

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

SAPPHIRE V10 - REPAIR & REFURBISH OF ASSEMBLIES

1. INTRODUCTION

The situation often occurs where it is necessary to repair or refurbish assemblies that have been returned from customer sites. This datasheet describes a method for handling occasional repairs without using the full Warranty & Returns Database module (see separate datasheet).

Returned (faulty) assemblies often have to be inspected, tested and evaluated prior to determining the repair process required and the components or items needed to execute the repair. This process is often referred to as 'Strip & Survey'.

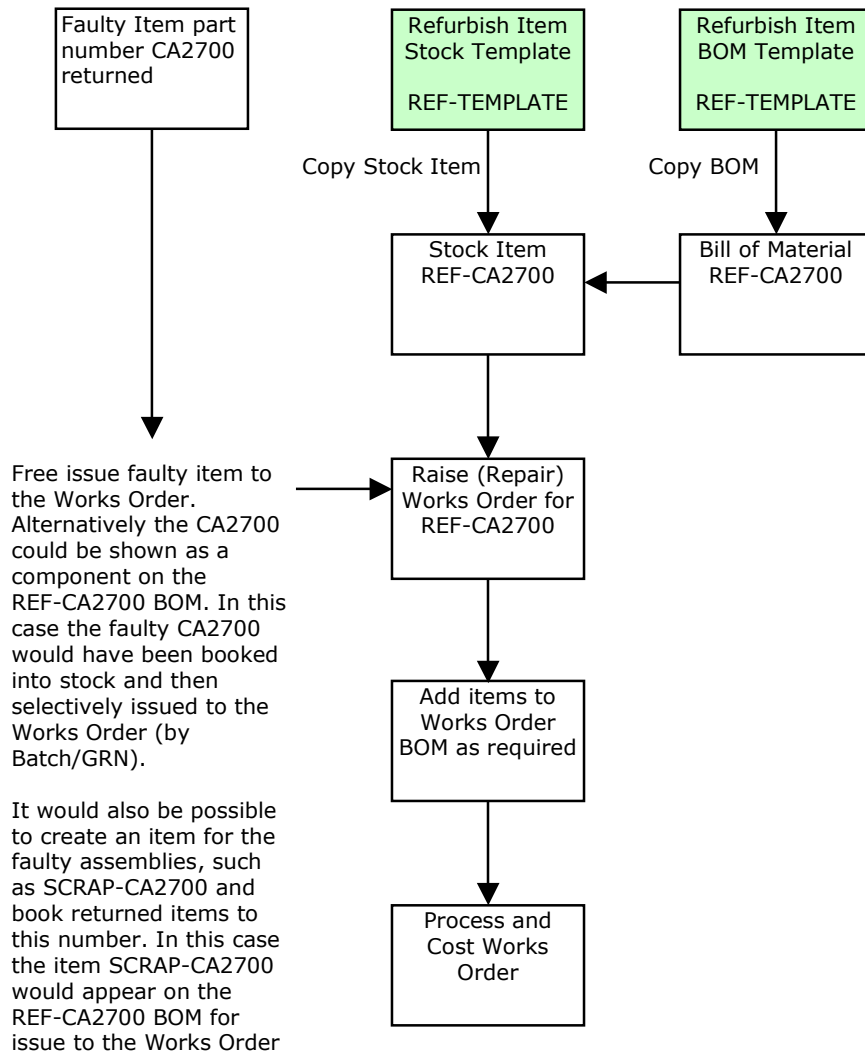
Refurbished items cannot be resold 'as new' and hence the part number is changed to differentiate between new and refurbished parts. A difficulty often arises in creating the Bill of Material and Routing for a repair item. There are typically three potential scenarios that occur

- If there are extensive repairs required, the BOM can be copied from the original item, and items capable of salvage from the returned assembly deleted from the BOM. The balance of (defective) items can then be issued
- If only a few items are required to complete the repair, a new BOM can be created for the required items
- In either of the above cases, additional components may be identified during the repair and test process, and these will need to be added to the Works Order BOM

The cost at which the refurbished item is booked into stock also needs to be considered. In some cases this may be the (standard) cost of the faulty item, plus the repair labour and the repair materials. Alternatively the returned faulty item may be valued at zero cost and just the repair labour and materials costed by the Works Order costing process.

The example process below is based on building a Repair BOM for the item based on a minimum template, rather than deleting items from the full original BOM. The refurbished item is generated using a prefix on the original item number (suffixes could also be used)

2. PROCESS



For subsequent repairs to CA2700 items the 'REF' item will already exist, and hence the Stock Item and BOM do not need to be copied from the Template.

3. REPAIR ITEM TEMPLATE

3.1 The minimum settings for the Stock Item Template are shown below

The image displays two screenshots of the SMS - Sapphire MRP Data software interface. The top screenshot shows the 'Item Master' menu with 'Item Master' selected. The bottom screenshot shows the 'Stock Item Maintenance' form with various fields for item configuration.

Screenshot 1: SMS - Sapphire MRP Data - Item Master

Item Number: REF-TEMPLATE Redundant:
 Description: Refurbishment Item Template

Product Group: ZREF Refurbished Items
 Product Family: Sector:
 Serialised stock: NO

Default Depot: WH1 Bin:
 Use Quantity In: 1 Each

In Stock	0.0000	Each
Promised (SO/WO/TR)	0.0000	Each
On order (WO/PO/TR)	0.0000	Each

Last Order Entered:
 Next Order Due:
 Last Stock Take:

Screenshot 2: SMS - Sapphire MRP Data - Stock Item Maintenance

Item Number	Include in MRP	NO
Description	MPS Item	NO
	Item Type	M Manufactured
	Order Policy	L Lot For Lot
Product	Preferred Supplier	<input type="text"/>
Product	Buyer	<input type="text"/>
Serialise	Order Line Type	STK
	Discount Code	<input type="text"/>
Default	ReOrder Level	0.0000
Use Quan	Lead Time	5 Days
I	Minimum PO/WO Qty	0.0000
Promised (SO	Minimum SO Qty	0.0000
on order (WO	Increment	0.0000
	Minimum Stock	0.0000
	Maximum Stock	0.0000
Last Order	Days Supply	0
Next O	Yield/Scrap	0.000000%
Last St		

Note the use of a specific Product Group with a 'Z' prefix to enable the Repair items to be excluded on 'First-Last' Enquiry and Report filters.

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3.2 Bill of Materials & Routing

The BOM Template is created with a minimum of one stock item and one operation as shown below.

SMS - Sapphire MRP Data

Bill of Materials REF-TEMPLATE Batch Size 1.0000 Level 1
 Description Refurbishment Item Template UOM Each
 Build Path REF-TEMPLATE >

Seq	Item Number	Description	Total Qty
1	LA1000	Repair Label	1.0000

Qty 1.0000 of size 1.0000 Total Qty 1.0000000

Raw Material In stock 0.0000
 UOM Each Component Ref
 Min Issue 0 Bulk Item NO Loc'n Unit Cost

Create BOM

SMS - Sapphire MRP Data

BOM Ref REF-TEMPLATE Sequence 10 Max (10)
 Title Refurbishment Item Template Run Time 0:50
 Operat'n Ref PR44 Run Qty 1.0000
 Details Strip & Survey Time Per Item 0:50:00.00

Resource Ref	Description	Type
EL60	Inspect & Test	Labour

Set Up 0:00 Finish Time 0:00 Run Time 0:50 Charge Rate 15.0000
 Department Group

Amend Routing

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4. WORKS ORDER

The Templates are copied to the item to be refurbished. In this example the original (returned) item is the CA2700 Pump Assembly. The Refurbish Item created is REF-CA2700.

A Works Order is raised and the materials Issued, moving the status to 5.

The screenshot shows the 'SMS - Sapphire MRP Data' window with the following fields:

- Works Order Number: 1512
- Bill of Materials: REF-CA2700
- Description: Refurbished Pump Assembly
- Notes: Refurbishment Item Template
- Status: 5 Stock Issued
- Issue Number: [Empty]
- Job Number: [Empty]
- Sales Account Number: [Empty]
- Sales Order Number: [Empty]
- Date Entered: 07 Feb 2007
- Date Closed: [Empty]
- Start Date: 24 Feb 2007
- Period Number: W709
- Date Required: 01 Mar 2007
- Cost To Date: 0.0000
- Actual Date: 01 Mar 2007
- Quantity Required: 1.0000
- To be Issued: 0.0000
- Manufactured: 0.0000
- Build Depot: WH1
- Target Depot: WH1

View Works Order

An additional item is added to the Works Order

The screenshot shows the 'SMS - Sapphire MRP Data' window with the following fields:

- Works Order: 1512
- BOM Ref: REF-CA2700
- Description: Refurbished Pump Assembly
- Status: 5 Stock Issued
- Qty Required: 1.0000
- Manufactured: 0.0000
- Outstanding: 0.0000

Item Number	Total Required	Issued	Outstanding
LA1000	1.0000	1.0000	0.0000
CA3800	1.0000	0.0000	1.0000

Component works order Number

Amend Works Order

The additional component is Issued and the Works Order finished with the goods booked into stock. The use of the V10 Manage Works Order screen is particularly useful as all transactions can be made from the base menu.

Data Sheet for Repair & Refurbish

SMS - Sapphire MRP Data

Item Number: REF-CA2700 Last: 60 Days Transactions
 Description: Refurbished Pump Assembly Stock Balance: 1.0000
 Depot: WH1 Measured In: Each

Date	Reference	In	Balance	Out
07 Feb 2007	11:47 1002	1.0000	1.0000	

Total: 1.0000 0.0000

Account: Unit Cost: 0.0000 Currency: £ Invoiced?: N/A

GRN Summary

Labour can be added to the Works Order using Time Sheet entry (as shown below) or by the Tracking Slips

SMS - Sapphire MRP Data

Resource Ref: EL60 Type: Labour
 Description: Inspect & Test Group: GP10

Operation Reference: Operator: Start: End:

works order: 1512 BOM Ref: REF-CA2700
 operation Ref: PR44 Operator: A56

Start Date: 07 Feb 2007 End Date: 07 Feb 2007 Total Duration: 0:30
 Start Time: 09:00 End Time: 09:30

Processed: 1.0000 Rejected: 0.0000 Accepted: 1.0000

operation Seq: works order: BOM Ref: Total Duration: 0:00

Total Time Required: 0:00 Total Time Entered: 0:00

Time Sheet Entry

The Works Order can now be Costed, the Cost Report printed and the order closed.

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Data Sheet for Repair & Refurbish

Sapphire MRP Data							Date Printed	07 Feb 2007
Works Order Cost Report							Printed By	STANDARD1
							Page Number	1
Works Order Number	1512		Start Date	24 Feb 2007		Quantity Required	1.0000	
Job Number			End Date	01 Mar 2007		To Be Issued	0.0000	
Bill Of Materials	REF-CA2700					Manufactured	1.0000	
Description	Refurbished Pump Assembly		Customer Account			Works Order Status		
						Stock Issued		
Operations								
Seq	Operation Ref	Details	Start Date	End Date	Expected Hours	Total Hrs To Date	Qty Processed	
10	PR44	Strip & Survey	07 Feb 2007	07 Feb 2007	00:30	00:30	1.0000	
TOTAL					00:30	00:30		
Resource Usage								
Operation	Resource	Start	End	Durat'n Operator		Charge Rate	Cost	
PR44	EL60	07/02/2007	09:00	07/02/2007	09:30	00:30 A.56	15.0000	
Total Duration					0.50	Total Resource Cost	7.5000	
Materials Issued								
Date	Item Number	Description	GRN	Quantity	Price		Value	
07 Feb 2007	LA1000	Repair Label	1001	1.0000	0.0000		0.0000	
07 Feb 2007	CA3800	Electric Motor 3HP 41.5V 3P	1518	1.0000	130.0000		130.0000	
Total Material Cost							130.0000	
Work In Progress Value							0.0000	
Total Works Order Cost							137.5000	
Grand Resource Costs							7.5000	
Grand Material Costs							130.0000	
Grand Purchase Order Costs							0.0000	
TOTAL COSTS							137.5000	
Grand Work In Progress Value							0.0000	
Grand Sales Revenue To Date					0.0000	Grand Expected Sales Revenue	0.0000	

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