

CAUTION !! All new procedures and processes should be checked in the 'Test' environment before being applied to the 'Live' business system.

BILL OF MATERIALS COSTING (Ver 7)

1. INTRODUCTION

This document describes the revised Bill of Materials Costing programs, available from V9 SP12 onwards, and standard in V10.

2. INSTALLATION (Applies to V9 systems ONLY)

2.1 The amended/additional programs for this feature update the 'Cost BOM's' transaction entry screen, 'View Costs' enquiry and the 'Print Costed BOM' report.

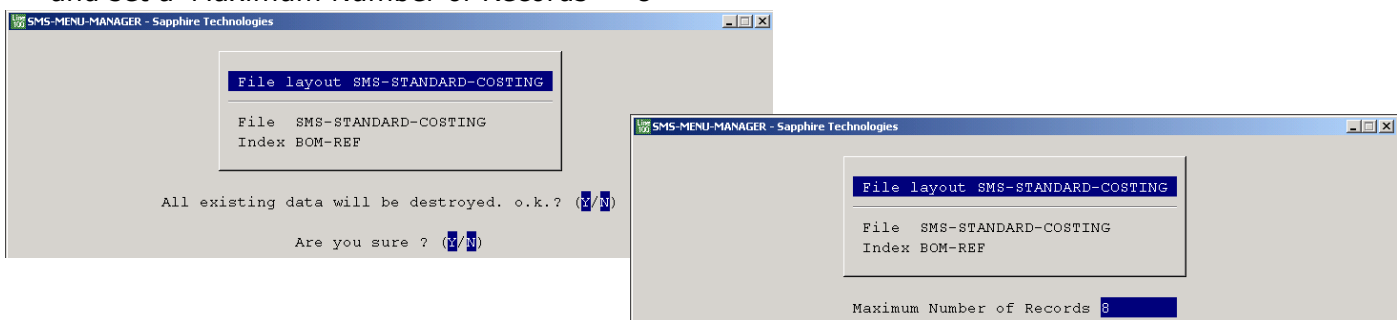
The programs are available as an update zip set from SMS, to ensure that the latest versions are supplied and that these are compatible with the client installation. Unzip the programs into a suitable directory, for example c:\update.

2.2 Install the programs by logging in as Manager, and then selecting 'External Update, Import a Database'. Set the path to the directory into which the programs were unzipped (as above). Accept the option to 'Rebuild the Catalogue' when requested.

The SMS-STANDARD-COSTING table now needs to be rebuilt.

Select *Sapphire System Manager, Utilities, Data File Utilities, Free Selection*

Enter the File Name 'SMSSCOS'. Select 'Create Data Files', Confirm '...data will be destroyed' and set a 'Maximum Number of Records' = 8



2.3 NOTE THAT IT IS ESSENTIAL TO RECAST ALL BOMS FOLLOWING THE CHANGE TO THIS REVISED COSTING, OR WHEN UPGRADING FROM V9 TO V10, AS THE EXISTING AND NEW REPORTS ARE NOT COMPATIBLE, DUE TO THE DIFFERENT FILE STRUCTURE.

3. BOM COSTING

Bill of Materials, Transaction Entry, Cost BOMs

Costing...

Cost BOMs At

Cost Purchased Assemblies At

Update Standard Cost

Selection

Start Bom: End Bom:

Quantity Breaks

1:- 2:- 3:- 4:- 5:-

Apply Breaks to:

A- All, B- Only where no break exist

Costing Calculator

"S" Standard Cost / "L" Last Price Paid

Help Text

Cost BOMs At

The option is to use Standard Cost or the Last Price Paid (Latest Cost). The help text in the bottom left of the screen prompts the user with the available valid entries.

Manufactured multi level assemblies are fully costed by exploding through all BOM levels to the lowest component level, using the standard or latest material costs as selected. The Standard Cost and the Last Buy Price on the stock record for lower level assemblies are ignored.

Cost Purchased Assemblies At

Purchased assemblies are NOT exploded to their component level, but the Standard Cost or the Last Buy Price on the stock record can be selected.

Update Standard Cost

The option is available to update the Standard Cost on the Stock file by selecting 'Y'. This will take the costing from 'Quantity Break 1' = 1. By selecting 'N' the costs can be viewed or reported as a 'what if' costing exercise.

PLEASE ALSO SEE APPENDIX 1

Start BOM/End BOM

Costing can be for a single BOM structure or a range of BOM's. If a single BOM is selected (Start and End are for the same item number) then the costing is displayed on screen at completion. This costing screen is not displayed if multiple assemblies are selected for costing.

Quantity Breaks

The option is available to cost the assembly with an additional 4 quantity breaks. Break 1 is always for quantity 1.

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Apply Breaks to

The system maintains the costing against quantity breaks, and these can be viewed for assemblies through *Bill of Materials, Enquiries, View Costs*.

This option is normally applied when costing a range of assemblies. For both a single assembly and a range of assemblies the default would normally be 'All'.

The available options are

A = All

B = Only where no break exists

Option A = All

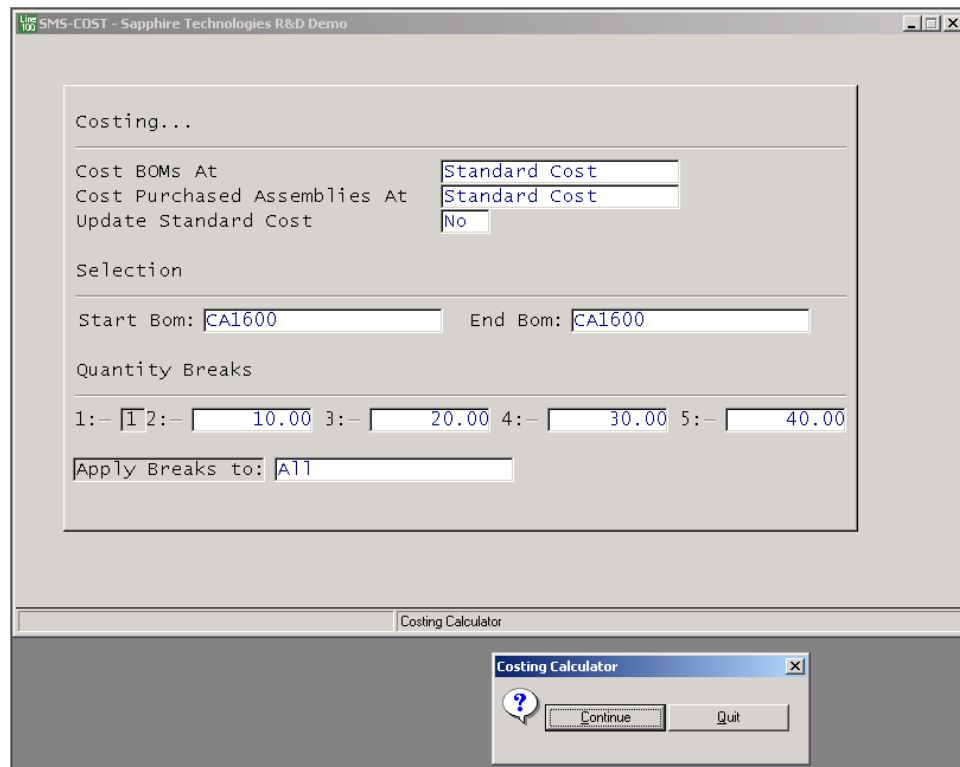
If during the costing 'All' is selected, previously used quantity breaks will be overwritten with those now selected.

Option B = Only where no break exists

In this case the system will not recost with the new breaks selected above, but will use the existing breaks held against the item.

Only where no breaks are held on record for an item will the new breaks be applied.

On completing the transaction entry form, the option is given to 'Continue' or 'Quit'



'Quit' returns to the menu with no further action, 'Continue' proceeds with the costing calculation, and for a single assembly, displays the following screen. The screen is not displayed when a range of assemblies is selected.

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Data Sheet for Bill of Materials Costing

SMS-COST - Sapphire Technologies R&D Demo

BOM CA1600

Last Costed 09 Feb 2005

Quantity	1.0000	10.0000	20.0000	30.0000	40.0000
Materials	510.0000	5100.0000	10200.0000	15300.0000	20400.0000
Res Setup	12.5000	12.5000	12.5000	12.5000	12.5000
Res Run	47.5000	475.0000	950.0000	1425.0000	1900.0000
Res Finish	0.0000	0.0000	0.0000	0.0000	0.0000
Total	570.0000	5587.5000	11162.5000	16737.5000	22312.5000
Unit Cost	570.0000	558.7500	558.1250	557.9166	557.8125
Cost Save	0.0000	11.2500	11.8750	12.0833	12.1875
Saving %	0.0000	2.0134	2.1276	2.1657	2.1848

SMS-COST-DISPLAY

SMS-COST-DISPLAY

Click OK to Continue

OK

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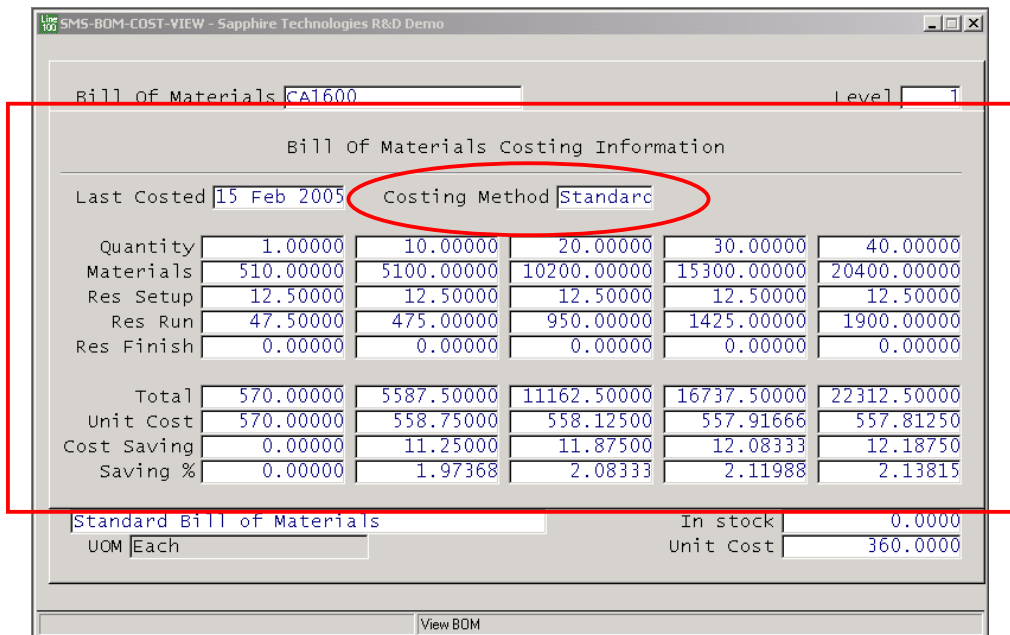
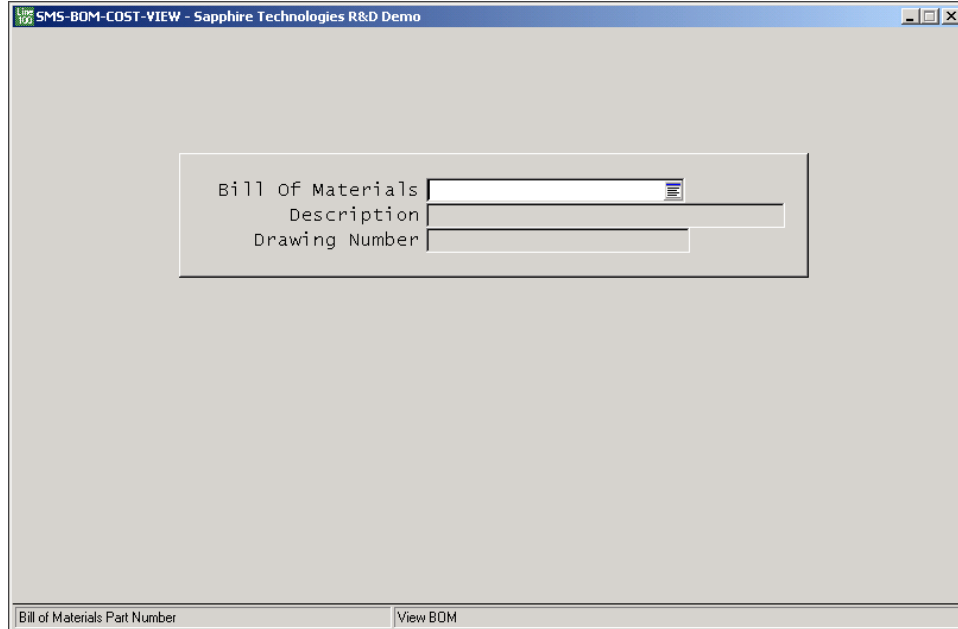
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4. VIEW COSTS

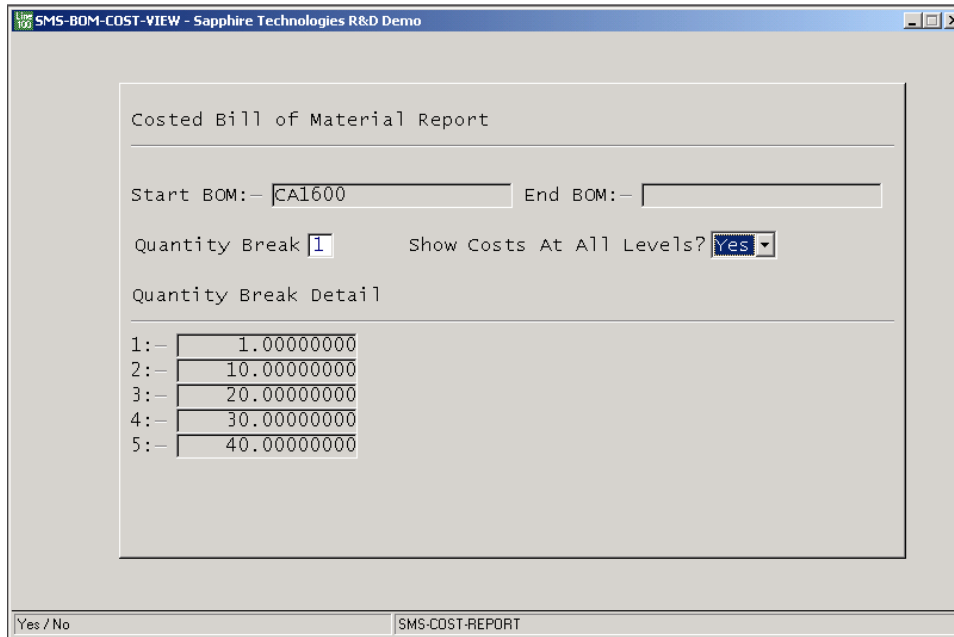
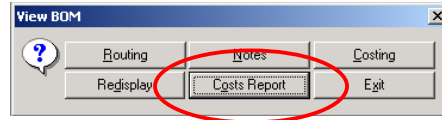
Bill of Materials, Enquiries, View Costs, <item number>, OK, ESC, Costing

Selection of the item can be made using a '/' search in Bill of Materials, Description or Drawing Number.



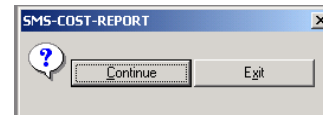
The above screen is displayed, (overlaid on the BOM screen) and is similar to that displayed at the end of the costing process. The Costing Method field is that chosen for the 'Cost BOMs At' during the transaction entry.

By selecting OK from the costing screen, the user is returned to the base menu with the option to print the Costs Report



The BOM number is already entered and the costed breaks are shown. Enter the Quantity Break for the report and the option of 'Show Costs At All Levels ? Y/N'

On exiting the screen, the option is given at the base menu to Continue or Exit



5. PRINT COSTED BOM

Bill of Materials, Reports, Print Costed BOM

The print option through Reports is similar to the above screen, but note that

- A '/' search will display only those BOMs that have been costed
- The Quantity Breaks display is not available for a range of BOMs as they may have been costed at different breaks. The Quantity Break number selected for the report may therefore print a different break quantity for each of the BOMs selected, depending on the way in which they were costed.
- For a single BOM where the same number is entered in the Start BOM and End BOM fields, the End BOM entry is suppressed after entry and the cursor moves directly to the Quantity Break field. The Quantity Break Details are shown greyed.

EXAMPLE COSTING REPORT (Show Costs At All Levels = Y)

Bill of Materials Costing Report								
Bom Reference		CA1600						
Description		Pump Unit (Enclosed) 800 LPM						
Economic Batch Quantity		1.0000						
Batch Size		1.0000						
Date Last Costed		15 Feb 2005						
Quantity		1.0000						
Materials		510.0000						
Resource Setup		12.5000						
Resource Run		47.5000						
Resource Finish		0.0000						
Last Costed Total		570.0000						
Materials								
Lev	Item Number	Description	Quantity Req.	Unit Cost	Total Cost			
1	* CA2700	Pump Assembly 3HP/800LPM	1.0000	365.0000				
2	CA3800	Electric Motor 3HP 415V 3PH	1.0000	130.0000	130.0000			
2	CA3850	Centrifugal Pump 800LPM	1.0000	220.0000	220.0000			
1	CA2750	Control Panel	1.0000	160.0000	160.0000			
				Total Material Cost		510.0000		
Resources for CA1600								
Operation Ref	Description	Resource Reference	Setup	Run	Finish	Cost Rate	Total Cost	
PR42	Manual Assembly	EL50	00:00	03:00	00:00	10.0000	30.0000	
PR42	Manual Assembly	EL60	00:30	00:30	00:00	15.0000	15.0000	
Resources for CA2700								
Operation Ref	Description	Resource Reference	Setup	Run	Finish	Cost Rate	Total Cost	
PR42	Manual Assembly	EL50	00:30	01:00	00:00	10.0000	15.0000	
						Resource Total		60.0000
						Grand Total		570.0000
						Ave Sell Price 2003/04		0.0000
						Margin		-570.0000
						Margin		0.0000%
Approved By		Date						

EXAMPLE COSTING REPORT (Show Costs At All Levels = N)

Bill of Materials Costing Report								
Bom Reference		CA1600						
Description		Pump Unit (Enclosed) 800 LPM						
Economic Batch Quantity		1.0000						
Batch Size		1.0000						
Date Last Costed		15 Feb 2005						
Quantity		1.0000						
Materials		510.0000						
Resource Setup		12.5000						
Resource Run		47.5000						
Resource Finish		0.0000						
Last Costed Total		570.0000						
Materials								
Lev	Item Number	Description	Quantity Req.	Unit Cost	Total Cost			
1	* CA2700	Pump Assembly 3HP/800LPM	1.0000	365.0000	365.0000			
1	CA2750	Control Panel	1.0000	160.0000	160.0000			
				Total Material Cost		525.0000		
Resources for CA1600								
Operation Ref	Description	Resource Reference	Setup	Run	Finish	Cost Rate	Total Cost	
PR42	Manual Assembly	EL50	00:00	03:00	00:00	10.0000	30.0000	
PR42	Manual Assembly	EL60	00:30	00:30	00:00	15.0000	15.0000	
						Resource Total		45.0000
						Grand Total		570.0000
						Ave Sell Price 2003/04		0.0000
						Margin		-570.0000
						Margin		0.0000%
Approved By		Date						

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APPENDIX 1

The Eco Order Qty field (Economic Order Quantity or EOQ) is the batch size/quantity in which this BOM should be manufactured. It has the following functions

- If a Works Order is raised for a quantity less than the Eco Order Qty, a warning will be given, but the user is not prevented from proceeding.
- Any Setup or Finish times will be factored by this figure in calculating the Standard Cost during BOM Costing (this also applies during Recost Works Order). For example, if the Eco Order Qty = 10, then 1/10 of the total Setup and Finish Times costs will be added to each item.

The screenshot shows a software window titled "SMS - Sapphire MRP Data". Inside, there is a form for BOM data. The fields and their values are as follows:

BOM Ref	AS1000		
Customer Part			
Description	Special Case Assembly		
Notes	Special Case Assembly		
Standard Drawing			
Issue Number			
Issue Reference			
Date Created	01 Mar 2007		
Last Amended			
Eco Order Qty	10		
BOM Type	Standard		
Batch Size	1.0000		
Weight	0.0000	Per	0
Analysis		On Hold	<input type="checkbox"/>

A red arrow points to the "Eco Order Qty" field, which contains the value "10". At the bottom of the window, there is a "Create BOM" button.

APPENDIX 2

The following files are related to the above changes

These updates should be applied after Sapphire9 SP12.

Data files

SMS-COST-HEAD	Costing Heading File
SMS-COST-LINE	Costing Line File
SMS-COST-COUNTER	Costing Unique Counter

Programs

SMS-COST	Costing Engine
SMS-COST-REPORT	Costing Report Generator
SMS-COST-DISPLAY	On Screen Costing Display Generator
SMS-MENU-BOM	References new costing Program
SMS-BOM-CREATE	References new costing Program
SMS-BOM-COST-VIEW	References new costing Program

APPENDIX 3

The following assemblies were used to produce the screen views, reports and test the functionality.

MCN-BOM-VIEW - Sapphire Technologies R&D Demo

Bill of Materials: CA1600 Level: 1
 Description: Pump Unit (Enclosed) 800 LPM UOM: Each
 Build Path: CA1600 »
 Issue Number: 0

Seq	Item Number	Description	Total Qty
1	CA2700	Pump Assembly 3HP/800LPM	1.000
2	CA2750	Control Panel	1.000

Qty: 1.0000 of Size: 1.0000 Total Qty: 1.000000

Standard Bill of Materials In stock: 0.0000
 UOM: Each Component Ref:
 Minimum Issue: 0 Bulk Item: Unit Cost: 360.0000

View BOM

MCN-BOM-VIEW - Sapphire Technologies R&D Demo

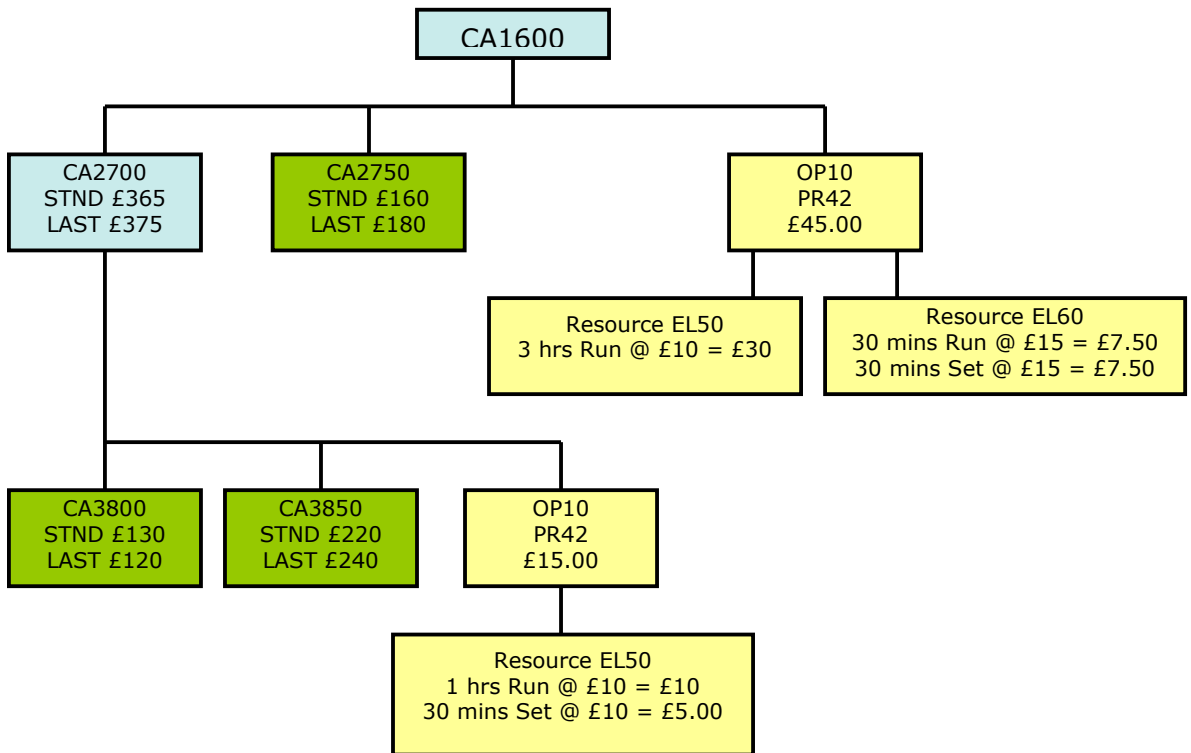
BOM Ref: CA1600 Sequence: 10 Max: 10
 Title: Pump Unit (Enclosed) 800 LPM Run Time: 3:00
 Operat'n Ref: PR42 Run Qty: 1.0000
 Details: Manual Assembly Time Per Item: 3:00:00.00

Resource Ref	Description	Type
EL50	Assembly	Labour
EL60	Inspect & Test	Labour

Set Up Time: 0:00 Finish Time: 0:00 Charge Rate: 10.0000
 Run Time: 3:00

View Routing

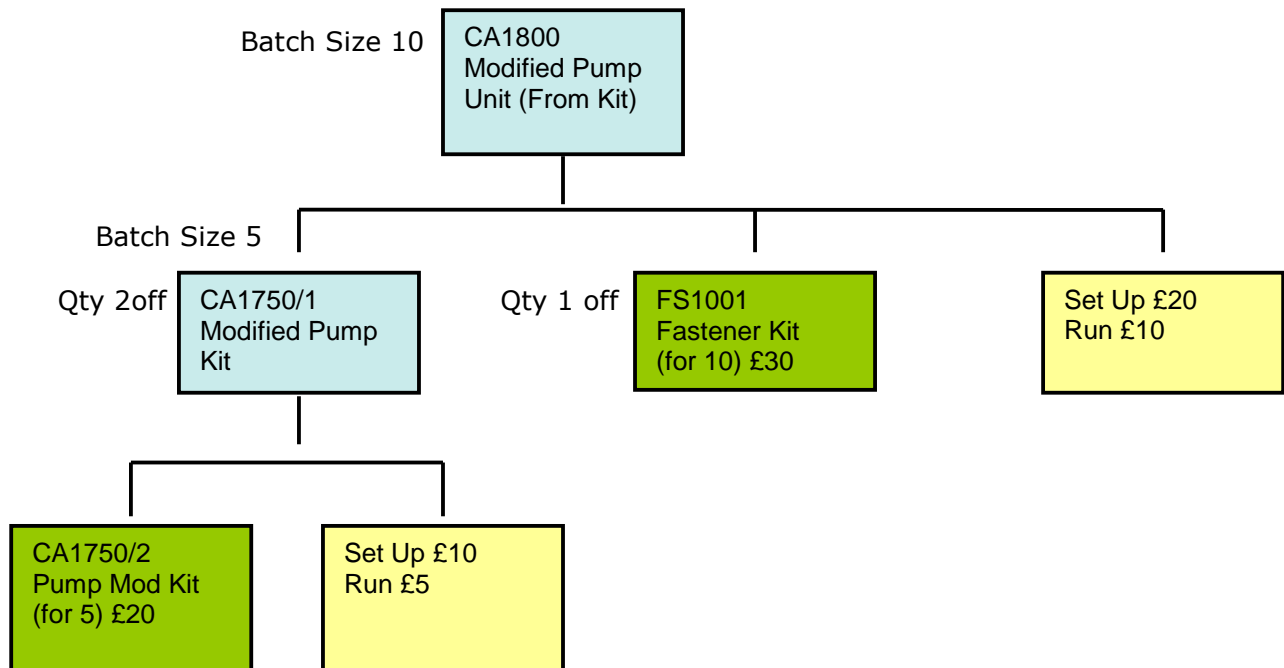
Single Level Assembly



Manufactured Assembly
Purchased Item
Operation/Resource

Multi-level Assembly with Batch Sizes applied

Costing at Breaks of 1, 10, 100 for the CA1800



	CA1800 Costing Price Break	Quantity	
	1	10	100
CA1750/2 Material (£20/5) x 2 (Total Cost/Batch Size x parent BOM qty)	8.00	8.00	8.00
Run (Routing Run Time x parent BOM Qty)	10.00	10.00	10.00
Setup (Total Setup/Break Qty)	10.00	1.00	0.10
CA1750/1 Cost (for 2 off)	28.00	19.00	18.10
CA1800 Material this level FS1001 (£30/10) (Item x Qty) /Batch Size	3.00	3.00	3.00
Run	10.00	10.00	10.00
Setup (Total Setup/Break Qty)	20.00	2.00	0.20
Total assembly cost	61.00	34.00	31.30

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