



White Paper: RMA Processing

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Introduction

RMA (Returned Merchandise Authorization) processing is a common requirement among manufacturing companies. An RMA system should be able to do the following:

- RMA entry of items expected to be returned by customer
- RMA number for customer product labeling
- RMA printout for customer notification and receiving purposes
- Open RMA tracking
- Ability to return undamaged items to stock
- Ability to remanufacture used items for resale
- Ability to repair items for return to customer
- Zero value invoicing for warranty repair
- Credit memos for returned item credit
- Customer refunds through Accounts Payable

All of this can be done in DBA if you follow the recommended procedures outlined in this white paper.

Special Features

RMA processing can be a complex undertaking with many issues and potential scenarios. DBA has some unique features that make it ideal for processing returns and repairs and remanufacturing or disassembling returned products. Here is a partial list:

- Ability to set up a *Sales Order Type* just for RMA processing
- Editable forms provide ability to create an RMA form layout.
- Ability to return items to stock by picking a negative order quantity
- Ability to assign used and returned *Item Categories* to their own *Sales* and *COGS* accounts
- Zero-value invoicing for no charge replacements
- Procedures for converting credit memos to cash refunds
- Ability to set up a *Make Job Type* just for repair jobs
- Ability to use custom manufacturing processes for repair jobs
- Unlimited job outputs for disassembly jobs

Create an RMA Sales Order Type

(Sales – Sales Setup – Sales Order Types)

The first thing to do is to set up a special *Sales Order Type* that is used solely for RMA processing. This enables you to segregate your RMA's from regular sales orders.

Go to the *Sales Order Types* screen and click the *New* button. Make the following entries:

Detail Tab

SO Type ID

We suggest you enter 'RMA'.

Description

Enter a description such as 'Returned Merchandize Authorization'.

Prefix

We suggest you enter a prefix such as 'R', 'RM', or 'RMA'.

Invoice Basis

Select 'Actual Qty'.

Activate Shipping Tab

We recommend that you select this checkbox so that you have the capability of shipping RMA items back to the customer.

Screen Config Button

Click the *Screen Config* button. All the checkboxes in the *Job Header* section should be pre-selected and left as they are.

Select the following checkboxes in the *Job Detail* section and clear all others.

- Line No
- Line Type
- Reference ID
- Cost Class
- Description
- Qty
- UM
- Reference Price
- Discount
- Price
- Total Price
- Act Qty
- Tax (Your Tax Name)
- Tax Code

Create an RMA print layout

If you need a printout of your RMA, either to send to the customer or for use by your receiving department, you can modify the order *Acknowledgment* and convert it into an RMA printout.

Save layout to a new name

Go to *Utilities – Forms Edit – Acknowledgment*. After the *Acknowledgment* layout displays, click *File*, then *Save As*. Save the layout to a new name, such as 'RMA.rtm'.

Edit the Layout

Now edit the layout. You will want to change the main title to "RMA". Most likely you will want to remove the *Price* and *Amount* fields; perhaps others. When you are done, save your changes and close the screen.

Add layout to your Sales Order Type

Go to *Sales – Sales Setup – Sales Order Types* and highlight your RMA *Sales Order Type*. Click the *Detail* tab. In the *Acknowledgment Layout* field, select your new RMA layout from the lookup. Click *OK*.

Printing or Emailing an RMA

After you enter an RMA, click the *Acknowledgement* button to print the RMA form or Email it to your customer.

Create separate ID's for used versions

Each manufactured product that is subject to returns from the field should be set up with two *Item ID*'s -- one for the standard version and one for the used version.

Used Version

This "used" version of the product has been returned from the field or is the process of being returned. It has not been formally refurbished. It is treated as a purchased item because it does not have a bill of material or routing.

The used version can be sold "as is" and can have its own unique selling price. Its cost is based on the amount credited to the customer for the item's return.

Enter RMA items as "used" until inspection

A return item should always be entered on the RMA with its "used" *Item ID*, which serves as a "placeholder" until the item gets inspected. If the product passes inspection and can be returned to stock, you delete the "placeholder" with the standard *Item ID* so that the item can then be picked (at negative quantity) to return it to stock.

Never use the same Item ID for both versions

Because the two versions are so different – each with its own cost and price, one with a bill of material and one without – it is imperative that you never use the same *Item ID* for both versions. *Always* set up a second *Item ID* for the used version.

NOTE: If you ignore this advice, you will confuse the inventory and planning systems.

Add a prefix or suffix to the standard Item ID

A good approach for numbering used versions is to add a prefix or suffix such as 'U' (for "used") in front of or at the end of the standard *Item ID*.

If you use a prefix on the front end, all your used versions will be segregated on lookups and lists from your standard versions. If you use a suffix on the back end, all your used versions will be mixed in with standard versions on lookups and lists.

Consider using separate Item Categories

Another consideration is to assign used versions to their own *Item Categories* instead of mixing them with your standard *Item Categories*. This way you can differentiate inventory value and GL postings for sales and COGS between the two versions.

Used Item Setup

(Inventory – Stock Items)

Any item that is subject to returns and RMA processing must be set up with a separate *Item ID* to represent the used version of the product.

NOTE: The RMA process described in this chapter will not work unless each return item has two Item ID's: one for the standard version and one for the used version.

Set up the used version of each item as follows:

Item ID

We suggest you add a prefix or suffix to the manufactured Item ID. Refer to the previous section for suggestions on how to do this.

Description

You may want to add reference to "return" or "used" within the item's standard description.

UM

Same as manufactured version.

Mfg / Purch

Select 'P' for "Purchased." A used item is not considered to be manufactured because it does not have a bill of material.

NOTE: The exception to this is when you plan on disassembling the used item for its parts. In this case you would designate it as an 'M' item so that you can create a bill of material with the parts designated as output items. See *Disassembling a product* at the end of this paper for more information.

Item Category

You may want the used item to be in a separate *Item Category* than its manufactured counterpart.

Estimated Cost

This is the cost that will be applied to items returned to stock as “used.” If you typically send the customer a replacement version in exchange for the used version, make this cost equal to the standard version’s *Estimated Cost*. If you typically credit the customer’s account for the used item without sending a replacement version, make this cost equal to the typical price paid.

Used Item Category Account Assignments

(*GL – General Ledger Setup – Account Assignments*)

(*Ledger – Manufacturing Ledger Setup – Account Assignments*)

If you assign your “used” items to specific *Item Categories* reserved for used items only, you may want to give each such *Item Category* its own *Sales* and *COGS* accounts so that used version sales are reported separately from standard version sales in your General Ledger.

In the *Sales* tab, *Exception* sub-tab is where you can assign each such *Item Category* its own *Sales* and *COGS* account.

RMA Creation

(*Sales – Sales Orders*)

Giving the customer an RMA number

A common practice is for the customer to request permission to return an item for credit or repair. Often the customer is given an RMA number and is instructed to label the returned items with that number. This way the receiving department knows what to do with the items when they are physically received.

To give the customer an RMA number, simply create a sales order. On the *New Order* screen, select your *RMA Sales Order Type*. When you get to the *Header* screen you immediately see the RMA number in the *Order No* field, which is the number you can give to your customer.

Select your *Customer* and then click the *Details* tab.

Line item entry is optional at this point

Some companies stop at this point and will enter line item details later once the returned items have been received. Others go ahead and enter specific line items that have been authorized for return.

Always enter the “used” version

When creating a new RMA, never use the standard *Item ID*. Always enter the “used” version’s *Item ID*. This prevents MRP from misinterpreting the return as actual demand or supply.

NOTE: The used version *Item ID* serves as a “placeholder” until the item gets inspected. If the product passes inspection and can be returned to stock, you delete the “placeholder” with the standard *Item ID* so that the item can then be picked (at negative quantity) to return it to stock.

Always enter a negative Qty for a return item

Always enter a negative Qty against the used version of the item. This serves two purposes.

First, if the used item needs to be returned to stock as “used”, picking a negative quantity line item is how the item gets into stock

NOTE: Never use an inventory adjustment to return items to stock, new or used. Always use the RMA for this purpose by picking a negative quantity.

Second, if the customer is to receive a credit memo for the returned item, the negative quantity creates the negative total price that converts the invoice into a credit memo.

RMA Printing (Optional)

You can print the RMA or Email it to the customer by clicking the *Acknowledgment* button. See the *Create an RMA print layout* section earlier in this chapter for more information.

What’s next?

After the RMA is initially created, any of the following events could happen next.

- You send out an immediate replacement.
- You return an undamaged item to stock.
- You return a used item to stock.
- You scrap the product
- You repair the product and return it to the customer

In the next several sections we will outline how these events are performed.

Sending a Replacement

When a customer returns a defective product, it is common to send out a replacement, often before you even receive and inspect the defective product. To process this, follow this sequence of events.

- Create an RMA. Enter the used version of the item as described above, as always with a negative Qty. The used item serves as the “placeholder” until the return item is received and inspected.
- Enter line *Notes* as needed to explain the reason for the return.
- Enter a separate line item for the replacement version, using the standard *Item ID*. In this case, enter a positive Qty because you are going to make a shipment, not a return to stock. Zero out the *Price*.
- Pick the replacement item in the normal fashion.
- Create a shipment and ship the item back to the customer.
- When you create the invoice, it will be at zero value because the replacement was sent out at no charge.
- When the defective product is received, it can be inspected to determine the next step, which could be any of the following actions.
 - Return the item to stock if it proves to be undamaged.
 - Scrap the item if it is not usable.
 - Receive the item to stock as “used.”
 - Refurbish the item for sales as “remanufactured.”
 - Disassemble the item for used parts.

See the remaining sections for details on how each of the above processes is handled.

Returning an undamaged item to stock

In this scenario the customer wants to return a product, perhaps due to an order cancellation. You issue the customer an RMA. After receiving the product, you determine that it is undamaged and can safely be returned to stock. Follow this sequence of events.

- Create an RMA. Select the used Item ID as the line item. Enter a negative Qty. The used item serves as the “placeholder” until the return item is received and inspected.
- The return product is then received and is determined to be undamaged and can therefore be returned to stock.
- Go to your RMA and enter a new line. This time select the manufactured Item ID. Enter the *Qty* as a negative amount.

NOTE: Picking a negative quantity is the means by which the item gets returned to stock.

- The *Reference Price*, *Discount* (if applicable), *Price*, and sales tax will come into the RMA automatically. If you plan to give the customer full credit, leave the pricing as is; otherwise, adjust it as needed.
- Enter line *Notes* as needed to explain the reason for the credit. These notes will print on the credit memo.
- If there is a restocking fee, which would be represented by a *Descriptor*, enter it as another line item. This line's *Qty* should be a positive amount.
- Delete the original line containing the used *Item ID*. Its use as a "placeholder" is no longer needed.
- Pick the order. Be aware that the *Pre-Fill All* option does not work with a negative *Qty*, so enter the negative *Pick Qty* manually. Picking the negative quantity places the item back in stock at current *Inventory Cost*.
- Create a shipment for invoicing purposes, even though nothing will be physically shipped.
- Create and print the invoice. The invoice will automatically print as a credit memo when the invoice total price is a negative amount.

NOTE: The negative *Qty* multiplied by the *Price* is what generates a negative *Total Price*.

Receiving a used item to stock

In this scenario the customer wants to return a used product for a credit against his or her account. It may be that the product was defective and the customer does not care for a replacement. It may also be that the customer has used the product for some time and wants to return it for credit against purchase of a new version.

The used product can be resold "as is" or can be utilized as the core component in a remanufactured version of the product. Follow this sequence of events.

- Create an RMA. Select the used *Item ID* as the line item. Enter a negative *Qty*. The used item serves as the "placeholder" until the return item is received and inspected.
- The *Price* against this line item establishes the value of the credit memo that will eventually be created. If the return is in relation to a defective product, the amount will usually be equal to the price paid. If the return is in relation to receiving credit for the return of used products (often for remanufacturing purposes), it is common to establish a *Base Price* for the used product, which will automatically flow into the RMA.
- Enter line *Notes* as needed to explain the reason for the credit. These notes will print on the credit memo.

- The used product is received and inspected. Once it passes inspection, it can then be physically put into stock as “used.”
- Pick the order. Be aware that the *Pre-Fill All* option does not work with a negative *Qty*, so enter the negative *Pick Qty* manually. Picking the negative quantity places the item back in stock at current *Inventory Cost*.
- Create a shipment for invoicing purposes, even though nothing will be physically shipped.
- Create and print the invoice. The invoice will automatically print as a credit memo when the total price is a negative amount.

Scrapping a Product

In this scenario the customer wants to return a defective product and does not want a replacement. You receive the return item and determine that it no salvage value and is to be scrapped. The customer is to receive a credit against his or her account. Follow this sequence of events:

- Create an RMA. Select the used *Item ID* as the line item. Enter a negative *Qty*. The used item serves as the “placeholder” until the return item is received and inspected.
- The *Price* against this line item establishes the value of the credit memo that will eventually be created. When the return is in relation to a defective product, the amount will usually be equal to the price paid.
- The used product is received and inspected and is determined to have no salvage value. The product is scrapped through a recycler or some other means.
- Create a general descriptor that can be used for crediting returns in situations where no product is returned to stock. In the *Account Assignments* screen you can assign this descriptor’s *Item Category* to its own *Sales* and *COGS* account so that you can track these type of returns in the General ledger.
- Enter this descriptor as a line item in the RMA. Descriptors cannot be returned to stock; therefore you will enter a positive *Qty*. With descriptors enter a negative *Price* for the amount you wish to credit the customer.
- Enter line *Notes* as needed to explain the reason for the credit. These notes will print on the credit memo.
- You can now delete the “placeholder” line for the used item, which is no longer needed.
- Pick the order.
- Create a shipment for invoicing purposes, even though nothing will be physically shipped.
- Create and print the invoice. The invoice will automatically print as a credit memo when the total price is a negative amount.

Credit Memos

Issuing credit memos against the customer account for returned items is common with RMA processing. It is important that you understand how a credit memo is created.

Any invoice with a negative total amount is automatically converted into a credit memo at time of invoice creation. The form title changes from 'INVOICE' to 'CREDIT MEMO' based on the name settings entered in *Main Setup*.

How does any given line's *Total Price* become a negative amount?

Stock items are given a negative Qty

If the line item is a standard or used version of an item to be returned to stock, it is always given a negative *Qty*. The negative *Qty* is multiplied by the *Price* and the result is a negative *Total Price*.

Besides pricing, the other purpose of the negative *Qty* with stock items is to return the item to stock when the line item gets picked.

Descriptors are given a negative Price

Descriptors are used for giving credit when there is nothing physically to be returned to stock. In this case, the *Qty* is a positive amount and the *Price* is negative (simply enter a minus sign in front of the price). The *Qty* is multiplied by the negative *Price* and the result is a negative *Total Price*.

Zero-Value Invoices

Zero-value invoices are common with RMA processing. There are occasions where you need to replace returned items at no charge. Even though there is no charge, you still want to create an invoice for two reasons:

- The invoice generates a cost of goods sold for the replacement item that needs to be reflected in your General Ledger.
- The invoice gives you and your customer a record of the no charge shipment.

Prices are not required to generate an invoice. Any items that have been shipped but not yet invoiced will be included in the invoice, whether they have a price or not.

Customer Refunds

The standard method for compensating the customer for a return is to issue a credit memo. A credit memo is fine when you have an ongoing relationship with the customer because the credit memo can be applied against other invoices.

If your relationship with the customer is on a one-time basis, however, you may be required to refund the customer his money. This can only be done through *Accounts Payable*.

The Customer must be set up as a Supplier

In order to send a payment through *Accounts Payable*, a Supplier is required. Therefore, you must set up the customer as a Supplier. Once that is done, you will make a transaction on the AR side that zeroes out the customer's balance and then you will create a supplier invoice on the AP side, against which you can make a payment. Follow this sequence of events:

- Let's say the customer has a credit memo in the amount of \$1000. Go to the *Customer Payments* screen and select the customer.
- Against the credit memo in the lower grid, enter \$1000 in the *Discount* field, then click *Update* to process the transaction. This zeroes out the customer's account in the *Accounts Receivable* side of the system.
- Go to the *Suppliers* screen and set up this customer as a supplier.
- Go to the *Supplier Invoices* screen and enter a supplier invoice in the amount of \$1000. In the lower grid, select your *AR Discounts Taken* account in the *GL Code* field.
- Finally, go to the *Payment Processing* screen and select and pay the supplier invoice in the normal fashion.

Repairing a Product

“Custom” manufacturing is used for repair work

If you repair products on behalf of customers, you can use Make Jobs to organize and track the costs of your repair jobs.

Repair jobs are quite different than manufacturing jobs, so it is important not to mix the two. Repair jobs should be given their own *Job Type* and repair work should not be conducted under the item's standard Item ID. Instead, repair work is performed using DBA's "custom" manufacturing capability, described further below.

“Repair” Job Type Setup

(*Make – Make Jobs Setup – Make Job Types*)

Go to the *Make Job Types* screen and click the *New* button. Make the following entries:

Detail Tab

Job Type ID

We suggest you enter an identifier code such as 'REPAIR'.

Description

Enter a description such as 'Repair Job'.

Prefix

Enter a prefix such as 'R' for "repair" or 'RJ' for "repair job."

Default Status

Unlike manufacturing jobs which are released in coordination with a start date, repair jobs are typically released as soon as they are created, in which case you would set the *Default Status* to 'RELEASED'.

Screen Config Button

Click the *Screen Config* button. Select the following checkboxes.

- Customer
- Line No
- Line Type
- Reference ID
- Cost Class
- Description
- Qty
- UM
- Est Cost
- Act Cost
- Act Qty
- PO No

Custom Item Setup

(Make – Make Jobs Setup – Make Job Defaults)

Repair jobs do not use the item's standard *Item ID* as the job's primary output. A "custom" *Item ID* is used instead.

A custom ID is generated on-the-fly during sales order entry and is used on a one-time basis for one particular repair job. Job costs are accumulated against the custom item and eventually flow back to the sales order as the cost of goods sold for the repair work performed.

Several options on the *Make Job Defaults* screen pertain to custom item setup.

Costing

Job Receipts Cost Basis

Make sure your *Job Receipts Costing Basis* is set to *Actual Job Cost*.

Custom Item Generator

Item ID Prefix

All custom items will be identified by this prefix, followed by a sequential number. The combination of the prefix and number constitutes the *Reference ID* number that is used in sales orders, MRP, and make jobs to identify the custom item (repair job output). We recommend that you use the letter 'Z', which will keep all

your custom items listed at the very end of lookups and reports. This keeps custom items from being intermingled with your permanent *Item ID*'s.

Next ID No

This displays the number that will be assigned to the next custom item that gets generated. We recommend a beginning number of 100000.

NOTE: Do not start with a number such as '1'. If you do so, on reports and screen listings, '10' will sort before '1', '20' before '2', etc.

Item Category

All custom items, when created, will be automatically assigned to this *Item Category*. We suggest you create a special *Item Category* for repair purposes. You can then go to the *Account Assignments* screen and on the *Sales* tab, *Exceptions* sub-tab, you can give this *Item Category* its own *Sales* and *COGS* accounts.

UM

All custom items, when created, will be automatically assigned this *UM*. At time of custom item generation, you can override this default. For repair purposes, this is normally set to 'EA'.

Lead Days

All custom items, when created, will be automatically assigned this *Lead Days* setting for MRP planning purposes. At time of custom item generation, you can override this default. For repair purposes this is normally left blank.

Job Days

All custom items, when created, will be automatically assigned this *Job Days* setting for MRP planning purposes. At time of custom item generation, you can override this default.

Custom Item Generation

(*Sales – Sales Orders*)

Custom items for repair jobs are generated during sales order entry. When you enter a new line, select the 'Custom' option from the drop-down list in the *Line Type* field. You are then presented with the *Custom Item Generator* screen, which presents the following fields:

Custom Item ID

This identification number is automatically generated by the program and will be used as the *Reference ID* in the sales order line. It cannot be modified.

Description

Enter the *Description* of the repair job. This is a required field.

UM

The default *UM* from the *Make Job Setup* screen is automatically inserted into this field, but can be overridden.

Customer Part No

This is an optional field. If you are making the custom item on behalf of a customer who identifies the item with a part number, enter the *Customer Part No* in this field. This number will be stored against the custom item and can print on the customer invoice as a cross-reference.

Lead Days

The default *Lead Days* setting from the *Make Job Setup* screen is automatically inserted into this field, but can be overridden.

Job Days

The default *Job Days* setting from the *Make Job Setup* screen is automatically inserted into this field, but can be overridden. Enter the estimated number of days you think will be required to complete the repair work. You can enter a decimal quantity.

Est Delivery

This is an estimated delivery date, calculated forward from today's date by adding the *Lead Days* to the *Job Days*, while skipping over any non-valid workdays within the *Job Days* time frame.

Use as Req Date

When this checkbox is selected, the *Est Delivery* date will be used as the sales order line's *Required Date*.

Closing the Window

Once you close the *Custom Item Generator* window, the *Custom Item ID* is displayed in the line item *Reference ID* field, and following it you will see your custom *Description* and *UM*.

Take note that the *Line Type* setting changes from 'Custom' to 'Stock'. This is because the custom item has now been given a record in the *Stock Items* table so that the item is treated by *Make Jobs* as if it were a stock item. This way the repair job costs can follow the item into stock and then back to the sales order in as the cost of goods sold when the custom item gets picked.

Generating the Repair Job

(MRP – MRP)

The repair job is created by MRP when you run the Generate Jobs from SO Lines function.

When the *Convert Planned Jobs* screen displays, change the *Job Type* to your repair *Job Type*.

RMA Sequence of Events

In this scenario the customer sends a product to you for repair. The repair might be done under warranty or for a fee. Follow this sequence of events.

- Create an RMA. Select the used *Item ID* as the line item. Enter a negative Qty. This line serves as a temporary “placeholder” until the item is received and inspected.
- The product is received and inspected to assess what repair might be required.
- Go to your RMA and enter a new line. Select a *Line Type* of ‘Custom’.
- In the *Custom Item Generator* screen, enter a brief *Description* of the repair work to be performed. Enter the *Lead Days* that elapse before the job can be started and the *Job Days* setting, which is the estimated days it will take to do the repair work. Click *OK*. The custom item that gets created will be used as the output on the repair job.
- Enter line *Notes* as required to describe the repair work to be performed.
- If you need to give your customer an estimated price, enter the *Price* and click the *Acknowledgment* button. The acknowledgment can serve as the quote.
- Delete the original “placeholder” line containing the used *Item ID*, which is no longer needed.
- Go to the *MRP* screen and use the *Generate Planned Jobs from SO Lines* function to generate a *Make Job* for the custom item.
- Perform the job by entering labor and material as required.
- When the job is completed, enter a job receipt on the custom item in the *Job Issues & Receipts* screen. The job cost will become the item’s *Inventory Cost*.
- Go back to your RMA and enter the final price against the custom item for the repair work that was performed.
- Pick the order in the normal fashion. The *Inventory Cost* for the custom item will eventually become its *Cost of Goods Sold*.
- Create a shipment and print a packing list.
- Create and print the invoice. If the repair was done under warranty free of charge, you can create a zero-value invoice.

Remanufacturing a Product

What is a remanufactured product?

A remanufactured product is a used version that has been refurbished for resale as a remanufactured item. Rebuilt engines, for example, are remanufactured products. A remanufactured bill of material consists of the used version (“core”) as well as the parts needed for refurbishment. The routing is confined to the steps needed in the refurbishment process. The remanufactured version has its own unique cost and selling price.

A remanufactured version should have its own Item ID

A remanufactured version of a product is distinctly different than the standard version or used version and should have its own *Item ID*. This way it can have its own bill of material, routing, cost, and selling price.

Remanufactured Item Setup

Stock Items Screen

Item ID

We suggest you add a prefix or suffix to the standard *Item ID* to differentiate the remanufactured version from the standard version.

Description

You should add reference to “remanufactured” within the item’s standard description.

UM

Same as standard version.

Mfg / Purch

Select ‘M’ for “Manufactured.”

Item Category

You may to assign the remanufactured version to its own *Item Category*. This way you go to the *Account Assignments* screen and on the *Sales* tab, *Exceptions* sub-tab, give this *Item Category* its own *Sales* and *COGS* accounts.

Bills of Material Screen

The remanufactured Item ID is the parent item

The BOM is created using the remanufactured *Item ID* as the parent item. .

The “used” version is the core component

The key difference between the standard BOM and remanufactured BOM is that the latter’s main component is the “used” version of the product, commonly referred to as the “core” component.

Therefore, a remanufactured product involves three *Item ID's* – one for the “standard” version, one for the “used” version and one for the “remanufactured” version.

In the remanufactured BOM, the *Components* should consist of the used version core component, as well as all the parts that are needed for refurbishment.

Used parts can be defined as outputs

If during the refurbishment process you replace some used parts with new parts and the used parts have use elsewhere, the used parts can be entered on the *Outputs* tab. This way the used parts will be received to stock when you report your job receipts. Be sure to select “used” *Item ID's* for these type of outputs.

Use the *Cost Ratio* to give each output its share of total job cost. If you consider these used parts to be “free”, leave the *Cost Ratio* at ‘0%’.

Remanufactured Routing

The remanufactured *Routing* should be confined to just the labor steps required in the refurbishment process.

Planning

Availability of used cores is the limiting factor

The planning process tends to be more manual in nature with remanufactured products compared to standard products. The decision to create a job is based as much or more on the availability of used “cores” as it is on actual demand from customers. Without a supply of cores, there is nothing to remanufacture.

The MRP process is the same

Using MRP is essentially the same with remanufactured products as it is with standard products. MRP will suggest planned jobs in response to net demand within the remanufactured item’s planning period. MRP also gives you the option of generating jobs directly from sales order lines.

Make Jobs

Remanufacturing jobs are less standardized

Technically, the process for making a remanufactured item is exactly the same as making a regular manufactured item. The difference is more in the style of manufacturing rather than in the way the job is created and processed.

The *Make Job* itself tends to be less standardized. You can start out the job with a pre-determined bill of material and routing, but during the course of the job you may have to use different components or perform different labor steps, all depending on what is required by the condition of the used products you are refurbishing.

Job processing steps are exactly the same

Apart from the differences in the style of manufacturing, the actual job processing steps – creating the job, modifying job details, issuing components from stock, reporting labor, entering job receipts – is exactly the same with remanufactured items as it is with regular manufactured items.

Disassembling a Product

What is disassembly?

“Disassembly” is the opposite of “assembly.” This requires a reverse bill of material. A conventional BOM’s components are “inputs” that are consumed during the course of the job. With a disassembly BOM, the components are “outputs” that are received to stock during the course of the job.

Bill of Material Setup

A disassembly BOM, like any BOM, requires a parent item, which is considered the “primary” output. All other outputs are considered “secondary” outputs.

The most significant output should be the BOM parent

The output item you consider to be the most significant should be designated as the primary output and is used as the BOM parent item. Therefore, the primary output item must be set up as an ‘M’ (manufactured) item.

The routing is confined to disassembly labor

The routing should be confined to the steps that are involved in the disassembly process.

The “used” version is the core component

The main and often only BOM component (input) in a disassembly BOM is the “used” version of the product, commonly referred to as the “core” component, which originated through an RMA.

Disassembled parts are “outputs”, not “components”

The used parts that are disassembled from the core component are set up on the *Outputs* tab. Each output is given a percentage of the total job cost in the *Cost Ratio* field. The total job cost is a combination of the disassembly labor involved as well as the cost of the core component.

Planning

Disassembly jobs are planned manually

Unlike standard manufacturing jobs, which are generated by MRP in response to net demand or sales order lines, disassembly jobs are created manually, which can be done by clicking the *New* button on the MRP screen to create a planned job. Once you’ve created the planned job, you can convert it to an actual *Make Job* in the normal fashion (select the *Convert* checkbox and click the *Convert* button).

Make Jobs

Disassembly jobs are less standardized

Technically, a disassembly job is the same as a standard manufacturing job in the sense that you will apply labor to the job and you will issue the core component (the product being disassembled) to the job from stock.

The *Make Job* itself tends to be less standardized. You can start out the job with a set of pre-determined outputs and a routing, but during the course of the job you may find that some of the outputs are unusable, or unexpected outputs are discovered, or unanticipated labor steps are required.

Job processing steps are the same

The actual job processing steps – creating the job, modifying job details, issuing the core component from stock, reporting labor – is the same with disassembly jobs as it is with regular manufacturing jobs.

Job receipts involve multiple outputs

The key difference between a disassembly job and a regular manufacturing job is that the disassembly job involves multiple outputs instead of a single output.

When you process job receipts in the *Job Issues & Receipts* screen, you are presented with numerous output lines. As you process each line, its cost is determined by its *Cost Ratio*, which is its percentage share of the overall job cost.