Manufacturing Bills of Material

Training Manual

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This document has been prepared to conform to the current release version of TRAVERSE Accounting Business Software for Windows. Because of our extensive development efforts and our desire to further improve and enhance the product, inconsistencies may exist between the software and the documentation in some instances. Call your customer support representative if you encounter an inconsistency.

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Introduction

1 INTRODUCTION

OVERVIEW

The key to a successful manufacturing software implementation begins with the Bills of Material module. A Bill of Material (BOM) defines product structure both in terms of materials and plant resources such as machinery, tooling, and labor. The Bills of Material module provides a solid base for production activity to be defined, tracked, and reviewed. It also enables more advanced software such as Material Requirements Planning (MRP) and Capacity Requirements Planning (CRP) to be used.

The Bills of Material module allows you to create and maintain BOMs. Among the many features of this module is the ability to make high-level material availability inquiries, print generic BOM worksheets, manage standard cost updates, track changes to BOMs, and globally replace BOM components.

In addition to the standard functions found in most Bills of Material software, the Bills of Material module enables you to import foreign ASCII data directly into the BOM from other software applications such as CAD systems.

A properly designed and accurate BOM is one of the main elements in successful manufacturing implementation. The Bills of Material module is crucial to the productivity and reliability of the Production module that handles production activities, and focuses on the use and planning of materials and shop capacity.

System Information

Additional information about using the system is found in the following sources:

- the *Bills of Material User's Help*
- the training manuals for other TRAVERSE applications
- the *Developer's Guide* and *Developer's Object Descriptions* manuals
- online help

Customer Support

Open Systems Holdings Corp. has a strong commitment to customer service and product quality. If you need help using any Open Systems product, follow these procedures:

- Consult the user's guide and other TRAVERSE reference materials.
- If you are a subscriber to the TRAVERSE customer support program, you can consult your customer support representative (1-800-320-3088) or e-mail them at traverse_support@osas.com.

ABOUT BILLS OF MATERIAL

Frequently used functions

The most frequently used functions are on the Setup and Maintenance and Reports menus. Use these functions for the following tasks:

- Enter and edit Bills of Material and Engineering Change Orders.
- Print the Costed Bills of Material and Component Where - Used Report.

Setup and Maintenance functions

The Setup and Maintenance functions will be used to set up information to be used in your BOMs and also setting up your BOMs. The Setup and Maintenance menu contains these functions:

- Bills of Material
- Engineering Change Orders
- Cost Groups
- Media Groups
- Engineering Change Order Codes
- Global Component Replacement

Reports

The Bills of Material reports offer you more detailed information that can't normally be accessed using an Interactive View or Setup and Maintenance function. The option to output to a file or printer also enables you to save the information to review later. Many reports offer a variety of selection criteria and sort parameters for formatting the report to meet your needs.

Interactive Views

Assembly, Bill of Material, Component Availability, and Available to Promise information can be displayed through the interactive view functions.

Standard Costs Maintenance

Use the Standard Cost Maintenance functions to maintain Standard Costs. Standard costs may not always be accurate. You change them at infrequent intervals with the intention of creating a Standard Cost that you can “live with” over a long period of time where the actual costs may be fluctuating. If you are using Standard Costing as an Inventory Costing Method, an important feature of the Standard Cost Maintenance functions is the ability to post journal entries to GL for changes to Standard Costs of Inventory and do so on a batch basis.

Interfaces

Bill of Materials can interface with General Ledger and requires Inventory, therefore it is automatically interfaced to Inventory.

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Setting Up Bills of Material

OVERVIEW

The key to a successful manufacturing software implementation begins with the Bills of Material module. A Bill of Material (BOM) defines product structure both in terms of materials and plant resources such as machinery, tooling, and labor. The Bills of Material module provides a solid base for production activity to be defined, tracked, and reviewed. It also enables more advanced software such as Material Requirements Planning (MRP) and Capacity Requirements Planning (CRP) to be used.

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SETUP CHECKLIST

Before you can use the Bills of Material module, follow the setup procedures in this chapter. Follow these procedures carefully. The choices you make determine how the system operates.

Perform these tasks to set up Bills of Material:

___ Set up Business Rules.

___ Define Cost Groups.

___ Set up employee information (using Payroll or System Manager).

___ Define Media Groups. (Optional).

___ Define Engineering Change Order Codes (Optional).

___ Set up Engineering Change Orders (Optional).

___ Set up BOMs.

Business Rules

Set up the Bills of Material Business Rules first. The Business Rules function allows you to interface General Ledger with Bills of Material; elect to save an audit trail of changes made to BOMs; select the Standard Cost Adjustments Account.

Cost Groups

Next, set up your Cost Groups. Use the Cost Groups function to create pre-defined groups of cost areas. Cost Groups enable you to group BOM costs into specific assigned areas. Each Cost Group is summarized by clicking on the Cost button on the General screen of the Bills of Material screen. You can assign each BOM element to a unique Cost Group.

NOTE: Cost Groups are not related to the GL Account references made by the different costing areas within a BOM, although they could be used to track similar information.

Media Groups

Next, set up your Media Groups. Use the Media Groups function to group multimedia documents under one Media Group ID. Rather than assign specific documents to specific Inventory Item IDs, Bills, and Operations, the system enables you to assign those documents to a Media Group ID. You can then assign this ID to a specific Operation, Tool, Component, and so on. This creates the flexibility to assign a potentially large group of related documents to a single process or material requirement.

Schedules

If the Routing and Resources module is installed you must next set up at least one schedule. The Schedule is used in the Bills of Material and Production modules although you set up and maintain it using the Routing and Resources module. This calendar enables you to specify the availability of shifts, the hours in each shift, plant closings, special holidays, planned repairs, maintenance, and so on. You can maintain as many shop calendars as you like. You can then assign Schedule IDs to specific Work Centers, Machine Groups, or Labor Types so that specific availability or capacity can be calculated on any of the above. See the Routing and Resources Training Manual for more information.

Routing and Resources Steps

If the Routing and Resources module is installed you may set up the following items next (some are optional) (see Routing and Resources Training Manual for more information.):

- **Tooling** – Set up and define Tooling maintenance, method of usage, cost, and so on. Proper Tooling for each Operation appears on relevant reports and inquiries to help you properly set up the Operation.
- **Labor Types** – Labor Types define the skill or grade that can be defined and applied to specific processes. Associated with the Labor Type is a rate by piece or hourly rate. Labor Types are later assigned to operations to calculate the labor costs involved.
- **Machine Groups** – Define your Machine Groups. These groups can be a single machine or an entire bank of machines. If your machinery, although similar in name, is unique enough that its cost factors differ significantly from machine to machine, you may want to define each machine with its own Machine Group ID. If the materials vary from machine to machine, you may also want to define each machine with its own Machine Group ID. The grouping of these machines is usually done by their basic function and cost factors. Like labor, Machine Groups can be assigned a schedule, hourly costs, and so on. Machine Groups are assigned to Operations in order to establish a machine related cost.

- **Work Centers** – Work Centers define where work is to take place and provide an area to set up Overhead Account IDs for GL, overhead rates, and methodology. Work Centers play an important part in managing labor and machine resources. They are later assigned to Operations to indicate where the work takes place or what the overhead factors should be for that Operation.
- **Operations** – Define your Operations. Operations pull the Tooling, Machine Group, Labor Type, and Work Center together in a defined Operation process. You can also use this function to set up a subcontracted Operation. Drilling, painting, mixing, and packaging all describe typical internal Operations. If the Operation is internal, Operations allows you to define the various related times involved in manufacturing. The setup of queue time, setup time, run time, wait time, and move time can be defined in terms of hours, minutes, and seconds.
- **Routings** – are defined as the general flow of an assembly through the plant floor. They are made up of steps that define the Operation being performed at that step. Routings are used when you set up the BOM. Having standard Routings makes the creation of a Routing for a BOM much easier and quicker. However, you do not need to create any preset Routings to use or maintain the Bills of Material module. If you choose not to set up these standard Routings, create the Routing steps individually when you set up of the BOM.

Bills of Material

Setting up a BOM is the most important function in the Bills of Material module. BOMs consist of two major elements: material components and Routing steps or processes. Setting up a BOM makes a connection between the two. You can disregard Routing and process steps completely and create BOMs that are solely material components. If you do not have the Routing and Resources module installed and interfaced, you cannot use the Routing features of Bills of Material.

WORKFLOW

Periodic Tasks

The Bills of Material module provides a solid base you can use to define, track, and review. There are no daily tasks required, but there are periodic tasks. You must build Bills of Material (BOMs) as you need them and adjust Standard Cost Variances when necessary. Some of the periodic tasks you may want to perform include:

- Set up BOMs
- Import BOMs
- Adjust Standard Costs

Set up Bills of Material

The Bills of Material function within Setup and Maintenance is the most important function in the Bills of Material module. All elements of the BOM are created using this function. Most other functions in the Bills of Material module are designed around this process, making the maintenance of the Bill easier, more accurate, efficient, and flexible. The BOM consists of both material components and Routings.

If you do not have the Routing and Resources module installed, you cannot use the Routing features of the Bills of Material module.

NOTE: Even if you are using the Routing and Resources module, you can disregard Routing steps completely and create BOMs that are solely material components, if needed.

TRAVERSE Manufacturing uses industry standard methodology for creating BOMs. Bills of Material are always created one level at a time without regard for other levels above or below.

Example: If your BOM has six levels, you must create a minimum of six different BOMs. The system understands and makes the proper connection between the various levels. If assembly A consists of a subassembly B and a raw material C, and subassembly B consists of raw materials D and E, you must create two BOMs: one for A and one for B. It doesn't matter in what order you create them. Once you create both bills, the system sees that BOM A consists of a B, and that B has its own BOM. When a Production Order is placed for product A, and subassembly B has been set up as a Non-Stocked subassembly within Assembly A, the production application calculates the required quantity of components B, C, D, and E. (Component B is actually a subassembly, so you could say that no quantity is required since it is being made using components D and E during the production. If Subassembly B was set up as a Stock Subassembly, then the system would require only B and C). For more information on production, see the Production Training Manual.

Bills of Material Elements

The BOM includes general information such as the Drawing Number, Engineer, Last Updated Date, Effective Dates, Unit of Measure, MRP Code, and Media Group. You can additionally mark the BOM as a stocked or non-stocked assembly, indicate whether or not this BOM is a Planning Bill, and mark the BOM as the current revision.

The primary element of the BOM is the physical materials used in different quantities which you can optionally attach to Routing steps. The Routings (or processes) are more intangible and consist of items such as Cost Per Hour, Time Required, Physical Location, and nature of process. Select the Operation to be performed in terms of where and with what machinery and labor the operation will be done. Routing steps are optional for any BOM, but using Routing steps enables you to have more control over the actual processes involved in the production cycle.

The information in the Routing area of the Bills of Material screen is predefined using the Routing and Resources module. This allows you to quickly set up Routing steps in a simple manufacturing environment by entering only the Routing Step and the Operation ID, and allowing the system to default the rest of the fields.

When you enter the physical materials used, in addition to the component Item ID, you can define a Unit of Measure, method of use, Cost Group, Scrap Percentage, and Quantity. A Notes section exists for additional comments. You can also define By-Products at this point that can offset the BOM cost. Set the Detail Type box to By-Product instead of Material to do this. You can have up to 999 components on one level of a BOM.

You can also specify non-stock or miscellaneous Items which are not to be quantified and/or costed, but are helpful to include in the BOM. These are Items such as grease, shop rags, sandpaper, and miscellaneous nuts and bolts that you choose not to cost or count. Non-stock Items can have quantities and costs, and those quantities and costs are utilized in cost estimation and in the Production module.

Import Bills of Material

Use the Import Bills of Material function to import ASCII data files into the BOM database. These files can be in comma delimited or fixed length record format and are generally output from a type of CAD system.

The first step in the import process is to set up the Import Layout Definition. Next, map the import file fields to the TRAVERSE BOM fields, import the files into a temporary table, verify that the values are defined correctly, and then write the files to the BOM database. You can also use this function to set up multiple layout parameters and assign unique IDs to each one.

NOTE: The Import Bill of Material function is not designed to handle every possible scenario and only allows for the importing of material Items. But, it can be a great time saver if this is a frequent process for you.

For more information on the Importing Bills of Material function, see the *System Manager Training Manual*.

Adjust Standard Costs

Use the Standard Costs Maintenance functions to maintain Standard Costs. Standard Costs may not always be considered accurate. They change at infrequent intervals and are assigned with the intention of creating a Standard Cost that can be “lived with” over a long period of time where the actual costs may be fluctuating. If you use Standard Costing as an Inventory Costing Method, an important feature of the Standard Cost Maintenance functions is the ability to post journal entries to GL for changes to Standard Costs of Inventory and do so on a batch basis.

The general work flow for adjusting Standard Cost variances is a two phase process.

Phase One

The first phase is to update the low level component Standard Costs. To do so, follow these steps:

- Compare current Unit Costs to existing costs using the Cost Variance Report function.
- Adjust the Costs using the Update Standard Costs function.
- Print the Standard Cost Adjustment Report using the Standard Cost Adjustment Report.
- Update Inventory Standard Costs and optionally post them to GL using Post Standard Costs Adjustment.

COST VARIANCE REPORT

When adjusting Standard Cost Variances, use the Cost Variance Report to compare the current Unit Costs of different components of a BOM, as well as the BOM cost, to the existing costs in Inventory. There are several parts to this report.

The first is a comparison of the Total BOM Cost. It is calculated using the current component makeup of the BOM to the current Standard Cost maintained in the Inventory master table.

The second part is the Component Variance, which is a comparison of the components' Standard Unit Cost to their actual LIFO Unit Costs currently in Inventory.

The third part of the report deals with Labor and Machine Costs. This section, which only appears if you are interfaced with Routing & Resources, is a comparison of time rather than cost, since process cost rates are predefined in the Routing and Resources module and cannot be overridden in the BOM. The report compares BOM Operations Costs to the standards set up in the Labor Type and Machine Group functions. This variance may or may not be meaningful, depending on how you have set up Labor Types and Machine Groups.

This report is not meant to subtotal and give overall information about the BOM. To do that, you need to include subassemblies and overhead. Also, the Lot size needs to be included because it affects the setup cost variances in the Labor and Machine areas. This report is strictly meant as a tool to point out possible areas of concern due to changing costs of both materials and process steps. High variances in components could mean the Standard Cost of your components should be changed. In the machine and labor area, a large variance could point out that you have adjusted your times in the master tables, but haven't changed them in the BOM. It could also mean that the BOM is unique and the variance is meaningless. Variances in the assembly may indicate your estimated costs changed and either the Standard Cost or the rolled up current cost may be inaccurate.

UPDATE STANDARD COSTS

If you found costs that need adjustment when reviewing the Cost Variance Report, use the Update Standard Cost function to make those adjustments. Since the TRAVERSE Inventory system does not provide a utility to quickly change and record Standard Costs Adjustments, you must make those changes here using the Update Standard Cost function. You can move quickly through the Inventory system, changing Standard Costs of component Items where needed.

NOTE: This function records the transactions but does not change the Standard Inventory Cost online. It writes cost changes to the transaction table, which is the source for the Standard Cost Adjustment report. Once you finish updating Standard Costs, print this report and Post the Standard Cost Adjustments.

STANDARD COST ADJUSTMENT REPORT

When you finish Updating Standard Costs, print the Standard Cost Adjustment report.

This report shows the cost update information and journal entries, which are created in GL, and is your last chance to review the data before you post it to GL and Inventory.

POST STANDARD COST ADJUSTMENTS

Use the Post Standard Cost Adjustments function to update Inventory Standard Costs and post entries to GL. A Credit is made to Standard Cost Adjustments as defined in the GL-Default section of the Business Rules screen, and a Debit is made to the individual asset account for Item IDs defined in the Inventory database. The Inventory Standard Cost field in the Inventory database also changes when you post.

NOTE: These GL transactions only get done if you use Standard Costing as your Costing Method in Inventory.

Phase Two

The second phase in the general work flow for Adjusting Standard Cost Variances is to update the assembly Standard Costs. To do so follow these steps:

- Roll up existing BOMs using the Roll Up Standard Costs function.
- Print the Standard Cost Adjustment report again.
- Post again to update Inventory Standard Costs and post entries to GL using Post Standard Costs Adjustment.

ROLL UP STANDARD COSTS

Once your component costs are accurate and you have posted transactions to Inventory, you can roll up the existing BOMs. This process adds up the elements of one or all BOMs, recalculating Material, Labor, Overhead, and Subcontracting Costs. The Standard Cost Adjustments required for each BOM are automatically created and written to the transaction file using this function. Later, you can post these costs to GL. Although you cannot create new transactions for assemblies, you can edit or view generated transactions created by the Roll Up Standard Costs function. All of the entries are then written to the Standard Costs Adjustments table and later appear on the Standard Costs Adjustments Report. You can then post these costs to GL.

STANDARD COST ADJUSTMENT REPORT

Once you finish Rolling Up Standard Costs, print the Standard Cost Adjustment report. This report shows the cost update information (if you are using Standard Costing) and journal entries, which are created in GL, and is your last chance to review the data before you post it to GL and Inventory.

POST STANDARD COST ADJUSTMENTS

Post again to update Inventory Standard Costs and, optionally, to post entries to GL.

BUSINESS PROCESSES

Bills of Material includes Interactive View functions, Reports, and Lists that provide you with the manufacturing information you need to analyze your business practices. To make the most of your manufacturing processes, use the functions described below.

Interactive Views

Interactive View functions are designed to quickly give you access to manufacturing information in less detail than a report. The summary nature of interactive views is designed to deliver information efficiently without having to sort through a lot of additional information.

Bills of Material View

The Bills of Material View uses a tree concept in a Microsoft Explorer-type setup to help you easily view a BOM from top to bottom.

Component Availability View

The Component Availability View function is designed to allow you to see the material component availability based on the building of a specified number of a given assembly. You can immediately know which component materials you are low on and by how much. This view saves you the time of having to calculate all of the quantities required of each subcomponent, and then checking the inventory availability of each one. The quantity of the finished assembly that you can build is dictated by the material component with the least availability.

Available to Promise View

The Available to Promise View function allows you to quickly view the availability of any given Inventory Item ID. The system displays two availability dates for the Item ID. These dates are generally future dates. The first date is the first available date. The second date is the first available date that does not compromise another pending order.

This function differs from Component Availability in these ways:

- It checks the availability of any Item ID rather than just BOM Item IDs.
- It doesn’t consider component availability.
- It takes into consideration the passage of time.

Cost Groups

The Cost Groups function allows you to view the current definitions of each of the Cost Groups.

Media Groups

Use the Media Groups function to view visual objects such as schematics, drawings, instructions, visual images, or movies grouped together into a user-defined Media Group, which can then be assigned to specific BOMs, Operations, Routing Steps, and so on.

Reports

The Bills of Material reports offer you more detailed information that can't normally be accessed using an Inquiry or Setup and Maintenance function. The option to output to a file or printer also enables you to save the information to review later. Many reports offer a variety of selection criteria and sort parameters for formatting the report to meet your needs.

Costed Bills of Material

Use the Costed Bills of Material report to view what costs make up a BOM and where these costs come from. A BOM consists of four main elements: Materials, By-Products (materials created as a result of the manufacturing process and have some value), Subcontracting, and Operations.

NOTE: Subcontracted steps are actually Routing Steps and are listed as such in the report.

Component Where Used

The Component Where Used report enables you to select a range of Inventory Item IDs and view where those Item IDs are used in BOMs. Use the Single Indention option to view a simple list by component of each BOM in which the component can be found. Use the Fully Indented option to view a fully indented BOM. By looking at a fully indented Component Where-Used report, you can determine the overall effect of a problem with a low level component starting from the bottom and working your way up.

Available Components

If you want to build a specific quantity of a given item, but it's an assembly with many components, and you can't easily calculate how many you can build without knowing the quantities available at the subcomponent levels, use the Available Components Report. This report calculates the required quantity of each of the components involved from the top level to the bottom (or stocked assembly level) and shows the operator, the component availability at each level, indicates the quantity required that is available, and the net over or under.

Indented Bills of Material

The Indented Bills of Material report displays material information in an indented format so that each subassembly's components are indented beneath it. This indention gives you a better look at BOM structure from the top down, including subassembly information. The report drills down into a BOM until a raw material or stocked subassembly is found. Stocked subassemblies are assemblies whose Stocking Level check box is selected on the General area of the Bills of Material screen within Setup and Maintenance. This check box indicates that it is a stocked Item ID and production orders that include this subassembly create direct demand for this item ID, but not for its components. An override option exists on the Indented Bills of Material screen to ignore this flag and drill down on all BOMs to their lowest component level.

Summarized Bills of Material

The Summarized Bills of Material report summarizes components by Cost Group. Information is not indented, but grouped from the top-level BOM down. Use the Summarized Bill of Material report to quickly see what Material Components, Machinery, Labor, and Work Centers are used for the entire BOM without searching through a lot of additional information. For example: if you print a summarized BOM for a complete automobile, you should be able to see every machine used in the entire process in one grouped summary area, if every machine has the same cost group or type.

Bill of Material Worksheets

The Bill of Material Worksheets is a working form and can be used in place of the Order Traveler and Production Picking List functions within the MFG - Production module. This form is very useful if the Production module is not installed or not yet implemented. The form reflects much of the information that can be found in the Bills of Material master list or other forms, but in a simplified and shortened format.

Master Lists

Master Lists are basic reports that display the contents of the main files, but do not show historical detail, or complex calculations. The purpose of the master list is to review for accuracy the master file information that you set up, or to check the appearance of sections. The following lists are available:

- **Bills of Material** – a comprehensive list of all data stored in the Bills of Material master record.
- **Media Groups** – prints a list of Media Groups and their Descriptions.
- **Engineering Change Orders** - Prints the Engineering Change Orders details.

3

Setup and Maintenance

OVERVIEW

Before you can use the Bills of Material module, follow the setup procedures in this chapter. Follow these procedures carefully. The choices you make determine how the system operates.

Perform these tasks to set up Bills of Material:

- Set up Business Rules.
- Define Cost Groups.
- Define Media Groups.
- Set up BOMs.

Below are brief descriptions of the functions on the Setup and Maintenance menu:

Business Rules

The Business Rules function allows you to interface General Ledger with Bills of Material; elect to save an audit trail of changes made to BOMs; select the Standard Cost Adjustments Account (page 3-7).

Engineering Change Orders

Use the Engineering Change Orders function allows you to enter and maintain Engineering Change Orders (ECO) that are associated with changes made to a Bill of Material (page 3-29). (Optional)

Cost Groups

Use the Cost Groups function to create pre-defined groups of cost areas. Cost Groups enable you to group BOM costs into specific assigned areas. Each Cost Group is summarized on the General area of the Bills of Material screen. You can assign each BOM element to a unique Cost Group (page 3-13).

Media Groups

Next, set up your Media Groups. Use the Media Groups function to group multimedia documents under one Media Group ID. Rather than assign specific documents to specific Inventory Item IDs, Bills, and Operations, the system enables you to assign those documents to a Media Group ID. You can then assign this ID to a specific Operation, Tool, Component, and so on. This creates the flexibility to assign a potentially large group of related documents to a single process or material requirement (page 3-17).

Engineering Change Orders Codes

Use the Engineering Change Order Codes are used in conjunction with two fields which appear on the Engineering Change Orders screen. The Change Code function gives you the ability to change, add, or delete the choices available in the Type field and/or the Status field. Either field can be interpreted for whatever purposes, but in general the Type field would indicate the type of Engineering Change order and the Status field would indicate the status of that change order. No built in logic is based on either field. These records can then be selected from the respective Type or Status drop down in the Engineering Change Order function (page 3-25).

Bills of Material

Setting up a BOM is the most important function in the Bills of Material module. BOMs consist of two major elements: Material Components and Routing Steps or processes. Setting up a BOM makes a connection between the two. You can disregard Routing and process steps completely and create BOMs that are solely Material Components. If you do not have the Routing and Resources module installed and interfaced, you cannot use the Routing features of Bills of Material. See “Workflow” on page 3-1 or “Bills of Material” for more information on setting up BOMs (page 3-35).

Suggestions for Defining IDs and Codes

IDs and codes tell the system how to identify each Item on file. The system uses these identifiers to organize information.

When you assign IDs and codes, establish a format that makes sense for your business and use it consistently. The following suggestions may help you to establish a useful format:

- Do not use these characters in an ID or a code: | “ ' & #.
- To prevent organization problems, use zeros to make all IDs the same length. If IDs are divided into more than one part, the parts should be the same length in every ID. Do not use spaces to divide IDs into more than one part. For example, use ACE-001 and ACE-011 instead of ACE-1 and ACE-11 or ACE 01 and ACE 11.

- If you use letters in IDs, use either all uppercase or all lowercase letters so that the IDs can be sorted correctly.
- Use descriptive IDs. For example, WIN001 and WIN002 are more descriptive than 000001 and 000002.
- If you want to sort items by a particular attribute, name or group, put the attribute in the ID. For example, to organize vendors by name, put the first characters of the vendor name in the vendor ID.

To ensure that new items can be inserted into a sequence, use a combination of letters and numbers that leaves room in the sequence for later additions. For example, WIN001 and WIN005 leave room for three IDs in between.

BUSINESS RULES

The **Business Rules** function allows you to interface General Ledger with Bills of Material; elect to save an audit trail of changes made to BOMs; select the Standard Cost Adjustments Account.

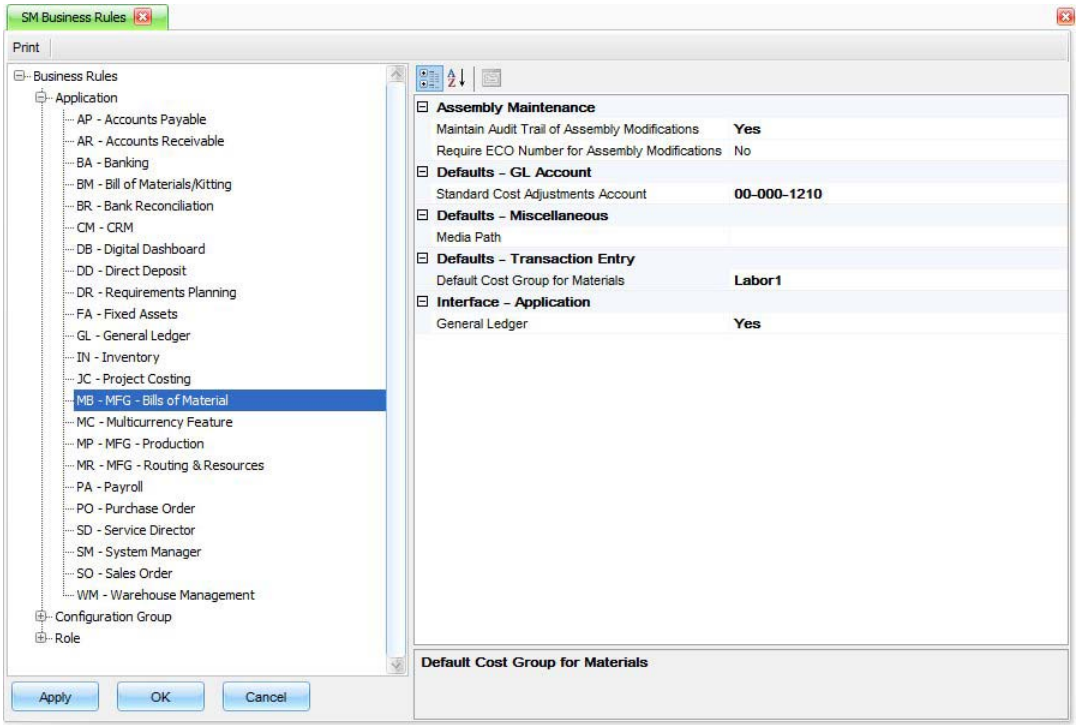
To set up **Business Rules**, follow these steps:

1. Select **Business Rules** from the **System Manager, Company Setup** menu.

Business Rules Menu

2. The **Business Rules** screen appears. Select **MFG - Bills of Material**.

Business Rules Screen



Assembly Maintenance

3. **Maintain Audit Trail of Assembly Modifications**: Select **Yes** to save a history of changes made to BOMs; otherwise, select **No**. If you select Yes to this option, changes to existing BOMs are written to a changes history table and you can view them using the System Manager Audit Explorer function.
4. **Require ECO Number for Assembly Modifications**: Select **Yes** to require that an Engineering Change Order number be assigned each time an assembly is modified; otherwise, select **No.**

Defaults - GL Account

5. **Standard Cost Adjustments Account**: Select the GL Account ID to which you want to post adjustments to Standard Costs. This is only applicable in a Standard Cost environment.

Defaults - Miscellaneous

6. **Media Path**: Enter the default media path for the system to use as an alternate **"**search**"** path when attempting to view and open media files. When you attempt to view a media file, TRAVERSE tries to open it using the path or filename provided. If it cannot open the file using this information, it pulls the filename out of the path or filename and attempts to open it from the default media path entered here.

Defaults - Transaction Entry

7. **Default Cost Group for Materials**: Select the default Cost Group for materials entered into a Bill of Material.

Interface - Application

8. **General Ledger**: Select **Yes** to interface Bills of Material with General Ledger. Interfacing with General Ledger will allow you to select valid GL Account IDs where they are needed.

   When running the Update Standard Costs function the GL Account ID set up here will default into the transactions.

9. Click **Print** to preview and print a report showing your selected business rules.

10. Select a command button:

Command Buttons

Name	Description
Apply	Save the changes you have made to the business rules functions. The screen will remain open.
OK	Save the changes and exit the business rules function.
Cancel	Close the business rules screen without saving any changes.
Print	Preview and print a business rules report.

Name	Description
Search	Perform a wildcard search of all existing business rule descriptions. The results will display in a tree-view for easy navigation.

Business Rules Report

Continental Products Unlimited Page 1
Business Rules List

Application	Group / Description	Current Value	Default Value
MB - MFG - Bills of Material			
	Assembly Maintenance		
	Maintain Audit Trail of Assembly Modifications	Yes	No
	Require ECO Number for Assembly Modifications	No	No
	Defaults - GL Account		
	Standard Cost Adjustments Account	00-000-1210	-
	Defaults - Miscellaneous		
	Media Path		-
	Defaults - Transaction Entry		
	Default Cost Group for Materials	Labor1	-
	Interface - Application		
	General Ledger	Yes	No

7/16/2014 3:59 PM *** End of Report *** OPEN_SYSTEMS\KentHe

COST GROUPS

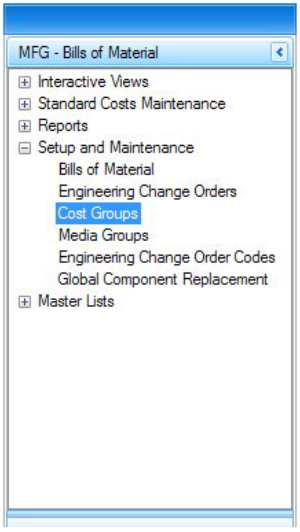
Cost Groups allow you to break the Bill of Material down into user definable Cost Groups. One can choose to set up one Cost Group and simply assign it to everything. This essentially negates the use of Cost Groups but makes the setup process somewhat easier. Typically users will assign Cost Groups related to labor to labor areas, machine related costs to machines, subcontracting to subcontracted process, materials to components, etc. One could take this a step further and have different Cost Groups for different machines, or labor types, etc. The Cost Groups are used primarily in the report, Summarized Bill of Material and the Cost button on the setup screen for the Bills of Material. These functions break the Bill of Material's costs down by these Cost Groups showing specific costs for each area. This can be very useful when the total estimated cost of a BOM seems too high or low. Cost Groups show exactly where this total cost is derived from and can aid in getting to the bottom of a troublesome costing issue.

These Cost Groups will then be available for use in the setup for Bills of Material, Work Centers, Machine Groups, Labor Types, and Subcontracted Operations.

To set up **Cost Groups**, follow these steps:

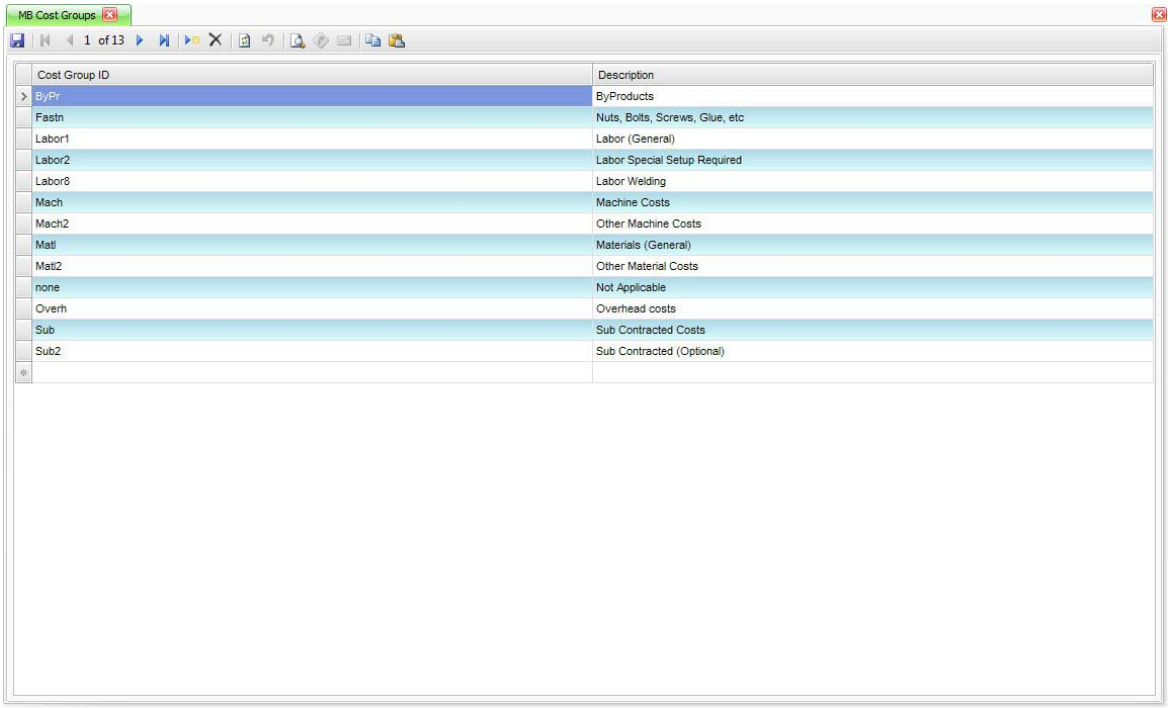
1. Select **Cost Groups** from the **Setup and Maintenance** menu.

Cost Groups Menu



2. The **Cost Groups** screen appears.

Cost Groups Screen



3. Click the **New Record** button on the toolbar to open a blank Cost Group record.
4. Enter a new **Cost Group ID**.
5. Enter a description of the new cost group in the **Description** field.

Producing a Cost Groups List

To produce a **Cost Groups List**, follow these steps:

1. Select the **Print Preview** button to preview the report for the Cost Groups you have set up.
2. The **Preview Report** screen appears.
3. Select the **Print** button in the toolbar to print your list.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Cost Groups List

Continental Products Unlimited
MB Cost Groups

Page 1

Cost Group ID	Description
ByPr	ByProducts
Fasn	Nuts, Bolts, Screws, Glue, etc
Labor1	Labor (General)
Labor2	Labor Special Setup Required
Labor3	Labor Welding
Mach	Machine Costs
Mach2	Other Machine Costs
Mat	Materials (General)
Mat2	Other Material Costs
none	Not Applicable
Overh	Overhead costs
Sub	Sub Contracted Costs
Sub2	Sub Contracted (Optional)

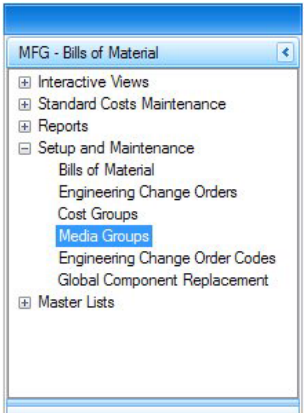
MEDIA GROUPS

Use the **Media Groups** function to group multimedia documents under one Media Group ID. Rather than assign specific documents to specific Inventory Item IDs, BOMs, and Operations, you can assign those documents to a Media Group ID. You can then assign the ID to a specific Operation, Tooling, or Component. This gives you the flexibility to assign a large group of related documents to a process or material requirement.

To set up **Media Groups**, follow these steps:

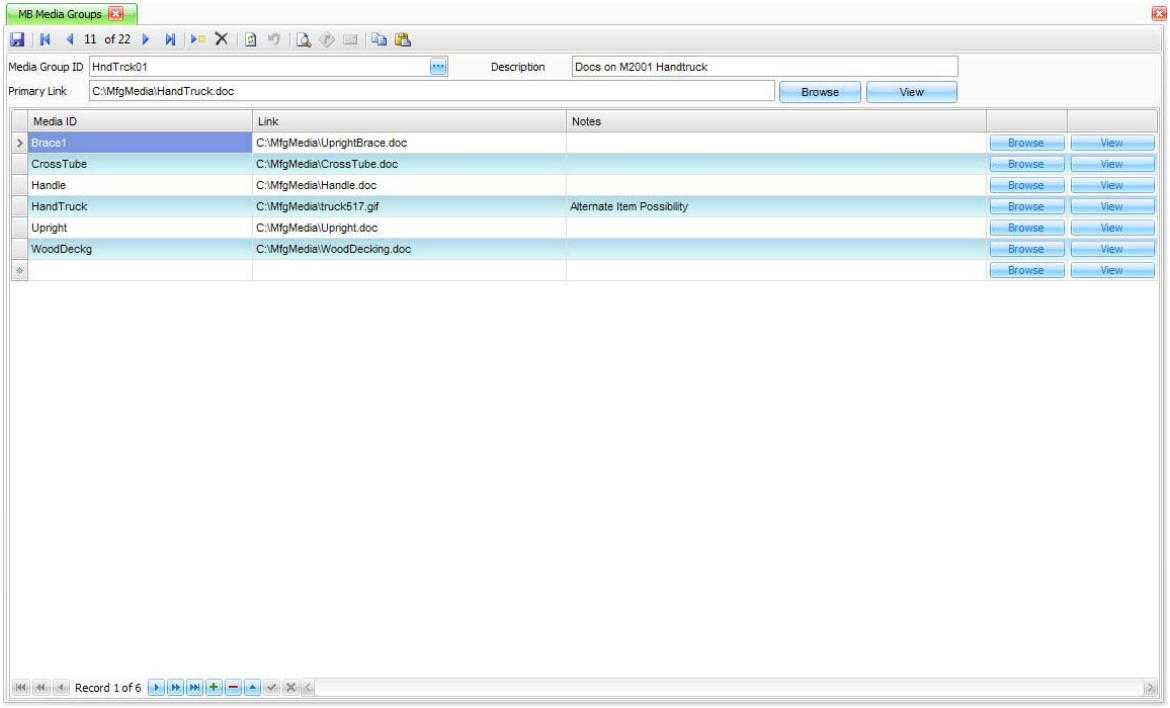
1. Select **Media Groups** from the **Setup and Maintenance** menu.

Media Groups Menu



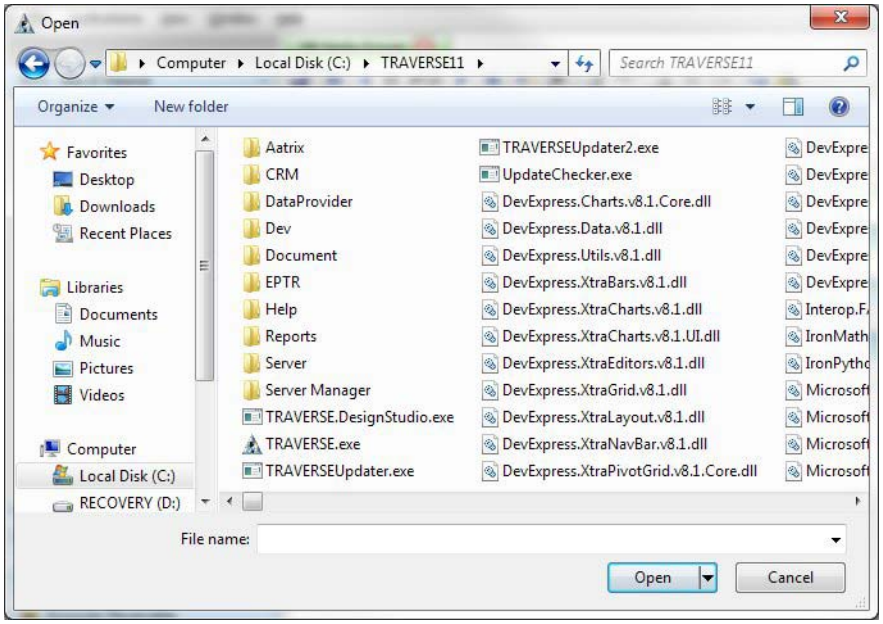
2. The **Media Groups** screen appears.

Media Groups Screen



3. To add a new Media Group, click the **New Record** button on the toolbar. A blank **Media Groups** row appears.
4. Enter the **Media Group ID** that helps you remember what the associated file is.
5. Enter a **Description** to describe your Media Group.

6. Enter the primary file path for the media group in the **Primary Link** field or use the **Browse** button to locate the file path.



NOTE: Use the View button to view the primary file by launching the application in which the file was created.

7. Enter an identification name or number to associate with an additional piece of media in the **Media ID** field, in the bottom portion of the screen.
8. Enter, if applicable, a link file path for the media group in the **Link** field or use the corresponding **Browse** button to locate the file path.

NOTE: Use the View button to view the adjacent file by launching the application in which the file was created.

9. Enter, if applicable, any notes for the adjacent media in the **Notes** field.
10. Click the **Save** button, on the tool-bar, to save the new Media Group.

Editing a **Media Group**:

1. Select a Media Group to edit from the **Media Group ID** field.
2. Edit the fields as necessary.
3. Click the **Save** button, on the tool-bar, to save any edits made to the Media Group.

Deleting a Media Group:

1. Select a media group to delete from the **Media Group ID** field.
2. Click the **Delete** button, on the tool-bar, to delete the selected media group.
3. Click **Yes** at the “Are you sure you want to delete selected record(s)?” prompt.

Producing a Media Groups List

The **Media Groups** Master List displays all the fields of the current Media Groups master records.

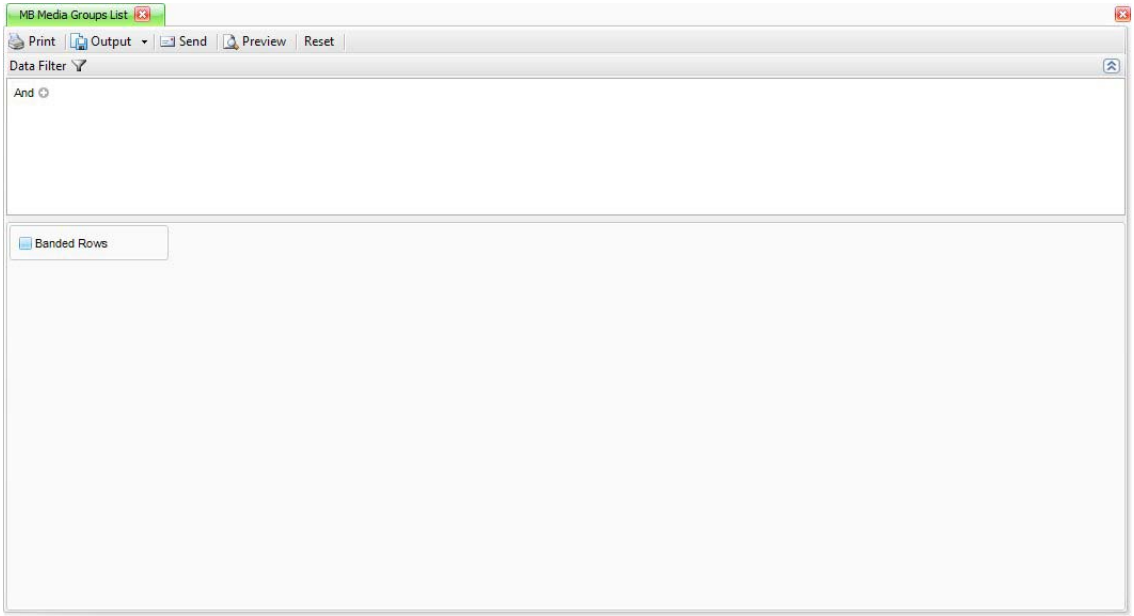
To produce a **Media Groups List**, follow these steps:

1. Select **Media Groups List** from the **Bills of Material, Master Lists** menu.

Media Groups List Menu

2. The **Media Groups List** screen appears.

Media Groups List Screen



3. Select the **Filter Criteria** to include in the list, or leave the fields blank to include all.
4. Select the check box if you want to print the report in **Banded Rows format**, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.

5. Select a command button:

Command Buttons

Name	Description
Reset	Set all fields to their defaults.
Preview	Preview the report on your monitor.
Output	Output the report as a .pdf file and save it.
Send	Email the report with the report attached as a .pdf file.
Print	Print the report.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Media Groups List Report

Continental Products Unlimited Page 1

Media Groups List

Report Filter

Media Group ID	Description	Primary Link
4517	Trailor Brake Handle	C:\MfgMedia\HandleFinished.jpg
4517HANDLE	Handle for 4517 prior to weld	C:\MfgMedia\HandleWOBase.jpg
4517PLATE	Plate for Brake Handle	C:\MfgMedia\HandleBase1.jpg
BEND9	Pipe and Tube Bender 919	C:\MfgMedia\PipeBender1.jpg
BRACE1	Upright Brace for Hand Truck	C:\MfgMedia\UprightBrace.doc
Decking38	Wood Decking	C:\MfgMedia\WoodDecking.doc
DrillPress	Drill Presses	C:\MfgMedia\DrillPressJetJDP17MF.jpg
Media ID	**Notes**	**Link**
17		C:\MfgMedia\DrillPressArea6.jpg
DRILLWC8	Drill Work Center	C:\MfgMedia\DrillPressArea6.jpg
FLTSTL8	Flat Steel	C:\MfgMedia\FlatSteel.jpg
Media ID	**Notes**	**Link**
FLAT2		C:\MfgMedia\FlatSteel2.jpg
Grinders	Industrial Grinders	C:\MfgMedia\DELTA 23-725 INDUSTRIAL GRINDER.jpg
HndTrck01	Docs on M2001 Handtruck	C:\MfgMedia\HandTruck.doc
Media ID	**Notes**	**Link**
Brace1		C:\MfgMedia\UprightBrace.doc
CrossTube		C:\MfgMedia\CrossTube.doc
Handle		C:\MfgMedia\Handle.doc
HandTruck	Alternate Item Possibility	C:\MfgMedia\truck517.gif
Upright		C:\MfgMedia\Upright.doc
WoodDeckg		C:\MfgMedia\WoodDecking.doc
M2001HNDL	M2001 Plastic Push Handle	C:\MfgMedia\Handle.doc
PIPE-BEN54	Pipe Bender	C:\MfgMedia\PipeBender1.jpg
PressBrake	Press Brakes	C:\MfgMedia\Brake1.jpg
PUNCHPRESS	Punchpress Area	C:\MfgMedia\PunchPress1.jpg
Media ID	**Notes**	**Link**
2		C:\MfgMedia\PunchPress2.jpg
3		C:\MfgMedia\PunchPress3.jpg
SAW47	Industrial Saw	C:\MfgMedia\TubeStockSaw.jpg
ST-TUB8	Steel Tubing	C:\MfgMedia\TubingForCarts.jpg
Storage	Misc Storage Locations	C:\MfgMedia\TubeStockStorage45.jpg
Media ID	**Notes**	**Link**
Storage1		C:\MfgMedia\TubeStockStorage1.jpg
WELD121	Welding Demo 121	C:\MfgMedia\WeldHandle12.mpg
WELDER8	Hobart Welder	C:\MfgMedia\Hobart135Welder.jpg
Welding	Welders and welding demos	C:\MfgMedia\WeldHandle12.mpg
Media ID	**Notes**	**Link**
W1		C:\MfgMedia\HandleSetup.mpg
W4		C:\MfgMedia\Hobart135Welder.jpg
W8		C:\MfgMedia\WeldingArea7.PSD
WELDWC7	Welding Work Center	C:\MfgMedia\WeldingArea2.jpg

4/1/2013 4:06 PM *** End of Report *** OPEN_SYSTEMS\KenHe

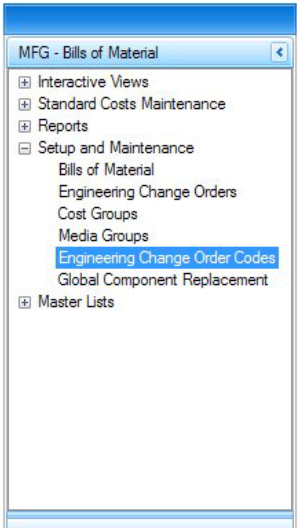
ENGINEERING CHANGE ORDER CODES

The **Engineering Change Order Codes** are used in conjunction with two fields which appear on the Engineering Change Orders screen. The Change Code function gives you the ability to change, add, or delete the choices available in the Type field and/or the Status field. Either field can be interpreted for whatever purposes, but in general the Type field would indicate the type of Engineering Change order and the Status field would indicate the status of that change order. These records can then be selected from the respective Type or Status drop down in the Engineering Change Order function.

To set up **Engineering Change Order Codes**, follow these steps:

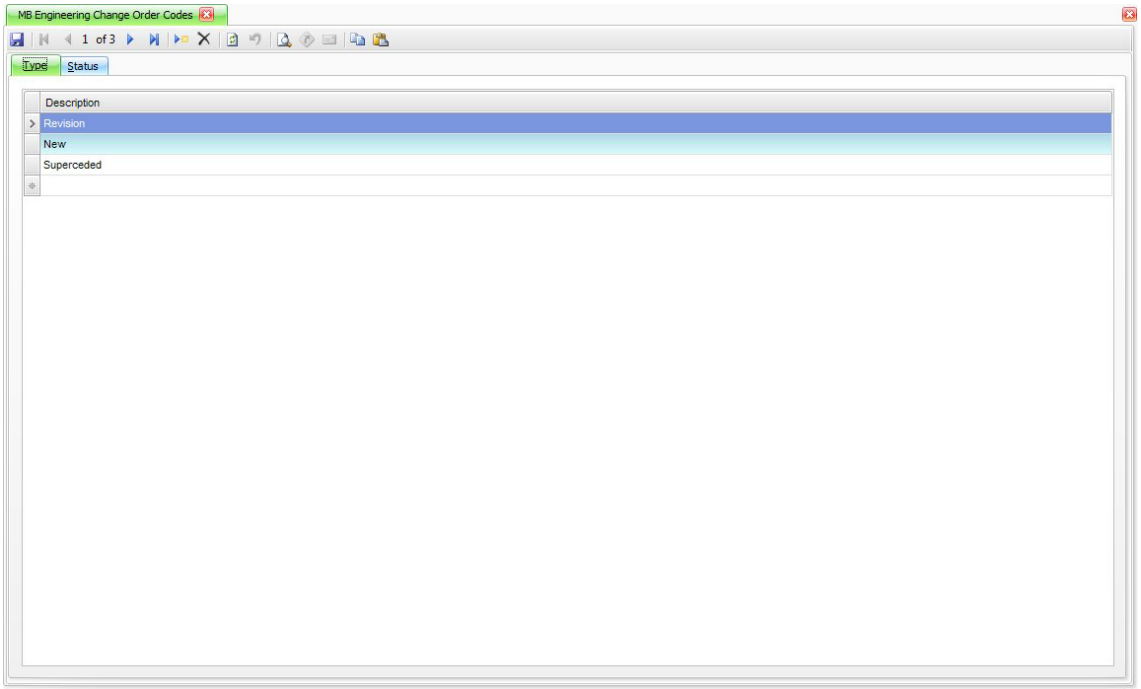
1. Select **Engineering Change Order Codes** from the **Setup and Maintenance** menu.

Engineering Change Order Codes Menu



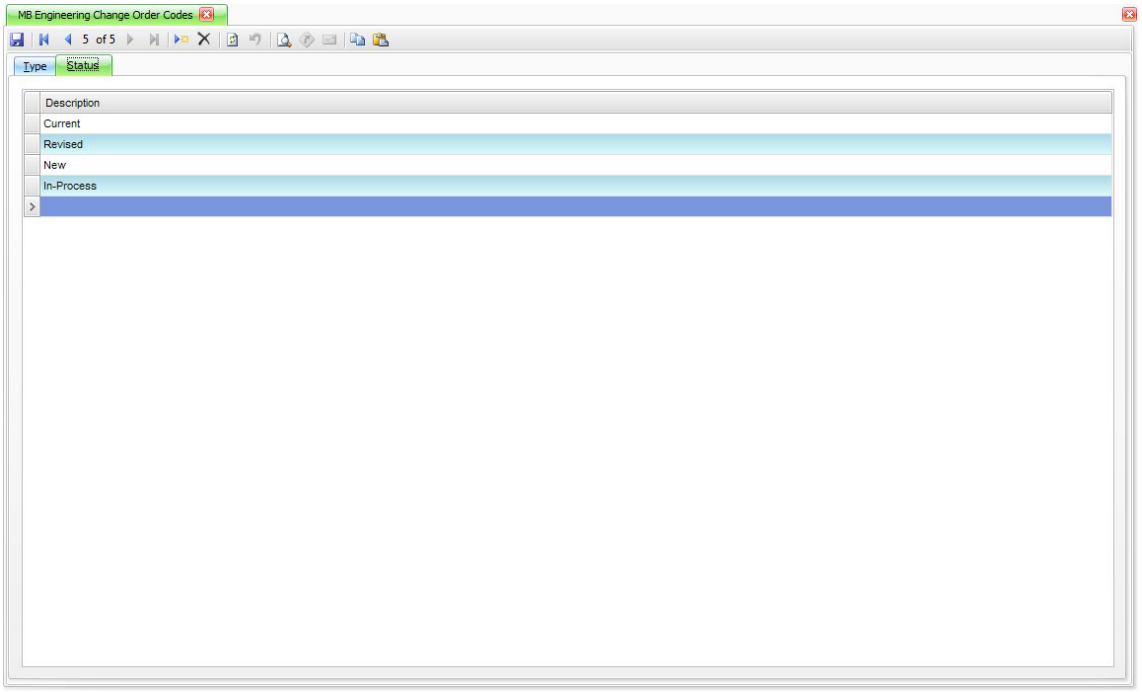
2. The **Engineering Change Order Codes** screen appears.

Engineering Change Order Codes Screen (Type Tab)



3. Enter a **Description** for the **Type** of ECO Code you want to use.
4. Select the next blank line, or click the **New Record** button to enter another ECO Code Type.
5. Click the **Save** button in the toolbar to save your ECO Code Types.

Engineering Change Order Codes Screen (Status Tab)



6. Enter a **Description** for the **Status** of ECO Code you want to use.
7. Select the next blank line, or click the **New Record** button to enter another ECO Code Status.
8. Click the **Save** button in the toolbar to save your ECO Code Statuses.

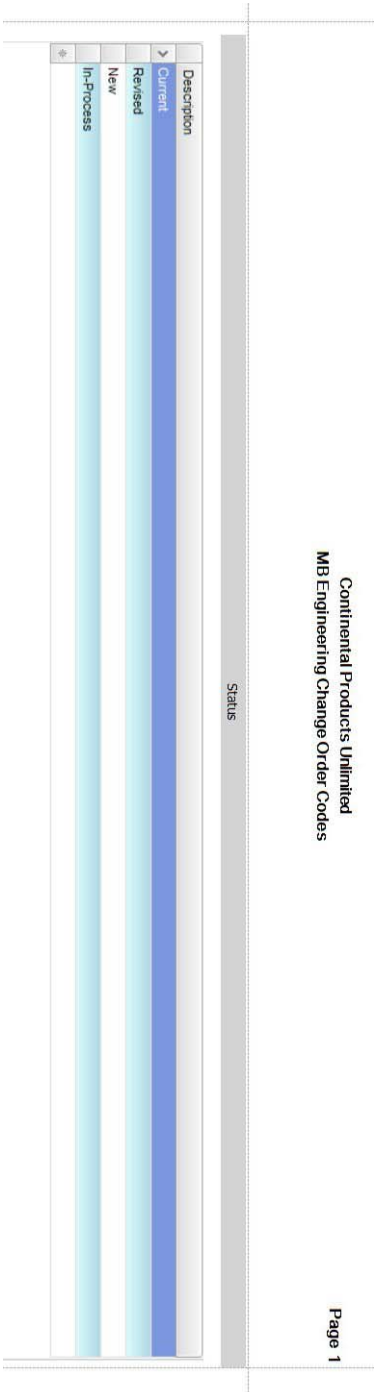
Producing an Engineering Change Orders Codes List

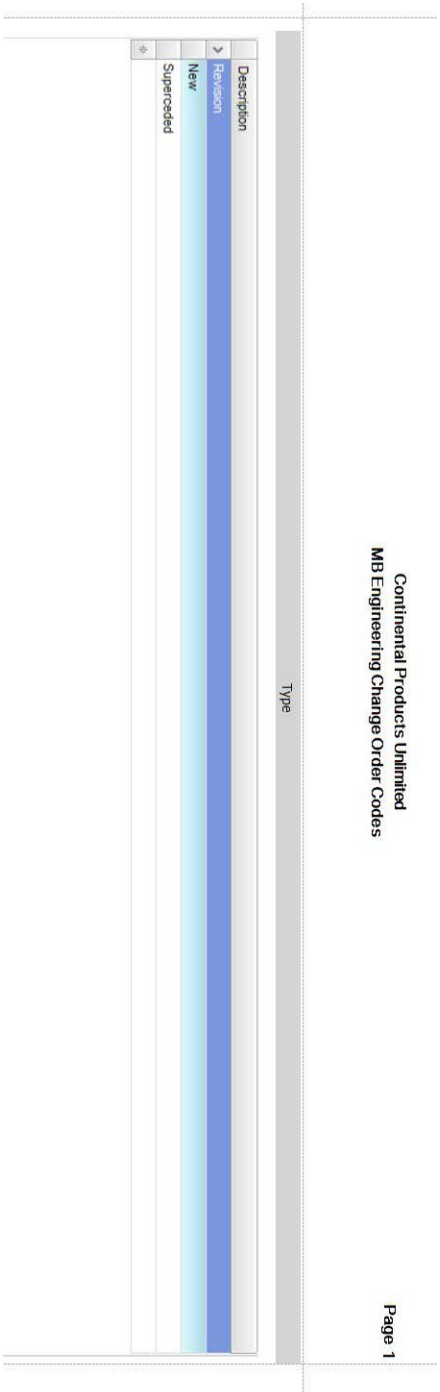
To produce a **Engineering Change Orders Codes List**, follow these steps:

1. Select the **Print Preview** button to preview the report for the Engineering Change Orders Codes you have set up.
2. The **Preview Report** screen appears.
3. Select the **Print** button in the toolbar to print your list.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Engineering Change Order Codes List





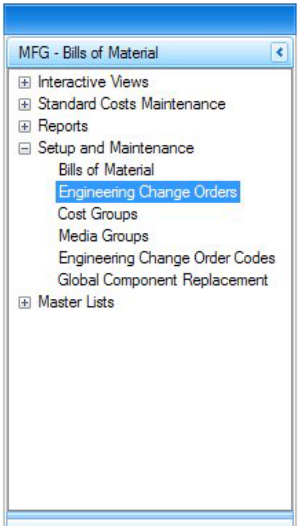
ENGINEERING CHANGE ORDERS

Engineering Change Orders (ECOs) are defined via this process. ECOs are usually created by the engineering group as they define required changes to Bills of Material. As those changes are made, you can reference back to a specific ECO to create an ECO history of where and how the ECO affected the existing Bills of Material. ECO can also optionally be referenced in "Global Replacement" functions.

To set up **Engineering Change Orders**, follow these steps:

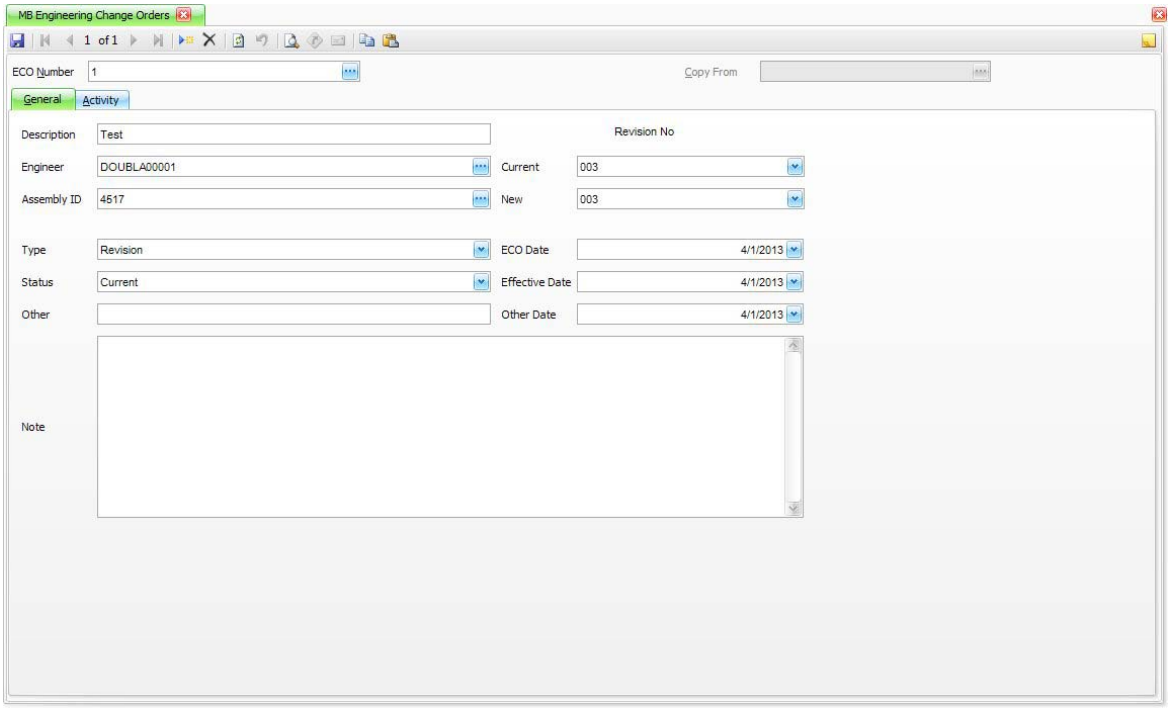
1. Select **Engineering Change Orders** from the **Setup and Maintenance** menu.

Engineering Change Orders Menu



2. The **Engineering Change Orders** screen appears.

Engineering Change Orders Screen



3. To add a new Engineering Change Order, click the **New Record** button on the toolbar. A blank **Engineering Change Order** screen appears.

4. Enter a new ECO identification number in the **ECO Number** field.

NOTE: If applicable, select a ECO from which to Copy information. This field only appears when you create a new ECO.

5. Enter a Description of the new ECO in the **Description** field.

6. Select an engineer to associate with the ECO from the **Engineer** field.

   The list will be the list of Employees set up in System Manager, Employees or Payroll, Employee Information setup, depending on whether you have Payroll installed or not.

7. Select an Assembly ID to which the engineering change order can be applied from the **Assembly ID** field.

8. Select a Type for the change order from the **Type** field. The Type will be from the Engineering Change Order Codes you set up.

9. Select a Status for the change order from the **Status** field. The Status will be from the Engineering Change Order Codes you set up.
10. Enter, if applicable, any other important information about the Type or Status of the change order in the **Other** field.
11. Enter, if applicable, any additional information about the change order in the **Notes** section.
12. Select the Current and New Revision Numbers for the ECO from the **Current** and **New** fields.
13. Select the dates for the **ECO Date**, **Effective Date**, and **Other Date** fields as applicable.
14. Click the **Save** button on the toolbar, to save the new ECO.

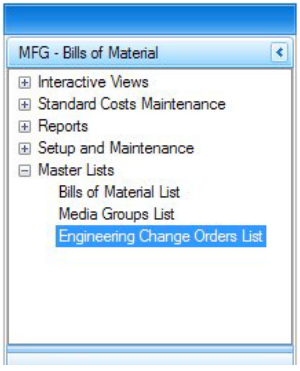
Producing an Engineering Change Orders List

The **Engineering Change Orders** Master List displays all the fields of the current Engineering Change Orders master records.

To produce a **Engineering Change Orders List**, follow these steps:

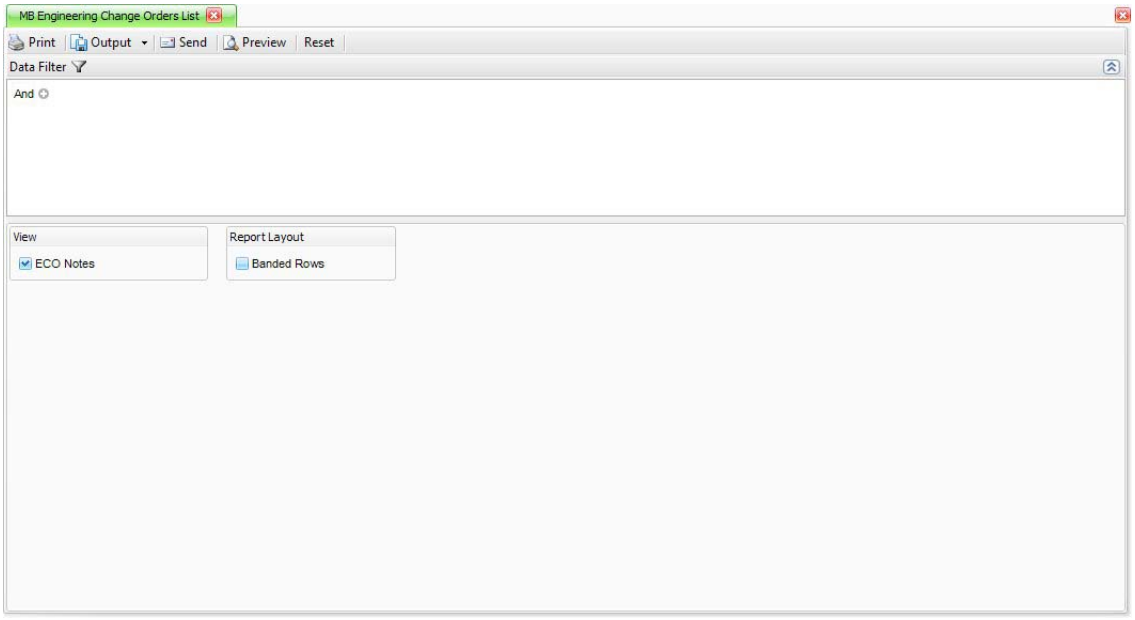
1. Select **Engineering Change Orders List** from the **Master Lists** menu.

Engineering Change Orders List Menu



2. The **Engineering Change Orders List** screen appears.

Engineering Change Orders List Screen



3. Select the **Filter Criteria** to include in the list or leave the fields blank to include all.
4. Select the **ECO Notes** check box, if applicable, to include the Notes entered in the Engineering Change Orders function in the list.
5. Select the check box if you want to print the report in **Banded Rows format**, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.

6. Select a command button:

Command Buttons

Name	Description
Reset	Set all fields to their defaults.
Preview	Preview the report on your monitor.
Output	Output the report as a .pdf file and save it.
Send	Email the report with the report attached as a .pdf file.
Print	Print the report.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Engineering Change Orders List Report

Continental Products Unlimited
Engineering Change Orders List

Page 1

Report Filter
View ECO Notes Yes

ECO No	Description	Type	Current Revision No	ECO Date
	Engineer	Status	New Revision No	Effective Date
	Assembly ID	Other		Other Date
1	Test	Revision	003	4/1/2013
	DOUBLA00001	Current	003	4/1/2013
	4517			4/1/2013

Notes

4/1/2013 4:11 PM *** End of Report *** OPEN_SYSTEMS\KenttHe

BILLS OF MATERIAL

The **Bills of Material** function within Setup and Maintenance is the most important function in the Bills of Material module. Most other functions in the Bills of Material module are designed around this process, making the maintenance of the BOM easier, more accurate, efficient, and flexible. The BOM consists of both material components and routings, and then makes a connection between the two.

If you do not have the Routing and Resources module installed, you cannot use the Routing features of the Bills of Material module. Look for the Routing and Resources icon for fields, tabs, and options not available.

NOTE: Even if you interface with Routing and Resources, you can disregard Routing steps completely, if you like, and create BOMs that are solely material components.

TRAVERSE Manufacturing uses industry standard methodology for creating BOMs. Bills of Material are always created one level at a time without regard for other levels above or below.

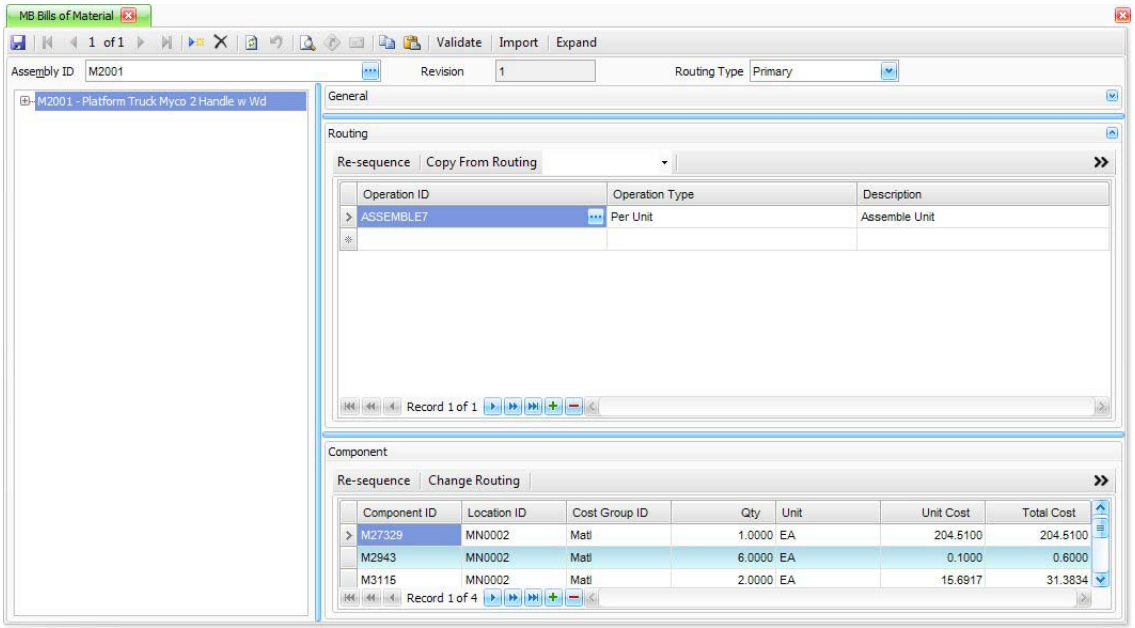
To set up **Bills of Material**, follow these steps:

1. Select **Bills of Material** from the **Setup and Maintenance** menu.

Bills of Material Menu

2. The **Bills of Material** screen appears.

Bills of Material Screen



When you first pull up this screen, the **Assembly ID** drop down should list existing Bills of Materials/Assemblies. If you click on the **New Record** icon at the top of the screen, the Add New Assembly popup screen appears.

The screen consists of a Tree box on the left side of the screen, which displays the Assembly ID. When expanded the tree will show Routings, then when routings are expanded the tree will display Components within the Routing.

Click the **Expand** button to fully expand the tree to view all levels of the Bill of Material.

Click the **Collapse** button to fully collapse the tree to hide all levels of the Bill of Material.

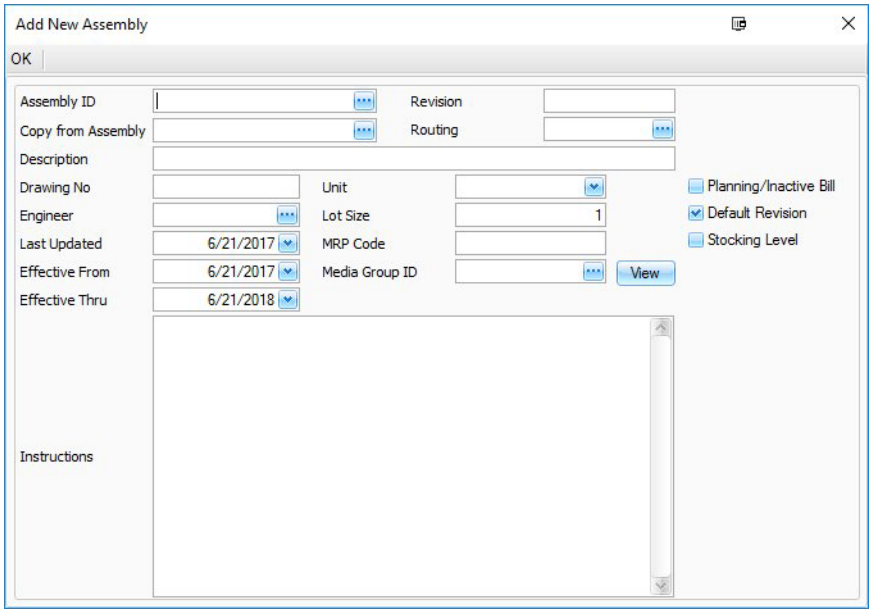
The right side of the screen will display three boxes, the General, Routing and Component boxes.

Click the **Down Arrow** button at the top of the box to expand the selected area. To view more information move your mouse over the blue line at the bottom of the desired box to get a bar with arrows up and down , and drag the line down. This will expand that section of the screen to reveal the details.

Click the **Up Arrow** button at the top of the box to collapse the details of the selected area.

3. Click the **New Record** button on the toolbar. The **Add New Assembly** screen appears.

Bill of Material - Add New Assembly - Blank



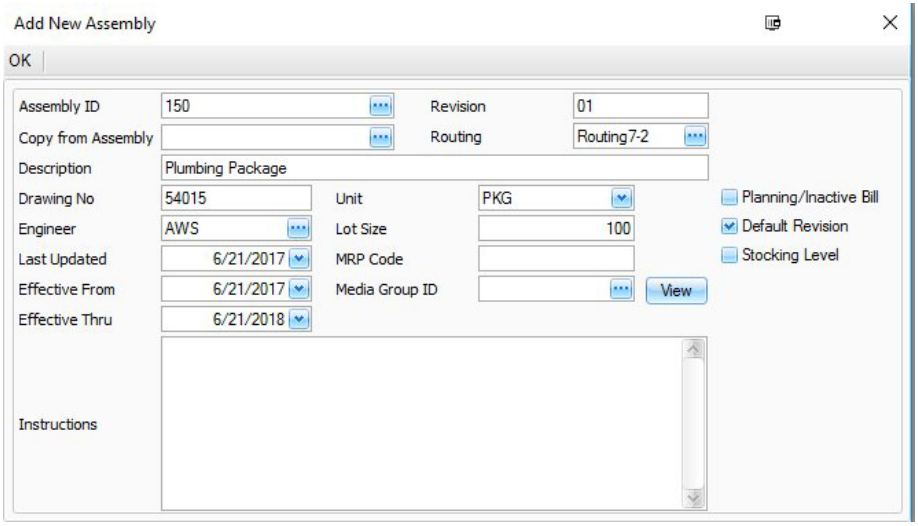
4. Enter a New **Assembly Id.**

   You must create an assembly ID from an existing Inventory ID, thus you must select or key in one of the ID's listed.

5. If your new Assembly ID is very similar to an existing Assembly ID, you may **Copy From** an existing Assembly ID. Select the Assembly ID to copy from the list.

NOTE: The Assembly ID that you are copying from must have the same Unit of Measure for the Copy From to work correctly.

Bill of Material - Add New Assembly - Filled



6. Information from the **Assembly ID** you are Copying From will fill in.
7. Edit any fields that will be different from the Assembly ID copied from.
8. Enter the **Revision** number for the new Assembly ID.
9. Select the **Routing** you want to use as the default Routing. This field may be left blank.
10. If you did not copy from an existing assembly the screen will show the inventory Item's description in the **Description** field as a default.
11. Enter the **Drawing No**. The Drawing Number is a 15 character alphanumeric field which can be changed at any time. This field does not link to any other field or table and can be blank.
12. Enter the **Last Updated** date, or accept today's date as the default. This field does not link to any other field or table and can be blank. It is manually maintained and not related to the audit trail, which automatically captures all changes by date.
13. Enter the **Effective Date From**. The default will be your workstation date.

    The **Effective Date From** field is a date field which can be changed at any time. It initially defaults to today's date. It is used in the releasing of work orders for this Assembly ID to insure you are not releasing an order for a product that is not yet deemed ready. If one enters a production order for the Assembly ID and the production order date is prior to the Effective Date From, the system will give you a warning as to whether or not you wish to proceed. The field can be blank, in which case it is ignored by the production release.

14. Enter the **Effective Date Thru**. The default will be one year from your workstation date.

    The **Effective Date Thru** field is a date field which can be changed at any time. It initially defaults to one year from today's date. It is used in the releasing of work orders for this Assembly ID to insure you are not releasing an order for a product that may have been replaced by a new Version/Revision. If one enters a production order for the Assembly ID and the production order date is after the Effective Date Thru, the system will give you a warning as to whether or not you wish to proceed. The field can be blank, in which case it is ignored by the production release.

15. The **Unit** Of Measure will default from the Inventory Item ID's default. The Unit can also be selected from the available Inventory Units of Measure valid for this Assembly ID.

16. The **Lot Size** defaults to one but could be any number. The Lot Size is used in the cost calculation. The fixed costs such as Setup, Machine, and Labor Costs, as well as Fixed Overhead, are divided by this number to come up with a Unit Cost.

17. Enter or Select the Media Group. The **Media Group** represents a "group" of documents or directories which are "linked" to this Bill of Material.

18. Select the **Planning/Inactive Bill** check box to mark a Bill of Material which is not to be built. This might be the case with new Bills of Material that are still awaiting a final design approval or old Bills of Material that should not be built any more.

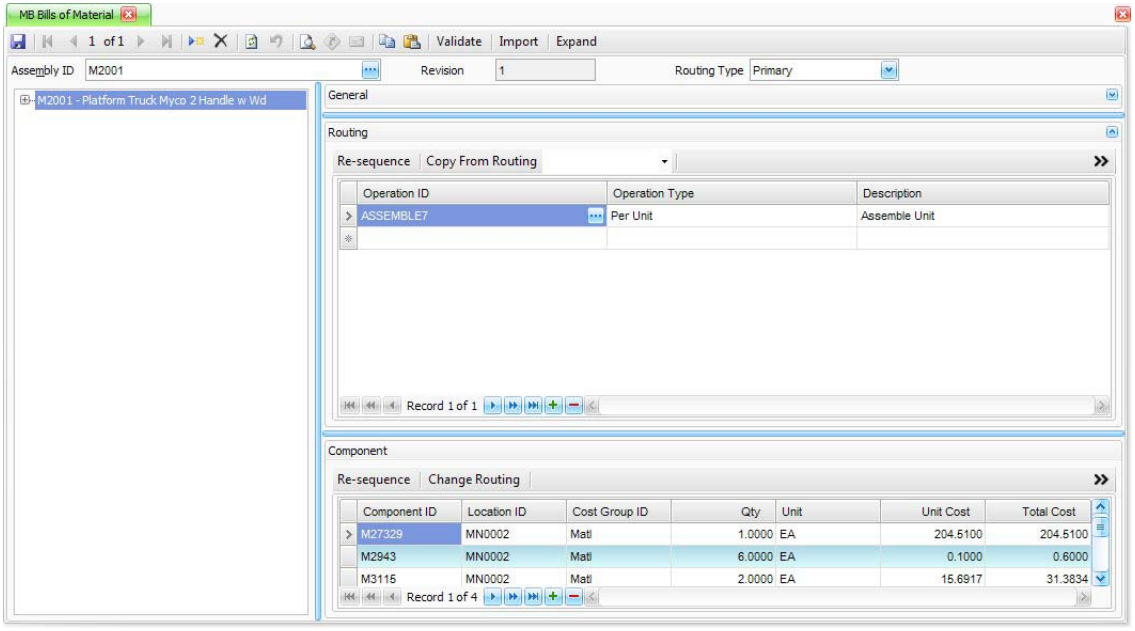
19. Select the **Default Revision** check box to indicate that this revision of the Bill of Material is the default Revision under most conditions. Only one Revision of a given Bill of Material can be marked as current.

20. Select the **Stocking Level** check box for Assembly IDs that are actually subassemblies and for those subassemblies that are generally stocked, which is to say, they are generally made in advance in significant quantities to cover multiple production orders. In reality, this field does not determine how the Assembly ID is used during the explosion process but it does set the default setting for this Inventory Item ID, when created as a component in another Bill of Material.

21. Enter **Instructions** for this assembly into the Instructions field. The Instructions field is an unlimited text field.

22. Click **OK** to save your New Assembly and return to the full Bill of Material screen.

Bill of Material Screen



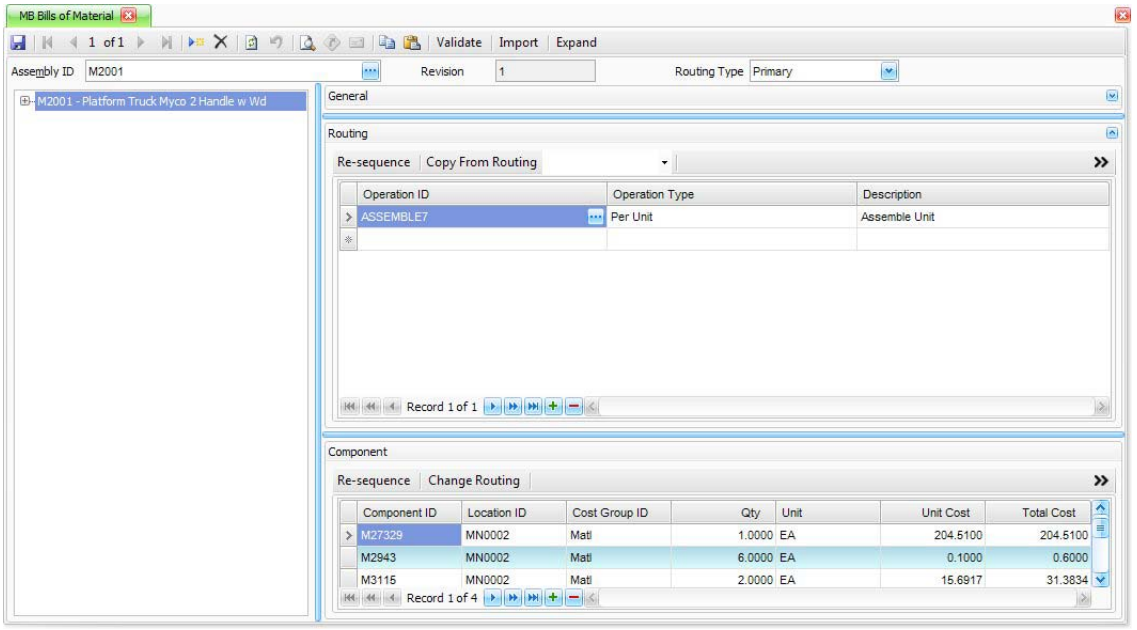
1. The new **Assembly ID** is displayed, or select an existing Assembly ID to edit.
2. The **Revision** is displayed and cannot be edited here.
3. Select the **Routing Type** for this assembly. The available choices are **Primary** and **Secondary**.

   The **Routings Type** field is always initially set to **Primary**. The Routing Type allows you to create more than one routing through the plant. One might think of an alternate routing, called a Secondary Routing, as another Revision, but since it doesn't represent a different product necessarily, it is somewhat different than a Revision. The Routing Types represent different ways of producing the same product using a different Routing.

   To add a new Routing Type, first create the Primary routing and then change the Routing Type to **Secondary**. This indicates to the system that a new routing is going to be created and the screen will clear all of the Routing Steps and allow you to re-state the Routing Steps. The Primary and Secondary Routings are technically two different Bills of Material very similar to two Revisions of a given Bill of Material.

The first step required once the General Bill of Material information has been entered, is to set up the Operations or Routing.

Bills of Material Screen - Routing



Maint

4. Select the first **Operation ID** for this assembly.

   By choosing the Operation ID, you can pull a predefined Operation consisting of a Work Center, Labor Type, and Machine Group, as well as any preset Time defaults. One may want to think of the Operation ID like a template. The Operation ID itself is not as important as the information it pulls in from predefined Operations.

5. Select the **Operation Type**; **Per Unit**, **Subcontracted**, **Batch** or **Run Rate**.

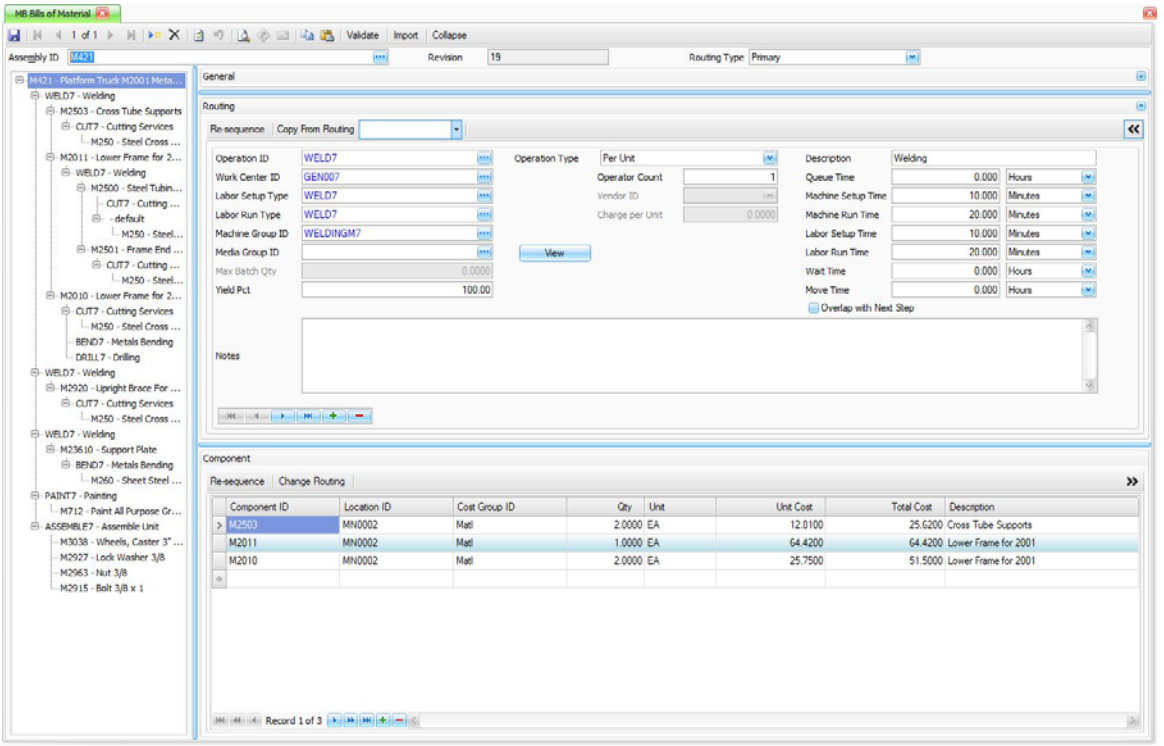
   Each type of operation has a slightly different setup screen using different fields.

   - **Batch** processes are processes that are run in large batches and limited by some constraint as to what the batch size is, such as in an oven, or a vat, or a drying room.
   - **Run Rate** processes and **Per Unit** processes are very similar. Run Rate fields states the Number of Units Per given Time, whereas Per Unit processes state the Time to Process one Unit. It's probably easier to define a process that processes 900 Units a minute as a Run Rate, whereas a process that requires 17 minutes for each Unit would be easier to state as a Per Unit process.
   - **Subcontracted** processes are processes done by another company, such that any time information normally maintained for an internal process, is irrelevant to a Subcontracted process.

6. The **Description** field will appear automatically based on the Operation ID selected. The Description field can be edited at this point.

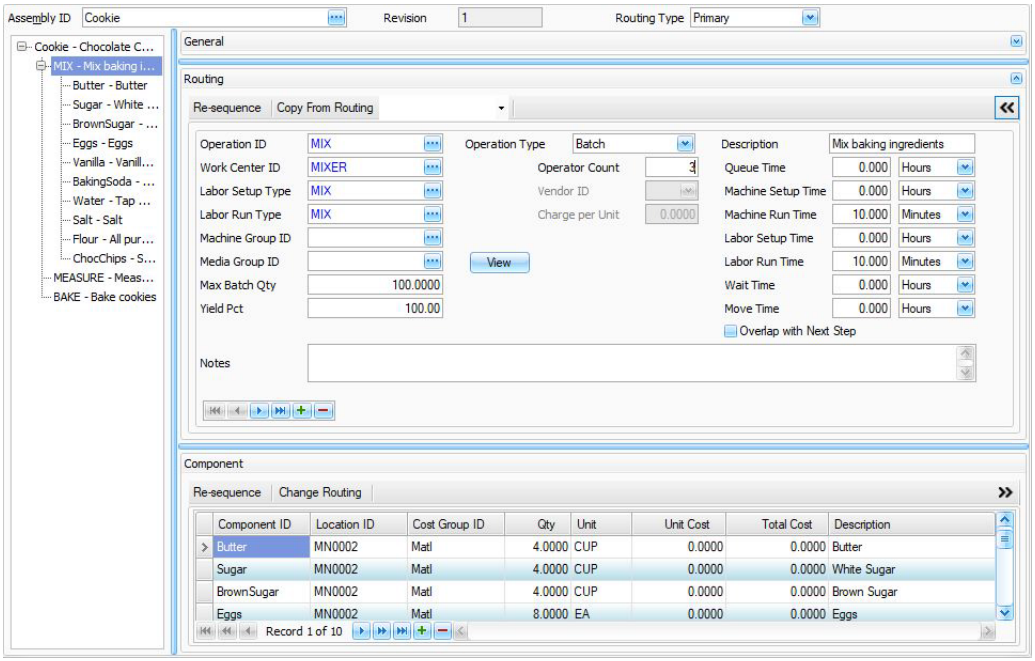
At this point you will want to switch views by clicking on the bold double arrows to the right of the screen. This will show you a detailed view of the Routing fields available.

Bills of Material Screen - Routing (Detail)



Since each type of Operation is handled somewhat differently, we will look at each Operation Type separately.

Bills of Material Screen - Routing - Batch



Maint

1. Select the **Operation ID**.

   By choosing the Operation ID, you can pull a predefined Operation consisting of a Work Center, Labor Type, and Machine Group, as well as any preset Time defaults. The Operation ID itself is not as important as the information it pulls in from predefined Operations.

2. The **Operation Type** from the operation setup is displayed. Accept this operation type or edit it.

   Select **Batch** from the **Operation Type** drop down list.

3. The **Description** from the operation setup is displayed. Accept this description or edit it.

Maint

4. The **Work Center ID** from the operation setup is displayed. Accept this work center or edit it.

   The Work Center ID defines the Work Center where the work is to take place and the Overhead Rate for that given Work Center via the Work Center master.

Maint

5. The **Labor Setup Type** from the Operation setup is displayed. Accept this Labor Setup Type or edit it.

   The Labor Setup Type defines the labor skill required for the setup of this operation.

Maint

6. The **Labor Run Type** from the Operation setup is displayed. Accept this Labor Run Type or edit it.

   The Labor Run Type defines the labor skill required to run this operation.

Maint

7. The **Machine Group** from the Operation setup is displayed. Accept this Machine Group or edit it.

   The Machine Group identifies the machine(s) required for this process. It is an optional field.

Maint

8. The **Media Group** from the Operation setup is displayed. Accept this Media Group or edit it.

   The Media Group identifies the group of documents to be associated with this process. This is an optional field.

9. Enter the **Max Batch Qty** to build for this operation.

   The Max Batch Qty is the maximum size of the batch. Knowing this and using the shown example of 5000, we know that an order for 13000 units would require 3 batches, as would an order for 15000 or 10001. The system will calculate time, not based on the quantity to be produced, but on the number of Batches that quantity requires. The Time Required relates to the time to process a Batch, not necessarily a given quantity. The issue of Unit of Measure may come up as a significant issue but we should be able to assume the quantity generated by the product or "subassembly" this Operation is used to produce, can drive this calculation.

   Example: We make chocolate candy bars; telling the system we need 10,000 bars doesn't translate into a batch size of 10,000, but if the chocolate is set up as a "subassembly" called "chocolate batch mix", the system will calculate how much "chocolate batch mix" is required to make 10,000 bars and that's the number we will need to use. This number is probably in pounds, ounces, kilograms, etc. but it doesn't matter, as long as the batch size is matched to the specific production process. It would be highly unlikely that one product is produced in the same process in ounces and another is produced in pounds, but the system could handle that because each routing step in each BOM could be unique.

10. The **Yield Pct** from the Operation setup is displayed. Accept this Yield Percent or edit it.

    The Yield Percentage indicates the efficiency of this process. If the process is 95% efficient, all of the components that feed this process should be increased to cover this loss by dividing their normal required quantities by .95.

    Yield Percentages entered are not used in any current calculation, this number is for informational purposes only.

11. The **Operator Count** defaults to the value of the **Operators Required** field on the **Operations** maintenance screen on the Routings and Resources menu. Edit if necessary. See the **Multiple Operator Overview** section for more information on how this value is used.

12. The **Queue Time** from the Operation setup is displayed. Accept this Queue Time or edit it.

    Queue Time is the time we generally wait for the process to become available. It is not part of the BOM cost algorithm, and is more or less an extra buffer time.

13. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

14. The **Batch Setup Time** from the Operation setup is displayed. Accept this Batch Setup Time or edit it.

    Batch Setup Time is the time required to setup the batch to run.

15. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

16. The **Batch Run Time** from the Operation setup is displayed. Accept this Batch Run Time or edit it.

    Batch Run Time is the time to process one batch, generally not including setup time. The Batch Run Time is not dependent on the batch size. For a Batch Type Operation, the time is the same no matter how big the batch will be.

17. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

18. The **Labor Setup Time** from the Operation setup is displayed. Accept this Labor Setup Time or edit it.

    Labor Setup Time is the labor required during the Batch Setup process.

19. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

20. The **Labor Run Time** from the Operation setup is displayed. Accept this Labor Run Time or edit it.

    Labor Run Time is the labor required in running the batch. This may be a fraction of the Batch Run Time, because one laborer may maintain multiple batches or a minimal amount of labor is required during the batch process time.

21. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

22. The **Wait Time** from the Operation setup is displayed. Accept this wait time or edit it.

    Wait Time is the time required for the batch to be ready to be used. It may be cooling, drying, solidifying, curing, etc. It is not part of the BOM cost algorithm.

23. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

24. The **Move Time** from the Operation setup is displayed. Accept this move time or edit it.

Move Time is the time required for the batch to be moved to the next step. It is not part of the BOM cost algorithm.

25. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

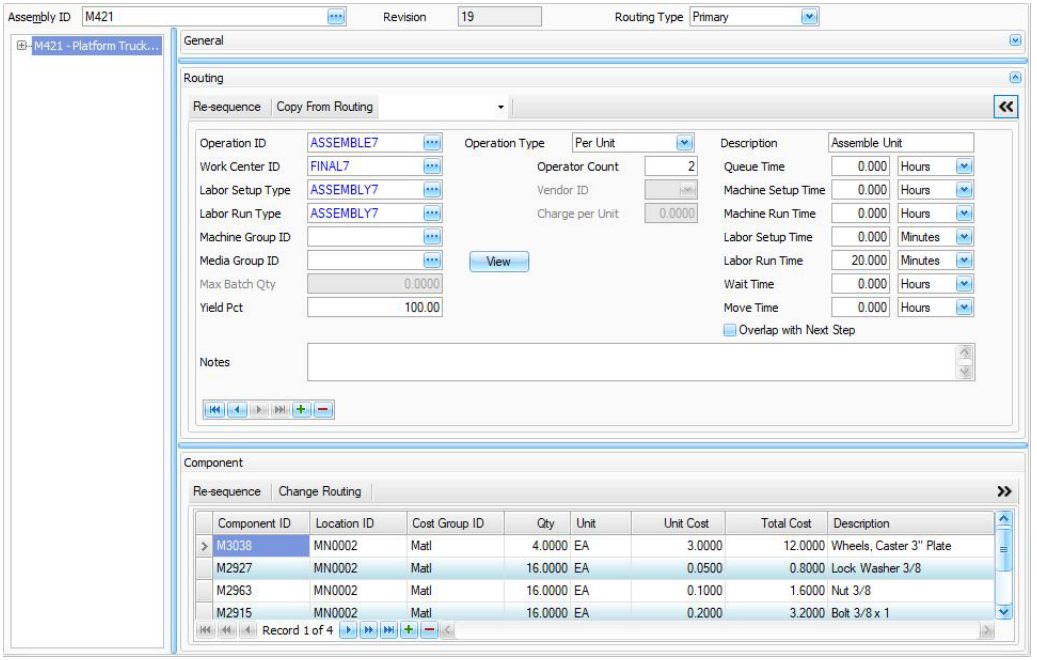
26. Select the **Overlap with Next Step** check box to indicate that this step overlaps with the next step. See Using Overlap with Next Step (page 3-55) for details on how Overlap will affect the times when scheduling a production order for this BOM.

NOTE: Overlap isn't normally used when using a Batch Type Operation. With a Batch the current process needs to finish before the next process can start.

27. The **Notes** from the Operation setup are displayed. Accept these Notes or edit them.

    The Notes field is an unlimited length field in which Notes specific to this process can be entered. These Notes pass through to the Bills of Material, and later appear on the Production Order Worksheets.

Bills of Material Screen - Routing - Per Unit



Maint

1. Select the **Operation ID**.

By choosing the Operation ID, you can pull a predefined Operation consisting of a Work Center, Labor Type, and Machine Group, as well as any preset Time defaults. The Operation ID itself is not as important as the information it pulls in from predefined Operations.

2. The **Operation Type** from the Operation setup is displayed. Accept this Operation Type or edit it.

   Select **Per Unit** from the drop down list.

3. The **Description** from the Operation setup is displayed. Accept this Description or edit it.

Maint

4. The **Work Center ID** from the Operation setup is displayed. Accept this Work Center or edit it.

   The Work Center ID defines the Work Center where the work is to take place and the Overhead Rate for that given Work Center via the Work Center master.

Maint

5. The **Labor Setup Type** from the Operation setup is displayed. Accept this Labor Setup Type or edit it.

   The Labor Setup Type defines the labor skill required for the setup of this Operation.

Maint

6. The **Labor Run Type** from the Operation setup is displayed. Accept this Labor Run Type or edit it.

   The Labor Run Type defines the labor skill required to run this Operation.

Maint

7. The **Machine Group** from the Operation setup is displayed. Accept this Machine Group or edit it.

   The Machine Group identifies the machine(s) required for this process. It is an optional field.

Maint

8. The **Media Group** from the Operation setup is displayed. Accept this Media Group or edit it.

   The Media Group identifies the group of documents to be associated with this process. This is an optional field.

9. The **Max Batch Qty** field is not available for this type of Operation.

10. The **Yield Pct** from the Operation setup is displayed. Accept this Yield Percent or edit it.

    The Yield Percentage indicates the efficiency of this process. If the process is 95% efficient, all of the components that feed this process should be increased to cover this loss by dividing their normal required quantities by .95.

    Yield Percentages entered are not used in any current calculation, this number is for informational purposes only.

11. The **Operator Count** defaults to the value of the **Operators Required** field on the **Operations** maintenance screen on the Routings and Resources menu. Edit if necessary. See the **Multiple Operator Overview** section for more information on how this value is used.
12. The **Queue Time** from the Operation setup is displayed. Accept this Queue Time or edit it.

    Queue Time is the time we generally wait for the process to become available. It is not part of the BOM cost algorithm and is more or less an extra buffer time.
13. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.
14. The **Machine Setup Time** from the Operation setup is displayed. Accept this Machine Setup Time or edit it.

    Machine Setup Time is the time required to setup the machine for this process.
15. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.
16. The **Machine Run Time** from the Operation setup is displayed. Accept this Machine Run Time or edit it.

    Machine Run Time is the time to process one piece.
17. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.
18. The **Labor Setup Time** from the Operation setup is displayed. Accept this Labor Setup Time or edit it.

    Labor Setup Time reflects the labor time required to set the process up.
19. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.
20. The **Labor Run Time** from the Operation setup is displayed. Accept this Labor Run Time or edit it.

    Labor Run Time is the time required in running one unit.
21. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.
22. The **Wait Time** from the Operation setup is displayed. Accept this Wait Time or edit it.

    Wait Time is the time required for the output of the process to be ready to be used. It may be cooling, drying, solidifying, curing, etc. It is not part of the BOM cost algorithm.
23. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.
24. The **Move Time** from the Operation setup is displayed. Accept this Move Time or edit it.

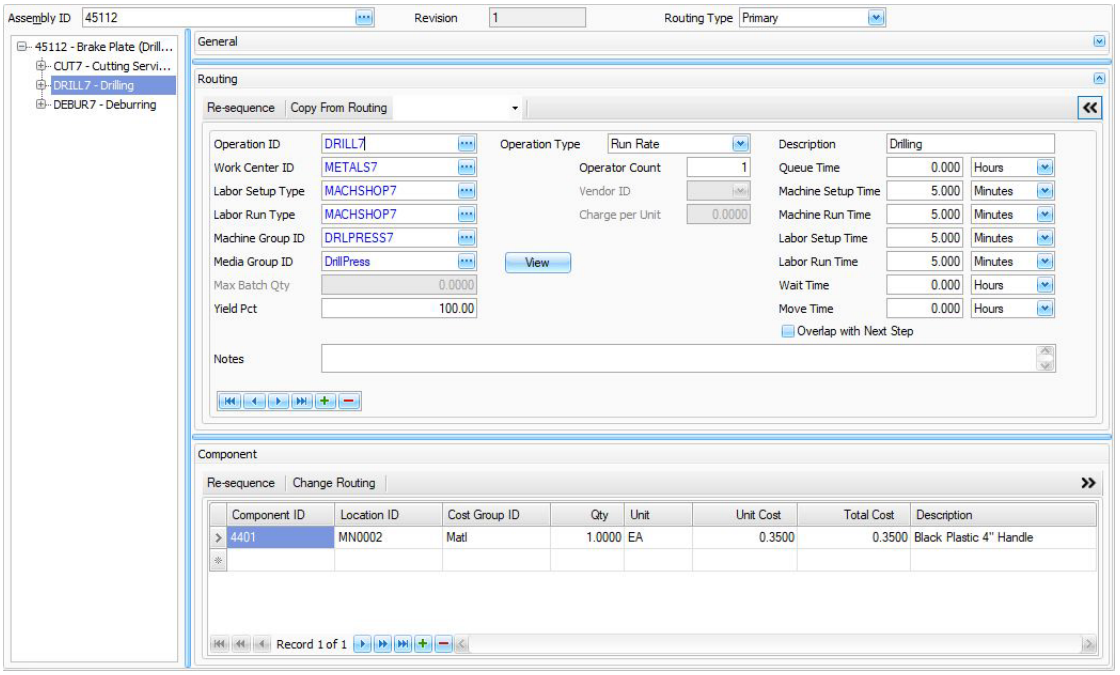
    Move Time is the time required for the output to be moved to the next step. It is not part of the BOM cost algorithm.
25. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

26. Select the **Overlap with Next Step** check box to indicate that this step overlaps with the next step. See Using Overlap with Next Step (page 3-55) for details on how Overlap will affect the times when scheduling a production order for this BOM.

27. The **Notes** from the Operation setup are displayed. Accept these Notes or edit them.

    The Notes field is an unlimited length field in which Notes specific to this process can be entered. These Notes pass through to the Bills of Material, and later appear on the Production Order Worksheets.

Bills of Material Screen - Routing - Run Rate



Maint

1. Select the **Operation ID**.

   By choosing the Operation ID, you can pull a predefined Operation consisting of a Work Center, Labor Type, and Machine Group, as well as any preset Time defaults. The Operation ID itself is not as important as the information it pulls in from predefined operations.

2. The **Operation Type** from the Operation setup is displayed. Accept this Operation Type or edit it.

   Select **Run Rate** from the drop down list.

3. The **Description** from the Operation setup is displayed. Accept this Description or edit it.

Maint

4. The **Work Center ID** from the Operation setup is displayed. Accept this Work Center or edit it.

   The Work Center ID defines the Work Center where the work is to take place and the Overhead Rate for that given Work Center via the Work Center master.

Maint

5. The **Labor Setup Type** from the Operation setup is displayed. Accept this Labor Setup Type or edit it.

   The Labor Setup Type defines the labor skill required for the setup of this operation.

Maint

6. The **Labor Run Type** from the Operation setup is displayed. Accept this Labor Run Type or edit it.

   The Labor Run Type defines the labor skill required to run this Operation.

Maint

7. The **Machine Group** from the Operation setup is displayed. Accept this Machine Group or edit it.

   The Machine Group identifies the machine(s) required for this process. It is an optional field.

Maint

8. The **Media Group** from the Operation setup is displayed. Accept this Media Group or edit it.

   The Media Group identifies the group of documents to be associated with this process. This is an optional field.

9. The **Max Batch Qty** field is not available for this type of operation.

10. The **Yield Pct** from the Operation setup is displayed. Accept this Yield Percent or edit it.

    The Yield Percentage indicates the efficiency of this process. If the process is 95% efficient, all of the components that feed this process should be increased to cover this loss by dividing their normal required quantities by .95.

    Yield Percentages entered are not used in any current calculation, this number is for informational purposes only.

11. The **Operator Count** defaults to the value of the **Operators Required** field on the **Operations** maintenance screen on the Routings and Resources menu. Edit if necessary. See the **Multiple Operator Overview** section for more information on how this value is used.

12. The **Queue Time** from the Operation setup is displayed. Accept this Queue Time or edit it.

    Queue Time is the time we generally wait for the process to become available. It is not part of the BOM cost algorithm and is more or less an extra buffer time.

13. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

14. The **Machine Setup Time** from the Operation setup is displayed. Accept this Machine Setup Time or edit it.

Machine Setup Time is the time required to setup the machine for this process. This process can be costed.

15. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

16. The **Machine Run Time** from the Operation setup is displayed. Accept this Machine Run Time or edit it.

    Machine Run Time is the number of pieces or units that can be run in a given time frame.

17. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

18. The **Labor Setup Time** from the Operation setup is displayed. Accept this Labor Setup Time or edit it.

    Labor Setup Time reflects the labor time required to set the process up.

19. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

20. The **Labor Run Time** from the Operation setup is displayed. Accept this Labor Run Time or edit it.

    Labor Run Time is the number of pieces or units that can be run for a given time frame. For example; Bob can paint 120 pieces per hour.

21. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

22. The **Wait Time** from the Operation setup is displayed. Accept this Wait Time or edit it.

    Wait Time is the time required for the output of the process to be ready to be used. It may be cooling, drying, solidifying, curing, etc. It is not part of the BOM cost algorithm.

23. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

24. The **Move Time** from the Operation setup is displayed. Accept this Move Time or edit it.

    Move Time is the time required for the output to be moved to the next step. It is not part of the BOM cost algorithm.

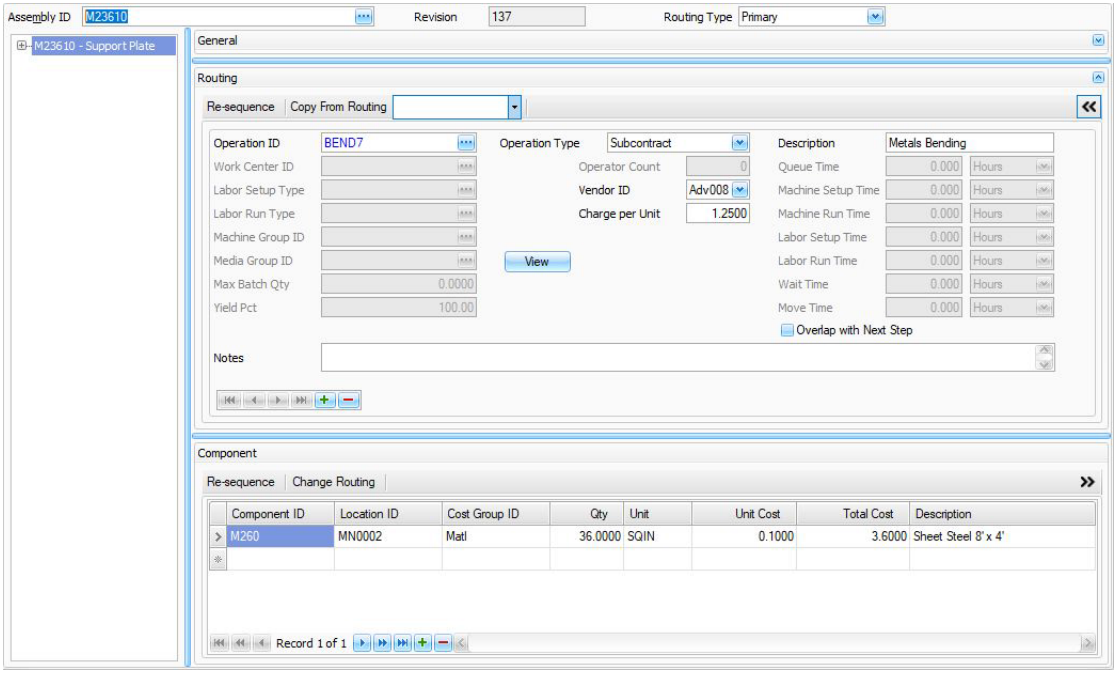
25. Select the Unit of Time to use; **Hours**, **Minutes**, or **Seconds**.

26. Select the **Overlap with Next Step** check box to indicate that this step overlaps with the next step. See Using Overlap with Next Step (page 3-55) for details on how Overlap will affect the times when scheduling a production order for this BOM.

27. The **Notes** from the operation setup are displayed. Accept these Notes or edit them.

    The Notes field is an unlimited length field in which Notes specific to this process can be entered. These Notes pass through to the Bills of Material, and later appear on the Production Order Worksheets.

Bills of Material Screen - Routing - Sub Contract



Maint

1. Select the **Operation ID**.

   The Operation ID is created and set up in the Routing and Resources module. Essentially the Operation ID IS the Subcontracted ID.

2. The **Operation Type** from the Operation setup is displayed. Accept this Operation Type or edit it.

   Select **Sub Contract** from the drop down list.

3. The **Description** from the Operation setup is displayed. Accept this Description or edit it.

4. The **Vendor ID** from the Operation setup is displayed. Accept this Vendor ID or edit it.

   The Vendor ID is maintained as one of the fields in the Subcontracted Operations. A given Subcontracted Operation could have one or more Vendor IDs associated with it. Each Vendor ID could dictate different Notes, Costs, G/L Account IDs, etc. Generally a Subcontracted Operation will only have one Vendor ID so once you select a Subcontracted Operation, the system will default to the first Vendor ID record for this Subcontracted Operation.

5. The **Charge Per Unit** from the Operation setup is displayed. Accept this Charge Per Unit or edit it.

   This is the estimated cost to process one unit (the Unit is the Unit defined in the Bill of Material header) using the Subcontracted Operation. The cost will default based on the cost which was set up in the Subcontracted Operation in the Routing and Resources module. Note that many times this default cost is meaningless given the wide variety of services a subcontractor could perform.

6. Select the **Overlap with Next Step** check box to indicate that this step overlaps with the next step. See Using Overlap with Next Step (page 3-55) for details on how Overlap will affect the times when scheduling a production order for this BOM.

NOTE: Overlap normally isn't used for Subcontract Operations. The Operation is done by an outside Vendor ID, so the process must be completed before the next Operation can start.

7. Enter **Notes** that apply to this Operation.

   Additional Notes which will appear on the subcontractor worksheets. These may also appear on worksheets sent to the subcontractor in request of work.

Multiple Operators Overview

The Multiple Manufacturing Operator functionality provides the ability to assign multiple Employees to an Operation on a Bill of Material (BOM). This will allow users to see correct cost estimates and accurate scheduling.

A Bill of Material (BOM) can contain any number of Routing Operations. Each Routing identifies the details associated with a specific process or Operation, including a set of time requirements necessary for completing the process. Each of the time values are considered a cumulative value necessary for completing the given process. The cumulative time values are also used to evaluate the costs associated with the relative portions of the Routing (Machine, Labor, etc).

The setup and processing of Manufacturing BOMs support the distribution of Labor Time (labor time = labor setup time + labor run time) across multiple operators. This helps improve the accuracy of Production Order scheduling without compromising the accuracy of the BOM costing.

Before the multiple operators feature was added

When setting up an Operation or BOM Route, a user can enter the actual time it will take X number of employees to complete a task. However, it is more common to enter the total labor for all employees working on the task, which yields more accurate costing but could cause the schedule to be inaccurate.

The ASSEMBLY7 Operation has an Operators Required value of 4.

We set up the BOM with the ASSEMBLY7 Operation, which shows us 1 hour of machine time, 1 hour of labor setup time, and 4 hours of labor run time to account for the 4 operators on the Operations screen.

We place an order to produce two widgets. We know that we will have 2 hours of machine time and 9 hours of labor time (labor setup time + labor run time). When we look at the schedule, we see that our production order is going to take 9 hours to complete. As shown using our example, our production order will run from 3 PM to Midnight. Note that the 4 operators defined for the ASSEMBLY7 operation are not being considered during scheduling.

Since the total labor time is 9 hrs, and we have 4 operators working on the Order, in reality it will only take 2.25 hrs (9 hrs of labor/4 operators = 2.25 hrs) to complete the Order.

To address this, we added a feature to utilize the Operator Count value to calculate the scheduling time. If we had the option to add multiple operators, we would have better visibility into the timing of orders. The Operators Required field that already exists in MR - Setup and Maintenance - Operations will be used in the scheduling.

Utilizing the multiple operators feature

When creating a new BOM, the value from the Operators Required field on the Operations screen will default into the Operator Count field in the Routing section of the BOM. The multiple operators feature presumes that the amount of time each operator uses to perform the labor setup and the labor run is the same.

NOTE: In the Operations setup/maintenance screen, the BOM Item setup/maintenance screen, and the Edit Released Order function, if the total labor time (labor setup time + labor run time) > 0, the operator count must be greater than 0.

With regards to scheduling, the system will use the larger of machine time or labor time. In our example, we ordered 2 widgets, with 2 hours of machine time, 1 hour of labor setup time, and 8 hours of labor run time. If we only use 1 operator (Operator Count = 1), the system will schedule 9 hours for the operation (1 hr setup + (4 hrs / 1 operator * 2 widgets) = 9 hrs; 9 hrs of labor time is greater than 2 hrs of machine time). Remember: Machine Setup and Labor Setup are performed once no matter the quantity of the Item on the Production Order.

If we instead use 4 operators (Operator Count = 4), the system will schedule 2.25 hours for the Operation (note the system always calculates using minutes):

Labor setup time: 60 min setup / 4 operators = 15 minutes (.25 hrs)

Labor run time: 240 minutes / 4 operators * 2 widgets = 120 minutes (2 hrs)

Total labor time = 135 minutes (2.25 hrs); 2.25 hrs of labor time is greater than 2 hrs of machine time.

Using Overlap with Next Step

Overlap is simply a matter of trying to attain a more realistic and accurate lead time by reducing the calculated lead time (for a definition of lead time, see “lead time” below) based on the assumption that, in a series of sequential processes, the next process can begin before the last process is finished.

NOTE: Each step is compared to the next step in the BOMs. The time to complete one step doesn’t change, but the determination of when to begin a step in relation to the previous step has a significant effect on the total time required to manufacture the BOMs.

The use of overlapping is optional. You can flag any or all processes within a BOM as overlapped, but, you can use overlapping only within a given BOM level. Each individual assembly or subassembly lead time can be calculated using overlap, but it is not extended to the entire BOM.

For example, the last process of a subassembly can’t be overlapped with the first step of the next assembly or subassembly in the process.

Example: 60 pieces of wood need painting and each one requires 10 minutes to sand and an additional 10 minutes to paint. You need 20 hours to complete the process if you sand each one and then once you complete the 60th piece, you begin painting each one. If you sand one piece and pass it on to be painted, the entire process can be reduced to 10 hours and 10 minutes.

Lead Time

Lead Time is the amount of time required from the point of ordering or the point of entering the production line to the completion of the order. Each requirement of an order, be it a given raw material, subcontracted process, or labor or machine process has a point in time where it should be introduced into the flow of the order to ensure an on-time delivery of the product. If materials are made available too early, there may not be room for them and they may simply add congestion to the process. If brought in too late, delays may result. The problems are the same for labor, machine use, and subcontracting.

Lead time is in terms of hours. It assumes a perfect world in which all materials, machines, and personnel are available when needed. It indicates the number of hours after the materials are brought to the floor or the number of hours after a process begins, that the order will be finished.

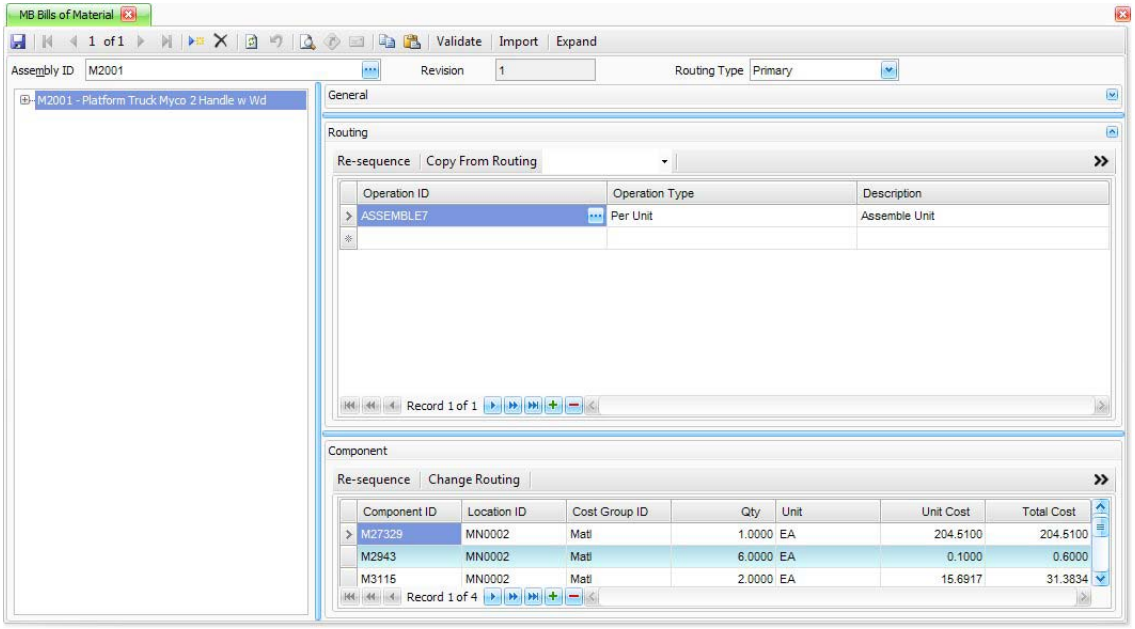
Lead time is calculated by first establishing the process time of each individual process requirement, adding the queue time, setup time (uses labor setup time or machine setup time, whichever is longer), wait time, and move time.

To calculate the lead time, the system then starts at the top of the bill and works its way down calculating the hours of lead time required at each step by accruing the process time for each step. Lead time is actually only calculated for processes. It is then assigned to materials, based on which routing step the material is assigned to. If the Bill of Material is more than one level deep, the lead times of the first level become the starting point of lead times for the second level, and so on. Overlap factors come into play here, which can complicate things considerably if being used.

The next step to set up is the Components for the Bill of Material.

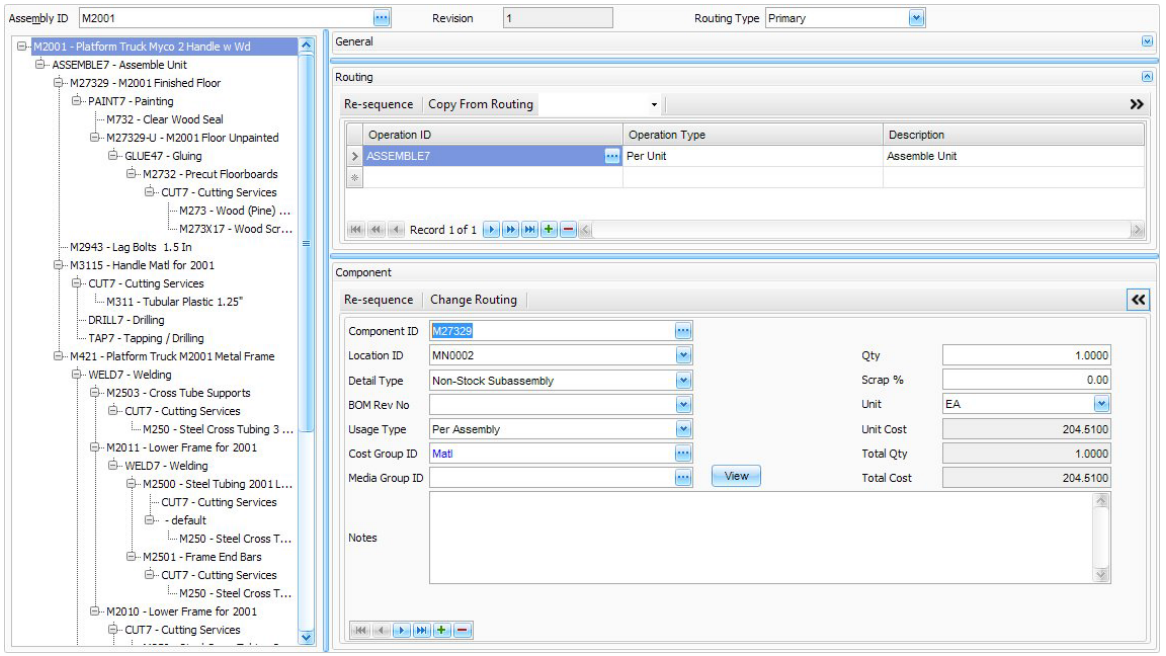
The Components Screen initially appears in Summary view. From this view you can set up the Component ID, Location, Cost Group, Quantity, and Unit of Measure.

Bill of Material Screen - Components Summary



In most cases, you will want to enter more information than that provided on this screen and will therefore want to switch to the Detailed view of this function. To do this, simply click on the bold double arrow to the right. This will redisplay the screen as shown below in a detailed format.

Bill of Material Screen - Components Detail



Maint

1. Select the **Component ID** from the list of Inventory Item IDs.

   The Component ID represents the Inventory Item ID of the Item ID being added. You may select any Inventory Item ID. You may also enter a Non-Inventory ID. At this point a warning message will display indicating that the item is not currently in the Inventory system, however these Components will be accepted as an actual part of the Bill of Material. You will need to provide a Quantity and Cost to see impact on the Bill of Material costing. The only required field is the Cost Group ID for Non-Inventory Components.

2. The default **Location ID** from the Inventory Item ID setup will be displayed. Accept this default or edit it.

   The Location ID holds the Location associated with the Inventory Item ID entered above.

3. Select the **Detail Type** of Component this will be in the assembly.

   The Detail Type tells the system whether this component is a **Non-Stocked Subassembly**, **Stocked Subassembly**, **Material**, or **By-Product**.

- A **Subassembly** would be an Inventory Item ID which also exists as a Bill of Material. In other words it's also an Assembly, although it is used as a Subassembly in the building of our current Bill of Material.

  If the Subassembly is built as part of each production order, it is simply called a Subassembly or **Non-Stocked Subassembly**.

  If the Subassembly is stocked such that it is built ahead of time in most cases, it could be considered a **Stocked Subassembly**. When production orders are created for Stocked Subassemblies, they don't calculate costs or quantities below this Subassembly. They treat the Subassembly almost as if it were a raw material because the assumption is that this item is “in stock”. If one sets the component up as a Non-Stocked Subassembly, the system more or less ignores the cost and need for this Item, and instead, looks at the components that make it up in calculating costs or building a list of required Item IDs.

- Components with a Detail Type of **Material** are simply Inventory Item IDs with no Bill of Material. They are considered raw materials or parts. Material Item IDs must be purchased; they are not built.

- Components with a Detail Type of **By-Product** are Inventory Item IDs that are created by the manufacturing process, but are not the intended finished product. An example might be the production of sawdust or wood shavings in a furniture manufacturing operation.

  By-Products must be defined in Inventory and they should be assigned a Standard Cost. By-Products are distinguished from Scrap in that By-Products have tangible value, whereas Scrap is simply lost.

4. Select the **BOM Rev No** to indicate which Revision Number of a Subassembly to use.

   This field indicates the Revision Number of the Subassembly. It is of course, only applicable for components which are Non-Stocked Subassemblies. This is a required field for those Subassemblies.

5. Select the **Usage Type** to indicate how to calculate the usage of this component.

   The Usage Type is used to indicate how the quantity will be calculated;

   - **Per Assembly** would require the calculation to multiply the quantity required in the Bill of Material to be multiplied by the number of finished assemblies to be made, thus “Per Assembly”.

   - **Fixed Qty** is simply a fixed quantity of that Component, regardless of how many finished assemblies we make, the quantity is fixed. This is somewhat rare but there are special situations where this can be handy. Fixed Quantities should not be affected by scrap loss or process yield factors. They are, as the name implies, fixed.

- **As Needed** says that the Component is probably relatively low cost and not relevant to the estimated cost of the BOM. As Needed Components can be stated as quantity zero. As Needed Item IDs should not be a part of the estimated cost of the Bill of Material.

Maint

6. Select the **Cost Group ID** from the list of Cost Groups setup.

   The Cost Group can be selected from the list of available Cost Groups. It determines where the cost associated with this component, appears on the cost summary on the General tab.

Maint

7. Select the **Media Group ID** from the list of Media Groups setup.

   This field represents the Media Group that is assigned to this component. It is an optional field. The drop down list comes from the Media Group Master.

8. Enter the **Qty Required** for usage in this Bill of Material.

   This field represents the Quantity needed to make one unit of the finished product, given the Unit of Measure shown. Keep in mind the finished assembly might be one liter, one drum or one ounce so one would need to know the Unit of Measure for the finished product to enter the correct number here. Non-Inventoried Items don't have Units of Measure so you should assume this is simply a multiplier.

9. Enter the **Scrap %** to indicate what percentage of this component will end up as scrap.

   The Scrap Percentage indicates the quantity of shrinkage or loss incurred for this Component. If the quantity is 70 and the scrap percentage is 2%, the calculated quantity required will be 71.43. If there is a 2% scrap as a percentage of 71.43, approximately 1.43, one would have 70.00 units remaining. The Scrap Percentage can work in conjunction with the Operation Yield Percentage, but they are actually two different factors.

10. Select the appropriate **Unit** of Measure for the Component, from the available Units set up for the Inventory Item ID.

    The system will default to the Inventory Default Unit of Measure. Non-Inventoried Items do not have a Unit of Measure.

11. The **Unit Cost** is displayed from the selected Inventory Item ID and cannot be edited. If the Component is a Non-Inventory Item, enter the Unit Cost for the Component.

12. The **Total Qty** (including scrap) is displayed and cannot be edited: This is a calculated field, which shows the Total Quantity required.

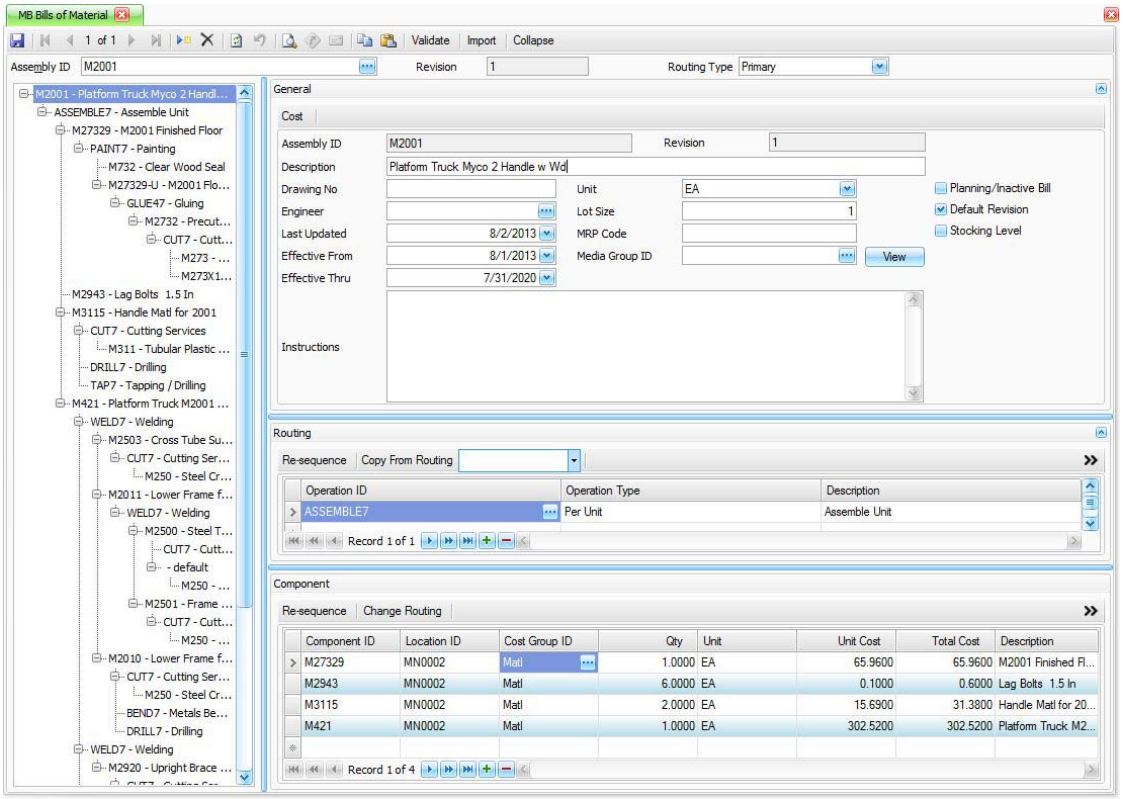
13. The **Total Cost** (including scrap) is displayed and cannot be edited: This is a calculated field, which shows the Total Cost of the Component.

14. Enter **Notes** for additional information about this Component.

The Notes field is an unlimited length field in which Notes specific to this Component can be entered. These Notes pass through to the Bills of Material, and later appear on the Production Order Worksheets.

To view the **General** area, click on the Arrow in the top right corner of the screen. This will expand the General area. You may have to drag the bottom line of the General area down to be able to view the information.

Bill of Material Screen - General



The information displayed in this General area will depend on which part of the Bill of Material is selected in the viewing tree area on the left side of the screen.

The tree area can be fully expanded by clicking the **Expand** button in the toolbar.

The tree can also be expanded at each level by clicking on the **Plus** (+) next to each level.

1. The **Assembly Id** is displayed and cannot be edited.
2. If your new Assembly is very similar to an existing Assembly, you may **Copy From** an existing Assembly ID. Select the Assembly ID to Copy From the list.

3. The **Revision** number for the Assembly ID is displayed and cannot be edited.
4. The **Description** for the selected part of the Bill of Material is displayed.
5. The **Drawing No** for the selected part of the Bill of Material is displayed. The Drawing Number is a 15 character alphanumeric field which can be changed at any time. This field does not link to any other field or table and can be blank.

Maint

6. Select the **Engineer** in charge of this Bill of Material. The Engineer IDs available will be from System Manager or Payroll Employee setup, depending on whether Payroll is installed and interfaced or not.
7. The **Last Updated** date for the selected part of the Bill of Material is displayed. This field does not link to any other field or table and can be blank. It is manually maintained and not related to the audit trail, which automatically captures all changes by date.
8. The **Effective Date From** for the selected part of the Bill of Material is displayed. The default will be your workstation date.

   The **Effective Date From** field is a date field which can be changed at any time. It initially defaults to today's date. It is used in the releasing of production orders for this Assembly ID to insure you are not releasing an order for a product that is not yet deemed ready. If one enters a production order for the Assembly ID and the production order date is prior to the Effective Date From, the system will give you a warning as to whether or not you wish to proceed. The field can be blank, in which case it is ignored by the production release.

9. The **Effective Date Thru** for the selected part of the Bill of Material is displayed. The default will be one year from your workstation date.

   The **Effective Date Thru** field is a date field which can be changed at any time. It initially defaults to one year from today's date. It is used in the releasing of production orders for this Assembly ID to insure you are not releasing an order for a product that may have been replaced by a new version/revision. If one enters a production order for the Assembly ID and the production order date is after the Effective Date Thru, the system will give you a warning as to whether or not you wish to proceed. The field can be blank, in which case it is ignored by the production release.

10. The **Unit** Of Measure for the selected part of the Bill of Material is displayed. The Unit can also be selected from the available Inventory Item ID Units of Measure valid for this Assembly ID.
11. The **Lot Size** for the selected part of the Bill of Material is displayed. The Lot Size is used in the cost calculation. The fixed costs such as Setup, Machine, and Labor Costs, as well as Fixed Overhead, are divided by this number to come up with a Unit Cost.

Maint

12. The **Media Group** for the selected part of the Bill of Material is displayed. The Media Group represents a "group" of documents or directories which are "linked" to this Bill of Material. Click the **View** button to view the files within this Media Group.

13. Select the **Planning/Inactive Bill** check box to mark a Bill of Material which is not to be built. This might be the case with new Bills of Material that are still awaiting a final design approval or old Bills of Material that should not be built any more.

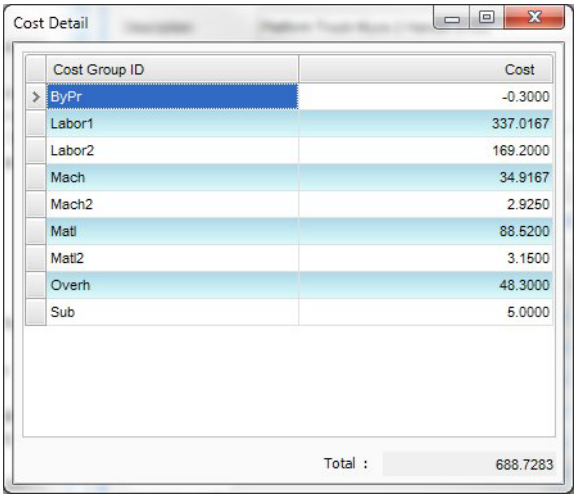
14. Select the **Default Revision** check box to indicate that this Revision of the Bill of Material is the Default Revision under most conditions. Only one Revision of a given Bill of Material can be marked as current.

15. Select the **Stocking Level** check box for Assemblies that are actually Subassemblies and for those Subassemblies that are generally stocked, which is to say, they are generally made in advance in significant quantities to cover multiple production orders. In reality, this field does not determine how the Assembly ID is used during the explosion process but it does set the default setting for this Inventory Item ID, when created as a Component in another Bill of Material.

16. Enter **Instructions** for this Assembly ID. The Instructions field is an unlimited text field.

Select the **Cost** button to view the calculated costs for each Cost Group used in this Bill of Material.

Bill of Material Cost Screen



The **Cost Group ID** and calculated **Cost** for the Bill of Material are displayed.

Select **Validate** to go through the BOM and check for recursive Components and for at least one Revision marked as the most current and not more than one Revision marked as the most current.

Select **Import** to open the Import Mapped Data screen to import Bills of Material from a predefined Import Layout Definition and Import Map Definition from System Manager.

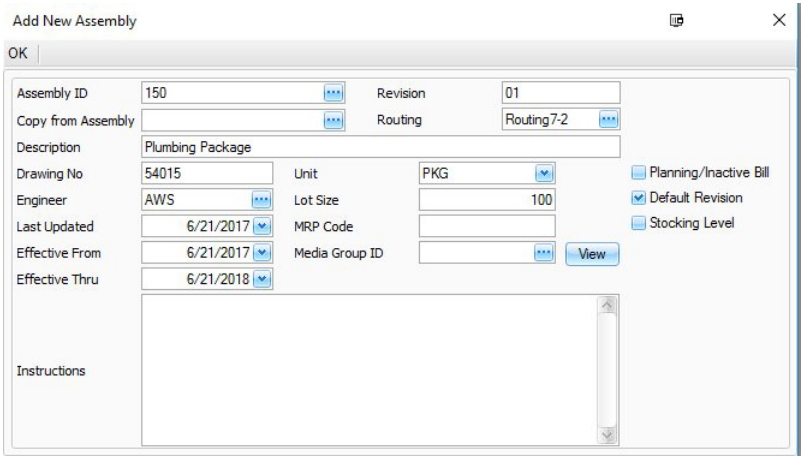
Task Summary

To create a new Bill of Material, follow these steps:

NOTE: The Assembly ID must exist in Inventory before you can create a Bill of Material for it.

1. Click the **New** button on the toolbar to open a blank Bill of Material. The **Add New Assembly** screen opens.

Add New Assembly Screen



2. The new **Assembly ID** is displayed, or select an existing Assembly ID to edit.
3. The **Revision** is displayed and cannot be edited here.
4. Select the **Routing Type** for this Assembly ID. The available choices are **Primary** and **Secondary**.
5. Click the **OK** button to save your New Assembly and return to the Bill of Materials screen.
6. Click the **Save** button on the toolbar to save the BOM.

To edit a Bill of Material, follow these steps:

1. Select an **Assembly ID** from the drop down list.
2. The **Revision** for the selected Assembly ID is read-only.
3. Edit the **Routing Type**, if necessary.
4. Edit the information in the **General**, **Routing**, and/or **Component** sections as necessary.
5. Click the **Save** button on the toolbar to save the BOM.

To deleting a Bill of Material, follow these steps:

NOTE: You can only delete a BOM that is not in use.

1. Select the **Assembly ID** for the BOM you want to delete from the drop down list.
2. Click the **Delete** button, on the tool-bar.
3. Click **Yes** at the "Are you sure you want to delete Assembly ID '###'?" prompt.

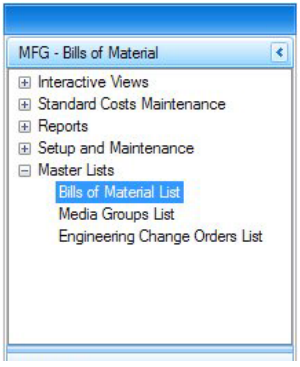
Producing a Bills of Material List

The **Bills of Material** Master List displays all the fields of the current Bills of Material master records.

To produce a **Bills of Material List**, follow these steps:

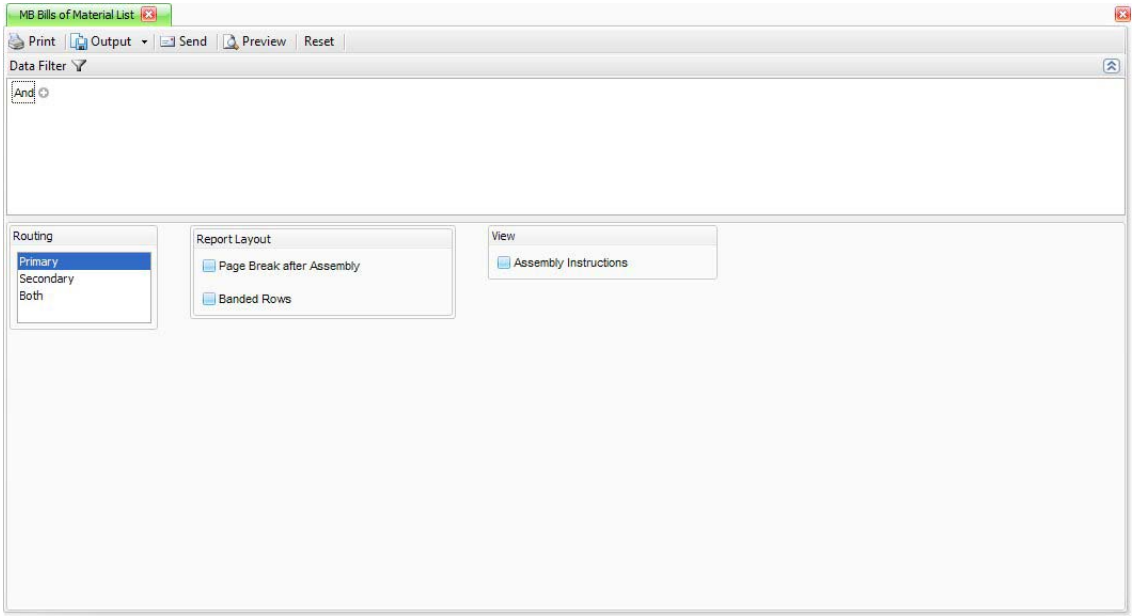
1. Select **Bills of Material List** from the **Master Lists** menu.

Bills of Material List Menu



2. The **Bills of Material List** screen appears.

Bills of Material List Screen



3. Select the **Filter Criteria** to include in the list or leave the fields blank to include all.
4. Select the **Routing** to include in the list; **Primary**, **Secondary** or **Both**.
5. Select the check box to have a **Page Break after Assembly** in the **Report Layout** area. Clear the box to have a continuous report.
6. Select the check box if you want to print the report in **Banded Rows format**, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.
7. Select the check box to **View Assembly Instructions** on the report. Clear the box to suppress the assembly instructions on the report.

8. Select a command button:

Command Buttons

Name	Description
Reset	Set all fields to their defaults.
Preview	Preview the report on your monitor.
Output	Output the report as a .pdf file and save it.
Send	Email the report with the report attached as a .pdf file.
Print	Print the report.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Bills of Material List Report

Continental Products Unlimited
Bills of Material List

Report Filter
View Assembly Instructions No **Include Routing** Primary

Assembly ID / Description	Rev	Rtg Type	Drawing No / Engineer	Planning Bill / Default Revision	Stocking Level / Last Updated	Effective From / Effective Thru	Unit / Lot Size	MRP Code / Media Group ID	Total Cost
45112	1	Primary		No	No	11/1/2003	EA		22.6793
Brake Plate (Drilled)				Yes	11/1/2003	10/31/2004	1		

Cost Group ID	Cost
Labor1	17.2333
Mach	1.6000
Mach2	0.7500
Matl	3.0960

Routing List

Rtg Step	Operation ID / Operation Type / Description / Notes	Work Center ID / Labor Setup Type ID / Labor Run Type ID	Machine Group ID / Media Group ID / Vendor ID	Max Batch Qty / Yield Pct / Charge per Unit	Queue Time / Mach Setup Time / Mach Run Time	Labor Setup Time / Labor Run Time / Wait Time	Move Time / Overlap
10	CUT7	METALS7	SAW07	0.0000	0.000 Hrs	30.000 Mins	0.000 Hrs
	Per Unit	MACHSHOP7	SAW47	100.00	0.500 Hrs	2.000 Mins	No
	Cutting Services	MACHSHOP7		0.0000	2.000 Mins	0.000 Hrs	
20	DRILL7	METALS7	DRLPRESS7	0.0000	0.000 Hrs	5.000 Mins	0.000 Hrs
	Per Unit	MACHSHOP7	DrillPress	100.00	5.000 Mins	5.000 Mins	No
	Drilling	MACHSHOP7		0.0000	5.000 Mins	0.000 Hrs	
30	DEBUR7	METALS7		0.0000	0.000 Hrs	0.000 Hrs	0.000 Hrs
	Per Unit	MACHSHOP7	Grinders	100.00	0.000 Hrs	5.000 Mins	No
	Deburring	MACHSHOP7		0.0000	0.000 Hrs	0.000 Hrs	

Component List

Rtg Step	Component ID / Description / Notes	Location ID / Detail Type	BOM Rev No / Usage Type	Cost Group ID / Media Group ID	Qty / Scrap %	Unit / Unit Cost	Total Qty / Total Cost
10	45020	MN0002		Matl	12.0000	SQIN	12.0000
	Steel 1/4 Flat	Material	Per Assembly	FLTSTL8	0	0.2000	2.4000
10	45030	MN0002		Matl	2.0000	IN	2.0000
	Steel Rod 1/2"	Material	Per Assembly		0	0.1730	0.3460
20	4401	MN0002		Matl	1.0000	EA	1.0000
	Black Plastic 4" Handle	Material	Per Assembly		0	0.3500	0.3500

GLOBAL COMPONENT REPLACEMENT

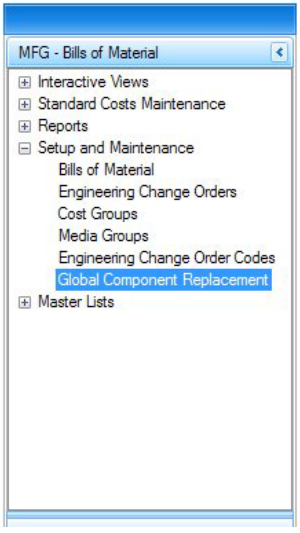
The **Global Component Replacement** function is used to replace a given Component with a different Component. You can then select which, if not all, BOMs for which to apply this "swap". When you enter the Replacement Component ID, the system will display all Bills of Material, which contain that Component, in the list area at the bottom of the screen. If the Revision is set to Effective, then only "effective" Bills of Material will display. These are Bills of Material whose effective date range includes today's date. If All is selected, all Bills of Material containing the above Component will appear.

The With Component allows you to dictate which Component will be put into the Bill of Material as the Replace Component is removed. Normally quantities will be untouched by the process but in some cases, one may want to adjust the quantity up or down as the Component being inserted may be more concentrated, larger, stronger, etc. and a quantity change is required. This is accomplished via the Multiply Quantities by field. By making this field less than one, the quantities are actually reduced as the new Component replaces the old one. Finally it's important to note that nothing happens until you have selected specifically which Bills of Material to affect. Once the Bills of Material are selected, you will click on the OK button to begin the process. A printed log of all changed Bills of Material will follow.

To use the **Global Component Replacement** follow these steps:

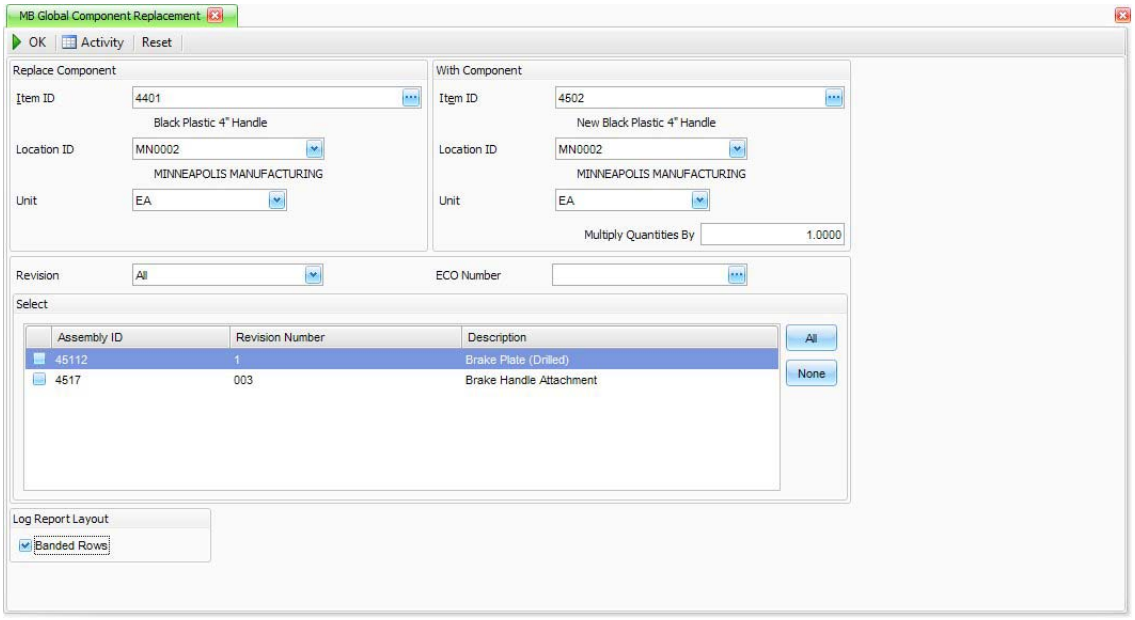
1. Select **Global Component Replacement** from the **Setup and Maintenance** menu.

Global Component Replacement Menu



2. The **Global Component Replacement** screen appears.

Global Component Replacement Screen



3. In the **Replace Component** area, select the **Item ID** to replace. This would be the Item ID you will be replacing.
4. If the **Location ID** that appears is not the manufacturing facility (for example: it's a distribution center instead), select the Location ID that includes the manufacturing facility.
5. In the **Unit** field, if the component uses several different Units of Measure, select the Unit you want to replace.

   Example: Suppose paint is the Component you are replacing. If this particular paint has GAL, QT, and OZ as valid Units of Measure and you want to locate only the BOMs set up to use the quart Unit of Measure and change it to use the ounce unit of measure, you would select QT.

6. In the **With Component** area, select the **Item ID** you want to replace with. This would be the new Item ID with which you want to replace the old Item ID.
7. If the **Location ID** that appears is not the manufacturing facility (for example, it's a distribution center instead), select the Location ID that includes the manufacturing facility.
8. In the **Unit** box, if the component uses several different Units of Measure, select the unit you want to replace.

9. If the Units of Measure are not the same for the two Components, use the **Multiply Quantities By** field to show the relationship between the two units.

   Example: Suppose paint is the component and it was purchased in gallons. It is being replaced by paint from a new manufacturer, purchased in quarts. You would enter a four into the Multiply Quantities By text box, because in the original BOM gallons was used and you need four quarts for each gallon used.

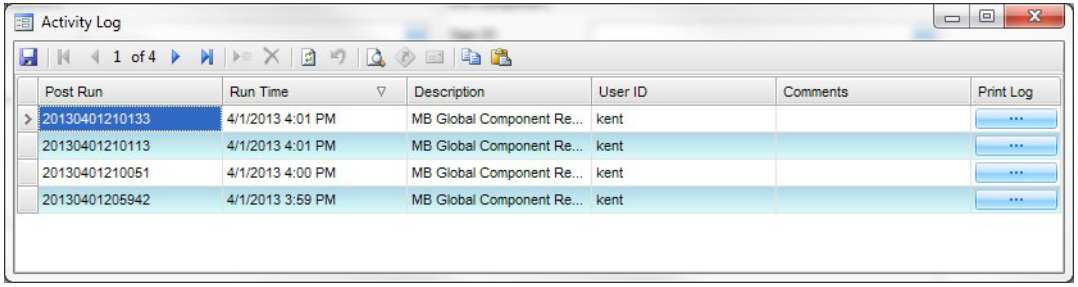
10. Select which **Revision** you want to replace; **Effective** Revisions or **All** Revisions.
11. Select the **ECO Number** in the BOM you want to replace.
12. **Select** which Assemblies in which you want to replace Item IDs. You can check each selection individually or click the **All** button to select all in the list. Select the **None** button to uncheck all selections in the list.
13. Select the check box if you want to print the report in **Banded Rows format**, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.
14. Select a command button:

Command Buttons

Name	Description
OK	To begin processing
Reset	To reset the values back to the original settings.
Activity	to view the Activity Log dialog box.

- A message appears when the replace completes successfully. After you click **OK** to close this message box, the Global Component Replacement Log appears.

Activity Log Dialog Box



The Activity Log dialog box appears when you click **Activity**. The Activity Log dialog box tracks all post activity for administrative purposes. The system assigns each post a run ID.

Post Run - The system generated number used to identify the replacement appears.

Run Time - The date and time the replacement was made appear.

Description - The replacement description appears.

User ID - The user who performed the replacement appears.

Comments - Comments entered for the replacement appear.

Print Log to print the replacement log from the selected replacement.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Global Component Replacement Log

Continental Products Unlimited
Global Component Replacement Log
Page 1

Multiply Quantities By 1.0000 Revision All
ECO No

	Component Replaced	New Component
Item ID:	4401	4502
Location ID:	MN0002	MN0002
Unit:	EA	EA

Assembly ID	Revision No	Comp No	User ID	Date /Time Changed	Original Qty	New Qty
45112	1	30	kent	4/1/2013 3:59:42 PM	1.0000	1.0000
4517	003	50	kent	4/1/2013 3:59:42 PM	1.0000	1.0000

4/1/2013 3:59 PM *** End of Report *** OPEN_SYSTEMS\KentHe

4

Standard Costs Maintenance

OVERVIEW

Use the Standard Cost Maintenance functions to maintain Standard Costs. Standard Costs may not always be accurate. You change them at infrequent intervals with the intention of creating a Standard Cost that you can "live with" over a long period of time where the actual costs may be fluctuating. If you are using Standard Costing as an Inventory Costing Method, an important feature of the Standard Cost Maintenance functions is the ability to post journal entries to GL for changes to Standard Costs of Inventory and do so on a batch basis.

NOTE: If you are using a Costing Method other than Standard Costing, these functions do not make any entries into GL, but enable you to maintain Standard Costs easily and accurately.

The general work flow for adjusting Standard Cost variances is a two-phase process. See the "Workflow" on (page 2-9) for specific information on these phases.

The Standard Costs Maintenance menu contains the following selections:

Cost Variance Report

When adjusting Standard Cost variances, use the **Cost Variance Report** to compare the current Unit Costs of different components of a BOM, as well as the BOM cost, to the existing costs in Inventory. There are several parts to this report.

Update Standard Costs

If you found costs that need adjustment when reviewing the Cost Variance Report, use the Update Standard Cost function to make those adjustments. Since the TRAVERSE Inventory system does not provide a utility to quickly change and record Standard Costs adjustments, you must make those changes here using this function. You can move quickly through the Inventory system, changing Standard Costs of Component Item IDs where needed.

Roll Up Standard Costs

Once your component costs are accurate and you have posted transactions to Inventory, you can roll up the existing BOMs. This process adds up the elements of one or all BOMs, recalculating Material, Labor, Overhead, and Subcontracting Costs. The Standard Cost Adjustments required for each BOM are automatically created and written to the transaction table using this function. Later, you can post these costs to GL. Although you cannot create new transactions for Assembly IDs, you can edit or view generated transactions created by the Roll Up Standard Costs function. All of the entries are then written to the Standard Costs Adjustments table and later appear on the Standard Costs Adjustments Report. You can then post these costs to GL.

Standard Cost Adjustment Report

Once you finish Rolling Up Standard Costs, print the Standard Cost Adjustment Report. This report shows the cost update information (if you are using Standard Costing) and journal entries, which are created in GL, and is your last chance to review the data before you post it to GL and Inventory.

Post Standard Cost Adjustments

Use this function to update Inventory Standard Costs and post entries to GL. A Credit is made to Standard Cost Adjustments as defined in the Default - GL Account section of the Business Rules screen, and a Debit is made to the individual Item ID Account for Item IDs defined in the Inventory database (these transactions could be reversed if there were a decrease in the Standard Cost). The Inventory Standard Cost field in the Inventory database also changes when you post.

COST VARIANCE REPORT

The purpose of the **Cost Variance Report** is to warn you of Standard Cost problems and/or gross inaccuracies in those Standard Inventory Costs.

Inventory Standard Costs will rarely be exactly correct but significant variances between the last cost paid for components to their Standard Cost or the calculated manufacturing cost to real product finished goods could lead to a variety of costing and pricing problems in the real world.

NOTE: The report has an option to print Machine Groups, Labor Types, and Subcontracted Activities, but this part of the report is rarely printed or used and although it shows variances, those variances are usually considered cosmetic information. They normally wouldn't be considered in establishing Standard Cost. Only the upper two Inventory sections of the report are crucial.

- The first section of the report shows the finished product on a single line. The Current Cost is the calculated cost of producing this product based on its current Bill of Materials. To establish that number, one would need to run the costing function to establish the BOM cost. This Current Cost should match the finished production cost number, which prints on the Costed Bill of Materials. The Standard Cost is simply the Standard Cost as defined in Inventory, which can be seen on the Inventory Maintenance screen under the Location tab. The Variance is the difference between the two numbers, subtracting the Current Cost from the Standard Cost, and the Percentage is the difference divided by the Standard Cost.
- The second section of the report prints the Inventory Component list for the Bill of Material. It includes all Inventory Item IDs at all levels from top to bottom. The Last Cost field is the last cost shown in the Inventory Items Location tab. The Standard Cost is the Standard Cost also shown on the Inventory Items Location tab.

NOTE: Non-Inventory Components used on the Bill of Material need not appear on this report since no variance could exist for those items as they have neither Last or Standard Costs.

NOTE: Subassemblies are not "calculated" for this report. We assume the stated Standard Cost in Inventory is correct.

The Variance is the difference between the Standard Cost and the Last Cost, subtracting the Last Cost from the Standard Cost. The Percentage is the variance amount divided by the Standard Cost number.

- The third section of the screen shows Routing steps. There is a section for Labor Setup, Labor, Machine Setup, Machine Time and Subcontracting. The Current Setup and Run Time are pulled directly off the Bill of Material. The Current Cost is established by multiplying the current Setup or Run Time by the Machine or Labor Cost set up in the Labor Type master or the Machine Group master.

NOTE: There is only one Machine Group per Operation, but there could be one or two Labor Types because the Bill of Material allows the setup of a different Setup Labor Type as opposed to the Actual Labor Run Type.

The fields, Standard Setup and Run Times are the times established in the Operation master record as identified for this step. To find this, one would read the Operation master record from the table using the Bill of Materials Routing Operation ID.

The Standard Cost is then calculated by multiplying the Run or Setup Cost by this standard time. The Variance is the difference between the Standard Cost and the Current Cost, subtracting the Current Cost from the Standard Cost.

The Percentage is the Variance divided by the Standard Cost amount. The real world issue here is that the Standard Setup Time generally has little or nothing to do with the time defined in the Bill of Material so this section of the report is usually not used.

If a Subcontracting step is involved, the report shows the Subcontracted Operation, Description, Vendor ID, and Unit Cost. No variance information is printed.

When you Adjust Standard Cost Variances, printing the Cost Variance Report is your first step. Use the Cost Variance Report to compare the current Unit Costs of the different Components of a BOM, as well as the BOM Cost, to the existing costs in Inventory.

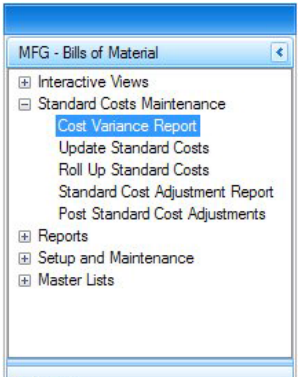
This report is not meant to subtotal and give overall information about the BOM. To do that, you need to include Subassemblies and Overhead. Also, the Lot size should be included because it affects the Setup Cost Variances in the Labor and Machine areas. This report is strictly meant as a tool to point out possible areas of concern due to changing costs of both materials and process steps.

High variances in Components could mean the Standard Cost of your Components should be changed. In the Machine and Labor area, a large variance could point out that you have adjusted your times in the master tables, but haven't changed them in the BOM. It could also mean that the BOM is unique and the variance is meaningless. Variances in the Assembly ID may indicate your estimated costs have changed and either the Standard Cost or the Rolled Up Current Cost may be inaccurate.

To print the **Cost Variance Report** follow these steps:

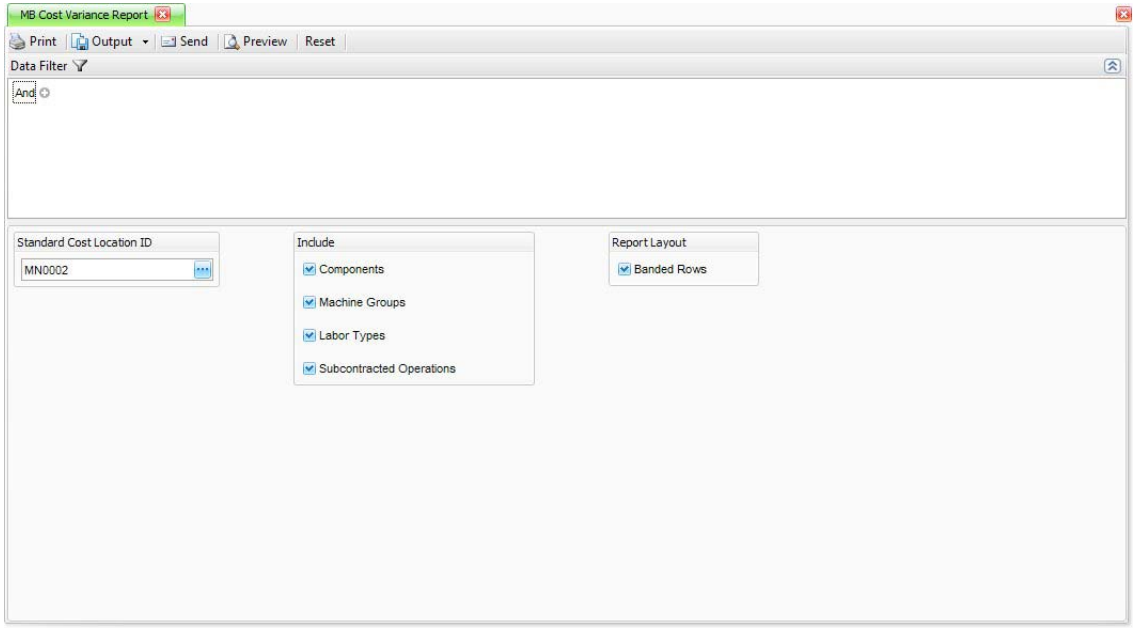
1. Select **Cost Variance Report** from the **Standard Costs Maintenance** menu.

Cost Variance Report Menu



2. The **Cost Variance Report** screen appears.

Cost Variance Report Screen



3. Select the **Filter Criteria** to include in the list or leave the fields blank to include all.

4. Select the **Standard Cost Location ID** from the list. This would be the Inventory Location from which you want to read the Standard Cost.
5. Select what you want to **Include** in the report; **Components**, **Machine Groups**, **Labor Types** and **Subcontracted Operations**.

NOTE: These selection will not be available if you do not have Routing and Resources installed.

6. Select the check box if you want to print the report in **Banded Rows format**, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.
7. Select a command button:

Command Buttons

Name	Description
Reset	Set all fields to their defaults.
Preview	Preview the report on your monitor.
Output	Output the report as a .pdf file and save it.
Send	Email the report with the report attached as a .pdf file.
Print	Print the report.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

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Cost Variance Report

Report Filter

Standard Cost Location ID MN0002 **Include** Components, Machine Groups, Labor Types, Subcontracted Operations

Assembly ID	Rev	Description	Unit	Current Cost	Standard Cost	Variance	Pct
45112	1	Brake Plate (Drilled)	EA	22.6793	21.9600	-0.7193	-3.28

Component ID	Location ID	Description	Unit	Last Cost	Standard Cost	Variance	Pct
45020	MN0002	Steel 1/4 Flat	SQIN	0.2000	0.2000	0.0000	0.00
45030	MN0002	Steel Rod 1/2"	IN	0.1730	0.1730	0.0000	0.00
4401	MN0002	Black Plastic 4" Handle	EA	0.8500	0.3500	-0.5000	-142.86

Labor Setup Type	Description	Current Setup Time	Current Cost	Standard Setup Time	Standard Cost	Variance	Pct
MACHSHOP7	Cutting Services	30.000 Mins	11.0000	15.000 Mins	5.5000	-5.5000	-100.00
MACHSHOP7	Drilling	5.000 Mins	1.8333	0.000 Hrs	0.0000	-1.8333	0.00
MACHSHOP7	Deburring	0.000 Hrs	0.0000	0.000 Hrs	0.0000	0.0000	0.00

Labor Type	Description	Current Run Time	Current Cost	Standard Run Time	Standard Cost	Variance	Pct
MACHSHOP7	Cutting Services	2.000 Mins	0.7333	30.000 Mins	11.0000	10.2667	93.33
MACHSHOP7	Drilling	5.000 Mins	1.8333	0.000 Hrs	0.0000	-1.8333	0.00
MACHSHOP7	Deburring	5.000 Mins	1.8333	0.000 Hrs	0.0000	-1.8333	0.00

Machine Group	Description	Current Setup Time	Current Cost	Standard Setup Time	Standard Cost	Variance	Pct
SAW07	Ellvon Band Saw	0.500 Hrs	1.5000	0.500 Hrs	1.5000	0.0000	0.00
DRLPRESS7	Drill Press 1	5.000 Mins	0.3750	10.000 Mins	0.7500	0.3750	50.00
		0.000 Hrs	0.0000	0.000 Hrs	0.0000	0.0000	0.00

Machine Group	Description	Current Run Time	Current Cost	Standard Run Time	Standard Cost	Variance	Pct
SAW07	Ellvon Band Saw	2.000 Mins	0.1000	0.500 Hrs	1.5000	1.4000	93.33
DRLPRESS7	Drill Press 1	5.000 Mins	0.3750	0.000 Hrs	0.0000	-0.3750	0.00
		0.000 Hrs	0.0000	0.000 Hrs	0.0000	0.0000	0.00

4/1/2013 2:30 PM **OPEN_SYSTEMS\KentHe**

Cost Variance Report

UPDATE STANDARD COSTS

The **Update Standard Costs** function allows you to re-establish the Standard Costs in the Inventory system. You could accomplish this same task by going into the Inventory module and simply changing the Standard Cost numbers. There are several advantages of doing this process through manufacturing.

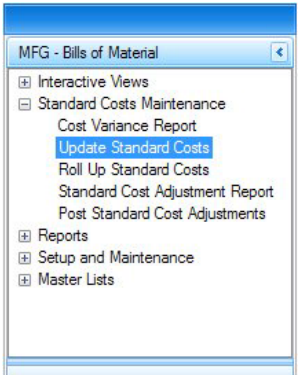
- The process is done as a batch process so all updates can be implemented at one time.
- Correct GL Journal entries are created as part of the process and posted to General Ledger in cases where the one is working in a Standard Costing environment.
- Transaction reporting allows you to see transaction updates for a more complete audit trail of Standard Cost updates.

The process begins by entering the Item ID for which the Standard Cost is to be changed. Since costs are maintained by Location, the Loc ID must be entered for the proper Item ID. The GL Account that appears comes from the Standard Cost Adjustment Account as set up in the company's Business Rules under Defaults - GL Accounts. This is the default income statement account and you can override it at any time. The following Fiscal Period and Fiscal Year are also fields that can be changed if you so choose. The New Std Cost field establishes the new Standard Cost and is then entered accordingly. The Current Average, Standard, FIFO, LIFO and Qty fields are information only and cannot be changed. The Entry Date and Transaction Date are user editable fields.

To use the **Update Standard Costs** follow these steps:

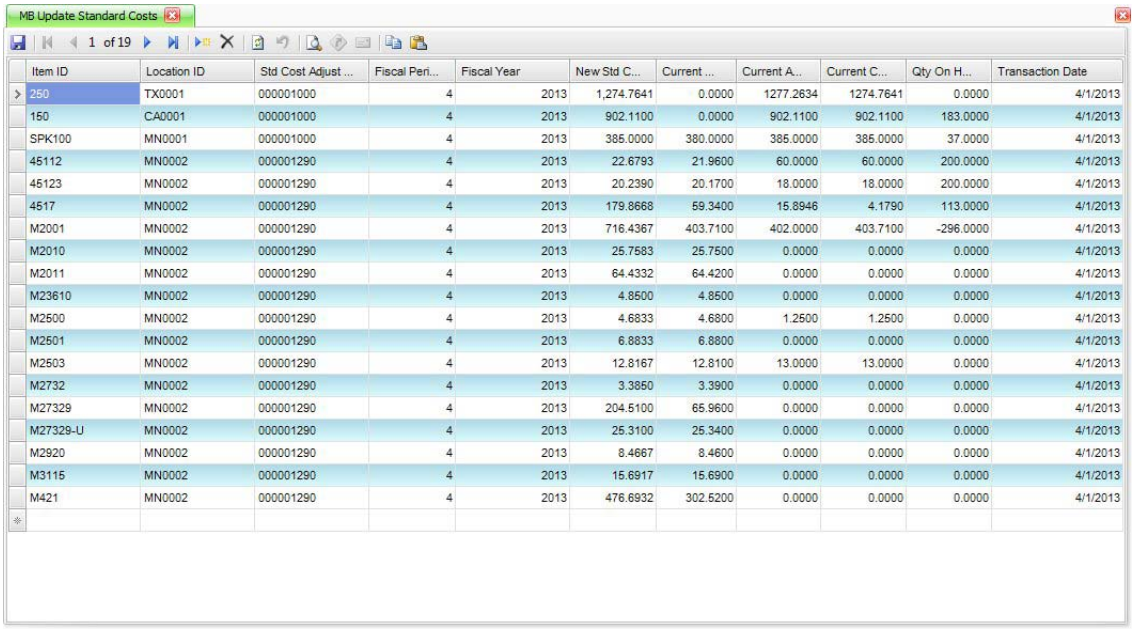
1. Select **Update Standard Costs** from the **Standard Costs Maintenance** menu.

Update Standard Costs Menu



2. The **Update Standard Costs** screen appears.

Update Standard Costs Screen



Item ID	Location ID	Std Cost Adjust ...	Fiscal Peri...	Fiscal Year	New Std C...	Current ...	Current A...	Current C...	Qty On H...	Transaction Date
250	TX0001	000001000	4	2013	1,274.7641	0.0000	1277.2634	1274.7641	0.0000	4/1/2013
150	CA0001	000001000	4	2013	902.1100	0.0000	902.1100	902.1100	183.0000	4/1/2013
SPK100	MN0001	000001000	4	2013	385.0000	380.0000	385.0000	385.0000	37.0000	4/1/2013
45112	MN0002	000001290	4	2013	22.6793	21.9600	60.0000	60.0000	200.0000	4/1/2013
45123	MN0002	000001290	4	2013	20.2390	20.1700	18.0000	18.0000	200.0000	4/1/2013
4517	MN0002	000001290	4	2013	179.8668	59.3400	15.8946	4.1790	113.0000	4/1/2013
M2001	MN0002	000001290	4	2013	716.4367	403.7100	402.0000	403.7100	-296.0000	4/1/2013
M2010	MN0002	000001290	4	2013	25.7583	25.7500	0.0000	0.0000	0.0000	4/1/2013
M2011	MN0002	000001290	4	2013	64.4332	64.4200	0.0000	0.0000	0.0000	4/1/2013
M23610	MN0002	000001290	4	2013	4.8500	4.8500	0.0000	0.0000	0.0000	4/1/2013
M2500	MN0002	000001290	4	2013	4.6833	4.6800	1.2500	1.2500	0.0000	4/1/2013
M2501	MN0002	000001290	4	2013	6.8833	6.8800	0.0000	0.0000	0.0000	4/1/2013
M2503	MN0002	000001290	4	2013	12.8167	12.8100	13.0000	13.0000	0.0000	4/1/2013
M2732	MN0002	000001290	4	2013	3.3850	3.3900	0.0000	0.0000	0.0000	4/1/2013
M27329	MN0002	000001290	4	2013	204.5100	65.9600	0.0000	0.0000	0.0000	4/1/2013
M27329-U	MN0002	000001290	4	2013	25.3100	25.3400	0.0000	0.0000	0.0000	4/1/2013
M2920	MN0002	000001290	4	2013	8.4667	8.4600	0.0000	0.0000	0.0000	4/1/2013
M3115	MN0002	000001290	4	2013	15.6917	15.6900	0.0000	0.0000	0.0000	4/1/2013
M421	MN0002	000001290	4	2013	476.6932	302.5200	0.0000	0.0000	0.0000	4/1/2013

3. Enter or select the **Item ID** of the component you want to adjust.
4. Select the **Location ID** for the component you want to adjust. The current cost information appears.
5. Change the **Std Cost Adjust Account** if the default account, set up using the Business Rules function (page 3-7), is incorrect for this transaction.
6. The current **Fiscal Period** is displayed. Accept the default or edit to the correct period.
7. The current **Fiscal Year** is displayed. Accept the default or edit to the correct year.
8. Enter the new standard cost into the **New Std Cost** field.
9. The **Current Average Cost**, **Standard Cost**, **Actual Cost** and **Qty** fields are information only and cannot be changed.
10. Accept or change the **Transaction Date**.

ROLL UP STANDARD COSTS

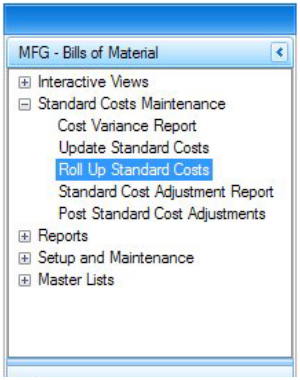
The **Roll Up Standard Costs** function automatically creates new Standard Cost update transactions by reading through Bills of Material, calculating their correct Standard Cost, and then writing it to the Standard Cost transaction update table. One could accomplish the same thing by printing a Costed Bill of Material for every Bill of Material and manually entering the transaction via the Update Standard Costs function, but the process would be very time consuming. The process offers you the option of rolling up one Bill of Material or all Bills of Material, thus if you wanted to only roll up three Bills of Material, they could run this function three times.

You can view the results of this function by opening the Update Standard Costs function and looking at the transactions or printing the Standard Cost Adjustments Report.

To use the **Roll Up Standard Costs** follow these steps:

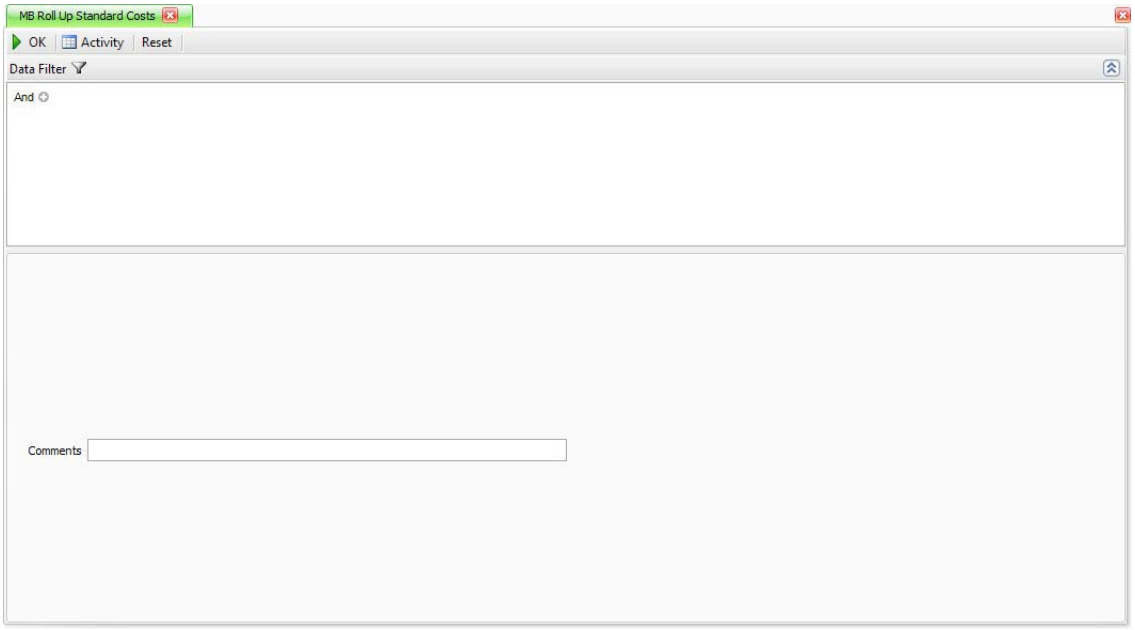
1. Select **Roll Up Standard Costs** from the **Standard Costs Maintenance** menu.

Roll Up Standard Costs Menu



2. The **Roll Up Standard Costs** screen appears.

Roll Up Standard Costs Screen



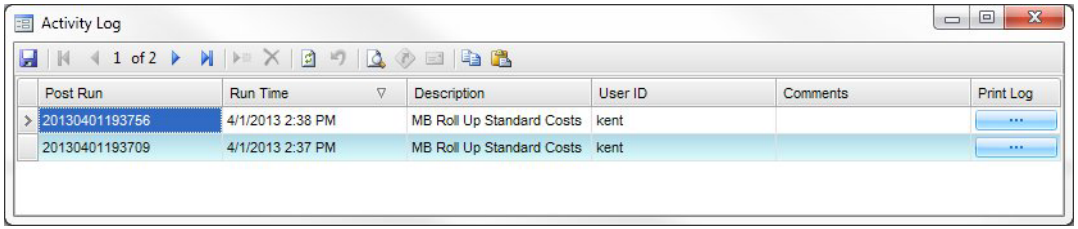
3. Select the **Filter Criteria** to limit the assemblies to roll up the Standard Costs. Leave this area blank to include all Assembly IDs.
4. Enter **Comments** to describe the reason for the Standard Cost Roll Up.
5. Select a command button:

Command Buttons

Name	Description
OK	To begin processing
Reset	To reset the values back to the original settings.
Activity	to view the Activity Log dialog box.

- A message appears when the roll up completes successfully. After you click **OK** to close this message box, the **Roll Up Standard Costs Log** appears.

Activity Log Dialog Box



The Activity Log dialog box appears when you click **Activity**. The Activity Log dialog box tracks all post activity for administrative purposes. The system assigns each post a run ID.

Post Run - The system generated number used to identify the roll up appears.

Run Time - The date and time the roll up was made appear.

Description - The roll up description appears.

User ID - The user who performed the roll up appears.

Comments - Comments entered for the roll up appear.

Print Log to print the roll up log from the selected roll up.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Roll Up Standard Costs Log

Continental Products Unlimited
Roll Up Standard Costs Log

Page 1

Report Filter
Comments

Assembly ID	Location ID	GL Account	Transaction Date	Original Cost	New Cost
45112	MN0002	00-000-1290	4/1/2013	21.9600	22.6793
45123	MN0002	00-000-1290	4/1/2013	20.1700	20.2390
4517	MN0002	00-000-1290	4/1/2013	59.3400	179.8668
M2001	MN0002	00-000-1290	4/1/2013	403.7100	716.4367
M2010	MN0002	00-000-1290	4/1/2013	25.7500	25.7583
M2011	MN0002	00-000-1290	4/1/2013	64.4200	64.4333
M23610	MN0002	00-000-1290	4/1/2013	4.8500	4.8500
M2500	MN0002	00-000-1290	4/1/2013	4.6800	4.6833
M2501	MN0002	00-000-1290	4/1/2013	6.8800	6.8833
M2503	MN0002	00-000-1290	4/1/2013	12.8100	12.8167
M2732	MN0002	00-000-1290	4/1/2013	3.3900	3.3850
M27329	MN0002	00-000-1290	4/1/2013	65.9600	204.5100
M27329-U	MN0002	00-000-1290	4/1/2013	25.3400	25.3100
M2920	MN0002	00-000-1290	4/1/2013	8.4600	8.4667
M3115	MN0002	00-000-1290	4/1/2013	15.6900	15.6917
M421	MN0002	00-000-1290	4/1/2013	302.5200	476.6933

4/1/2013 2:37 PM *** End of Report *** OPEN_SYSTEMS\KenHe

STANDARD COST ADJUSTMENT REPORT

Once you finish updating Standard Costs, print the **Standard Cost Adjustment Report** to view and audit all Standard Cost adjustments.

This report shows the cost update information (if you are using Standard Costing) and journal entries, which are created in GL, and is your last chance to review the data before you post to GL and Inventory.

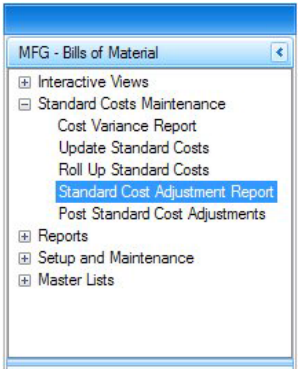
This is a simple log report that prints out a list of all of the Inventory Item IDs for which Standard Costs have been updated.

This report should be printed before Posting the Standard Cost Updates. The report shows the Item ID, Location, GL Account ID revenue/expense, as entered, Transaction Date, Original Cost (original Standard Cost) and New Cost (new Standard Cost).

To print the **Standard Cost Adjustment Report** follow these steps:

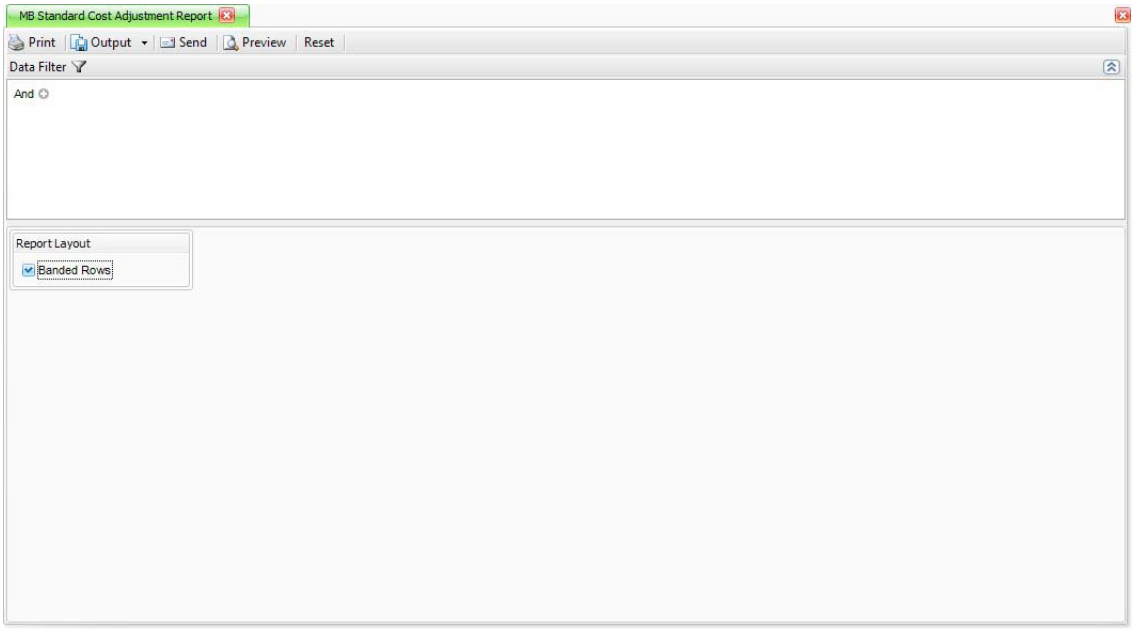
1. Select **Standard Cost Adjustment Report** from the **Standard Costs Maintenance** menu.

Standard Cost Adjustment Report Menu



2. The **Standard Cost Adjustment Report** screen appears.

Standard Cost Adjustment Report Screen



3. Select the **Filter Criteria** to include in the list or leave the fields blank to include all.
4. Select the check box if you want to print the report in **Banded Rows** format, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.

5. Select a command button:

Command Buttons

Name	Description
Reset	Set all fields to their defaults.
Preview	Preview the report on your monitor.
Output	Output the report as a .pdf file and save it.
Send	Email the report with the report attached as a .pdf file.
Print	Print the report.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Standard Cost Adjustment Report

Continental Products Unlimited
Standard Cost Adjustment Report

Page 1

Report Filter

Item ID	Location ID	GL Account	Transaction Date	Original Cost	New Cost
250	TX0001	00-000-1000	10/21/2003	0.0000	1,274.7641
45112	MN0002	00-000-1290	4/1/2013	21.9600	22.6793
45123	MN0002	00-000-1290	4/1/2013	20.1700	20.2390
150	CA0001	00-000-1000	10/21/2003	0.0000	0.0000
SPK100	MN0001	00-000-1000	10/21/2003	380.0000	0.0000
4517	MN0002	00-000-1290	4/1/2013	59.3400	179.8668
M2001	MN0002	00-000-1290	4/1/2013	403.7100	716.4367
M2010	MN0002	00-000-1290	4/1/2013	25.7500	25.7583
M2011	MN0002	00-000-1290	4/1/2013	64.4200	64.4332
M23610	MN0002	00-000-1290	4/1/2013	4.8500	4.8500
M2500	MN0002	00-000-1290	4/1/2013	4.6800	4.6833
M2501	MN0002	00-000-1290	4/1/2013	6.8800	6.8833
M2503	MN0002	00-000-1290	4/1/2013	12.8100	12.8167
M2732	MN0002	00-000-1290	4/1/2013	3.3900	3.3850
M27329	MN0002	00-000-1290	4/1/2013	65.9600	204.5100
M27329-U	MN0002	00-000-1290	4/1/2013	25.3400	25.3100
M2920	MN0002	00-000-1290	4/1/2013	8.4600	8.4667
M3115	MN0002	00-000-1290	4/1/2013	15.6900	15.6917
M421	MN0002	00-000-1290	4/1/2013	302.5200	476.6932

4/1/2013 2:39 PM *** End of Report *** OPEN_SYSTEMS\KenHe

POST STANDARD COST ADJUSTMENTS OVERVIEW

The **Post Standard Cost Adjustments** function posts the Standard Cost Adjustments to Inventory, changing the Inventory Standard Cost for those Item IDs included in the update. Generally that is the extent of the post but if the costing environment is using Standard Cost, a journal entry is created in GL using the revenue/expense account entered in the transaction and the asset account for the Inventory Item ID, setup in the IN Account Codes.

> **Example: Let us say the GL Account ID entered in the transaction record was 5113 and the GL Inventory Account as set up in the IN Account Codes was 1292. Let us say the Standard Cost was changed from $1.50 to $1.70. Again, we are assuming the system was using Standard Costing as the Costing Method, and we will assume 300 units were in stock. At this point, the system would make a $60.00 debit to Account 1292 and a $60.00 credit to Account 5113**

When Bills of Material is interfaced to General Ledger the following journal entries are made:

If the Standard Cost Adjustment is an increase in the Standard Cost from the current Standard Cost for items:

Standard Cost Adjustments

Inventory		Adjustment Account	
DB			CR

The Inventory Account is coming from the Account Code assigned to the Item ID in the Inventory Item setup. The Adjustment Account is the Account entered into the Update Standard Costs screen.

If the Standard Cost Adjustment is a decrease in the Standard Cost from the current Standard Cost for items:

Standard Cost Adjustments

Inventory		Adjustment Account	
	CR	DB	

The Inventory Account is coming from the Account Code assigned to the Item ID in the Inventory Item setup. The Adjustment Account is the Account entered into the Update Standard Costs screen.

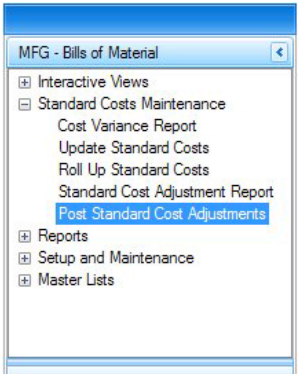
POST STANDARD COST ADJUSTMENTS

The **Post Standard Cost Adjustments** function posts the Standard Cost Adjustments to Inventory, changing the Inventory Standard Cost for those Item IDs included in the update. Generally that is the extent of the post but if the costing environment is using Standard Cost, a journal entry is created in GL using the revenue/expense Account entered in the transaction and the asset Account for the Inventory Item ID, setup in the IN Account Codes.

To **Post Standard Cost Adjustments**, follow these steps:

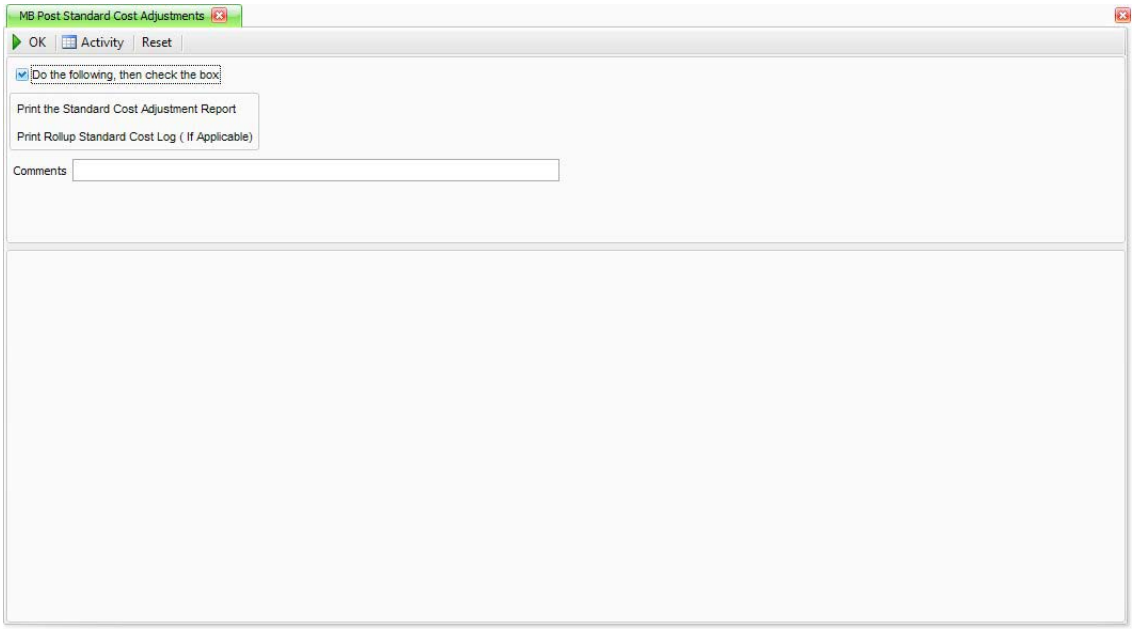
1. Select **Post Standard Cost Adjustments** from the **Standard Costs Maintenance** menu.

Post Standard Cost Adjustments Menu



2. The **Post Standard Cost Adjustments** screen appears.

Post Standard Cost Adjustments Screen



3. Select the box to verify you have done the following:
    - Print the Standard Cost Adjustment Report
    - Print Rollup Standard Cost Log (If Applicable)
4. Enter **Comments** to describe the post.

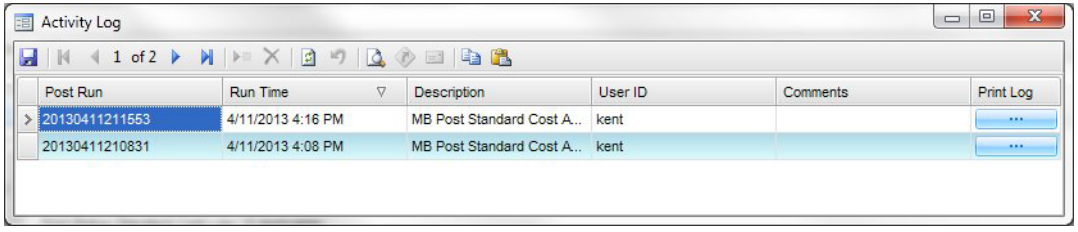
5. Select a command button:

Command Buttons

Name	Description
OK	To begin processing
Reset	To reset the values back to the original settings.
Activity	to view the Activity Log dialog box.

- A message appears when the post completes successfully. After you click **OK** to close this message box, the **Post Standard Cost Adjustments Log** appears.

Activity Log Dialog Box



The Activity Log dialog box appears when you click **Activity**. The Activity Log dialog box tracks all post activity for administrative purposes. The system assigns each post a run ID.

Post Run - The system generated number used to identify the post appears.

Run Time - The date and time the post was made appear.

Description - The post description appears.

User ID - The user who performed the post appears.

Comments - Comments entered for the post appear.

Print Log to print the post log from the selected post.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Post Standard Cost Adjustments Log

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Post Standard Cost Adjustments Log

Comments

GL Entries — 20130401194457

Posted to Fiscal Year 2013
Fiscal Period 4

Reference	Description	GL Account	Debit	Credit
MB	45112/MN0002	00-000-1230	143.86	
MB	45112/MN0002	00-000-1290		143.86
MB	150/CA0001	00-000-1230	165,086.13	
MB	150/CA0001	00-000-1000		165,086.13
MB	45123/MN0002	00-000-1230	13.80	
MB	45123/MN0002	00-000-1290		13.80
MB	4517/MN0002	00-000-1230	13,619.53	
MB	4517/MN0002	00-000-1290		13,619.53
MB	SPK100/MN0001	00-000-1230	185.00	
MB	SPK100/MN0001	00-000-1000		185.00
	Total for Fiscal Period 4		179,048.32	179,048.32
Grand Total			179,048.32	179,048.32

Exceptions

Grand Total

4/1/2013 2:45 PM *** End of Report *** OPEN_SYSTEMS\KenHe

5

Interactive Views

USING THE INTERACTIVE VIEWS MENU

Use the Interactive Views menu functions to view (but not change) the following setup information:

- Assemblies
- Bills of Material
- Component Availability
- Available to Promise

Using Interactive Views you can easily and quickly build and manipulate tables to display information. After selecting from the available criteria to display as filter fields, data items, column fields, or row fields, you can highlight columns and rows to have the selected rows and columns display as a graph below the table. To include multiple rows or columns in the graph, you can use the CTRL+ click (to select multiple rows or columns) and SHIFT+ click (to select all rows or columns between the first and second click) shortcuts, after selecting the first row and column.

Sorting and Filtering

When you arrange the columns to your liking, you can sort, group, or filter the data by the column's contents. To sort and filter the data, right-click a column heading and use the functions outlined in the table below.

Button	Name	Select To
	**Sort Ascending**	Sort the selected column’s data in ascending order. **NOTE: You can also accomplish this task by clicking the column heading until appears.**
	**Sort Descending**	Sort the selected column’s data in descending order. **NOTE: You can also accomplish this task by clicking the column heading until  appears.**
	Clear Sorting	Remove all sorting options and revert to the default view.

Group By This Column	Group the identical entries from this column into a single group. **NOTE: If you group by column entry, you can right-click on the grouped column heading to select from the options outlined in this table, or choose Full Expand to expand all of the grouped entries, Full Collapse to collapse all of the grouped entries, or UnGroup to undo the grouped entry.**
Column Chooser	Open the Customization window. With the Customization window open, you can click and drag columns to the window to remove them from the screen or click and drag columns from the window to place them back onto the screen. **NOTE: You can also remove a column from the form by clicking on the heading of the column and dragging it to the bottom of the screen and releasing it when your cursor changes to an *X*.**
Best Fit	Adjust the selected column to resize the column for the best view of that column's data.
Clear Filter	Remove all filter options and revert to the default view.
Filter Editor	See "Filtering Across All Columns" in the General Information guide for more information.
Best Fit (all columns)	Adjust all columns to resize for the best view all of the data at once.

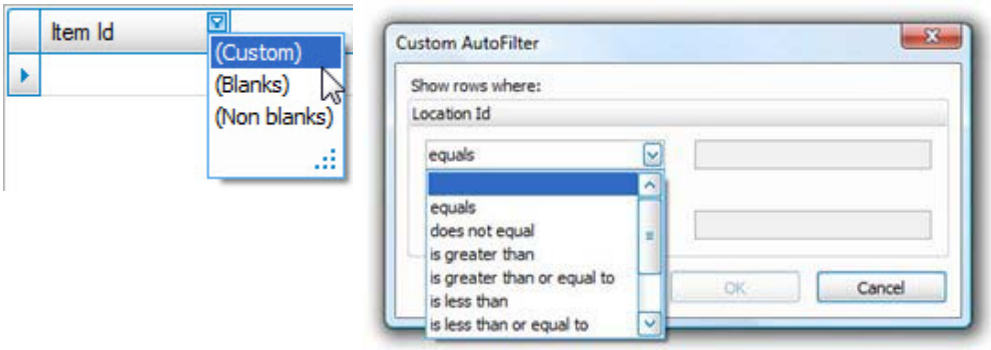
Filtering by an Individual Column

To create a filter for a single column, click the funnel icon that appears once you place the cursor in the associated column and then select a filter option from the drop down menu.

Select	To
(Custom)	Enter criteria for filtering the selected column. **NOTE: View the following paragraph for additional information.**
(Blanks)	Display only entries with blank information in the selected column.
(Non blanks)	Display only entries with information in the selected column.

From the drop down menu, you can also select from the entries in the selected column to group the column by the selected entry.

If you select (**Custom**), the Custom AutoFilter function appears. Select up to two filtering criteria for the selected column from the drop down menus, then enter a string of text or numbers to complete the condition and click **OK**.



Sorting and Filtering Pivot Chart Data

Right-click on the pivot table gray area or a field button when in Pivot Chart View for each application, to use the following functions:

Select	To
Refresh Data	Refresh the data in the tables.
Hide	Remove the selected criterion from the table.
Order	Move the selected criterion to the beginning, left, right, or end of the list of criteria.
Show Field List	Open the PivotGrid Field List, then click and drag the applicable fields to the desired locations.

Select	To
	Close the PivotGrid Field List.

NOTE: Note: See instructions in the "Filtering Across All Columns" section for more information on filtering.

ASSEMBLY VIEW

The **Assembly View** gives you a summarized view of Assembly IDs and allows you to drill-down into the Bills of Material View.

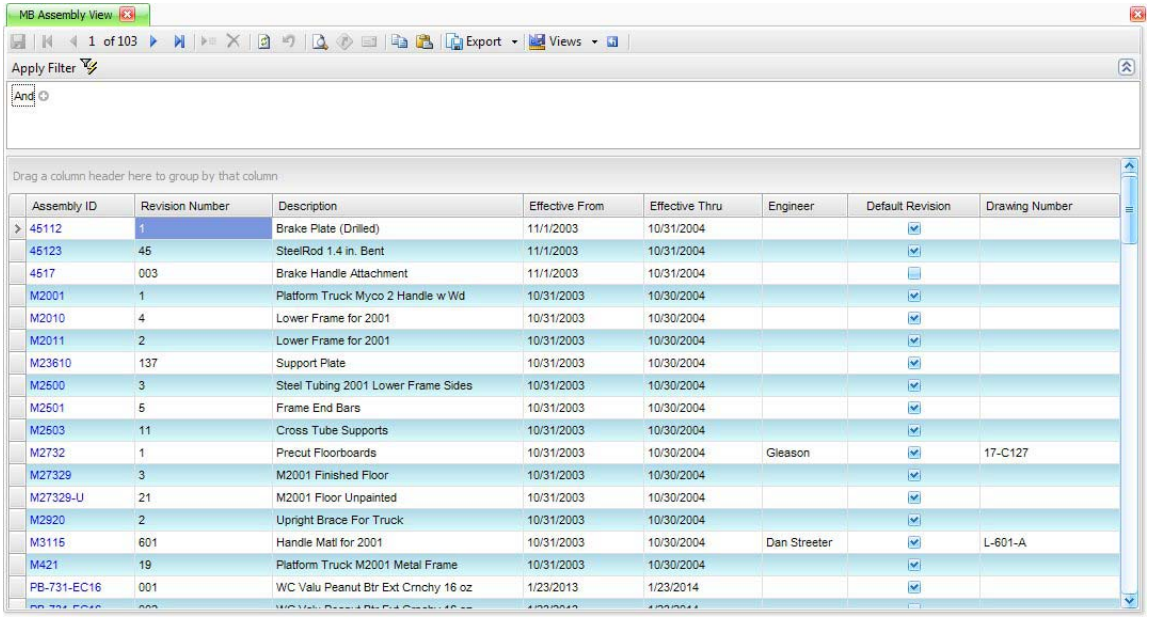
To use the **Assembly View**, follow these steps:

1. Select **Assembly View** from the **Interactive Views** menu.

Assembly View Menu

2. The **Assembly View** screen appears.

Assembly View Screen



Assembly ID	Revision Number	Description	Effective From	Effective Thru	Engineer	Default Revision	Drawing Number
45112	1	Brake Plate (Drilled)	11/1/2003	10/31/2004		☑	
45123	45	SteelRod 1.4 in. Bent	11/1/2003	10/31/2004		☑	
4517	003	Brake Handle Attachment	11/1/2003	10/31/2004		☐	
M2001	1	Platform Truck Myco 2 Handle w Wd	10/31/2003	10/30/2004		☑	
M2010	4	Lower Frame for 2001	10/31/2003	10/30/2004		☑	
M2011	2	Lower Frame for 2001	10/31/2003	10/30/2004		☑	
M23610	137	Support Plate	10/31/2003	10/30/2004		☑	
M2500	3	Steel Tubing 2001 Lower Frame Sides	10/31/2003	10/30/2004		☑	
M2501	5	Frame End Bars	10/31/2003	10/30/2004		☑	
M2503	11	Cross Tube Supports	10/31/2003	10/30/2004		☑	
M2732	1	Precut Floorboards	10/31/2003	10/30/2004	Gleason	☑	17-C127
M27329	3	M2001 Finished Floor	10/31/2003	10/30/2004		☑	
M27329-U	21	M2001 Floor Unpainted	10/31/2003	10/30/2004		☑	
M2920	2	Upright Brace For Truck	10/31/2003	10/30/2004		☑	
M3115	601	Handle Matl for 2001	10/31/2003	10/30/2004	Dan Streeter	☑	L-601-A
M421	19	Platform Truck M2001 Metal Frame	10/31/2003	10/30/2004		☑	
PB-731-EC16	001	WC Valu Peanut Btr Ext Crnchy 16 oz	1/23/2013	1/23/2014		☑	

3. Select the range of **Filter Criteria** to include in the View. Leave the filter criteria blank to include all records. Click **Apply Filter** to populate the grid below.

4. Double click on the blue **Assembly ID** field to drill down to the Bills of Material setup screen.

Refer to the **Using the Interactive Views Menu** section a the beginning of this chapter for more details on using the Assembly View.

NOTE: Refer to the How to Use Grids Section in the General Information guide for more details on how to add or take away columns from the grid screen.

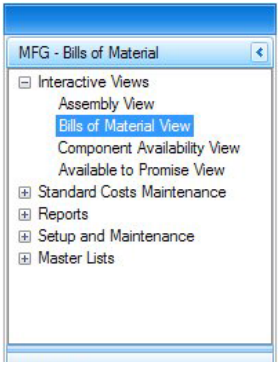
BILLS OF MATERIAL VIEW

The **Bills of Material View** allows you to view the material Components and Routings for your Bills of Material.

To use the **Bills of Material View**, follow these steps:

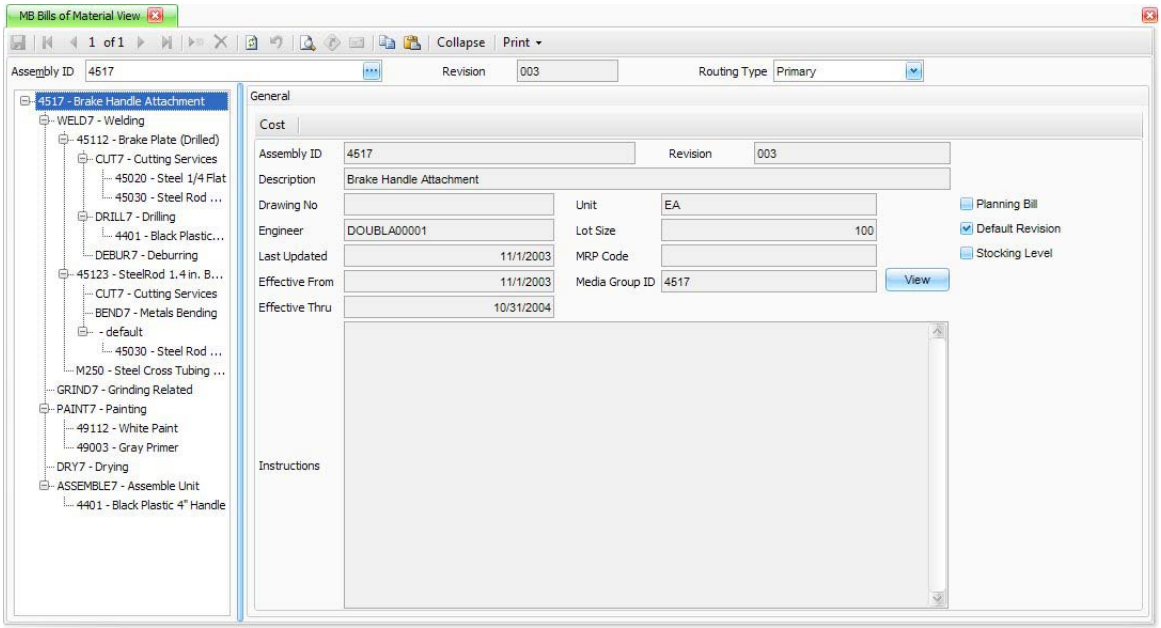
1. Select **Bills of Material View** from the **Interactive Views** menu.

Bills of Material View Menu



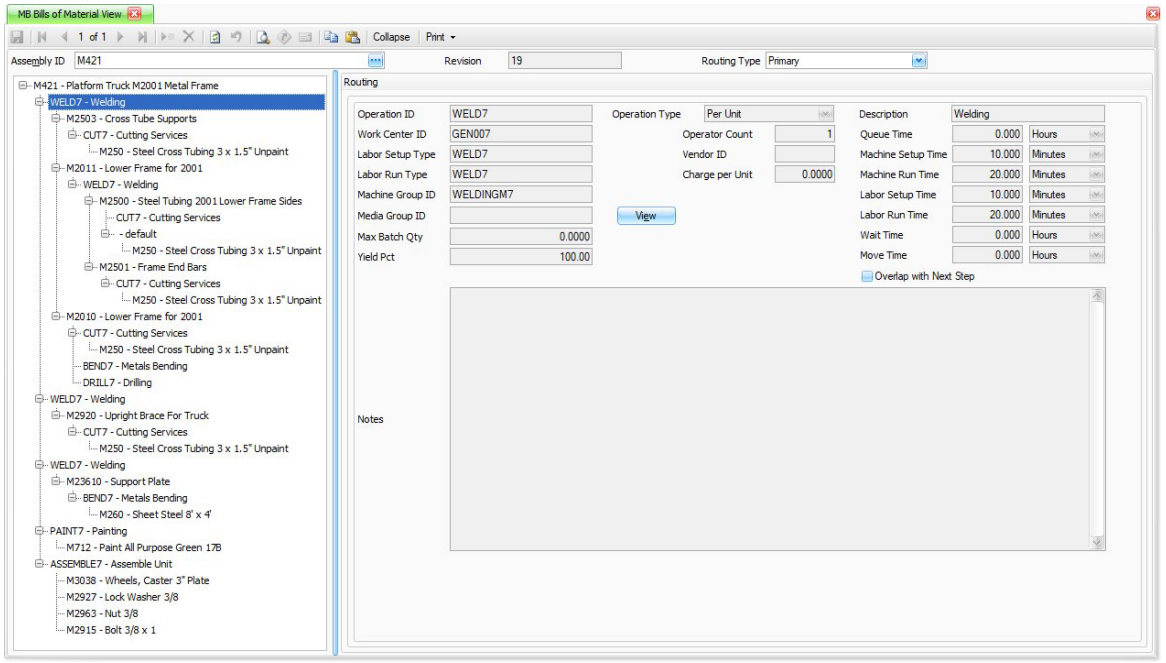
2. The **Bills of Material View** screen appears.

Bills of Material View Screen

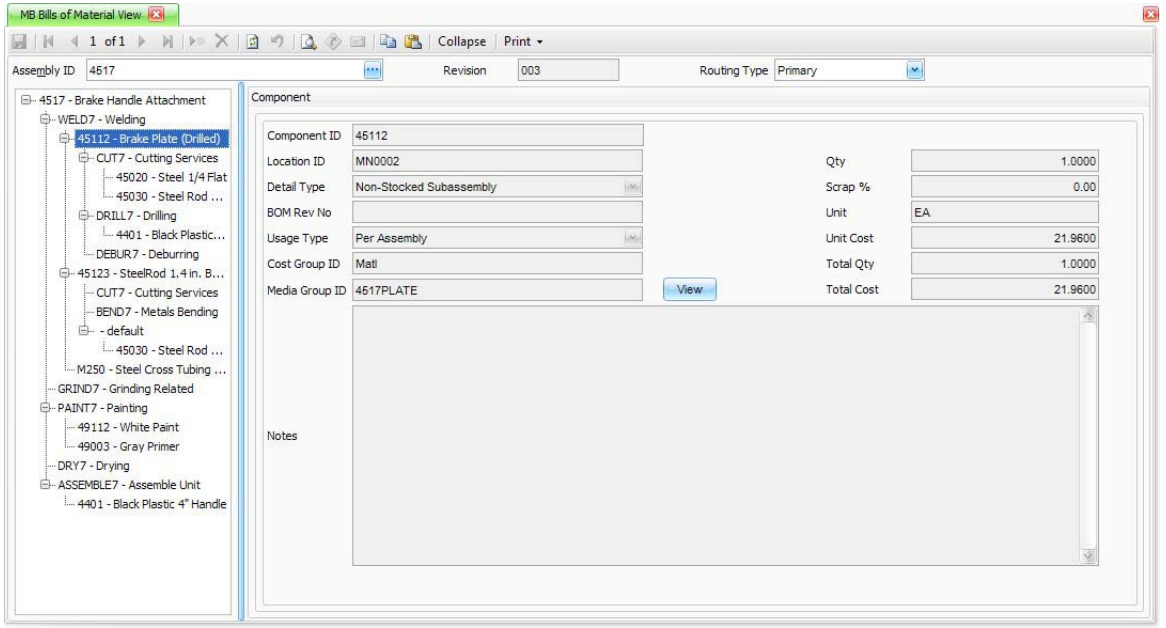


3. Select the **Assembly ID** you want to view.
4. Click the **Expand** button to expand the tree to more easily select all levels of the Assembly ID.
5. Select the Routing or Component for which you want to view details.

Bills of Material View Screen - Routing

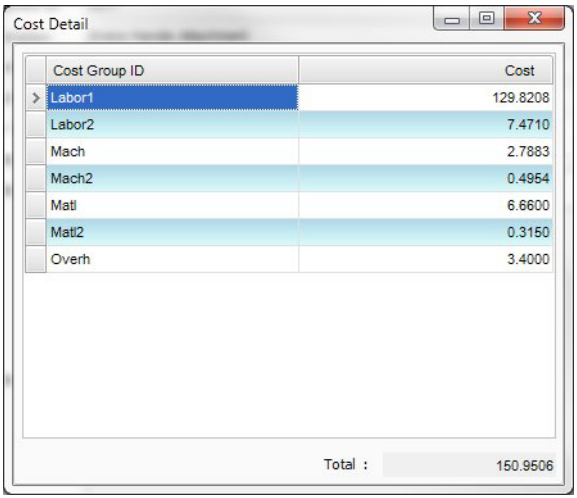


Bills of Material View Screen - Component



6. When the Assembly ID view detail is displayed, click the **Cost** button to display the Cost Group costs calculated for the assembly.

Bills of Material Cost Detail Screen



7. Click the **Print** button to print the following reports:
    - Bills of Material List
    - Indented Bills of Material
    - Summarized Bills of Material
    - Costed Bills of Material
    - Bills of Material Worksheet

Refer to the **Using the Interactive Views Menu** section a the beginning of this chapter for more details on using the Bills of Material View.

NOTE: Refer to the How to Use Grids Section in the General Information guide for more details on how to add or take away columns from the grid screen.

COMPONENT AVAILABILITY VIEW

The **Component Availability View** function allows you to quickly view individual component availability for a user input Assembly ID and a desired production quantity for that Assembly ID.

The Component Availability View function allows you to enter an Assembly ID and Revision, as well as an estimated or desired final production Quantity. When you click on the **Find** button, the software then prepares a list of all the Components or Stocked Subassemblies that go into the Bill of Material. This list of Components extends through all levels of the Bill of Material if multiple levels exists and are connected via non-stocked Subassemblies. It then displays that list on the screen showing the current Quantity Required, the Quantity Available for each Component, the Maximum Buildable Quantity based on each individual Component, and finally, the Actual Buildable Quantity based on the status of all Components.

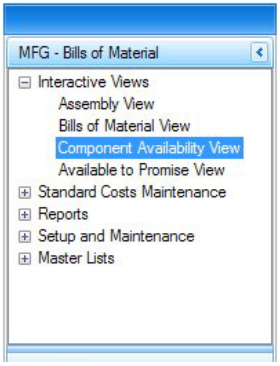
> **Example: We are building a simple 4 legged table, we choose to build 10 tables and we have 50 legs in stock. The system will initially show us that the quantity required (Qty Required) in terms of legs would be 40. The next column, which shows the quantity available (Qty Available) will show us that 50 legs are actually in stock. In the maximum buildable quantity field (Max Buildable Qty) we'll see 12. This is because based on leg availability alone we have enough to actually build 12 tables. Finally in the buildable quantity field (Buildable Qty) we'll see the total number of tables we can build based on an analysis of all components.**

The Component Availability View only concerns itself with material Components and does not make any consideration for Time related resources such as Labor, Machines, or Subcontract processes. Again, the function treats Stocked Subassemblies like raw materials in calculating the requirements. Subassemblies which have been defined in the bill as “Non-stocked” Subassemblies do not appear on the screen, but their material and Stocked Subassembly components would appear. By-products do not appear on the screen. Non-Inventory Items, Service Items, and “as needed” that have been defined with required quantities of zero are included in the display but have no affect on the Buildable Quantity. Non-Inventory Items and Service Items will display a quantity required in most cases, but the Quantity Available will always display as zero, since neither Item can be given a quantity within the Inventory system. The Maximum Quantity Buildable will also display as zero for those line Items but this has no effect on the Buildable Quantity.

To use the **Component Availability View**, follow these steps:

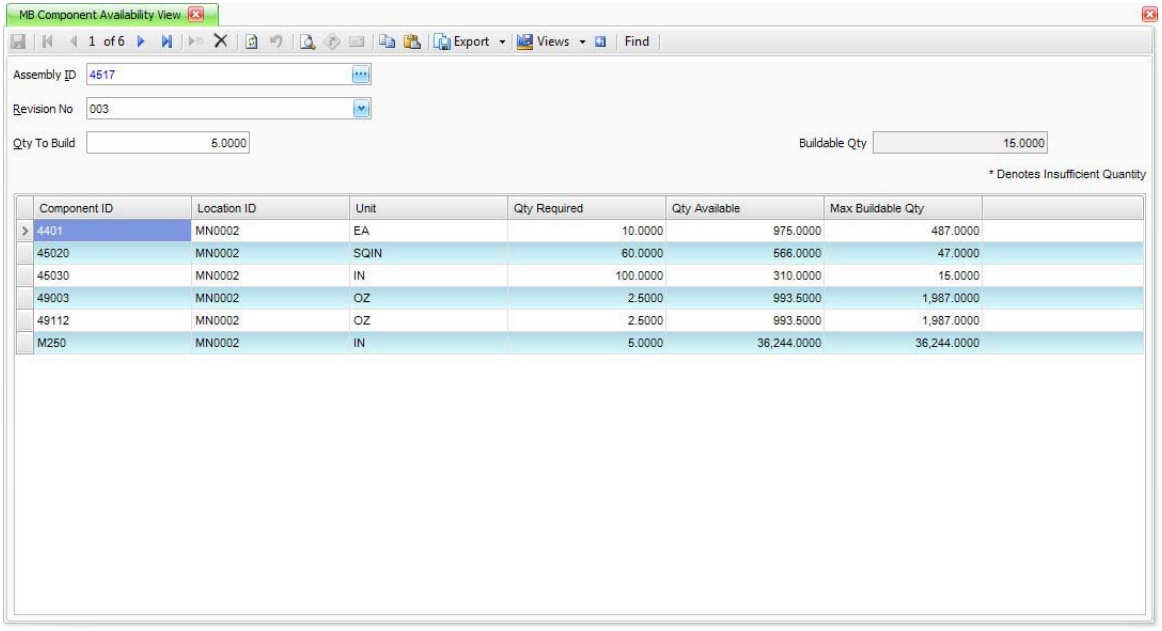
1. Select **Component Availability View** from the **Interactive Views** menu.

Component Availability View Menu



2. The **Component Availability View** screen appears.

Component Availability View Screen



3. Select the **Assembly ID** for which you want to find the availability.
4. Select the **Revision No** for which you want to view the availability.

5. Enter the **Qty to Build** for quantity you want to view the availability.
6. Click **Find** to view the components and the available quantities.

Refer to the **Using the Interactive Views Menu** section a the beginning of this chapter for more details on using the Component Availability View.

NOTE: Refer to the How to Use Grids Section in the General Information guide for more details on how to add or take away columns from the grid screen.

AVAILABLE TO PROMISE VIEW

Use the **Available to Promise View** to show you two product availability dates. One that is a First Available Date and one called the Available to Promise Date, which can be used to quote an Available Date to their Customer, without stepping on another Customer's order or a manufacturing requirement.

The Available to Promise view has several unique features and may be thought of more as a sales tool than a manufacturing tool at times. It does not look at Components that could potentially be required for un released Production Orders. It doesn't use the Bill of Materials data. It only looks at existing Inventory supply and demand information in the TRAVERSE database. The function simply asks you for an Item ID and a Quantity Required and works equally well with manufactured Items as Item IDs that are simply stocked for resale or Components stocked for manufacturing usage.

The first thing the system does is to show the Quantity currently On Hand, which is a relatively quick and easy calculation. (Inventory Base Qty On Hand) At this point it's irrelevant what is On Order, Sold, Committed, etc. The system is telling you, “If you need it right now, and you don't care if it's Committed to Manufacturing, or a Customer, or Project Cost, here's what you can take out of stock right now”

Next, the system finds what is called the First Available Date. This would be today if the Quantity On Hand is equal or greater to the Quantity Required. If the Quantity On Hand is less than what is needed, the system reads through outstanding Purchase Orders, Sales Orders, Manufacturing Production Orders, and any other source of supply or demand for Inventory, attempting to establish a date in the future when the theoretical Quantity On Hand should be greater than what you require. Production Orders and Purchase Orders add to the Quantity On Hand day by day and Sales Orders, or components in currently released Production Orders, reduce that quantity.

The next field is the Available to Promise Date. Again, this is a date for which you can promise the product without risk of stepping on a future order. The Available to Promise date is somewhat similar to the First Available Date, but the difference is that once the system encounters a date that appears to have sufficient Inventory quantities to address the Quantity Required, it keeps reading out into the future to see if the Inventory level later drops below the Required Quantity. If this happens, that previously encountered date is disregarded and the system looks for a new date farther out in the future.

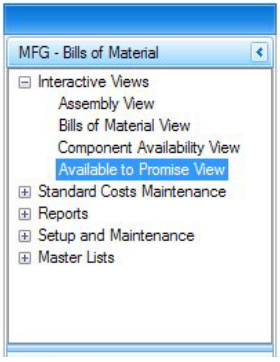
Example: Today being November 1st, we need 10 units and we have 7 units in stock. The Quantity On Hand appears as 7 units. As the system reads out into the future it discovers a Production Order on November 11th for 5 units, for this Item ID. We now have enough, so November 11 becomes our First Available Date and maybe our Available to Promise Date. However, as we read out further we find a Sales Order for 8 units on November 13th. This drops our available units from 12 units to 4 so we have to look for another date as our Available to Promise Date. Now we find another Production Order on December 8th for 20 units, changing our expected On Hand to be 24 units. As we continue to search, we find no more transactions for this Item ID within the lead time. December 8th becomes our Available to Promise Date.

NOTE: As the system reads out into the future attempting to establish either of the dates, it will stop when it hits the Lead Time days or 90 days if no Lead Time has been established in Inventory. At that point it will assign that date to the First Available Date and the Available to Promise Date; the assumption being that although there aren't planned orders to create the required availability, one could simply place a Purchase Order or Manufacturing Production Order for the product today, and have it by that date.

To use the **Available to Promise View**, follow these steps:

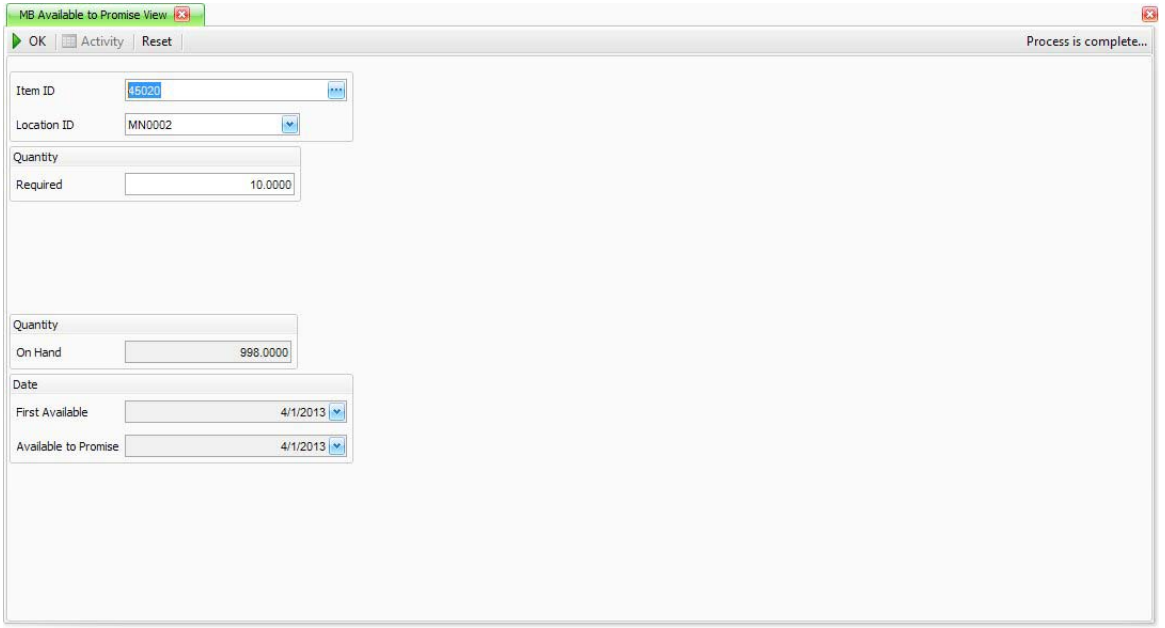
1. Select **Available to Promise View** from the **Interactive Views** menu.

Available to Promise View Menu



2. The **Available to Promise View** screen appears.

Available to Promise View Screen



3. Select the **Item ID** for the item you want the First Available and Available to Promise Dates calculated.
4. Select the **Location ID** for the Location of the Item ID you want the First Available and Available to Promise date calculated.
5. Enter the **Quantity Required** to promise.
6. Click **OK** and the **Quantity On Hand**, **First Available Date**, and **Available to Promise Date** are displayed.

Refer to the **Using the Interactive Views Menu** section a the beginning of this chapter for more details on using the Available to Promise View.

NOTE: Refer to the How to Use Grids Section in the General Information guide for more details on how to add or take away columns from the grid screen.

6

Reports

USING THE REPORTS MENU

Before you use the functions on the Reports menu, make sure you have set up Bills of Material using the corresponding functions on the Setup and Maintenance menu. Verify your setup information using the functions on the Master Lists and Interactive Views menus. See “Bills of Material Setup” on (page 3-35) for more information on setting up Bills of Material. Use the functions on the Reports menu to perform these tasks:

- View the Materials, By-Products, Subcontracting, and Operations Components that make up the BOM and the costs associated with these Components.
- Locate BOMs currently using specific Components.
- Examine the quantities involved to the subcomponent level when planning to build a specific quantity of an Item ID.
- Locate changes made to a previous Revision of a BOM, view a current Revision, or locate a BOM change made months prior.
- Review Components (including Subassembly) in an indented format, enabling you to have better idea of the BOM structure.
- Quickly view what Material Components, Machinery, Labor, and Work Centers are used for an entire BOM without digging through a lot of additional information.
- Create a working form that can be used in place of the Order Traveler and Production Picking List within the Production module.

COSTED BILLS OF MATERIAL

The **Costed Bills of Material Report** is designed to give you a printed copy of all the costs that go into a Bill of Material, resulting in a total product cost based on current Standard Costs or optionally, component Last Costs. The report lists out each process from start to finish, listing Material Components within those Routing steps. Queue Time, Wait Time, and Move Time need not be shown on the report since they are not costed Item IDs. Non-Inventory Items and As Needed Items appear on the report although As Needed Items may not add cost to the BOM.

The first line of each report section shows the Assembly ID or Product ID being produced and it's Description. The Type always appears as “Assembly” for this line. The Labor Type ID and Machine Group ID are blank. The Lot Size, and Unit of Measure are the respective fields from the General area. Finally the Total calculated cost of the Item ID appears to the far right.

Below the Assembly line are the various cost lines of the report. These consist of Labor Setup Costs, Machine Setup Costs, Overhead (Work Center) Costs, Material Costs, and Subcontracting Costs. On the far right side of the report is the Cost contribution of that specific Cost area to the Total Cost of the Assembly ID.

The report only prints one level Bills of Material, indenting Routing steps and further indenting their Material Components. The report actually calculates the Standard Cost of Non-Stocked Subassemblies that print on the report so those costs should be very accurate as they include all lower level Routing and Material Costs. This also means that if one was to look at the stated Standard Cost in Inventory or on the Bill of Material for a Non-Stocked Subassembly, one might find it would be different than the amount that prints on the report.

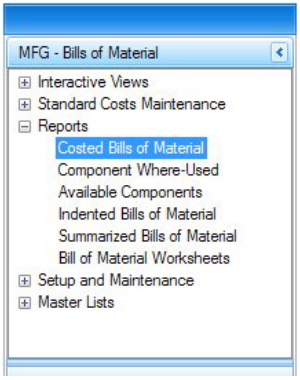
Machine Setup, Labor Setup, Labor Run, and Machine Run Costs print very similarly, however, the Qty and Cost may be calculated differently depending on whether the process is considered a Per Unit, Batch or Run Rate process. The Location ID/Work Center will print the name of the Work Center for these lines. Type will appear as Labor, Machine, Machine Setup, or Labor Setup. The Labor Type ID and Machine Group ID will appear accordingly. The Qty/Lot Size should generally equate to the time to run one piece or one unit. The Unit is going to be Hrs, Mins, or Secs. Cost Group ID prints the Cost Group assigned to that Machine Group or Labor Type and finally the Cost, is the Cost contribution to the Total Cost of the product that this line provides.

Material Components will appear below the Operation or Routing Step they have been assigned to, and are indented slightly from the Operations. They will print their Location and Type, which always appears as Material. The Labor Type ID and Machine ID are not applicable and appear blank. The Qty field holds the quantity to be used. Unit is the Unit of Measure. Cost Group shows the Cost Group assigned to that Material in the Bill of Material, and finally the Cost is the Unit Cost multiplied by the Quantity. As Needed and Non-Inventory components also appear on the report.

To produce the **Costed Bills of Material Report**, follow these steps:

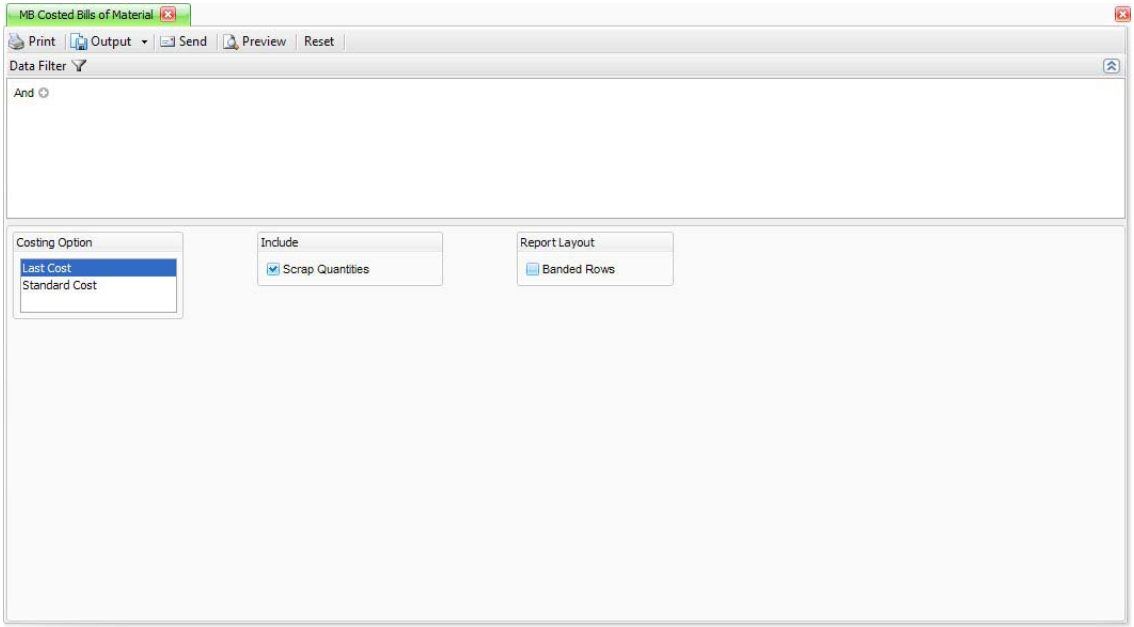
1. Select **Costed Bills of Material Report** from the **Reports** menu.

Costed Bills of Material Report Menu



2. The **Costed Bills of Material Report** screen appears.

Costed Bills of Material Report Screen



3. Select the range of **Filter Criteria** to include in the report. Leave this area blank to include all information in the report.
4. Select the **Costing Option** the report; **Last Cost** or **Standard Cost**.
5. Select the box to **Include Scrap Quantities** on the report.
6. Select the check box if you want to print the report in **Banded Rows** format, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.

7. Select a command button:

Command Buttons

Name	Description
Reset	Set all fields to their defaults.
Preview	Preview the report on your monitor.
Output	Output the report as a .pdf file and save it.
Send	Email the report with the report attached as a .pdf file.
Print	Print the report.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Costed Bills of Material Report

Continental Products Unlimited
Costed Bills of Material - Last Cost

Page 1

Report Filter
Include Scrap Quantities Yes

Assembly / Operation / Component	Location ID / Work Center	Type	Labor Type ID	Machine Group ID	Qty / Lot Size	Unit	Cost Group ID	Cost
45112-1 (Primary): Brake Plate (Drilled)		Assembly			1.0000	EA		23.1793
CUT7: Cutting Services	METALS7	Labor Setup	MACHSHOP7	SAW07	30.0000	Mins	Labor1	11.0000
CUT7: Cutting Services	METALS7	Labor	MACHSHOP7	SAW07	2.0000	Mins	Labor1	0.7333
CUT7: Cutting Services	METALS7	Machine Setup	MACHSHOP7	SAW07	0.5000	Hrs	Mach	1.5000
CUT7: Cutting Services	METALS7	Machine	MACHSHOP7	SAW07	2.0000	Mins	Mach	0.1000
CUT7: Cutting Services	METALS7	Overhead	MACHSHOP7	SAW07	1.0000		Overh	0.0000
CUT7: Cutting Services	METALS7	Labor Per Piece	MACHSHOP7	SAW07	1.0000		Labor1	0.0000
45020: Steel 1/4 Flat	MN0002	Material			12.0000	SQIN	Matl	2.4000
45030: Steel Rod 1/2"	MN0002	Material			2.0000	IN	Matl	0.3460
DRILL7: Drilling	METALS7	Labor Setup	MACHSHOP7	DRLPRESS7	5.0000	Mins	Labor1	1.8333
DRILL7: Drilling	METALS7	Labor	MACHSHOP7	DRLPRESS7	5.0000	Mins	Labor1	1.8333
DRILL7: Drilling	METALS7	Machine Setup	MACHSHOP7	DRLPRESS7	5.0000	Mins	Mach2	0.3750
DRILL7: Drilling	METALS7	Machine	MACHSHOP7	DRLPRESS7	5.0000	Mins	Mach2	0.3750
DRILL7: Drilling	METALS7	Overhead	MACHSHOP7	DRLPRESS7	1.0000		Overh	0.0000
DRILL7: Drilling	METALS7	Labor Per Piece	MACHSHOP7	DRLPRESS7	1.0000		Labor1	0.0000
4401: Black Plastic 4" Handle	MN0002	Material			1.0000	EA	Matl	0.8500
DEBUR7: Deburring	METALS7	Labor	MACHSHOP7		5.0000	Mins	Labor1	1.8333
DEBUR7: Deburring	METALS7	Overhead	MACHSHOP7		1.0000		Overh	0.0000
DEBUR7: Deburring	METALS7	Labor Per Piece	MACHSHOP7		1.0000		Labor1	0.0000
45123-45 (Primary): SteelRod 1.4 in. Bent		Assembly			1.0000	EA		20.2390
CUT7: Cutting Services	METALS7	Labor	MACHSHOP7	SAW07	30.0000	Secs	Labor1	0.1833
CUT7: Cutting Services	METALS7	Machine	MACHSHOP7	SAW07	30.0000	Secs	Mach	0.0250
CUT7: Cutting Services	METALS7	Overhead	MACHSHOP7	SAW07	1.0000		Overh	0.0000
CUT7: Cutting Services	METALS7	Labor Per Piece	MACHSHOP7	SAW07	1.0000		Labor1	0.0000
BEND7: Metals Bending	METALS7	Labor Setup	MACHSHOP7	BEND07	30.0000	Mins	Labor1	11.0000
BEND7: Metals Bending	METALS7	Labor	MACHSHOP7	BEND07	5.0000	Mins	Labor1	1.8333
BEND7: Metals Bending	METALS7	Machine Setup	MACHSHOP7	BEND07	30.0000	Mins	Mach	3.5000
BEND7: Metals Bending	METALS7	Machine	MACHSHOP7	BEND07	5.0000	Mins	Mach	0.5833
BEND7: Metals Bending	METALS7	Overhead	MACHSHOP7	BEND07	1.0000		Overh	0.0000
BEND7: Metals Bending	METALS7	Labor Per Piece	MACHSHOP7	BEND07	1.0000		Labor1	0.0000
: default		Overhead			1.0000			0.0000
: default		Labor Per Piece			1.0000			0.0000
45030: Steel Rod 1/2"	MN0002	Material			18.0000	IN	Matl	3.1140
4517-003 (Primary): Brake Handle Attachment		Assembly			100.0000	EA		151.7306
WELD7: Welding	GEN007	Labor Setup	WELD7	WELDINGM7	0.0025	Hrs	Labor2	0.1050

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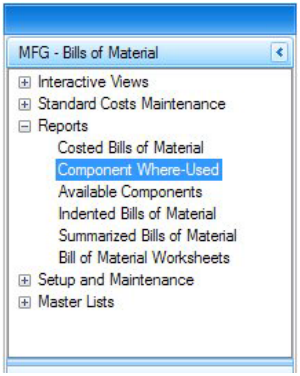
COMPONENT WHERE - USED

The **Component Where - Used** report shows in which Bills of Material, Components can be found. This report is useful if a particular Component is being discontinued or has had a significant price change and management is considering replacing the Component and needs to know what finished goods will be affected. Single indentation would allow you to see the Component and the BOM it is used in. The report resembles an upside down Bill of Materials, because one is seeing the Component, then all the BOMs it is a part of, at any given level. The fully indented version of the report allows you to not only see the BOM the Component goes into, but if that BOM is a component to another Bill of Materials, the report will show that also. Seeing this hierarchy of Bills of Material can be helpful and seeing how minor Components can impact several Bills of Material at higher levels.

To produce the **Component Where - Used Report**, follow these steps:

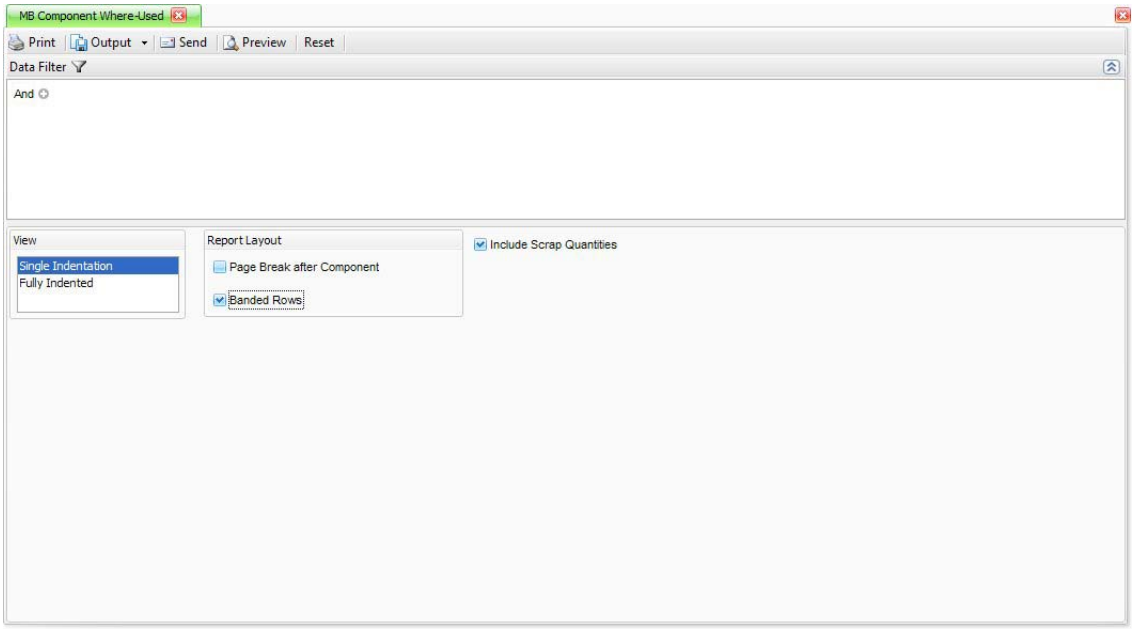
1. Select **Component Where - Used Report** from the **Reports** menu.

Component Where - Used Report Menu



2. The **Component Where - Used Report** screen appears.

Component Where - Used Report Screen



3. Select the range of **Filter Criteria** to include in the report. Leave this area blank to include all information in the report.
4. Select the **View** format for the report; **Single Indentation** or **Fully Indented**.
5. Select the **Report Layout** check the box if you want to have a **Page Break after Component**. Leave this check box blank to have a continuous report.
6. Select the check box if you want to print the report in **Banded Rows** format, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.
7. Select the box to **Include Scrap Quantities** on the report.

8. Select a command button:

Command Buttons

Name	Description
Reset	Set all fields to their defaults.
Preview	Preview the report on your monitor.
Output	Output the report as a .pdf file and save it.
Send	Email the report with the report attached as a .pdf file.
Print	Print the report.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Component Where - Used Report - Single Indentation

Continental Products Unlimited
Component Where-Used (Single Indentation)

Page 1

Report Filter
Include Scrap Quantities Yes

Component ID: Component Description Assembly ID: Assembly Description	Revision No	Detail Type	Location ID	Unit	Component Qty
+4401:Black Plastic 4" Handle			MN0002		
+45112:Brake Plate (Drilled)	1	Material	MN0002	EA	1.0000
+4517:Brake Handle Attachment	003	Material	MN0002	EA	1.0000
+4502:Steel 1/4 Flat			MN0002		
+45112:Brake Plate (Drilled)	1	Material	MN0002	SQIN	12.0000
+45030:Steel Rod 1/2"			MN0002		
+45112:Brake Plate (Drilled)	1	Material	MN0002	IN	2.0000
+45123:SteelRod 1.4 in. Bent	45	Material	MN0002	IN	18.0000
+45112:Brake Plate (Drilled)			MN0002		
+4517:Brake Handle Attachment	003	Assembly	MN0002	EA	1.0000
+45123:SteelRod 1.4 in. Bent			MN0002		
+4517:Brake Handle Attachment	003	Assembly	MN0002	EA	1.0000
+49003:Gray Primer			MN0002		
+4517:Brake Handle Attachment	003	Material	MN0002	OZ	0.5000
+49112:White Paint			MN0002		
+4517:Brake Handle Attachment	003	Material	MN0002	OZ	0.5000
+M2010:Lower Frame for 2001			MN0002		
+M421:Platform Truck M2001 Metal Frame	19	Assembly	MN0002	EA	2.0000
+M2011:Lower Frame			MN0002		
+M421:Platform Truck M2001 Metal Frame	19	Assembly	MN0002	EA	1.0000
+M23610:Steel Support Plate 6" x 6" Stamped			MN0002		
+M421:Platform Truck M2001 Metal Frame	19	Assembly	MN0002	EA	4.0000
+M250:Steel Cross Tubing 3 x 1.5" Unpaint			MN0002		
+4517:Brake Handle Attachment	003	Material	MN0002	IN	1.0000
+M2010:Lower Frame for 2001	4	Material	MN0002	IN	48.0000
+M2500:Steel Tubing 2001 Lower Frame Sides	3	Material	MN0002	IN	26.0000
+M2501:Frame End Bars	5	Material	MN0002	IN	48.0000
+M2503:Cross Tube Supports	11	Material	MN0002	IN	24.0000

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Component Where - Used Report - Fully Indented

Continental Products Unlimited
Component Where-Used (Fully Indented)

Page 1

Report Filter
Include Scrap Quantities: Yes

Component ID: Component Description Assembly ID: Assembly Description	Revision No	Detail Type	Location ID	Unit	Component Qty
+4401:Black Plastic 4" Handle			MN0002		
+45112:Brake Plate (Drilled)	1	Material	MN0002	EA	1.0000
+4517:Brake Handle Attachment	003	Assembly		EA	1.0000
+4517:Brake Handle Attachment	003	Material	MN0002	EA	1.0000
+45020:Steel 1/4 Flat			MN0002		
+45112:Brake Plate (Drilled)	1	Material	MN0002	SQIN	12.0000
+4517:Brake Handle Attachment	003	Assembly		EA	1.0000
+45030:Steel Rod 1/2"			MN0002		
+45112:Brake Plate (Drilled)	1	Material	MN0002	IN	2.0000
+4517:Brake Handle Attachment	003	Assembly		EA	1.0000
+45123:SteelRod 1.4 in. Bent	45	Material	MN0002	IN	18.0000
+4517:Brake Handle Attachment	003	Assembly		EA	1.0000
+45112:Brake Plate (Drilled)			MN0002		
+4517:Brake Handle Attachment	003	Assembly	MN0002	EA	1.0000
+45123:SteelRod 1.4 in. Bent			MN0002		
+4517:Brake Handle Attachment	003	Assembly	MN0002	EA	1.0000
+49003:Gray Primer			MN0002		
+4517:Brake Handle Attachment	003	Material	MN0002	OZ	0.5000
+49112:White Paint			MN0002		
+4517:Brake Handle Attachment	003	Material	MN0002	OZ	0.5000
+M2010:Lower Frame for 2001			MN0002		
+M421:Platform Truck M2001 Metal Frame	19	Assembly	MN0002	EA	2.0000
+M2001:Platform Truck Myco 2 Handle w Wd	1	Assembly		EA	1.0000
+M2011:Lower Frame			MN0002		
+M421:Platform Truck M2001 Metal Frame	19	Assembly	MN0002	EA	1.0000
+M2001:Platform Truck Myco 2 Handle w Wd	1	Assembly		EA	1.0000
+M23610:Steel Support Plate 6" x 6" Stamped			MN0002		
+M421:Platform Truck M2001 Metal Frame	19	Assembly	MN0002	EA	4.0000

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AVAILABLE COMPONENTS

The **Available Components** is the report version of the Available Components View.

The report can be run for a range of Assembly IDs and Revisions, but is really intended to be run for one specific Assembly ID. You can enter a quantity and that quantity is exploded for a single Bill of Material, or Bills of Material in the range. The system then prints an Availability report of Components for each Bill of Material. It also shows how many of the finished Assembly ID could be built, based on the Components Available. This report allows you to focus on the weakest link or links in terms of availability. To see more specific details in regard to the makeup of the report, refer to the more detailed notes on the Component Availability View (page 5-13) discussed previously.

The Available Components Report function allows you to enter an Assembly ID and Revision, as well as an estimated or desired final production Quantity to Build. When you print the report, the software then prepares a list of all the Components or Stocked Subassemblies that go into the Bill of Material. This list of Components extends through all levels of the Bill of Material if multiple levels exist and are connected via Non-Stocked Subassemblies. It then displays that list on the report showing the current Quantity Required, the Quantity Available for each component, the maximum Quantity Buildable, based on each individual Component, and finally, the actual Quantity Buildable based on the status of all Components.

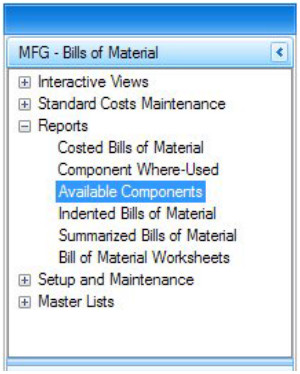
> **Example: We are building a simple 4 legged table, we choose to build 10 tables and we have 50 legs in stock. The system will initially show us that the quantity required (Qty Required) in terms of legs would be 40. The next column, which shows the quantity available (Qty Available) will show us that 50 legs are actually in stock. In the maximum buildable quantity field (Max Buildable Qty) we'll see 12. This is because based on leg availability alone we have enough to actually build 12 tables. Finally in the buildable quantity field (Buildable Qty) we'll see the total number of tables we can build based on an analysis of all components.**

The report only concerns itself with Material Components and does not make any consideration for Time related resources such as Labor, Machines, or Subcontract processes. Again, the report treats Stocked Subassemblies like raw materials in calculating the requirements. Subassemblies which have been defined in the Bill of Material as “Non-stocked” Subassemblies do not appear on the report, but their Material and Stocked Subassembly Components will appear. By-Products do not appear on the report. Non-Inventory Items, Service Items, and “as needed” that have been defined with required quantities of zero are included in the report but have no affect on the Quantity Buildable. Non-Inventory Items and Service Items will display a Quantity Required in most cases, but the quantity Available will always display as zero, since neither Item can be given a quantity within the Inventory system. The maximum Quantity Buildable will also display as zero for those line items but this has no effect on the Quantity Buildable.

To produce the **Available Components Report**, follow these steps:

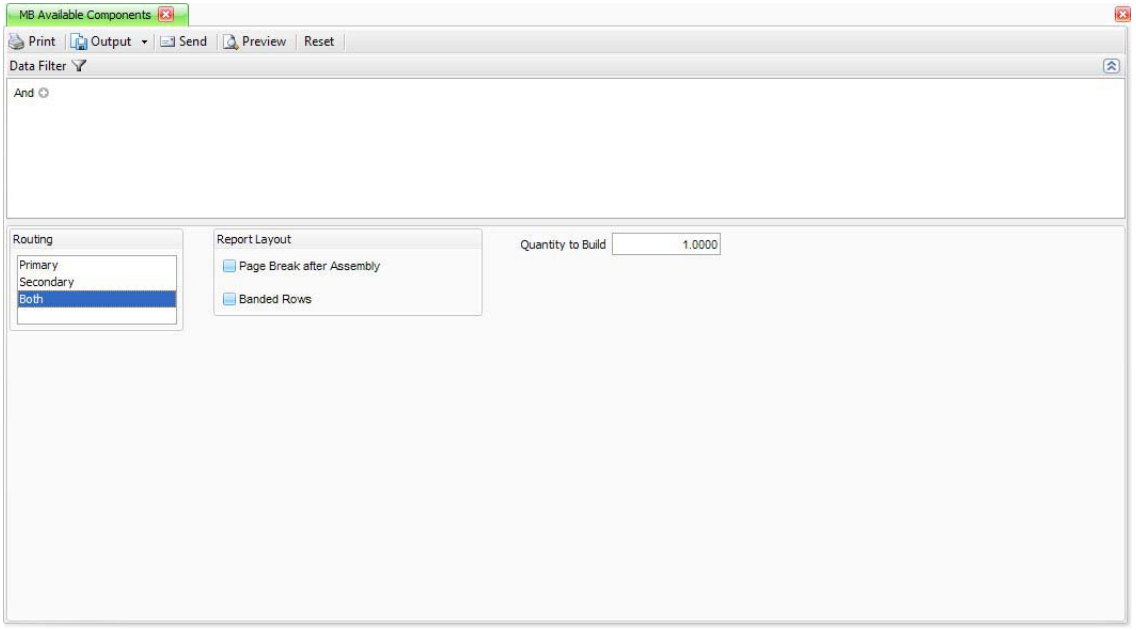
1. Select **Available Components Report** from the **Reports** menu.

Available Components Report Menu



2. The **Available Components Report** screen appears.

Available Components Report Screen



3. Select the range of **Filter Criteria** to include in the report. Leave this area blank to include all information in the report.

4. Select the **Routing** for the report; **Primary, Secondary**, or **Both**.
5. Select the **Report Layout** check the box if you want to have a **Page Break after Assembly**. Leave this check box blank to have a continuous report.
6. Select the check box if you want to print the report in **Banded Rows** format, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.
7. Enter the **Quantity to Build** for the report.
8. Select a command button:

Command Buttons

Name	Description
Reset	Set all fields to their defaults.
Preview	Preview the report on your monitor.
Output	Output the report as a .pdf file and save it.
Send	Email the report with the report attached as a .pdf file.
Print	Print the report.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Available Components Report

Continental Products Unlimited
Available Components

Report Filter
Quantity to Build 10.0000 **Include Routing** Primary and Secondary

Assembly ID	Revision No	Routing Type	Description	Unit	Qty to Build	Qty Buildable
45112	1	Primary	Brake Plate (Drilled)	EA	10.0000	47.0000
Component ID	**Location ID**	**Description**	**Item Type**	**Unit**	**Qty Required**	**Qty Available**
4401	MN0002	Black Plastic 4" Handle	Material	EA	10.0000	975.0000
45020	MN0002	Steel 1/4 Flat	Material	SQIN	120.0000	566.0000
45030	MN0002	Steel Rod 1/2"	Material	IN	20.0000	310.0000

Assembly ID	Revision No	Routing Type	Description	Unit	Qty to Build	Qty Buildable
45123	45	Primary	SteelRod 1.4 in. Bent	EA	10.0000	17.0000
Component ID	**Location ID**	**Description**	**Item Type**	**Unit**	**Qty Required**	**Qty Available**
45030	MN0002	Steel Rod 1/2"	Material	IN	180.0000	310.0000

Assembly ID	Revision No	Routing Type	Description	Unit	Qty to Build	Qty Buildable
4517	003	Primary	Brake Handle Attachment	EA	10.0000	15.0000
Component ID	**Location ID**	**Description**	**Item Type**	**Unit**	**Qty Required**	**Qty Available**
4401	MN0002	Black Plastic 4" Handle	Material	EA	20.0000	975.0000
45020	MN0002	Steel 1/4 Flat	Material	SQIN	120.0000	566.0000
45030	MN0002	Steel Rod 1/2"	Material	IN	200.0000	310.0000
49003	MN0002	Gray Primer	Material	OZ	5.0000	993.5000
49112	MN0002	White Paint	Material	OZ	5.0000	993.5000
M250	MN0002	Steel Cross Tubing 3 x 1.5" Unpaint	Material	IN	10.0000	36,244.0000

Assembly ID	Revision No	Routing Type	Description	Unit	Qty to Build	Qty Buildable
M2001	1	Primary	Platform Truck Myco 2 Handle w Wd	EA	10.0000	23.0000
Component ID	**Location ID**	**Description**	**Item Type**	**Unit**	**Qty Required**	**Qty Available**
M250	MN0002	Steel Cross Tubing 3 x 1.5" Unpaint	Material	IN	4,840.0000	36,244.0000
M260	MN0002	Sheet Steel 8' x 4'	Material	SQIN	1,440.0000	3,376.0000
M273	MN0002	Wood (Pine) 2x4x8	Material	EA	30.0000	898.0000
M2915	MN0002	Bolt 3/8 x 1	Material	EA	160.0000	9,014.0000
M2927	MN0002	Lock Washer 3/8	Material	EA	160.0000	22,764.0000
M2943	MN0002	Lag Bolts 1.5 In	Material	EA	60.0000	12,796.0000
M2963	MN0002	Nut 3/8	Material	EA	160.0000	9,014.0000
M3038	MN0002	Wheels, Caster 3" Plate	Material	EA	40.0000	816.0000
M311	MN0002	Tubular Plastic 1.25"	Material	IN	900.0000	7,300.0000
M712	MN0002	Paint All Purpose Green 17B	Material	OZ	30.0000	862.0000
M732	MN0002	Clear Wood Seal	Material	OZ	40.0000	864.0000

Assembly ID	Revision No	Routing Type	Description	Unit	Qty to Build	Qty Buildable
M2010	4	Primary	Lower Frame for 2001	EA	10.0000	755.0000
Component ID	**Location ID**	**Description**	**Item Type**	**Unit**	**Qty Required**	**Qty Available**
M250	MN0002	Steel Cross Tubing 3 x 1.5" Unpaint	Material	IN	480.0000	36,244.0000

Assembly ID	Revision No	Routing Type	Description	Unit	Qty to Build	Qty Buildable
M2011	2	Primary	Lower Frame for 2001	EA	10.0000	244.0000
Component ID	**Location ID**	**Description**	**Item Type**	**Unit**	**Qty Required**	**Qty Available**
M250	MN0002	Steel Cross Tubing 3 x 1.5" Unpaint	Material	IN	1,480.0000	36,244.0000

INDENTED BILLS OF MATERIAL

The **Indented Bills of Material** report enables you to see the framework of the Bill of Material from top to bottom. Unlike many of the costing reports, the Indented Bills of Material report is designed to show structure and quantity but does not contain costing information.

Subassemblies are indented for ease of readability thus the name, Indented Bills of Material. The report can be printed with or without Operations. Although the sample Bill of Material below does not contain Operations, it is generally suggested you print the report to include existing Operations.

The Ignore Stocked Assembly Flag changes the functionality of the report in that all Stocked Subassemblies are automatically treated like Non-Stocked Subassemblies for the purposes of this report.

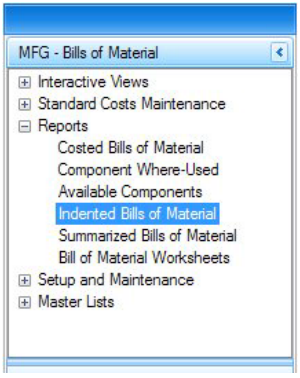
Include Secondary Routings allows you to include Secondary Routings on the report as well as your Primary Routings.

The report can be printed in Banded or Non-Banded rows and with or with a page break after each Assembly ID. The sequence of the Routing can be printed in Ascending or Descending order.

To produce the **Indented Bills of Material Report**, follow these steps:

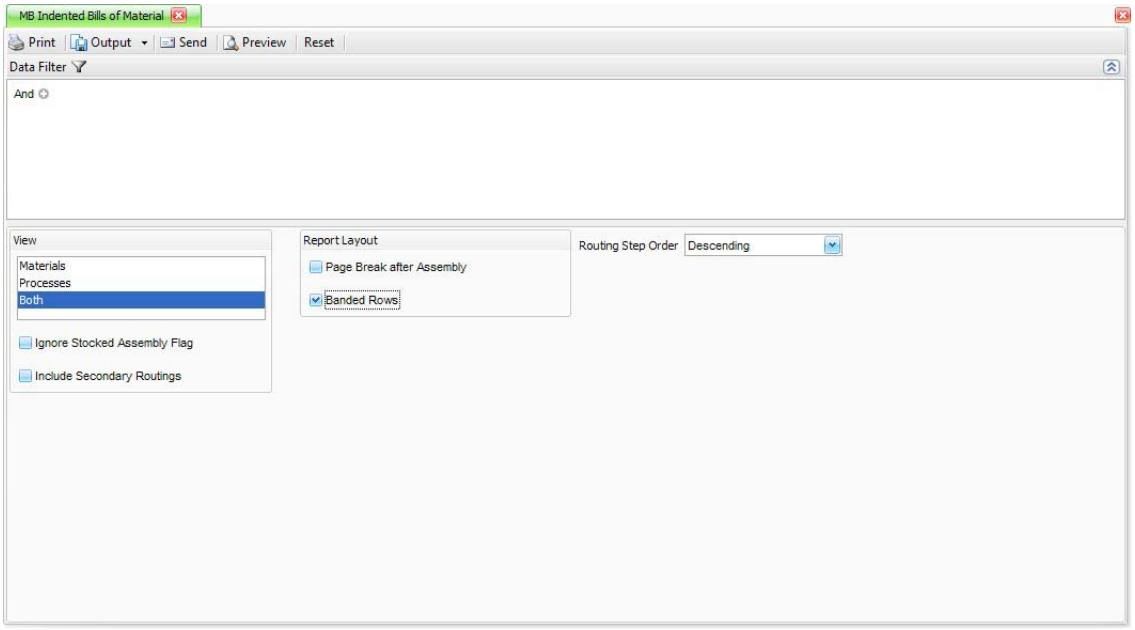
1. Select **Indented Bills of Material Report** from the **Reports** menu.

Indented Bills of Material Report Menu



2. The **Indented Bills of Material Report** screen appears.

Indented Bills of Material Report Screen



3. Select the range of **Filter Criteria** to include in the report. Leave this area blank to include all information in the report.
4. Select the **View** for the report; **Materials, Processes**, or **Both**.
5. Select the box to **Ignore Stocked Assembly Flag**, so that all Stocked Subassemblies are automatically treated like Non-Stocked Subassemblies for the purposes of this report.
6. Select the box to **Include Secondary Routings**, to include Secondary Routings on the report as well as your Primary Routings.
7. Select the **Report Layout** check the box if you want to have a **Page Break after Assembly**. Leave this check box blank to have a continuous report.
8. Select the check box if you want to print the report in **Banded Rows** format, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.
9. Select the **Routing Step Order** for the report; **Ascending** or **Descending**.

10. Select a command button:

Command Buttons

Name	Description
Reset	Set all fields to their defaults.
Preview	Preview the report on your monitor.
Output	Output the report as a .pdf file and save it.
Send	Email the report with the report attached as a .pdf file.
Print	Print the report.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Indented Bills of Material Report

Continental Products Unlimited
Indented Bills of Material
Materials and Processes

Report Filter
Ignore Stocked Assembly Flag: No — Include Secondary Routings: No
Routing Step Order: Descending

Assembly ID	Revision No	Routing	Description	Lot Size	Drawing No
45112	1	Primary	Brake Plate (Drilled)	1.0000	

Level	Routing / Component	Routing Step	Location / Work Center	Total Qty	Scrap %	Machine Group	Lot Size	Drawing No	Labor Type	Labor Setup
1	DEBUR7	30	METALS7						MACHSHOP7	MACHSHOP7
1	DRILL7	20	METALS7			DRLPRESS7			MACHSHOP7	MACHSHOP7
2	4401:Black Plastic 4" Handle	30	MN0002	1.0000	0.00					
1	CUT7	10	METALS7			SAW07			MACHSHOP7	MACHSHOP7
2	45030:Steel Rod 1/2"	20	MN0002	2.0000	0.00					
2	45020:Steel 1/4 Flat	10	MN0002	12.0000	0.00					

Assembly ID	Revision No	Routing	Description	Lot Size	Drawing No
45123	45	Primary	SteelRod 1.4 in. Bent	1.0000	

Level	Routing / Component	Routing Step	Location / Work Center	Total Qty	Scrap %	Machine Group	Lot Size	Drawing No	Labor Type	Labor Setup
1		1000								
2	45030:Steel Rod 1/2"	10	MN0002	18.0000	0.00					
1	BEND7	20	METALS7			BEND07			MACHSHOP7	MACHSHOP7
1	CUT7	10	METALS7			SAW07			MACHSHOP7	MACHSHOP7

Assembly ID	Revision No	Routing	Description	Lot Size	Drawing No
4517	003	Primary	Brake Handle Attachment	100.0000	

Level	Routing / Component	Routing Step	Location / Work Center	Total Qty	Scrap %	Machine Group	Labor Type	Labor Setup
1	ASSEMBLE7	50	GEN007				ASSEMBLY7	ASSEMBLY7
2	4401:Black Plastic 4" Handle	50	MN0002	1.0000	0.00			
1	DRY7	40	VENTED7			NOT-USED	NOT-USED	NOT-USED
1	PAINT7	30	VENTED7			DRY7	PNTG7	Notching
2	49003:Gray Primer	40	MN0002	0.5000	0.00			
2	49112:White Paint	30	MN0002	0.5000	0.00			
1	GRIND7	20	GEN007			GRINDER07	MACHSHOP7	MACHSHOP7
1	WELD7	10	GEN007			WELDINGM7	WELD7	WELD7
2	M250:Steel Cross Tubing 3 x 1.5" Unpaint	60	MN0002	1.0000	0.00			
2	45123:SteelRod 1.4 in. Bent	20	MN0002	1.0000	0.00			

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SUMMARIZED BILLS OF MATERIAL

The **Summarized Bills of Material** report is very similar to the Costed Bill of Material. It is a Bill of Material costing report. The major difference is that the Bill of Material Cost Total appears at the bottom of the report and more importantly, the report is broken down into groupings by Cost Group. This allows you to see specifically where the costs are coming from in terms of perhaps Labor vs. Machine costs or Inventory vs. Operation costs, etc.

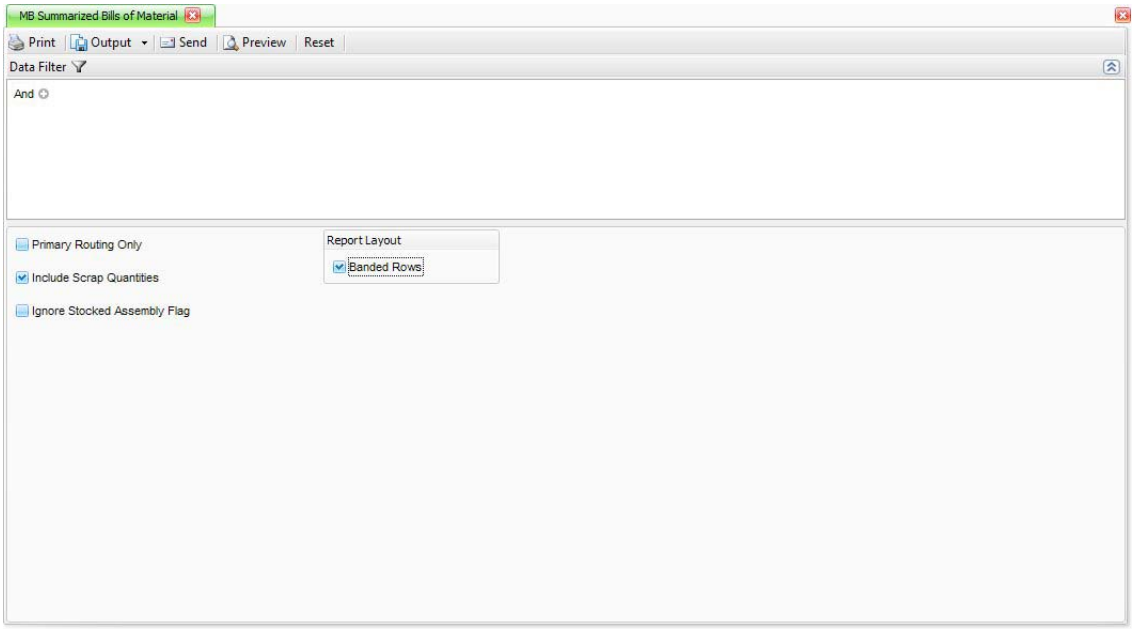
To produce the **Summarized Bills of Material Report**, follow these steps:

1. Select **Summarized Bills of Material Report** from the **Reports** menu.

Summarized Bills of Material Report Menu

2. The **Summarized Bills of Material Report** screen appears.

Summarized Bills of Material Report Screen



3. Select the range of **Filter Criteria** to include in the report. Leave this area blank to include all information in the report.
4. Select the box to use the **Primary Routing Only**, otherwise clear to box to include all Routings.
5. Select the box to **Include Scrap Quantities** in the Quantity calculations, otherwise clear the box to print only used quantities without scrap.
6. Select the box to **Ignore Stocked Assembly Flag**, so that all Stocked Subassemblies are automatically treated like Non-Stocked Subassemblies for the purposes of this report.
7. Select the check box if you want to print the report in **Banded Rows** format, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.

8. Select a command button:

Command Buttons

Name	Description
Reset	Set all fields to their defaults.
Preview	Preview the report on your monitor.
Output	Output the report as a .pdf file and save it.
Send	Email the report with the report attached as a .pdf file.
Print	Print the report.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Summarized Bills of Material Report

Continental Products Unlimited Page 1
Summarized Bills of Material

Report Filter
Include Scrap Quantities Yes **Ignore Stocked Assembly Flag** No
Primary Routing Only No

Assembly ID	Revision No	Routing	Description
45112	1	Primary	Brake Plate (Drilled)

Component ID / Operation ID Location ID / Work Center ID	Labor Type ID Machine Group ID	Detail Type	Cost Group ID	Cost
CUT7:Cutting Services	MACHSHOP7			
METALS7	SAW07	Labor Setup	Labor1	11.0000
CUT7:Cutting Services	MACHSHOP7			
METALS7	SAW07	Labor	Labor1	0.7333
CUT7:Cutting Services	MACHSHOP7			
METALS7	SAW07	Labor Per Piece	Labor1	0.0000
DRILL7:Drilling	MACHSHOP7			
METALS7	DRLPRESS7	Labor Setup	Labor1	1.8333
DRILL7:Drilling	MACHSHOP7			
METALS7	DRLPRESS7	Labor	Labor1	1.8333
DRILL7:Drilling	MACHSHOP7			
METALS7	DRLPRESS7	Labor Per Piece	Labor1	0.0000
DEBUR7:Deburring	MACHSHOP7			
METALS7		Labor	Labor1	1.8333
DEBUR7:Deburring	MACHSHOP7			
METALS7		Labor Per Piece	Labor1	0.0000
			Labor1 Total	17.2333
CUT7:Cutting Services	MACHSHOP7			
METALS7	SAW07	Machine Setup	Mach	1.5000
CUT7:Cutting Services	MACHSHOP7			
METALS7	SAW07	Machine	Mach	0.1000
			Mach Total	1.6000
DRILL7:Drilling	MACHSHOP7			
METALS7	DRLPRESS7	Machine Setup	Mach2	0.3750
DRILL7:Drilling	MACHSHOP7			
METALS7	DRLPRESS7	Machine	Mach2	0.3750
			Mach2 Total	0.7500
4401:Black Plastic 4" Handle				
MN0002		Material	Matl	0.3500
45020:Steel 1/4 Flat				
MN0002		Material	Matl	2.4000
45030:Steel Rod 1/2"				
MN0002		Material	Matl	0.3460
			Matl Total	3.0960
CUT7:Cutting Services	MACHSHOP7			
METALS7	SAW07	Overhead	Overh	0.0000
DRILL7:Drilling	MACHSHOP7			
METALS7	DRLPRESS7	Overhead	Overh	0.0000
DEBUR7:Deburring	MACHSHOP7			
METALS7		Overhead	Overh	0.0000
			Overh Total	0.0000
			Assembly Cost	22.6793

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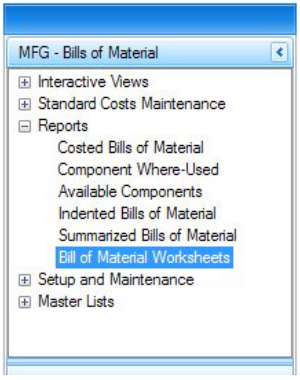
BILL OF MATERIAL WORKSHEETS

The **Bill of Material Worksheets** is designed to be used as a alternate production report or another master list with a very different look and feel. The report allows you to select the number of Units to Build and the data which appears on the report reflects the Time, Subcontracting, and Material demand required to meet that Build Quantity. You can add a Due Date and Planner name to the report. These are cosmetic in nature. The report can be printed with Banded or Non-Banded rows.

To produce the **Bill of Material Worksheets**, follow these steps:

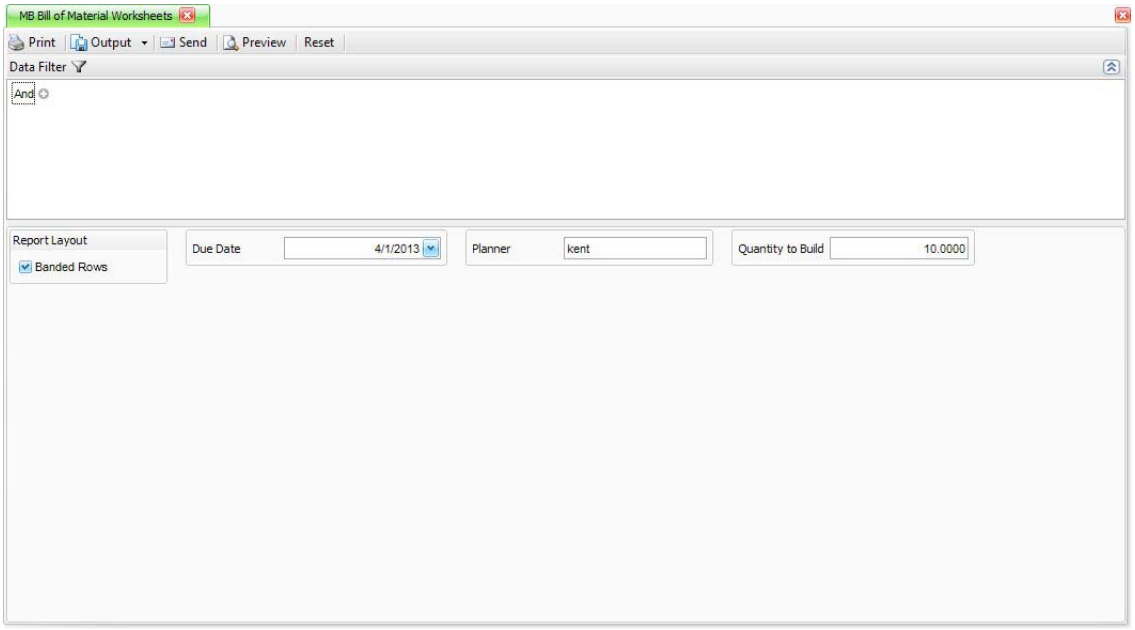
1. Select **Bill of Material Worksheets** from the **Reports** menu.

Bill of Material Worksheets Menu



2. The **Bill of Material Worksheets** screen appears.

Bill of Material Worksheet Screen



3. Select the range of **Filter Criteria** to include in the report. Leave this area blank to include all information in the report.
4. Select the check box if you want to print the report in **Banded Rows** format, which highlights lines in the report in alternating bands of color (or gray on monochrome printers). This makes wide reports easier to read. You can define your default preference for the banded rows format on the System Manager Business Rules. You can then override your default choice when you print the report.
5. Enter a **Due Date** to display on the worksheet.
6. Enter a **Planner** to display on the worksheet, the Planner is for information only.
7. Enter the **Quantity to Build** for the report.

8. Select a command button:

Command Buttons

Name	Description
Reset	Set all fields to their defaults.
Preview	Preview the report on your monitor.
Output	Output the report as a .pdf file and save it.
Send	Email the report with the report attached as a .pdf file.
Print	Print the report.

NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.

Bill of Material Worksheet

Continental Products Unlimited
Bill of Material Worksheets

Report Filter

Assembly ID	45112		**Revision**	1		**Routing**	Primary	**Description**	Brake Plate (Drilled)
Due Date	4/1/2013		**Planner**	kent				**Qty to Build**	10.0000
Instructions									
Operation ID	CUT7	**Routing Step**	10	**Machine Time**	2.000	Mins	**Labor Time**	2.000	Mins
Routing Desc	Cutting Services			**Machine Group ID**	SAW07		**Labor Type ID**	MACHSHOP7	
Notes									
Tooling ID	9-G88		Welding Gloves						
	CLAMP2		2" Spring Clamps						
	CLAMP7		7" C - Clamp						
Component ID		**Location ID**		**Component Description**			**Qty**	**Unit**	**Scrap %**	**Ext Qty**
45020		MN0002		Steel 1/4 Flat			120.0000	SQIN	0.00	120.0000
45030		MN0002		Steel Rod 1/2"			20.0000	IN	0.00	20.0000
Operation ID	DRILL7	**Routing Step**	20	**Machine Time**	5.000	Mins	**Labor Time**	5.000	Mins	
Routing Desc	Drilling			**Machine Group ID**	DRLPRESS7		**Labor Type ID**	MACHSHOP7		
Notes										
Component ID		**Location ID**		**Component Description**			**Qty**	**Unit**	**Scrap %**	**Ext Qty**
4401		MN0002		Black Plastic 4" Handle			10.0000	EA	0.00	10.0000
Operation ID	DEBUR7	**Routing Step**	30	**Machine Time**	0.000	Hrs	**Labor Time**	5.000	Mins	
Routing Desc	Deburring			**Machine Group ID**			**Labor Type ID**	MACHSHOP7		
Notes										
Component ID		**Location ID**		**Component Description**			**Qty**	**Unit**	**Scrap %**	**Ext Qty**

7

Common Questions

QUESTIONS

How does the Yield Percentage field work in Operations?

The Yield Percentage field is simply a cosmetic field. There are two philosophies on the yield concept; one being to allow it to recalculate all of the quantitative fields below it and increase the raw materials requirements in production, similar to scrap, to accommodate yield loss. The other philosophy is to use it strictly as a benchmark against actual yield on a historical basis. Recalculating quantities can get very complex and doesn't allow for the built in restrictions in actual environments such as limited space capacity or other manufacturing restrictions that would prevent one from simply increasing the production plan. For example; I need 50 liters of FG XYZ, but I have a 50% yield so therefore to produce 50 liters I might need to bump up the raw materials by approximately 50%. The problem is, however that the vat only holds 50 liters? I can't put 100 liters in a 50 liter vat so increasing RM may not be feasible. Look for future versions to build on these concepts. (Routing and Resources, Operations Setup and Bills of Material Setup)

How does the Generate Orders select and regenerate orders work?

The Generate Orders from SO is based on Customer, Sales Order, Date Range and Product. It no longer looks at PO number. It removes any Production Orders that meet the selected criteria that are of a Planned or New status. It then regenerates those. So if I was to say that the process selects Sales Orders (or Sales Order line) to generate from, based on the Assembly ID or Product ID range, Date Range, Customer ID Range, and whether the status is PICKED. It then removes Production Orders that have a status of PLANNED that meet the same criteria. It then replaces those Production Orders with new PLANNED status orders, would I be correct? If a product is found more than once on a given Sales Order, it generates multiple releases on one Production Order for those lines? No reference is made to Customer Purchase Order. (Production, Production Orders, Generate Orders from Sales)

How does the Per Piece overhead get generated in Record Production activity?

When recording time in Production, the quantity dictates the overhead per piece. Quantity is considered as Qty Produced PLUS Qty Scrapped. (Production, Production Orders, Record Production Activity)

How is scrap costed when I record production activity?

Scrap does not affect Inventory. It is part of the quantity pulled when working with Components and it is considered to be in addition to Qty Produced when recording finished goods, although it does not get added to Inventory. The Scrap field is not part of the final costing calculation because it is technically, already included in the cost. (Production, Production Orders, Record Production Activity)

What is the difference between the Available Start Date and the Estimated Start Date in the Start Date option?

In the Resource Availability report use Available Start Date if orders can start consecutively without regard for Start Date. Use Estimated Start Date to prevent orders from appearing before their Start Date. (Production, Reports and Worksheets, Resource Availability)

Why don't I see my Production Orders when I go into Release Orders?

In the Release Orders you must click on the Apply button to view the available orders. Also note that Production Orders must have a status of Released or Firm Planned. The status of the Production Orders is set using the Production Orders function. (Production, Production Orders, Production Orders and Release Production Orders)

It seems that the Summarized Bill of Material report and the Costed Bill of Material report print differently in regard to subassemblies?

The Summarized Bill of Materials report prints the cost and detail of Non-Stocked Subassemblies as part of the report. No Subassembly Item IDs will appear on the report unless they are Stocked Subassemblies. On the Costed Bill of Material report, Subassembly Items are shown with their respective cost. Their detail is not shown. The reports should come up with the same overall assembly cost total. (Bills of Material, Reports, Costed Bills of Material and Summarized Bills of Material)

I see there are now Operation Types in Version 11. What is the difference between version 10.5 and version 11.

In version 10.5 TRAVERSE could handle what we call, “Per Unit” and “Subcontracted” processes. We have added two new types of processes. (Routing and Resources, Operations Setup)

The first is “Run Rate”. A “Run Rate” operation is like a “Per Unit” operation only “reversed” one might say. Instead of time per unit, the user sets up units per time. Per Unit says I can process a unit in 1.5 minutes, for example. Run Rate might state I can process 900 units in 1.5 minutes for example. Per the 900 units, I could have said I produce 1 unit in .1 seconds. It would be the exact same thing. However let's say we can process 1400 units in 1.25 minutes. I don't have to state the Per Unit time as 1 unit per .0535714 seconds. We simply say 1400 units per 1.25 minutes. So the concept is somewhat just being practical and somewhat simply a way of thinking.

The other method is Batch processing. There are some subtle complications here but more or less we are stating the time required to process a specific quantity. It involves at least two variables; the time and the quantity. Unlike Run Rate, you can't break it down for slightly smaller or larger quantities. It's like baking cookies; if the oven holds 50 cookies and they take 20 minutes to cook it won't really matter if you are cooking 10 or 50, you are probably looking at about 20 minutes. Along the same line if you are cooking 51 cookies, you will need to split them into two batches of 50 and 1 or maybe 25 and 26. Either way you are looking at about 40 minutes. This concept couldn't be handled by version 10.5. Most manufacturers know these batch sizes. They aren't going to bake 51 cookies. They are going to bake 50, or 100, or 5000.

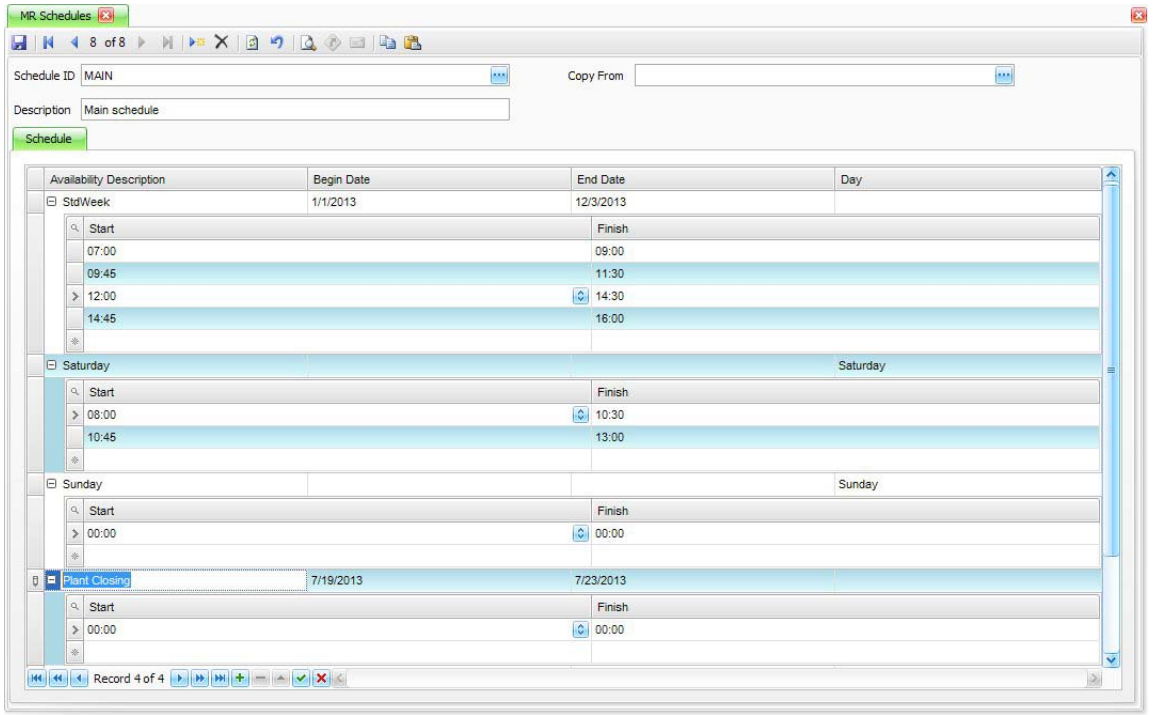
In Routing and Resources, what does the Billing Information Rate field do?

Special Note: Setup costs are on a per batch basis. For example; if the batch size is 50 and the setup costs are $20.00 and one runs two batches, the overall setup costs would be $40.00. This may or may not be proper given the FG product. In cases where repetitive setup isn't required or additional setup are less time intensive, the setup costs should be reduced or perhaps averaged over the number of batches usually run, or build into the run costs.

The Billing Information Rate is not used at all, but. . . what it could be used for would be “pricing” process or operation costs. Let's say we want to create a price quote for a Bill of Materials; it's going to require a custom report or form of some sort. We can easily get prices for the Components from Inventory, but what about the processes? What the billing information rate allows one to do is to set a percentage over cost or a flat rate per hour as a billing or chargeable rate so that if I'm writing a customer report I could pick up this information, utilize the estimated time, and come up with a billable cost of the operation. (Routing and Resources, Work Centers Setup)

How do I set up a Schedule in Routing and Resources and how do they work?

Schedules are used in a couple of different areas of the TRAVERSE production module. It is used in the explosion or “releasing” of Production Orders and it is used in the Resource Availability report. The Schedule ID is referenced in the creation of Labor Types, Machine Groups, and Work Centers and is a required field. It is also a field in the Production Business Rules. The detailed design and functionality was created to integrate with a third party or future internal scheduling software package, thus the setup may seem like overkill at first glance. In most cases one would want to have one simple Schedule and use only that one. Below is a good example of what the simplest Schedule might look like with the assumption that there are no Saturday or Sunday hours and the plant hours are the same Monday through Friday.



The Schedule is used in doing a very rough calculation of how much time the processes of a Production Order will require so that the system can estimate process Start Dates. Note that without a true scheduling system this is just a very rough estimate because the system assumes no other production activity and that all resources have the same availability. What the system does is first calculate the time required to do a process, beginning with the final process. That time is divided by the hours in a day, as found in the Schedule, which was assigned to the Labor or Machine for that process, to determine the date that final process should start. Then the next process is calculated etc. etc. (Routing and Resources, Schedules Setup, Labor Types Setup, Machine Groups Setup, and Work Centers Setup)

Example: We have a process that requires 15 minutes of machine time per unit. The schedule used for that machine indicates it is running 15 hours a day, five days a week. We create a Production Order for 300 units. The system divides the 4500 minutes required by the 900 available minutes in a day to estimate a lead time of approximately 5 days.

What is the Master Schedule in the Requirements Planning module used for?

The Master Schedule represents the plan of production in terms of Item ID, Quantity, and Date. We could achieve almost the same effect by creating Production Orders for finished goods Items in terms of date and quantity but this would be a tremendous task, not only to create, but also to maintain. When Master Schedules are used, it is generally in conjunction with some sort of a Sales Forecast. In TRAVERSE you can create a Sales Forecast and then, by running the Master Schedule report, create and manage a Master Schedule that meets the needs of the Sales Forecast. In simple terms, meeting demand with supply. Once you are satisfied with the Master Schedule, use the various RP reports to tell you what subcomponents will be required and when, to satisfy the finished goods demand created by the Master Schedule. (Requirements Planning, Master Schedule Setup and RP Processing, Standard RP Report)

GLOSSARY

G

absorption costing

An approach to Inventory valuation in which variable costs and a portion of fixed costs are assigned to each unit of production. The fixed costs are usually allocated to units of output on the basis of labor hours, machine hours, or material costs.

account

A storage unit of financial data in accounting, usually grouping related information under one Account number or Account ID.

accounting period

A period of time in accounting, used to provide distinct units of time you can work with. For example; you might want a report to include transactions done in a particular accounting period.

activity

The changes in account balances resulting from transactions (Sales, Purchases, Payments of wages, Adjustments, and other journal entries) between the business and one or more outside parties.

activity based costing (ABC)

The allocation of indirect costs against the activities that caused them. An accounting technique that can more accurately reflect indirect cost improvement than traditional Standard Costing.

actual costing

A cost system that collects costs historically and allocates those costs as items are sold or used in production.

adjustment

A type of transaction that corrects differences in quantity.

alias

An alternate name for an inventory item. For example, the alias for item 700873920PS might be plumbing supplies.

alternate item

A comparable item that can be substituted when you sell an item with insufficient quantities in stock.

alternate routing

A routing, usually less preferred than the primary routing, but resulting in an identical item.

application

A software package made up of several related programs (functions) and files. Usually an application is named after a common accounting practice—for example, Accounts Payable, Accounts Receivable, or Payroll.

assemble to order

A production environment where a product request can be assembled after the receipt of a customer's order. The key components (bulk, semi-finished, intermediate, subassembly, fabricated, purchased, packaging) used in the assembly or finished process are planned and possibly stocked in anticipation of the Customer order.

asset

The resources (such as cash, investments, manufacturing materials, inventory, buildings, leases, and fixtures) owned by a business. Assets are entered as debits in asset accounts.

audit trail

A detailed record of accounting activity used to explain the source of every dollar in the accounts.

average cost

An inventory costing method. The average cost method calculates a weighted average cost by dividing the total cost of all units of an inventory item by the number of units on hand. See also FIFO, LIFO and standard cost.

average price

The average selling price of an item updated each time a purchase is entered.

backflush

Automatic deduction of the parts used on an assembly from stock triggered by the release, progress, or completion of a production order. Unless there is a very high level of data accuracy and discipline, backflushing leads to inaccurate inventory records so is not recommended except when used in conjunction with KanBans.

back up

To make a copy of data for archival purposes.

balance

(1) The difference between the total debit entries and the total credit entries for an account.
(2) The total amount owed by a customer or owed to a vendor.

balance sheet

A standard financial statement that summarizes the financial status of a business at a particular time, according to the fundamental accounting equation Assets = Liabilities + Owner's Equity.

base cost

Cost used for calculating prices as a markup from cost.

base currency

In TRAVERSE, the currency selected in the System Manager Company Setup Company Information function. While TRAVERSE stores both base and foreign currencies, all other currencies are converted to base currency.

base price

A price assigned to each unit and used to calculate price breaks and customer level pricing in Sales Order.

batch

A group of items, locations, bins, product lines, and user-defined fields that are assigned an ID. Batch IDs are used in the physical count process to group similar items for counting purposes.

bin number

A number that identifies the location of an item.

blow-through

When a Phantom or Pseudo is found in the preparation of a kit picking list, the parts needed to make the Phantom or pseudo (less any Phantom Parts found in stock) are “blown through” to the kit.

bills of materials

The list of the components necessary to make a part of product and the amount of each component required.

bill of resources

A list of some or all of the critical resources necessary to make an end item.

bucketless

All demands for a part keep their individual date identity and so can be traced back to their original source of demand through a Pegging Report–essential for bottom up re-planning.

byproduct

Material produced as a residual of a production process. Represented by negative use in the bill of material for an assembly.

capital

Claims on a company’s assets by the owners, either the capital put up by the owners or the income earned by the business and not distributed (retained earnings).

carrying cost percent

The percentage of the total value of inventory. This amount is used in the EOQ calculation in the reorder process.

COGS

The beginning inventory plus purchases minus the ending inventory.

component

Part needed to make a parent item as shown on its bill of material.

configurator

A software tool to simplify order entry when a product may be sold with a number of features and options.

cumulative lead time

The total time required to make an item assuming there are is no stock of any of it's components including the time to purchase those components.

conversion

The process of updating existing data, programs, or applications to the current version. See also installation.

conversion factor

The portion of the base unit that is the alternate unit. For example; if the base unit were EACH and the alternate unit were BOX of 10, the conversion factor would be 10.

costing method

The method used for costing sales and inventory: FIFO, LIFO, average cost, and standard cost.

count date

The date when a physical count of inventory items is taken.

counted quantity

The quantities from the on-hand physical inventory, generally listed on tags or worksheets. See also frozen quantity.

current liquidity ratio

The ratio of current assets to current liabilities.

depreciation

The allocation of the cost of using up fixed assets over time in the form of a particular portion per accounting period.

discount

An amount subtracted from the full amount of a vendor or customer invoice in return for prompt payment.

discrete manufacturing

Refers to the manufacturing of specific unique items to exacting specifications such as a custom-made cabinet or a new sophisticated carburetor. Discrete manufacturing is used heavily by the engineering, automotive, electronics, and aerospace industries, among others.

Unlike continuous manufacturing, this is divided into discrete stages and usually involves a wide range of finished products. The products themselves are discrete units. Depending on the variety and volume of finished products, discrete manufacturing is further sub-divided into Job Shop, Batch Production, and Repetitive manufacturing.

distribution code

A code that indicates how amounts are to be distributed among general ledger accounts.

Economic Order Quantity (EOQ)

An ordering method that compares the cost of placing a purchase order (and all associated receiving and invoicing costs) against the cost of carrying stock in inventory. It uses the Carrying Cost percent and Order Cost Amount fields from the locations table. If an item is particularly expensive to order (imported, for example) or expensive to stock (very large, for example), you can override these fields on an item basis. Generally, the higher the cost, the lower the purchase quantity. The traditional EOQ formula is used with Annual Use as the movement variable:

$$\sqrt{\frac{2 \times AnnualUsage \times OrderCost}{UnitValue \times CarryingCost}}$$

effective date

The date range for which a part or assembly is considered correct and in effect.

effectivity date

The date on which a change is due to take effect.

Engineering Change Order (ECO)

A record of revisions to one or more items usually released by engineering.

expense

The cost incurred in earning revenue: cost of goods sold, wages, rent.

explosion

A computer process or calculation of the requirements in terms of components of an assembly based on its bill of material.

field

(1) A region on the screen that accepts input from the user. (2) One element of a record in a table.

FIFO

A costing method that uses the oldest items in your inventory as the basis for costing your sales and inventory. FIFO allocates the oldest unit costs to the cost of goods sold and the most recent unit costs to the ending inventory. When costs rise, the FIFO method yields the highest net income; when costs fall, the FIFO method yields the lowest net income. See also average cost, LIFO, and standard cost.

finite capacity planning

Computer controlled re-scheduling of orders based on preset capacity resource levels and fixed scheduling rules.

firm planned order

An order which is treated as a planned order for the MRP calculation but one that does not be change, either in date or quantity, by the computer. Firm planned orders are changed manually and are used for Master production scheduling and to override the computer setting of order quantity, lead times, and safety stock, usually to overcome material or capacity problems.

flow manufacturing

A form of manufacturing in which machines and operators handle a standard, usually uninterrupted, material flow. Extreme examples could be process industries in the areas of chemicals, oil, paint.

forecast

An estimate of future demand. Generally related to the Master Production Schedule and used in MRP reporting.

freeze

A step in physical inventory in which inventory quantities are calculated and stored before the inventory is counted.

frozen quantity

The calculated inventory totals that are stored before the inventory is counted. See also counted quantity.

function

A menu item that leads to a full screen. Most functions have a corresponding program.

general ledger

A record of accounts in terms of a chart of accounts and accounting periods. The General Ledger application tracks the effects on accounts from transactions entered in General Ledger and interfaced applications, and it is updated by other applications interfaced with it.

income statement

A standard financial statement that shows revenues, expenses, gains, and losses for an accounting period.

infinite planning

Loading a work center with orders to see how much current capacity is exceeded.

installation

The process of adding an application to an existing system. See also conversion.

interface

To join to another application for the purpose of having information entered in one application update information in another application.

inventory

The goods a business owns at a particular time, whether held for direct sale or for use in manufacturing goods for future sale. Manufacturing inventory is usually divided into raw material, work in process, and finished goods.

job shop environment

Tend to be high variety and low volume factories which make to order or to customer specifications. Their customers are very often other factories, so they tend not to produce consumer goods. Job shops tend to be highly flexible and their workers highly skilled. The shop floor layout would consist mostly of separate functionally specialized departments. Frequent change overs from one product to another are common.

journal

A chronological record of transactions.

journal entries

Transactions recorded in a journal.

KanBan

A method of JIT production that uses standard lot sizes with pull cards to signal wanting to withdraw parts from a supplying operation.

lead time

The amount of time required from the point of ordering or the point of entering the production line to the completion of the order. Each requirement of an order, be it a given raw material, subcontracted process, or labor or machine process has a point in time where it should be introduced into the flow of the order to ensure an on-time delivery of the product. If materials are made available too early, there may not be room for them and they may simply add congestion to the process. If brought in too late, delays may result. The problems are the same for labor, machine use, and subcontracting.

Lead time is in terms of hours. It assumes a perfect world in which all materials, machines, and personnel are available when needed. It indicates the number of hours after the materials are brought to the floor or the number of hours after a process begins, that the order will be finished.

Lead time is calculated by first establishing the process time of each individual process requirement, adding the queue time, setup time (uses labor setup time or machine setup time, whichever is longer), wait time, and move time.

To calculate the lead time, the system then starts at the top of the bill and works its way down calculating the hours of lead time required at each step by accruing the process time for each step. Lead time is actually only calculated for processes. It is then assigned to materials, based on which routing step the material is assigned to. If the bill of material is more than one level deep, the lead times of the first level become the starting point of lead times for the second level, and so on. Overlap factors come into play here, which can complicate things considerably if being used. (See the overlap entry in the Glossary for more information.)

LIFO

A costing method that uses the last items brought into inventory as the basis for costing your sales and inventory. When costs of your inventory items rise, the LIFO method yields the lowest net income of all the costing types; when inventory item costs fall, the LIFO method yields the highest net income. LIFO is often preferred when prices rise because it results in a lower pretax income and a lower tax obligation. See also average cost, FIFO, and standard cost.

liquidity ratio

Ratio that indicates the amount of cash that could be available for investment after meeting short-term obligations.

list price

The basic published price for each unit without discounts added to it.

location

The place your inventory is stored—a van, a warehouse, etc.

lotted items

Items that are grouped for identification and given a lot number, such as items with the same shipping, receiving, or expiration date.

master production schedule (MPS)

What the company intends to produce in terms of products or end-items.

materials requirements planning (MRP)

A computer based technique which takes an MPT, product structure data, and inventory information, generates a report and creates planned orders for assemblies and components based on anticipated demand.

material requisition

A document that a business uses to record internal use of stock items from its own warehouse.

menu

A list of applications, functions, options, or other menus.

miscellaneous debit

A transaction that nullifies a purchase, resulting from a return or an adjustment to the purchase transaction. Miscellaneous debits reduce the total amount of accounts payable due vendors.

mixed model production

Making several different parts or products in varying lot sizes that closely match the mix of products sold that day.

move time

The time required to move the product from one workstation to another. This could be across the plant floor or to a completely different location.

net change MRP

An approach in which the material requirements plan is continually retained in the computer and adjustments made only as needed.

order point

The quantity you want to have on hand when you place an order for an item at a location.

ordering cost amount

The total cost of shipping, stocking, and labor. This amount is used in the EOQ calculation in the reorder process.

overlap

Overlap is simply a matter of trying to attain a more realistic and accurate lead time by reducing the calculated lead time based on the assumption that in a series of sequential processes, the next process can begin before the last process is finished.

NOTE: Each step is compared to the next step in the BOMs. The time to complete one step doesn't change, but the determination of at what point to begin a step in relation to the previous step can have a significant affect on the total time required to manufacture the BOMs.

overlap quantity

The number of items that need to be run and sent to the following operation before the "overlap" operation can begin.

pegging

The capability to identify the sources of a given item's gross requirements.

penalty type

The percent or amount used to determine the price when fractional parts of a unit are sold.

periodic inventory

Physical inventory taken at the end of the year to establish ending inventory.

perpetual inventory

A continuous record of inventory maintained by keeping detailed records of purchases and sales.

phantom bill of material

A bill of material coding and structuring technique used primarily for transient subassemblies.

physical inventory

The actual on-hand inventory.

planned order

Generally a production order created by an MRP system.

planning bill of material

An artificial grouping of items or events in a bill of material format to enable the calculation of mixed components to achieve a mixture of finished product, for example, 2 blues, 2 yellows, 1 green.

post

To transfer information from one place to another, usually at the end of the day or at a distinct break in business.

price break

A price break set up by quantity, generally giving increasing discounts as the quantity of sales increase.

price ID

Customer-level pricing identifier that is useful for categories of items and items in particular locations.

product line

A category of similar items used for sorting.

program

A self-contained list of executable code, written and implemented to do a task. Most programs are represented by a function on a menu.

process manufacturing

Production that adds value by mixing, separating, forming, and /or performing chemical reactions. It can be done in either a batch or continuous mode.

prox term

A term of a business arrangement which specifies that the payment's due date is based on days from the beginning of the next month. See also regular terms.

purchase price variance

The difference between the standard cost and the actual price paid for an item in the standard costing valuation method. For example, if your standard cost for an item is $50 and you purchase the item at $60, the purchase price variance between the standard cost and what was paid for the item is $10.

purge

To remove from the system.

queue time

Used mainly as a cushion for error. Queue time is the time the materials sit in front of the workstation waiting to be processed.

quick ratio

The ratio of current assets less inventory to current liabilities.

record

A unit of information that has other pieces of information assigned to it.

regeneration MRP

An MRP processing approach where the requirements are totally re-exploded down through all bills of material, resulting in a totally new MRP report and plan.

regular terms

A term of a business arrangement which specifies that the payment's due date is based on days from the discount date. See also prox terms.

repetitive manufacturing

This type of production is characterized by low variety and high volume. It is concerned with the production of consumer goods. Production is mostly to stock. The factory floor normally consists entirely of production lines, each dedicated to a specific product. The line is designed for optimum production of that product. Changeovers are infrequent and tend to be costly in terms of time and labor.

restore

To bring information back to its original place and condition.

routing

Information detailing the method of manufacture of a particular item. It includes the operations to be performed, their sequence, the various work centers involved, and the standards for run and setup time. Also may include additional information such as required skill levels, tooling, testing equipment.

safety stock

The quantity of stock in inventory to have as a safeguard against order process uncertainty and fluctuations in demand or supply.

scrap

Materials outside of specifications and possessing characteristics that make rework impractical. For example; a raw material with a 2% scrap factor is assumed to be something in which, when an assembly is put together and the material is used, about 2% is lost or scrapped. It could be that 2% of the material is defective or is lost due to the nature of the process. The reason a scrap factor is set up is to enable you to actually track these quantities in the hopes of improving your process. Scrap should be considered a variable quantity and expense.

The unexpected loss of a completed part for any reason.

scrap factor

A percentage factor used in the product structure to increase gross needed requirements to account for anticipated scrap.

setup time

The time it takes to adjust a machine or fit a tool to make a particular item. Part of the lead time which does not vary with the order quantity.

shrinkage

The anticipated loss or reduction of an item when being used. It can be related to the specific manufacturing nature but can also represent other things.

The reduction of actual quantities of items in stock, in process, or in transit. The loss may be caused by scrap, theft, deterioration, evaporation.

serialized item

An item that is identified by a serial number, such as an appliance, a computer, a stereo system.

standard cost

A costing method that is an estimate of costs you set. For example, in a manufacturing operation the standard cost is the cost of the item plus costs of raw materials, labor, and overhead. See also average cost, FIFO, and LIFO.

subcontracting

Sending production work outside to another manufacturer.

superseded item ID

An ID assigned to an item that is set up to replace an item that is no longer available for purchase or sale.

table

(1) A grid that holds records and is visible. (2) An object that stores data.

tact time

The time required between completion of successive units of an end product.

temporary vendor

An organization or source of supply from which your business purchases goods or services only once.

terms code

A code that serves as a shorthand notation for the terms of a business arrangement.

time bucket

A number of days of data summarized into a column display.

transaction

An exchange between a business and another party, leading to an accounting entry, which is recorded in the GL Journal.

traveler

A copy of the manufacturing order that actually moves with the work through the shop.

UPC

The universal price code that records the identification number for an item.

variance amount

The difference between frozen quantities and calculated (counted quantities times cost) quantities. work in process Products in various stages of completion throughout the factory, including raw material that has been released for initial processing and products awaiting inspection.

wait time

Time required after an operation or process is complete for curing, drying, setting, cooling. This time is required after the process is complete but before the next process can begin or before it can be moved to the next step. It does not involve any trackable machine or labor time.