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Introduction

Bill of Material Overview
The Bill of Material module in Microsoft Dynamics® SL provides functionality to help you create bills of material and/or routings for finished goods and subassemblies, compute their standard costs, and revalue existing inventory. The Bill of Material module defines the low-level components used to make higher-level assemblies (bills), and optionally, the labor and steps required (the associated routing) to combine those discrete elements into a new item. A separate production entry application is used to produce the item. Based on the materials and labor required, the Bill of Material module then assigns costs to manufactured inventory items.

The Bill of Material module provides much more sophisticated capabilities for product definition and costing than the standard kitting functionality within the Inventory module. For less complex processes, kitting is retained as a feature in Inventory. Any kits previously created in the Inventory module are accessible in Bill of Material Maintenance (11.250.00). However, bills of material created in Bill of Material Maintenance (11.250.00) are not accessible in Kits (10.320.00).

Bill of Material Functions
The primary functions of the Bill of Material module are:

- Create bills of material for subassemblies and finished goods
- Create routings for finished goods and/or subassemblies (optional)
- Compute standard cost through cost rollup processes

You can create bills of material with up to 25 levels of subassemblies to define the standard material requirements for a product. In addition, you can create routings to define the production resources (for example, labor, work centers, machines, and tools) required to build a product and include labor and overhead in computing the standard costs. New bills and routings can be copied from existing bills and routings. You can create more than one bill for a product. In addition, if the product is built differently at different sites; you can create a separate bill for each site. Or, you can create an active and pending bill for the same product at each site.

You can maintain bills of material individually by changing them in Bill of Material Maintenance (11.250.00) or by using other processes to do mass updates.

Example: You can create components or entire bills with a pending status and a start date. Then, when you use the Apply Date-Effective Revisions (11.500.00) process and specify a date, the process activates all pending bills or components that have a start date on or before that effective date.

You can compute standard costs for bills by using Compute Cost Rollup (11.540.00). The computed costs are stored in pending cost fields, and are subsequently made current by using Update Standard Costs from Pending (11.530.00). Updating standard costs also revalues inventory amounts and creates general ledger transactions to update inventory accounts. You can obtain a preview of standard cost change revaluation amounts by printing the Standard Cost Change Preview (11.630.00) report.
Integration with Other Modules

The Bill of Material module integrates with other Microsoft Dynamics SL modules to complete certain tasks more efficiently. It integrates with the Inventory module to define finished goods and subassemblies based on their components and to compute their standard costs. Using Production Entry (11.010.00), you can enter production quantities to increment finished goods inventory while automatically relieving component quantities from inventory. A bill of material cannot use components that are committed to a project via the Project Allocated Inventory functionality.

The Bill of Materials module works with the Purchasing module by allowing you to enter a bill of materials ID in a purchase order. Similarly, it integrates with the Order Management module by enabling you to enter a bill of materials ID in a sales order.

General Ledger’s standard cost revaluation account (from setup) is updated by Update Standard Costs from Pending (11.530.00) for items using the Standard Cost valuation method. Revaluation takes into account the difference in cost multiplied by the physical quantity-on-hand for the item.
Bill of Material, Production Entry Interaction

INPUTS
1. Finished Goods Production
2. Component Issues

Inventory
Finished Goods Costs
Component Costs
Quantities on Hand
Standard Costs

General Ledger
Finished Goods Inventory
Component Inventory
Inventory Revaluation
Cost Variances

Bill of Material

OUTPUTS

SHORTAGE REPORT
PRODUCTION ANALYSIS
VARIANCE ANALYSIS

CHECKS

Figure 1: Bill of Material, Production Entry Interaction
User Guide Overview

This user guide provides necessary information regarding setup and use of the Bill of Material module so that you can make informed decisions regarding implementation of the Bill of Material module in your business.

What is Covered in the User Guide?

The user guide consists mainly of procedures and checklists describing how to carry out tasks such as setting up bills of material or routings. It has been written at a level that allows you to understand the functions even if you do not understand the keystrokes. The “Task Guidelines” section follows the flow of transactions through the module whereas the “Reference” section is organized sequentially according to screen and report numbers.

Who Should Use the User Guide?

The user guide is designed for readers who are new to Microsoft Dynamics SL. The guide provides the information necessary for making decisions regarding how to implement the Bill of Material module in your business.

How to Use the User Guide

Read the appropriate section of the user guide before proceeding with setup and operation of the Bill of Material module. The guide assists you with implementation of the module and serves as a reference tool once the Bill of Material module is implemented. The Task Guidelines contain procedures and steps for various bill of material operations. Use these procedures to create a company bill of material procedure manual. Include in this manual all job descriptions, who is responsible for each task, and when each task should be completed.

To assist you in locating information, the user guide contains:

- A “Table of Contents” of logically organized activities and tasks.
- An alphabetized “Quick Reference Task List” of commonly performed tasks.
- An alphabetized “Index” of the information provided in the user guide.
Implementation Check List

The checklist below may be used as a guide when completing a Bill of Material implementation. Note that the following screens must be set up prior to implementing the Bill of Material module.

<table>
<thead>
<tr>
<th>Description</th>
<th>Assigned to</th>
<th>Date Required</th>
<th>Date Completed</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Ledger:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ledger Maintenance (01.310.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Set up at least one ledger for posting actual account data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chart of Accounts Maintenance (01.260.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GL Setup (01.950.00)</td>
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</tr>
<tr>
<td>• Complete the General Ledger setup screen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shared Information:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexkey Definition (21.320.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Define subaccount segment structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FlexKey Table Maintenance (21.330.00) (Optional)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Define valid values for the segments where Validate is selected in Flexkey Definition (21.320.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>General Ledger:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subaccount Maintenance (01.270.00)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Establish a subaccount for each line of business, location, or line of business and location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Assigned to</td>
<td>Date Required</td>
<td>Date Completed</td>
<td>Comments</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------------</td>
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</tr>
<tr>
<td>Inventory:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>IN Setup (10.950.00)</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>• Completely set up this screen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Decide if you want to <strong>Allow Negative Quantities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Setup the <strong>GL Posting Option</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Enter the correct <strong>Current Period Number</strong> value</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• In the Decimal Places frame, verify <strong>Quantities</strong> and <strong>Price/Cost</strong> are set correctly; keep in mind that 2 decimal places may not give sufficient precision (you may want to set cost to 4 or 5 decimal places)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Product Classes (10.280.00)</strong></td>
<td></td>
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</tr>
<tr>
<td>• Define at least one product class for setting default values on new inventory items and for reporting purposes</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Unit Conversions (10.270.00)</strong></td>
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<td></td>
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<tr>
<td>• Define all stocking units of measure for inventory items with purchase or sales units differing from their stocking unit</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Sites (10.310.00)</strong></td>
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<td></td>
</tr>
<tr>
<td>• Define all sites where inventory items may be stored</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Warehouse Bin Locations (10.340.00)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Define all locations within a site where inventory items are stored</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inventory Items (10.250.00)</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Define material and labor items</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Define all labor items as non-stock inventory items</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Bill of Material Concepts

This section contains information that will help you understand how the Bill of Material module operates. The section includes information about:

- Accounting Flow and Setup
- Batches and Production Entry
- Costing Methods
- Date Effectivity and Engineering Change Control
- Mass Updates
- Pending Standard Cost Recalculations
- Production Documents
- Production Entry vs. Kit Assembly
- Routing Concepts
- Subassembly Concepts
- Tracking Labor and Machine Time

Accounting Flow and Setup

Businesses capitalize into inventory their expenses incurred during the manufacturing process. From an accounting standpoint, the movement is usually timed with the manufacture of finished goods on the shop floor out of lower level components. The Bill of Material and accounting modules capture:

- Material costs
- Labor costs
- Overhead costs

The standard costing method is optional. Some companies less familiar with the standard costing method, or those who deem it too complex for their business, use a simpler approach for valuing inventory and determining the cost of goods sold. One alternative is using the periodic inventory method, which computes or estimates the average cost of sales by keeping track of the change in inventory and the receipts over the period using the formula shown below:

\[
\text{Cost of sales} = (\text{inventory beginning value} + \text{receipts} - \text{inventory ending value})
\]

The software also supports LIFO, FIFO, user-specified, and specific identification costing methods as alternatives to standard costing.
Standard Costing Flows

Standard material and labor costs are set up and maintained in the Bill of Material and Inventory modules to define the unit costs that should occur if all cost transactions follow a predefined standard. If all activity (inventory issues and receipts) occurred at exactly the standard cost, then the system would create the following journal entries:

Sales – Cost of Goods Sold:

<table>
<thead>
<tr>
<th>Cost of Goods Sold</th>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Manufacture – WIP/Finished Goods Inventory:

<table>
<thead>
<tr>
<th>Fin Goods Inventory</th>
<th>Component Inventory</th>
<th>Salaries &amp; Wages</th>
<th>Overhead Accounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Because the manufacturing process is dynamic in nature, the software tracks variances between standard and actual material and labor costs in the General Ledger. This is accomplished by accounting for variances in separate General Ledger accounts:

Sales – Cost of Goods Sold:

<table>
<thead>
<tr>
<th>Cost of Goods Sold</th>
<th>Inventory - Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Manufacture – WIP/Finished Goods Inventory:

<table>
<thead>
<tr>
<th>Inventory - Standard</th>
<th>Component Inventory - Actual</th>
<th>Variance Accounts</th>
<th>Salaries &amp; Wages - Actual</th>
<th>Overhead Accounts - Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Accounting Flow

Figure 2: Accounting Flow
Batches and Production Entry

Production Entry (11.010.00) uses batches differently than other screens. This is because in the Payroll or Accounts Payable screens, for example, the concept of batching transactions before any updates take place makes sense, since real-time update is not needed. However, in inventory-related screens like Production Entry (11.010.00), batching transactions cause numerous problems in evaluating the inventory quantity available for users in Production Entry (11.010.00) as well as Order Management, etc. Furthermore, balancing batches is a customary, natural outgrowth of the batch concept that improves accounting control in Payroll and Accounts Payable; however, it is often a foreign concept among those who track and/or manage inventory. Therefore, several changes have been made in the way Production Entry (11.010.00) handles batches, as summarized below.

- A production document is entered as a “standalone” document, and is assigned an inventory batch number when released. A production document can be released immediately or placed on hold and released later.
- A batch and document is not balanced by comparing totals to control quantities. A document is assumed to be balanced.
- Existing documents that were placed on hold can be edited.
- All transactions created by releasing a document are assigned an inventory number that is displayed on the screen.
- The inventory batch number is an audit trail to enable you to identify all transactions that come from a released document released in Production Entry (11.010.00).
Costing Methods

Costing methods other than standard cost use different database fields to calculate the cost of each production transaction. Unlike standard cost, these methods do not rely on the Compute Cost Rollup (11.540.00) process.

Costing methods other than the standard cost method supported by Microsoft Dynamics SL are:

- Average cost
- FIFO
- LIFO
- Specific ID

These costing methods are all direct cost-related, where each receipt and each issue of the inventory item results in a recalculation of the direct cost. The software pulls the costs for inventory items using these costing methods from the following sources:

- Direct Material cost — Taken from the Site Detail table of inventory.
- Material Overhead — If defined as Apply When Used in Bill of Material Setup (11.950.00), then the material overhead rate from the product class of the inventory item is applied as overhead.
- Labor Overhead and Machine Overhead — If active routings are available, both labor and machine overhead are pulled from the work center.
  If routings are not used, but the costs associated with labor and machine overhead have been set up as inventory IDs in Inventory Items (10.250.00) and subsequently added as components of the bill in Bill of Material Maintenance (11.250.00), then these costs are taken directly from the item site record.
- Direct Labor — If active routings are available, direct labor is pulled from the labor class associated with the routing step.
  If routings are not used, but the costs associated with direct labor have been set up as inventory IDs in Inventory Items (10.250.00) and subsequently added as components of the bill in Bill of Material Maintenance (11.250.00), then direct labor is taken directly from the item site record.

Mass changes to labor class rates and work center rates are options within the processes of the Update Pending Costs/Rates (11.520.00) process. Therefore, any cost/rate changes made in this process also affect the rates applied for LIFO/FIFO/Average cost and specific ID cost methods.
Date Effectivity and Engineering Change Control

When you create a bill of material or add a component to an existing bill, you may not want it activated immediately.

**Example:** The Engineering department may decide to replace a component in a product with a new component to reduce costs. Since tooling changes may be required or current on-hand inventory may need to be used up before the change takes effect, the production department may decide to implement the change at a later date, rather than immediately. The accounting department, however, would like to know now how this change affects the standard cost of the product.

Date effectivity for engineering change control allows planned changes to be made in advance, costed in advance, yet implemented on the specific start date as planned.

Start and stop dates are queried by a single process, *Apply Date-Effective Revisions (11.500.00)*, which implements new components or obsoletes old components based on a user specified “effective date” for this process. Any database record whose planned start or stop date is on or before the process control date undergoes a status change in the database which implements the previously planned change.
Mass Updates

Use Update Standard Costs from Pending (11.530.00) to perform a mass update to any of the following standard costs or rates by copying the corresponding pending cost or rates to the current standard cost or rate. This process provides an alternative to updating each of these items one at a time in the corresponding maintenance screens. Options are:

- Bill/Inventory/Item Site/Routing
- Inventory/Item Site for Component Items
- Work Center
- Labor Class
- Product Class
- All of the Above

Selection of either of the first two options does the following, upon clicking **Begin Processing**:

- Updates standard cost for the selected items
- Revalues inventory for items that use the standard valuation method based on the new standard costs; updates the inventory values if a quantity on hand existed for the old standard cost
- Creates General Ledger transactions for items that use the standard valuation method

Selection of any of the last three options updates standard cost for the selected category.

Standard cost changes made in this screen have no impact on the following:

- Inventory items that do not have a valuation method of standard (the items’ standard costs are updated, but the inventory value does not change)
- Inventory transactions that have already been costed
- Historical inventory-related costs in any module
- If quantity-on-hand is equal to 0

Only current standard costs and rates are updated; not pending standard costs and rates. This is the only process that updates standard costs, all other mass-update processes update pending costs, not standard costs.
Pending Standard Cost Recalculations

It is important to use the **Compute Cost Rollup (11.540.00)** process (and the **Update Standard Costs from Pending (11.530.00)** process) for all or selected bills of material whenever the standard costs of component items have been changed. Using these processes is the only way to recompute standard costs. This ensures that transactions that use bills of material are correctly costed and that variances of standard versus actual costs are correctly computed.

Calculating Cost Rollup

Bills of material are created in **Bill of Material Maintenance (11.250.00)**. The primary intent of this screen is to identify the materials (i.e., components and subassemblies) and their associated costs (i.e., direct material, labor, and material overhead) required to build a product. However, there are situations where it may make sense to include other cost categories in the bill of material by creating components for other item types: Labor, Other Direct, and Machine Overhead. These cost categories can be defined more completely and in greater detail in a routing created in **Routing Maintenance (11.260.00)**.

**Example:** In a routing you can define each step in the production process and specify the labor hours, labor class, work center, and operation for each step. However, if your production process is simple or if labor cost is a small percent of total cost, you can just include a labor item in the bill of material with Quantity set equal to the total number of labor hours required.

The following table summarizes the cost categories that the **Compute Cost Rollup (11.540.00)** process calculates, and the source of the costs (i.e., B= bill of material, R= routing, B/R= either bill of material or routing). Standard costs for products are broken out by these categories and can be reported this way:

<table>
<thead>
<tr>
<th>Categories</th>
<th>Material</th>
<th>Labor</th>
<th>Machine</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct</td>
<td>B</td>
<td>B/R</td>
<td>-</td>
<td>B/R</td>
</tr>
<tr>
<td>Variable Overheads</td>
<td>B</td>
<td>B/R</td>
<td>B/R</td>
<td>-</td>
</tr>
<tr>
<td>Fixed Overheads</td>
<td>B</td>
<td>B/R</td>
<td>B/R</td>
<td>-</td>
</tr>
</tbody>
</table>

In addition to storing standard costs by the above categories, standard costs are divided into pending and current standard costs. Current standard costs are used to value inventory and cost transactions for items that use the standard valuation method. Pending standard costs are projected changes to standard costs that can be compared to the current standards to preview the financial impact of those changes before they are implemented. The **Compute Cost Rollup (11.540.00)** process only updates pending standard costs — current standard costs are updated by using the **Update Standard Costs from Pending (11.530.00)** process.

Standard costs are stored in both the inventory master record and each site record for an item, which enables you to have a different standard cost for each site (e.g., warehouse or factory) where an inventory item is used or produced. It is important to understand that inventory at a site is valued and transactions that occur at a site are costed using the standard cost from the inventory item’s site record, not the inventory master record for that item.

If **Bill of Material by Site** is checked in **Bill of Material Setup (11.950.00)**, then:

- A global BOM updates Inventory and all existing ItemSites that do not have a site-specific active BOM
- A site-specific BOM only updates that ItemSite, and creates it if one does not exist.

If **Bill of Material by Site** is not checked in **Bill of Material Setup (11.950.00)**, then:

- A global BOM updates Inventory and all existing ItemSites.

Calculating Budget and Estimate Costs

The **Compute Cost Rollup (11.540.00)** process is primarily intended for products and components that use the standard valuation method. It is used to recompute pending standard costs which can then be
reviewed and compared to current standard costs before updating current standard costs using the Update Current Standard Costs from Pending (11.530.00) process. However, the Compute Cost Rollup (11.540.00) process can be used for items with any valuation method.

**Example:** If all of your products and components use the average valuation method, you can use the Standard Costs fields as “budget” or “estimate” fields as benchmarks to compare with actual costs to analyze production efficiency. This is done by entering “standard” costs for your component items using the Compute Cost Rollup (11.540.00) process to compute “standard” costs for products. The “standard” cost fields are not used to value inventory or cost transactions for these average costed items except for the current standard fields in the work center and labor class tables — they strictly provide benchmarks for analysis.

**Running the Process on Selected Bills of Material**

The Compute Cost Rollup (11.540.00) process can be run for all or selected bills of material. If you specify all bills, then pending standard costs for all final assembly bills and all subassembly bills are recomputed. This is the best way to ensure that costs for all levels of assembly are kept synchronized. However, you can run the process for only selected bills of material to save processing time. However, it then becomes your responsibility to ensure that costs at different levels are synchronized.

**Example:** If you specify a single bill to be processed, all levels of subassembly beneath it are also processed. If the bill you selected is a final assembly, then all levels for this product are recomputed and synchronized. However, if the bill you selected is a subassembly, then only the levels beneath it are recomputed — levels above it are not. Therefore the total costs for final assemblies that use this subassembly are not updated with the new cost of the subassembly.

**Including Components in Cost Roll Ups**

Bill of material components may or may not be included in the cost rollup calculations, depending on the status of the bill of material and the status of the component. Active components are always included. Pending components are only included when the bill of material status is pending. The following table summarizes the inclusion of components based on status.

<table>
<thead>
<tr>
<th>Component Status</th>
<th>Bill of Material Status</th>
<th>Active</th>
<th>Pending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>Included in roll up</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Pending</td>
<td>Not included in roll up</td>
<td>Included in roll up</td>
<td></td>
</tr>
<tr>
<td>Obsolete</td>
<td>Not included in roll up</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
Including Routings in Cost Rollups

Routings may or may not be included in the cost rollup calculations depending on the status of the bill and the status of the routing. Cost rollup logic is driven by bills of materials, not routings. A bill of material can exist without a companion routing (companion meaning the same BOM ID, status, and site ID) but a routing cannot exist without a companion bill of material. A pending routing is included with a pending companion bill, an active routing is included with an active companion bill, and an active routing may be included with a pending active companion bill if no pending companion routing exits. The following table shows the combinations of bill of material routing statuses and how they are handled in cost rollup logic.

<table>
<thead>
<tr>
<th>Routing Status</th>
<th>Bill of Material Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Active</td>
</tr>
<tr>
<td>Active</td>
<td>Included in roll up</td>
</tr>
<tr>
<td>Pending</td>
<td>Not included in roll up</td>
</tr>
</tbody>
</table>

*Note: The Bill of Material module does not allow a bill of material to have a BMID/status/site differing from its routing (in other words, active bill of material site 100 with pending routing site 100).*
Production Documents

Before releasing production documents for processing, you can review them using the Production Preview report (11.650.00). This report displays all component information entered at all levels plus routing information. To review component shortages, print the Shortage Report (11.670.00).

Production documents are released on an individual basis, one reference number per inventory batch and one BMID (end item) per reference number. Production documents should retain the No Action document handling status until ready for release. Transactions created when the document is released are assigned an inventory batch number at the time of release.

When a production document is released for processing, the following updates take place:

- The cost of the item produced is computed from the item’s components and its routing if one exists. This cost is totaled by cost category (e.g., direct material, labor overhead, etc.).
- Cost variances are computed by comparing actual costs to standard costs for the item produced if the valuation method is standard cost. The variance is then posted to the G/L Variance account as defined in Work Center Maintenance (11.270.00) for routing related accounts and as defined in Bill of Material Setup (11.950.00) for material-related accounts. Other valuation methods cost at actual costs.
- Quantities and costs are deducted from inventory records for the components used. General Ledger transactions are created for these costs. All inventory valuation methods are supported for costing components except user-specified.
- Quantities and costs are incremented in inventory records for the item produced. General Ledger transactions are created for the cost. All inventory valuation methods are supported for costing the item produced except user-specified.
- Costs are computed from each routing step for labor, overheads, and other direct costs. General Ledger transactions are created for these costs.
Production Entry vs. Kit Assembly

Production Entry (11.010.00) is similar in concept to Kit Assembly (10.050.00) in the Inventory module. However, it offers significantly more functionality over kits, including the following:

- Production Entry (11.010.00) segregates labor and machine costs from material costs; Kit Assembly (10.050.00) does not.
- Production Entry (11.010.00) computes standard cost variances based on cost category; Kit Assembly (10.050.00) does not.
- Production Entry (11.010.00) explodes bills of material through multiple levels; Kit Assembly (10.050.00) does not.
- Production Entry (11.010.00) can incorporate routing information; Kit Assembly (10.050.00) cannot.
- Production Entry (11.010.00) can process site-specific bills of material; Kit Assembly (10.050.00) cannot.

You should make the determination up front if kits or bills of material are suitable for your operation. You should not attempt to mix the use of Kit Assembly (10.050.00) and Production Entry (11.010.00) for the same kit at different points in time.

If you have an Inventory kit and want to convert it to a bill of material, you can do so. Use Copy BOM/Kit in Bill of Material Maintenance (11.250.00) to convert the kit. Once you save the bill in Bill of Material Maintenance (11.250.00), you can no longer access the former kit in Inventory module’s Kits (10.320.00) or Kit Assembly (10.050.00). You can, however, immediately use this bill of material in Production Entry (11.010.00) to report production completions.
Routing Concepts

Before creating a routing, create the companion bill of material (see Bill of Material Maintenance (11.250.00) for more information). The bill of material/routing pair must have the same inventory ID, site ID, and status. Routings must be created before you can complete Compute Cost Rollup (11.540.00), as well as other processes involving routings.

Before creating routings, we recommend creating the following:

- Work centers (see Work Center Maintenance (11.270.00)).
- Operations (see Operation Maintenance (11.280.00)).
- Labor classes (see Labor Class Maintenance (11.290.00)).
- Tools (see Tool Maintenance (11.300.00)).
- Machines (see Machine Maintenance (11.310.00)).

However, if you need to create any of the above while in Routing Maintenance (11.260.00), open the appropriate maintenance screen and add the item. Closing the maintenance screen returns you to Routing Maintenance (11.260.00).

You can create multiple routings for an inventory item by specifying a different site or status for each routing. There can be only one routing for each combination of inventory ID, site ID and status. The same combination must exist in Bill of Material Maintenance (11.250.00) before the matching routing can be created.

New routings can be copied from existing routings using Copy Routing in Routing Maintenance (11.260.00).

You can include labor and overhead costs in finished good or subassembly costs in two ways. The primary way is to define a routing for the finished good or subassembly. The routing provides a detailed definition of labor and overheads: the production step where it occurs, the work center involved, the nature of the operation, whether it is setup, runtime, or outside.

The second way is to define non-stock inventory items with types of Labor, Machine Overhead, etc., and set up standard costs for these items. The standard cost is used as the labor or overhead rate, and the component quantity is the number of labor hours or overhead units for the finished good or subassembly being produced. The costs for these items are rolled up under the labor and overhead categories.

After completing this screen, use Routing List (11.700.00) to print a record of the routing information.
Subassembly Concepts

You can select any subassembly for review and editing before the document is released to the General Ledger and Inventory modules using either *Bill of Material Structure* (11.320.00) or *Production Entry BOM Structure* (11.010.01). You can accept the standard components and default quantities, lot/serial numbers, warehouse locations, sites, etc., or override any of these at any level.

Subassemblies and Stock Usage

One major advantage of bills of material over kits is the ability to control the process of assembly. The *Stock Usage* flag for subassemblies in the *Component List* tab of *Bill of Material Maintenance* (11.250.00) controls these processes as follows:

- **Stock Only** subassemblies are always pulled from available stock, even if no stock is available. If insufficient stock is available, the quantity-on-hand becomes negative. Subassemblies of type Stock Only are required to be previously assembled and exist in stock as single inventory items. Use this option to allow customer orders and production entry for the component item regardless of whether demand can be filled by stock quantities known to the system.

- **Build Only** subassemblies are always exploded into the bill’s lower-level components and consequently should not be reported separately as assembled prior to production. General Ledger booking is to components (not the subassembly account) when building directly from the components. Use this option to disallow any production entry or customer order for the product that cannot be filled. Build Only is the most commonly used option.

- **Normal** subassemblies are pulled from stock if sufficient stock is available. If stock on-hand is exhausted (zero), the production requirement balance is built from lower-level components. Subassemblies of this type may optionally be reported as assembled prior to production. Use this option to create a phantom inventory; that is, an item that never actually exists in inventory stock.

Subassemblies can and most often are used in multiple higher level (parent) bills. Stock usage handling may or may not be the same within each higher level bill.

Tracking Labor and Machine Time

*Production Entry* (11.010.00) captures the routing steps with standard labor and machine hours in detail, and you can enter the actual hours if they differ from standard.
Task Guidelines

Quick Reference Task List
This list contains tasks that are commonly performed with the Bill of Material module. Each task is cross-referenced to a specific page in the user guide.

How Do I Create...?
- A bill — see “Creating Bills of Material” on page 28
- Bills and items concurrently — see “Creating Inventory Items Concurrently with Bill Creation” on page 28
- Effective dates for bills, components, or routings — see “Using Date Effectivity for Engineering Change Control” on page 35
- Phantom assemblies — see “Creating Phantom Assemblies” on page 29
- A multi-level bill — see “Creating a Multi-Level Bill” on page 28
- Reports — see “Generating Bill of Material Reports” on page 41
- A routing — see “Creating Routings” on page 30
- Routings and bills concurrently — see “Creating Routing Elements Concurrently with Bill Creation” on page 31

How Do I Define...?
- Setup costs versus runtime costs during production — see “Defining Setup Operations versus Runtime Operations” on page 32
- Labor rates at each work center — see “Defining Labor and Machine Overhead Rates at each Work Center” on page 34
- Machine overhead rates at each work center — see “Defining Labor and Machine Overhead Rates at each Work Center” on page 34

How Do I Close...?
- A period in the Bill of Material module — see “Period Closing, Bill of Material Module” on page 40

How Do I Compute...?
- Routing costs without creating formal routings — see “Capturing Routing Related Costs Without Establishing Formal Routings” on page 31
- Standard costs for all bills— see “Computing and Updating Standard Costs for All Bills of Material” on page 37
- Standard costs for one bill — see “Computing and Updating Standard Costs for One Bill of Material” on page 38
- Transactions using average cost/FIFO/LIFO/specific IDs — see “Computing and Updating Standard Costs for All Bills of Material” on page 37

How Do I Set Up...?
- The Bill of Material module — see “Setting up the Bill of Material Module” on page 25
How Do I Update...?

- Standard costs for all bills — see “Computing and Updating Standard Costs for All Bills of Material” on page 37
- Standard costs for one bill — see “Computing and Updating Standard Costs for One Bill of Material” on page 38
- Standard costs globally when common components change — see “Updating Standard Costs Globally When Common Components Change” on page 39
Setting up the Modules That Integrate with Bill of Material

The first steps in setting up the Bill of Material module are to perform the setup tasks for the other modules that integrate with Bill of Material.

- Shared Information
- General Ledger
- System Manager
- Inventory
- Purchasing
- Customization Manager
- Crystal Reports

Shared Information Module
The following screens must be completed before the Bill of Material module can be set up.
1. Tax Maintenance (21.280.00) — Required
   - Any Tax IDs used in Invoice Entry (SD.202.00) must have a Calculation Type of Document.
2. Tax Group Maintenance (21.340.00) — Optional
3. Terms Maintenance (21.270.00) — Required

General Ledger Module
1. Chart of Accounts Maintenance (01.260.00) — Required
2. General Ledger Setup (01.950.00) — Required
3. Subaccount Maintenance (01.270.00) — Required

System Manager Module
1. User Maintenance (95.260.00) and Group Maintenance (95.280.00) — Optional
   - Define all users in User Maintenance (95.260.00) and groups in Group Maintenance (95.280.00) along with passwords for all users in the Bill of Material module.
2. Access Rights Maintenance (95.270.00) — Optional
   - Set the appropriate access rights for all bill of material users and groups in Access Rights Maintenance (95.270.00) for the Bill of Material module.
   - Click Preload to open Preload Screens (95.270.01) and Bill of Material from the list to view the screens for the bill of material module.
   - Specify the appropriate level of rights for each screen for each bill of material user or group.

Inventory Module
1. IN Setup (10.950.00) — Required
   - Determine how many decimal places you wish to use in calculations. Note: If the quantity decimal place is set to 0 you cannot view partial quantities. Also, two decimal places many not offer the level of detail required to accurately determine quantities or costs.
   - Verify GL Posting Option is set correctly.
   - When setting up decimal place precision, remember that a maximum of 15 characters total can be implemented, regardless of where the decimal place is used.
2. *Product Classes* (10.280.00) — Required
3. *Warehouse Bin Locations* (10.340.00) — Required
4. *Unit Conversions* (10.650.00) — Required
5. *Sites* (10.310.00) — Required
6. *Inventory Items* (10.250.00) — Required
   - Type all labor hourly rates as non-stock inventory items. For any item entered as labor, the inventory account is actually an accrued wages payable account.
   - Create one miscellaneous inventory item as taxable, such as *Miscellaneous Materials - Taxable*. This item is non-stock with a valuation method of user-specified.
   - Create one miscellaneous inventory item as non-taxable, such as *Miscellaneous Materials - Non-taxable*. This item is non-stock with a valuation method of user-specified.

**Example:** When invoicing for equipment rented, you probably will **not** pay sales tax.

**Note:** For all labor inventory items, the labels for *Inventory Account* and *Sub* should be modified to *Invt/Wages Acct* and *Sub* using Customization Manager, as labor items are charged to the Accrued Wages Payable account.

**Purchasing Module**
1. *Purchase Order Setup* (04.950.00)
   The following Purchasing screens integrate with the Bill of Material module:
   2. *Receipt/Invoice Entry* (04.010.00)
   3. *Purchase Orders* (04.250.00)

**Customization Manager Module**
Customization Manager gives users the ability to modify Bill of Material screens to meet the accounting requirements of an organization. For example, new fields and controls can be added, data fields and objects can be hidden, and defaults values for data fields can be set. To make data entry more efficient, objects can be moved to other positions on a screen and the tab order of data fields can be modified.

Although there are no setup procedures required for the Customization Manager, the module must be purchased and installed separately in order to make modifications to Bill of Material screens.

**Crystal Reports**
Crystal Reports gives users the ability to modify Bill of Material reports to meet the requirements of an organization. For example, new labels and fields can be added while data fields and objects can be removed. Although there are no setup procedures required for Crystal Reports, the module must be installed in order to make modifications to Bill of Material reports.
Setting up the Bill of Material Module

Before you begin using the Bill of Material module, you must complete the following steps:

Setup Considerations:

1. Review the “Starting Inventory” procedure in the “Introduction” section of the Inventory module. The Bill of Material module cannot be used until the Inventory module has been started.

2. Complete Bill of Material Setup (11.950.00). Options and account number defaults in this screen control the underlying decisions/processes in all other screens in the Bill of Material module. Key decisions made in this screen include:
   - If your bills are single site or multi site for the same product.
   - Material overhead application method.
   - Identify General Ledger accounts to be used for variances and offsets.

3. If applicable (controlled by the setup in step 2), define the material overhead rates to be applied using Product Classes (10.280.00).

4. Create inventory items in Inventory Items (10.250.00) for any component, subassembly or finished goods needed in the bill of material of the subassembly or finished good. As each component item is created, enter its direct material cost if using the standard cost valuation method. This cost should be entered in both the pending and current fields on the Cost/Price tab of Inventory Items (10.250.00). Valuation methods, other than standard cost, have their unit costs established upon receipt.

Procedural Considerations:

1. Create bills of material using Bill of Material Maintenance (11.250.00).

2. Optional: Create routings using Routing Maintenance (11.260.00). Before this is possible, the following production resources consumed in the routing must be defined:
   - Machines — Define individual machines or types of machines used in production using Machine Maintenance (11.310.00).
   - Tools — Define tooling needed for production in Tool Maintenance (11.300.00).
   - Labor class — Define labor grades or classes used in production and the pay rates for each using Labor Class Maintenance (11.290.00). These pay rates are maintained in the Labor Class table and subsequently used in cost rollups.
   - Operations — Define types of operations performed in the production process using Operation Maintenance (11.280.00).
   - Work centers — Define the work centers used in the production process using Work Center Maintenance (11.270.00). Labor and machine overhead rates used in cost rollups are maintained in the Work Center table.
   - Routings — If all of the previous production resources are defined, you may now define the routing consisting of each operation in the production process and the associated production resources of these operations. To do so, use Routing Maintenance (11.260.00).

3. Component cost alternative — Use Update Pending Costs/Rates (11.520.00) to insert costs in a more global fashion based on formulas and/or product class affiliation. This process screen has the additional capability of applying the material overhead rates defined by product class.

4. Run the Compute Cost Rollup (11.540.00) process for all or selected bills of material. This process rolls up costs from each bill’s lower-level subassemblies, components and/or routings and stores the resultant cost in Pending Standard Cost where it can be reviewed either on the screen or on reports. This step (plus Update Pending Costs/Rates (11.520.00) from step 5) form the “what if” costing capability of the Bill of Material module.

5. Establish the current standard cost used to cost production transactions using Update Standard Costs from Pending (11.530.00).
6. If all nine previous steps have been completed, you may now enter and report Production completions in your production software.

**Note:** General Ledger Implications: General Ledger’s standard cost revaluation account (from setup) is updated by *Update Standard Costs from Pending* (11.530.00) for items with the standard cost valuation method. Revaluation takes into account the difference in cost multiplied by the physical quantity-on-hand for the item.

**Note:** Your bills can be either global or site-specific. The key factor in determining which is more suitable for your operation is your costing requirements. In other words, do you want to maintain different standard costs at different production sites for the same product? If so, use site-specific bills. If not, use global bills.
Bill of Material Transaction Flow

- Create Inventory Items (Inventory module)
- Create Bills of Material
- Create Routings (optional)
- Compute Standard Cost from Bills and Routings
- Revalue Inventory at New Standard Cost, Update GL
- Enter Finished Goods Production, Relieve Component Inventory (Production application)

Figure 3: Bill of Material Transaction Flow
Creating Bills of Material

Follow this procedure to create bills of material (BOM) for assembled products. You can create a new bill of material by copying an existing one. To do so, use Bill of Material Maintenance (11.250.00) Copy BOM/Kit instead of manually entering all of the component information.

If you have created kits previously using Kits (10.320.00) in Inventory, you must first create a bill of material for the kit before you can access it with your production entry software. To do so, use Bill of Material Maintenance (11.250.00) and enter the kit’s parent inventory ID in BOM ID and the site ID associated with the kit. All of the kit components are automatically copied into the new bill of material.

Creating One Bill of Material

1. Use Inventory Items (10.250.00) to create inventory items for components, subassemblies and finished goods.
2. Optional: Create routings.
3. Use Bill of Material Maintenance (11.250.00) to create bills of material for each lower level subassembly, and then for the parent assembly (final assembly). If you want to create a new bill of material by copying an existing bill, use Copy BOM/Kit instead of manually entering the required information.

Creating Inventory Items Concurrently with Bill Creation

If creation of all required inventory items in advance of bill creation is not practical for your operation, the software’s multiple window capabilities make it easy to create new inventory items when required, as follows:

1. Leave Bill of Material Maintenance (11.250.00) open and open Inventory Items (10.250.00), to create the required inventory ID (item).
2. Close Inventory Items (10.250.00).
3. Add the new item as a component for the bill in Bill of Material Maintenance (11.250.00).

Creating a Multi-Level Bill

A multi-level bill of material is used to document an item that contains lower-level subassemblies.

Example: If your plant manufactures lawn mowers, the lawn mower consists of many subassemblies such as a carburetor, transmission, engine, etc. In turn, each of these subassemblies contains additional subassemblies. Subassemblies are listed until you reach the lowest level component, which may be a screw, nut, metal casting, etc.

1. Use Inventory Items (10.250.00) to create inventory items for components, subassemblies and finished goods.
2. Use Bill of Material Maintenance (11.250.00) to create bills of material for each lower level subassembly, and then for the parent assembly (final assembly). If you want to create a new bill of material by copying an existing bill, use Copy BOM/Kit instead of manually entering the required information.
3. Associate the subassemblies to the parent item.
Creating Phantom Assemblies

Phantom bills are created to group components under a parent.

**Example:** If you are building a product that consists of a part, an installation guide, a registration card, and an accessories order form, all these elements are placed in the box during production and shipped to the customer. Therefore, *Stock Usage* is set to Build Only for the latter three items. However, the shipping manifest shows only the product (these other items are assumed to be in the package); the product’s *Stock Usage* is set to Build Only.

1. Use *Inventory Items* (10.250.00) to create a record for each of the phantom items. Be sure to set each item’s *Stock Usage* to Build Only.
2. Use *Inventory Items* (10.250.00) to create a record for the parent item.
3. Open *Bill of Material Maintenance* (11.250.00) and create a bill of material for each lower item. Be sure to set each item’s *Stock Usage* to Build Only.
4. Using *Bill of Material Maintenance* (11.250.00), create a bill of material for the parent item and set the item’s *Stock Usage* to Build Only.
5. Associate the phantom items with the parent item.
Creating Routings

Follow this procedure to create routings for assembled products, final assemblies and/or subassemblies. While the bill of material typically identifies the materials needed and material costs, the routing specifies how to build the product inclusive of all other production resources needed: work centers, operation steps, labor classes, machines and tools. The routing also specifies the standard labor and machine hours required to complete each operation step in the routing.

You can create a new routing by copying an existing one. To do so, use Copy Routing instead of manually entering all of the detailed information.

Routing operation types supported are Setup, Runtime, and Outside. Routings capture and report costs for these three operation types as follows:

- **Setup** — May consist of direct labor, labor overhead, and machine overhead; Setup costs are computed by lot size.
- **Runtime** — May consist of direct labor, labor overhead, and machine overhead; Runtime costs are computed by the number of individual pieces. A portion of the runtime costs may fall into the category of other direct costs.
- **Outside** — Falls into the category of other direct costs.

Setup Considerations

Your routings can be either global or site specific. The key factor in determining which is more suitable for your operation is your costing requirements. In other words, do you want to maintain different standard costs at different production sites for the same product? If so, use site-specific bills. If not, use global bills.

Global Bills

Define the Global Site ID in Bill of Material Setup (11.950.00); then always use this global site in Routing Maintenance (11.260.00). Cost rollup is required only for the global site.

Site Specific Bills

If you want to use site-specific bills, select Bill of Material by Site in Bill of Material Setup (11.950.00), and then create individual routings for each site in Routing Maintenance (11.260.00).

Cost rollups are required for each individual site’s bill of material.

Creating One Routing

1. Before creating a routing, use Bill of Material Maintenance (11.250.00) to create bills of material for each lower-level subassembly, and then for the parent assembly (final assembly). See “Creating Bills of Material” on page 28 for more information.
2. Use Machine Maintenance (11.310.00) to create machines to be used in routing steps (no cost implications).
3. Use Tool Maintenance (11.300.00) to create the tools to be used in routing steps (no cost implications).
4. Use Labor Class Maintenance (11.290.00) to create the labor classes to be used in routing steps. Labor class determines labor rates used in cost rollup for direct labor.
5. Use Operation Maintenance (11.280.00) to create operation steps to be used in routing steps. Operation steps determine whether the routing steps are of type Setup, Runtime, or Outside and affect the type of costs to be applied, though no rates are entered for the operation itself.
6. Use Work Center Maintenance (11.270.00) to create work centers to be used in routing steps. Work center determines both labor and machine overhead rates used in cost rollup.
7. Use Routing Maintenance (11.260.00) to create the final routing inclusive of all necessary routing steps required to complete the production process to build one each of the concerned product.
For each routing step, you identify some or all of the following depending on the type of operation in the routing step:

- Work center
- Labor class
- Tool ID
- Machine ID
- #labor hours per unit
- #machine hours per unit

If you want to create a new routing by copying an existing routing, use Copy Routing instead of manually entering the required information.

Creating Routing Elements Concurrently with Bill Creation

If creation of tools/machines/labor class/operation steps/work centers in advance of routing creation is not practical for your operation, the software's multiple window capabilities make it easy to create these elements when required:

1. Leave Routing Maintenance (11.260.00) open and open another window for any of the following production resources, depending on your need:
   - Machines: Machine Maintenance (11.310.00)
   - Tools: Tool Maintenance (11.300.00)
   - Labor class: Labor Class Maintenance (11.290.00)
   - Operations: Operation Maintenance (11.280.00)
   - Work centers: Work Center Maintenance (11.270.00)

2. Define and save the information, then close this temporary window (screen).

3. Select the newly created item from the possible values list for the appropriate field on Routing Maintenance (11.260.00).

Capturing Routing Related Costs Without Establishing Formal Routings

Optional: Creation and use of routings are optional in the Bill of Material module. If you choose not to use routings, you can still capture routing related costs for your products by creating inventory items that are uniquely identified as one of the following item types:

- Labor Item — Captures labor costs to produce one each of the parent item.
- Machine Overhead item — Captures the machine overhead costs to produce one each of the parent item.
- Other Direct Costs item — Capture the other direct costs to produce one each of the parent item.

These routing cost related inventory items would then be added as a component to the parent item’s bill using Bill of Material Maintenance (11.250.00).
Defining Items for a Bill of Material

The procedures in this section describe and define:
- The difference between setup and runtime operations
- Labor classes
- Labor rates at each work center
- Machines
- Operations
- Tools
- Work centers
- Warehouse bin locations

Defining Setup Operations versus Runtime Operations

Operations are initially set up in Operation Maintenance (11.280.00). Once the type of operation is set up, use Routing Maintenance (11.260.00) to associate the operation with the creation of your product.

There are three classes you can use to define an operation:
- Setup — Use Setup to define an operation that is needed to prepare a machine for production.
  
  **Example:** If a press needs to be re-tooled or reprogrammed in order to drill a sequence of holes into a casting, the time, labor, and expense are considered to be setup costs. The cost of setup is factored into the total price charged for the finished product. If retooling costs $100.00 to build 10 items, the setup cost per item is calculated to be $10.00.

- Runtime — Use Runtime to define the operation that creates the item. Once the press is set up to drill holes in the casting, the labor, expense, and time needed to drill the holes are considered runtime costs. If it costs $2 to drill the holes in one casting, the price of the product is increased to $12.00.

- Outside — Use outside to cover the costs of subcontractor, vendor contracts, or other costs associated with the products that are not performed by your company.
  
  **Example:** If the press has a service contract that costs $2.00 per casting, the cost of the product increases to $14.00.

To define an operation:
1. Use Operation Maintenance (11.280.00) to set up operation codes for your manufacturing process.
2. Use Routing Maintenance (11.260.00) to associate each operation with your product.
Defining Labor Classes

Use Labor Class Maintenance (11.290.00) to create and maintain information on labor classes used in production processes. A labor class is a group of employees with similar skills and pay rates. Examples of labor classes are millwrights, electricians, assemblers, welders, painters, etc.

**Figure 4: Labor Class Maintenance (11.290.00)**

To define labor classes:
1. Open Labor Class Maintenance (11.290.00).
2. Type the labor class ID in Labor Class.
3. Type a meaningful explanation of the labor class in Description.
4. Type the present hourly rate being paid to employees in this class in Current Pay Rate.
5. Type the anticipated hourly rate paid to employees in this class in Pending Pay Rate.
6. Type a previously established set rate for the labor class being paid to employees in this class in Current Standard Rate.
7. Type the projected rate that is established for the labor class paid to employees in this class in Pending Standard Rate.
8. Complete the fields as necessary for the remaining labor classes.
9. Click Save on the toolbar.
Defining Labor and Machine Overhead Rates at each Work Center

Use Work Center Maintenance (11.270.00) to create and maintain information on labor and machine overhead rates used in production processes. Because work centers in different areas of the country or region may use specific pay scales, labor rates for each work center should be created.

To define labor and machine overhead rates at each work center:

1. Open Work Center Maintenance (11.270.00).
2. Type the work center ID in Work Center.
3. Type a meaningful explanation of the work center in Description.
4. Type the location of where the production takes place in Site Id.
5. Type the number of hours that a work center normally operates during a work day in Work Hours.
6. Type the number of people working in the work center in Crew Size.
7. Type the how many machines normally operate at the work center in Number of Machines.
8. Type the variable and fixed labor overhead in Standard and Pending in the Labor frame.
9. Type the variable and fixed machine overhead in Standard and Pending in the Machine frame.
10. Click Save on the toolbar.
11. Associate the work center to a product using Routing Maintenance (11.260.00).
Using Date Effectivity for Engineering Change Control

The Bill of Material module’s Date Effectivity controls status changes in the assembly’s bill or routing as well as the status changes of any of the bill’s components or routing’s operations for this assembly. Valid status changes are:

- Active
- Pending
- Obsolete

Implementing Date Effectivity

Applying Status Changes

To apply a status change to an entire bill of material:
1. Open Bill of Material Maintenance (11.250.00) and select the BOM ID.
2. On the Engineering Control tab, document the engineering changes by the entry of a revision number, engineering change number, and drawing number as appropriate.
3. Enter the planned start or planned stop date as appropriate. Be aware that these planned dates apply to the routing as well, if any.
4. Review the planned changes using Bill of Material Lists (11.600.00), and then select only those bill of material IDs with start or stop dates equal to a specified date.
5. Make the changes by running the Apply Date-Effective Revisions (11.500.00) process and entering an Effective Date. (Effective Date Update Option = Bill of Material Records.)

To apply a status change to a bill of material component:
1. Open Bill of Material Maintenance (11.250.00) and select the BOM ID.
2. On the Component List tab, select the component that you want to change.
3. Enter the planned start or stop date as appropriate in the area.
4. Review the planned changes using Bill of Material Lists (11.600.00), and then select only those component inventory IDs with start or stop dates equal to a specified date.
5. Make the changes by running the Apply Date-Effective Revisions (11.500.00) process and entering an Effective Date. (Effective Date Update Option = Component Records.)

Note: Start and stop dates for routings are controlled by their bill of material.
Applying Date Effectivity
The Apply Date-Effective Revisions (11.500.00) process has two options that operate as follows:

- Bill of Material Records
  - Looks at and updates the status of the bill of material ID in the header area of Bill of Material Maintenance (11.250.00) in addition to the status of the associated routing (if any) in Routing Maintenance (11.260.00).
  - Looks at Start/Stop Date on the Engineering Control tab of Bill of Material Maintenance (11.250.00).
  - During processing, start date looks for bills of material with a Pending status. If found and the date is on or before the process control date entered in Effective Date of Apply Date-Effective Revisions (11.500.00), the process updates the status to Active for both the parent bill of material and its associated routing if any.
  - During processing, stop date looks for Active status. If found and the date is on or before the process control date entered in Effective Date of Apply Date-Effective Revisions (11.500.00), the process updates the status to Obsolete of both the parent Bill of Material and its associated routing if a routing exists.

- Component Records
  - Looks at and updates the status of each component on the Component List tab of Bill of Material Maintenance (11.250.00).
  - Looks at Start/Stop Date for each component on the Component List tab of Bill of Material Maintenance (11.250.00).
  - During processing, start date looks for components with a Pending status. If found and the date is on or before the process control date entered in Effective Date of Apply Date-Effective Revisions (11.500.00), the process updates the status to Active.
  - During processing, stop date looks for components with an Active status. If found and the date is on or before the process control date entered in Effective Date of Apply Date-Effective Revisions (11.500.00), the process updates the status to Obsolete.
Computing and Updating Standard Costs for All Bills of Material

Follow this procedure to establish new standard costs for assemblies at the beginning of a new fiscal year. It is recommended to use this procedure to change standard costs rather than the alternative of changing them directly using Inventory Items (10.250.00). This procedure keeps standard costs, inventory valuations, and general ledger account balances synchronized.

The first five steps below form the “what if” review cycle and may be repeated any number of times. Step 6 locks in your revised costs to current standard rates. Production transactions for items using the standard cost method are costed at current standard. Production transactions for items using LIFO/FIFO/average cost or specific ID are costed at average cost for material, while routing-related costs are taken from the current standard rates for labor and overheads.

To compute and update standard costs for all bills of material:

1. Update pending standard costs for all component items using Inventory Items (10.250.00).
   
   **Shortcut:** Use Update Pending Costs/Rates (11.520.00) to make mass changes to pending standard costs and rates whenever you are making similar cost changes to multiple items.
   
   **Example:** If you are increasing standard costs for all items by 5% or setting standard costs equal to average cost + 10% for all items, this is possible in this screen. To process all items, select All Items.

2. Update pending rates for work centers (if you use routings) using Work Center Maintenance (11.270.00) and labor classes by using Labor Class Maintenance (11.290.00).

3. Review the revised pending costs/rates by printing the Standard Cost Detail Report (11.620.00).

4. Roll up the pending standard costs for all or selected bills by using Compute Cost Rollup (11.540.00). To process all bills, select All BOM IDs.

5. Review the rolled up pending standard costs of all selected bills and underlying components by using the Standard Cost Change Preview (11.630.00) report.

6. Update the current standard costs using the Update Standard Costs from Pending (11.530.00) process. This process copies the pending standard costs to current, updates the inventory valuation based on the new standard costs and existing quantity on hand, and creates general ledger transactions for the revaluation amounts (the latter occurs only if the item uses the standard cost method). Revaluation updates the revaluation account defined in the GL Offset Accounts tab of Bill of Material Setup (11.950.00) and the inventory accounts specified for each selected item in Inventory Items (10.250.00). To process all bills, select All Items.

   It is recommended that you choose the All Items option, which ensures that bills, routings, components, and rates in product class, labor class, and work center are all updated collectively in one process. Alternatively, you can choose to transfer the pending costs to current standard costs using individual processes for bills, routings, components, etc.
Computing and Updating Standard Costs for One Bill of Material

Follow this procedure to compute new standard costs for a single bill of material and its underlying components. This procedure is typically done when a high-cost component is added or deleted from the bill, when a quantity has changed, or when a component’s unit cost changes significantly.

This procedure keeps standard costs, inventory valuations, and general ledger account balances synchronized. It is recommended that you use this procedure to change standard costs rather than the alternative of changing them directly using Inventory Items (10.250.00).

The first four steps below form the “what if” review cycle and can be repeated any number of times. Step 5 locks in your revised costs to current standard. Production transactions for items using the standard cost method are costed at current standard costs. Production transactions for items using LIFO/FIFO/average cost or specific ID are costed at average cost for material, while routing-related costs are taken from the current standard rates for labor and overheads.

**To compute and update standard costs for one bill of material:**

1. Perform the database change that would warrant a new standard cost:
   - Add component to Bill of Material Maintenance (11.250.00).
   - Delete component from Bill of Material Maintenance (11.250.00).
   - Change a component’s quantity per parent in Bill of Material Maintenance (11.250.00).
   - Change the component’s pending standard cost in Bill of Material Maintenance (11.250.00).
   - Change scrap percent in Bill of Material Maintenance (11.250.00) in the Detail area of the Component List tab.

2. If the annual fiscal year exercise to roll up new standard costs for all products has been completed prior to using this procedure, the Update Standard Costs from Pending (11.530.00) process has zeroed out all pending cost fields after transferring pending to current. Therefore, be sure correct pending costs and rates are available in all pending cost fields prior to doing a cost rollup for this individual bill of material. This would include component pending costs, material overhead, labor class rates and labor overhead (in other words, everything).

3. Roll up the pending standard cost for the selected bill by using Compute Cost Rollup (11.540.00).

4. Review the rolled up pending standard costs of the selected bill and underlying components by using the Standard Cost Change Preview (11.630.00) report.

5. Update the current standard cost using Update Standard Costs from Pending (11.530.00). This process copies the pending standard costs to current, updates the inventory valuation based on the new standard costs and existing quantity on hand, and creates general ledger transactions for the revaluation amounts (the latter occurs only if the item uses the standard cost method). Revaluation hits the revaluation account defined in the GL Offset Accounts tab in Bill of Material Setup (11.950.00) and the inventory accounts specified for the selected item in Inventory Items (10.250.00).

It is recommended that you select All of the Above, which ensures that bills, routings, components, and rates in product class, labor class, and work center are all updated collectively in one process. Alternatively, you could choose to transfer the pending costs to current standard costs using individual processes for bills, routings, components, etc.
Updating Standard Costs Globally When Common Components Change

Follow this procedure to compute new standard costs for all bills of material that contain a particular inventory item as a component. This procedure is typically done when the standard cost of the component has changed but might also be performed when a new component globally replaces a previously used component in Mass Component Maintenance (11.510.00).

It is recommended that you use this procedure to change standard costs for assemblies rather than the alternative of changing them directly using Inventory Items (10.250.00). This procedure keeps standard costs, inventory valuations, and general ledger account balances synchronized.

The first four steps below form the “what if” review cycle and may be repeated any number of times. Step 5 locks in your revised costs to current standard costs. Production transactions for items using the standard cost method are costed at current standard costs. Production transactions for items using LIFO/FIFO/average cost or specific ID are costed at average cost for material, while routing-related costs are taken from the current standard rates for labor and overheads.

To compute and update standard costs globally when one common component changes:

1. Perform the database change that would warrant new standard costs for commonly used components:
   a. Enter the planned start and stop dates for the new and old components in Mass Component Maintenance (11.510.00).
   b. Change the component’s pending standard cost in Bill of Material Maintenance (11.250.00).

2. Print the Indented report format of the Component Where-Used Lists (11.610.00) report for the specific common component to determine the list of bills of material that use this component. Indented report format is required to identify the highest level of bills that are affected by this cost change.

3. If the annual fiscal year exercise to roll up new standard costs for all products has been completed prior to using this procedure, the Update Standard Costs from Pending (11.530.00) process has zeroed out all pending cost fields after transferring pending to current. Therefore, be sure correct pending costs and rates are available in all pending cost fields prior to doing a cost rollup for this individual bill of material. This would include component pending costs, material overhead, labor class rates and labor overhead (in other words, everything).

4. Roll up the pending standard cost for only the highest level of bills shown on the indented Component Where-Used Lists (11.610.00) step 2 by using Compute Cost Rollup (11.540.00).

5. Review the rolled up pending standard costs of the selected bill and underlying components by using the Standard Cost Change Preview (11.630.00) report for only the highest level bills.

6. Update the current standard cost using the Update Standard Costs from Pending (11.530.00) process for the highest level of bills affected as identified in step 2. This process copies the pending standard costs to current, updates the inventory valuation based on the new standard costs and quantity on hand, and creates general ledger transactions for the revaluation amounts (the latter occurs only if the item uses the Standard cost method). Revaluation updates the revaluation account in the GL Offset Accounts tab in Bill of Material Setup (11.950.00) and the inventory accounts specified in Inventory Items (10.250.00).

It is recommended that you choose the All Items option, which ensures that bills, routings, components, and rates in product class, labor class, and work center are all updated collectively in one process. Alternatively, you can choose to transfer the pending costs to current standard costs using individual processes for bills, routings, components, etc.
Period Closing, Bill of Material Module

Follow this procedure to close the Bill of Material module for an accounting period. The majority of the effort lies in closing the Inventory module, but several housekeeping tasks should be done in Bill of Material as well.

1. Ensure that all production for the period has been entered and released in Production Entry (11.010.00).

2. Activate any pending bill of material or routing changes that you want to make effective in the current period by using Apply Date-Effective Revisions (11.500.00).

3. Make to make all standard cost changes for inventory revaluation that you want to be effective in the current period (see “Update Standard Costs Globally When Common Components Change,” “Computing and Updating Standard Costs for One Bill of Material,” and “Computing and Updating Standard Costs for All Bills of Material”).

4. Close the Inventory module for the period (see “Closing Inventory” in the Inventory online help or user guide).

5. Activate any pending bill of material or routing changes that you want to be effective in the new period by using Apply Date-Effective Revisions (11.500.00).

6. Make all standard cost changes that cause inventory revaluation (such as finished goods, subassemblies, and components that use the standard valuation method) that you want to be effective in the new period.
Generating Bill of Material Reports

The Bill of Material module has the ability to produce a wide array of valuable reports. Standard reports consist of:

- Bill of Material Lists (11.600.00)
- Component Where-Used Lists (11.610.00)
- Standard Cost Detail Report (11.620.00)
- Standard Cost Change Preview (11.630.00)
- Actual Production vs. Plan (11.640.00)
- Production Preview (11.650.00)
- Production Analysis (11.660.00)
- Shortage Report (11.670.00)
- Variance Analysis (11.680.00)
- Routing List (11.700.00)
- Work Center List (11.710.00)
- Work Center Where-Used (11.720.00)
- Operation List (11.730.00)
- Labor Class List (11.740.00)
- Tool List (11.750.00)
- Machine List (11.760.00)

Any of the standard reports can be printed, sent to the screen, or recorded to a file. Although each report is different, the reporting screens that generate the reports are very similar. All of the standard reports combine Operator and Value on the Sort tab allowing you to specify certain criteria for your reports. The Sort and Select tabs contain a list of fields from the database tables used in the report. These fields serve as the basis for your selection criteria.

The Operator field contains a specified list of operators including:

- <None> (this is the default)
- Is NULL
- Begins with
- Less than
- Between
- Less than or equal to
- Contains
- Not between
- Equal
- Not Contains
- Greater than
- Not equal
- Greater than or equal to
- Not In
- In
- Is not NULL

Value allows you to input a value that is part of your selection criteria.

**Example:** If Kit ID is chosen on the Sort and Select tabs for a bill of material list, you would next enter the kit ID (inventory ID) associated with the current bill of material.

Other report options allow you to specify preferences on sort orders and selection of reports and save them for future use.
Maintenance Screens

Production Entry (11.010.00)

Use Production Entry (11.010.00) to enter quantities of finished goods or subassemblies that have been produced, and automatically deduct from inventory the quantities of components used. This is commonly called back flushing. The components and quantities are determined from the bill of material for the item produced, which must be created in Bill of Material Maintenance (11.250.00) before any transactions can be entered for that item. If a companion routing exists for the bill of material, then the costs from the routing are included with the component costs to compute the total cost of the product produced.

Note: You must click Save on the toolbar after entering information in Production Entry (11.010.00) to enable Components and Routings.

Production Entry (11.010.00) is used to enter production after the fact. No work orders are used and work in process is not tracked. This is designed for production operations with short cycle times (i.e., elapsed time from start to finish of production) where tracking quantities and costs for work in process is not necessary because each unit of product is in process only a short time, and the production lines can be cleared at the end of a day. These typically would be standard products produced in fairly high volumes on assembly lines, such as radios, telephones, electric mixers, or disk drives.

Production transactions are entered in the form of documents, where the document header identifies the finished good or subassembly produced and the detail shows the components used. When the quantity produced for the parent item is entered in the header a multi-level bill of material explosion occurs; the explosion process optionally processes all levels of subassemblies and components for the item produced, computing the quantities required for all components. This explosion stores the information for all levels in memory, and you can use Production Entry BOM Structure (11.010.01) to select any subassembly to review and edit before the document is released to update the General Ledger and Inventory modules.

Note: You must click Save on the toolbar after entering information in Production Entry (11.010.00).

Figure 6: Production Entry (11.010.00)
Following are the field descriptions for Production Entry (11.010.00).

**Reference Number**
Reference Number is a unique identifier assigned to a bill of material document that distinguishes it from all other documents in the database. The reference number is assigned to the document when its information is entered into the database in Production Entry (11.010.00). The reference number links all transactions generated by a production document to a source document number as an audit trail, as well as for reporting purposes. The reference number is typically a production ticket number.

**Transaction Date**
Transaction Date is the date when the production transaction occurs. The default date is the current date.

**Description**
The document description is a short account of the nature of the document.

**Status**
Status indicates the condition of a document. It indicates whether the document has been entered but not processed, or whether it has been processed and completed. The software updates the status to complete when you release the document. Possible values are:

- Pending — The document has been entered, but has not been processed and completed. This is the default value.
- Complete — The document has been processed and completed.

**Handling**
Handling should be used when you complete the entry of a document to indicate whether you want to process it immediately or save it without processing. The value of the document handling cannot be changed if the document status is complete. The possible values are:

- No Action — Leave the status of the document unchanged. The document is not processed and the status remains open.
- Release Now — Process the document when Finish is clicked. Release Now creates the build, including all updates to the Inventory and General Ledger modules.

**Bill of Material ID**
Bill of Material ID, along with Site ID, identifies the specific bill of material for the product that is processed. The ID you enter here must have been previously created in Bill of Material Maintenance (11.250.00), and it must be a stock inventory item. Only bills of material with an active status can be entered.

**Bill of Material Site**
Bill of Material Site, together with Bill of Material ID, identifies the bill of material used to define how the product is made. Components are back flushed according to the bill of material associated with this site. A valid bill of material is required for the site. If you attempt to enter a site that does not exist, a warning message is displayed.

**Bill of Material Description**
Bill of Material Description displays after the bill of material ID and site ID are entered. Bill of Material Description is entered in Bill of Material Maintenance (11.250.00).

**BMID Inventory Site**
BMID Inventory Site represents the warehouse into which the production quantity is to be stored as completed units leave the assembly line. This is the site where inventory quantities and inventory
valuation for the item produced are incremented. A valid bill of material is not required for the site; however, an item site record must exist when using BMID Inventory Site.

**Plan ID**

**Plan ID** identifies the assembly plan from the Inventory module’s Assembly Plans (10.330.00) against which this batch of production took place. Pressing F3 opens the Assembly Plan List from Assembly Plans (10.330.00). **Plan ID** is key to the measurement of actual production vs. plan on the Actual Production vs. Plan (11.640.00) report.

**Warehouse Location**

**Warehouse Location** is the place (for example, bin, bay, rack) within the site in inventory where the quantity entered in Production Qty is stored. If the quantity entered is stored in multiple locations, enter the first location here, then open Lot/Serial for Parent Item (11.010.01) to enter multiple locations.

**Stocking UOM**

**Stocking UOM** represents the unit of stock for the bill of material inventory item.

**Production Quantity**

**Production Quantity** updates inventory records for the item produced, as well as to compute the number of components needed. After you enter the quantity, the software loads the components and subassemblies for this item from all levels of the active bill of material for the bill of material site defined. Use Production Entry BOM Structure (11.010.01) to access components and subassemblies.

Components at all levels are checked for sufficient inventory quantity. The action taken on components for which insufficient quantity exists depends on Allow Negative Quantities in IN Setup (10.950.00). When figuring production quantity, be aware of the following:

- If negative quantity is allowed, a warning message appears indicating that one or more components are short. To determine which components are short, print the Production Preview (11.650.00). You can release the document despite the warning only if no lot or serial number exists for the item.
- If negative quantity is not allowed, an error message appears stating that one or more components are short. To determine which components are short, print the Production Preview (11.650.00). You cannot release the document until the shortage is corrected.
- All of the production quantity used in Production Entry (11.010.00) must be allocated in Inventory. Allocation marks a quantity of inventory as needed or reserved, without actually reducing the current quantity on hand. Quantity on hand is the number of actual parts or subassemblies in warehouse bins, regardless of allocations. Quantity available is the number of inventory items that have not had allocations reserved against them.

If the production item is lot numbered or serial numbered, the numbers are automatically generated. **Click Lot/Serial Numbers** to manually change a number.

Disassembly is not currently supported.

The software uses the appropriate costs according to the valuation method defined in Inventory Maintenance (10.250.00) for each item.

**Lot/Serial Number**

**Lot/Serial Number** is the next lot or serial number to be processed. The lot or serial number displayed is assigned by the software and depends on the type of transaction being processed (see information on lot/serial setup in the Inventory online help or user guide). You can reassign the number displayed if it is not the desired number.

To display a list of all available lot/serial numbers, press F3 or double-right-click. **Available Lot/Serial Numbers List** appears. To select a number, highlight it and click OK or double-click on your selection.

**Note:** The lot/serial number control will be enabled only under the following conditions:
- The item selected is configured as being lot or serial controlled using the assignment method of When Received.
- The item selected is configured as the valuation method of Specific Identification.
- The Link To Specific Cost ID check box was selected in Lot/Serial Number Setup (10.250.01). When lot/serial items are linked to specific cost identities, only a single serialized item (Quantity must equal 1) can be entered in Production Entry (11.010.00). Also, only a single lot number can be entered in Production Entry (11.010.00). Lot items do not have a quantity restriction.

### Specific Cost ID

Specific Cost ID identifies a particular cost layer for an item. Specific Cost ID is enabled only for inventory items that use the Specific Identification valuation method.

**Note:** Specific Cost ID is disabled for items that are lot/serial controlled, for which Specific Identification is selected in Valuation Method on the Information tab of Inventory Items (10.250.00), and that have Link To Specific Cost ID selected in Lot/Serial Number Setup (10.250.01). Specific Cost ID is then automatically filled with the lot/serial number, which acts as the specific cost identity number.

### Components (button)

Components opens Production Entry BOM Structure (11.010.01). Production Entry BOM Structure (11.010.01) contains a tree structure summarized to show all subassemblies and components at all levels below the bill of material ID that was specified in Production Entry (11.010.00). If you want to accept all standard components and quantities, default sites, production routings, lot/serial numbers, and warehouse locations, release the document without using Components.

### Routings (button)

Routings opens Production Entry Routing (11.010.03) for review or edit.

### Lot/Serial (button)

Lot/Serial opens Lot/Serial Assignment (10.070.00) used for lot/serial number entry. This button is only enabled if the Bill of Material item is lot or serial controlled.

- Lot and serial numbers are not required for Production Entry assemblies when the assignment for the item in Inventory's Lot/Serial Number Setup (10.250.01) is When Used From Inventory.
- Serial numbers, when entry is required, must be unique within the Detail area.

### Batch Information (button)

Batch Information opens Batch Information (11.010.04) where you can review and edit batch information such as Period To Post, Batch Description, and Batch Number.

### View Standard Structure (button)

View Standard Structure opens Bill of Material Structure (11.320.00). Bill of Material Structure (11.320.00) serves two purposes. First, it is shows all subassemblies and components at all levels below the bill of material specified in Bill of Material Maintenance (11.250.00). Second, it can be used to navigate to subassemblies of the bill of material specified in Bill of Material Maintenance (11.250.00). See “Bill of Material Structure (11.320.00)” for field descriptions.
Production Entry BOM Structure (11.010.01)

*Production Entry BOM Structure* (11.010.01) is a tree structure that summarizes all subassemblies and components at all levels below the bill of material ID that is specified in *Production Entry* (11.010.00). It is used to navigate to lower level subassemblies and bring the latter’s components into *Component Entry* (11.011.00) for review or edit.

The following operations can be performed in *Production Entry BOM Structure* (11.010.01):

- Click on a plus sign (+) to explode a subassembly into its components in the window.
- Click on a minus sign (-) to implode a previously exploded subassembly.

To access this screen, click **Components** in *Production Entry* (11.010.00).

![Production Entry BOM Structure (11.010.01)](image)

*Figure 7: Production Entry BOM Structure (11.010.01)*

Following are the field descriptions for *Production Entry BOM Structure* (11.010.01).

**Component Entry (button)**

*Component Entry* opens *Component Entry* (11.011.00). Use *Component Entry* (11.011.00) to review or update all components and subassemblies on the bill of material.

**Routings (button)**

*Routings* opens *Production Entry Routing* (11.010.03) for review or edit.

**Return (button)**

*Return* closes *Production Entry BOM Structure* (11.010.01) and opens *Production Entry* (11.010.00).
Production Entry Routing (11.010.03)

Use Production Entry Routing to update routing information that exists for either the parent bill of material ID from Production Entry (11.010.00) or any of its subassemblies built from components below the subassembly. You can modify information such as work center, operations, labor class, actual labor hours or actual machine hours.

To access this screen, click Routings in Production Entry (11.010.00) or Routings in Production Entry BOM Structure (11.010.01).

![Production Entry Routing (11.010.03)](image)

Figure 8: Production Entry Routing (11.010.03)

Following are the field descriptions for Production Entry Routing (11.010.03).

**Reference Number**

Reference Number contains a unique numeric code assigned to the production entry document that distinguishes it from all other documents in the database. Reference number identification is useful for reporting purposes and for possible value (PV) selection on non-released production entry documents.

**Bill of Material ID**

Bill of Material ID, along with Site ID, identifies the specific bill of material component list for the product to be back flushed.

**Site ID**

Site ID, along with Bill of Material ID, identifies the specific bill of material to be back flushed. This is the site where inventory quantity and value for the product being produced are incremented. Typically, it is also the site where component quantities and value are decremented as well, although any component’s site ID can be different than its parent item.

**Production Quantity**

Production Qty contains the number of pieces completed during the production assembly process for the parent item. This action increases the quantity on-hand for the parent. This quantity in turn determines the back flush amount required for components based on Bill of Material’s quantity per parent.
Subassembly ID
Subassembly ID contains the identifier for the subassembly that is selected in Production Entry BOM Structure (11.010.01).

Site ID
Site ID contains the site ID where inventory on hand will be updated for the subassembly that is selected in Production Entry BOM Structure (11.010.01).

Subassembly Description
Subassembly Description is the standard inventory description of the subassembly selected in Production Entry BOM Structure (11.010.01).

Step Number
Step Number specifies a routing step.

Work Center ID
Work Center ID identifies the work center used by the routing step. The work center ID must first be defined in Work Center Maintenance (11.270.00).

Operation ID
Operation ID identifies an operation used in a routing step.

Type
The type of operation IDs include:
- Setup — The operation is preparing machines and work areas to make the product.
- Run — The operation is making the product.
- Outside — The operation is any outside contracting involved in making the product.

Tool ID 1
Tool ID 1 specifies a tool that is used in the routing step. The tool ID is defined in Tool Maintenance (11.300.00).

Tool ID 2
Tool ID 2 specifies a tool that is used in the routing step. The tool ID is defined in Tool Maintenance (11.300.00).

Tool ID 3
Tool ID 3 specifies a tool that is used in the routing step. The tool ID is defined in Tool Maintenance (11.300.00).

Labor Class ID
Labor Class ID identifies the labor class used by the routing step. The labor class ID must be defined in Labor Class Maintenance (11.290.00).

Standard Labor Hours
Standard Labor Hours represents the standard labor hours for the entire quantity being produced for the routing step. This is the Standard Labor Hours Per Unit defined in Routing Maintenance (11.260.00) times the Production Qty entered in Production Entry (10.010.00).
Actual Labor Hours

**Actual Labor Hours** represents the actual number of direct labor hours used for the entire quantity being produced for the routing step. **Actual Labor Hrs** defaults equal to Standard Labor Hrs, but can be changed.

Machine ID

**Machine ID** identifies the machine used by the routing step. **Machine ID** must be defined in **Machine Maintenance (11.310.00)**.

Standard Machine Hours

**Standard Machine Hours** represents the standard machine hours for the entire quantity being produced for the routing step. This is the **Standard Machine Hours Per Unit** defined in **Routing Maintenance (11.260.00)** times the **Production Qty** entered in **Production Entry (11.010.00)**.

Actual Machine Hours

**Actual Machine Hours** represents the actual number of machine hours used for the entire quantity being produced for the routing step. **Actual Machine Hrs** defaults equal to **Standard Machine Hrs**, but can be changed.

Standard Other Direct Cost

**Standard Other Direct Cost** represents the other direct standard costs for the entire quantity being produced for the routing step. **Standard Other Direct Cost** is **Standard Other Direct cost Per Unit** defined in **Routing Maintenance (11.260.00)** times **Production Qty** in **Production Entry (11.010.00)**.

Other Direct Amount

**Other Direct Amount** represents the actual other direct standard costs for the entire quantity being produced for the routing step.

**OK (button)**

**OK** saves the changes you have made in **Production Entry Routing (11.010.03)** and returns you to either **Production Entry (11.010.00)** or **Production Entry BOM Structure (11.010.01)**, depending on where you called **Production Entry Routing (11.010.03)** from.
Batch Information (11.010.04)

Use Batch Information (11.010.04) to review information about production batches. To open Batch Information (11.010.04), click Batch Information on Production Entry (11.010.00).

![Batch Information (11.010.04)](image)

**Figure 9: Batch Information (11.010.04)**

Following are the field descriptions for Batch Information (11.010.04).

**Batch Number**

Batch Number is a numeric code assigned to a transaction batch that uniquely identifies the batch. The software automatically assigns a different batch number to each new transaction batch created according to the batch number format established in IN Setup (11.950.00). This number increments by one (000242, 000243, etc.), for each new batch created and cannot be changed.

**Period to Post**

Period to Post specifies the fiscal period and year to which transactions from released documents should be posted in both inventory and general ledger records. The default is the current period in the Inventory module. The period to post must be a valid fiscal period as specified in General Ledger Setup (01.950.00).

**Description**

Description contains an explanation of the batch.

**Batch Status**

Batch Status indicates the current status of the transaction batch in Production Entry (11.010.00):

- Hold — Not to be released.
- Balanced — Ready for release.
- Partially Released — Could not be completely released due to an out-of-balance document or other problem.
- Void — Voided.
- Unposted — Released for posting to the General Ledger but not yet posted.
- Posted — Released and posted to the General Ledger.
- Un Hold — Released for posting to the general ledger but not yet posted.
- Posted — Released and posted.

**OK (button)**

OK closes Batch Information (11.010.04).
Component Entry (11.011.00)

Use Component Entry (11.011.00) to update component IDs, quantities, lot/serial numbers, warehouse locations, etc., for subassemblies and components of the original bill of material entered in Production Entry (11.010.00).

To open Component Entry (11.011.00), click Components in Production Entry (11.010.00) to open Production Entry BOM Structure (11.010.01), and then click Component Entry.

Following are the field descriptions for Component Entry (11.011.00).

Reference Number

Reference Number is a unique numeric code assigned to the bill of material document that distinguishes it from all other documents in the database. Reference number identification is useful for reporting purposes. Documents have their associated reference numbers listed beside them on many bill of material reports.

Bill of Material ID (Production Document)

Bill of Material ID, along with Site ID, identifies the specific bill of material for the product being processed.

Site ID (Production Document)

Site ID indicates where the production takes place. This is the site where inventory quantities and amounts for the item produced are incremented. Typically, it is also the site where component quantities are deducted in Production Qty.

Production Quantity

Production Quantity updates inventory records for the item produced, as well as to compute the number of components needed.

Subassembly ID

Subassembly ID is the identifier for the parent assembly from Production Entry (11.010.00).
Subassembly Description
Subassembly Description is a brief explanation of Subassembly ID.

Site ID (Subassembly)
Site ID is where production takes place for Subassembly ID.

Component ID
Component ID identifies the components and subassemblies of the parent item. You can delete or add a component in addition to making modifications to the record.

Note: Component quantity that is allocated to a project by using the Project Allocated Inventory functionality cannot be used. If the inventory item has a mixture of project allocated inventory quantities and stock quantities, the bill of material will use only the stock quantity.

Component Description
The description is a brief explanation of the component for of the assembly.

Subassembly
Subassembly indicates if the component is also a subassembly.

Bill of Material ID (Component Detail)
Bill of Material ID, along with Site ID, identifies the specific bill of material for the product being processed.

Site ID (Component Detail)
Site ID is the site where production takes place for components. This is the site where inventory on hand will be reduced for the component.

Warehouse Location
Warehouse Location contains the place where the component is stored. This is the location (e.g. bin, bay, rack, etc.) within the site in inventory where the quantity entered in Total Transaction Qty is stored. If the quantity entered below was stored in multiple locations, enter the first location here, then click the Lot/Serial to open Lot/Serial Assignment (10.070.00).

Stocking Unit
Stocking Unit represents the unit of measure for the component in which the component is stocked and issued.

Lot/Serial Number
Lot/Serial Number is the next lot or serial number to be processed. The lot or serial number displayed is assigned by the software and depends on the type of transaction being processed (see information on lot/serial setup in the Inventory online help or user guide). You can reassign the number displayed if it is not the desired number.

To display a list of all available lot/serial numbers, press F3 or double-right-click. Available Lot/Serial Numbers List appears. To select a number, highlight it and click OK or double-click on your selection.

Note: The lot/serial number control will be enabled only under the following conditions:
- The item selected is configured as being lot or serial controlled using the assignment method of When Received.
- The item selected is configured as the valuation method of Specific Identification.
- The Link To Specific Cost ID check box was selected in Lot/Serial Number Setup (10.250.01). When lot/serial items are linked to specific cost identities, only a single serialized item (Quantity
must equal 1) can be entered in Production Entry (11.010.00). Also, only a single lot number can be entered in Production Entry (11.010.00). Lot items do not have a quantity restriction.

**Standard Quantity Per**

**Standard Quantity Per** is the expected quantity of the component needed per unit of the bill of material, factored for expected scrap.

**Extended Std Qty Per**

**Extended Std Qty Per** is the standard component quantity needed to produce the subassembly or final assembly item. This quantity is computed for each component and subassembly at every applicable level in the bill of material structure using net requirements logic.

- For a level 1 component or subassembly (i.e. level 0 is the item being produced, so level 1 is its immediate components), the standard quantity is the standard quantity per multiplied by the final assembly production quantity.
- For a level 2 component or subassembly (i.e. a component of a level 1 subassembly), the standard quantity is the standard quantity per multiplied by the level 1 subassembly quantity per multiplied by the final assembly production quantity.

**Use From Stock Qty**

**Use From Stock Qty** is the actual quantity of the component or subassembly that was used from stock. This quantity is deducted from inventory quantities for this item in the Inventory module.

Components at all levels are checked for sufficient inventory quantity. The action taken on components for which insufficient quantity exists depends on **Allow Negative Quantities** in IN Setup (10.950.00). The quantity checked in inventory is the quantity available for the warehouse location and lot/serial numbers entered. Quantity available is the quantity on hand minus any allocations.

- If a negative quantity is allowed, a warning message appears stating that one or more components are short. To determine which components are short, print the Production Preview report (11.650.00). The document can be released despite this warning only if no lot/serial number exists for the items.
- If a negative quantity is not allowed, an error message appears stating that one or more components are short. To determine which components are short, print the Production Preview report (11.650.00). The document cannot be released until the shortage is corrected.
- All of the stock quantity used in Production Entry (11.010.00) must be allocated in Inventory. Allocation marks a quantity of inventory as needed or reserved, without actually reducing the current quantity on hand. Quantity on hand is the number of actual parts or subassemblies in warehouse bins, regardless of allocations. Quantity available is the number of inventory items that have not had allocations reserved against them.

Subassemblies are also checked for sufficient quantity. However, depending on the value at **Stock Usage**, subassemblies may be built from their components or pulled from stock. See **Stock Usage** in Bill of Material Maintenance (11.250.00) for more information.

If the item is serial numbered and only one serial number has been entered, then the quantity entered must be 1.

**Qty to be Assembled**

**Qty to be Assembled** is the actual quantity of the subassembly that is built from its components to satisfy production requirements. This quantity is to be added to, and then deducted from, inventory quantities for this subassembly in inventory. This provides a good audit trail for subassemblies, as it shows them being built and then used in the production process.

**Qty to be Assembled** applies to subassemblies only.
Total Transaction Qty
This is the total quantity of the component or subassembly used in the production process. It is the transaction total of **Use From Stock Qty** and **Qty to be Assembled**.

Lot/Serial Numbers (button)
Lot/Serial Numbers opens **Lot/Serial Assignment** (10.070.00). This is a detail entry window that lets you enter lot or serial numbers for the item and quantity entered in **Component Entry** (11.011.00). Refer to the Inventory online help or user guide for more information about **Lot/Serial Assignment** (10.070.00).

- You will need to manually select the lot/serial number assigned to each transaction for lot/serial tracked items that are defined in Inventory **Lot/Serial Number Setup** (10.250.01) with an Issue Method of User Enterable. The values will not be automatically defaulted by the system.
- Serial numbers, when entry is required, must be unique within the Detail area.

Specific Cost ID
**Specific Cost ID** specifies the specific cost detail.

**Note:** **Specific Cost ID** will be disabled for items that are lot/serial controlled, for which Specific Identification is selected in **Valuation Method** on the **Information** tab of **Inventory Items** (10.250.00), and that have **Link To Specific Cost ID** selected in **Lot/Serial Number Setup** (10.250.01). **Specific Cost ID** is then automatically filled with the lot/serial number, which acts as the specific cost identity number.
Bill of Material Maintenance (11.250.00)

Use Bill of Material Maintenance (11.250.00) to enter and maintain bills of material for finished goods or subassembly inventory items. A bill of material lists the components and the quantity of each component required to manufacture the item. Bills of material must be created before you can perform cost rollups using Compute Cost Rollup (11.540.00), and before you can use other screens to perform processes involving bills of material, such as Production Entry (11.010.00).

Before creating bills of material, create inventory items for the assembly and component items using Inventory Items (10.250.00). However, if you need to create an inventory item for a component while in Bill of Material Maintenance (11.250.00), leave the screen open, open Inventory Items (10.250.00), and add the item.

Bills of material can be created for both stock and non-stock items. Bills created for non-stock items are treated like “phantom bills” and cannot be placed into inventory. Instead, non-stock items are considered subassemblies of higher-level bills of material and are exploded into their components during production. Remember that higher-level bills of material have a lower number designation.

You can create up to 25 levels in a bill of material for a finished goods item. Each level can be viewed by clicking View Structure. Multi-level bills are created by entering separate single-level bills for each necessary subassembly and including the subassemblies in the component list of the final assembly bill.

You can include labor and overhead in bills of material and the corresponding costs in two ways. The simplest way is to define non-stock inventory items with types of Labor, Machine Overhead, etc., and set up standard costs for these items. The standard cost is used as the labor or overhead rate, and the component quantity is the number of labor hours or overhead units for the finished goods or subassembly being produced. The costs for these items are rolled up under the labor and overhead categories.

Another way is to define a routing for the finished goods or subassembly. The routing provides a more detailed definition of labor and overheads: the production step where it occurs, the work center involved, and the nature of the operation, whether it is setup, runtime, or outside.

You can create multiple bills for an inventory item by specifying a different site or status for each bill. There can be only one bill for each combination of BOM ID, site ID, and status.

You can convert an inventory kit to a bill of material by bringing up the inventory kit ID in BOM ID. A warning appears stating that once you save the bill in Bill of Material Maintenance (11.250.00), you can no longer access the former kit in the Inventory module’s Kits (10.320.00) or kit assembly screens. You can, however, immediately use this bill of material in other modules such as Work Order to report production completions.

You can also copy bill of material component data from existing bills into Bill of Material Maintenance (11.250.00) using Copy BOM/Kit.

Each time a BOM is modified, the screen updates any build headers present for the parent part number.

You can edit bills of material individually. However, mass bill of material maintenance can be done using several of the process screens in the Bill of Material module.

Examples:

- Use Apply Date-Effective Revisions (11.500.00) to activate or deactivate bills and components based on the corresponding start and stop dates. This process implements all changes scheduled to occur on the date you have entered.

- Use Mass Component Maintenance (11.510.00) to delete all occurrences of a specified component from the database and optionally replace them with another component.
- Use Mass Component Maintenance (11.510.00) to change the quantity of a component or its scrap percent, wherever used.

![Bill of Material Maintenance (11.250.00)](image)

*Figure 11: Bill of Material Maintenance (11.250.00)*

Following are the field descriptions for *Bill of Material Maintenance (11.250.00)*.

**BOM ID**

*BOM ID* along with *Status* and *Site ID* identify the specific bill of material to be processed. The bill of material ID must be already set up in *Inventory Items (10.250.00)*.

**Descr**

*Descr* contains an explanation of the bill of material. The bill of material description is displayed directly below the bill of material ID. The default description comes from the inventory ID for the bill of material item that was entered in *Inventory Items (10.250.00)*. You can change the description for the bill of material without changing the description for the inventory item itself.

**Status**

*Status* indicates whether the bill of material can be used to compute standard costs for the bill of material item and whether it can be used for production. The status can be changed from the *Change Status* tab or from *Apply Date-Effective Revisions (11.500.00)* if the bill has a start/stop date. Status options are:

- **Active** — The bill of material can be used for all transactions where a bill of material is appropriate, such as in purchase orders, sales orders, and production. An active bill of material is also used to compute standard costs for the bill of material inventory item. Components for an active bill of material can be active, pending, or obsolete.
- **Pending** — The bill of material cannot be used in transactions or to compute standard costs. A pending bill of material is made active sometime in the future. You can optionally enter a start date from the *Engineering Control* tab.
- **Obsolete** — The bill of material cannot be used in transactions or to compute standard costs. An obsolete bill of material was active but has been replaced by another bill of material.
All kits entered in Kits (10.320.00) are given an Active status. If you process such a kit in Bill of Material Maintenance (11.250.00) and save it as a bill of material, the kit is no longer accessible in Kits (10.320.00).

Site ID

Site ID indicates where inventory quantities and inventory valuation are incremented for the parent item of this bill. Lower level components and subassemblies (those with a higher level number) of this bill may or may not be the same site.

Multi-Company: The possible value on the site ID only returns valid sites for the company into which you are currently logged.

If Bill of Material by Site is not selected in Bill of Material Setup (11.950.00), the software automatically sets this site ID to the global site ID and override of the global site is not permitted.

The site ID of a bill of material determines how it is processed in Compute Cost Rollup (11.540.00) and during production:

- Compute cost rollup — If Bill of Material by Site is checked in Bill of Material Setup (11.950.00), then:
  - A global BOM updates Inventory and all existing ItemSites that do not have a site-specific active BOM.
  - A site-specific BOM only updates that ItemSite, and creates it if one does not exist.

If Bill of Material by Site is not checked in Bill of Material Setup (11.950.00), then:
- A global BOM updates Inventory and all existing ItemSites.

- Production entry — Refer to the documentation for your production entry tool.

If the site ID is global, as specified in Bill of Material Setup (11.950.00), the site ID for each component in this bill is set to the same global site and no other value can be entered.

All kits entered in Kits (10.320.00) receive the global site ID as specified in Bill of Material Setup (11.950.00). Bills of material created in Bill of Material Maintenance (11.250.00) with the global site ID are not accessible in Kits (10.320.00).

See Bill of Material by Site in Bill of Material Setup (11.950.00) for considerations on choosing to have different bills of material for each site.

Stocking UOM

Stocking UOM represents the unit of measure for the bill of material. This unit is entered for the bill of material inventory item in Inventory Items (10.250.00). The bill’s unit must match the stocking unit (the unit at the time of issue). If the item is purchased at a different unit, conversion to the stocking unit occurs at the time of receipt.

View Structure (button)

View Structure accesses Bill of Material Structure (11.320.00). Bill of Material Structure (11.320.00) serves two purposes. First, it shows all subassemblies and components at all levels below the bill of material specified in Bill of Material Maintenance (11.250.00). Second, it can be used to navigate to subassemblies of the bill of material specified in Bill of Material Maintenance (11.250.00). See Bill of Material Structure (11.320.00) for field descriptions.

Renumber Seq (button)

Renumber Seq renumbers the components in the bill of material, with the first component being given a sequence number of 10 and incrementing each subsequent component by 10. The order of the components as they appear in the grid is not changed — only the sequence numbers are changed. Use Renumber Seq after you insert new components or change the sequence numbers of individual components.
Copy BOM/Kit (button)

Copy BOM/Kit displays Copy BOM/Kit (11.250.03), allowing you to add additional bill of material or kit information into the specified bill of material. See Copy BOM/Kit (11.250.03) for more information.

Routing (button)

Routing displays Routing Maintenance (11.260.00) for this Bill of Material ID, Site ID, and Status combination. See Routing Maintenance (11.260.00) for more information.
Bill of Material Maintenance, Component List Tab

Use the **Component List** tab to enter information about the components for this single-level bill of material.

The **Component List** tab is accessed from *Bill of Material Maintenance (11.250.00)*.

**Figure 12**: *Bill of Material Maintenance (11.250.00), Component List tab*

Following are the field descriptions for the **Component List** tab of *Bill of Material Maintenance (11.250.00)*.

**Seq. No**

**Seq. No** displays the numbers that are automatically assigned to components as they are added, starting with 10 and incrementing by 10 for each new component. Sequence numbers control the order that components are displayed in *Bill of Material Maintenance (11.250.00)* and many reports.

You can insert a new component between two existing components by pressing the **Insert** key or clicking **New** while the cursor is on the second of the two components. The new component is assigned a new sequence number that equals the first component sequence number +1.

If you place the cursor on the sequence number of a component and type a new sequence number, the cursor moves to a new line and displays in **Seq. No** the number you typed. If you no longer want the component in its original position, you must delete it. If you type a new sequence number, the new copy of the component line is placed in the corresponding position without any renumbering. *Bill of Material Maintenance (11.250.00)* does not allow duplicate sequence numbers.

**Component ID**

**Component ID** specifies the inventory item ID for the component. This ID was created in *Inventory Items (10.250.00)*. If an inventory item ID has not been created for a component, you can leave *Bill of Material Maintenance (11.250.00)* open, open *Inventory Items (10.250.00)*, add the item, then return to *Bill of Material Maintenance (11.250.00)*.
A component can be any inventory item type. Different item types are treated differently in cost rollup and production entry:

- Raw material, component part, subassembly, and other items — Cost rollup treats these as material costs; production entry deducts these from the inventory quantity on hand.
- Labor — Cost rollup treats it as labor costs; production entry does not deduct these from the inventory quantity on hand.
- Machine overhead — Cost rollup treats it as machine overhead costs; production entry does not deduct these from the inventory quantity on hand.

If the component item also has a bill of material defined for it, then you are creating a subassembly for the bill of material ID in the header portion of the screen.

A component ID can be used more than once in the same bill of material, but the sequence number must be unique for each occurrence.

**Note:** Component quantities that are allocated to a project by using the Project Allocated Inventory functionality cannot be used. If the inventory item has a mixture of project allocated inventory quantities and stock quantities, the bill of material will use only the stock quantity.

### Site ID

**Site ID** indicates where the production takes place and where inventory quantities and amounts for the item produced are incremented, or, in the case of a subassembly, where inventory quantities and amounts are decremented for a component. If **Bill of Material by Site** is selected in **Bill of Material Setup** (11.950.00), you can enter a site ID for this component. Otherwise, the software automatically sets the site ID to Global as specified in **Bill of Material Setup** (11.950.00), and no other value can be entered.

*Multi-Company:* The possible value on the site ID only returns valid sites for the company into which you are currently logged.

The site ID of a component determines how it is processed in **Compute Cost Rollup** (11.540.00). If the site ID is global, as specified in **Bill of Material Setup** (11.950.00), then costs are rolled up from the inventory master record for this component item. If the site ID is any site other than global, costs are rolled up from the site record for this component item.

If the site ID of the bill of material is global, as specified in **Bill of Material Setup** (11.950.00), then the site ID for each component in this bill of material is set to the same global site and no other value can be entered.

All kit components entered in **Kits** (10.320.00) receive the global site ID as specified in **Bill of Material Setup** (11.950.00). Components of bills of material created in **Bill of Material Maintenance** (11.250.00) with the global site ID are not accessible in **Kits** (10.320.00).

See **Bill of Material by Site** in **Bill of Material Setup** (11.950.00) for considerations on choosing to have different bills of material for each site.

### Status

**Status** determines whether the component is used to roll up standard costs for the bill of material item and whether it can be used to deduct production quantities for the component item. The status can be changed either by clicking the **Status** list or by using **Apply Date-Effective Revisions** (11.500.00) if the component has a start/stop date. The status options are:

- **Active** — The component is used for all transactions where a bill of material is appropriate, such as in purchase orders, sales orders, and production. An active component is also used to compute standard costs for the bill of material inventory item.
- **Pending** — The component cannot be used in transactions, and is only used to compute standard costs if the bill is also pending. A pending component is a component that is made active sometime in the future. Components can be pending for either an active or pending bill of material.
- **Obsolete** — The component cannot be used in transactions or to compute standard costs. An obsolete component is a component that was active in the past but has since been replaced by another component.

All kit components entered in **Kits (10.320.00)** are given a status of Active. If you process an active kit in **Bill of Material Maintenance (11.250.00)**, the component is no longer accessible in **Kits (10.320.00)**.

**Description**

**Description** contains an explanation of the inventory item ID (component ID) entered in **Inventory Items (10.250.00)**.

**Subassy Bill Status**

**Sub Assy Bill Status** indicates the condition of a subassembly bill of material.

- **Active** — The subassembly is used for all transactions where a bill of material is appropriate, such as in purchase orders, sales orders, and production.
- **Pending** — The subassembly cannot be used in transactions, and is only used to compute standard costs if the bill is also pending.
- **Obsolete** — The subassembly cannot be used in transactions or to compute standard costs.

Although the subassembly status is different from the component status, every component has a status, regardless of whether it is a subassembly. However, if the component you enter is a subassembly bill of material, you may need to enter a **Subassy Bill Status** to correctly identify the component’s bill.

**Example:** Suppose that the bill of material status is active, the component is a subassembly, and its status is pending. Now suppose that there are two bills of material for the subassembly component — one that is active and one that is pending. In this case, you need to specify which of these subassembly bills you are referring to by entering active or pending at **Subassy Bill Status**. In the typical case, however, only an active subassembly bill is allowed so you have to accept the default value of Active for the status.

**Note:** In grid view, if this component item’s type is not Finished Good or Subassembly, **Subassy Bill Status** is not enabled.

**Stock Usage**

**Stock Usage** controls the usage of a subassembly item during production. It indicates whether the required quantity of a subassembly inventory item should be satisfied by using the stock quantity of the subassembly or by building more units of the subassembly from its components. The possible values are:

- **Build Only** — Regardless of whether stock quantity exists, do not use any units of this component subassembly from stock. Instead, build all required units from its components.

**Example:** If a bill of material is entered that requires 50 units of subassembly X to complete production and 20 units of X are in stock, build all 50 units from its components. This option may be used in the situations below:

  - The subassembly is a “phantom bill” that is never put into stock. It is a collection of items that are always consumed together in the production process. Any quantity shown in stock is erroneous.
  - All subassembly units must come from the same lot due to customer requirements.
  - All subassembly units in stock are intentional overruns held for customer replacement units.
  - All subassembly units that appear to be in stock are actually spurious quantities caused by packaging fill level problems in products such as beverages, adhesives, and paints.
- Normal — If sufficient quantity exists, use all the required units of this component subassembly from stock. If quantity is insufficient, use the subassembly units available, and then build the remaining units from its components.

Example: If a bill of material is entered that requires 50 units of subassembly X to complete production and only 20 units of X are in stock, use the 20 units and build 30 additional units from its components.

- Stock Only — Regardless of whether the stock quantity is sufficient, use all required units of this component subassembly from stock, even if it forces negative stock quantity (only if Allow Negative Quantities is selected in IN Setup (10.950.00)).

Example: If a bill of material has been entered that requires 50 units of subassembly X to complete production and 20 units of X are in stock, use all 50 units from stock without building any from its components. This option might be used in situations such as the following:
- Production for the subassembly is separately scheduled and entered. If reporting procedures are followed correctly, there is sufficient quantity of the subassembly in stock when production for the final assembly item is entered. If there is a lag in entering production for the subassembly, this allows the stock quantity to go negative until production of the subassembly is entered.
- A subassembly has a bill of material defined for it to specify how it is built and what it should cost, but it is not actually manufactured in-house. Instead, production is subcontracted and all units are received from the subcontractor and placed into stock for subsequent production.

If this component item is not a subassembly, Stock Usage is not enabled.

Routing Step
Routing Step links components to routing steps to more accurately report the timing of material requirements. This is useful if you have created a companion routing for a bill of material. Routing steps are set up in Routing Maintenance (11.260.00). Routing Step is used for reference only.

Stocking UOM
Stocking UOM represents the unit of measure to be used with the engineering quantity on this bill of material. The unit of measure is entered for the inventory item ID (component ID) in Inventory Items (10.250.00).

Engr Qty
Engr Qty displays the engineering quantity of the component needed per unit of the bill of material. This is the quantity that should be used under ideal conditions without any scrap.

Example: Fifty quarter-inch bolts are needed for a particular assembly. Two out of the 50 bolts are expected to be scrap. However, 50 is the quantity that the engineering drawings call for, so it is entered as the engineering quantity.

Scrap Percent
Scrap Percent displays the component scrap factor percentage. The scrap factor is the percent of the component quantity that is expected to be discarded.

Example: Fifty quarter-inch bolts are needed for a particular assembly. Two out of the 50 bolts are expected to be rejected. Therefore, the scrap factor is:
\[(2/50) \times 100 = 4\%\]. Enter 4.0 in Scrap Percent.

Std Qty
The component standard quantity for each unit of the bill of material specifies the expected quantity of the component needed per unit of the bill of material. It is calculated automatically and factored for scrap.
**Example:** Fifty quarter-inch bolts are needed for a particular assembly. Two out of the 50 bolts are expected to be scrap. Therefore, the standard quantity is 50 + (50 x 4%) = 52.

**Start Date**

**Start Date** specifies the date you want a component to become active. When you use *Apply Date-Effective Revisions* (11.500.00) process and enter a date that is on or after this date, the components for the bill of material and its associated routing become active.

If a bill of material and its associated routing is already active, you can still enter a date to document when it becomes active. However, no processing occurs based on this date.

**Stop Date**

**Stop Date** specifies the date you want a component to become obsolete. When you use *Apply Date-Effective Revisions* (11.500.00) process and enter a date that is on or after this date, the components for the bill of material and its associated routing become obsolete.

If a bill of material and its associated routing is already obsolete, you can still enter a date to document when the component becomes obsolete. However, no processing occurs on obsolete items regardless of the date entered.

**Change Order**

**Change Order** displays the order that authorizes the changes to the component. It is only to document the change — no processing is done based on the number entered. It appears in detailed bill of material reports.

**Supersedes**

**Supersedes** notes the component that this component replaces when it becomes active. Within the Bill of Material module, **Supersedes** documents the change, and it appears in detailed bill of material reports. Other modules may access the value entered in **Supersedes** for processing purposes.

**Superseded By**

**Superseded By** notes the component that replaces this component when it becomes obsolete. Within the bill of Material module, **Superseded By** is only to document the change, and it appears in detailed bill of material reports. Other modules may access the value entered in **Superseded By** for processing purposes.
Bill of Material Maintenance, Engineering Control Tab

The **Engineering Control** tab allows you to specify start and stop dates for the bill of material and document the change with a revision number, change order number, drawing number, etc. The **Engineering Control** tab is accessed from *Bill of Material Maintenance (11.250.00)*.

*Figure 13: Bill of Material Maintenance (11.250.00), Engineering Control tab*

Following are the field descriptions for the **Engineering Control** tab of *Bill of Material Maintenance (11.250.00)*.

**Revision Number**

**Revision Number** displays the modified number or version of a bill of material. The number here is only to document the change — no processing is done based on the number entered. It appears in detailed bill of material reports.

**Engineering Change Order**

**Engineering Change Order** authorizes the changes to the component. It is only to document the change — no processing is done based on the number entered. It appears in detailed bill of material reports.

**Engineering Drawing Number**

**Engineering Drawing Number** contains the ID for the engineering drawing, design, or process document from which the bill of material (or the latest revisions) is derived. It is only to document the change — no processing is done based on the number entered. It appears in detailed bill of material reports.
Start Date

Start Date specifies the date you want a bill of material and its associated routing (if routings are used) to become active. When you use the Apply Date-Effective Revisions (11.500.00) process and enter a date that is on or after this date, the bill of material and its associated routing become active.

If a bill of material and its associated routing is already active, you can still enter a date to document when it becomes active. However, no processing occurs based on this date.

Stop Date

Stop Date specifies the date you want a bill of material and its associated routing (if routings are used) to become obsolete. When you use the Apply Date-Effective Revisions (11.500.00) process and enter a date that is on or after this date, the bill of material and its associated routing become obsolete.

If a bill of material and its associated routing is already obsolete, you can still enter a date to document when it becomes obsolete. However, no processing occurs on obsolete items, regardless of the date entered.

Supersedes

Supersedes notes the bill of material this bill of material replaces when it becomes active. Supersedes documents the change — no processing is done based on the number entered. It appears in detailed bill of material reports.

Superseded By

Superseded By notes the bill of material that replaces this bill of material when it becomes obsolete. Superseded By documents the change — no processing is done based on the number entered. It appears in detailed bill of material reports.
Bill of Material Maintenance, Standard Costs Tab

The **Standard Costs** tab displays both the current and pending standard cost for the bill of material broken down by cost category. If a companion routing has been defined for the bill of material, additional cost detail can be displayed, breaking down standard costs into setup versus runtime costs.

The **Standard Costs** tab is accessed from **Bill of Material Maintenance (11.250.00)**.

![Figure 14: Bill of Material Maintenance (11.250.00), Standard Costs tab](image)

Following are the field descriptions for the **Standard Costs** tab of **Bill of Material Maintenance (11.250.00)**.

**Direct Material**

**Direct Material** contains material costs that are directly incurred when producing the bill of material item. This typically consists of parts that are assembled or materials that are fabricated to make the product.

**Direct Labor**

**Direct Labor** contains labor costs that are directly incurred when producing the bill of material item. This is typically the cost of using employees’ time to assemble the product or operate tools and equipment for fabrication. These costs can come from the routing or components on the bill of material set up with an **Inventory Type** of Labor.

**Other Direct**

**Other Direct** contains costs that go directly into producing the bill of material item, typically outside processing. These costs can come from the routing or components on the bill of material set up with an **Inventory Type** of Other Direct Costs.
Total Direct Cost
Total Direct Cost contains the total unit cost of direct material, direct labor, and other direct costs for the bill of material and all subassembly levels below it.

Labor Fixed Overhead
Labor Fixed Overhead contains labor costs that are not directly involved in the production of the bill of material item, and do not vary with production volume. Examples include the cost of supervisory and administrative personnel in the factory or medical insurance premiums. These costs can come from the routing or from components on the bill of material set up with an Inventory Type of Labor.

Labor Variable Overhead
Labor Variable Overhead contains labor costs that are not directly involved in the production of the bill of material item but which vary with production volume. Examples include vacation time accrued based on hours worked or the cost of cleaning employee uniforms. These costs can come from the routing or components on the bill of material set up with an Inventory Type of Labor.

Machine Fixed Overhead
Machine Fixed Overhead contains machinery costs that do not go directly into making the bill of material item, and do not vary with production volume, such as building rent allocations based on floor space or equipment depreciation. These costs can come from the routing or from components on the bill of material set up with an Inventory Type of Machine Overhead.

Machine Variable Overhead
Machine Variable Overhead contains machinery costs which do not go directly into making the bill of material item, and which vary with production volume, such as power, lubricants, and maintenance. These costs can come from the routing or components on the bill of material set up with an Inventory Type of Machine Overhead.

Material Fixed Overhead
Material Fixed Overhead contains material-related costs that do not go directly into making the bill of material item, and do not vary with production volume, such as warehouse rent or material handling equipment depreciation.

Material Variable Overhead
Material Variable Overhead contains material-related costs that do not go directly into making the bill of material item, and vary with production volume, such as maintenance of material handling equipment.

Total Overhead Cost
Total Overhead Cost contains the total unit cost of all overhead categories for this bill of material and all subassembly levels below it.

Total Standard Cost
Total Standard Cost contains the total standard cost for this bill of material and all subassembly levels below it.

Current
Current specifies the current cumulative standard costs per unit for Direct Material, Direct Labor, Other Direct. Total Direct, Labor Overhead (fixed and variable), Machine Overhead (fixed and variable), Material Overhead (fixed and variable), Total Overhead and Total Standard Cost. The current cumulative standard costs per unit are the standard costs for the bill of material, calculated through all subassembly levels using Compute Cost Rollup (11.540.00), then applied to inventory using Update Standard Costs from Pending (11.530.00).
Pending

Pending specifies the pending cumulative standard costs per unit for Direct Material, Direct Labor, Other Direct, Total Direct Labor Overhead (fixed and variable), Machine Overhead (fixed and variable), Material Overhead (fixed and variable), Total Overhead, and Total Standard Cost. The pending cumulative standard costs per unit are the standard costs for this bill of material, calculated through all subassembly levels using Compute Cost Rollup (11.540.00). They have not yet been applied to inventory using Update Standard Costs from Pending (11.530.00).

Current Setup/Runtime Costs (button)

Current Setup/Runtime Costs accesses Current Standard Setup vs Runtime Costs (11.250.01), which is a subscreen of Bill of Material Maintenance (11.250.00). Current Standard Setup vs Runtime Costs (11.250.01) allows you to review setup and runtime standard costs as determined by the routing that has been defined for this bill of material, and recompute these costs for the bill of material. See “Current Standard Setup vs Runtime Costs (11.250.01)” for a detailed description.

Pending Setup/Runtime Costs (button)

Pending Setup/Runtime Costs accesses Pending Standard Setup vs Runtime Costs (11.250.02), which is a subscreen of Bill of Material Maintenance (11.250.00). Pending Standard Setup vs Runtime Costs (11.250.02) allows you to review setup and runtime standard costs as determined by the routing that has been defined for this bill of material, and recompute these costs for the bill of material. See “Pending Standard Setup vs Runtime Costs (11.250.02)” for a detailed description.
Bill of Material Maintenance, Shortage Check Tab

The Shortage Check tab enables you to quickly check inventory availability for the bill of material item and its component items at any inventory site you choose. This shortage check is single-level only — no checking is done for lower level subassembly components.

The Shortage Check tab is accessed from Bill of Material Maintenance (11.250.00).

Following are the field descriptions for the Shortage Check tab of Bill of Material Maintenance (11.250.00).

**Stocking Unit**

Stocking Unit represents the unit of measure for the current bill of material item being displayed.

**Site ID**

Site ID indicates the site where you want to check for inventory availability. This may be the same or different from the bill of material site in Bill of Material Maintenance (11.250.00).

Multi-Company: The possible value on the site ID only returns valid sites for the company into which you are currently logged.

**Quantity to Explode**

Quantity to Explode specifies the quantity of this bill of material item that you want to produce. When components are exploded, the standard quantity for each component is multiplied by this quantity.

**BOM Qty On Hand**

BOM Qty On Hand identifies the quantity of the bill of material item at the site specified in Site ID.
BOM Qty Available

BOM Qty Available identifies the quantity available for the bill of material item at the site specified in Site ID. Quantity available is computed as:

\[
\text{Quantity on hand} + \text{Quantity on PO} - \text{Quantity on SO} - \text{Quantity on BO} - \text{Quantity allocated}
\]

This is used to compute bill of material net requirements:

\[
\text{Quantity to explode} - \text{Quantity available}
\]

Sequence

Sequence indicates the number that is automatically assigned to the component in the Component List tab.

Component ID

Component ID displays the inventory item ID for the component. Component ID is created in Inventory Items (10.250.00).

Quantity Per

Quantity Per displays the component standard quantity for each unit of the bill of material. Quantity Per is the expected quantity of the component needed per unit of the bill of material.

Gross Requirements

Gross Requirements displays the requirements for a component and is computed as:

\[
\text{bill of material net requirements} \times \text{standard quantity per}
\]

Quantity Available

Quantity Available displays the available quantity of the component item at the site specified above. Quantity Available is computed as follows:

\[
\text{Quantity on hand} + \text{Quantity on PO} - \text{Quantity on SO} - \text{Quantity on BO} - \text{Quantity allocated}
\]

The result of the calculation is used to compute Shortage (see below).

Shortage

Shortage identifies the shortage quantity for the component item at the specified site. Shortage is computed as follows:

\[
\text{Gross requirements} - \text{Quantity available}
\]

A positive number indicates that more of this component item needs to be ordered, while a negative number indicates that more than enough is available.

Stock Unit

Stock Unit represents the unit of stock for the component.
Bill of Material Maintenance, Change Status Tab

The Change Status tab permits you to immediately change the status of a bill of material and its associated routing status (if routings are used) without using Apply Date-Effective Revisions (11.500.00) process. This screen also changes the status of components as described below.

The Change Status tab is accessed from Bill of Material Maintenance (11.250.00).

Figure 16: Bill of Material Maintenance (11.250.00), Change Status tab

Following are the field descriptions for the Change Status tab of Bill of Material Maintenance (11.250.00).

BOM ID

BOM ID along with Status and Site ID identifies the specific bill of material to be processed.

Site ID

Site ID along with BOM ID and Status identifies the specific bill of material to be processed.

Multi-Company: The possible value in Site ID returns only valid sites for the company into which you are currently logged.

Current Status

Current Status indicates the present status of the bill of material. Possible status values are pending, active, or obsolete.

New Status

New Status indicates the status to which you want to change the bill of material and its associated routing (if routings are used). Possible status values are Active, Pending, or Obsolete.
Include Components in Status Change
When selected, a change to the bill status also changes the status of all components on the bill. If this box is clear, each component status remains independent of the bill status.

Change Status (button)
Change Status changes “current status” to “new status.” The status of the bill of material and its associated routing (if routings are used) are changed immediately and you return to the Component List tab of Bill of Material Maintenance (11.250.00). The status of components may also change.

Example: If the old status was pending (and the status of all components was pending) and the new status is active, the status of all components is changed to active. The only exception is if one of the pending components is a subassembly item with a pending bill of material status.
Current Standard Setup vs Runtime Costs (11.250.01)

Use *Current Standard Setup vs Runtime Costs (11.250.01)* to review setup and runtime standard costs as determined by the routing that has been defined for this bill of material.

![Current Standard Setup Vs Runtime Costs (11.250.01)](image)

Figure 17: Current Standard Setup Vs Runtime Costs (11.250.01)

Following are the field descriptions for *Current Standard Setup Vs Runtime Costs (11.250.01)*.

### Direct Labor

*Direct Labor* contains costs that are directly incurred when producing the bill of material item. This is typically the cost of using employees’ time to assemble the product or operate tools and equipment for fabrication. These costs can come from the routing or from components on the bill of material set up with an *Inventory Type* of Labor.

### Other Direct

*Other Direct* contains costs that go directly into producing the bill of material item, typically outside processing. These costs can come from the routing or components on the bill of material set up with an *Inventory Type* of Other Direct Costs.

### Total Direct Cost

*Total Direct Cost* contains the total unit cost of direct labor and other direct costs for the bill of material and all subassembly levels below it.

### Labor Fixed Overhead

*Labor Fixed Overhead* contains labor costs that are not directly involved in the production of the bill of material item, and do not vary with production volume. Examples include the cost of supervisory and administrative personnel in the factory or medical insurance premiums. These costs can come from the routing or components on the bill of material set up with an *Inventory Type* of Labor.

### Labor Variable Overhead

*Labor Variable Overhead* contains labor costs that are not directly involved in the production of the bill of material item but which vary with production volume. Examples include vacation time that accrues based on hours worked or the cost of cleaning employee uniforms. These costs can come from the routing or components on the bill of material set up with an *Inventory Type* of Labor.

### Machine Fixed Overhead

*Machine Fixed Overhead* contains machinery costs that do not go directly into making the bill of material item, and do not vary with production volume, such as building rent allocations based on floor space or equipment depreciation. These costs can come from the routing or from components on the bill of material set up with an *Inventory Type* of Machine Overhead.
Machine Variable Overhead

**Machine Variable Overhead** contains machinery costs that do not go directly into making the bill of material item, and vary with production volume, such as power, lubricants, and maintenance. These costs can come from the routing or components on the bill of material set up with an **Inventory Type** of Machine Overhead.

**Total Overhead Cost**

**Total Overhead Cost** contains the total unit cost of all overhead categories for this bill of material at this level only.

**Total Standard Cost**

**Total Standard Cost** contains the total standard cost for this bill of material at this level only.

Setup

**Setup** contains the number of hours used by **Direct Labor**, **Other Direct**, **Total Direct**, **Labor Overhead** (fixed and variable), **Machine Overhead** (fixed and variable), **Total Overhead**, and **Total Standard Cost** to set up the environment prior to the start of production.

Setup %

**Setup %** contains the percentage of total hours used by **Direct Labor**, **Other Direct**, **Total Direct**, **Labor Overhead** (fixed and variable), and **Machine Overhead** (fixed and variable) for setup activities. Cumulative totals are displayed in **Total Overhead** and **Total Standard Cost**.

Run Time

**Run Time** contains the number of hours used by **Direct Labor**, **Other Direct**, **Total Direct**, **Labor Overhead** (fixed and variable), **Machine Overhead** (fixed and variable), and **Total Overhead** and **Total Standard Cost** during the production of the bill of material item at this level.

Run Time %

**Run Time %** contains the percentage of total hours used by **Direct Labor**, **Other Direct**, **Total Direct**, **Labor Overhead** (fixed and variable), and **Machine Overhead** (fixed and variable) for runtime activities. Cumulative totals are displayed in **Total Overhead** and **Total Standard Cost**.

OK (button)

OK returns you to **Bill of Material Maintenance** (11.250.00).
Pending Standard Setup Vs Runtime Costs (11.250.02)

Use *Pending Standard Setup Vs Runtime Costs (11.250.02)* to review setup and runtime standard costs as determined by the routing defined for this bill of material.

![Pending Standard Setup Vs Runtime Costs (11.250.02)](image)

*Figure 18: Pending Standard Setup Vs Runtime Costs (11.250.02)*

Following are the field descriptions for *Pending Standard Setup Vs Runtime Costs (11.250.02)*.

**Direct Labor**

Direct Labor contains costs that are directly incurred when producing the bill of material item. This is typically the cost of using employees’ time to assemble the product or operate tools and equipment for fabrication. These costs can come from the routing or components on the bill of material set up with an *Inventory Type* of Labor.

**Other Direct**

Other Direct contains costs that go directly into producing the bill of material item, typically outside processing. These costs can come from the routing or components on the bill of material set up with an *Inventory Type* of Other Direct Costs.

**Total Direct Cost**

Total Direct Cost contains the total unit cost of direct material, direct labor, and other direct costs for the bill of material and all subassembly levels below it.

**Labor Fixed Overhead**

Labor Fixed Overhead contains labor costs that are not directly involved in the production of the bill of material item, and do **not** vary with production volume. Examples include the cost of supervisory and administrative personnel in the factory or medical insurance premiums. These costs can come from the routing or components on the bill of material set up with an *Inventory Type* of Labor.

**Labor Variable Overhead**

Labor Variable Overhead contains labor costs that are not directly involved in the production of the bill of material item but which vary with production volume. Examples include the cost of cleaning employee uniforms. These costs can come from the routing or components on the bill of material set up with an *Inventory Type* of Labor.

**Machine Fixed Overhead**

Machine Fixed Overhead contains machinery costs that do not go directly into making the bill of material item, and do **not** vary with production volume, such as building rent allocations based on floor
space or equipment depreciation. These costs can come from the routing or from components on the bill of material set up with an Inventory Type of Machine Overhead.

**Machine Variable Overhead**

Machine Variable Overhead contains machinery costs that do not go directly into making the bill of material item, and which vary with production volume, such as power, lubricants, and maintenance. These costs can come from the routing or components on the bill of material set up with an Inventory Type of Machine Overhead.

**Total Overhead Cost**

Total Overhead Cost contains the total unit cost of all overhead categories for this bill of material at this level only.

**Total Standard Cost**

Total Standard Cost contains the total standard cost for this bill of material at this level only.

**Setup**

Setup contains the number of hours used by Direct Labor, Other Direct, Total Direct, Labor Overhead (fixed and variable), Machine Overhead (fixed and variable), Total Overhead and Total Standard Cost to set up the environment prior to the start of production.

**Setup %**

Setup % contains the percentage of total hours used by Direct Labor, Other Direct, Total Direct, Labor Overhead (fixed and variable), and Machine Overhead (fixed and variable) for setup activities. Cumulative totals are displayed in Total Overhead and Total Standard Cost.

**Run Time**

Run Time contains the number of hours used by Direct Labor, Other Direct, Total Direct, Labor Overhead (fixed and variable), Machine Overhead (fixed and variable), Total Overhead and Total Standard Cost during the production of the bill of material item at this level.

**Run Time %**

Run Time % contains the percentage of total hours used by Direct Labor, Other Direct, Total Direct, Labor Overhead (fixed and variable), and Machine Overhead (fixed and variable) for runtime activities. Cumulative totals are displayed in Total Overhead and Total Standard Cost.

**OK (button)**

OK returns you to *Bill of Material Maintenance (11.250.00).*
Copy BOM/Kit (11.250.03)

Following are the field descriptions for Copy BOM/Kit (11.250.03).

BOM/Kit

BOM/Kit contains the ID of the bill of material or kit you are inserting into the current bill of material. BOM/Kit, along with Site ID and Status identify the specific bill of material to be copied.

Site ID

The Site ID is the site where inventory on hand for the component item will be reduced. Site ID, along with BOM/Kit and Status identify the specific bill of material to be copied.

Status

Status indicates whether the bill of material can be used to compute standard costs for the bill of material item and whether it can be used for production. Status along with Site ID and BOM/Kit identify the specific bill of material to be copied. Status options are:

- **Active** — The bill of material can be used for all transactions where a bill of material is appropriate, such as in purchase orders, sales orders, and production. An active bill of material is also used to compute standard costs for the bill of material inventory item. Components for an active bill of material can be active, pending, or obsolete.
- **Pending** — The bill of material cannot be used in transactions or to compute standard costs. A pending bill of material is made active sometime in the future.
- **Obsolete** — The bill of material cannot be used in transactions or to compute standard costs. An obsolete bill of material was active but has been replaced by another bill of material.

Insert Position in Component List

Two option buttons allow you to specify where you want the requested bill of material or kit to be inserted into the current bill of material. The following options are available:

- **Current** — Insert the requested bill of material or kit in the selected area.
- **End of List** — Insert the requested bill of material or kit at the end of the bill of material.

Insert (button)

Insert positions the bill of material or kit in the current bill of material in the area specified in Insert Position in Component List.

Cancel (button)

Cancel disregards information entered in the screen and returns you to Bill of Material Maintenance (11.250.00).
Routing Maintenance (11.260.00)

Use Routing Maintenance (11.260.00) to enter and maintain routings for finished goods or subassembly inventory items. A routing lists the processing steps required to manufacture an item. A routing can contain any number of steps. Each step identifies the operation, work center, machine, labor class, tools, standard labor hours, and standard machine hours. Routings are the primary means by which direct labor, other direct costs, and overhead costs are computed for manufactured items.

Before creating a routing, create the companion bill of material (see Bill of Material Maintenance (11.250.00) for more information). The bill of material/routing pair must have the same inventory ID, site ID, and status. Routings must be created before you can complete Compute Cost Rollup (11.540.00), as well as other processes involving routings.

Before creating routings, it is recommended that the following be created:
- Work centers — See Work Center Maintenance (11.270.00)
- Operations — See Operation Maintenance (11.280.00)
- Labor classes — See Labor Class Maintenance (11.290.00)
- Tools — See Tool Maintenance (11.300.00)
- Machines — See Machine Maintenance (11.310.00)

However, if you need to create any of the above while in Routing Maintenance (11.260.00), open the appropriate maintenance screen and add the item. Closing the maintenance screen returns you to Routing Maintenance (11.260.00).

You can create multiple routings for an inventory item by specifying a different site or status for each routing. There can be only one routing for each combination of inventory ID, site ID and status. The same combination must exist in Bill of Material Maintenance (11.250.00) before the matching routing can be created.

New routings can be copied from existing routings using the Copy/Paste feature.

You can add labor and overhead costs to finished goods or subassembly costs in two ways. The primary way is to define a routing for the finished good or subassembly. The routing provides a detailed definition of labor and overheads: the production step where it occurs, the work center involved, the nature of the operation, tools and machines used, and whether it is setup, runtime, or outside.

The second way is to define non-stock inventory items with types of Labor, Machine Overhead, etc., and set up standard costs for these items. The standard cost is used as the labor or overhead rate, and the component quantity is the number of labor hours or overhead units for the finished good or subassembly being produced. The costs for these items are rolled up under the labor and overhead categories.
After completing this screen, use Routing List (11.700.00) to print a record of the routing information.

Figure 20: Routing Maintenance (11.260.00)

Following are the field descriptions for Routing Maintenance (11.260.00).

**BOM ID**

BOM ID along with Status and Site ID identifies the specific routing to be processed. The bill of material ID, status, and site ID combination you enter must have been set up previously in Bill of Material Maintenance (11.250.00). You can enter a Note or an Attachment if more information must be attached to the routing.

Pressing F3 displays all bills of material in the database, regardless of whether they have companion routings. Pressing SHIFT+F3 lists all bills with existing routings. If you select a bill of material that has a routing, you are modifying an existing routing. If you select a bill that does not have a routing, you are creating a new routing for that bill.

**Desc**

Desc contains explanation of the bill of material. Desc defaults from Bill of Material Maintenance (11.250.00).

**Status**

Status specifies whether the routing can be used to compute standard costs for the finished goods or subassembly item and whether it can be used to record production quantities for the item. You can change the status using Apply Date-Effective Revisions (11.500.00) if the routing has a start/stop date. However, the bill of material ID, status, and site ID combination you enter must have been set up previously in Bill of Material Maintenance (11.250.00).

**Note:** If you want to make an “active” routing obsolete, you must first change the bill of material status to obsolete. Status changes do not support a bill of material status to differ from a routing status. In other words, you cannot have an active bill of material and a pending routing.
The status options are:

- **Active** — The routing can be used for all transactions where a routing is appropriate, such as production entry. The routing is also used to compute standard costs for finished goods or subassembly inventory items.

- **Pending** — The routing cannot be used in transactions or to compute standard costs. This routing can be made active sometime in the future. You can optionally enter a start date in the Engineering Change tab.

- **Obsolete** — The routing cannot be used in transactions or to compute standard costs. This routing was active in the past but has been replaced by another routing.

**Site ID**

*Site ID* indicates where production takes place. If **Bill of Material by Site** is selected in *Bill of Material Setup* (11.950.00), you can enter a site ID for the routing. Otherwise, the site ID is set automatically to global as specified in *Bill of Material Setup* (11.950.00), and no value can be entered.

*Multi-company:* The possible value on the site ID only returns valid sites for the company into which you are currently logged.

The bill of material ID, status, and site ID combination you enter must have been set up previously in *Bill of Material Maintenance* (11.250.00).

If **Bill of Material by Site** is checked in *Bill of Material Setup* (11.950.00), then:

- A global BOM updates Inventory and all existing ItemSites that do not have a site-specific active BOM.

- A site-specific BOM only updates that ItemSite, and creates it if one does not exist.

If **Bill of Material by Site** is not checked in *Bill of Material Setup* (11.950.00), then:

- A global BOM updates Inventory and all existing ItemSites.

Enter a work center ID for each routing step. The work center has a site ID assigned in *Work Center Maintenance* (11.270.00). A warning message appears if you enter a work center ID that has a site ID different from this site ID.

See **Bill of Material by Site** in *Bill of Material Setup* (11.950.00) for considerations on choosing different sites for each bill of material.

**Stocking UOM**

*Stocking UOM* represents the unit of measure for the routing. This unit is entered for the bill of material inventory item in *Inventory Items* (10.250.00). This is the unit used by the standard lot size.

**Std Lot Size**

*Std Lot Size* specifies the standard lot size used for computing the standard routing costs. The lot size is the product quantity manufactured in one production run. Increasing or decreasing the standard lot size increases or decreases the total standard cost per product unit if the routing contains one or more setup operations. This is because the cost of setup operations is spread across all units in the standard lot size. Increasing or decreasing the standard lot size also increases or decreases the total lead time computed for the routing.

**Std Yield Pct**

*Std Yield Pct* specifies the percent of good assemblies completed per standard lot size started. The percent is calculated when you click **Recompute Yield/LT** or when you click **Save** or **Finish**. *Std Yield Pct* uses individual step yield percents — it cannot be entered directly. The standard yield percent is computed by multiplying the yield percents of each step.

**Example:** If a routing contains three steps and each has a yield of 90 percent, then the standard yield percent is \(0.9 \times 0.9 \times 0.9 = 0.729\), or 72.9 percent.
Std Lead Time

**Std Lead Time** displays the time it takes to complete all routing steps, including move time, queue time, setup time, and run time. It is calculated using the above time figures for each step in the routing when you click **Recompute Yield/LT** or when you click **Save** or **Finish**; it cannot be entered directly. The software computes the standard lead time as follows for each step, then sums across all steps:

**Runtime Operations** compare and use the greater of the following two results:

- Standard Labor Hours “per unit” (times) Lot Size (divided by) Crew Size
- Standard Machine Hours “per unit” (times) Lot Size (divided by) Number of Machines

then adds:

- Move time per Lot
- Queue time per Lot

**Setup Operations** compare and use the greater of the following two results:

- Standard Labor Hours “per Lot” (divided by) Crew Size
- Standard Machine Hours “per Lot” (divided by) Number of Machines

then adds:

- Move time per Lot
- Queue time per Lot

**Outside Operations** add:

- Move time per Lot
- Queue time per Lot

**Renumber Steps (button)**

**Renumber Steps** renumbers the steps in the routing, with the first step being given a sequence number of 10 and incrementing each subsequent step by 10. The order of the steps as they appear in the grid is not changed — only the sequence numbers are changed. Use **Renumber Steps** after you insert new steps or change the sequence numbers of individual steps.

**Recompute Yield/LT (button)**

**Recompute Yield/LT** computes the standard yield percent and standard lead time for the routing from the information in the routing steps (also computed when you click **Save** or **Finish**). See **Std Lot Size** and **Std Yield Pct** for more information on these calculations.

**Copy Routing (button)**

**Copy Routing** opens **Copy Routing** (11.260.01), enabling you to copy a routing from one bill of material routing to another.
Routing Maintenance, Routing List Tab

The Routing List tab permits you to enter the routing steps associated with this bill of material, status, and site ID combination. Routing steps also specify items such as work centers, operations, labor classes, machines, and tools.

The Routing List tab is accessed from Routing Maintenance (11.260.00).

Figure 21: Routing Maintenance (11.260.00), Routing List tab

Following are the field descriptions for the Routing List tab of Routing Maintenance (11.260.00).

Step Number

Step Number indicates the number assigned to the routing step. Step numbers are automatically assigned to routing steps as they are added, starting with 10 and incrementing by 10 for each new step. Step numbers control the order that steps are displayed in Routing Maintenance (11.260.00) and many reports.

You can insert a new step between two existing steps by pressing the INSERT key or clicking New while the cursor is on the second step. The second step and all steps following it are renumbered, and the new step has the sequence number previously used by the second step upon clicking Renumber Steps.

If you place the cursor on the sequence number of a step and type a new step number, the step and all fields for that step are copied to the position corresponding to the new step number. If you no longer want the step in its original position, you must delete it. If you type a new step number, the new copy of the routing step line is placed in the corresponding position without any renumbering. Routing does not allow “duplicate” step numbers.

Status

Status specifies whether this step in the routing is in effect at the present time and should therefore be used in subsequent calculations.

The status options are:
- **Active** — The routing step can be used for all transactions where a routing is appropriate, such as cost rollup and production. The routing step is also used to compute standard costs for finished goods or subassembly inventory items.

- **Pending** — The routing step cannot be used in transactions or to compute standard costs. This routing step will be made active in the future. You can optionally enter a start date in the Engineering Change tab.

- **Obsolete** — The routing step cannot be used in transactions or to compute standard costs. This routing step was active in the past but has been replaced by another routing.

**Operation**

*Operation* indicates the operation ID used in the step. The operation ID must first be defined in *Operation Maintenance* (11.280.00). The operation type and description is automatically displayed after the operation ID is entered.

**Description**

*Description* automatically displays the description for the operation when an operation is specified. Operation descriptions may be modified in *Operation Maintenance* (11.280.00).

**Type**

*Type* displays the type of the operation associated with the specified operation ID. The valid types are:

- **Setup** — The operation is preparing machines and work areas to make the product.
- **Runtime** — The operation is making the product.
- **Outside** — The operation is any outside contracting involved in making the product.

**Work Center**

*Work Center* specifies a production area within a factory consisting of machines and/or workers that can be considered one unit. The work center ID is defined in *Work Center Maintenance* (11.270.00).

**Crew Size**

*Crew Size* indicates the number of people working in a crew that is responsible for the routing step. The number is used in lead time calculations and for planning purposes.

**Labor Class**

*Labor Class* represents the labor class ID used by the routing step. The labor class ID is defined in *Labor Class Maintenance* (11.290.00) along with the labor rates.

**Tool 1, Tool 2, Tool 3**

*Tool 1, Tool 2, and Tool 3* specify up to three tools that are used in this routing step. The tool ID is defined in *Tool Maintenance* (11.300.00).

**Other Direct**

*Other Direct* indicates the other direct standard costs per unit for the routing step. These costs are for anything that does not fall under other existing categories, for example, outside processing.

**Machine ID**

*Machine ID* indicates which machine is used by the routing step. The machine ID is defined in *Machine Maintenance* (11.310.00).

**# of Machines**

*# of Machines* specifies the number of machines at the work center that is assigned to the routing step. This number is used in lead time calculations and for planning purposes.
Current Std Yield

Current Std Yield indicates the percent of a product started on a routing step that is good after the step is completed.

Labor/Unit

Labor/Unit specifies the number of labor hours the step takes under ideal conditions without producing any scrap. If the step has a Setup operation type, the hours are for a standard lot size. If the step has a Runtime operation type, the hours are for a single unit. Standard labor hours are computed from engineering labor hours based on the standard yield percent. These hours are then used to compute standard costs and lead time.

Current standard labor hours are the number of labor hours the routing step takes under actual conditions, taking scrap into account. The current standard labor hours are used to compute standard costs and lead time.

Mach/Unit

Mach/Unit specifies the number of machine hours the step takes under ideal conditions, without producing any scrap. If the step has a Setup operation type, the hours are for a standard lot size. If the step has a Runtime operation type, the hours are for a single unit. Standard machine hours are computed from engineering machine hours based on the standard yield percent. Standard machine hours are then used to compute standard costs and lead time.

Current standard machine hours are the number of machine hours the routing step takes under actual conditions, taking scrap into account. Standard machine hours are used to compute standard costs and lead time.

Queue/Lot

Queue/Lot specifies the number of hours of idle time for a routing step before any work is performed on the partially completed product. Engineering queue hours are used for lead time calculations. Note that this is the time that the entire lot of material is idle, not each piece.

Standard queue time is always equal to engineering queue time.

Move/Lot

Move/Lot specifies the number of hours that the partially completed product is in transit after completing a routing step, and before the next step begins. Engineering move hours are used for lead time calculations. Note that this is the time that the entire lot of material in transit, not each piece.

Move time is often significant for outside operations where the pieces must be shipped to a vendor for processing and then shipped back.

Standard move time is always equal to engineering move time.

Lead Time

Lead Time specifies the engineering time needed to complete the routing step. It is computed from engineering labor, machine, queue, and move hours. Note that this is the lead time for each piece and excludes Current Std Yield.

Standard lead time is the engineering lead time including Current Std Yield.
Routing Maintenance, Current Std Costs Tab

The **Current Std Costs** tab allows you to review current standard costs broken down into setup and runtime costs, and recompute current standard costs for the routing.

Costs can be recalculated in this screen to test the impact of routing changes. These costs are **not** cumulative. They are for this level only, and only for the costs defined by the routing. They are combined with material-related costs on the **Standard Costs** tab of **Bill of Material Maintenance (11.250.00)**, where total cumulative standard costs are displayed.

The **Current Std Costs** tab is accessed from **Routing Maintenance (11.260.00)**.

![Routing Maintenance, Current Std Costs Tab](image)

*Figure 22: Routing Maintenance (11.260.00), Current Std Costs tab*

Following are the field descriptions for the **Current Std Costs** tab of **Routing Maintenance (11.260.00)**.

**Direct Labor**

**Direct Labor** contains labor costs that go directly into making the bill of material item. This typically is the cost of using employees’ time to assemble the product or operate tools and equipment for fabrication. These costs come from the routing—not from a bill of material using components set up with an **Inventory Type** of Labor.

**Other Direct**

**Other Direct** contains additional costs that go directly into making the bill of material item, typically outside processing. These costs come from the routing only—not from a bill of material using components set up with an **Inventory Type** of Other Direct.

**Total Direct Costs**

**Total Direct Costs** contains the total unit costs of direct labor and other direct costs for this routing. The costs are applied to the total cost for the bill of material and all levels of subassemblies below it.

**Note:** Keep in mind that the parent bill of material is the highest level, which is given a level number of 0. All subsequent children are considered to be at a lower level, with increasing level numbers.
Example: A child with a level designation of 3 has “older” children at levels 2 and 1, with the parent bill of material designated at level 0.

Variable Labor Overhead

Variable Labor Overhead contains labor costs which do not go directly into making the bill of material item, and which vary with production volume. Examples are vacation time that accrues based on hours worked and the cost of cleaning employee uniforms. These costs come from the routing only—not from a bill of material using components set up with an Inventory Type of Labor.

Fixed Labor Overhead

Fixed Labor Overhead contains labor costs which do not go directly into making the bill of material item, and which do not vary with production volume. Examples are the cost of supervisory and administrative personnel in the factory and medical insurance premiums. These costs come from the routing only—not from a bill of material using components set up with an Inventory Type of Labor.

Variable Machine Overhead

Variable Machine Overhead contains machinery costs which do not go directly into making the bill of material item and which vary with production volume, such as power, lubricants, and maintenance. These costs come from the routing only—not from a bill of material using components set up with an Inventory Type of Machine Overhead.

Fixed Machine Overhead

Fixed Machine Overhead contains machinery costs which do not go directly into making the bill of material item, and which do not vary with production volume, such as building rent allocations based on floor space and equipment depreciation. These costs come from the routing only—not from a bill of material using components set up with an Inventory Type of Machine Overhead.

Total Overhead

Total Overhead contains the total unit cost of all overhead categories for this routing. The cost is applied to the total cost of the bill of material and all levels of subassemblies below it.

Note: Keep in mind that the parent bill of material is the highest level, which is given a level number of 0. All subsequent children are considered to be at a lower level, with increasing level numbers.

Example: A child with a level designation of 3 has “older” children at levels 2 and 1, with the parent bill of material designated at level 0.

Total Standard Costs

Total Standard Costs contains the total unit costs for this routing. The cost is applied to the total cost of the bill of material and all levels of subassemblies below it.

Note: Keep in mind that the parent bill of material is the highest level, which is given a level number of 0. All subsequent children are considered to be at a lower level, with increasing level numbers.

Example: A child with a level designation of 3 has “older” children at levels 2 and 1, with the parent bill of material designated at level 0.

Setup

Setup specifies the setup standard costs per unit for Direct Labor, Other Direct, Total Direct Labor Overhead (fixed and variable), Machine Overhead (fixed and variable), Total Overhead, and Total Standard Costs. The setup standard costs per unit are the standard costs from the companion routing for the bill of material, calculated from all routing steps that have the type set to Setup. These costs are not cumulative. They are for this level only, and only for the costs defined by the routing. They are combined with material-related costs on the Standard Costs tab of Bill of Material Maintenance (11.250.00), where total cumulative standard costs are displayed.
Run Time

Run Time specifies the runtime standard costs per unit for Direct Labor, Other Direct, Total Direct, Labor Overhead (fixed and variable), Machine Overhead (fixed and variable), Total Overhead, and Total Standard Costs. The runtime standard costs per unit are the standard costs from the companion routing for this bill of material calculated from all routing steps that have the type set to Runtime. These costs are not cumulative. They are for this level only, and only for the costs defined by the routing. They are combined with material-related costs on the Standard Costs tab of Bill of Material Maintenance (11.250.00), where total cumulative standard costs are displayed.

Recompute Costs (button)

Recompute Costs runs through the routing steps for the companion routing for a bill of material and recomputes the standard costs. This calculation is a single-level process — the costs for components and lower levels are not recomputed. Its purpose is to allow you to preview the impact of changes to the bill of material on its standard costs. To view recalculated values, you must save your changes made in the grid. Also, current standard costs are not updated — only pending costs are updated. To update the current standard costs use Update Standard Costs from Pending (11.530.00) after recalculating the pending costs in the screen and saving the changes.
Routing Maintenance, Pending Std Costs Tab

The **Pending Std Costs** tab displays both the setup and runtime pending standard costs for the routing. The costs are broken down by cost category. Costs can be recalculated in this screen to test the impact of routing changes. These costs are not cumulative. They are for this level only, and only for the costs defined by the routing. They are combined with material-related costs on the **Current Std Costs** tab of **Bill of Material Maintenance** (11.250.00) where total cumulative standard costs are displayed.

The **Pending Std Costs** tab is accessed from **Routing Maintenance** (11.260.00).

**Note:** If changes are made to the routing, recomputed, then saved, they are not in sync with the costs in **Bill of Material Maintenance** (11.250.00) until you re-run the cost rollup procedure (see “Compute and Update Standard Costs for One Bill”).

![Figure 23: Routing Maintenance (11.260.00), Pending Std Costs tab](image)

Following are the field descriptions for the **Pending Std Costs** tab of **Routing Maintenance** (11.260.00).

**Direct Labor**

**Direct Labor** contains the cost of labor that goes directly into making the bill of material item. This typically is the cost of using employees’ time to assemble the product or operate tools and equipment for fabrication. These costs come from the routing—not from components of the bill of material set up with an **Inventory Type** of Labor.

**Other Direct**

**Other Direct** contains additional costs that go directly into making the bill of material item, typically outside processing. These costs come from the routing only—not from components of the bill of material set up with an **Inventory Type** of Other Direct.
Total Direct Costs

Total Direct Costs contains the total unit costs of direct material, direct labor, and other direct costs for the bill of material and all levels of subassemblies below it.

Variable Labor Overhead

Variable Labor Overhead contains labor costs which do not go directly into making the bill of material item and which vary with production volume. Examples are vacation time that accrues based on hours worked and the cost of cleaning employee uniforms. These costs come from the routing only—not from components of the bill of material set up with an Inventory Type of Labor.

Fixed Labor Overhead

Fixed Labor Overhead contains labor costs which do not go directly into making the bill of material item, and which do not vary with production volume. Examples are the cost of supervisory and administrative personnel in the factory and medical insurance premiums. These costs come from the routing only—not from components of the bill of material set up with an Inventory Type of Labor.

Variable Machine Overhead

Variable Machine Overhead contains machinery costs which do not go directly into making the bill of material item, and which vary with production volume, such as power, lubricants, and maintenance. These costs come from the routing only—not from components of the bill of material set up with an Inventory Type of Machine Overhead.

Fixed Machine Overhead

Fixed Machine Overhead contains machinery costs which do not go directly into making the bill of material item and which do not vary with production volume, such as building rent allocations based on floor space and equipment depreciation. These costs come from the routing only—not from components of the bill of material set up with an Inventory Type of Machine Overhead.

Total Overhead

Total Overhead contains the total unit cost of all overhead categories for the bill of material and all levels of subassemblies below it.

Total Standard Costs

Total Standard Costs contains the total unit costs for the bill of material and all levels of subassemblies below it.

Setup

Setup specifies the pending setup standard costs per unit for Direct Labor, Other Direct, Total Direct, Labor Overhead (fixed and variable), Machine Overhead (fixed and variable), Total Overhead, and Total Standard Cost. The standard costs per unit are the standard costs for the routing that are calculated from all routing steps that have the Setup type. These costs are not cumulative. They are for this level only, and only for the costs defined by the routing. They are combined with material-related costs on the Standard Costs tab of Bill of Material Maintenance (11.250.00) where total cumulative standard costs are displayed.

Run Time

Run Time specifies the runtime standard costs per unit for Direct Labor, Other Direct, Total Direct, Labor Overhead (fixed and variable), Machine Overhead (fixed and variable), Total Overhead, and Total Standard Cost. The runtime standard costs per unit are the standard costs for the routing calculated from all routing steps that have the Runtime type. These costs are not cumulative. They are for this level only, and only for the costs defined by the routing. They are combined with material-related costs on the Standard Costs tab of Bill of Material Maintenance (11.250.00) where total cumulative standard costs are displayed.
Recompute Pending (button)

To view recalculated values, you must save the changes made in the grid.
Copy Routing (11.260.01)

Following are the field descriptions for Copy Routing (11.260.01).

BOM ID
BOM ID contains the ID of the bill of material you are inserting into the current routing.

Site ID
Site ID is where the inventory on hand for the component item will be reduced.

Status
Status indicates whether the bill of material can be used to compute standard costs for the bill of material item and whether it can be used for production. Status options are:

- Active — The bill of material can be used for all transactions where a bill of material is appropriate, such as in purchase orders, sales orders, and production. An active bill of material is also used to compute standard costs for the bill of material inventory item. Components for an active bill of material can be active, pending, or obsolete.
- Pending — The bill of material cannot be used in transactions or to compute standard costs. A pending bill of material is made active sometime in the future.
- Obsolete — The bill of material cannot be used in transactions or to compute standard costs. An obsolete bill of material was active but has been replaced by another bill of material.

Insert Position in Component List
Two option buttons allow you to specify where you want the requested bill of material or kit to be inserted into the current bill of material or kit. The following options are available:

- Current — Insert the requested bill of material or kit in the selected area.
- End of List — Insert the requested bill of material or kit at the end of the bill of material.

Insert (button)
Insert positions the bill of material or kit in the current bill of material in the area specified in Insert Position in Component List.

Cancel (button)
Cancel disregards information entered in the screen and returns you to Routing Maintenance (11.260.00)
**Work Center Maintenance (11.270.00)**

Use *Work Center Maintenance (11.270.00)* to create and maintain information concerning work centers. A work center is a production area within the factory consisting of machines and/or workers that can be considered one unit for production planning, costing, and reporting purposes. A work center is usually a specific place on a factory floor, but it can also be a department. Examples of work centers include the following: final assembly area, sandblasting booth, painting booth, stamping center, milling center, dedicated production line, etc.

The work center information created in this screen is used to validate work centers entered in *Routing Maintenance (11.260.00)*. *Compute Cost Rollup (11.540.00)* uses the overhead rates entered here to compute labor overhead and machine overhead costs.

After completing this screen, you can print the *Work Center List (11.730.00)* report for a record of the work center information entered.

![Work Center Maintenance (11.270.00), Information tab](image)

*Figure 25: Work Center Maintenance (11.270.00), Information tab*

Following are the field descriptions for *Work Center Maintenance (11.270.00), Information* tab.

**Work Center**

*Work Center* specifies a production area within a factory consisting of machines and/or workers that can be considered one unit.

**Description**

*Description* contains an explanation of the work center.

**Site Id**

*Site Id* indicates where the production takes place. Typically, all work centers entered for a given routing are located in the same site, but this is not required. If you enter a work center in a routing step in *Routing Maintenance (11.260.00)* with a site ID that is different than the site specified in the routing header, you receive a warning. However, you can still use the work center.
Multi-company: The possible value list on the site ID only returns valid sites for the company into which you are currently logged.

Work Hours
Work Hours specifies the number of hours that a work center normally operates during a work day and is used for lead time calculations.

Crew Size
Crew Size indicates the number of people working in the work center and is used for lead time calculations.

Number of Machines
Number of Machines specifies how many machines normally operate at the work center and is used in lead time calculations.

Standard Variable (Labor Frame)
The standard variable labor overhead rate or percent specifies labor costs for a particular work center which do not go directly into making the bill of material item, and which vary with production volume. Labor overhead is applied as a rate per direct labor hour, or as a percent of direct labor cost, as specified in Bill of Material Setup (11.950.00).

Example: Suppose you are applying labor overhead as a rate per direct labor hour, and have a standard variable labor overhead rate of $10/hour. If five direct labor hours are used at this work center, $50 of variable labor overhead is charged to work in process or finished goods. Variable labor overhead is added to fixed labor overhead to compute total labor overhead. Labor overhead is split into variable and fixed portions for reporting purposes only, so that variable can be added to the direct cost, enabling the total variable cost to be reported.

Standard Fixed (Labor Frame)
The standard fixed labor overhead rate or percent specifies labor costs for a work center that do not go directly into making the bill of material item, and do not vary with production volume.

Labor overhead is applied as a rate per direct labor hour, or as a percent of direct labor cost, as specified in Bill of Material Setup (11.950.00).

Example: Suppose you are applying labor overhead as a rate per direct labor hour, and have a standard fixed labor overhead rate of $10/hour. If five direct labor hours are used at this work center, $50 of fixed labor overhead is charged to work in process or finished goods. Fixed labor overhead is added to variable labor overhead to compute total labor overhead. Labor overhead is split into variable and fixed portions for reporting purposes only, so that variable can be added to direct cost, enabling the total variable cost to be reported.

Standard Total (Labor Frame)
The standard total labor overhead displays the sum of the standard variable labor and fixed labor overhead rate or percent for the work center.

Pending Variable (Labor Frame)
The pending variable labor overhead rate or percent specifies projected labor costs for a particular work center. These costs do not go directly into making the bill of material item and they vary with production volume. This rate is used by Compute Cost Rollup (11.540.00) to compute the pending variable labor overhead rate/percent for a product. This rate can be copied to the current rate for all or selected work centers using Update Standard Costs from Pending (11.530.00).
Pending Fixed (Labor Frame)
The pending fixed labor overhead rate or percent specifies projected labor costs for a work center. These costs do not go directly into making the bill of material item and do not vary with production volume. This rate is used by Compute Cost Rollup (11.540.00) to compute the pending fixed labor overhead rate/percent for a product. This rate can be copied to the current rate for all or selected work centers using Update Standard Costs from Pending (11.530.00).

Pending Total (Labor Frame)
The pending total labor overhead rate displays the sum of the pending variable labor and pending fixed labor overhead rate or percent for the work center.

Standard Variable (Machine Frame)
The current standard variable machine overhead rate for a work center is used during production to compute the variable machine overhead cost of finished goods produced. Machine overhead is applied as a rate per machine hour.

**Example:** Suppose you have a standard variable machine overhead rate of $10/hour. If five machine hours are used at this work center, $50 of variable machine overhead is charged to work in process or finished goods. Variable machine overhead is added to fixed machine overhead to compute total machine overhead. Machine overhead is split into variable and fixed portions for reporting purposes only, so that variable can be added to direct cost enabling total variable cost to be reported.

Standard Fixed (Machine Frame)
The current standard fixed machine overhead rate for the work center is used during production to compute the fixed machine overhead cost of finished goods produced. Machine overhead is applied as a rate per machine hour.

**Example:** Suppose you have a standard fixed machine overhead rate of $10/hour. If five machine hours are used at this work center, $50 of fixed machine overhead is charged to work in process or finished goods. Machine labor overhead is added to variable machine overhead to compute total machine overhead. Machine overhead is split into variable and fixed portions for reporting purposes only, so that variable can be added to direct cost enabling total variable cost to be reported.

Standard Total (Machine Frame)
The standard total machine overhead rate is the sum of standard variable and fixed machine overhead for the work center.

Pending Variable (Machine Frame)
The pending variable machine overhead rate specifies projected machine costs for a particular work center. This rate is used by Compute Cost Rollup (11.540.00) to compute the pending variable machine overhead rate for a product. This rate can be copied to the current rate for all or selected work centers using Update Standard Costs from Pending (11.530.00).

Pending Fixed (Machine Frame)
The pending fixed machine overhead rate specifies projected machine costs for a particular work center. This rate is used by Compute Cost Rollup (11.540.00) to compute the pending fixed machine overhead rate for a product. This rate can be copied to the current rate for all or selected work centers using Update Standard Costs from Pending (11.530.00).

Pending Total (Machine Frame)
The pending total machine overhead rate is the sum of the pending variable and fixed machine overhead rate for the work center.
Work Center Maintenance, GL Offset Accounts Tab

Use the GL Accounts tabs (GL Offset Accounts and GL Variance Accounts) to review and edit the General Ledger accounts that are used to create General Ledger transactions for a work center. These accounts default from Bill of Material Setup (11.950.00) and can be overridden.

These accounts are used during production in Production Entry (11.010.00) for each of the cost categories, by creating a credit to offset the debit to finished goods, when the product being produced has a routing defined for it.

The GL Offset Accounts tab is accessed from Work Center Maintenance (11.270.00).

![Image of Work Center Maintenance (11.270.00), GL Offset Accounts tab]

Following are the field descriptions for the GL Offset Accounts tab of Work Center Maintenance (11.270.00).

Direct Labor Account (Offset)

Direct Labor Account is used as the offset expense account when direct labor is added to work in process or finished goods.

Example: If the direct labor cost at a work center for an item is $1.50/unit and 100 items are produced, then $150 is the credit to the direct labor offset account specified here, and $150 is the debit to work in process or finished goods. The account must have been previously set up in Chart of Accounts Maintenance (01.260.00).

Direct Labor Sub Account (Offset)

Direct Labor Sub Account is used as the offset expense subaccount when direct labor is added to work in process or finished goods.

Example: If the direct labor cost at a work center for an item is $1.50/unit and 100 items are produced, then $150 is the credit to the direct labor offset subaccount specified here, and $150 is the debit to work in process or finished goods.
Other Direct Account (Offset)

Other Direct Account is used as the offset expense account when other direct cost is added to work in process or finished goods.

Example: If the other direct cost at a work center for an item is $1.50/unit and 100 items are produced, then $150 is the credit to the other direct offset account specified here, and $150 is the debit to work in process or finished goods. This account must have been previously set up in Chart of Accounts Maintenance (01.260.00).

Other Direct Sub Account (Offset)

Other Direct Sub Account is used as the offset expense account when other direct cost is added to work in process or finished goods.

Example: If the other direct cost at a work center for an item is $1.50/unit and 100 items are produced, then $150 is the credit to the other direct offset subaccount specified here, and $150 is the debit to work in process or finished goods.

Labor Overhead Account (Offset)

Labor Overhead Account is used as the offset expense account when labor overhead is added to work in process or finished goods.

Example: If the labor overhead cost at a work center for an item is $1.50/unit and 100 are produced, then $150 is the credit to the labor overhead offset account specified here, and $150 is the debit to work in process or finished goods. This account must have been previously set up in Chart of Accounts Maintenance (01.260.00).

Labor Overhead Sub Account (Offset)

Labor Overhead Sub Account is used as the offset expense account when labor overhead is added to work in process or finished goods.

Example: If the labor overhead cost at a work center for an item is $1.50/unit and 100 items are produced, then $150 is the credit to labor overhead offset subaccount specified here, and $150 is the debit to work in process or finished goods.

Machine Overhead Account (Offset)

Machine Overhead Account is used as the offset expense account when machine overhead is added to work in process or finished goods.

Example: If the machine overhead cost at a work center for an item is $1.50/unit and 100 units are produced, then $150 is the credit to the machine overhead offset account specified here, and $150 is the debit to work in process or finished goods. This account must have been previously set up in Chart of Accounts Maintenance (01.260.00).

Machine Overhead Sub Account (Offset)

Machine Overhead Sub Account is used as the offset expense account when machine overhead is added to work in process or finished goods.

Example: If the machine overhead cost at a work center for an item is $1.50/unit and 100 are produced, then $150 is the credit to machine overhead offset subaccount specified here, and $150 is the debit to work in process or finished goods.
Work Center Maintenance, GL Variance Accounts Tab

Use the **GL Variance Accounts** tab to enter information about the GL variance accounts that are used during production.

The **GL Variance Accounts** tab is accessed from **Work Center Maintenance (11.270.00)**.

![Figure 27: Work Center Maintenance (11.270.00), GL Variance Accounts tab](image)

Following are the field descriptions for the **GL Variance Accounts** tab of **Work Center Maintenance (11.270.00)**.

**Direct Labor Account**

**Direct Labor Account** updates the General Ledger for the difference between the standard direct labor cost for an item produced at a work center and the actual direct labor cost when the item produced uses the standard inventory valuation method (including both rate and efficiency variance amounts).

**Example:** If the standard direct labor cost at a work center for an item produced is $40 and the actual direct labor cost is $50, then $50 is the credit to the direct labor expense account/subaccount, $10 is the debit to the direct labor variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount. This account must have been previously set up in **Chart of Accounts Maintenance (01.260.00)** in the General Ledger module.

**Direct Labor Sub Account**

**Direct Labor Sub Account** updates the General Ledger for the difference between the standard direct labor cost for an item produced at a work center and the actual direct labor cost when the item produced uses the standard inventory valuation method.

**Example:** If the standard direct labor cost at a work center for an item produced is $40 and the actual direct labor cost is $50, then $50 is the credit to the direct labor expense account/subaccount, $10 is the debit to the direct labor variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount.
Other Direct Account

Other Direct Account updates the General Ledger for the difference between the standard other direct cost for an item produced at a work center and the actual other direct cost when the item produced uses the standard inventory valuation method.

Example: If the standard other direct cost at a work center for an item produced is $40 and the actual other direct cost is $50, then $50 is the credit to the other direct expense account/subaccount, $10 is the debit to the other direct variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount. This account must have been previously set up in Chart of Accounts Maintenance (01.260.00).

Other Direct Sub Account

Other Direct Sub Account updates the General Ledger for the difference between the standard other direct cost for an item produced at the work center and the actual other direct cost when the item produced uses the standard inventory valuation method.

Example: If the standard other direct cost at a work center for an item produced is $40 and the actual other direct cost is $50, then $50 is the credit to the other direct expense account/subaccount, $10 is the debit to the other direct variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount.

Labor Overhead Account

Labor Overhead Account updates the General Ledger for the difference between the standard labor overhead cost for an item produced at a work center and the actual labor overhead cost when the item produced uses the standard inventory valuation method.

Example: If the standard labor overhead cost at a work center for an item produced is $40 and the actual labor overhead cost is $50, then $50 is the credit to the labor overhead expense account/subaccount, $10 is the debit to the labor overhead variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount. This account must have been previously set up in Chart of Accounts Maintenance (01.260.00).

Labor Overhead Sub Account

Labor Overhead Sub Account updates the General Ledger for the difference between the standard labor overhead cost for an item produced at a work center and the actual labor overhead cost when the item produced uses the standard inventory valuation method.

Example: If the standard labor overhead cost at a work center for an item produced is $40 and the actual labor overhead cost is $50, then $50 is the credit to the labor overhead expense account/subaccount, $10 is the debit to the labor overhead variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount.

Machine Overhead Account

Machine Overhead Account updates the General Ledger for the difference between the standard machine overhead cost for an item produced at a work center and the actual machine overhead cost when the item produced uses the standard inventory valuation method.

Example: If the standard machine overhead cost at a work center for an item produced is $40 and the actual machine overhead cost is $50, then $50 is the credit to the machine overhead expense account/subaccount, $10 is the debit to the machine overhead variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount. This account must have been previously set up in Chart of Accounts Maintenance (01.260.00).
Machine Overhead Sub Account

Machine Overhead Sub Account updates the General Ledger for the difference between the standard machine overhead cost for an item produced at a work center and the actual machine overhead cost when the item produced uses the standard inventory valuation method.

Example: If the standard machine overhead cost at a work center for an item produced is $40 and the actual machine overhead cost is $50, then $50 is the credit to the machine overhead expense account/subaccount, $10 is the debit to the machine overhead variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount.
Operation Maintenance (11.280.00)

Use *Operation Maintenance* (11.280.00) to create and maintain information on operations used in production processes. An operation is a specific production task, such as assembly, sandblasting, painting, stamping, milling, inspection, etc. Operations are usually defined for the entire production area and can be used in many different routing steps at many different work centers.

The operation information you create is used to validate operations entered in *Routing Maintenance* (11.260.00). *Compute Cost Rollup* (11.540.00) uses the types you enter to segregate the cost of labor, overhead, and other direct cost into setup and runtime costs.

After completing *Operation Maintenance* (11.280.00), you can print the *Operation List* (11.730.00) report for a record of the operation information entered.

![Figure 28: Operation Maintenance (11.280.00)](image)

Following are the field descriptions for *Operation Maintenance* (11.280.00).

**Operation**

*Operation* contains a unique identifier to define a specific operation that may be entered into routings. Operations are functions performed, and may be used to further break down activity at a work center.

**Description**

*Description* contains an explanation of the operation. Use *Description* to provide a more detailed definition of the operation being performed. If more detail is needed, you can attach a Note or an Attachment to the operation.

**Type**

The operation is identified as one of the following types:

- **Setup** — The operation is performed once during a production run to set up a machine or a production line. Use type Setup not only for an operation performed prior to a production run, but also for cleanup operations and other special operations performed during or after the run. Setup operations are costed differently from runtime or outside operations because the standard labor or machine hours specified in the routing step are considered once for the entire production run, not once per unit.

- **Runtime** — The operation is performed once for each unit produced. The standard labor or machine hours specified in the routing step are per unit.

- **Outside** — The operation is performed at an outside vendor — once for each unit produced. The standard other direct cost specified in the routing step is what the outside vendor charges per unit.

*Note*: *Type* can be changed at any time.
Labor Class Maintenance (11.290.00)

Use Labor Class Maintenance (11.290.00) to create and maintain information on labor classes used in production processes. A labor class is a group of employees with similar skills and pay rates. Examples of labor classes are millwrights, electricians, assemblers, welders, painters, etc.

The labor class information you create is used to validate labor classes entered in Routing Maintenance (11.260.00). Compute Cost Rollup (11.540.00) uses the pending standard rates you enter to calculate the cost of labor for products according to the labor classes specified in the routing. After completing Labor Class Maintenance (11.290.00), you can print the Labor Class List (11.740.00) report for a record of the labor class information entered.

![Labor Class Maintenance (11.290.00)](image)

Figure 29: Labor Class Maintenance (11.290.00)

Following are the field descriptions for Labor Class Maintenance (11.290.00).

**Labor Class**

Labor Class identifies a specific labor class. The labor class ID is entered on Routing Maintenance (11.260.00) to identify labor costs.

**Description**

Description contains a more detailed explanation of the labor performed by the labor class. If more detail is needed, you can attach a Note or an Attachment to the labor class.

**Current Pay Rate**

Current Pay Rate specifies the actual hourly rate paid to employees. This information is used in Update Pending Costs/Rates (11.520.00) and Update Standard Costs from Pending (11.530.00), it is not used in cost rollups. The value displayed here is informational only.

**Pending Pay Rate**

Pending Pay Rate specifies the projected actual hourly pay rate for employees (in other words, pay increases). The value displayed here is not used in cost rollups; it is informational only.

**Current Standard Rate**

Current Standard Rate specifies a previously established set rate for the labor class. This is the rate that is updated by the Update Standard Costs from Pending (11.530.00) process.

**Pending Standard Rate**

Pending Standard Rate specifies the projected rate that is established for the labor class. It is used by the Compute Cost Rollup (11.540.00) process to compute labor costs for a product.
Tool Maintenance (11.300.00)

Use Tool Maintenance (11.300.00) to create and maintain information on tooling used in production processes. A tool can be anything needed at a work center to help perform a production operation. Tools include specialized hand tools, jigs, fixtures, molds, etc. The intent of Tool Maintenance (11.300.00) is to record the tools that are important to one or more production processes and need to be carefully managed.

Tool information is used to validate tools entered in Routing Maintenance (11.260.00).

After completing Tool Maintenance (11.300.00), you can print the Tool List (11.750.00) report for a record of the tool information entered.

Following are the field descriptions for Tool Maintenance (11.300.00).

Tool

Tool identifies a specific tool used in the production process. Up to three tools can be used in each routing step. Tools may also be used to further identify the specific use of a machine.

Example: A machine tied to a routing step could be a “Drill Press” and a tool could be the “4mm Drill Bit” used in that machine.

Description

Description contains a more detailed explanation of the tool. If more detail is needed, you can attach a Note or an Attachment to the tool.

Fixed Asset ID

Fixed Asset ID identifies whether or not the tool is a fixed asset. The fixed asset ID is not used, but it serves as a possible cross-reference to your fixed assets system so that additional information about the tool can be retrieved.

Status

Status indicates whether the tool can be used for production. The following status values are possible:

- Active — The tool is available for use in production.
- Inactive — The tool is not available for use in production. This could be because it is temporarily committed to another production.
- Obsolete — The tool cannot be used in production; it has been replaced by another tool or may be permanently out of use.
Note: You can change the Status of a tool at any time.
Machine Maintenance (11.310.00)

Use Machine Maintenance (11.310.00) to create and maintain information on machines used in production processes. The intent of Machine Maintenance (11.310.00) is to record the machines that are important to one or more production processes and need to be carefully managed.

The machine information created here is used to validate machines entered in Routing Maintenance (11.260.00).

After completing Machine Maintenance (11.310.00), you can print the Machine List (11.760.00) report for a record of the machine information entered.

Following are the field descriptions for Machine Maintenance (11.310.00).

**Machine**
Machine identifies a specific machine used in the production process. The machine ID could represent a machine type, such as a CNC drill, milling machine, stamping press, robot, lathe, etc., or it could be a specific machine, such as “500 ton press #4.”

**Description**
Description contains a more detailed explanation of the machine. If more detail is needed, you can attach a Note or an Attachment to the machine.

**Fixed Asset ID**
Fixed Asset ID indicates whether or not the machine is a fixed asset. Typically the fixed asset ID is only used if the machine ID refers to a specific machine rather than a type of machine. The fixed asset ID is not used, but it serves as a possible cross-reference to your fixed assets system so that additional information about the machine can be retrieved.

**Status**
Status indicates whether the machine can be used for production. The following status values are possible:

- **Active** — The machine is available for use in production.
- **Inactive** — The machine is not available for use in production. This could be because it is temporarily committed to another production or it could be permanently out of use.
- **Obsolete** — The machine cannot be used in production; it has been replaced by another machine or may be permanently out of use.

**Note:** You can change the Status of a machine at any time.
Bill of Material Structure (11.320.00)

*Bill of Material Structure* (11.320.00) provides an indented view of components on a bill of material and their related information.

In the Folder Items area, all components of the bill are displayed on a multi-level basis. Folders may be expanded or collapsed to drill down into subassemblies and return back to higher levels.

Detailed information relating to the component having focus is displayed in the right side panel of the form when a particular item has focus.

Clicking **Component List** opens *Bill of Material Structure* (11.320.01), which displays a list of the components for the BOM ID’s entire bill of material.

To access this screen, select **Bill of Material Structure** from the Bill of Material module menu, or click **View Structure** in *Bill of Material Maintenance* (11.250.00).

![Bill of Material Structure](image)

*Figure 32: Bill of Material Structure (11.320.00)*

Following are the field descriptions for *Bill of Material Structure* (11.320.00).

**BOM ID**

*BOM ID* specifies the inventory item ID for which to display the bill of material. *BOM ID*, combined with **Site ID** and **Status**, identifies the desired bill of material.

**Status**

*Status* specifies the status of the selected bill of material. See *Bill of Material Maintenance* (11.250.00) for further discussion.

**Site ID**

*Site ID* specifies the site of the selected bill of material. See *Bill of Material Maintenance* (11.250.00) for further discussion. If the **Bill of Material by Site** option is not enabled in *Bill of Material Setup* (11.980.00), **Site ID** displays the global site ID and cannot be changed.
Description

Description contains a detailed description of the selected bill of material. See Bill of Material Maintenance (11.250.00) for further discussion.

Stocking UOM

Stocking UOM specifies the unit of measure of the assembly being produced. See Bill of Material Maintenance (11.250.00) for further discussion.

Component List (button)

Clicking Component List displays all the components on the bill of material in text form. See “Bill of Material Structure” on page 119 for more information.
Bill of Material Structure, Component Info Tab

The Component Info tab displays information about the component selected in the Folder Items area. This data is maintained on the Component List tab on Bill of Material Maintenance (11.250.00).

Following are the field descriptions for the Component Info tab of Bill of Material Structure (11.320.00).

**BOM ID**

BOM ID specifies the inventory item ID for which to display the bill of material. BOM ID, combined with Site ID and Status, identifies the desired bill of material.

**Sequence No**

Sequence No automatically assigns numbers to components as they are added.

**Stock Usage**

Stock Usage indicates whether the required quantity of a subassembly inventory item should be satisfied by using the stock quantity of the subassembly or by building more units of the subassembly from its components. This is used to control the usage of subassembly during production.

The possible values are Normal, Build Only, Stock Only, and (None).

**Status**

Status determines whether the component is used to roll up standard costs for the bill of material item and whether it can be used to deduct production quantities for the component item. The possible values are Active, Pending, or Obsolete.
Routing Step
Routing Step indicates if the item is tied to a routing step.

Description
Description contains the description for this component on this bill of material.

Subassy Bill Status
Subassembly Bill Status indicates the status of a selected item. If the item selected in the Folder Items area is a subassembly, this is the status of that subassembly, which may be Active, Pending, or Obsolete. If the item selected is not a subassembly, this value is None.

Stocking UOM
Stocking UOM specifies the unit of measure used for this component on this bill of material.

Scrap %
Scrap % specifies the component scrap factor percentage. The scrap factor is the percent of the component quantity expected to be discarded.

Engineered Quantity
Engineered Quantity specifies the amount of the component needed per unit of the bill of material. This is the quantity that should be used under ideal conditions without any scrap.

Standard Quantity
Standard Quantity specifies the expected quantity of the component needed per unit of the bill of material. It is calculated automatically and factored for scrap.

Start Date
Start Date specifies the date this component is to become active on this bill of material.

Stop Date
Stop Date specifies the date this component is to become obsolete on this bill of material.

Change Order
Change Order indicates the engineering change order that authorizes the changes to the component. This text field is descriptive only; it is not used in processing.

Supersedes
Supersedes notes the component this component replaces when it becomes or became active.

Superseded By
Superseded By notes the component that replaces this component when it becomes or became obsolete.
Bill of Material Structure, BOM Info Tab

The **BOM Info** tab displays cost and change information about the assembly or highest level selected in the Folder Items area. If you select a component under the item, the **BOM Info** tab changes to the **Component Info** tab, allowing you to view information about the component.

![Bill of Material Structure (11.320.00), BOM Info tab](image)

Figure 34: Bill of Material Structure (11.320.00), BOM Info tab

Following are the field descriptions for the **BOM Info** tab of Bill of Material Structure (11.320.00).

**BOM ID**

BOM ID specifies the inventory item ID for which to display the bill of material. BOM ID, combined with Site ID and Status, identifies the desired bill of material.

**Direct Material**

Direct Material contains costs that are directly incurred when producing the bill of material item. This typically consists of parts that are assembled or materials that are fabricated to make the product.

**Direct Labor**

Direct Labor contains costs are directly incurred when producing the bill of material item. This is typically the cost of using employees’ time to assemble the product or operate tools and equipment for fabrication. These costs can come from the routing or from components on the bill of material set up with an Inventory Type of Labor.

**Other Direct**

Other Direct contains costs that go directly into producing the bill of material item, typically outside processing. These costs can come from the routing or from components on the bill of material set up with an Inventory Type of Other Direct.
**Labor Fixed Overhead**

Labor Fixed Overhead contains labor costs that are not directly involved in the production of the bill of material item, and do not vary with production volume. Examples include the cost of supervisory and administrative personnel in the factory, and medical insurance premiums. These costs can come from the routing or from components on the bill of material set up with an Inventory Type of Labor.

**Labor Variable Overhead**

Labor Variable Overhead contains labor costs that are not directly involved in the production of the bill of material item but which vary with production volume. Examples include vacation time that accrues based on hours worked and the cost of cleaning employee uniforms. These costs can come from the routing or from components on the bill of material set up with an Inventory Type of Labor.

**Machine Fixed Overhead**

Machine Fixed Overhead contains machinery costs which do not go directly into making the bill of material item, and which do not vary with production volume, such as building rent allocations based on floor space and equipment depreciation. These costs can come from the routing or from components on the bill of material set up with an Inventory Type of Machine Overhead.

**Machine Variable Overhead**

Machine Variable Overhead contains machinery costs which do not go directly into making the bill of material item, and which vary with production volume, such as power, lubricants, and maintenance. These costs can come from the routing or from components on the bill of material set up with an Inventory Type of Machine Overhead.

**Material Fixed Overhead**

Material Fixed Overhead contains material-related costs which do not go directly into making the bill of material item, and which do not vary with production volume, such as warehouse rent and material handling equipment depreciation.

**Material Variable Overhead**

Material Variable Overhead contains material-related costs which do not go directly into making the bill of material item, and which vary with production volume, such as maintenance of material handling equipment.

**Total Standard Cost**

Total Standard Cost contains the total unit cost of all standard categories for this bill of material and all levels of subassemblies below it.

**Start Date**

Start Date specifies the date you want a bill of material and its associated routing (if routings are used) to become active. When you use Apply Date-Effective Revisions (11.500.00) process and enter a date that is on or after this date, the bill of material and its associated routing become active. If a bill of material and its associated routing is already active, you can still enter a date to document when it becomes active. However, no processing occurs based on this date.

**Stop Date**

Stop Date specifies the date you want a bill of material and its associated routing (if routings are used) to become obsolete. When you use Apply Date-Effective Revisions (11.500.00) process and enter a date that is on or after this date, the bill of material and its associated routing become obsolete. If a bill of material and its associated routing is already obsolete, you can still enter a date to document when it becomes obsolete. However, no processing occurs on obsolete items regardless of the date entered.
Change Order

Change Order displays the order that authorizes the changes to the component. It is only to document the change — no processing is done based on the number entered. It appears in detailed bill of material reports.

Supersedes

Supersedes notes the component which this component replaces when it becomes active. Within the Bill of Material module, Supersedes documents the change, and appears in detailed bill of material reports. Other modules may access the value entered in Supersedes for processing purposes.

Superseded By

Superseded By notes the component that replaces this component when it becomes obsolete. Within the bill of Material module, Superseded By documents the change, and it appears in detailed bill of material reports. Other modules may access the value entered in Superseded By for processing purposes.
Bill of Material Structure, Inventory Info Tab

The Inventory Info tab displays pertinent inventory information about the selected component on this bill of material, as entered in Inventory Items (10.250.00).

![Bill of Material Structure (11.320.00), Inventory Info tab](image)

Figure 35: Bill of Material Structure (11.320.00), Inventory Info tab

Following are the field descriptions for the Inventory Info tab of Bill of Material Structure (11.320.00).

**ID**

ID specifies the inventory ID of the selected component on this bill of materials.

**Note:** Component quantity that is allocated to a project by using the Project Allocated Inventory functionality cannot be used. If the inventory item has a mixture of project allocated inventory quantities and stock quantities, the bill of material will use only the stock quantity.

**Description**

Description contains an explanation of the inventory item specified in ID. This description appears on reports listing the item.

**Class ID**

Class ID associates the item with a specific product class (group of related items). Product classes help make reporting inventory information easier.

**Type**

Type specifies the item’s inventory classification: finished good, raw material, labor, etc. (an “item” can be a service). The software uses inventory types during cost calculations to determine which cost categories on the bills of materials to increment when processing the item. See Inventory Items (10.250.00) in the Inventory online help or user guide for more information).
Source

Source specifies how you typically acquire the item. Source options are:
- Manufactured — The item is produced in house.
- Outsourced — The item is produced by an outside supplier.
- Purchased — The item is purchased from an outside supplier.

Valuation Method

Valuation Method determines the way cost is attributed to the item. The default Inventory module valuation method is established in IN Setup (10.950.00). The valuation method options are:
- Average Cost — The item is valued at the weighted average cost of the quantity on hand.
- FIFO — The item is valued using the first-in-first-out method.
- LIFO — The item is valued using the last-in-first-out method.
- Specific Identification — The item is valued using the method that maintains specifically identified cost layers for items according to their lot or serial numbers.
- User-Specified Cost — The item receives its cost when you enter sales orders in the Order Management module.

Lot/Serial Tracked

Lot/Serial Tracked indicates where specific production lot numbers or individual serial numbers are assigned during production of this component.

Transaction Status

Transaction Status indicates whether certain transactions for an item can be performed. Transaction Status is pulled from Inventory Items (10.250.00).

Product Mgr ID

Product Mgr ID indicates the ID of the person responsible for overseeing the production to replenish stock of a manufactured item.

Material Type

Material Type is used to categorize common types of requested items within an organization. For Inventory, common material types are Accessory, Finished, Overhead, Packaging, Raw Material, Subassembly, and Misc. Material Type is pulled from Inventory Items (10.250.00).

Tax Category

Tax Category groups the item with other items subject to a similar tax treatment.

Stock Item

Stock Item indicates whether or not the inventory item is an item actually stocked by your business. If you select this option, the item is considered a stock item. Non-stock items are items for which you do not maintain on-hand quantities. Drop-ship items are non-stock items.

Verify Quantities

Verify Quantities specifies whether or not the software performs quantity checking for the item when it is entered on a sales order. Verify quantities options are:
- Yes — Verify the item’s available quantity when it is entered on a sales order. Depending on whether or not item quantity is sufficient to meet sales order requirements, the software displays the appropriate system message.
• No — Do not verify the item’s available quantity. It is useful for items that do not require close inventory control.

**Kit**

*Kit* specifies whether or not the item is an inventory kit. Kits are defined in *Kit Maintenance* (10.320.00).

**Custom Item**

*Custom Item* indicates whether the item is one of a kind or a limited run.

**Buyer**

*Buyer* indicates the name of the person responsible for replenishment of a purchased component.

**ABC Code**

*ABC Code* specifies the item’s sales significance to your business. Typically, Category A items are either very expensive or have a long lead time and are therefore very important for tracking in your business. Conversely, Category D items are low cost and readily available, and therefore do not require much attention. B and C items fall somewhere in between.

**Default Site ID**

*Default Site ID* specifies the inventory site where you normally store the item.

**Stocking UOM**

*Stocking UOM* specifies the unit of measure (lb., carton, bundle, etc.) used to stock the item in inventory. The stocking unit of measure appears as the default in *Receipt Entry* (10.010.00).

**Purchase UOM**

*Purchase UOM* specifies the unit of measure (lb., carton, bundle, etc.) used when placing a purchase order to replenish stock of this item. It appears by default in *Purchase Order* (04.250.00).

**Sales UOM**

*Sales UOM* specifies the unit of measure (lb., carton, bundle, etc.) used selling this item to customers. It appears by default in *Sales Orders* (40.100.00).

**Default Whse Loc**

*Default Whse Loc* displays the ID of the warehouse or location where you normally store the item.

**Mfg Class ID**

*Mfg Class ID* associates the item with a specific manufacturing class (group of related items). Manufacturing classes help make reporting inventory information easier.
Bill of Material Structure, Item Site Info Tab

The Item Site Info tab displays pertinent inventory information, at the site level, for the selected component.

![Bill of Material Structure (11.320.00), Item Site Info tab](image)

Following are the field descriptions for the Item Site Info tab of Bill of Material Structure (11.320.00).

**Site ID**

Site ID specifies the identification codes of the inventory storage facilities where the item is located.

**Product Mgr ID**

Product Mgr ID indicates the ID of the person responsible for overseeing the production to replenish stock of a manufactured item.

**Name**

Name contains a by-site explanation of the item’s site IDs (see Site ID).

**Method**

Method specifies the point (quantity level) at which to reorder the inventory item. Method is retrieved from the Inventory Items (10.250.00), Replenishments tab.

**Reorder Qty**

Reorder Qty displays the number of item units recommended for purchase each time the reorder recommendation occurs. Reorder Qty is retrieved from the Inventory Items (10.250.00), Replenishments tab.
Reorder Point

Reorder Point displays the item’s quantity-on-hand point at which a purchase order recommendation is issued. Reorder Point is retrieved from the Inventory Items (10.250.00), Replenishments tab.

Safety Stock

Safety Stock displays the quantity carried to compensate for forecast errors. It is used when calculating the order point. Safety Stock is retrieved from the Inventory Items (10.250.00), Replenishments tab.

Lead Time

Lead Time specifies the engineering time needed to complete the routing step. It is computed from engineering labor, machine, queue, and move hours.

Mfg Lead Time

Mfg Lead Time specifies the manufacturing time needed to complete the routing step.

Last

Last displays the most recent amount paid per stock unit for the item at this site. It is updated automatically by entries in Receipt Entry (10.010.00). The software automatically computes the last cost when you enter inventory receipts.

Average

Average specifies the average cost of the item. This is defined as the total amount paid for the item divided by the number of item units purchased when the quantity on hand at the site level is positive. If quantity on hand calculates to a negative value, then the average cost is not changed. It is the last cost if the quantity on hand is zero. It is not changed when the quantity on hand is negative.

The average cost amount is updated automatically by entries in Receipt Entry (10.010.00). Note that the software computes and stores average cost by individual inventory site, and uses the average cost from the appropriate site to compute cost-of-goods-sold for that site.

Standard

Standard specifies the costs used to value on-hand inventory and to cost transactions for items using the standard cost valuation method. You can enter standard costs for items using other valuation methods, but the software does not use these costs for valuation or costing. The Bill of Material module uses a component item's standard costs for computing the item's bill of material standard cost, regardless of the item's valuation method. The software uses current standard costs in an item site record to value the item's quantity on hand and to cost inventory transactions for that site only.

On Hand

On Hand specifies the total quantity of the item currently stored at this site.

Available

Available specifies the inventory item's total units available (for sale, etc.) at this site. The software calculates quantity available based on options selected in IN Setup (10.950.00). (See the Inventory online help or user guide for more information.)

Total Cost

Total Cost specifies the total value of all item units at this site. The software calculates total cost using the item's assigned costing method.
Inventory Status Inquiry (button)

Inventory Status Inquiry opens Inventory Status Inquiry (10.220.00), allowing you to view details about the item.
Bill of Material Structure (11.320.01)

You can access Bill of Material Structure (11.320.01) by clicking Component List on Bill of Material Structure (11.320.00). This screen lists each of the components for all levels of the selected bill of material individually.

Following are the field descriptions for Bill of Material Structure (11.320.01), Component List.

BOM Level

BOM Level indicates how deep in the bill this component resides. Unlike Bill of Material Maintenance (11.250.00), BOM Level shows all components in the entire bill, including subcomponents of subassemblies. The BOM Level will be displayed as 1 for all components that reside at the top level of this bill of material. Components of subassemblies at the top level will display a BOM Level of 2. This number can range from 1 to 25 (the maximum BOM level limit of this module.)

Sequence

Sequence automatically assigns numbers to components as they are added, starting with 10 and incrementing by 10 for each new component. Sequence numbers control the order that components are displayed in Bill of Material Maintenance (11.250.00) and in many reports.

Component ID

Component ID displays the inventory item ID for the component. A component can be any type of inventory item. If the component item also has a bill of material defined for it, this will be indicated in Subassy Bill Status, and then the components for this subassembly will appear below this item in the grid. A component ID can be used more than once in the same bill of material, but the sequence number must be unique for each occurrence.

Site ID

Site ID indicates where the production takes place and where inventory quantities and amounts for the item produced are incremented. If Bill of Material by Site is selected in Bill of Material Setup (11.950.00), Site ID reflects the site ID for this component. Otherwise, the software automatically sets the site ID to Global as specified in Bill of Material Setup (11.950.00).
Status

Status determines whether the component is currently in effect on this bill of material. The status options are:

- **Active** — The component is used for all transactions where a bill of material is appropriate, such as in purchase orders, sales orders, and production. An active component is also used to compute standard costs for the bill of material inventory item.

- **Pending** — The component cannot be used in transactions, and is only used to compute standard costs if the bill is also pending. A pending component is a component that is made active sometime in the future. Components can be pending for either an active or pending bill of material.

- **Obsolete** — The component cannot be used in transactions or to compute standard costs. An obsolete component is a component that was active in the past but has since been replaced by another component. Components can be obsolete for either an active or obsolete bill of material.

Routing Step

Routing Step links components to routing steps defined for this bill of material. This more accurately reports the timing of material requirements.

Subassembly Bill Status

Subassembly Bill Status indicates the condition of a subassembly bill of material. The subassembly status is different from the component status, however. Every component has a status, regardless of whether or not it is a subassembly. Each subassembly can have three separate bills of material – an active bill, a pending bill, and an obsolete bill. Subassembly Bill Status is used to select the appropriate subassembly bill for inclusion in this parent bill.

Stock Usage

Stock Usage indicates the usage of a subassembly during production, specifying whether the required quantity of a subassembly inventory item should be satisfied by using the stock quantity of the subassembly or by building more units of the subassembly from its components.

The possible values are:

- **None** — Used for components that are not assemblies, and gives a visual cue that there are no stock usage issues related to this component

- **Normal** — If sufficient quantity exists, use all the required units of this component subassembly from stock. If quantity is insufficient, use the subassembly units available, then build the remaining units from its components.

  Example: If a bill of material is entered that requires 50 units of subassembly X to complete production and only 20 units of X are in stock, use the 20 units and build 30 additional units from its components.

- **Build Only** — Regardless of whether any stock quantity exists, do not use any units of this component subassembly from stock. Instead, build all required units from its components.

  Example: If a bill of material is entered that requires 50 units of subassembly X to complete production and 20 units of X are in stock, build all 50 units from its components.

- **Stock Only** — Regardless of whether the stock quantity is sufficient, use all required units of this component subassembly from stock, even if it forces negative stock quantity.

  Example: If a bill of material has been entered that requires 50 units of subassembly X to complete production and 20 units of X are in stock, use all 50 units from stock without building any from its components.
Engr Qty

Engr Qty specifies the engineering quantity of the component needed per unit of the bill of material. This is the quantity that should be used under ideal conditions without any scrap.

Example: Fifty quarter-inch bolts are needed for a particular assembly. Two out of the 50 bolts are expected to be scrap. However, 50 is the quantity that the engineering drawings call for, so it is entered as the engineering quantity.

Standard Qty

Standard Qty specifies the expected quantity of the component needed per unit of the bill of material. It is calculated automatically and factored for scrap.

Example: Fifty quarter-inch bolts are needed for a particular assembly. Two out of the 50 bolts are expected to be scrap. Therefore, the standard quantity is 50 + (50 x 4%) = 52.

Scrap Pct

Scrap Pct specifies the component scrap factor percentage. The scrap factor is the percent of the component quantity that is expected to be discarded.

Example: Fifty quarter-inch bolts are needed for a particular assembly. Two out of the 50 bolts are expected to be rejected. Therefore, the scrap factor is: (2/50) x 100 = 4 %. A value of 4.0 should be entered in this field.

Start Date

Start Date specifies the date when this component will switch from Pending status to Active status on this bill of material.

Stop Date

Stop Date specifies the date when this component will switch from Active status to Obsolete status on this bill of material.

Change Order

Change Order specifies the order that authorizes the changes to the component. It is only to document the change — no processing is done based on the number entered. It appears in detailed bill of material reports.

Supersedes

Supersedes notes the component which this component replaces when it becomes active.

Superseded By

Superseded By notes the component that replaces this component when it becomes obsolete.
Component Where-Used (11.330.00)

The purpose of Component Where-Used (11.330.00) is to allow you to inquire “up” the bill of material, displaying all parents one level higher than the selected component. If the component is also a component of another bill, its parent is displayed when the folder is clicked on in the Folder Items list.

In the Folder Items area, a display is presented of all assemblies that contain the target component. Some of these assemblies may be subassemblies on other bills. As a result, this component exists in effect on the parents of the subassemblies as well. The folders of parent subassemblies may be expanded to see all of the bills on which these subassemblies exist. This expansion process may be performed until the ultimate top-level finished goods assembly is reached.

**Note:** When you specify a component to a different target location, the costs associated with the component are calculated from the target site, not the original site.

**Example:** If a component is built in Los Angeles and then sent to Malaysia for assembly, the part’s cost will reflect the cost to build the component in Malaysia, not the Los Angeles cost.

Detailed information relating to the highlighted item is displayed in the right side panel of the form. Clicking Component List opens the Component Where-Used List (11.330.02), which presents in text form the information displayed in the Folder Items area.

To access Component Where-Used (11.330.00), select Component Where Used from the menu.

![Component Where-Used (11.330.00)](image)

**Figure 38: Component Where-Used (11.330.00)**

Following are the field descriptions for Component Where-Used (11.330.00).

**ID**

ID specifies the inventory item ID that you wish to locate on target bills of material. ID, serving as a component ID, combined with Site ID and Status, identifies the target bills of material.
Description

*Description* contains a detailed description of the selected component to be located on all parent bills of material.

Status

*Status* indicates the status of the bills of material used to search for this component. Three separate versions can be specified for each assembly at each site — an active bill, a pending bill, and an obsolete bill.

Site ID

*Site ID* indicates the site ID of the bills of material used to search for this component. You may limit the search to a specific site, or you may select **All Sites** and leave *Site ID* blank to search for this component on all bills at all sites.

All Sites

Select **All Sites** to interrogate all bills of material for all sites to identify where the requested item is used as a component.

Refresh (button)

After making your selections, click **Refresh** to search for where the designated item is used as a component and display the results.
Component Where-Used, BOM Info Tab

The **BOM Info** tab displays the options selected for this component in the bill of material being viewed. This component can be assigned to multiple bills, and the options selected for its use may vary from bill to bill.

![Figure 39: Component Where-Used (11.330.00), BOM Info tab](image)

Following are the field descriptions for the **BOM Info** tab of **Component Where-Used** (11.330.00).

**BOM ID**

BOM ID specifies the inventory item ID for which to display the bill of material. BOM ID, combined with Site ID and Status, identifies the desired bill of material.

**Site ID**

Site ID indicates where inventory quantities and inventory valuation are incremented for the parent item of this bill. Lower level components and subassemblies of this bill may or may not be the same site.

**Subassy Bill Status**

Subassembly Bill Status indicates the status of the selected item. If the item is a subassembly the status may be Active, Pending, or Obsolete. If the item selected is not a subassembly, this value is None.

**Stock Usage**

Stock Usage indicates whether the required quantity of a subassembly inventory item should be satisfied by using the stock quantity of the subassembly or by building more units of the subassembly from its components. This is used to control usage of a subassembly during production.

The possible values are Normal, Build Only, Stock Only, and (None).
Description
Description contains a detailed description for this component on this bill of material.

Seq. No
Seq. No automatically assigns numbers to components as they are added.

Rtg Step
Rtg Step indicates if the item is tied to a routing step.

Stocking UOM
Stocking UOM specifies the unit of measure used for this component on this bill of material.

Scrap %
Scrap % specifies the component scrap factor percentage. The scrap factor is the percent of the component quantity expected to be discarded.

Engineered Quantity
Engineered Quantity specifies the amount of the component needed per unit of the bill of material. This is the quantity that should be used under ideal conditions without any scrap.

Standard Quantity
Standard Quantity specifies the expected quantity of the component needed per unit of the bill of material. It is calculated automatically and factored for scrap.

Start Date
Start Date specifies the date when this component is to become active on this bill of material.

Stop Date
Stop Date specifies the date when this component is to become obsolete on this bill of material.

Change Order
Change Order specifies the order that authorizes the changes to the component. This is a textual field only used to record an engineering change order number; it is not used in processing.

Supersedes
Supersedes notes the component which this component replaces when it becomes or became active.

Superseded By
Superseded By notes the component that replaces this component when it becomes or became obsolete.
Component Where-Used, Inventory Info Tab

The Inventory Info tab displays pertinent inventory information about the selected item, as entered in Inventory Items (10.250.00).

Following are the field descriptions for the Inventory Info tab of Component Where-Used (11.330.00).

**ID**

ID specifies the inventory ID of the selected component.

**Desc**

Desc contains an explanation of the inventory item specified by ID. This description appears on reports listing the item.

**Mfg Class ID**

Mfg Class ID associates the item with a specific manufacturing class (group of related items). Manufacturing classes help make reporting inventory information easier.

**Product Class ID**

Product Class ID associates the item with a specific product class (group of related items). Product classes help make reporting inventory information easier.

**Type**

Type specifies the item’s inventory classification: finished good, raw material, labor, etc. (an “item” can be a service). The software uses inventory types during cost calculations to determine which cost categories on the bills of materials to increment when processing the item. See the Inventory online help or user guide for more information.
Source

Source specifies how you typically acquire the item. Source options are:
- Manufactured — The item is produced in house.
- Outsourced — The item is produced by an outside supplier.
- Purchased — The item is purchased from an outside supplier.

Valuation Method

Valuation Method determines the way cost is attributed to the item (the default Inventory module valuation method is established in IN Setup (10.950.00). The valuation method options are:
- Average Cost — The item is valued at the weighted average cost of the quantity on hand.
- FIFO — The item is valued using the first-in-first-out method.
- LIFO — The item is valued using the last-in-first-out method.
- Specific Identification — The item is valued using the method that maintains specifically identified cost layers for items according to their lot or serial numbers.
- User-Specified Cost — The item receives its cost when you enter sales orders in the Order Management module.

Lot/Serial Tracked

Lot/Serial Tracked indicates where specific production lot numbers or individual serial numbers are assigned during production of this component.

Product Mgr ID

Product Mgr ID indicates the ID of the person responsible for overseeing the production to replenish stock of a manufactured item.

Tax Category

Tax Category groups the item with other items subject to a similar tax treatment.

Default Whse Loc

Default Whse Loc displays the ID of the warehouse or location where you normally store the item.

Stock Item

Stock Item indicates whether or not the inventory item is an item actually stocked by your business. If you select this option, the item is considered a stock item. Non-stock items are items for which you do not maintain on-hand quantities. Drop-ship items are non-stock items.

Verify Quantities

Verify Quantities specifies whether or not the software performs quantity checking for the item when it is entered on a sales order. Verify quantities options are:
- Yes — Verify the item’s available quantity when it is entered on a sales order. Depending on whether or not item quantity is sufficient to meet sales order requirements, the software displays the appropriate system message.
- No — Do not verify the item’s available quantity. It is useful for items that do not require close inventory control.

Kit

Kit indicates whether the item is an inventory kit. Kits are defined in Kit Maintenance (10.320.00).
**BOM**

*BOM* indicates whether the item is a bill of material.

**Custom Item**

*Custom Item* indicates whether the item is one of a kind or a limited run.

**Buyer**

*Buyer* contains the name of the person responsible for replenishment of a purchased component.

**ABC Code**

*ABC Code* specifies the item’s sales significance to your business. Typically, Category A items are either very expensive or have a long lead time and are therefore very important for tracking in your business. Conversely, Category D items are low cost and readily available, and therefore do not require much attention. B and C items fall somewhere in between.

**Default Site ID**

*Default Site ID* displays the inventory site where you normally store the item.

**Stocking UOM**

*Stocking UOM* specifies the unit of measure (lb., carton, bundle, etc.) used to stock the item in inventory. The stocking unit appears as the default in *Receipt Entry* (10.010.00).

**Purchase UOM**

*Purchase UOM* specifies the unit of measure (lb., carton, bundle, etc.) used when placing a purchase order to replenish stock of this item. It appears by default in *Purchase Order* (04.250.00).

**Sales UOM**

*Sales UOM* specifies the unit of measure (lb., carton, bundle, etc.) used selling this item to customers. It appears by default in *Sales Orders* (40.100.00).
Component Where-Used, Item Site Info Tab

The **Item Site Info** tab displays pertinent site-specific inventory information about the selected item, as entered in *Inventory Items* (10.250.00).

![Component Where-Used (11.330.00), Item Site Info tab](image)

Figure 41: Component Where-Used (11.330.00), Item Site Info tab

Following are the field descriptions for the **Item Site Info** tab of *Component Where-Used* (11.330.00).

**ID**

ID specifies the identification codes of the inventory storage facilities where the item is located.

**Name**

Name contains a by-site explanation of the item’s storage facility (see **ID**).

**Method**

Method specifies the point (quantity level) at which to reorder the inventory item. Method is retrieved from the *Inventory Items* (10.250.00), **Replenishments** tab.

**Reorder Qty**

Reorder Qty displays the number of item units recommended for purchase each time the reorder recommendation occurs. Reorder Qty is retrieved from the *Inventory Items* (10.250.00), **Replenishments** tab.

**Reorder Point**

Reorder Point displays the item’s quantity-on-hand point at which the software issues a purchase order recommendation. Reorder Point is retrieved from the *Inventory Items* (10.250.00), **Replenishments** tab.
Safety Stock
Safety Stock displays the quantity carried to compensate for forecast errors. It is used when calculating the order point. Safety Stock is retrieved from the Inventory Items (10.250.00), Replenishments tab.

Lead Time
Lead Time specifies the engineering time needed to complete the routing step. It is computed from engineering labor, machine, queue, and move hours.

Mfg Lead Time
Mfg Lead Time specifies the manufacturing time needed to complete the routing step.

Last
Last displays the most recent amount paid per stock unit for the item at this site. It is updated automatically by entries in Receipt Entry (10.010.00). The software automatically computes the last cost when you enter inventory receipts.

Average
Average specifies the average cost of item units purchased when the quantity on hand at the site level is positive. If quantity on hand calculates to a negative value, then the average cost is not changed. It is the last cost if the quantity on hand is zero. It is not changed when the quantity on hand is negative. The average cost amount is updated automatically by entries in Receipt Entry (10.010.00). Note that the software computes and stores average cost by individual inventory site, and uses the average cost from the appropriate site to compute cost-of-goods-sold for that site.

Standard
Standard specifies the costs used to value on-hand inventory and to cost transactions for items using the standard cost valuation method. You can enter standard costs for items using other valuation methods, but the software does not use these costs for valuation or costing. The Bill of Material module uses a component item’s standard costs for computing the item’s bill of material standard cost, regardless of the item’s valuation method. The software uses current standard costs in an item site record to value the item’s quantity on hand and to cost inventory transactions for that site only.

On Hand
On Hand specifies the total quantity of the item currently stored at this site.

On PO
On PO specifies the item’s total number of units currently on purchase orders at this site.

On Drop Ship
On Drop Ship specifies the item’s total number of units currently being drop shipped to or from at this site.

On Sales Order
On Sales Order specifies the item’s total number of units currently on sales orders at this site.

On Back Order
On Back Order specifies the item’s total number of units currently on back orders at this site.
Allocated

Allocated specifies the amount of the item that can be allocated to projects in the Project Controller module for this site. The allocated amount is updated by batches of inventory transactions that are on hold and by inventory quantities that are shipped but not yet invoiced.

Shipped not Invoiced

Shipped not invoiced specifies the amount of an item that has been shipped (and is therefore no longer physically in stock) but has not yet been invoiced.

Not Available

Not Available specifies the item’s total units in site locations (warehouses, bins, etc.) that are not included in quantity available calculations (see Available) for this site. Use Warehouse Location Maintenance (10.340.00) to designate site locations not included in quantity available calculations.

Available

Available specifies by inventory item’s total units available (for sale, etc.) at this site. The software calculates quantity available based on options selected in IN Setup (10.950.00) (see the Inventory online help or user guide for more information).

In Transit

In Transit specifies the selected item’s total quantity currently in transit to the site. This quantity includes items transferred from another site or warehouse bin location in a two-step type transfer generated in the Inventory module. Where the first step is complete but the second step is not. (The item has been removed from that site or bin location’s on-hand, but not yet received into the “to location” site or bin location.)

Total Cost

Total Cost specifies the total value of all item units at this site. The software calculates total cost using the item’s assigned costing method.
Process Screens

Apply Date-Effective Revisions (11.500.00)

Use **Apply Date-Effective Revisions (11.500.00)** to update the status of all or selected bills of material, components, and routings which have pending changes tied to start or stop dates.

**Example:** This process can change components with a pending status to active, if the start date for the component is on or before the date processed here. Similarly, this process can change parts with an active status to obsolete if their stop date is on or before the date provided.

**Apply Date-Effective Revisions (11.500.00)** provides a time-saving alternative to updating the status of bills of material, components, and routings by using the respective maintenance screens to change status one at a time. You can enter all effective dates into the system in advance of the actual date, and all planned changes are then implemented by this process, which “remembers” your planned effective date. Before running this process, you can preview the changes that are made by:

- Printing the **Bill of Material Lists (11.600.00)** report (single-level format), selecting either the bill of material or component status and start/stop dates.
- Printing **Routing List (11.700.00)**, selecting the routing status and start/stop dates.

At any time after the process is run, you can review which updates occurred by using the appropriate report (**Bill of Material Lists (11.600.00)** or **Routing List (11.700.00)**) and selecting the appropriate status and start/stop dates.

Standard costs are not automatically recomputed by **Apply Date-Effective Revisions (11.500.00)**. Bills of material and routings that have been changed need to be recosted using **Compute Cost Rollup (11.540.00)** and **Update Standard Costs from Pending (11.530.00)**.

You should include the **Apply Date-Effective Revisions (11.500.00)** process in a regularly scheduled process stream, so that all changes take effect on the appropriate days.

The information in the grid gives you a preview of which bills of material, routings, and components will be updated by this process. You cannot enter additional items directly in the grid; however, you can delete items from the grid so that they are not processed.

![Figure 42: Apply Date-Effective Revisions (11.500.00)](image-url)
Following are the field descriptions for Apply Date-Effective Revisions (11.500.00).

**Effective Date Update Option**

**Effective Date Update Option** allows you to choose the option you want to update. The choices are:

- **Bill of Material Records**
  - Looks at and updates the status of the entire bill of material in the header area of *Bill of Material Maintenance* (11.250.00) plus the status of the associated routing (if any) in *Routing Maintenance* (11.260.00).
  - Looks at Start/Stop Date in the Engineering Control tab in *Bill of Material Maintenance* (11.250.00).
  - During processing, the start date looks for Pending status; if found and the date is on or before the process control date entered in Effective Date of Apply Date-Effective Revisions (11.500.00), then the process updates the status to Active of both the parent bill of material and its associated routing if a routing exists.
  - During processing, the stop date looks for Active status; if found and the date is on or before the process control date entered in Effective Date of Apply Date-Effective Revisions (11.500.00), then the process updates the status to Obsolete of both the parent bill of material and its associated routing if a routing exists.

- **Components**
  - Looks at and updates the grid level status of the component in *Bill of Material Maintenance* (11.250.00).
  - Looks at Start/Stop Date in the grid level for each component in *Bill of Material Maintenance* (11.250.00).
  - During the processing logic, the start date looks for Pending status; if found and the date is less than or equal to the process control date entered in Effective Date of Apply Date-Effective Revisions (11.500.00), then the process updates the status to Active.
  - During the processing logic, the stop date looks for Active status; if found and the date is less than or equal to the process control date entered in Effective Date of Apply Date-Effective Revisions (11.500.00), then the process updates the status to Obsolete.

**Effective Date**

**Effective Date** specifies the desired system cutoff date for this process. If a bill of material, component, or routing with a pending status has a start date on or before the effective date, then the Apply Date-Effective Revisions (11.500.00) process makes the selected record active. If a bill of material, component, or routing with a status of active has a stop date on or before the effective date, the process makes the selected record obsolete.

**All Items**

Select **All Items** to apply date-effective revisions for all underlying items falling within the selected update option. If you select **All Items**, do not enter information in BOM ID, Component ID, or Site ID — they are only used to select specific items for processing.

**BOM ID**

**BOM ID** together with **Site ID** identifies a selected bill of material or routing for which you want to apply date-effective revisions. The bills of material or routings that fit the ID or mask entered at **Bill of Material ID** appear in the grid after you click **Select Items**. Note that **BOM ID** only appears when you have selected the Effective Date Update Option of **Bill of Material Records**.

Use ? and * to mask the value in each of these fields. For example, ?R* would show all bills of material with any character in position 1, an R in position 2, and any characters in the remaining positions.
Site ID
During processing bill of material records, Site ID together with BOM ID identifies the site where production takes place for the selected bill of material or routings for which you want to use the apply date-effective revisions. The bills of material or routings that fit the site ID entered appear in the grid after you click Select Items.

When processing components, the site ID together with the component ID, identify the site where inventory is drawn for the component that you want to select for date-effective revision processing. Components that fit the site ID entered appear in the grid after you click Select Items.

Multi-Company: The possible value on the site ID only returns valid sites for the company into which you are currently logged.

Select Items (button)
Click Select Items to find and display in the grid the bills of material, routings or components that match your selection criteria and are to be processed. If you selected the All Items above, then clicking Select Items is not required. If you entered values in the selection fields (BOM ID or Component ID) then clicking Select Items is required, and the bills of material, components and routings that fit the selection fields are displayed in the grid.

BOM ID (detail)
BOM ID identifies the bills of material or routings that fit the ID or mask entered at Bill of Material ID. They appear in the grid after you click Select Items.

BOM Site ID
BOM Site ID displays the site ID of the selected bill of material entered at the site. The bills of material that fit the site entered in Site ID appear in the grid after you click Select Items.

BOM Status
BOM Status displays the status of the selected bill of material for which you want to apply date-effective revisions.

Component ID
Component ID identifies a component for which you want to apply date-effective revisions. The component that fits the ID or mask entered at Component ID appears in the grid after you click Select Items.

Site ID
Site ID identifies the site where production takes place for the selected component for which you want to apply date-effective revisions. The component that fits the site ID entered appears in the grid after you click Select Items.

Status
Status displays the status of the selected component for which you want to apply date-effective revisions. The component that fits the status entered appears in the grid after you click Select Items.

Start Date
Start Date specifies when the status of the component will change. If the start date for this component on the bill is on or before the specified effective date, and the status of the component is Pending, then the status for this component will be changed to Active.
Stop Date

Stop Date specifies when the status of this component will change. If the stop date for this component on the bill is on or before the specified effective date and the status of this component is Active, then the status for this component will be changed to Obsolete.

Begin Processing (button)

Click Begin Processing to begin the Apply Date-Effective Revisions (11.500.00) process. At this point, the selected components or bills will be modified and changes will be made to the status values, with components changing from pending to active and active to obsolete where the appropriate date ranges apply. The results of this process will be recorded in an event log file, which should be reviewed using the Event Log Viewer.
Mass Component Maintenance (11.510.00)

Use Mass Component Maintenance (11.510.00) to update a specific component for all or selected occurrences in bills of material. This process provides a time-saving alternative to updating a component in all or selected bills of material using Bill of Material Maintenance (11.250.00) where you modify these bills individually.

The Mass Component Maintenance (11.510.00) process enables you to do any of the following maintenance operations on a component when it appears in all or selected bills of material:

- Delete a specified component
- Delete a specified component and replace it with another component
- Find a specified component and add another component
- Find a specified component and modify it

Before using Mass Component Maintenance (11.510.00), you can preview the bills of material that you are changing by printing the Component Where-Used Lists (11.610.00) report (Single Level format), and selecting the component that you plan to update.

Standard costs are not automatically recomputed by this process. Bills of material that have been changed may need to be recosted using the Compute Cost Rollup (11.540.00) and Update Standard Costs from Pending (11.530.00) processes.

Figure 43: Mass Component Maintenance (11.510.00)

Following are the field descriptions for Mass Component Maintenance (11.510.00).

Update Option

Update Option specifies the type of maintenance you want to perform. The maintenance options are:

- Delete Components — Delete a specified component.
- Replace Components — Delete a specified component and replace it with another component.
**Example:** You could find all occurrences of Component X in bills of material, delete them, and replace them with Component Y.

- **Find / Insert Components** — Find a specified component and insert another component into the same bills of material.

**Example:** You could find all occurrences of Component X in bills of material and add Component Y into those same bills of material.

- **Modify Components** — Find a specified component and modify one or more of the fields for that component.

**Example:** You could find all occurrences of Component X in bills of material and set the Stop Date to 01/01/00, or you could change its quantity per parent.

**Original Component Selection (Frame)**

Use Original Component Selection to select the component or components to update.

**Component (Original Component Selection)**

**Component** specifies the inventory ID for the original component that you want to update. The components that match the component ID and site ID you enter appear in the grid after you click **Select Components**.

**Site ID (Original Component Selection)**

**Site ID** specifies the site for the original component that you want to update (there is a site ID for each component in a bill of material).

**Status (Original Component Selection)**

**Status** indicates the status for the original component that you want to update. If you want to update all occurrences of a component regardless of the status, select **All Statuses**. If you want to update only those occurrences of a component with a specific status, enter that status. The components that match the status and site ID you enter appear in the grid after you click **Select Components**. The possible status values are:

- All Statuses — All occurrences of this component regardless of status are processed.
- Active — Only occurrences of this component with an active status are processed.
- Pending — Only occurrences of this component with a pending status are processed.
- Obsolete — Only occurrences of this component with an obsolete status are processed.

**New Component Selection (Frame)**

Use **New Component Selection** to enter new parts.

**Component (New Component Selection)**

**Component** specifies the inventory ID for the new component that you want to add to a bill of material. The new component that you enter appears in the grid on the same line with the original component after you click **Select Components**. Only enter a new component if you selected one of the following for the **Update Option**:

- Replace Components (If you do not enter a new component, then the original component is deleted without adding a new component.)
- Find / Insert Components
Site ID (New Component Selection)

Site ID specifies the site for the new component that you want to add to bills of material. The site ID for the new component appears in the grid on the same line with the original component after you click Select Components.

Status (New Component Selection)

Status indicates the status for the new component that you want to add to bills of material. If you want the status of the new component to be set to the status of the original component, select All Statuses. If you want the status of the new component to be a specific value, then select that value. The status for the new component appears in the grid on the same line with the original component after you click Select Components.

The possible status values are:

- All Statuses — Make the status of the new component the same as the status of the original component.
- Active — Make the status of the new component Active even if the original component was not active.
- Pending — Make the status of the new component Pending even if the original component was not pending.
- Obsolete — Make the status of the new component Obsolete even if the status of the original component was not obsolete.

Additional Fields Frame

Additional Fields displays additional fields that can be entered. The purpose of this subscreen is to enter values which differ from the “original” values of the selected components, should you choose not to use the Mass Component Maintenance (11.510.00) Detail area to accomplish the same thing. Fields you can edit here are:

- Start Date — The date you want a new component to become active. You can modify this value if you wish. When you use Apply Date-Effective Revisions (11.500.00) and enter a date that is less than or equal to this date, the component becomes active.
- Stop Date — The date you want the new component to become obsolete. You can modify this value if you wish. When you use Apply Date-Effective Revisions (11.500.00) and enter a date in that screen that is less than or equal to this date, the component becomes obsolete.
- Component Qty — The component quantity is the engineered quantity of the component needed per unit of the bill of material. You can modify this value if you wish. The engineered quantity is the quantity that would be used under ideal conditions, without any scrap.
- Scrap % — The component scrap factor percentage. You can modify this value if you wish. The scrap factor is the percent of the component quantity which is expected to be discarded and/ or scrapped during the production process.

Original Component ID

Original Component ID specifies the inventory item ID for the original component record that is selected for processing.

Original Site ID

Original Site ID indicates the site of the component detail record in the bill for the original component selected for processing.

Original Status

Original Status indicates the status for the original component selected for processing.
New Component ID
New Component ID specifies the inventory item ID to be added to all component records that are selected for processing. A value is only displayed if a new component was entered above.

New Site ID
New Site ID indicates where the production takes place for the new component to be added to all component records selected for processing. A value is only displayed if a new component was entered.

New Status
New Status indicates the status for the new component to be added to all component records selected for processing. A value is only displayed if a new component was entered above.

Start Date
Start Date specifies the date you want a new or pending component to become active. You can modify this date if you wish. When you use Apply Date-Effective Revisions (11.500.00) and enter a date that is on or after the start date entered here, the component becomes active.
If the component is already active, you can still enter a date to document when it became active.

Stop Date
Stop Date specifies the date you want the new or existing component to become obsolete. You can modify this date if you wish. When you use Apply Date-Effective Revisions (11.500.00) and enter a date that is on or after the stop date entered here, the component becomes obsolete.
If the component is already obsolete, you can still enter a date to document when it became obsolete.

Quantity Per
Quantity Per indicates the engineering quantity of the component needed per unit of the bill of material. You can modify this value if you wish. The engineering quantity is the quantity that would be used under ideal conditions, without any scrap.

Example: 50 quarter-inch bolts are needed for a particular assembly. Two out of the 50 bolts are expected to be scrap; however, 50 is the quantity that the engineering drawings call for so it is entered as the engineering quantity.

Scrap Percent
Scrap Percent specifies the component scrap factor percentage. You can modify this value if you wish. The scrap factor is the percent of the component quantity that is expected to be discarded during the production process.

Example: 50 quarter-inch bolts are needed for a particular assembly. Two out of the 50 bolts are expected to be scrapped; therefore, the scrap factor is: \( \frac{2}{50} \times 100 = 4\% \). Enter 4.0 in this field.

BOM ID
BOM ID specifies a unique identifying code used to identify the bill of the material (parent item) to which the original component selected for processing belongs. This value cannot be modified.

BOM Site ID
BOM Site ID specifies the site for the bill of material ID (parent item) of each original component record that is selected for processing. This value cannot be modified.

Multi-company: The possible value on the site ID only returns valid sites for the company into which you are currently logged.
BOM Status

**BOM Status** indicates the bill of material status for the bill of material ID (parent item) for each original component record that has been selected for processing. This value cannot be modified.

**Select Components (button)**

**Select Components** displays the components that are to be processed in the grid. The components must be selected before you click **Begin Processing**. Once the grid is populated with the components to be processed, you can do the following to control updates:

- Delete lines from the grid so that the components on those lines are not updated.
- Edit grid lines to change how the component is updated.

**Clear Selections (button)**

**Clear Selections** clears the display in the grid so that no components are selected to be processed. This is typically done when you want to change one or more of the fields for the original or new component and repopulate the grid.

**Begin Processing (button)**

**Begin Processing** starts the **Mass Component Maintenance (11.510.00)** process.
Update Pending Costs/Rates (11.520.00)

Use the Update Pending Costs/Rates (11.520.00) process to make mass changes to pending standard costs and rates whenever you make similar cost changes to multiple items.

This process provides an alternative to updating each item one at a time, and provides a number of ways to automatically compute rates.

This screen is two-tiered in its mass update capability: Tier 1 identifies the type of records to be updated by this process:

- Component Pending Costs
- Bill of Material and Routing Records
- Labor Rates in Labor Class
- Labor Overhead Rates in Work Center
- Machine Overhead Rates in Work Center
- Material Overhead Rates in Product Class

Tier 2 identifies the method to be applied to carry out these updates (not all methods apply to all types of records to be updated).
The following table shows which methods are appropriate for each record type:

<table>
<thead>
<tr>
<th>Record Type</th>
<th>Rate Update Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current pending cost/rate ± amount or percent</td>
<td>X</td>
</tr>
<tr>
<td>Current standard cost/rate ± amount or percent</td>
<td>X</td>
</tr>
<tr>
<td>Zero out pending costs</td>
<td>X</td>
</tr>
<tr>
<td>Recompute material overhead rates</td>
<td>X</td>
</tr>
<tr>
<td>Last costs</td>
<td>X</td>
</tr>
<tr>
<td>Average costs</td>
<td>X</td>
</tr>
</tbody>
</table>

- **Component Pending Costs:**
  - X
  - X
  - X
  - X
  - X

- **Bill of Material and Routing Pending Costs:**
  - X (note that remaining costs are derived from roll ups)

- **Labor Rates in Labor Class:**
  - X
  - X
  - X

- **Material O/H Rates in product class:**
  - X
  - X

- **Machine O/H Rates in Work Center:**
  - X
  - X

- **Labor O/H Rates in Work Center:**
  - X
  - X

See “Update Pending Costs/Rates (11.520.00) worksheet example.”

Only pending standard costs and rates are updated, not current standard costs and rates. Use the Update Standard Costs from Pending (11.530.00) process to update current standard costs and rates after you have rolled up all costs using the Compute Cost Rollup (11.540.00) process.
Update Pending Costs/Rates (11.520.00) is typically used toward the beginning of the standard cost update cycle in preparation for the start of a new fiscal year. It is used to load initial values into Pending Standard Cost and Rate. You can then review and analyze these values using various reports and modify them individually until they are ready to become current standard costs and rates.

Compute Cost Rollup (11.540.00) must be run after this process to test the impact of pending cost changes for components and overhead rates on subassemblies and final assemblies.

### Update Pending Costs/Rates 11.520.00

**METHOD**

<table>
<thead>
<tr>
<th>CURRENT PENDING COST/PRICE +/− AMT/PCT</th>
<th>CURRENT STANDARD COST/PRICE +/− AMT/PCT</th>
<th>ZERO OUT PENDING COSTS</th>
<th>AVERAGE COSTS</th>
</tr>
</thead>
</table>

**METHOD FUNCTIONALITY**

- Applies the DOLLAR AMOUNT or PERCENT specified to existing pending costs to create new pending costs.
- Applies the DOLLAR AMOUNT or PERCENT specified to current standard costs to create new pending costs.
- Zeros out all costs in "PENDING" fields
- MACHINE OVERHEAD FROM PRODUCT CLASS PENDING RATES (note: subassemblies and end items, not components)
- MACHINE OVERHEAD RATES IN WORK CLASS (note: subassemblies and end items, not components)
- MATERIAL OVERHEAD RATES IN PRODUCT CLASS (note: subassemblies and end items, not components)
- LABOR RATES IN LABOR CLASS (note: subassemblies and end items, not components)

**UPDATE OPTION:**

- **Component Pending Costs**
  - Current Pending Cost/Rate +/− Amt/Pct
  - Current Standard Cost/Rate +/− Amt/Pct
  - Zero Pending Costs
  - Average Costs

- **BOM and Routing Pending Costs**
  - Zero Out Pending Costs
  - Average Costs

- **Labor Rates in Labor Class**
  - Current Pending Cost/Rate +/− Amt/Pct
  - Current Standard Cost/Rate +/− Amt/Pct
  - Zero Out Pending Costs

- **Material Overhead Rates in Product Class**
  - Current Pending Cost/Rate +/− Amt/Pct
  - Current Standard Cost/Rate +/− Amt/Pct
  - Zero Out Pending Costs

- **Machine Overhead Rates in Work Center**
  - Current Pending Cost/Rate +/− Amt/Pct
  - Current Standard Cost/Rate +/− Amt/Pct
  - Zero Out Pending Costs

- **Labor Overhead Rates in Work Center**
  - Current Pending Cost/Rate +/− Amt/Pct
  - Current Standard Cost/Rate +/− Amt/Pct
  - Zero Out Pending Costs

**FIELDS UPDATED:**

- Pending Costs/Rates
- Pending Standard Costs
- Pending Current Costs
- Pending Standard Rates
- Pending Current Rates
- Average Costs
- Pending Component Costs
- Pending Component Rates
- Pending Component Average Costs

**SCREENS UPDATED:**

- BM Work Center Maintenance
- BM Maintenance
- BM Labor Class Maintenance
- BM Routing Maintenance
- BM Cost
- BM Pending Std Costs
- BM Routing Std Costs
- BM Site Details Button
- BM Site Details Cost/Price tab

**METHOD OF UPDATE:**

- Current Pending Cost/Rate +/− Amt/Pct
- Current Standard Cost/Rate +/− Amt/Pct
- Zero Out Pending Costs
- Average Costs

**METHOD FUNCTIONALITY:**

- Applies the DOLLAR AMOUNT or PERCENT specified to 'current standard' costs to create 'new' pending costs.
- Zeros out all costs in "PENDING" fields
- Machine Overhead Rates in Work Class (note: subassemblies and end items, not components)
- Material Overhead Rates in Product Class (note: subassemblies and end items, not components)
- Labor Rates in Labor Class (note: subassemblies and end items, not components)

**SPECIAL NOTES:**

- Note: subassemblies and end items, not components
- This option also updates the fixed and variable fields in Inventory Maintenance etc.
- This option updates pending costs for components in both the Kit and Routing tables. You can view these pending costs in Bill of Material Maintenance (11.250.00) by clicking Standard Costs, or in the Routing Maintenance (11.260.00) by clicking Pending Std Costs. This option is not the same as using Compute Cost Rollup (11.540.00). Compute Cost Rollup (11.540.00) processes the pending costs in components and routing steps to compute pending costs for the bill of material and the routing.

**Labor Rates in Labor Class**

- This option updates pending labor overhead rates that are stored in the Labor Class table. You can view these rates in Labor Class Maintenance (11.290.00).

---

**Figure 45: Update Pending Costs/Rates (11.520.00) worksheet example**

Following are the field descriptions for Update Pending Costs/Rates (11.520.00).

**Pending Cost/Rate Update Option**

Pending Cost/Rate Update Option along with the Method of Update determines which costs/rates get updated and how they get updated. Following are the update options:

- **Component Pending Costs** — This option updates pending costs for components in both the Inventory and Item/Site tables. You can view these pending costs in Inventory Items (10.250.00) by clicking on the Cost/Price tab or Site Detail.

- **BOM and Routing Pending Costs** — This option updates pending costs for bills of material and routings in both the Kit and Routing tables. You can view these pending costs in Bill of Material Maintenance (11.250.00) by clicking Standard Costs, or in the Routing Maintenance (11.260.00) by clicking Pending Std Costs. This option is not the same as using Compute Cost Rollup (11.540.00). Compute Cost Rollup (11.540.00) processes the pending costs in components and routing steps to compute pending costs for the bill of material and the routing.

- **Labor Rates in Labor Class** — This option updates pending labor overhead rates that are stored in the Labor Class table. You can view these rates in Labor Class Maintenance (11.290.00).
- **Material Overhead Rates in Product Class** — This option updates pending material overhead rates that are stored in the Product Class table. You can view these rates in *Product Classes* (10.280.00). This option does not update the material overhead pending costs for components; it only updates the rates used to compute these costs. Use the Component Pending Costs option with the Recompute option at **Method of Update** to update material overhead pending costs for components. If *Bill of Material Maintenance* (11.250.00) is flagged as Material Overhead Not Used, then these rates in product class are ignored.

- **Machine Overhead Rates in Work Center** — This option updates pending machine overhead rates stored in the Work Center table. You can view these rates in *Work Center Maintenance* (11.270.00).

- **Labor Overhead Rates in Work Center** — This option updates pending labor overhead rates stored in the Work Center table. You can view these rates in *Work Center Maintenance* (11.270.00).

**Method of Update**

**Method of Update** together with the **Pending Cost/Rate Update Option** determines which costs or rates get updated and how they are updated. Enter one of the following update options:

- **Current Pending Cost/Rate ± Amt/Pct** — This option updates pending costs and rates by multiplying the existing pending cost or rate by a specified percent or by adding a specified amount.

  **Example:** Suppose an existing pending rate is $10. If you select this option and enter 20.00 in change percent, the new pending rate is $12. If the existing pending rate is $10 and you enter -1.00 in change amount, the new pending rate is $9.

You may not always want to apply the same rates/amounts to all three cost categories of direct cost, fixed cost and variable cost. The software allows you to flexibly enter different rates or amounts for all three of these cost categories.

- **Current Standard Cost/Rate ± Amt/Pct** — This option updates pending costs and rates by multiplying the current standard cost or rate by a specified percent, or by adding a specified amount.

  **Example:** Suppose a current standard rate is $10. If you select this option and enter 20.00 in change percent, then the new pending rate is $12. If the current standard rate is $10 and you enter -1.00 in change amount, then the new pending rate is $9. Current standard costs and rates remain unchanged — only pending costs and rates are updated. This is true for all options in this screen.

- **Zero Out Pending Costs** — This option zeros out existing pending costs and rates.

- **Recompute Matl O/H if Applicable** — This option only applies if Component Pending Costs is selected at **Pending Cost/Rate Update Option**. This option recomputes the pending material overhead standard costs for component items based on the pending material overhead rates that can be viewed in *Product Classes* (10.280.00). The pending material overhead standard costs for component items can be viewed in *Inventory Items* (10.250.00).

- **Last Cost (Components)** — This option only applies if Component Pending Costs is selected at **Pending Cost/Rate Update Option**. This option copies the last cost for each component item into **Pending Standard Cost** in both the Inventory and Item/Site tables. Only the direct portion of **Pending Standard Cost** is updated, the material overhead portions are not. The material overhead portions can be updated by selecting the Recompute Matl O/H if Applicable option.

- **Average Cost (Components)** — This option only applies if Component Pending Costs is selected at **Pending Cost/Rate Update Option**. This option copies the average cost for each component item into **Pending Standard Cost** in both the Inventory and Item/Site tables. Only the direct portion of pending standard cost is updated, the material overhead portions are not. The material overhead portions can be updated by selecting the Recompute Matl O/H if Applicable option.
Bill of Material

All Items
Select All Items to update pending costs for all items of the type specified at Pending Cost/Rate Update Option. If you select All Items, do not enter the BOM ID, Work Center, Labor Class or Product Class ID — they are only used to select certain items for processing.

Select Items (button)
Select Items allows you to select which items to update. This is only possible, however, if one of the fields listed below is selected in the Selection Criteria frame for the selected Pending Cost/Rate Update Option. Once Select Items is clicked, or All Items is selected, the grid fills with the selected records.

- Component Pending Costs — Inventory ID is enabled. For more information see Inventory ID below.
- BOM and Routing Pending Costs — BOM ID/Site ID are enabled. For more information, see BOM ID and Site ID below.
- Labor Rates in Labor Class — Labor Class is enabled. For more information, see Labor Class below.
- Labor Overhead Rates in Work Center — Work Center is enabled. For more information, see Labor Class below.
- Material Overhead Rates in Product Class — Product Class ID is enabled. For more information, see Class ID below.
- Machine Overhead Rates in Work Center — Work Center is enabled. For more information, see Work Center below.

Direct
Direct specifies whether or not the pending cost or rate update applies to direct costs. Select Direct to apply the update to direct costs.

Direct Amount
Direct Amount specifies the dollar amount that you want added or subtracted from the pending cost or rate of direct costs. Direct Amount only applies if you have selected one of the following in Method of Update:

- Current Pending Cost/Rate ± Amt/Pct
- Current Standard Cost/Rate ± Amt/Pct
- Last Cost (Components)
- Average Cost (Components)

Direct Percent
Direct Percent specifies the percent that you want added or subtracted from the pending cost or rate of direct costs. Direct Percent only applies if you have selected one of the following in Method of Update:

- Current Pending Cost/Rate ± Amt/Pct
- Current Standard Cost/Rate ± Amt/Pct
- Last Cost (Components)
- Average Cost (Components)

Fixed
Fixed specifies whether or not the pending cost or rate update applies to fixed costs. Select Fixed to apply the update to fixed costs.
Fixed Amount

Fixed Amount specifies the dollar amount that you want added or subtracted from the pending cost or rate of fixed costs. Fixed Amount only applies if you have selected one of the following in Method of Update:

- Current Pending Cost/Rate ± Amt/Pct
- Current Standard Cost/Rate ± Amt/Pct
- Last Cost (Components)
- Average Cost (Components)

Fixed Percent

Fixed Percent specifies the percent that you want added or subtracted from the pending cost or rate of fixed costs. Fixed Percent only applies if you have selected one of the following in Method of Update:

- Current Pending Cost/Rate ± Amt/Pct
- Current Standard Cost/Rate ± Amt/Pct
- Last Cost (Components)
- Average Cost (Components)

Variable

Variable specifies whether or not the pending cost or rate update applies to variable costs. Select Variable to apply the update to variable costs.

Variable Amount

Variable Amount specifies the dollar amount that you want added or subtracted from the pending cost or rate of variable costs. Variable Amount only applies if you have selected one of the following in Method of Update:

- Current Pending Cost/Rate ± Amt/Pct
- Current Standard Cost/Rate ± Amt/Pct
- Last Cost (Components)
- Average Cost (Components)

Variable Percent

Variable Percent specifies the percent that you want added or subtracted from the pending cost or rate of variable costs. Variable Percent only applies if you have selected one of the following in Method of Update:

- Current Pending Cost/Rate ± Amt/Pct
- Current Standard Cost/Rate ± Amt/Pct
- Last Cost (Components)
- Average Cost (Components)

Masking

The following fields may be used for identifying selection criteria for filling the grid. Wild cards may be used in filling in the mask. Use ? and * to mask the value in each of these fields. For example, ?R* would show all bills of material with any character in position 1, an R in position 2, and any characters in the remaining positions.

BOM ID

BOM ID or mask identifies a selected bill of material or routing for which you want to update pending costs. The bills of material and routings that fit the ID or mask entered at BOM ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The bill of material
ID only enables if the BOM and Routing Pending Costs option is selected at Pending Cost/Rate Update Option.

Site ID
Site ID identifies the site of the selected bills of material or routings for which you want to update pending costs. The bills of material or routings that fit the site ID entered here appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The site ID only enables if BOM and Routing Pending Costs is selected at Pending Cost/Rate Update Option. Multi-company: The possible value on the site ID only returns valid sites for the company into which you are currently logged.

Inventory ID
Inventory ID identifies the selected component items for which you want to update pending costs. The component items that fit the inventory ID entered in Inventory ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The inventory ID only enables if Component Pending Costs is selected at Pending Cost/Rate Update Option.

Work Center
Work Center identifies the selected work centers for which you want to update pending machine and labor overhead rates. The work centers that fit the work center ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The work center ID only enables if the Machine Overhead Rates in Work Center or Labor Overhead Rates in Work Center option is selected at Pending Cost/Rate Update Option.

Labor Class
Labor Class or mask identifies the selected labor classes for which you want to update pending labor rates. The classes that fit the labor class ID entered in Labor Class appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The labor class ID only enables if the Labor Rates in Labor Class option is selected at Pending Cost/Rate Update Option.

Product Class ID
Product Class or mask identifies the selected product classes for which you want to update pending material overhead rates. The classes that fit the product class ID entered in Product Class ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The class ID only enables if the Material Overhead Rates in Product Class option is selected at Pending Cost/Rate Update Option.

Begin Processing (button)
Begin Processing begins the Update Pending Costs/Rates (11.520.00) process.
**Update Standard Costs from Pending (11.530.00)**

*Update Standard Costs from Pending (11.530.00)* is typically used at the end of the standard cost update cycle in preparation for the start of a new fiscal year. It is used after pending standard costs and rates have been computed, reviewed, and analyzed, and are ready to become current standard costs and rates. You can use several reports to preview the changes that are made by running this process, including:

- **Standard Cost Detail Report (11.620.00)**
- **Standard Cost Change Preview (11.630.00)** report

![Update Standard Costs from Pending (11.530.00)](image)

**Figure 46: Update Standard Costs from Pending (11.530.00)**

Following are the field descriptions for *Update Standard Costs from Pending (11.530.00).*

**Standard Cost Update Option**

The **Standard Cost Update Option** determines which costs/rates get updated. Enter one of the following update options:

- **BOM/Inventory/Itemsite/Routing** — This option updates standard costs for bills of material and routings (but not components) in both the Kit and Routing tables, and the corresponding standard costs in the Inventory and Item/Site tables. These are the standard costs that can be viewed in the following screens:
  - Bill of Material Maintenance (11.250.00) by clicking **Standard Costs**.
  - Routing Maintenance (11.260.00) by clicking **Pending Std Costs**.
  - Inventory Items (10.250.00) by clicking the **Cost/Price tab**, if the site updated is equal to **Global Site ID** in Bill of Material Maintenance (11.950.00), or **Site Detail**.

- **Inventory/Item Site for Components Items** — This option updates standard costs for components in both the Inventory and Item/Site tables. These are the standard costs that can be viewed in **Inventory Items (10.250.00)** by clicking **Std Cost Breakout** or **Site Detail**.

- **Work Center** — This option updates standard Labor overhead rates stored in the Work Center table. These rates can be viewed in **Work Center Maintenance (11.270.00)**.
• Product Class — This option updates standard material overhead rates that are stored in the Product Class table. These rates can be viewed in Product Classes (10.280.00). This option does not update the material overhead standard costs for components; only the rates used to compute these costs.

• Labor Class — This option updates standard labor overhead rates that are stored in the Labor Class table. These rates can be viewed in Labor Class Maintenance (11.290.00).

• All of the Above — This option provides a “shortcut” to copy all of your pending standard costs to the current standard costs for the selected items to be processed. It performs the updates described for “all/each” of the individual options in the option list for Standard Cost Update Option (one after the other).

All Items

Select All Items to update standard costs for all items of the type specified at Standard Cost Update Option. If you select All Items, do not enter the BOM ID, Work Center, Labor Class or Product Class ID — they are only used to select certain items for processing.

BOM ID

BOM ID or mask identifies a selected bill of material or routing for which you want to update standard costs. The bills of material and routings that fit the ID or mask entered at BOM ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items.

Site ID

Site ID specifies the identification codes of the inventory storage facilities where the item is located.

Inventory ID

Inventory ID identifies the selected component items for which you want to update standard costs. The component items that fit the inventory ID entered in Inventory ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The inventory ID only appears if Component Standard Costs is selected in Standard Cost Update Option.

Work Center

Work Center identifies the selected work centers for which you want to update standard machine or labor overhead rates. The work centers that fit the work center ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The work center ID only appears if the Machine or Labor Overhead Rates in Work Center options are selected at Standard Cost Update Option.

Labor Class

Labor Class or mask identifies the selected labor classes for which you want to update pending labor rates. The classes that fit the labor class ID entered in Labor Class appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The labor class ID only appears if the Labor Rates in Labor Class option is selected at Standard Cost Update Option.

Product Class ID

Product Class ID or mask identifies the selected product classes for which you want to update pending material overhead rates. The classes that fit the product class ID entered in Product Class ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The product class ID only appears if the Material Overhead Rates in Product Class option is selected for Standard Cost Update Option.
Select Items (button)

Select Items allows you to select which items to update. This is only possible, however, if one of the fields listed below in the Selection Criteria area is selected. Once Select Items is clicked, or you select All Items, the grid fills with the selected records.

Masking

The following fields may be used for identifying selection criteria for filling the grid. Wild cards may be used in filling in the mask. Use ? and * to mask the value in each of these fields, e.g. ?R* would show all bills of material with any character in position 1, an R in position 2, and any characters in the remaining positions.

BOM ID

BOM ID or mask identifies a selected bill of material or routing for which you want to update standard costs. The bills of material and routings that fit the ID or mask entered at BOM ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The bill of material ID only enables if the Bill/Inventory/Itemsite/Routing option is selected at Standard Cost Update Option.

BOM Site ID

Site ID, along with BOM ID, identifies the bill of material or routing for which you want to update standard costs. The bills of material or routings that fit the site ID entered here appear in the grid after you click Select Items. If you enter an ID or mask in here, do not select All Items. The site ID only appears if the Bill/Inventory/Itemsite/Routing option is selected at Standard Cost Update Option. Multi-company: The possible value on the site ID only returns valid sites for the company into which you are currently logged.

Inventory ID

Inventory ID identifies the selected component items for which you want to update standard costs. The component items that fit the inventory ID entered in Inventory ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The inventory ID only appears if the Component Standard Costs option is selected at Standard Cost Update Option.

Work Center

Work center identifies the selected work centers for which you want to update standard machine or labor overhead rates. The work centers that fit the work center ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The work center ID only appears if the Machine or Labor Overhead Rates in Work Center options are selected at Standard Cost Update Option.

Product Class ID

Product class ID or mask identifies the selected product classes for which you want to update pending material overhead rates. The classes that fit the product class ID entered in Product Class ID appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The product class ID only appears if the Material Overhead Rates in Product Class option is selected for Standard Cost Update Option.

Labor Class

Labor Class or mask identifies the selected labor classes for which you want to update pending labor rates. The classes that fit the labor class ID entered in Labor Class appear in the grid after you click Select Items. If you enter an ID or mask here, do not select All Items. The labor class ID only appears if the Labor Rates in Labor Class option is selected at Standard Cost Update Option.
Begin Processing (button)

**Begin Processing** begins the update standard costs process.

If a standard cost valued inventory item is being revalued, the batch processing is passed off to the Inventory module. In the event of a suspended batch, the Inventory module’s *Release IN Batches* (10,400.00) is used to release the batch after corrective action has been taken.
Compute Cost Rollup (11.540.00)

Use Compute Cost Rollup (11.540.00) to recalculate pending standard costs for all or selected products based on the costs of the resources required for production. Resource costs include materials, labor, other direct costs, labor overhead, and machine overhead. The resources and the quantities required for each assembly are obtained from that product’s bill of material and routing. Compute Cost Rollup (11.540.00) first recomputes the pending standard cost of all subassemblies at the lowest level in the bill of material structure, and then works up through the higher levels. The newly computed costs for subassemblies are used (“rolled up”) to compute costs for the higher level assemblies.

Note: Compute Cost Rollup (11.540.00) can update the Inventory pending cost fields only in the following cases:

- If BOM by Site is selected in Bill of Material Setup (11.950.00) and the Kit site ID is the same as Global Site ID in Bill of Material Setup (11.950.00)
- If BOM by Site is clear in Bill of Material Setup (11.950.00) and the Kit site ID is the same as Global Site ID in Bill of Material Setup (11.950.00)

Inventory update fields are not updated if BOM by Site is selected in Bill of Material Setup (11.950.00) and the Kit site ID is not the same as Global Site ID in Bill of Material Setup (11.950.00). This is because multiple sites may be set up for a kit to accommodate kits at several sites with different costs set up.

![Figure 47: Compute Cost Rollup (11.540.00) (11.540.00)](image)

The Compute Cost Rollup (11.540.00) process does not create general ledger transactions and does not update inventory, but it stores the computed costs as pending standard costs. To apply the pending standard costs calculated in this screen to inventory and create general ledger transactions, use Update Standard Costs from Pending (11.530.00).

After you use the Compute Cost Rollup (11.540.00) process you can print the following reports for all or selected bills of material to analyze your cost changes and preview the financial impact of implementing these cost changes:

- Bill of Material Lists (11.600.00) — Pending Costs format)
• Standard Cost Detail Report (11.620.00) — Pending Costs format
• Standard Cost Change Preview (11.630.00) — BOM Comparison format
• Routing List (11.700.00) — Pending Costs format

Following are the field descriptions for Compute Cost Rollup (11.540.00).

All BOM IDs
Select All BOM IDs to compute pending costs for all bills of material. If you select All BOM IDs, BOM ID, Status, and BOM Site ID are disabled. They are only used to select certain bills for costing.

Masking
The BOM ID and BOM Site ID fields may be used for identifying selection criteria for filling the grid. Wild cards may be used in filling in the mask. Use ? and * to mask the value in each of these fields. For example, ?R* would show all bills of material with any character in position 1, an R in position 2, and any characters in the remaining positions.

BOM ID
BOM ID or mask identifies a selected bill of material or routing for which you want to compute pending costs. The bills of material that fit the ID or mask entered at BOM ID appear in the grid after you click Select Bills of Material. If you enter an ID or mask here, do not select All BOM IDs.

Status
Status indicates the status of selected bills of material for which you want to compute pending costs. The bills of material that fit the status entered here appear in the grid after you click Select Bills of Material. If you enter a value here, do not select All BOM IDs.

BOM Site ID
BOM Site ID, along with Status and BOM ID, identifies the bill of material for which you want to compute pending costs. The bills of material that fit the BOM site ID entered appear in the grid after you click Select Bills of Material. If you enter an ID or mask in here, do not select All BOM IDs.
Multi-company: The possible value on the BOM site ID only returns valid sites for the company into which you are currently logged.

Select Bills of Material (button)
Click Select Bills of Material to display in the grid the bills of material you want to be costed. If you select All BOM IDs, Select Bills of Material is disabled; all bills of material are displayed. If you entered values in BOM ID, Status, and BOM Site ID, click Select Bills of Material, and the bills of material that fit the selection fields are displayed.

BOM ID (Details)
BOM ID displays a bill of material that is selected for costing.

Status (Details)
Status displays the status for a bill of material that is selected for costing.

BOM Site ID (Details)
BOM Site ID, along with BOM ID and Status identify the bill of material that is selected for costing. The Details area displays the selection only; the fields are read-only.

Begin Processing (button)
Begin Processing begins the Compute Cost Rollup (11.540.00) process.
Delete Production Detail (11.550.00)

Use Delete Production Detail (11.540.00) to remove completed production entry documents and detail that are no longer needed in the database for business operations.

**Periods to Retain Detail** in Bill of Material Setup (11.950.00) enables you to specify a maximum number of periods prior to the current period to retain production documents and detail in the database. Once a document has been retained in the database for a period that exceeds the number specified, it can be deleted using Delete Production Detail (11.540.00).

![Delete Production Detail (11.550.00)](image)

Following are the field descriptions for Delete Production Detail (11.550.00).

**Current Fiscal Period**

*Current Fiscal Period* controls which prior period and year should be the starting point for document and detail deletion.

**Delete Detail from**

*Delete Detail from* contains the first fiscal period and year when production documents and detail are deleted. All documents and detail from this period (and all periods prior to the specified period that still contain detail), are deleted from the database. This period number is computed from *Current Fiscal Period* in Delete Production Detail (11.550.00) and Periods to Retain in Bill of Material Setup (11.950.00).

**Begin Processing (button)**

*Begin Processing* begins the Delete Production Detail (11.540.00) process.
Setup Screens

Bill of Material Setup (11.950.00)

Use Bill of Material Setup (11.950.00) to select processing options for the Bill of Material module. General Ledger Setup (01.950.00) must be completed before you can complete Bill of Material Setup (11.950.00). Bill of Material Setup (11.950.00) must also be completed before you can use other bill of material screens for normal operations.

Figure 49: Bill of Material Setup (11.950.00), Options tab
Bill of Material Setup, Options Tab

Following are the field descriptions for the Options tab of Bill of Material Setup (11.950.00).

Period Number

Initially, the current fiscal period is the fiscal period and year when you initialize the Bill of Material module (enter bill of material beginning account balances). The Period number defaults from IN Setup (10.950.00). This should be the period before the one in which you plan to begin regular operations.

Example: If you plan to begin regular operations in period nine of 2001, the current fiscal period is 08-2001. The initial period number is the same as the current period in the General Ledger module; see Fiscal Period Information (01.950.02) in the General Ledger online help or user guide.

Do not confuse fiscal period number with month number.

Example: If your business’ fiscal year-end is March 31 and April is the first period of the new fiscal year, enter 01 to initialize the Bill of Material module in April. Also, the number of the fiscal year is the calendar year in which the fiscal year begins. If the fiscal year begins August 1, 2001, and runs through July 31, 2002 and you plan to initialize after the end of the calendar year (for example, February, 2002), 2001 is still the fiscal year to use for initialization.

The current fiscal period number increments by one at each period closing; see Closing Process (01.560.00) in the General Ledger online help or user guide. After the first period closing, the value at Period Number is always the number of the current bill of material accounting period. The current fiscal year increases by one at each yearly closing.

Note: Once you enter transactions into the database, you cannot change the current fiscal period number. The number changes only as a result of doing period- and year-end closings. For this reason, make sure the current period number is correct before you enter any financial transactions.

Automatic Reference Number

Select Automatic Reference Number if you want to automatically number production documents created in Production Entry (11.010.00). Clear Automatic Reference Number if you want to assign these numbers manually.

Last Reference Number

Last Reference Number contains the last number used as a reference number on production documents in Production Entry (11.010.00). If you are using automatic reference numbering, the next number assigned will be one greater than the number displayed.

Retain Obsolete Components

Select Retain Obsolete Components to retain components on bills of material when the Apply Date-Effective Revisions (11.500.00) process changes their status from active to obsolete. Obsolete components are retained for historical purposes only. They are not included in cost rollups or in transactions. Clear Retain Obsolete Components to automatically delete components when their status changes to obsolete.

Periods to Retain Production Documents

Periods to Retain Production Documents controls the maximum number of periods prior to the current period that production activity is to be retained in the database.

Example: 02 indicates that production activity should be retained for two periods after the current period. Once an accounting period’s production activity has been retained in the database for a period that exceeds the number specified, the activity for the period can be deleted using Delete Production Detail (11.550.00).
Setup Screens

Bill of Material by Site
Select Bill of Material by Site if you want to create site-specific bills of material. Clear Bill of Material by Site if you only want to create global bills of material. Choosing site-specific bills of material allows you to create different bills of material at different sites for the same product. This gives you more flexibility in computing standard costs and in entering production for a product, but it also requires more bill of material maintenance effort.

The site ID of a bill of material determines how it is processed in Compute Cost Rollup (11.540.00):

- **Compute cost rollup** — If Bill of Material by Site is checked in Bill of Material Setup (11.950.00), then:
  - A global BOM updates Inventory and all existing ItemSites that do not have a site-specific active BOM
  - A site-specific BOM only updates that ItemSite, and creates it if one does not exist.

If Bill of Material by Site is not checked in Bill of Material Setup (11.950.00), then:
- A global BOM updates Inventory and all existing ItemSites.

- **Production entry** — If the site ID is global, as specified in Bill of Material Setup (11.950.00), then it is replaced by the site ID you enter during production entry, as is the site ID for all component items.

Global Site ID
Global Site ID specifies the site ID that you want to use for global bills of material, regardless of whether or not you have selected Bill of Material by Site. The site ID must have been previously created in Sites (10.310.00). See Bill of Material by Site above for more information.

Note:
- If Bill of Material by Site is not selected, the site ID you enter here also appears as the default site ID on the Line Items tab of the Purchase Order Maintenance (04.250.00) screen. You can change this default in a purchase order as needed.
- **Multi-company**: The possible value on the site ID only returns valid sites for the company into which you are currently logged.

Material Overhead Application
Material overhead can be applied to the direct cost of material to increase the cost of the material, and this application can occur at one of two times:

- **Apply When Used** — The material overhead amount is not carried in material inventory, rather it is added to the direct cost of the material when the material is used in production, increasing the cost of work in process or finished goods. The material overhead offset account is credited at that time.

- **Material Overhead Not Used** — Material overhead is not used at all.

Material Overhead Rate or Percent
Material overhead rates/percent are stored by product class in Product Classes (10.280.00). They are used to compute the material overhead amounts displayed in Inventory Items (10.250.00). Depending on the method selected for material overhead application, this option controls how the numbers displayed in Product Classes (10.280.00) are used to compute material overhead amounts:

- **Rate** — The number displayed in Product Classes (10.280.00) is used as a $/unit rate.

  **Example**: If the number is .50, then $.50 is added to the direct cost for each unit for inventory items in this product class.

- **Percent** — The number displayed in Product Classes (10.280.00) is used as a percent.
**Example:** If the number is .50, then the direct cost of each unit is multiplied by .50% and added to the direct cost for inventory items in this product class.

- Not Applicable.

**Labor Overhead Rate or Percent**

Labor overhead rates/percent are entered in Work Center Maintenance (11.270.00). They are used to compute the labor portion of standard cost for items that have a routing. Depending on the setup of Bill of Material Setup (11.950.00), this option controls how the numbers displayed in Work Center Maintenance (11.270.00) are used to compute labor overhead costs:

- **Rate** — The number displayed in Work Center Maintenance (11.270.00) is used as a $/hour rate.

  **Example:** If the number is .50, then $.50 is added to the labor overhead cost per hour of direct labor for inventory items that use this work center in a routing step.

- **Percent** — The number displayed in Work Center Maintenance (11.270.00) is used as a percent.

  **Example:** If the number is .50, then the direct labor cost is multiplied by .50% and added to the labor overhead cost for inventory items that use this work center in a routing step.

- Not Applicable.
Bill of Material Setup, GL Offset Accounts Tab

Use Bill of Material Setup (11.950.00), GL Offset Accounts tab to enter information about the General Ledger offset accounts that are used to create General Ledger transactions.

Note: The account information entered here overwrites the account information set up in IN Setup (11.950.00); the two tables are not linked.

![Image of Bill of Material Setup, GL Offset Accounts Tab]

Following are the field descriptions for the GL Offset Accounts tab of Bill of Material Setup (11.950.00).

Standard Cost Revaluation Account

**Standard Cost Revaluation Account** is used as the offset expense account when inventory is revalued.

Example: If the standard cost of an item changes from $1.50 to $1.00 and there are 100 on hand, the revaluation amount is $50. This amount credits the inventory account for the item and debits the standard cost revaluation account specified here. This account must have been previously set up in Chart of Accounts Maintenance (01.260.00).

Standard Cost Revaluation Subaccount

**Standard Cost Revaluation Subaccount** is used as the offset expense subaccount when inventory is revalued.

Example: If the standard cost of an item changes from $1.50 to $1.00 and there are 100 on hand, the revaluation amount is $50. This amount credits the inventory account and subaccount for the item and debits the standard cost revaluation subaccount specified here.
Direct Labor Account

Direct Labor Account is used as the offset expense account when direct labor is added to work in process or finished goods.

Example: If the direct labor cost at a work center for an item is $1.50/unit and 100 items are produced, then $150 is the credit to the direct labor offset account specified here, and $150 is the debit to work in process or finished goods. The account must have been previously set up in Chart of Accounts Maintenance (01.260.00).

Direct Labor Subaccount

Direct Labor Subaccount is used as the offset expense subaccount when direct labor is added to work in process or finished goods.

Example: If the direct labor cost at a work center for an item is $1.50/unit and 100 items are produced, then $150 is the credit to the direct labor offset subaccount specified here, and $150 is the debit to work in process or finished goods.

Other Direct Account

Other Direct Account is used as the offset expense account when other direct cost is added to work in process or finished goods.

Example: If the other direct cost at a work center for an item is $1.50/unit and 100 items are produced, then $150 is the credit to the other direct offset account specified here, and $150 is the debit to work in process or finished goods. This account must have been previously set up in Chart of Accounts Maintenance (01.260.00).

Other Direct Subaccount

Other Direct Subaccount is used as the offset expense subaccount when other direct cost is added to work in process or finished goods.

Example: If the other direct cost at a work center for an item is $1.50/unit and 100 items are produced, then $150 is the credit to the other direct offset subaccount specified here, and $150 is the debit to work in process or finished goods.

Labor Overhead Account

Labor Overhead Account is used as the offset expense account when labor overhead is added to work in process or finished goods.

Example: If the labor overhead cost at a work center for an item is $1.50/unit and 100 are produced, then $150 is the credit to the labor overhead offset account specified here, and $150 is the debit to work in process or finished goods. This account must have been previously set up in Chart of Accounts Maintenance (01.260.00).

Labor Overhead Subaccount

Labor Overhead Subaccount is used as the offset expense account when labor overhead is added to work in process or finished goods.

Example: If the labor overhead cost at a work center for an item is $1.50/unit and 100 items are produced, then $150 is the credit to the labor overhead offset subaccount specified here, and $150 is the debit to work in process or finished goods.

Machine Overhead Account

Machine Overhead Account is used as the offset expense account when machine overhead is added to work in process or finished goods.
**Example:** If the machine overhead cost at a work center for an item is $1.50/unit and 100 units are produced, then $150 is the credit to the machine overhead offset account specified here, and $150 is the debit to work in process or finished goods. This account must have been previously set up in *Chart of Accounts Maintenance* (01.260.00).

**Machine Overhead Subaccount**

*Machine Overhead Subaccount* is used as the offset expense account when machine overhead is added to work in process or finished goods.

**Example:** If the machine overhead cost at a work center for an item is $1.50/unit and 100 are produced, then $150 is the credit to machine overhead offset subaccount specified here, and $150 is the debit to work in process or finished goods.
Bill of Material Setup, GL Variance Accounts Tab

Use the GL Variance Accounts tab to enter information about the General Ledger variance accounts that are used to create General Ledger transactions.

These accounts are used somewhat differently depending on whether a routing has been defined for the product being produced. The following applies to all cost categories except direct material and material overhead:

- **Routing** — These accounts are used as defaults each time a work center is created, and can be accepted or overridden in Work Center Maintenance (11.270.00). When variances are computed, the accounts are taken from the work center where the variances occurred.

- **No Routing** — When variances occur, the accounts in this screen are used to create the GL transactions.

Direct material and material overhead variances always use the accounts in this screen.

![Figure 51: Bill of Material Setup (11.950.00), GL Variance Accounts tab](image)

Following are the field descriptions for the GL Variance Accounts tab of Bill of Material Setup (11.950.00).

**Direct Material Account**

Direct Material Account updates the General Ledger with the difference between the standard direct material cost for an item produced and the actual direct material cost when the item produced uses the standard inventory valuation method.

**Example:** If the standard direct material cost for an item produced is $100 and the actual direct material cost is $150, then $150 is the credit to materials inventory, $50 is the debit to the Direct Material Variance account specified here, and $100 is the debit to Work In Progress or Finished Goods. This account must have previously been set up in Chart of Accounts Maintenance (01.260.00).
Direct Material Sub Account

**Direct Material Subaccount** updates the General Ledger with the difference between the standard direct material cost for an item produced and the actual direct material cost when the item produced uses the standard inventory valuation method.

**Example:** If the standard direct material cost for an item produced is $100 and the actual direct material cost is $150, then $150 is the credit to materials inventory, $50 is the debit to the Direct Material Variance subaccount specified here, and $100 is the debit to Work in Progress or Finished Goods. Use of subaccounts is optional. If used, the subaccount you enter here must have previously been set up in Subaccount Maintenance (01.270.00).

Direct Labor Account

**Direct Labor Account** updates the General Ledger for the difference between the standard direct labor cost for an item produced at a work center and the actual direct labor cost when the item produced uses the standard inventory valuation method (including both rate and efficiency variance amounts).

**Example:** If the standard direct labor cost at a work center for an item produced is $40 and the actual direct labor cost is $50, then $50 is the credit to the direct labor expense account/subaccount, $10 is the debit to the direct labor variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount. This account must have been previously set up in Chart of Accounts Maintenance (01.260.00) in the General Ledger module.

Direct Labor Subaccount

**Direct Labor Subaccount** updates the General Ledger for the difference between the standard direct labor cost for an item produced at a work center and the actual direct labor cost when the item produced uses the standard inventory valuation method.

**Example:** If the standard direct labor cost at a work center for an item produced is $40 and the actual direct labor cost is $50, then $50 is the credit to the direct labor expense account/subaccount, $10 is the debit to the direct labor variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount.

Other Direct Account

**Other Direct Account** updates the General Ledger for the difference between the standard other direct cost for an item produced at a work center and the actual other direct cost when the item produced uses the standard inventory valuation method.

**Example:** If the standard other direct cost at a work center for an item produced is $40 and the actual other direct cost is $50, then $50 is the credit to the other direct expense account/subaccount, $10 is the debit to the other direct variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount. This account must have been previously set up in Chart of Accounts Maintenance (01.260.00).

Other Direct Subaccount

**Other Direct Subaccount** updates the General Ledger for the difference between the standard other direct cost for an item produced at the work center and the actual other direct cost when the item produced uses the standard inventory valuation method.

**Example:** If the standard other direct cost at a work center for an item produced is $40 and the actual other direct cost is $50, then $50 is the credit to the other direct expense account/subaccount, $10 is the debit to the other direct variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount.
**Labor Overhead Account**

**Labor Overhead Account** updates the General Ledger for the difference between the standard labor overhead cost for an item produced at a work center and the actual labor overhead cost when the item produced uses the standard inventory valuation method.

**Example:** If the standard labor overhead cost at a work center for an item produced is $40 and the actual labor overhead cost is $50, then $50 is the credit to the labor overhead expense account/subaccount, $10 is the debit to the labor overhead variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount. This account must have been previously set up in *Chart of Accounts Maintenance* (01.260.00).

**Labor Overhead Subaccount**

**Labor Overhead Subaccount** updates the General Ledger for the difference between the standard labor overhead cost for an item produced at a work center and the actual labor overhead cost when the item produced uses the standard inventory valuation method.

**Example:** If the standard labor overhead cost at a work center for an item produced is $40 and the actual labor overhead cost is $50, then $50 is the credit to the labor overhead expense account/subaccount, $10 is the debit to the labor overhead variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount.

**Machine Overhead Account**

**Machine Overhead Account** updates the General Ledger for the difference between the standard machine overhead cost for an item produced at a work center and the actual machine overhead cost when the item produced uses the standard inventory valuation method.

**Example:** If the standard machine overhead cost at a work center for an item produced is $40 and the actual machine overhead cost is $50, then $50 is the credit to the machine overhead expense account/subaccount, $10 is the debit to the machine overhead variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount. This account must have been previously set up in *Chart of Accounts Maintenance* (01.260.00).

**Machine Overhead Subaccount**

**Machine Overhead Subaccount** updates the General Ledger for the difference between the standard machine overhead cost for an item produced at a work center and the actual machine overhead cost when the item produced uses the standard inventory valuation method.

**Example:** If the standard machine overhead cost at a work center for an item produced is $40 and the actual machine overhead cost is $50, then $50 is the credit to the machine overhead expense account/subaccount, $10 is the debit to the machine overhead variance account/subaccount specified here, and $40 is the debit to the finished goods inventory account/subaccount.

**Cost Rollup Account**

**Cost Rollup Account** updates the General Ledger for the difference between current and pending standard product costs: materials, labor, labor overhead, machine overhead, and other direct costs (see “Compute Cost Rollup (11.540.00)”). Current standard costs are what products cost now; pending standard costs are what products cost after cost rollups calculated in *Compute Cost Rollup (11.540.00)* are applied in *Update Standard Costs from Pending (11.530.00)* (the pending standard costs become the current costs after they have been applied in *Update Standard Costs from Pending (11.530.00)*)). This account must have been previously set up in *Chart of Accounts Maintenance* (01.260.00).

**Cost Rollup Subaccount**

**Cost Rollup Subaccount** updates the General Ledger for the difference between current and pending standard product costs: materials, labor, labor overhead, machine overhead, and other direct costs (see “Compute Cost Rollup (11.540.00)”). Current standard costs are what products cost now;
pending standard costs are what products cost after cost rollups calculated in *Compute Cost Rollup* (11.540.00) are applied in *Update Standard Costs from Pending* (11.530.00). The pending standard costs become the current costs after they have been applied in *Update Standard Costs from Pending* (11.530.00).
Reports

Bill of Material Lists (11.600.00)

The Bill of Material Lists (11.600.00) report lists bills of material and components created in Bill of Material Maintenance (11.250.00). Use it to review newly created bills or revisions to existing bills, and also as a reference document. It is especially useful for reviewing the relationships among final assemblies and subassemblies in multiple level bills of material.

Figure 52: Bill of Material Lists (11.600.00) report

For descriptions of the fields contained in this report see "Bill of Material Maintenance (11.250.00)."

Note that Bill of Material Lists (11.600.00) has the following variations and/or additions to the standard extended report options.

Report Format

The report format specifies the type of report to generate. Report options are:

- Single Level — This format displays each final assembly or subassembly bill of material and its immediate components in a single-level format.

- Indented — This format displays each final assembly or subassembly bill of material and its components in an indented, multi-level format. Each component that is itself a subassembly is immediately exploded into its components and printed within the context of the parent bill of material. Level numbers are shown and lower level components are indented to the right to clarify the relationships among the final assembly, subassemblies, and components.

- Summarized — This format displays each final assembly or subassembly bill of material and its components in a summarized, multi-level format. Each component that is itself a subassembly is exploded into its components, and the quantities for all like components are summarized into a total quantity required for all levels within the parent bill of material. Components for all levels are printed in a summarized, “parts list” format.
• Costed (Current) — This format displays each final assembly or subassembly bill of material and its immediate components in a single-level format. The emphasis in this format is on current cost information, and how the current standard costs from components roll up into the bill of material. Only active components are printed.

   **Note:** If costs are not computed and rolled, these reports reflect zero costs.

• Costed (Pending) — This format displays each final assembly or subassembly bill of material and its immediate components in a single-level format. The emphasis in this format is on pending cost information, and how the pending standard costs from components roll up into the bill of material.
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Component Where-Used Lists (11.610.00)

The Component Where-Used Lists (11.610.00) report lists components from bills of material created in Bill of Material Maintenance (11.250.00), showing the bills of material in which each component is used. (This report presents the same information as Component Where-Used (11.330.00), which also enables you to perform queries.) This report is especially useful for finding all bills of material that need to be modified when the usage of a component has changed or been discontinued. A “component” is any item attached to a higher level. Subassembly-where-used lists are also provided.

Figure 53: Component Where-Used Lists (11.610.00) report

For descriptions of the fields contained in this report see “Bill of Material Maintenance (11.250.00).” Components from kits created in Kits (10.320.00) can also be printed in this report.

Note that the Component Where-Used Lists (11.610.00) report has the following variations and/or additions to the standard extended report options.

Report Format

The report format specifies the type of report to generate. Report options are:

- Single Level — This format displays each component and its immediate parent bills of material in a single-level format.
- Indented — This format displays each component and its parent bills of material in an indented, multi-level format. Each parent bill that is itself a component in a higher level bill is immediately imploded to show the higher level bills and printed within the context of the original component. Level numbers are shown and higher level parent bills are indented to the right to clarify the relationships among the components, subassemblies, and final assemblies.
Standard Cost Detail Report (11.620.00)

The Standard Cost Detail Report (11.620.00) lists bills of material created in Bill of Material Maintenance (11.250.00). Individual components are not shown. Instead, the standard costs for the bill of material are broken out and analyzed by cost category and direct/variable/fixed. This report is especially useful for supporting decisions such as “make versus buy,” where costs need to be broken out into their fixed and variable portions.

The following cost categories are shown:

- Material
- Labor
- Machine
- Other

Each of the above cost categories are broken down further into:

- Direct
- Variable Overhead
- Total Variable
- Fixed Overhead
- Total Category Overhead Cost
- Total Category Cost
- In addition, the report shows percents for all of the above breakouts.

For descriptions of the fields contained in this report see “Bill of Material Maintenance (11.250.00).”

Note that the Standard Cost Detail Report (11.620.00) has the following variations and/or additions to the standard extended report options.

**Report Format**

The report format specifies the type of report to generate. Report options are:

- Current — Current cost information is shown for the bill of material.
- Pending — Pending cost information is shown for the bill of material.
Standard Cost Change Preview (11.630.00)

The Standard Cost Change Preview (11.630.00) report lists bills of material created in Bill of Material Maintenance (11.250.00) and inventory items created in Inventory Items (10.250.00). Use it to compare current standard costs to pending costs for bill of material and component items. It is especially useful for previewing the financial impact of standard cost changes before they are implemented.

![Figure 55: Standard Cost Change Preview (11.630.00) report](image)

For descriptions of the fields contained in the Standard Cost Change Preview (11.630.00) report, see “Bill of Material Maintenance (11.250.00).”

Note that the Standard Cost Change Preview (11.630.00) report has the following variations and/or additions to the standard extended report options.

**Report Format**

The report format specifies the type of report to generate. Report options are:

- **Item Revaluation** — This format displays the total current standard cost, total pending cost, quantity on hand, and the General Ledger revaluation amount and site for each item (both bill of material and component type items) of standard cost valuation method. Only items with non-zero amount in the pending standard cost fields are reported.

- **BOM Comparison** — This format compares current standard costs to pending costs for each bill of material, breaking costs down by direct versus overhead, and by cost category: material, labor, machine and other. The difference between current and pending and percent differences are computed.

- **Item Comparison** — This format compares current standard to pending costs for each item, breaking costs down by direct, variable overhead, and fixed overhead. The difference between current and pending and percent differences are computed.
Actual Production vs Plan (11.640.00)

The Actual Production vs Plan (11.640.00) report lists planned production quantities as specified in Assembly Plan Maintenance (10.330.00) and compares them to the actual production quantities as entered in Production Entry (11.010.00).

You must enter a value in Plan ID on Production Entry (11.010.00) for each production document that you want included in this report.

![Figure 56: Actual Production vs Plan (11.640.00) report](image)

Note that the Actual Production vs Plan (11.640.00) report has the following variations and/or additions to the standard extended report options.

**Report Format**

The report format specifies the type of report to generate. Report options are:

- **Summary** — This format prints one line per assembly plan detail line, showing the inventory item to be produced, the planned quantity, the total actual quantity, and the difference.

- **Detail** — This format prints each production document corresponding to each assembly plan detail line, showing the inventory item to be produced, the production document reference number, production date, and production quantity. Totals for each assembly plan detail line are printed showing the planned quantity, the total actual quantity, and the difference.
Production Preview (11.650.00)

The Production Preview (11.650.00) report lists production documents and component transactions created in Production Entry (11.010.00). The report is useful if you want to preview the data entered in those documents before release, including inventory items, lot/serial numbers, warehouse locations, dates, quantities, and quantity variances against standard. You can use it as a register of released documents for audit purposes.

![Bill Production Preview (11.650.00) report](image)

Note that the Production Preview (11.650.00) report has the following variations and/or additions to the standard extended report options.

**Report Format**

The report format specifies the type of report to generate. Report options are:

- **Summary** — This format lists document level data: the item and quantity produced, the site where production takes place, the production date, the lot number or first serial number produced, etc.

- **Detail** — This format prints the information in the summary format, plus component information: the component ID, the standard and actual quantities used, quantity variance, the lot number or first serial number used, and the site and location where the component inventory was used.

- **Detail Only** — This format prints component level information: the component ID, the standard and actual quantities used, quantity variance, the lot number or first serial number used, and the site and location where component inventory was used.
Production Analysis (11.660.00)

The Production Analysis (11.660.00) report lists production documents and component transactions created in Production Entry (11.010.00). Its primary use is to list released documents as a production audit trail and analysis of actual performance vs. standard.

![Production Analysis Report](image)

Figure 58: Production Analysis (11.660.00) report

Note that the Production Analysis (11.660.00) report has the following variations and/or additions to the standard extended report options.

**Report Format**

The report format specifies the type of report to generate. Report options are:

- **Summary** — This format lists document level data: the item and quantity produced, the total actual and standard costs of production, variance of actual versus standard cost, the site where production took place, the production date, the lot number or first serial number produced, etc.

- **Detail** — This format prints the information in the summary format, plus component information: the component ID, the standard and actual quantities used, standard and actual cost used, quantity and cost variances, the lot number or first serial number used, and the site and location where component inventory was used.

- **Detail Only** — This format prints component level information: the component ID, the standard and actual quantities used, standard and actual cost used, quantity and cost variances, the lot number or first serial number used, and the site and location where component inventory was used.
Shortage Report (11.670.00)

The Shortage Report (11.670.00) lists components and required quantities in all or selected bills of material, compares them to the quantity available in inventory, and computes the shortage quantities.

<table>
<thead>
<tr>
<th>Component ID</th>
<th>Production Item ID</th>
<th>Product Class</th>
<th>Unit Type</th>
<th>Source</th>
<th>Stock</th>
<th>Unit</th>
<th>Qty On Hand</th>
<th>Qty on PO</th>
<th>Qty on EO</th>
<th>Qty on EO</th>
<th>Current Qty Available</th>
<th>Cumulative Qty Available</th>
<th>Cumulative Net Qty Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>000311</td>
<td>A JRCRANK-ASMBLY</td>
<td>C</td>
<td>P</td>
<td>T</td>
<td>EA</td>
<td>1.000</td>
<td>07/01/00</td>
<td>2.00</td>
<td>2.00</td>
<td>50.00</td>
<td>98.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>000311</td>
<td>A JRCRANK-ASMBLY</td>
<td>C</td>
<td>P</td>
<td>T</td>
<td>EA</td>
<td>1.000</td>
<td>07/01/00</td>
<td>2.00</td>
<td>2.00</td>
<td>10.00</td>
<td>9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>000311</td>
<td>A JRCRANK-ASMBLY</td>
<td>C</td>
<td>P</td>
<td>T</td>
<td>EA</td>
<td>1.000</td>
<td>07/01/00</td>
<td>2.00</td>
<td>2.00</td>
<td>10.00</td>
<td>6.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>000311</td>
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<td>C</td>
<td>P</td>
<td>T</td>
<td>EA</td>
<td>1.000</td>
<td>07/01/00</td>
<td>2.00</td>
<td>2.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 59: Shortage Report (11.660.00)

Note that the Shortage Report (11.670.00) has the following variations and/or additions to the standard extended report options.

Report Format

The report format specifies the type of report to generate. Report options are:

- **Summary** — This format lists the total quantity required for each component in all or selected production documents, compares it to the quantity available in inventory, and computes the shortage quantity.
- **Detail** — This format lists each occurrence of a component in all or selected production documents, the total quantity required for each component, compares it to the quantity available in inventory, and computes the shortage quantity.
Variance Analysis (11.680.00)

The Variance Analysis (11.680.00) report provides a document level analysis of variances of actual production costs versus standard. Variances are broken out by cost category (material, labor, machine, other), direct versus overhead, and efficiency versus rate. Variances are expressed in both dollar amounts and percentages.

Efficiency variances are those caused by using hours of labor or quantities of material that differ from the standard. Rate variances are those caused by the rate of labor or unit cost of material that differs from the standard.

Figure 60: Variance Analysis (11.680.00) report
Routing List (11.700.00)

The Routing List (11.700.00) report shows routings created in Routing Maintenance (11.260.00). You can use it to review newly created routings or revisions to existing routings, and also as a reference document.

Figure 61: Routing List (11.700.00) report

For descriptions of the fields contained in the Routing List (11.700.00) report, see “Routing Maintenance (11.260.00).”

Note that the Routing List (11.700.00) report has the following variations and/or additions to the standard extended report options.

Report Format

The report format specifies the type of report to generate. Report options are:

- Operations — This is the basic routing format. It displays each routing and its steps, including basic information such as work center, labor class, operation, machine, and tools.
- Standard Hours — This format displays in detail the engineering and standard labor and machine hours for each step.
- Materials Included — This format is similar to the operations format, but also includes the components from the bills of material in each step.
- Costed (Current) — This format displays each step of the routing, emphasizing current cost information and how the current standard costs roll up into totals for the routing. Costs are broken out into direct labor, other direct, labor overhead, and machine overhead. Cumulative costs are shown for each step.
- Costed (Pending) — This format displays each step of the routing, emphasizing pending cost information and how the pending standard costs roll up into totals for the routing. Costs are broken out into direct labor, other direct, labor overhead, and machine overhead. Cumulative costs are shown for each step.
Work Center List (11.710.00)

The Work Center List (11.710.00) report lists work centers created in the Work Center Maintenance (11.270.00). You can use it to review newly created work centers or revisions to existing work centers, and also as a reference document.

![Figure 62: Work Center List (11.710.00) report](image)

For descriptions of the fields contained in the Work Center List (11.710.00) report, see “Work Center Maintenance (11.270.00).”

Note that the Work Center List (11.710.00) report has the following variations and/or additions to the standard extended report options.

Report Format

The report format specifies the type of report to generate. Report options are:

- **Summary** — This format shows basic information about each work center.
- **Detail** — This format shows basic information about each work center, plus overhead application rates and General Ledger accounts.
**Work Center Where-Used (11.720.00)**

*Work Center Where-Used (11.720.00)* report lists work centers from routings created in *Routing Maintenance (11.260.00)*, showing the routings in which each work center is used. It is especially useful for finding all routings that need to be modified when the usage of a work center has been changed or discontinued.

![Figure 63: Work Center Where-Used (11.720.00) report](image)

For descriptions of the fields contained in the *Work Center Where-Used (11.720.00)* report, see “Routing Maintenance (11.260.00).”
Operation List (11.730.00)

The Operation List (11.730.00) report lists operations created in Operations Maintenance (11.280.00). It can be used to review newly created operations or revisions to existing operations, and can also serve as a reference document.

For descriptions of the fields contained in the Operation List (11.730.00) report, see “Operation Maintenance (11.280.00).”
Labor Class List (11.740.00)

The *Labor Class List* (11.740.00) report lists labor classes created in *Labor Class Maintenance* (11.290.00). It can be used to review newly created labor classes or revisions to existing labor classes, and can also serve as a reference document.

![Figure 65: Labor Class List (11.740.00) report](image)

For descriptions of the fields contained in the *Labor Class List* (11.740.00) report, see “Labor Class Maintenance (11.290.00).”
Tool List (11.750.00)

The Tool List (11.750.00) report shows tool records created in Tool Maintenance (11.300.00). It can be used to review newly created tools or revisions to existing tools, and can also serve as a reference document.

Figure 66: Tool List (11.750.00) report

For descriptions of the fields contained in the Tool List (11.750.00) report, see “Tool Maintenance (11.300.00).”
Machine List (11.760.00)

The *Machine List* (11.760.00) report lists machine records created in the *Machine Maintenance* (11.310.00). It can be used to review newly created machines or revisions to existing machines, and can also serve as a reference document.

![Machine List (11.760.00) report](image)

*Figure 67: Machine List (11.760.00) report*

For descriptions of the fields contained in the *Machine List* (11.760.00) report, see “Machine Maintenance (11.310.00).”
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