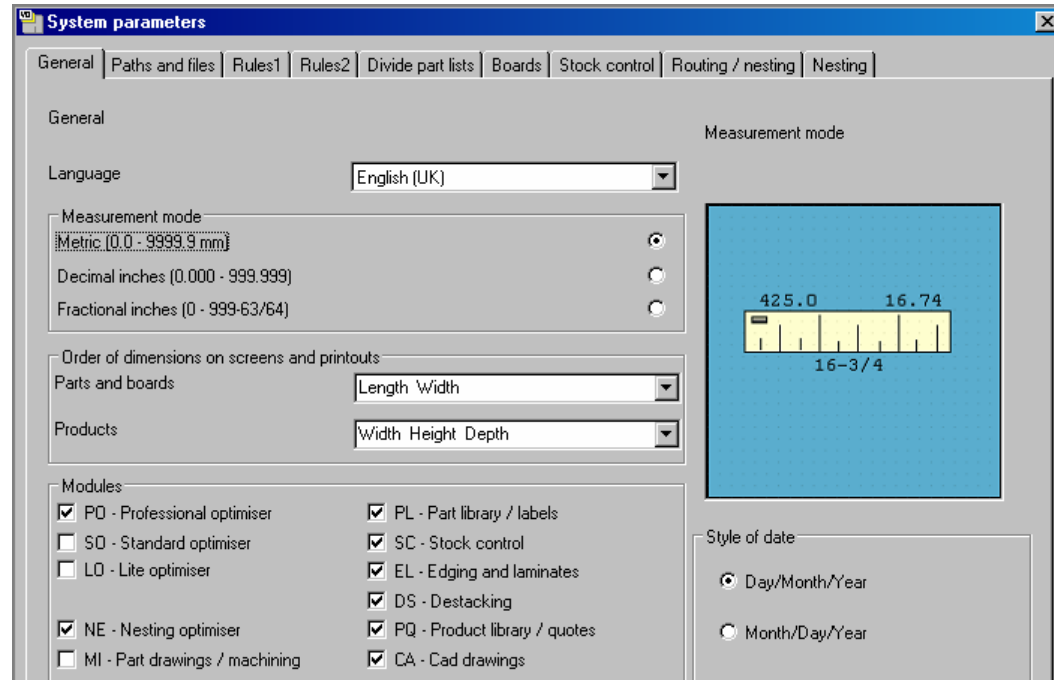


Figure 131

Important parameters for the Interface guide are listed below.

- Measurement mode
- Path for Import
- Path for Export data
- Create data for

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

<u>Length</u>	<u>Width</u>	<u>? Width</u>	<u>Length</u>
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.-

<u>Export format</u>	<u>Max parts</u>	<u>Max boards</u>
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.**

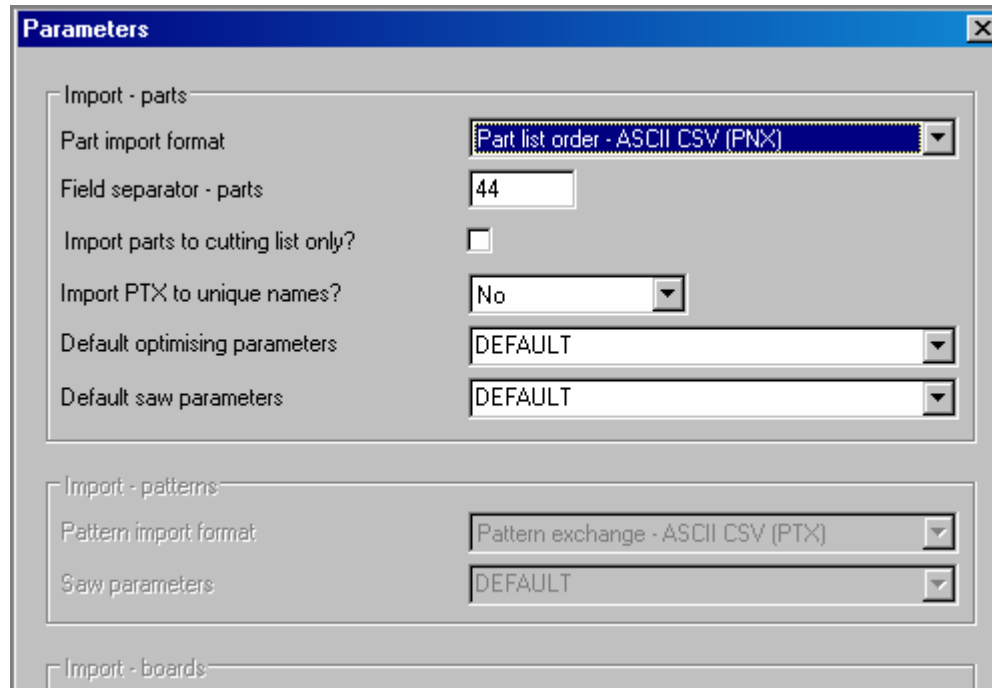


Figure 132

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

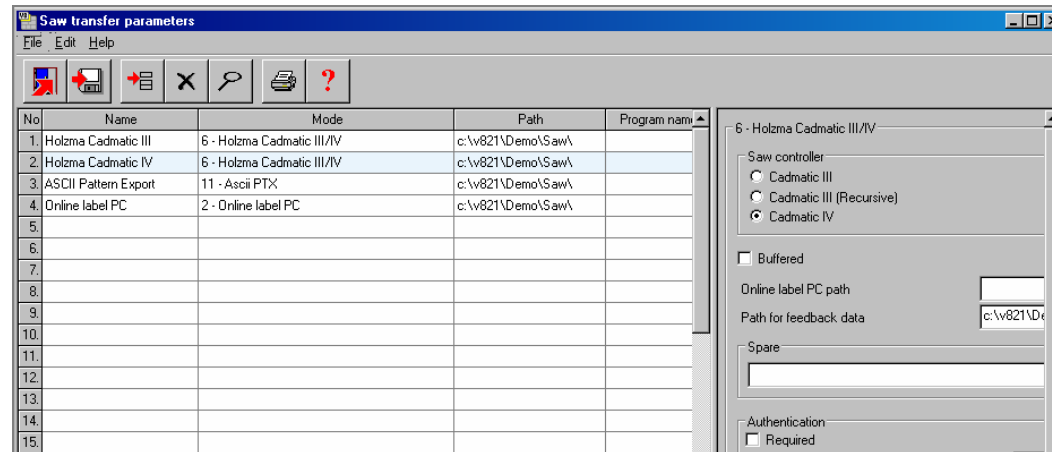


Figure 133

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.

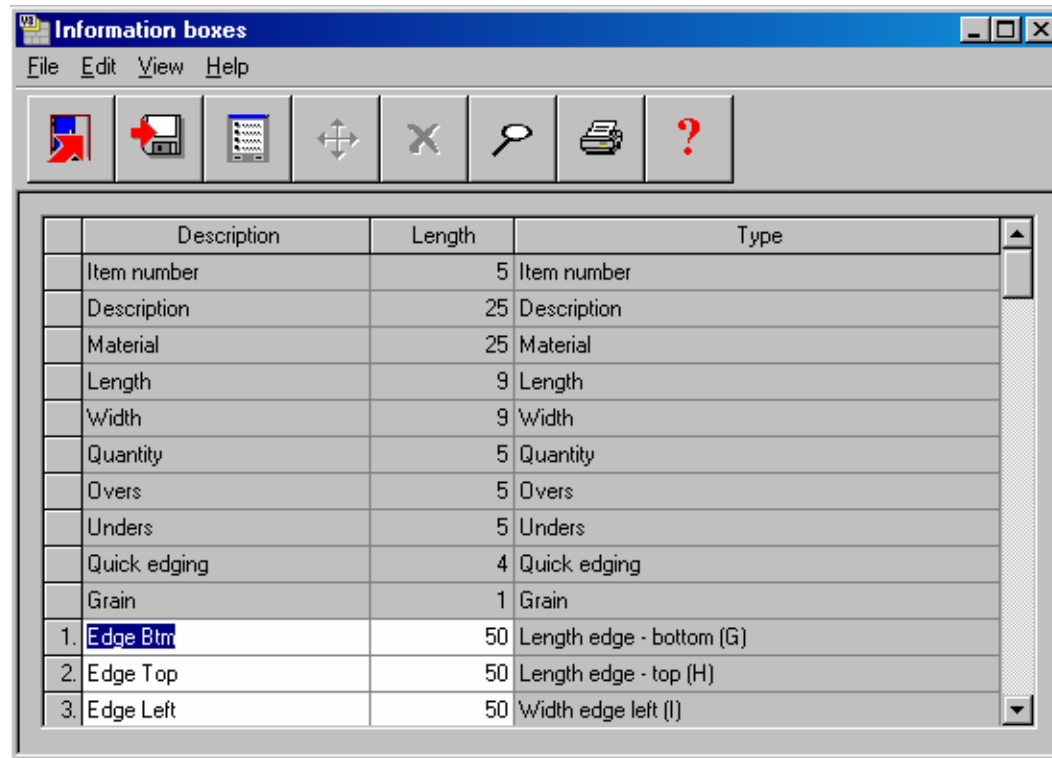


Figure 134

Take care when changing these parameters since they apply to all part lists. It is often OK to add new items 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.

	Value	
1. Part code	1	
2. Material	2	
3. Length	4	
4. Width	5	
5. Quantity	3	
6. Over	0	
7. Under	0	
8. Grain	6	
9. Length edge - bottom	0	
10. Length edge - top	0	
11. Width edge left	0	

Figure 135

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*)

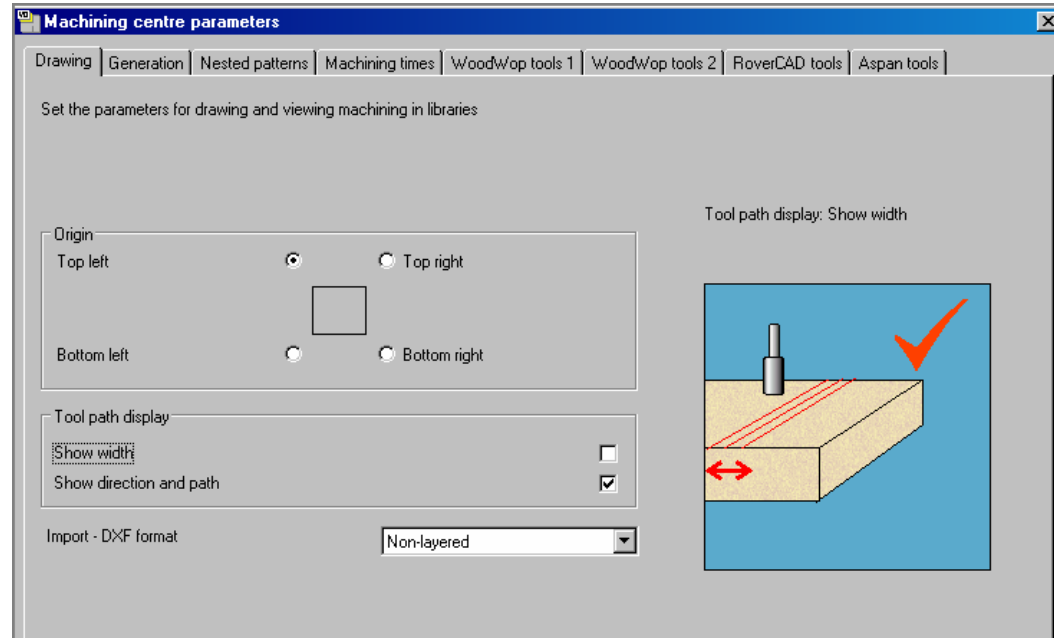


Figure 136

Click on a tab for each set of parameters.

7. ASCII format & field sizes

ASCII Format

This is a summary of the widely used standard - ASCII format (American Standard Code for Information Exchange).

Most programming languages, databases, spreadsheets, word processors and text editors can create and read files in this format so it is very easy to create or use this sort of file. Here is a typical example.

```
WEEK12
END/128,MFC15,750.0,398.0,0,100
TOP/11A,MFC15,1750.0,790.0,200
END/17A,MDF18,650.0,390.5,140,"Red Oak"
"DOOR/RH",MDF21,960.0,450.0,0,,,,,15
```

All the data is based on the ASCII character set. Each line is a single record with one or more fields. Each field is data separated by a comma (ASCII decimal code 44) and each line is terminated by a carriage return (ASCII decimal code 13) and line feed (ASCII decimal code 10).

This file format is often referred to as CSV (comma separated values) when the field separators are the ASCII comma character.

Each field (the items separated by commas) must refer to the same item so, for instance in this example the second field is the material code for a part (MFC15 etc).

Trailing commas can be omitted where there is no other information but pad out the line with the correct number of commas where there is relevant data in later fields (as in line 4 above).

Double quotation marks - these are sometimes used to surround fields as in "Red Oak" above. When data is imported the quotes are removed. They are used to make the data clear where there are spaces or for example where the data itself contains a comma as in "Unit 25, Bristol" which is read as a single field.

The quotation mark is ASCII decimal code 34.

For some import options specify that the separator is a character other than a comma (see system Parameters). This is useful where the data naturally contains a lot of commas - the European style for numbers is one example, "750,0" where the comma is used for the decimal separator.

Interface Guide

```
END/128:MFC15:750,0:398,0:0:100
TOP/11A,MFC15:1750,0:790,0:200
END/17A:MDF18:650,0:390,5:140:"Red Oak"
"DOOR/RH":MDF21:960,0:450,0:0:0:0:0:0:15
```

This example uses a colon (ASCII decimal character 58).

Limits and maximum sizes

The following list shows the most important limits on list sizes, field lengths etc.

<i>Item</i>	<i>Limit</i>
Max items in part list	20000
Max items in cutting list	20000
Max items in board list	5000
Max items in cutting list per optimisation	9999
Max items in board list per optimisation	5000
Max material types per run	2000
Max offcuts in run	7500
Max patterns in run	5000
Max dimension for parts and board (mm)	9999.0
Max parts in a pattern	1000
Max part size as % of board area	0.1%
Max value for quantity part / board list	999999
Max run quantity per pattern	99999
Max runs in batch	250
Max length of product code	25
Max length of part code	25
Max length of material code	25
Max length of board code	25
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 (product 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	300
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

8. Board library data

Experienced Access Users only

The Board library stores information about Boards in the following structured way

MATERIALS

 BOARDS (Board sizes)

 TRANSACTIONS (*Stock module only*)

Boards are divided into different types of material, for example, CHIPBOARD-15MM or FIBREBOARD-18MM and so on. Within each material type several different sizes may be available, for example:-

CHIPBOARD-15MM

Code	Length	Width	Quantity
BOARD1	3660.0 x	1220.0	322
BOARD2	2440.0 x	1220.0	240

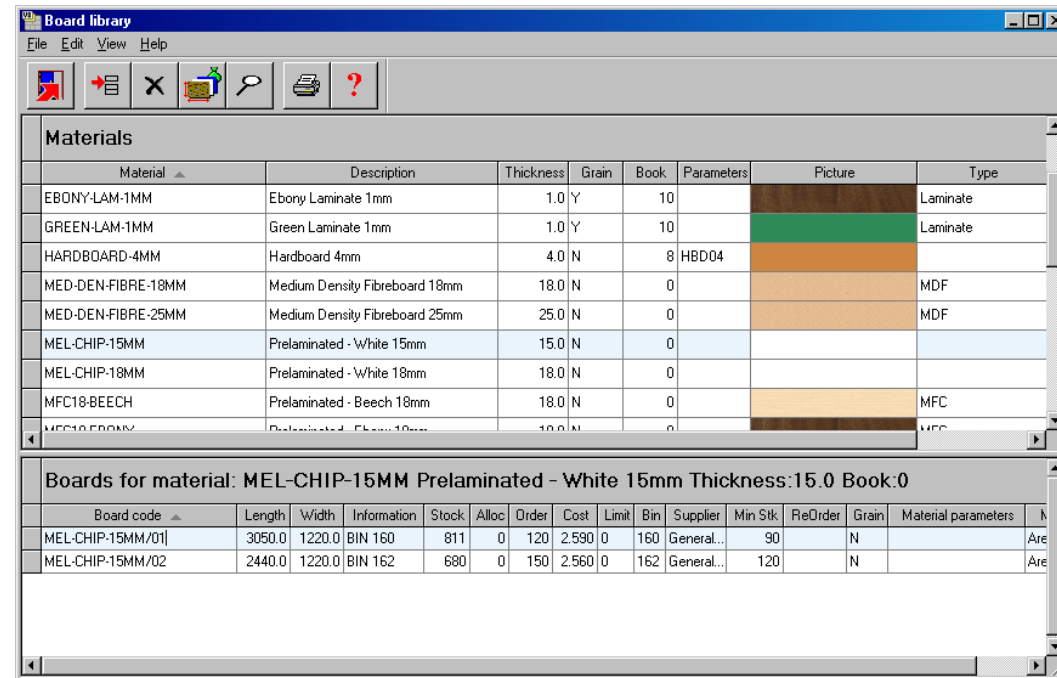


Figure 137

The Board library is an Access MDB database in Access 2000 format so data can be accessed or exported via Database queries using Access or a compatible database program.

In some cases it may also be useful to use Access to update the database - for example for a batch update of Material or Board costs.

From V8.18 onwards the Board Library tables and structures are not protected by a security file and password.

To make reports or queries in Access for the Board library it is best to work with a Front End database. A *Front-End* database is another database which attaches to the Board library database by *linking* to the Board library database tables. Store any reports and queries in the *Front-End* database.

The following query used in a Front End database extracts a sub-set of the materials.

Selected materials

<u>MaterialsCode</u>	<u>MaterialsDescription</u>	<u>MaterialsThickness</u>
MED-DEN-FIBRE-18MM	Medium Density Fibreboard 18mm	18.00
MED-DEN-FIBRE-25MM	Medium Density Fibreboard 25mm	25.00
MFC18-BEECH	Prelaminated - Beech 18mm	18.00
MFC18-EBONY	Prelaminated - Ebony 18mm	18.00
MFC18-OAK	Prelaminated - Oak 18mm	18.00
MFC18-TEAK	Prelaminated - Teak 18mm	18.00

The query is:-

```
SELECT Materials.MaterialsCode, Materials.MaterialsDescription,  
Materials.MaterialsThickness  
FROM Materials  
WHERE (((Materials.MaterialsCode) Like "*MED-DEN*" Or  
(Materials.MaterialsCode) Like "*MFC*"))
```

Database Structure - Board library**Materials table: MATERIALS**

Field name	Description
MaterialsCode	unique code, text(25)
MaterialsDescription	text(50)
MaterialsThickness	number
MaterialsGrain	number
MaterialsBookHeight	number
MaterialsParametersName	text(50)
MaterialsPictureFileName	text(50)
MaterialsType	number

Boards table: BOARDS

Field name	Description
BoardsCode	unique code, text(25)
BoardsMaterialCode	text(25)
BoardsLength	number
BoardsWidth	number
BoardsInformation	text(25)
BoardsStockQuantity	number
BoardsOrderQuantity	number
BoardsAllocationQuantity	number
BoardsCost	number
BoardsLimit	number
BoardsMinimumQuantity	number
BoardBin	text(25)
BoardsSupplier	text(25)
BoardsCostMethod	number
BoardsParametersName	text(50)
BoardsReorderQuantity	text(20)
BoardsType	number
BoardsGrain	number

Stock transactions table: TRANSACTIONS

Field name	Description
TransactionsID	unique ID, number
TransactionsDate	text(6) (ddmmyy)
TransactionsType	number
TransactionsReference	text(50)
TransactionsBoardCode	text(25)

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TransactionsQuantity	number
TransactionsBoardCost	number
TransactionsUser	text(4)

Material type table: MATERIALTYPE

Field name	Description
MaterialTypeCode	number
MaterialTypeDescription	text(40)

9. Data examples

The following screens illustrate the type of results data for import and export by the program.

Product requirements

No	Code	Information	Product			Qty
			Width	Height	Depth	
1	BASE-CABINET	001 Base unit - cabinet	900.0	870.0	600.0	1
2	BASE-DDOUBLE	002 Double base unit	1000.0	870.0	600.0	1
3	BASE-DOUBLE	003 Double base unit	1000.0	870.0	600.0	1
4	BASE-DRAWER	004 Drawers-MFC18-DAK	500.0	870.0	600.0	1
5	BASE-SINGLE	005 Single base unit	500.0	870.0	600.0	1
6	BASE-CORNER	006 Corner cabinet	800.0	870.0	800.0	1
7	BASE-SINK	007 Sink base unit	1000.0	870.0	600.0	1
8	BASE-SINGLE	008 Single base unit	500.0	870.0	600.0	1

Figure 138

Data may be just the basic product requirement lines or more complex answers to variable items for custom products.

Part list

	Description	Material	Length	Width	Quantity	Over	Under	Grain	Inf
Global						0%	0%		
1.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
2.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
3.	BASE-BACK	HARDBOARD-4MM	876.0	735.0	1	0	0	N	
4.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
5.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
6.	BASE-BACK	HARDBOARD-4MM	476.0	735.0	1	0	0	N	
7.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
8.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
9.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
10.	BASE-BACK	HARDBOARD-4MM	976.0	735.0	1	0	0	N	
11.	BASE-BOTTOM	MED-DEN-FIBRE-18MM	464.0	582.0	1	0	0	N	
12.	BASE-BOTTOM	MED-DEN-FIBRE-18MM	464.0	582.0	1	0	0	N	
13.	BASE-BOTTOM	MED-DEN-FIBRE-18MM	564.0	582.0	3	0	0	N	
14.	BASE-BOTTOM	MED-DEN-FIBRE-18MM	464.0	582.0	1	0	0	N	
15.	BASE-BOTTOM	MED-DEN-FIBRE-18MM	464.0	582.0	1	0	0	N	
16.	BASE-CABINET-BOTTOM	MED-DEN-FIBRE-18MM	864.0	582.0	1	0	0	N	
17.	BASE-CABINET-DIVIDER	MED-DEN-FIBRE-18MM	560.0	533.3	1	0	0	N	
18.	BASE-CABINET-DOOR	MFC18-OAK	400.0	556.8	1	0	0	X	
19.	BASE-CABINET-DRAWER	MFC18-OAK	400.0	184.3	3	0	0	N	
20.	BASE-CABINET-DRAWER-LONG	MFC18-OAK	900.0	184.3	1	0	0	N	
21.	BASE-CABINET-END-L-FEET	MED-DEN-FIBRE-18MM	582.0	870.0	1	0	0	N	

Figure 139

Data may be just the basic part information or include extra information from the information boxes.

Board list

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

Figure 140

The boards available for a part list.

Pattern preview

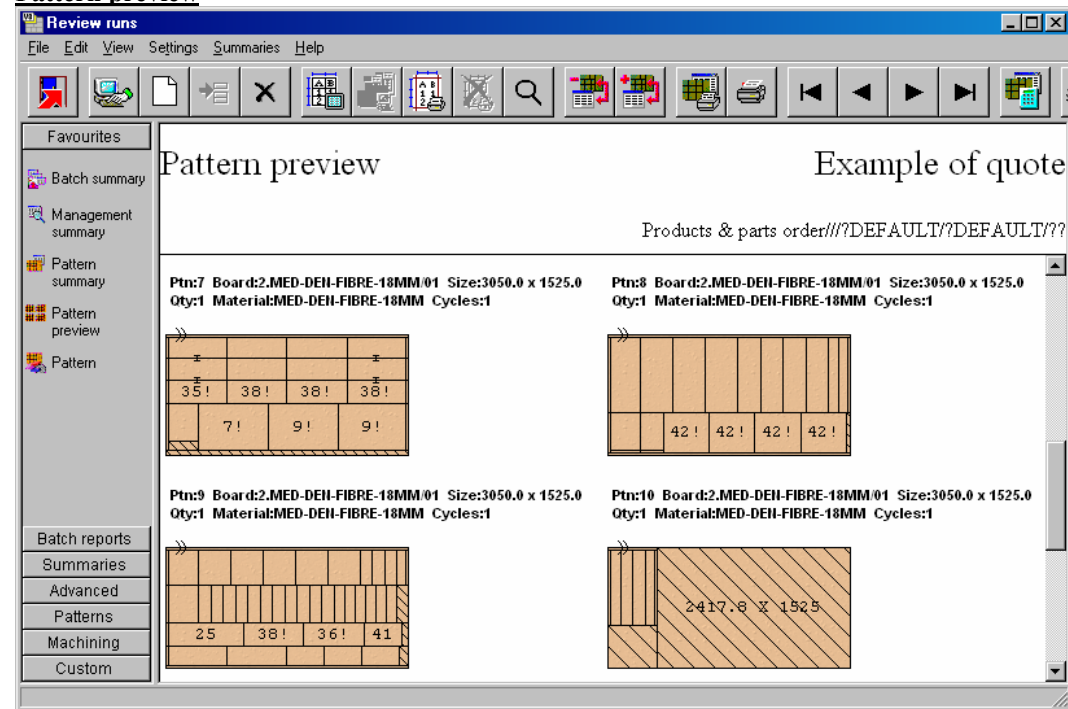


Figure 141

A typical set of patterns. Patterns are exported to a PTX (pattern exchange) file. Patterns and the associated data are complex items to describe - this is set out in the Pattern Exchange standard.

Note - the program is running in 'Inches' measurement mode in this example so all the measurements are in inches. Millimetres, Inches and Decimal inches are the available modes.

Pattern details

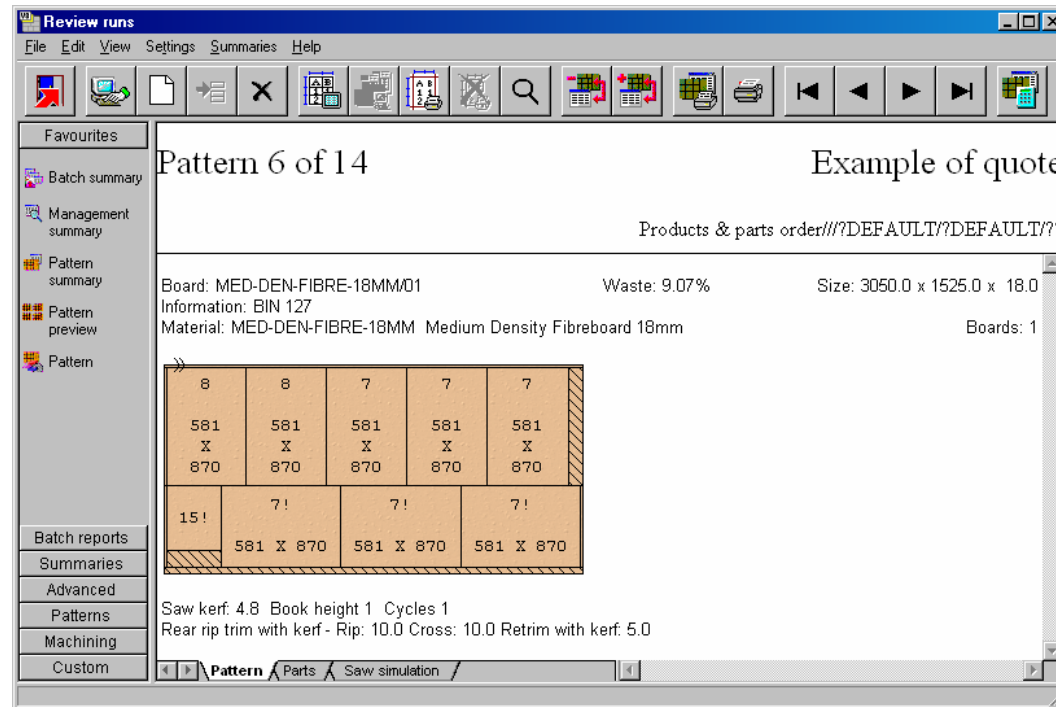


Figure 142

Full page view of a pattern.

When exporting patterns (PTX) the format includes a way of describing the cuts.

Management summary

Management summary Example of quote

Products & parts order///?DEFAULT/?DEFAULT/??

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

Figure 143

Summary data for one optimisation or run. All summary data can be exported.

Part summary

Part summary Order/01 - Week 4

Units - Wk 4///DEFAULT/DEFAULT/??

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

Figure 144

Summary of parts produced in one optimisation. All summary data can be exported including headings, subtotals and totals.

Board summary

Board summary Order/01 - Week 4

Units - Wk 4///DEFAULT/DEFAULT??

No	Board	Len... mm	Width mm	Informa... BIN	Qty in Stock	Qty Us... Us...	Len... m	Area m2	Cost m2	Cost/ Board	Total Cost	Parar
<u>MED-DEN-FIBRE-18MM Medium Density Fibreboard 18mm Thickness 18.0 Book 5</u>												
5.	MED-DEN-FIBRE-18...	3050.0	1525.0	BIN 127	1202	7		32.56	4.500	20.931	146.51	
						7		32.56			146.51	
<u>MEL-CHIP-18MM Prelaminated - White 18mm Thickness 18.0 Book 5</u>												
1.	MEL-CHIP-18MM/01	3050.0	1220.0	BIN 150	920	9		33.49	3.180	11.833	106.50	
2.	MEL-CHIP-18MM/02	2440.0	1220.0	BIN 151	324	5		14.88	3.140	9.347	46.74	
						14		48.37			153.23	
<u>MFC18-BEECH Prelaminated - Beech 18mm Thickness 18.0 Book 5</u>												
3.	MFC18-BEECH/01	3050.0	1525.0		1702	9		41.86	3.210	14.931	134.37	
4.	MFC18-BEECH/02	2440.0	1220.0		1630	15		44.65	2.960	8.811	132.17	
						24		86.51			266.54	

Figure 145

Summary of boards used for one optimisation. All summary data can be exported.

Offcut summary

No	Description	Length mm	Width mm	Total	Area m2	Cost m2	Cost / Offcut	Total Cost	Offcuts per pattern
Offcut value - restocking 5.60 Cost reduction 0.00									
MED-DEN-FIBRE-18MM Medium Density Fibreboard 18mm Thickness 18.0 Book 5 Min size 300.0 X 200.0									
1.	XUNITS-WK4/0001	840.4	420.0	2	0.706	2.250	0.794	1.59	2/16
					0.706			1.59	
MEL-CHIP-18MM Prelaminated - White 18mm Thickness 18.0 Book 5 Min size 300.0 X 200.0									
2.	XUNITS-WK4/0002	410.8	302.0	1	0.124	1.570	0.195	0.19	1/6
					0.124			0.19	
MFC18-BEECH Prelaminated - Beech 18mm Thickness 18.0 Book 5 Min size 300.0 X 200.0									

Figure 146

Summary of offcuts produced in an optimisation. All summary data can be exported.

Material summary

The screenshot shows a software window titled 'Review runs' with a menu bar (File, Edit, View, Settings, Summaries, Help) and a toolbar. The main area displays a 'Material summary' for 'Bedrooms 2'. The table below is a summary of materials used in an optimisation.

Part No	Part m	Part m2	Part m3	Board No	Board m2	Board m3	Sheets No	Sheets m2	Sh... m3	Off... No	Off... m2	Off... m3	C...Ptn	Time hh:...	Cost	Av Waste	A S.	
00020/Bedrooms 2/Bedrooms 2/DEFAULT/DEFAULT??																		
<u>MEL-CHIP-18MM Prelaminated - White 18mm Thickness 18.0 Book 5</u>																		
120	125.10	2.25	44	140.65	2.53	44	140.65	2.53	0	0.00	0.00	12	9	0:00	443.59	11.06	5.5	
<u>MFC18-BEECH Prelaminated - Beech 18mm Thickness 18.0 Book 5</u>																		
572	239.10	4.30	74	270.52	4.87	74	270.52	4.87	0	0.00	0.00	24	24	0:00	835.61	11.61	9.3	
692	364.20	6.55	118	411.17	7.40	118	411.17	7.40	0	0.00	0.00	36	33	0:00	1279.20	11.42	8.0	

Figure 147

Summary of materials used in an optimisation.

Machining library

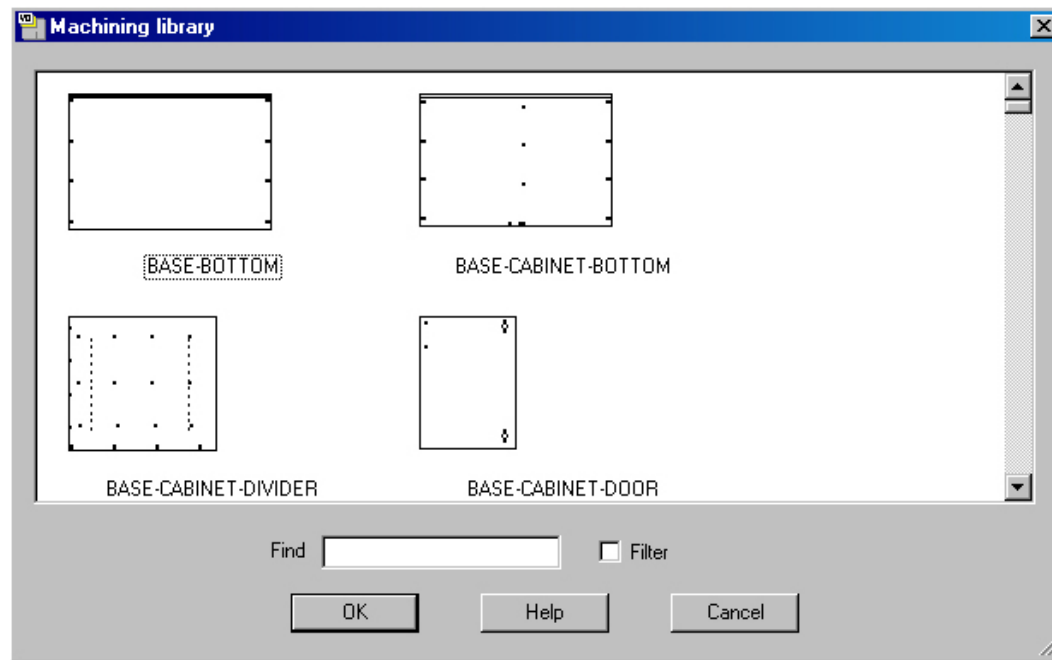


Figure 148

Machining instructions for each part or type of part.

Machining drawing

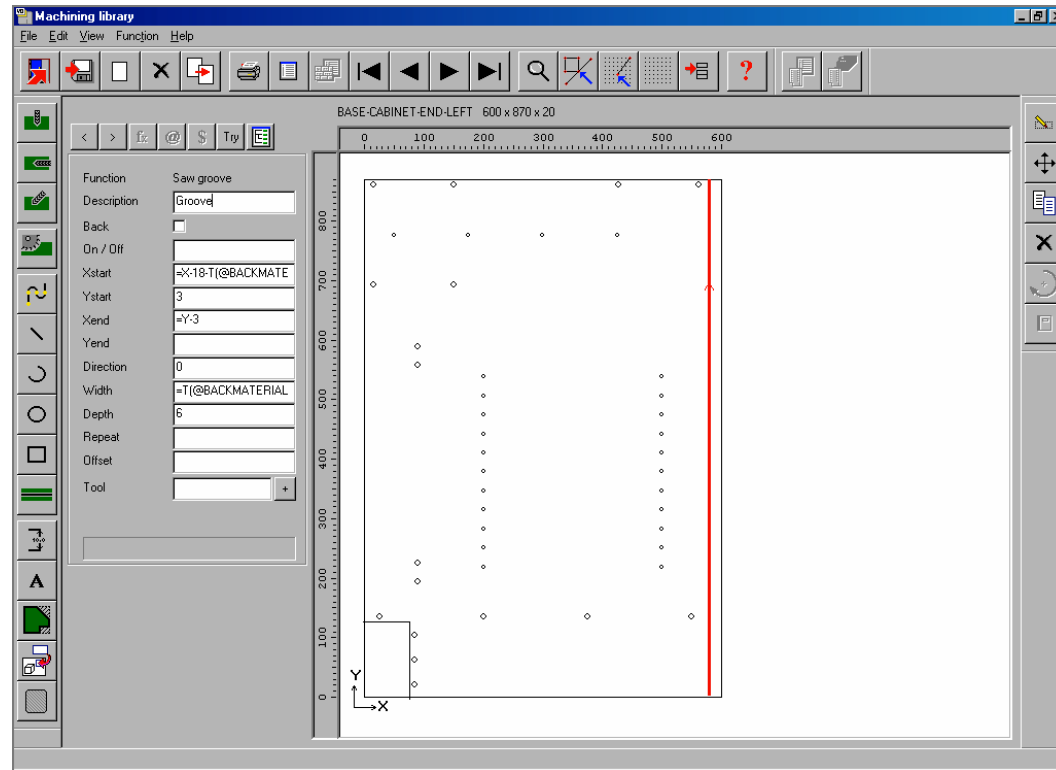
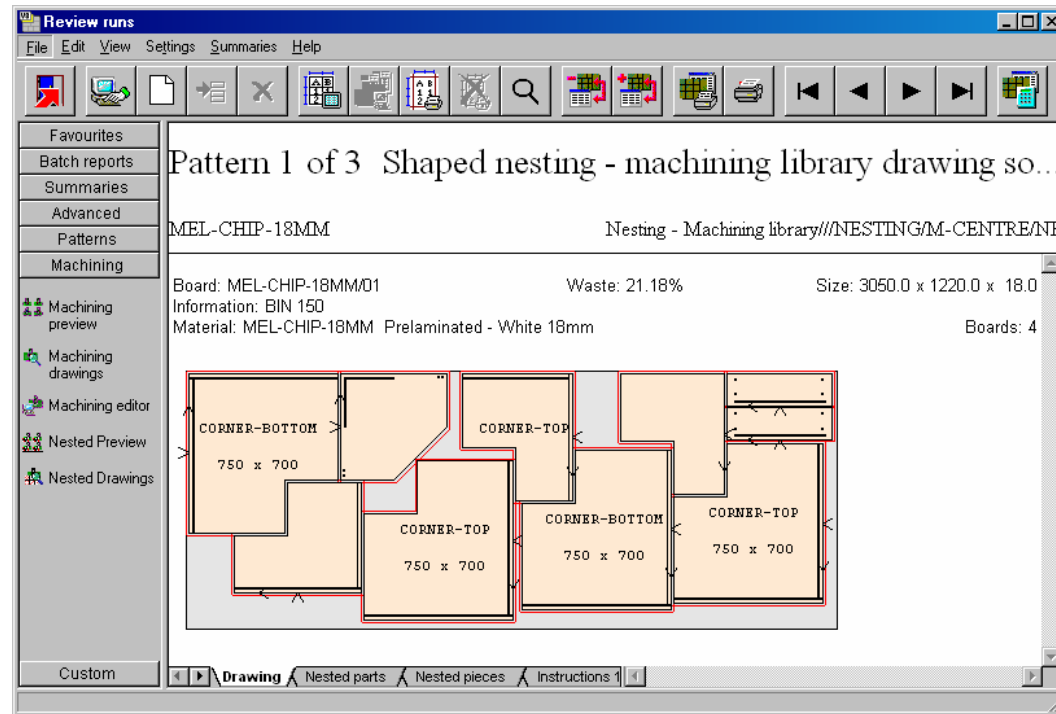


Figure 149

Details of machining for a part.

Nested drawing*Figure 150*

Patterns for machining - produced by the Nesting optimisers.

Product library

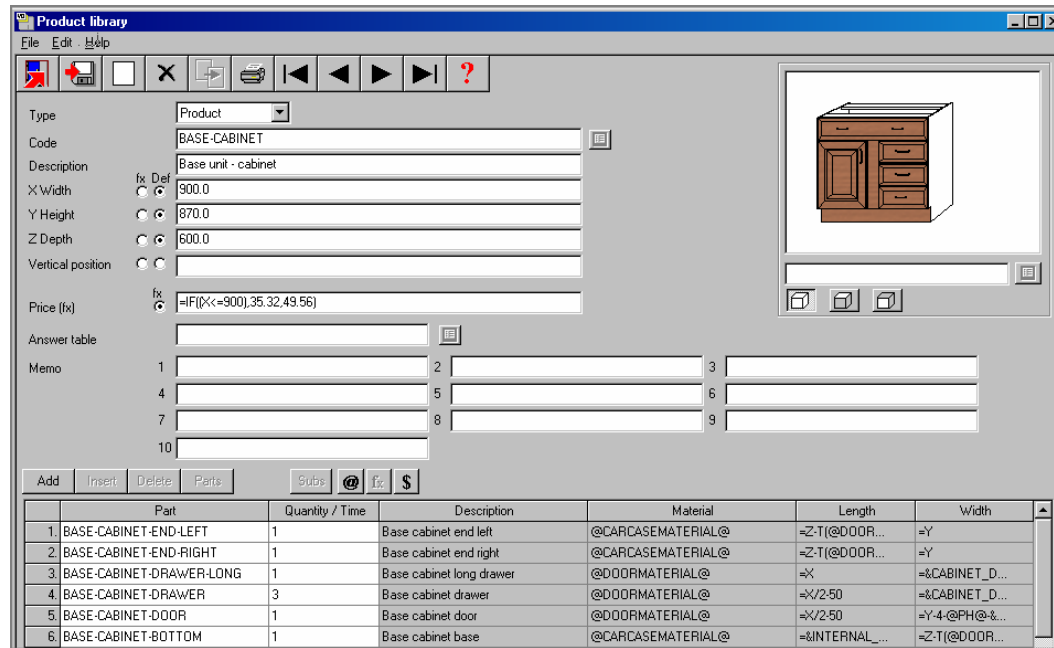


Figure 151

Definition of each product or style of product. Can include custom products defined by formula.

Drawing library

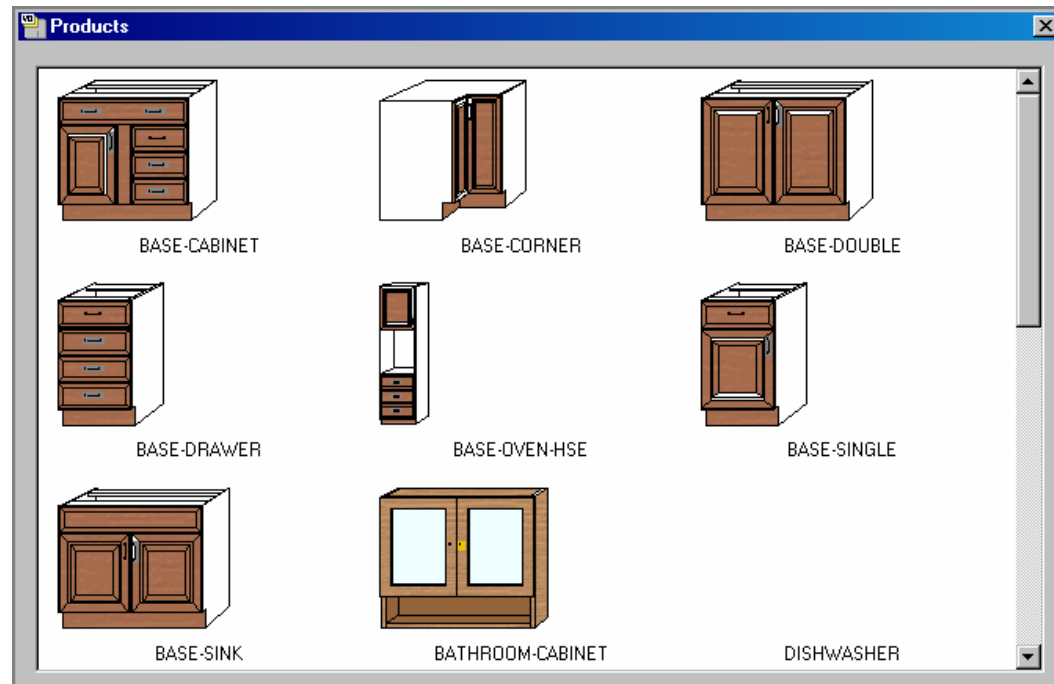


Figure 152

Library of drawings. Can include products, elevations, fittings (hardware), sketches and plans.

Drawing

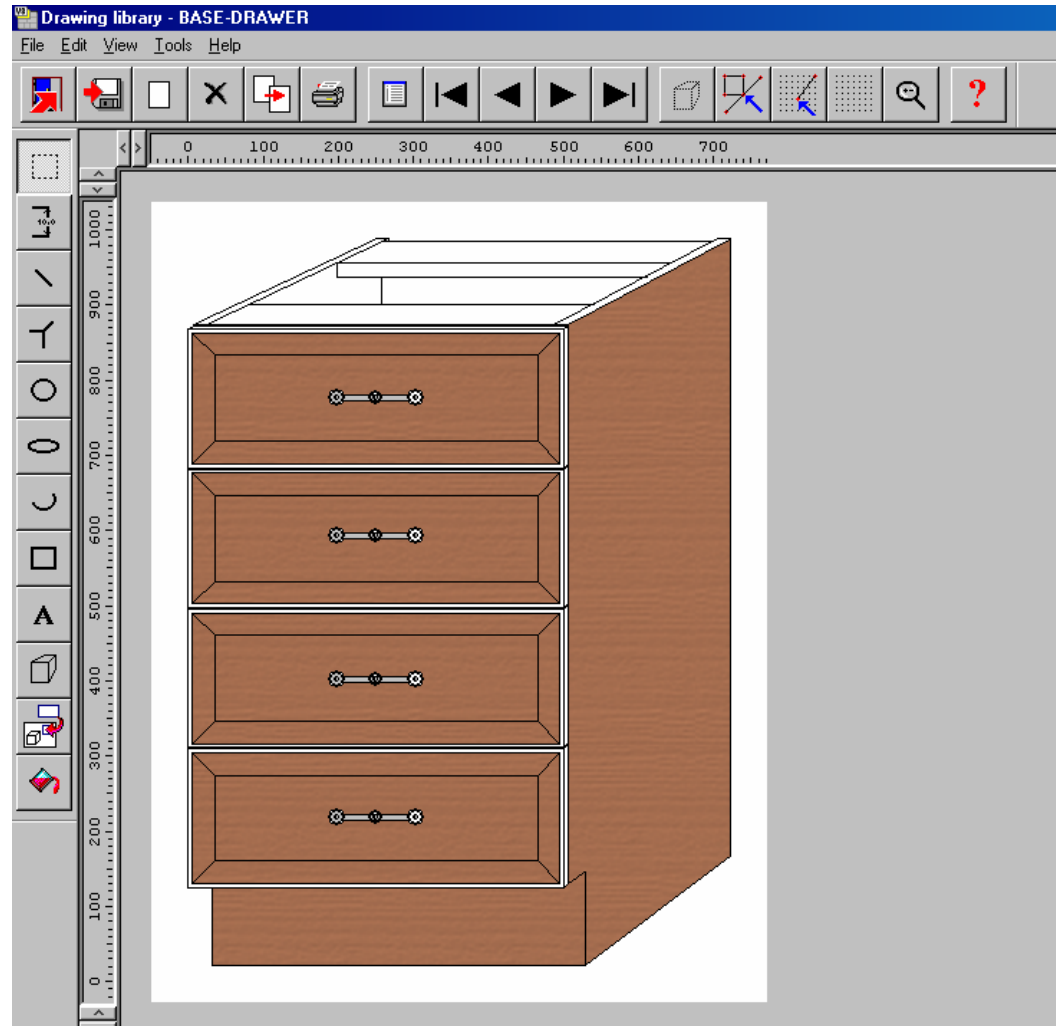


Figure 153

Details of a drawing for a front view of a product or style of product.

Cad drawings

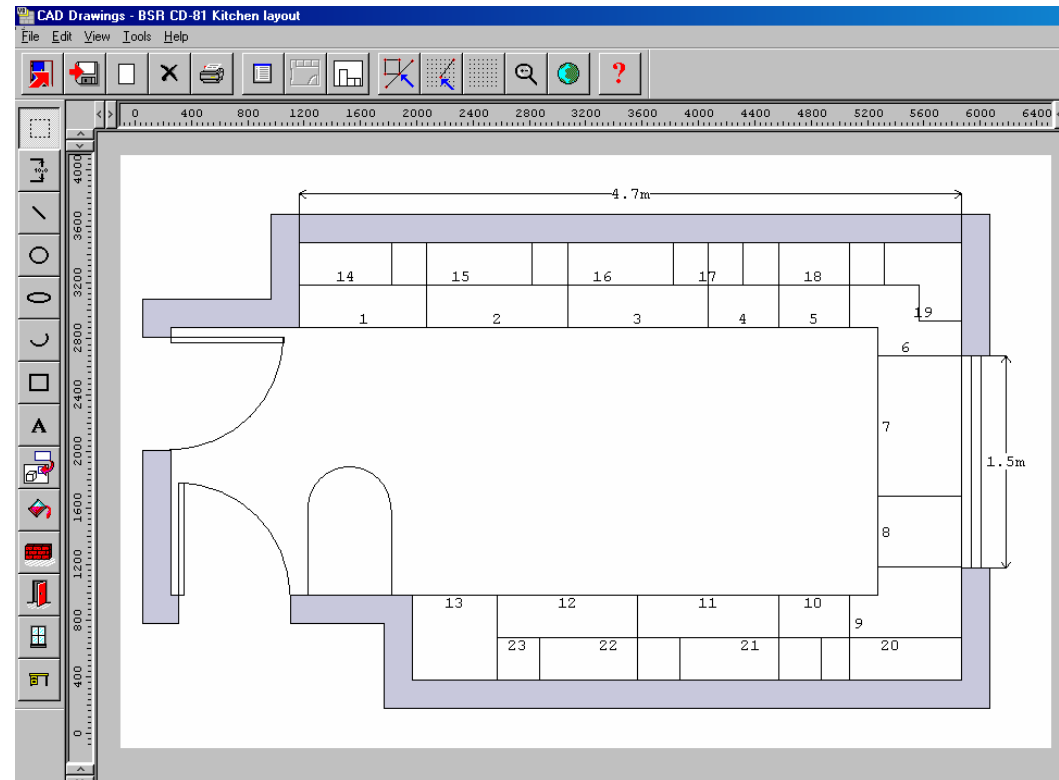


Figure 154

Plans for room layouts. Includes fully defined products and options.