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Product Costing and Manufacturing
Accounting 8.9 PeopleBook

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Overview

Product costing and manufacturing accounting is an important part of a profitable manufacturing environment. After you have determined whether your company will use standard or actual costing methods, you can set up and implement your manufacturing accounting system.

The Product Costing and Manufacturing Accounting systems in the J.D. Edwards Manufacturing suite provide the features required to resolve the issues presented by the industry environment and enable a company to control its costs and make them transparent.

Industry Environment and Concepts

Virtually every organization must address fundamental questions such as: Are we operating at a profit or a loss? Are we as profitable as we could be? To answer those questions, an organization must have a method for establishing the cost of doing business. Companies should also have a method for tracking those costs to their associated functions. Tracking costs provides a means for gauging whether costs are appropriate and a method for correcting costs that might be inconsistent with the organization's plans.

Traditionally, organizations have been set up in separate and distinct functional groups. Information is obtained from one area in the organization and forwarded along a predetermined path without much coordination among other functional areas. These areas could benefit from shared information to operate more efficiently. Sharing information among departments such as design engineering, manufacturing engineering, industrial engineering, production planning, production control, and quality management provides valuable cross-functional integration that might result in smoother processes and reduced product costs.

Modern organizations are redefining and refining how information is processed within the organization's structure. They are paying closer attention to making information available across functional boundaries and coordinating information to operate at an optimal level. Market competition has caused most businesses to analyze how they manage operations and seek more efficient ways of setting up, tracking, and changing processes. All of these activities ultimately affect profitability. An organization cannot reduce the costs of doing business if it does not know where and how the costs are generated.

Organizations are realizing that global competition and dynamic market changes have changed the focus of many business practices. Most business activities must be flexible. To ensure a potentially larger market share, organizations must become aware of strategic areas so that they can focus on the *significant few* tasks and shift focus away from the remaining *trivial many* areas. Total quality management tools, which can pinpoint areas of concern and potential causes, are becoming more common throughout many industries. Statistical process controls, tracking methods, and causal analysis assist organizations in focusing on areas that can make a difference in improving operations. These processes can positively affect the organization's customer service capability and the organization's profitability.

From a financial standpoint, an organization seeking to improve its profitability must have access to detailed information for individual product costs. The information must be broken down to various cost component levels to understand how each activity affects costs and how to manage each activity appropriately.

Each contributing area within an organization must be responsible for the total costs of the activities that the area generates. For example, the initial cost of an item might be a combination of the following costs, in addition to the actual item cost:

- Supplier costs
- Production costs
- Warehouse costs
- Transportation costs
- Carrying costs

As you perform various operations within a manufacturing company, other costs are associated with that item. Each operation that you perform has associated costs that you need to track and account for in the overall or updated cost of the item.

After you define costs, you might use various tools to monitor how the costs are distributed among the operating areas. Manufacturing accounting specifically monitors costs that are generated during various manufacturing activities and provides management with a tool to compare actual results to expected results.

One method used to create baseline costs for comparison purposes is the standard product costing method. By specifying a standard cost for a product, which can comprise various cost components, you determine a base cost. You can compare this base cost to the actual cost of the product after you have finished manufacturing it. The result of the comparison allows management to determine whether the tasks accomplished during production are within the scope of what the product's cost should have been. You can then begin to improve how specific costs are derived. An organization is unable to resolve discrepancies if it does not know which costs are involved and where they originated.

Every area within the organization that affects the cost of the product must be involved in determining and evaluating those costs. You must then determine which costs add value to the item and which do not. You should then eliminate those costs that do not add value to an item. Each area should be responsible for the costs that are derived from that area's activity. Reducing the cost of doing business reflects directly on the profitability of the organization. Enterprise-wide techniques for waste reduction, such as just-in-time methodologies, can also pertain to wastes that affect the cost of the product to the customer. The organization's goal is to reduce waste within processes by reducing tasks that add no value. This effort typically results in reduced overall costs and can ultimately reduce the product's cost to the customer.

With the increased need to monitor costs, organizations need a mechanism for tracking the expected costs of items, as well as the actual costs that are incurred at each activity. When expected and actual costs are known, you can compare them to identify areas for improvement. You can then put processes into place to ensure the lowest cost to the consumer, increase profitability, and maintain or enhance the organization's position in the marketplace.

Organizations that are interested in ensuring the health of their entire organization have many specialized methods available. Methods include establishing the criteria for organizational health, establishing and implementing processes and procedures to create a healthy operating system, and establishing criteria for evaluating progress. These methods assist the organization in attaining the ultimate goal of maintaining or increasing its share of the target market.

If the organization's goals include operating at optimal cost levels, management should ensure that costing analysis not only includes the cost of products consumed during processing, but that costs reflect all of the various factors that comprise the total cost profile.

Analysis should include any activity that positively or negatively affects costs that might eventually be passed along to the end user or customer. The ability to break costs down and define extra costs enables an enterprise to identify and evaluate activities that are valuable to the process and to identify areas in which improvements might result in the ability to stay in business in the global community and to become a stronger market player.

Standard Costing Systems

Organizations that use standard costing systems can track specific cost flows from purchasing or production to inventory. Typically, the expected costs of labor, material, and overhead are based on history. This technique is different from the techniques of activity-based costing, which use current costs as the activity is accomplished, rather than predetermined standard costs. With standard costing, you can establish a systematic strategy to identify all cost components, the individual costs that make up an item's cost. Typically, the system calculates material, labor, and overhead costs. Generally, an organization needs to recognize extra costs that must also be calculated and controlled, such as electricity or royalty costs. The total of all of these costs is the costing baseline. These cost components are helpful in planning future strategic goals across the entire enterprise.

After you complete production activities, you identify variances between the predetermined standard costs and the values established throughout the production process. You can identify several phases of variance. For example, a variance could represent discrepancies between the original frozen (expected) standard values and the bill of material costs that might exist sometime after the frozen record was established. This is known as an *engineering variance*. You can also compare the bill of material to the parts list that is generated for a work order. A cost variance between these two is known as a *planned variance*. Another variance might be between the work order's original parts list and the final list of products issued to the work order. This is known as the *actual variance*. These variance comparisons allow management to understand where discrepancies occur in production and to identify areas that might require further controls. Standard costing is ideal for repetitive or rate-based manufacturing industries, as well as for discrete and process manufacturing. Once established, the costs can be tracked throughout the life cycle of the product or product family.

Actual Costing Systems

Organizations that choose to manage costing by tracking actual costs for reporting purposes emphasize the need to monitor costs as they are incurred. Actual costing uses predetermined cost components, but the costs are accumulated at the time that they occur throughout the production process. Variances between the estimated costs and the actual costs do not exist because the actual cost is continually updated to become the most current or last manufactured cost. Costing analysis can include material and labor costs as they accumulate. For manufacturing environments such as make-to-order or assemble-to-order, this visibility is important because of the possibility that no two deliverable items are identical. Because each product might vary from products manufactured in the past, a standard cost based on production history might be impossible to determine. Other factors that influence whether an organization decides to use actual costing instead of standard costing include the use of commodity items, whose costs might vary constantly, or dynamic economic fluctuations.

An additional benefit to using actual costing is the ability to revalue inventory based on actual costs, which are the most accurate. Changes to costs from labor or additional cost components are reflected almost immediately. Inventory activity is costed at the updated value for any additional inventory transactions that you process.

Technology or electronics industries benefit most from this type of costing because component variations affect total actual costs. Industries that deal with commodities, such as dairy products or precious metals, and are characterized by widely fluctuating costs, might use an actual costing system to provide the most current cost values. For these industries, the return on investment is having immediate access to the costs as they are incurred.

External Need to Track Costs

External entities often require industries to monitor specific areas of operations. These entities include regulatory agencies (such as agencies that influence pharmaceutical industries) or customers who require more self-regulation and monitoring of processes. Many organizations demonstrate their compliance by participating in registration processes such as ISO registration. The premise of ISO registration states that organizations have established business processes to which they conform and have documentation to support those processes. Merely participating in a registration program is not enough, however. An organization must determine whether its purpose for participating is generating additional paperwork, or if process improvement is the goal. Defining product costs and establishing methods for accounting for enterprise-wide activities are valid justifications for implementing monitoring processes. Many organizations implement self-improvement programs to uncover problem areas and to eliminate sources of waste that are internal to the organization, even if no outside agency or requirement exists. The ultimate goal is to stay informed and maintain a sound, well-run organization that will continue to be a viable contender as the future of the market evolves on a global scale.

The Competitive Advantage Through Product Costing and Manufacturing Accounting

The following table provides examples of typical issues in manufacturing accounting, the solutions provided by J.D. Edwards software, and the return on investment:

Issue	Solution
A company needs to know whether it operates at a profit or a loss.	The system compiles costs in a single ledger record regardless of where the cost record was generated.
	The system provides the ability to sort and report cost information by summary or detail.
	The return on investment is that the system provides continuous visibility of product costs and accounting records generated from associated functions throughout the enterprise. This allows management to make better-informed decisions.
A company needs to know the source of its costs.	The system integrates product costing (by item, hours and quantities) and manufacturing accounting. The system shows all elements that influence the cost of an item.
	Product costing provides your system with improved cost visibility and supports better management decisions. The system information can increase a company's accuracy in determining costs to customers.
	The return on investment is that the system provides improved accuracy in cost visibility for better-informed management decisions, which contributes to increased accuracy in determining costs to customers.
A company needs to automate account processing for manufacturing to accommodate the number of accounts and the complexity of the accounting structure.	After you have structured your accounts, nonaccounting personnel can access accounts throughout the system by using automatic accounting instructions (AAIs) and G/L class codes.
	Accurate accounting records of activity are available automatically without requiring nonaccounting personnel to generate new accounts.
	Fewer opportunities exist for inaccurate accounting records to be generated.
	The return on investment is that the system provides improved accuracy in cost visibility for better-informed management decisions, which contributes to increased accuracy in determining costs to customers.
A company needs to maintain accounting records to various accounts, based on customer.	You can design and maintain product costing and accounting structures within a single database to provide accurate records throughout the life cycle of any item.
	The return on investment is that the system provides the ability to review and adjust cost and accounting records to maintain an accurate and complete cost history throughout a single database. This ability contributes to decreased processing lead

	times and decreased costs.
A company has a complex product pricing structure for configured items that makes real-time pricing for customer orders difficult, especially in high-tech and electronics companies.	You can use the Advanced Pricing system in conjunction with the Base Configurator system to create accurate and timely pricing at sales order entry. Because configurations are determined at the time of order, electronics industry companies are using advanced pricing to provide customers with automatic price quotes at order time.
	The return on investment is that the system provides improved accuracy in cost visibility for better-informed management decisions and decreased order-processing lead time.
A commodity company needs to track current labor performance and compare it to standard performance.	The Manufacturing Accounting system provides records of standard labor costs that can be compared to current performance during or after a production process.
	The return on investment is that the system provides accurate and timely comparison records of standard versus current performance, which contribute to more accurate customer-related costs.

Product Costing and Manufacturing Accounting Overview

Maintaining accurate and complete records of the value of inventory is one of the major concerns of most businesses today. Keeping too much of an unprofitable stock or using inappropriate methods of costing on certain inventory items can quickly deplete your profits.

The Product Costing system allows you to store and retrieve cost information. It also helps you to manage your costs by providing information to your company's business plan. With accurate product costing, you can evaluate the following manufacturing processes to determine how they affect your company's profitability:

- Manufacturing budgets (direct labor, indirect labor, and overhead)
- Product design (design and manufacturing engineering)
- Accounting (gross margin by product line or item)

After you establish costs in the Product Costing system, the Manufacturing Accounting system tracks the costs, reports variances, and posts manufacturing transactions to the general ledger.

System Integration

Product Costing and Manufacturing Accounting are two of the systems that are used as part of Supply Chain Management. They allow you to track and account for your product and manufacturing costs in conjunction with supply chain activities.

Supply Chain Management enables you to coordinate your inventory, raw material, and labor resources, and to deliver products according to a managed schedule. The systems within Supply Chain Management are fully integrated, which ensures that information is current and accurate throughout all of your business operations. It is a manufacturing system that formalizes the activities of company and operations planning, as well as the execution of those plans.

Certain functions within the Product Costing and Manufacturing Accounting systems integrate with other J.D. Edwards systems, such as:

- Product Data Management
- Shop Floor Management
- Enterprise Asset Management
- Engineering Project Management
- Payroll
- General Accounting

You should have a basic understanding of these systems and their tables and how they interact with Product Costing and Manufacturing Accounting.

Product Costing and Manufacturing Accounting Features

The Product Costing and Manufacturing Accounting systems provide flexibility to accommodate your manufacturing environment. The following table describes some of the benefits and features of these systems:

User defined cost extras or add-ons	Define and maintain an unlimited number of cost components for tracking specific costs, such as freight, taxes, duty, and electricity.
User defined cost rollup methods	Define an unlimited number of cost methods to use in cost simulation analyses and actual costing.
User defined cost factors and rates	Allocate cost factors and rates to a specific item. These factors and rates are used with cost extras or add-ons to calculate additional costs.
Cost variances	Print a complete set of reports to compare old costs with new costs before implementing any changes.
Bill of material rollup	Calculate the total material cost by retrieving the bill of material for all items and adding the total cost of the components.
Cost simulation	Run a complete simulation of costs before any live data is updated as the frozen cost standard.
Multifacility costing	Maintain cost information at the branch/plant level to allow for cost variances at different locations for identical manufactured items.
Variances	Review the following kinds of variances: • Engineering • Planned • Actual (material and labor) • Other
Journal entries for variances	Create detailed or summary journal entries for work order or rate schedule variances.

Journal entries for work order or rate schedule transactions	Create detailed or summary journal entries for work in process or completions.
Automatic accounting instruction (AAI) tables	Charge amounts to specified accounts.
Reports	Print reports listing detailed costs and variances for work orders or rate schedules.

Product Costing and Standard Accounting Integration

Product costing plays a significant role in the manufacturing environment. For standard costing, before you can implement your Manufacturing Accounting system, you must set up costs for the products that you produce. To calculate these costs, you must consider the following aspects in the manufacturing environment:

- Cost reporting (what does the item really cost to produce?)
- Variance reporting (actual versus standard costs)
- Product and job costing (detailed information) for material labor, and overhead

If you use the standard cost method (07) after you calculate your cost component values in a simulated mode and are satisfied with the results, you must establish frozen standard cost components. All shop floor transactions use these frozen standards for calculations, which, in turn, create transactions in your general ledger and are the basis of your inventory valuation.

Standard costing is most applicable for a company with stable costs and little cost variance from one manufacturing run to another. Companies with minimal accounting staff often use standard cost accounting.

Actual Accounting Integration

J.D. Edwards provides the following two methods for evaluating actual costs:

- Weighted average cost method (02)
- Actual, or manufacturing last, cost method (09)

You can implement actual costing with the Manufacturing Accounting system without using the Product Costing system.

Many companies who use the J.D. Edwards Shop Floor Management system want to capture and track actual or average manufacturing costs. If you use actual costing, the system calculates the cost of the product built on a work order or rate schedule based on the actual hours used and the actual quantity of issued parts. The system updates the cost based on the most current information.

Actual costing is a function of the Manufacturing Accounting system and not the Product Costing system. If you use actual costing, you do not need to set up product costs for each item that you manufacture because product costs will be calculated when the work or rate order completions are run. A company can choose to use a combination of actual-costed items and standard-costed items. A company using one of the actual costing methods should set up its extra, or overhead, costs as it would for standard accounting.

When you complete work orders for items that use the weighted average (02) or actual, manufacturing last, (09) cost methods, the system performs the following actions:

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- Calculates a new cost unit for the item based on shop floor activities
- Revalues on-hand inventory for items using cost method 09
- Calculates and updates the weighted average cost
- Updates the Item Cost File table (F4105) with the new unit cost

Average costing is often useful for companies for which costs change often but not significantly.

Actual costing is useful for companies that:

- Engineer or manufacture to order
- Create quotations
- Have costs that change often and significantly

Achieving Effective Cost Management

Most of the major areas or departments within your manufacturing company contribute information to your product costing activities and, therefore, affect the overall accuracy of your manufacturing budget.

The following table lists examples of departments within a typical company and the aspects of the Product Costing and Manufacturing Accounting systems that are affected by each department:

Design Engineering	The design engineering group is responsible for ensuring that the following occurs: • The bill of material is complete • The make-buy information is accurate • The engineering change orders (ECOs) have been taken into account
Sales	The sales force contributes important information regarding target markets, as well as the latest trends in manufacturing. For effective cost management, the sales force must provide timely and reasonable forecasts.
Manufacturing Engineering	The manufacturing engineering group is responsible for identifying the following: • Correct processes • Changes to existing processes • Manufacturing overhead • Accurate information about work centers
Purchasing	The purchasing department must provide the following information: • Accurate supplier costs • Accurate transportation costs
Manufacturing	Manufacturing operations provide vital information to the costing effort. For example, they must perform the following tasks: • Input their data in a timely and accurate manner • Identify any discrepancies in the bills of material and routings

Cost Accounting   The cost accounting staff must perform the following tasks:

- Ensure that all items have costs
- Identify general and administrative overhead
- Produce timely variance reports (standard costs versus current costs)

Consider the following issues as you define and manage your manufacturing costs:

- When (and how often) you change costs
- How you limit access
- When the cost of a new item is reflected
- How you account for labor rates and work center overhead

You might also encounter the following circumstances as you define costs:

- Not all costs are available before your initial cost rollup
- You have used incorrect units of measure
- Your company reports labor hours and costs inaccurately
- New products are not updated in a timely manner
- Standards are updated too frequently
- Items have been added to or deleted from the bill of material since the last cost update
- Steps in the routing master have been changed since the last cost update

Considerations Regarding Standard and Actual Costing

A company should decide to use either standard or actual costing depending on its needs and requirements. You must weigh many considerations when making the decision to use standard or actual costing and accounting. To assist in the decision-making, the following list identifies considerations that are relevant to the J.D. Edwards Product Costing and Manufacturing Accounting systems:

Integration with other systems	The Base Configurator programs are not fully adapted to actual costing methods (02 or 09).
Manufacturing considerations	When you use actual costing methods, J.D. Edwards recommends that you do the following: • Use only single-level bills of material, if you use bills of material • Use discrete manufacturing • Use engineer-to-order or make-to-order practices and oversee the entry of all information on the work orders
Inventory transfer considerations	When you use actual costing methods, J.D. Edwards recommends that you do the following: • Be aware that transferring inventory for any purposes other than the cost of goods sold (COGS) might result in unreliable information in the variance accounting. • Manually set the actual cost for the primary location to equal the standard cost to allow for transient stock. • Understand that processing for physical inventory might be more time consuming than with other cost methods.
Costing considerations	When you use actual costing methods, maintain the inventory cost level at the item, branch, and location levels (Inventory Cost Level 3) for best results.

Tables for Product Costing and Manufacturing Accounting

The following is a list of the tables that are used throughout Product Costing and Manufacturing Accounting.

Account Balances (F0902)	Contains net postings for each period and prior year balances (net and cumulative). This table contains one record per account, ledger type, subledger, fiscal year, and transaction currency table.
Account Ledger (F0911)	Contains detailed transactions in the general ledger.
Account Master (F0901)	Contains account definitions, including numbers and descriptions.
Address Book Master (F0101)	Contains information about customers, suppliers, employees, and prospects.
Distribution/Manufacturing - AAI Values (F4095)	Contains account numbers that are used to create journal entries and charge amounts to those accounts.
Batch Control Records (F0011)	Contains system-generated batch header information, including the batch number, batch status, and batch entry date.
Bill of Material Master File (F3002)	Contains information at the business unit level about bills of material, such as quantities of components. The system uses this information to calculate material costs.

Item Branch File (F4102)	Defines and maintains warehouse or plant-level information, such as branch-level category codes.
Business Unit Master (F0006)	Identifies information about business units, such as company names and category codes assigned to the business unit.
Item Cost Component Add-Ons (F30026)	Contains standard costs and extra costs.
Item Cost Component Detail (F300261)	Stores item cost components by work center.
Item Cost File (F4105)	Contains the summarized item costs and inventory valuation method.
Equipment Rates (F1301)	Contains equipment rates that can be used for actual costing if you choose this table as a machine rate source in the Manufacturing Constants program (P3009).
Generic Message/Rates (F00191)	Contains rate and factor tables, including the following: • 30/CF Costing Factors • 30/CR Costing Rates • 31/ER Employee Rates
Item Ledger File (F4111)	Contains transactions that indicate changes in inventory value.
Item Location File (F41021)	Determines the G/L class code used in manufacturing accounting transactions.
Item Master (F4101)	Stores basic information about each defined inventory item, such as item numbers, descriptions, category codes, and units of measure.
Job Shop Manufacturing Constants (F3009)	Stores variables that indicate, for example, whether to include efficiency in the cost rollup and which overhead values to use. For actual costing, you can specify the sources for labor and machine rates.
Item Manufacturing Data (F4101M)	Stores the accounting cost quantity, which the system uses to determine the allocation of fixed setup costs for an item.
Work Order Parts List (F3111)	Contains the parts list that is attached to a work order or rate schedule. It contains one record for each part.
Shop Floor Control Parts List Tag Table (F3111T)	Stores the accumulated costs, accumulated scrap amount, and unaccounted scrap quantity for components.
Production Cost (F3102)	Contains all costs associated with a particular work order.
Purchase Order Detail File (F4311)	Contains transactions related to a purchase order.
Routing Master File (F3003)	Stores routing information, including operation sequence, work center, run time, setup time, and machine time. The system uses this information to calculate labor, machine, and overhead costs.

Sales Flex Accounting (F4096) Determines the information to use for cost objects.

User Defined Codes (F0005) Contains user defined codes and their descriptions.

Work Center Master File (F30006) Contains detailed data about all defined work centers, including efficiency.

Work Center Rates File (F30008) Contains simulated and frozen rates for each work center, such as rates for overhead and labor.

Work Order Master File (F4801) Contains all work order header information. The data from this table appears on shop floor paperwork. The system updates this table when completion transactions occur for a work order.

Work Order Master Tag File (F4801T) Stores the cost method for the work order. Additionally, it includes the unaccounted amount and quantity for scrap units and the unaccounted work order completions.

Work Order Routing (F3112) Contains the routing steps that are attached to a work order or rate schedule. It contains one record for each operation sequence number and work center.

Shop Floor Control Routing Instructions Tag Table (F3112T) Stores the unaccounted quantity and amounts for outside operations.

Work Order Time Transactions (F31122) Contains labor and machine time transactions by work order.

System Setup for Product Costing and Manufacturing Accounting

Before you can use your Product Costing and Manufacturing Accounting systems, you need to define certain information that the system uses during processing. The settings might vary depending on whether you are using standard or actual accounting for an item.

User Defined Codes for Product Costing

Many fields throughout the Product Costing and Manufacturing Accounting systems require user defined codes. You can customize fields in your system by setting up user defined codes to meet the needs of your organization. User defined codes allow you to establish and maintain a table that defines valid codes for various types of information. Codes are categorized by system and code type.

The Product Costing and Manufacturing Accounting systems uses the following user defined codes:

Cost Component Add-Ons (30/CA)
Use cost components to identify and track each type of cost for an item. Cost components that begin with A, B, and C are hard-coded by J.D. Edwards and cannot be changed. J.D. Edwards recommends that you use cost component D for outside operations.

You can define an unlimited number of additional cost components to account for extra costs for an item, such as electricity or research and development. J.D. Edwards recommends that you define extra costs with an X for easy identification. You can assign separate cost components by categories that are applicable to your business. The user defined codes for extra cost components can begin with any letter except A, B, or C. Although it might appear that you can set up extra cost components that begin with these letters, the Simulate Rollup program (R30812) actually deletes these cost components.

When you set up cost components, complete a separate line for all of the possible cost components that can be used in the cost rollup for an item. Complete the fields with the following information:

- Codes: The code for the cost component.
- Description 1: What the component represents.
- Description 2: Additional text that further clarifies Description 1 or the cost component.
- Special Handling: Additional information. For outside operations, type 1 as the first character.

Caution

You can use a cost component only once for an outside operation in a routing. If you have more than one outside operation, you need to define different cost components, for example D1 and D2.

Cost Buckets (30/CB)
Use cost buckets to group similar cost components for inquiry and reporting purposes.

When you set up cost buckets, complete the fields with the following information:

- Codes: Identify the cost components to be grouped.
- Description 1: Enter the name that you want to appear as the heading for the cost bucket column on costed bill review programs and reports. You need to enter this title only once for each sequence number (entered in the Description 2 field). If the program finds more than one name for a bucket, it uses the name defined for the last cost component that it accumulates into the operation bucket.
- Description 2: Specify in which column (bucket) each cost component is grouped.

Costed Operation Buckets (30/CO)

Use operation bucket codes to combine component costs in each step in the routing. That is, you can group operation costs into totals that appear on costed routing review programs and reports. For example, you might track labor costs by separate cost components that represent setup, run, and overhead labor for an item. When you assign the same sequence number to each cost component, you can combine these cost components into one total cost for labor on the costed routing review program or report for the item.

When you set up operation bucket codes, complete the fields with the following information:

- Codes: Identify the cost components to be grouped.
- Description 1: Enter the name that you want to appear as the heading for the operation bucket column on costed routing inquiries and reports. You need to enter this title only once for each sequence number (entered in the Description 2 field). If the program finds more than one name for a bucket, it uses the name defined for the last cost component that it accumulates into the operation bucket.
- Description 2: Specify in which column (bucket) each cost component is grouped. You should reserve buckets 1 and 2 for extra costs because the system does not calculate cost buckets 1 and 2 based on the routing, and extra costs are not related to a particular operation on the routing. Buckets 1 and 2 appear in the header area of Costed Routing/Process Inquiry (P30208), and a processing option controls whether they are included in the calculation of total costs.

Costing Exceptions Error Messages (30/EM)

Use this UDC table to review the error messages that appear on the Costing Exceptions report (R30801) when any item contains any of the errors included in this table. You can change the severity level of an error to one that is appropriate for your company. The severity level is defined in Description 2.

The error messages are hard-coded. You cannot add or delete messages. If you change the name of an existing message, you should not change its meaning, but merely adapt the definition to one that is more clearly understood by your company.

Average Cost Calculation (40/AV)

If you want your weighted average cost method (02) to be updated automatically by the system, use this UDC table to enter the program numbers for each of the programs that you want the system to update.

Cost Method (40/CM)

Use this UDC table to review the cost methods used to calculate costs for all items. Codes 01 through 09 are hard-coded and cannot be altered. Codes 10 through 19 are reserved for use by J.D. Edwards. Codes 02, 07, and 09 are the only cost methods that are supported by manufacturing.

Example: Setting Up Cost Bucket Codes for Costed Bills of Material

You can group similar cost components for review and reporting purposes. For example, you can define A1 and A2 cost components as Purchasing. You do this by assigning them the same sequence number in the Description 2 field. The sequence number also determines in which order the groups appear on costed bill review programs and reports. You can then use the costed bill inquiries and reports to review the total costs for the group Purchase.

Each cost bucket can contain several defined cost components. For example, you might define the buckets and user defined codes as follows:

Bucket 1 Purchase. Includes cost components A1 (material), A2 (scrap), and D1 (outside operations).

Bucket 2 Labor. Includes cost components B1 (direct labor), B2 (setup), and B4 (labor efficiency).

Bucket 3 Machine. Includes cost component B3 (machine run).

Bucket 4 Overhead. Includes cost components C1 (machine variable) and C2 (machine fixed).

Bucket 5 Extras. Includes cost components X1 (taxes) and X2 (electricity).

Setting Up Costing Information

You can customize the Product Costing and Manufacturing Accounting systems to meet your specific manufacturing environment needs. The system uses the values that you define to determine the costs of the items that you manufacture.

Note

If you use either of the actual cost methods, you do not complete the task for setting up accounting cost quantities.

Setting Up Accounting Cost Quantities for Standard Costs

The system uses accounting cost quantities to determine the allocation of fixed costs for an item. Accounting cost quantities represent the average quantity of a work order or rate schedule for this item. During cost rollup, the system divides the fixed costs by the accounting cost quantity that you specify to determine a unit fixed cost.

Note

If you use either of the actual cost methods (02 or 09) for an item, you do not need to complete this task.

▶ **To set up accounting cost quantities for standard costs**

From the Item Revisions menu (G4112), choose Item Branch/Plant Manufacturing Data.

1. On Work With Item Branch, complete the following field and click Find:

- Item Number

2. Choose a record in the detail area and then choose Addl System Info from the Row menu.

3. On Additional System Info, choose the Plant Manufacturing tab and complete the following field:

- Accounting Cost Qty

Setting Up Item Cost Levels

The cost level that you assign to an item indicates the level at which the system maintains costs. You determine whether the system maintains one overall cost for an item (cost level 1) or a different cost for the item in each branch/plant (cost level 2). The system can also maintain a different cost for each location and lot within a branch/plant (cost level 3).

The following applies to using cost level 3:

- Configured items must be cost level 3.

- If you use actual costing, J.D. Edwards recommends that you use cost level 3.

- In the standard costing system, costs at cost level 3 are informational only.

After you have entered cost information, do not change an item's cost level on this form. To change an item's cost level, use the Item Cost Level Conversion program (R41815).

► **To set up an item cost level**

From the Inventory Master/Transactions menu (G4111), choose Item Master.

1. On Work With Item Master Browse, complete the following field in the Query by Example line and click Find:

   - 2nd Item Number

2. Choose the record and click Select.

3. On Item Master Revisions, choose the Basic Item Data tab and complete or review the following field:

   - Inventory Cost Level

4. If you use actual costing and you entered 3 as the inventory cost level, choose the Lot Processing tab and complete the following field:

   - Lot Process Type

Setting Up Methods and Costs for Items

You must provide cost information for each of your items so that the system can track inventory costs. When you define an item with cost level 2 or 3, you specify the cost method that the system uses to determine an item's cost for sales transactions, inventory transactions, and purchase orders in the Branch/Plant Constants program (P41001). You can override the values in the branch/plant constants for a particular item at the item branch/plant level.

For example, you can specify that the system use the weighted average cost method to determine the inventory cost for an item and use the last-in cost method to determine the item's unit cost for purchase orders.

You can set up your manufacturing accounting to do one of the following:

Standard costing

Use cost method 07 (Standard). This method is useful for items that are manufactured in volume with low variety and have stable costs. When using cost method 07 for the parent item, the system uses only method 07 for all components of the parent, outside operations, and so forth.

Actual costing

Use either cost method 02 (Weighted Average) or cost method 09 (Actual, Manufacturing Last). When you assign either cost method 02 or 09 to the parent item, the system uses this value to update the Ledger field (LEDG) in the Work Order Master Tag File table (F4801T) when work orders are generated. Therefore, the components on the parts list for the parent item can have any valid cost method (UDC 40/CM). The actual costing methods apply to discrete items only.

Cost method 02 (Weighted Average) is useful for costs that change often. Use this method when you do not want to revalue on-hand inventory when the work orders are completed, but at a time of your own determination.

Cost method 09 (Actual, Manufacturing Last) is useful for items that are engineered or manufactured to order and have costs that change often and significantly. Use this method when you want to revalue your inventory each time that you run the work order completion programs.

Caution

Because J.D. Edwards software does not support actual costing for process and configured items, the system issues a hard error if you attempt to define an actual cost method for a process item (stocking type R) or a configured item (stocking type C).

For each cost method that you assign to an item, you must also specify a cost or let the system calculate it. For example, to use the actual, or manufacturing last, cost method for an item, you could enter an initial cost or let the system update it with the last manufactured cost.

You can set up user defined codes (40/CM) to define your own cost methods. For example, you might want to establish a cost method to maintain a history of last year's costs. Codes 01 through 09 are hard-coded and cannot be altered. Codes 10 through 19 are reserved for J.D. Edwards use and cannot be assigned.

Note

You can remove a cost method for an item if it is no longer applicable. If you try to remove your sales and inventory or purchasing cost method, the system displays a warning message. The system does not delete the cost method, but updates it to a cost of zero.

► **To set up methods and costs for items**

From the Product Costing menu (G3014), choose Enter/Change Item Costs.

1. On Work With Item Cost, complete the following fields and click Find:
   - Branch/Plant

- Item Number

2. Choose a record in the detail area and click Add.
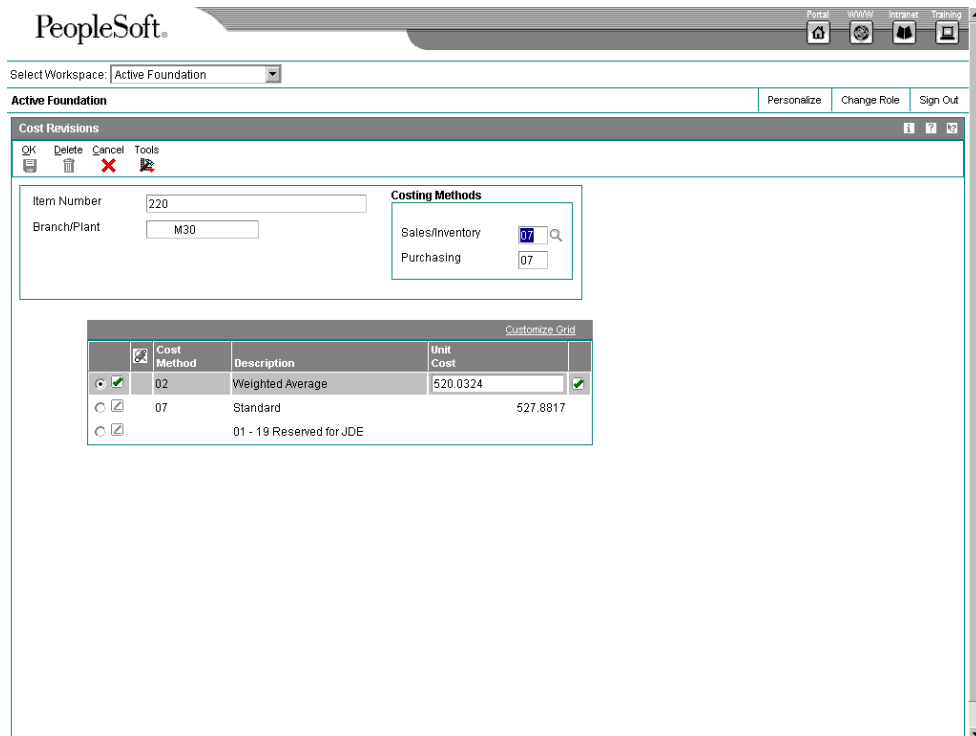
3. On Cost Revisions, enter the appropriate cost methods in the following fields:

   - Sales/Inventory

   - Purchasing

4. Complete the following fields for each of the applicable cost methods:

   - Cost Method

   - Unit Cost

   If you enter a cost method for sales/inventory or purchasing and do not set up a cost amount for that method, a warning message appears. If you do not enter a cost amount for the cost method, the system assigns a cost of zero.

5. Click OK.

Processing Options for Enter/Change Item Costs (P4105)

Process

1. Enter a '1' to prevent the standard cost from being changed.
Interop

1. Enter the transaction type for the interoperability transaction. If left blank, outbound interoperability processing will not be performed.

Flex Acct

1. Flex Accounting

   Blank = Do not activate flexible accounting
   1 = Activate flexible accounting

Setting Up Manufacturing Constants for Product Costing and Manufacturing Accounting

You must define product costing and manufacturing accounting information that is unique to your branch/plant. You use the Manufacturing Constants program (P3009) to specify the following cost calculation information:

- Whether to maintain costs on the work center or the cost component level

- How to calculate overhead costs

- Whether to consider work center efficiency when calculating direct labor and overhead

- Whether overhead costs are entered as percents or rates

If you use actual costing, you can specify the sources for labor and machine rates that the system uses to calculate labor and machine costs.

► **To set up manufacturing constants for Product Costing**

From the Product Costing Setup menu (G3042), choose Manufacturing Constants.

1. On Work with Manufacturing Constants, choose a branch/plant and click Select.

2. On Manufacturing Constants Revision, choose the Costing Options tab.

3. Click (to turn on) any of the following costing options that are appropriate for your organization:

   - Cost by Work Center

     If you turn on this option, the system maintains costs by work center and stores the information in the Item Cost Component Detail table (F300261).

   - Modify cost by Work Center Efficiency

     If you turn on this option, the system creates cost component B4 (labor efficiency).

   - Include Var. Labor Overhead in cost

   - Calculate Fixed on Setup Labor

   - Calculate Var. on Direct Labor

   - Include Fixed Labor Overhead in cost

   - Calculate Fixed on Setup Labor

   - Calculate Fixed on Direct Labor

   - Include Fixed Machine Overhead in cost

   - Include Var. Machine Overhead in cost

4. If you used actual costing, complete the following fields:

   - Machine Rate Source

   - Labor Rate Source

   Note
   For machine rates, you can use either the frozen work center rates from the Work Center Rates File table (F30008) for the cost method of the parent item, or you can use the Equipment Rates table (F1301). For labor rates, you can also use the Work Center Rates File table (F30008) or the Employee Labor Rates program (P00191).

5. Click one of the following options in the Overheads group box:

   - Percentages

   - Rates

6. Click OK when you have chosen all of the appropriate costing options.

See Also

❑ *Setting Up Manufacturing Constants* in the *Product Data Management Guide* documentation for further information about setting up all of the manufacturing constants

Setting up Standard Rate and Factor Codes

Standard rate and factor codes represent overhead costs or other indirect costs that cannot be attributed directly to a certain production process or operation, but must be accounted for in the costs of an item. These types of costs include utilities, insurance, research and development costs, rent or lease payments, or other overhead or general operating costs.

Note

Rate and factor codes are user defined, but, to maintain them, you must access the Standard Rates program (P00191) from the menu. You cannot change them in the user defined code tables with the same label. For example, if you enter 30 and CR on the Work With User Defined Codes form, you open the Critical Work Center UDC table, not the standard rates.

The Simulate Rollup program (R30812) uses the rates and factors that you define to calculate some of the costs that appear in the Enter/Change Cost Components program (P30026).

► **To set up standard rate codes**

From the Product Costing Setup menu (G3042), choose Standard Rates.

1. Choose Costing Rates and click Select.

2. On Enter Generic Message/Rates, complete the following fields and click OK:

- Code

  The Enter/Change Cost Components program (P30026) uses this value in conjunction with the factor code to calculate extra costs.

- Description

  A description of the code.

- Rate

  The rate with up to four decimal places is used to calculate the extra costs for this code.

► **To set up standard factor codes**

From the Product Costing Setup menu (G3042), choose Standard Factors.

1. Choose Costing Factors and click Select.

2. On Enter Generic Message/Rates, complete the following fields and click OK:

- Code

  The Enter/Change Cost Components program (P30026) uses this value in conjunction with the rate code and rate to calculate extra costs.

- Description

A description of the code.

- Rate

  The rate with up to four decimal places is used to calculate the extra costs for this code.

Assigning Values to User Defined Cost Components

After you set up cost components and standard rate and factor codes, you must assign a monetary value to each. These values are added to the net amount of each item that you set up. You can assign a net-added value manually, or you can assign a predefined value.

You can also assign a calculated value based on another cost component's total value. In this case, the system calculates the net added value based on the total for an existing cost component. In addition, you can assign a calculated value based on another cost component's net-added value. The system calculates the net-added value based on the net-added value for an existing cost component. In both circumstances, the system calculates this value when you enter information in the Enter/Change Cost Components program (P30026). The costs are then rolled up into the cost of the item when you run the Simulate Rollup program (R30812).

The system can calculate the net added value by multiplying a rate and factor. If you enter both amounts, the system multiplies the two numbers to calculate the net added cost for the cost component for that item.

Before You Begin

- ❑ Set up the cost components in UDC table 30/CA.
- ❑ Set up the standard rate and factor codes.

► To assign a net added value manually

From the Product Costing menu (G3014), choose Enter/Change Cost Components.

1. On Work With Cost Components, complete the following fields and click Find:

   - Branch/Plant

   - Item Number

2. Choose a record in the detail area and click Select.

3. On Enter Cost Components, complete the following field for the record for which you need to assign a net added value, and then click OK:

   - Simulated Net Added

Note

The program displays manually entered costs in the Simulated Total field.

► To assign a predefined value

From the Product Costing menu (G3014), choose Enter/Change Cost Components.

1. On Work With Cost Components, complete the following fields and click Find:

   - Branch/Plant

   - Item Number

2. Choose a record in the detail area and click Select.

3. On Enter Cost Components, complete one of the following fields and click OK:

   - Sim Fac Code

   The system retrieves the value that you defined for the factor code (30/CF) in the Generic Message/Rates table (F00191). The system multiplies the values in the Sim Fac Code and the Simulated Rate fields. To review the valid factor codes, use the Search button or choose Factors from the Form menu.

   - Simulated Rate Code

   The system retrieves the value that you defined for the rate code (30/CR) in the Generic Message/Rates table (F00191). The system multiplies the values in the Simulated Rate Code and the Sim Fac Code fields. To review the valid rate codes, use the Search button or choose Rates from the Form menu.

   Note
   If you complete both fields, the system multiplies the returned values for the factor and the rate.

► To assign a calculated value based on another cost component's total value

From the Product Costing menu (G3014), choose Enter/Change Cost Components.

1. On Work With Cost Components, complete the following fields and click Find:

   - Branch/Plant

   - Item Number

2. Choose a record in the detail area and click Select.

3. On Enter Cost Components, choose a cost component type and type & followed by the cost component code in the following field:

   - Sim Fac Code

   Because of the way in which the system rolls up the costs, the cost component that you reference must come before the cost component that you are defining. For example, to define cost component X2, you can reference cost component X1 by entering &X1 in this field, but you cannot define cost component X1 by referencing cost component X2.

4. Complete one of the following fields and click OK:

   - Simulated Rate Code

- Simulated Rate

The system retrieves the total value for the cost component and multiplies it by the rate value that you indicated.

► **To assign a calculated value based on another cost component's net-added value**

From the Product Costing menu (G3014), choose Enter/Change Cost Components.

1. On Work With Cost Components, complete the following fields and click Find:

   - Branch/Plant

   - Item Number

2. Choose a record in the detail area and click Select.

3. On Enter Cost Components, complete the following field:

   - Cost Type

4. Type * followed by the cost component code in the following field:

   - Sim Fac Code

   Because of the way system rolls up costs, the cost component that you reference must come before the cost component that you are defining. For example, to define cost component X2, you can reference cost component X1 by entering *X1 in this field, but you cannot define cost component X1 by referencing cost component X2.

5. Complete one of the following fields and click OK:

   - Simulated Rate Code

   - Simulated Rate

   The system retrieves the net added value for the cost component and multiplies it by the rate value that you indicated.

► **To assign a calculated value by multiplying a rate and a factor**

From the Product Costing menu (G3014), choose Enter/Change Cost Components.

1. On Work With Cost Components, complete the following fields and click Find:

   - Branch/Plant

   - Item Number

2. Choose a record in the detail area and click Select.

3. On Enter Cost Components, choose a cost component type and complete one or both of the following fields:

   - Simulated Rate Code

   - Simulated Rate

   Alternatively, you can complete the Sim Fac Code or Simulated Rate Code fields or both. The system retrieves the values for the codes and multiplies them.

Setting Up Simulated Rates for Work Centers

You can effectively manage changes to a work center by tracking rates for labor and machine costs. You can update simulated rates for machine and labor hours by work center and cost method. The system uses these values in other manufacturing calculations, such as those used in costed routings, labor rate variance reports, and direct labor efficiency reports.

If you use standard costing, you must set up the simulated rates for work centers.

If you use actual costing and do not want to use labor or machine rates, you can use work center rates. You must make this decision when you set up the manufacturing constants. You can also set up the work center rates even if you have chosen labor or machine rates. The system uses the work center rate as the default rate if no other rates have been chosen.

Before You Begin

❑   Set up work centers.

► **To set up simulated rates for work centers**

From the Product Costing menu (G3014), choose Enter/Change Work Center Rate.

1. On Work With Work Center Rates, complete the following field and click Find:

    •   Branch/ Plant

    •   Work Center

2. Choose a record and click Select.

3. On Work Center Rate Revisions, complete the following fields and click OK:

- Direct Labor

- Setup Labor

- Labor Variable O/H

- Labor Fixed O/H

- Machine Run

- Machine Variable O/H

- Machine Fixed O/H

See Also

❑ *Entering Costing and Accounting Information* in the *Product Data Management Guide*

Setting Up General Ledger (G/L) Class Codes

General ledger (G/L) class codes are used by the automatic accounting instructions (AAIs) to determine to which accounts the system posts transactions.

You set up the G/L class code on the Item Branch/Plant Info form. However, the system then copies that value to the Item Location Revision program (P41024) and the AAIs use the G/L class code from the Item Location File table (F41021).

Because the system generates journal entries based on G/L class codes and AAIs, you should set up the class codes carefully. Generally, the AAIs are either already set up or are set up in collaboration with other accounting departments.

▶ **To set up G/L class codes**

From the Inventory Master/Transactions menu (G4111), choose Item Branch/Plant.

1. On Work With Item Branch, complete the following field and click Find:

- Item Number

2. Choose a record and click Select.

3. On Item/Branch Plant Info, choose the Basic Branch/Plant Data tab, complete the following field, and click OK:

- G/L Class

4. On Work With Item Branch, choose Location Revisions from the Row menu.

5. On Work With Item Locations, choose a location and click Select.

6. On Location Revisions, complete the following field or accept the default value:

- Class Code

7. Click OK.

Reviewing Manufacturing AAIs

Each transaction for which the system creates journal entries has automatic accounting instructions (AAIs) that instruct the program to post to specific G/L accounts. User defined AAIs connect manufacturing accounting, your chart of accounts, and financial reporting. You should create AAIs for each unique combination of company, transaction, document type, G/L class, and cost component.

To create G/L entries for transactions, the AAIs access the following information to find the account number to use:

- Company number
- Document type
- G/L class code
- Cost component
- Branch or business unit

To choose an AAI, the system searches first for an exact match between company and the G/L class code. If it does not find one, it then searches for the default company and the item's G/L class code. If it does not find a match, it then searches for the company, and uses **** (four asterisks) for the G/L class code.

Each AAI or record type points to a specific G/L account consisting of a business unit, an object, and a subsidiary code. J.D. Edwards defines manufacturing AAIs at the 3000 level, as follows:

3110 Inventory/Raw Materials
This AAI specifies which balance sheet G/L accounts are used when issuing raw materials or parts from inventory to work in process (document type IM). This AAI is also used to issue completed subassemblies from inventory back into work in process.

3120 Work in Process
For debit transactions, this AAI increases the material value of work in process by issuing raw materials and parts to work orders or rate schedules (document type IM).

For credit transactions, during completion (document type IC), this AAI records the transfer of material costs for a work order or a rate schedule from work in process inventory to subassemblies and finished goods inventory. This AAI also records the transfer of direct labor, setup labor, and overhead from work in process when work orders or rate schedules are complete.

3130 Sub-Assmby/Finished Goods
This AAI specifies which balance sheet G/L accounts are used when receiving subassemblies or finished goods from work in process into inventory (document type IC) or scrap (document type IS).

3210 Clear Work in Process
For actual costing, this AAI posts any additional cost of goods sold that were not included when completions were entered.

3220 Labor
This AAI posts debits when the planned hours are different from the actual hours that are associated with shop floor activities on document type IV. This is applicable to all cost components except A1 and A2.

Variances are posted as positive or negative, depending on whether they are favorable or unfavorable.

3240 Material	This AAI posts when the planned costs are different from the actual for cost components A1 and A2. The variance results from either over-issues or under-issues.
	Variances are posted as debits or credits, depending on whether they are favorable or unfavorable.

3260 Planned

This AAI posts when the planned costs are different from the current costs that are associated with shop floor activities on document type IV. This variance results from either of the following:

- A change to the parts list or the routing
- A shrink factor

Variances are posted as positive or negative, depending on whether they are favorable or unfavorable.

3270 Engineered

This AAI posts when the standard (frozen) costs are different from the current costs associated with shop floor activities on document type IV. This variance results from a change to the standard bill of material or the standard routing.

Variances are posted as positive or negative, depending on whether they are favorable or unfavorable.

3280 Other

This AAI posts when the completed cost is different from the standard cost that is associated with shop floor activities on document type IV. This variance results when a cost rollup is performed in the middle of the cycle, or is generated when the quantity completed plus the quantity scrapped does not equal the work or rate schedule quantity. The variance might be due to a rounding problem.

Variances are posted as positive or negative, depending on whether they are favorable or unfavorable.

3401 Accruals

This AAI specifies the profit and loss accounts that offset work in process labor transactions to work orders or rate schedules (document type IH).

► **To review AAIs**

From the Shop Floor Management Setup menu (G3141), choose Automatic Accounting Instructions.

1. On Work With AAIs, complete the following field:

   - Skip To AAI

   Note
   If you access the Automatic Accounting Instructions program from any manufacturing menu, the system automatically enters 3000 (the beginning of the manufacturing AAIs) in the Skip To AAI field.

2. Choose a record, and then choose Details from the Row menu.
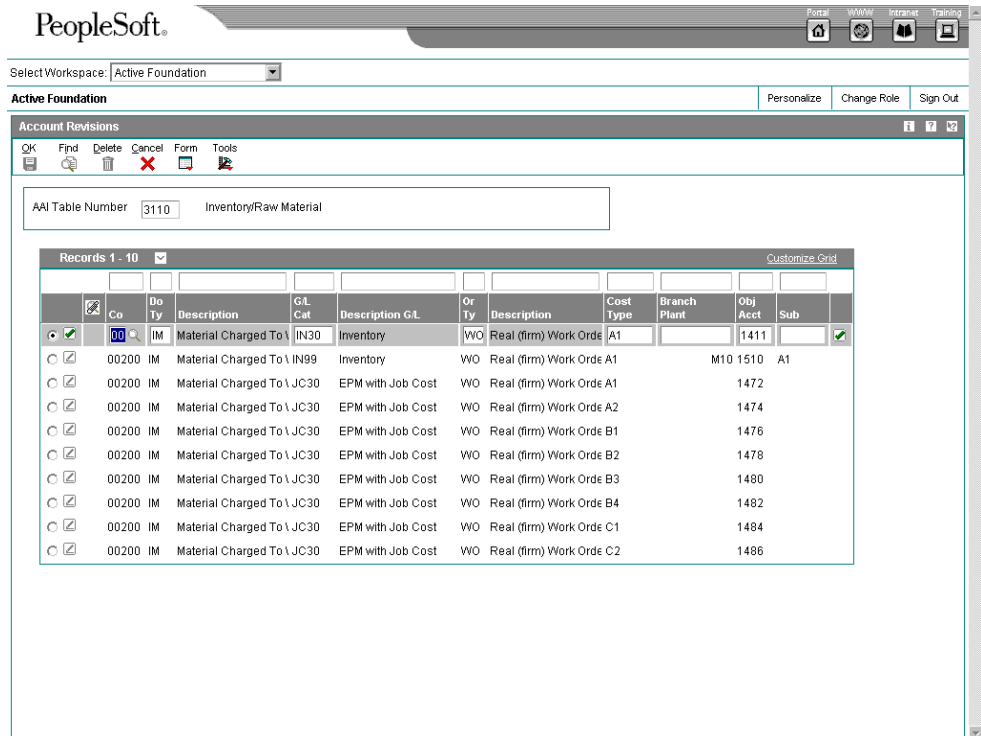
3. On Account Revisions, review the following fields:

   - Co

   - Do Ty

   - G/L Cat

   - Or Ty

   - Cost Type

   - Branch Plant

   - Obj Acct

   - Sub

Processing Options for Automatic Accounting Instructions (P40950)

Defaults

AAI Table Number

Enter a '1' if the cost type field should be available to Distribution AAI tables listed below: 4122, 4124, 4134, 4136, 4220, 4240 and 4310.

Product Costing

To remain competitive in a changing business environment and to reduce the costs that are passed along to the consumer, companies must be aware of all aspects of their business and look for ways to refine operations to reduce leadtimes, expedite speed to market, and reduce the cost of operations. All of these processes help the company to be more flexible so that it can respond to changes in customer demands and to maintain or improve its market share.

To reduce costs that you incur as a part of conducting business, you must understand where costs are generated. For production industries, you must break down product costs into each contributing factor that influences the ultimate cost of the manufactured product. You should track not only the cost of the individual item, but also each additive feature or activity that adds cost to the end product or increases the value of the product.

Numerous activities or processes might add costs to the product. You should have processes and tools in place to identify each component of cost. You must also understand how those incurred costs might be passed along to customers.

As your company refines its production processes and automates costing activities, you should create detailed definitions of the costing processes. Ensure that your cost techniques support any manufacturing method that you use. Often, a company wants to decrease the leadtime required to maintain and monitor product costing information throughout the entire manufacturing process. More accurate costing information enables you to identify wasteful costs, and to lower costs that must be passed along to the consumer or that are absorbed. The goal is to increase the company's revenue and improve profit margins.

Standard Costing

With standard costing, you estimate costs for each end item assembly and manufactured part on a level-by-level basis before production begins. These cost estimates are based on both past performance and analysis of future conditions.

Net Added Cost

These costs include the following:

- Labor
- Overhead
- Outside operations
- Extra costs
- Materials (for purchased parts only)

Total Cost

These costs include the following:

- This item's net-added cost
- Total cost of lower-level components

The net-added cost represents the cost to manufacture an item at a specified level in the bill of material. For manufactured parts, the cost includes labor, outside operations, and extra costs, but not materials (lower-level items). For purchased parts, the net-added cost includes the cost of materials. The total cost of an item represents the sum of the item's net-added cost and the total cost of all components.

By defining and monitoring standard product costs, you can measure your company's current manufacturing performance and compare it to your standard (target) costs. Product costing provides information about the monetary investments in your materials, work in process, and

physical inventory. You can use this information to determine pricing on end-items and service components.

Simulated Versus Frozen Costs

Simulated costs represent a "what if" analysis for a given cost method. You might want to calculate simulated costs because of changing factors in the business environment, such as labor rates or the cost of raw materials. You can simulate cost change scenarios (rollups) as many times as needed before you finalize the changes.

You finalize the changes by performing a frozen update for the given cost method. A frozen update copies your simulated values and makes them your frozen costs, and updates the Item Cost File table (F4105) with the total cost. These costs remain in effect until you update them with another frozen update.

Actual Costing

Actual costing captures and records actual manufacturing costs associated with shop floor transactions, such as work orders. Actual costing calculates costs by cost component, based on the parts list, routing, and extra costs.

If you are implementing actual costing, you need to thoroughly understand how standard costing flows through the J.D. Edwards systems. Actual costing with J.D. Edwards provides the following features:

Material costs	The system calculates material costs based on the cost method and cost level that you choose when you set up the item. You calculate component cost when you issue material to a work order by multiplying the component quantity with the cost that is set up for the chosen cost method in the Item Cost File table (F4105).
Labor costs	The system calculates labor costs using one of the following:

- The rates set up for the work center.
- The Employee Rates table (31/ER).
- The Employee Master Information table (F060116), if you are using the J.D. Edwards Workforce Management product suite. You must use the Speed Time Entry program (P051121) to retrieve information from the Employee Master Information table.
- You can manually enter the costs when you enter the time and quantity completed.

Machine costs	The system calculates machine costs using one of the following:

- The work center rates for the cost method that you specify
- The work center rates that the system calculates using information in the Equipment Rates table (F1301)
- The costs that you manually enter when you enter the time and quantity completed

Overhead costs	The system calculates overhead costs using rates or percentages from the Work Center Rates File table (F30008). You use the Manufacturing Constants program (P3009) to select the type of overhead costs that you want to include.
Extra costs	You define extra costs for an actual cost item in the Enter/Change Cost Components program (P30026) by entering them and then running the Reset Simulated Costs program

(R30850).

Outside operations	The system calculates costs for outside operations from the cost method specified for the item that is processed by an outside company (*OP item). The system calculates extra costs from the Item Cost Component Add-Ons table (F30026).

Cost Components

Cost components are values in UDC table 30/CA that represent the individual costs that make up an item, such as costs for material, labor, overhead, and extras. The system automatically calculates material, labor, and overhead costs. Extra costs, such as electricity, are manually controlled.

Use cost components to maintain complete item costing information. You can use them to set up simulated cost scenarios to help plan for future cost changes, and to display the simulated or frozen net-added and total component costs for any item.

In addition, you can do the following:

- Allow for extra costs that are related to the manufacturing of a product, such as costs for electricity, insurance, water, or warehouse space.

- Review specific calculations that determine cost amounts for any item.

- Maintain costs by branch for multifacility processing. Multifacility processing allows for different costing values based on regional or business variations.

- Set up costing rates that represent cost elements.

- Define additional cost factors to include in product costing calculations.

Reviewing Costing in Bills of Material

Review your bills of material to understand how the bills affect your material costs. Only items with a bill type of M are costed.

See Also

- ❑ *Entering Bills of Material* in the *Product Data Management Guide* for complete instructions for entering bills of material

► **To review costing in bills of material**

From the Daily PDM Discrete menu (G3011), choose Enter/Change Bill.

1. On Work with Bill of Material, complete the following fields and click Find:

    - Branch/Plant

    - Item Number

2. Choose a record and click Select.

3. On Enter Bill of Material Information, review the following fields:

- Item Number

- Quantity

- UM

- F V

- Feat Cost %

- Percent Scrap

- Operation Scrap Percent

Reviewing Routing Information

Review your routings to understand their input into your labor and overhead costs.

See Also

❑ *Working with Routing Instructions* in the *Product Data Management Guide* for information about entering routings

► **To review routing information**

From the Daily PDM Discrete menu (G3011), choose Enter/Change Routing.

1. On Work with Routing Operations, find the routing that you want to review.

2. Choose Revision from the Form menu.

3. On Enter Routing Information, review the following fields:

- Work Center

- Run Labor

- Run Machine

- Setup Labor

- Crew Size

- Cost Type

- Type Oper

- Yield %

- Cum Yield %

- Time Basis

Creating Simulated Costs

You can use the Product Costing system to calculate costs based on hypothetical situations. You can review the effect of any changes that you want to incorporate without altering the frozen standard costs. In addition, you can simulate cost change scenarios (rollups) as many times as needed before you finalize the changes during the frozen update process. For example, you can use simulated rollups to do the following:

- Simulate an increase in material costs

- Forecast the affect of changes on labor rates

- Develop strategies for pricing, contractual, or labor negotiation

You can set the processing options in any of the cost simulation programs to specify the cost method that you want to use.

The Simulate Rollup program (R30812) use information from the following tables to generate costs:

Job Shop Manufacturing Constants (F3009)	Values from this table indicate whether overhead should be included in cost component calculations.
Work Center Rates File (F30008)	The Simulate Rollup program uses monetary amounts and percentages for the calculation of labor, machine, and overhead costs.
Routing Master File (F3003)	This table stores the hours required for each operation, crew size, outside operation costs, and cumulative yield values.
Bill of Material Master File (F3002)	This table provides information about the material that is required at each level of the bill.
Item Cost File (F4105)	This table provides costs for purchased items and outside operations.
Item Cross Reference File (F4104)	This table identifies the master routing.
Work Center Master (F30006)	This table provides the work center efficiency factor.
Item Master (F4101)	This table stores the low-level code. Costs are rolled up from the lowest level to the highest level.
Item Branch File (F4102)	This table provides the accounting cost quantity.
Generic Message/Rates (F00191)	This table provides rates and factors for extra costs.
Item Cost Components Add-Ons (F30026)	This table provides the calculations for extra costs.

The program sums the costs of all the components in each level of the parent item's bill of material to arrive at a total cost for the parent item.

Creating the Costing Exceptions Report

From the Product Costing Reports menu (G3023), choose Costing Exceptions.

Before you roll up simulated costs, run the Costing Exceptions report (R30801). This report lists error messages that identify any problems that are associated with an item. An example of a problem is an item without a routing.

The error messages are hard-coded in UDC table 30/EM. You cannot add or change these error messages. You can define the severity level for each error message to one that is appropriate for your company. For example, if having labor costs of 0 (zero) is an important exception in your company, you could assign that error message a high severity level. You can indicate in the processing options the minimum level of error messages that you want included in the report.

The following list identifies the changeable, default severity setting for each of the hard-coded error messages:

Severity level 10	• No accounting lot size for setup
	• Setup hours are zero
	• Machine hours are zero
Severity level 20	• Purchase part with bill of material
	• Bill of material components with no quantity
Severity level 30	• No cost component - material cost
	• No work center - labor rate
	• No work center - setup labor rate
	• No work center - labor variable overhead rate
	• No work center - labor fixed overhead rate
	• No work center - machine run rate
	• No work center - machine variable overhead rate
	• No work center - machine fixed overhead rate
	• Purchased item without purchased cost
Severity level 40	• No rates for work center
Severity level 50	• Manufactured item with no bill of material
	• Manufactured item with no routing

You should correct the problems and run the Costing Exceptions report again before you create a simulated rollup.

Processing Options for Costing Exceptions (R30801)

Error Message
Enter the minimum message level to appear on the report.

Error Message
Cost Method:
Enter the cost method to base costing errors on (i.e: 01, 02,...). If left blank, cost method 07 (standard) will be used.

Cost Method
Enter the Purchasing Cost Method to base costing errors on (ie: 07, 02, ...). If left blank, cost method 07 (standard) will be used.

Cost Method

Creating a Simulated Rollup

From the Product Costing menu (G3014), choose Simulate Standard Rollup.

Use the Simulate Standard Rollup program (R30812) to calculate costs based on hypothetical situations. The Frozen Standard Update report (R30825) displays the cost components by work center. After you run this report, you can review the results in the Enter Cost Components program (P30026).

To choose a bill of material and routing, the program searches first for a bill for which the batch quantity matches the accounting cost quantity. When the program finds no such bill, it uses the zero batch bill. The bill of material must have bill type M (Standard Manufacturing Bill).

For the system to calculate B and C cost components, all of the following conditions must be met:

- The routing must have routing type M (Standard Manufacturing Routing).
- A routing operation must have a work center with rates in the Work Center Master File table (F30006) for the cost component to appear.
- The operation type code on the routing must indicate a normal operation (that is, the field for this code is blank).
- The effective dates on the routing must be valid. The default As Of date is the current date.

The cost simulation is affected by the following information.

Cumulative Yield

Cumulative yield, which is defined on the routing, affects labor and machine hours in the rollup calculations. Enough hours must be expended to obtain 100 percent yield at the last operation. In a series of routings, the hours must be adjusted accordingly. The following example illustrates how costing of hours is affected by cumulative yield:

Cumulative Yield = 85% (0.85)

	Labor	Machine	Setup
Without Yield	5	5	5
With Yield	5.88	5.88	5

For each operation, the labor and machine hours are adjusted by dividing the hours by the cumulative yield. Setup hours are not affected.

Operation Scrap

Operation scrap, defined on the bill of material, affects material cost calculations in the rollup. Enough material must be at each operation in order to obtain 100 percent yield at the last operation. When material cost is calculated, the quantity of the components is adjusted accordingly. The following example illustrates the effect of operation scrap on costing:

Parent = A

Component = B

Quantity per = 3

Cost of B = 5.00

Operation scrap = 8%

Cost of B rolled into parent item A = 3 x 1.08 x 5 = 16.20

Master Routings

The Simulate Standard Rollup program uses the master routing for the item from the Routing Master File table (F3003) if all of the following are true:

- The Master Routing field on the Manufacturing Constants form is set to Y for the branch.
- The parent item has a cross-reference item defined for master routing. (The cross-reference item must be defined with a cross-reference type of MR and the Address field must be blank.)
- An item routing has been defined for the cross-reference item.

Unit of Measure Conversions

The Simulate Standard Rollup program converts all units of measure to the primary unit of measure for the purpose of the rollup.

When one of the units of measure is a potent unit of measure, the conversion equation includes the standard potency value from branch/plant manufacturing data. The following example illustrates a conversion involving a potent unit of measure:

- Component = B
- Quantity per = 3
- Primary unit of measure = GA (physical gallons)
- Component unit of measure = GP (potent gallons)
- Standard potency = 50%
- Cost of B = 50.00 (from the Item Cost File table, F4105)
- Cost rolled into parent item = [(3 / .5) x 50] = 300.00

Before You Begin

- ❑ Create the Costing Exceptions report (R30801).

Processing Options for Simulate Standard Rollup (R30812)

Default Tab

These processing options specify the default values for date and cost method.

1. As Of Date

Blank = System Date

This date is used to determine which routing and bill of material for each item are used in the rollup, based on their effectivity dates. If you leave this field blank, the program uses the current date.

2. Cost Method

Blank = 07

This is the cost method that will contain your new simulated costs in the Cost Components table. If you leave this field blank, the program calculates costs for cost method 07 (standard costs).

Processing Tab

These processing options control processing criteria.

1. Single Level

Blank = Complete Rollup
1 = Single Level

Use this processing option to specify whether you want to simulate costs for a selected item or items, without recosting everything else in the bill of material. For example, you might have a new item that needs to be costed, but you do not want to recost all components. If you enter 1, the program uses the costs of the lower-level components to roll up the cost for the new item, but does not recost the lower-level components themselves.

If you leave this field blank, the program does a complete rollup of all the components. Enter only the parent item numbers in the data selection.

If you are costing items in process manufacturing, leave the option blank and do a complete rollup to cost the ingredients.

Valid values are:

  blank Perform a complete rollup.

  1   Perform a single-level rollup.

2. Clear and Recalculate

1 = Manufactured Items
2 = All Items
3 = Clear All Items And Calculate Manufactured Items

Use this processing option to control how the program calculates routing related costs.

Valid values are:

  blank You manually enter B1-C4 costs. Otherwise, the program overwrites costs that are manually entered.

  1   The program clears and recalculates labor and overhead for manufactured items. This is the most common option for this program.

  2   The program clears and recalculates labor and overhead for all items. Use this option if you have purchased parts with routings and you need to recalculate labor costs, for example, inspection steps.

3   **The program clears labor and overhead for all items, but recalculates labor and overhead for manufactured items only. Use this option if a part changes from manufactured to purchased. This ensures that labor and overhead are cleared for the changed items.**

3. Cost Method

a. Purchased Items

Blank = Do Not Move Costs

Use this processing option to specify the cost method to use as the input for the costs of purchased items. If you leave this field blank, the program does not retrieve costs from the Cost Ledger table (F4105).

b. Outside Operation

Blank = Do Not Move Costs

Use this processing option to specify the cost method to use as the input for the purchased costs of outside operations. If you leave this field blank, the program does not retrieve costs from the Cost Ledger table (F4105).

You should verify the following about your outside operations before you run this program:

    o You have set up an item branch/plant record for the *OP item, either manually or through the Process Work Orders program

    o There is a valid cost in the Cost Ledger table (F4105) for the method specified here

Print Tab

This processing option controls which items appear on the Cost Simulation report.

1. Print Items

Blank = Print Nothing

1 = All Items

2 = Changed Items

Use this processing option to specify which items appear on the Cost Simulation report.

Valid values are:

blank Do not print

1   Print all items

2   Print changed items

Process Mfg Tab

If you use process manufacturing, these processing option controls how the costs for co-/by-products are calculated.

1. Calculate Co/By-Products

Blank = Do Not Calculate

1 = Calculate

If you use process manufacturing, enter 1 to calculate costs for co-/by products. If you leave this field blank, the program calculates costs only for the parent process.

Valid values are:

blank Do not calculate

1   Calculate

2. Calculate And Clear Costs Of Ingredients Used As CoBy In Another Process.

Blank = Clear And Calculate

1 = Do Not Clear And Do Not Calculate

Use this processing option to specify whether the system clears and recalculates co-product costs, by-product costs, or both. If an ingredient that you include in data selection is also a co-product or by-product of another process that is not included in data selection, enter 1 in this processing option. If you leave this processing option blank, the system clears the cost of the co-product or by-product. When the co-product or by-product is cleared, the system does not calculate the cost of the co-product or by-product within the total cost of the process. Valid values are:

Blank

Clear and recalculate co-product or by-product costs.

1

Do not clear co-product or by-product costs.

Working with Simulated Cost Components

After you have created simulated costs, review costing information to determine the effects of the current rollup scenario. Revise the costing information, as necessary. When costs are correct, run the Frozen Standard Update program (R30835).

Reviewing and Revising Simulated Cost Components

You review costing information and set up simulated cost scenarios to help plan for future cost changes. After running the Simulate Standard Rollup program (R30812), you can review the cost simulation report that shows the previous cost of the item, the simulated rolled up cost, and the variance between the two. After reviewing the simulated costs, you revise incorrect information and create simulated costs again to include the changes.

You can change only simulated costs. You can set a processing option if you want to manually maintain the routing cost components (B and C) and protect them from being overwritten.

You must delete costs at the bill of material level at which they occur. For example, you cannot delete costs for lower-level components by locating the parent item. Instead, locate the component item number and remove the costs for the component. The system does not make the corresponding cost change to the higher level components and the parent item until you run the Simulate Standard Rollup program. To delete outside processing costs (usually cost component Dx), delete the cost component from the routing. Then, delete the cost component and net added value on the Enter Cost Components form.

If you activate the Cost by Work Center option in the Manufacturing Constants program (P3009), you can define cost components by work center, as well. When you use this feature, the amounts for a cost component at multiple work centers in the Item Cost Component

Detail table (F300261) must match the corresponding cost component amounts in the Item Cost Component Add-Ons table (F30026). You can use simulated rate and factor codes either at the work center or the cost component level, but not at both levels.

▶ **To review and revise simulated cost components**

From the Product Costing menu (G3014), choose Enter/Change Cost Components.

1. On Work With Cost Components, complete the following fields and click Find:

    - Branch/Plant

    - Item Number

2. Choose a record and click Select.

3. On Enter Cost Components, review the following fields in the header area:

    - Simulated

    - Frozen

    - Cost Ledger

    - Cost Method

    The item cost totals represent the total costs of all cost components as of the last cost simulation for simulated values, and as of the last frozen update for frozen values. Simulated and frozen values are from the Item Cost Component Add-Ons table (F30026).

If the program finds a discrepancy between the Frozen and Cost Ledger fields, it highlights both fields.

4. Review or revise the following fields in the detail area:

    - Cost Type

    - Simulated Net Added

    - Simulated Total

5. If you need to access the detail calculations for the net-added value of a routing cost component (B or C), choose the record, and then choose Cost Calc from the Row menu.

6. On Work With Work Center Cost, choose an operation and click Select.
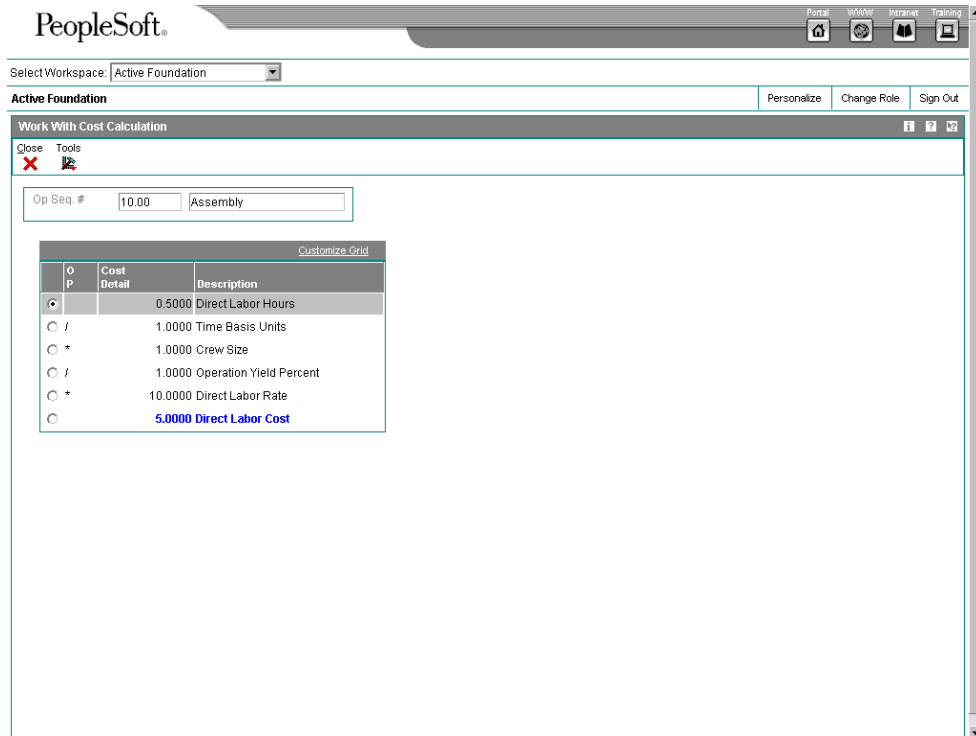
Work With Cost Calculation shows real-time costs. These values are calculated from work center data, work center rates, and manufacturing constants. They might be different from those shown on Enter Cost Components, if you have changed the item's routing, work center rates, or manufacturing constants since you last ran the Simulate Standard Rollup program (R30812).

See Also

❑ *Creating Simulated Costs* in the *Product Costing and Manufacturing Accounting Guide* for instructions for creating the costs that you are reviewing

❑ *Calculations in Cost Rollup* in the *Product Costing and Manufacturing Accounting Guide* to review examples

Processing Options for Enter/Change Cost Components (P30026)

Process Tab

These processing options control whether the system calculates costs from manual input or by running the Simulate Rollup program (R30812).

Enter A '1' To Allow Input Into The Routing Calculated Cost Types. (I.E. Cost Types: B1, B2, B3, B4, C1, C2, C3, C4).

Routing Cost Entry

Use this processing option to specify how the system maintains net added cost components B1 through C4. Valid values are:

Blank

Use the Cost Simulation - Build Temp program (R30812) to calculate net added component costs.

1

Use manually entered cost components.

Enter A '1' To Allow Input Into The Total Simulated Cost

Total Cost Entry

Use this processing option to determine how to calculate the net added total cost. Valid values are:

Blank

Calculate net added total cost by the Simulated Cost Rollup program.

1

Allow net-added total to be calculated manually.

Reviewing Costed Bills of Material

To assist you in budgeting your resources and planning for future cost of items, use the Costed Bill Inquiry program (P30206) to review costs for both parent items and components.

The program displays summarized costs for the direct components, net-added costs, and total costs for the parent item. For the parent item, the program displays the net-added cost components from the Item Cost Component Add-Ons table (F30026). For each component,

the program displays costs that it calculates based on the "as of" date from the bill of material and the cost method used. The program uses the "as of" date to ignore obsolete component lines in the bill of material.

For example, you can review all costs of manufacturing a parent item, including assembly, subassembly, and component costs. In addition, the manufacturing cost of a component is divided into the following five user defined categories for precise costing calculations:

- Purchase

- Labor

- Machine

- Overhead

- Extras

This program calculates the cost associated with each cost component in the same way as the Simulate Standard Rollup program (R30812) calculates costs.

You can review the following information:

- Net-added cost for the parent from the Item Cost Component Add-Ons table (F30026) at the top of the form

- Cost breakdown for all next-level components

- Total costs of the parent item from the Item Cost Component Add-Ons table

- Total of all costs for the parent item

The program can accumulate purchase costs for up to 500 components on each bill of material. Components beyond 500 are not included in the costing process.

Note

If you update costs on the bill of material, the changes are reflected in Costed Bill Inquiry program. The Enter Cost Components form displays the costs that are computed when you run Simulate Standard Rollup program. As a result, the values might differ from those that appear on Work with Costed Bill if you have changed the bill of material, routing, or manufacturing constants since you last ran the rollup program.

The totals are either totals from the Item Cost Components Add-Ons table or columnar totals calculated in real-time, depending on how you set the processing option for calculating totals.

► **To review a costed bill of material**

From the Product Costing menu (G3014), choose Costed Bill Inquiry.

1. On Work With Costed Bill, complete the following fields and click Find:

    - Branch/Plant

    - Parent Item

2. Review the following fields:

    - Req. Quantity

- As of Date

- Cost Method

- Skip to Seq #

- 2nd Item Number

- Purchase

- Labor

- Machine

- Overhead

- Extras

- Total

3. Choose a record in the detail area and choose Details from the Row menu.

4. On Costed Bill Detail, review the following fields:

- Quantity Per

- Effective From

- Effective Thru

- Operation Scrap %

- Percent of Scrap

- Feature Cost %

5. Click Cancel.

6. On Work With Costed Bill, choose a component and choose Next from the Row menu to access the costed bill information for the components.

7. To toggle between frozen and simulated costs, choose Frozen or Simulated from the View menu.

8. To review an item's cost buckets, choose Columns from the Form menu.
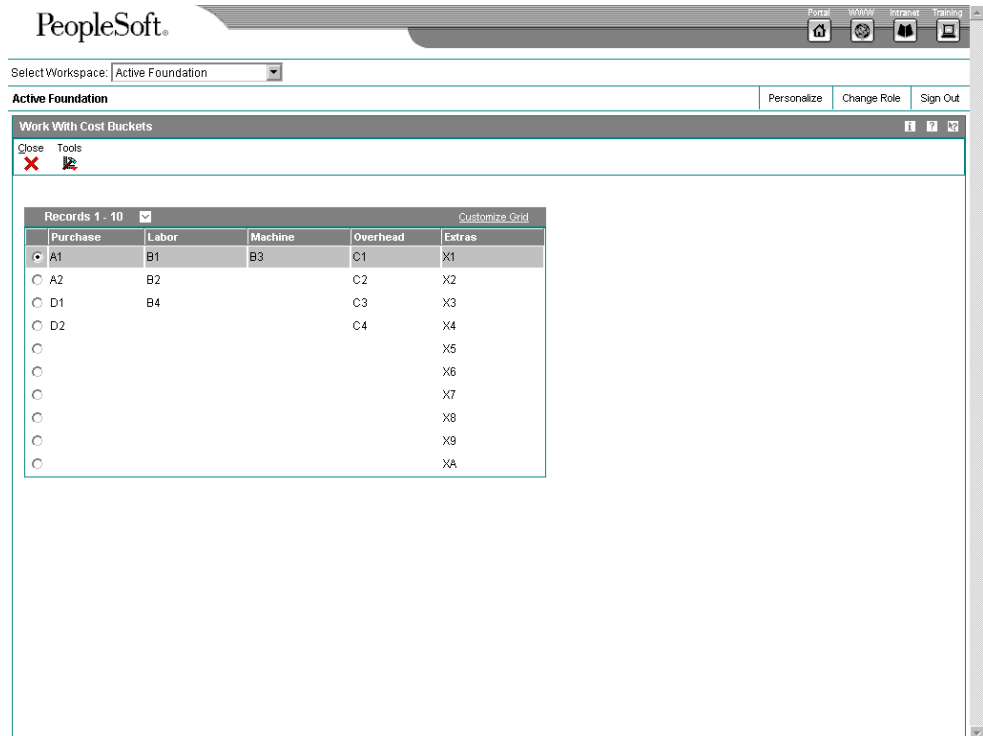
Processing Options for Costed Bill Inquiry (P30206)

Display Tab

These processing options control the information that appears on the form, such as whether standard or calculated totals appear and whether fixed costs are based on the requested or the accounting cost quantity.

1. Decimal Places (0-4) (Future)

Blank = 4

Use this processing option to indicate the number of decimal places that the system displays. Valid values are 0 to 4. If you leave this option blank, the system displays four decimals.

2. Totals

Blank = Standard Totals

1 = Calculated Totals

Use this processing option to specify whether the system displays the calculated totals or the standard totals. The calculated totals are the columnar totals. The standard totals are the unit costs from the Cost Components table (F30026) multiplied by the requested quantity. Valid values are:

1   Display calculated totals.

blank Display standard totals (default).

3. Fixed Costs Based On

Blank = ACQ

1 = Requested Quantity

Use this processing option to specify whether the system bases fixed costs on the accounting cost quantity or on the requested quantity. Valid values are:

blank Base fixed costs on the accounting cost quantity (default).

1   Base fixed costs on the requested quantity.

Reviewing a Costed Routing

Use the Costed Routing/Process Inquiry program (P30208) to review the summarized costs of an item for each operation in the routing. This information can help you to effectively manage production costs. For example, you can do the following:

- Review the work center that is responsible for an operation

- Determine whether a work center performs multiple operations

- Display simulated or frozen costs for labor values for cost methods

- Calculate the totals for all costs by cost categories

This program calculates the cost associated with each cost component in the same way that the Simulate Standard Rollup program (R30812) calculates cost.

The program can accumulate purchase costs for up to 500 components on each bill of material. Components beyond 500 are not included in the costing process.

Note

If you update the routing for an item, the changes are reflected in the Costed Routing/Process Inquiry program. The Enter Cost Components form displays the costs that the system calculates when you run the Simulate Standard Rollup program. As a result, the values on the Enter Cost Components form might differ from those on the Work with Costed Routing/Process Inquiry form if you have changed the routing, work center rates, or manufacturing constants since you last ran the rollup program.

When all of the following are true, the Costed Routing/Process Inquiry program uses the master routing for the item from the Routing Master File table (F3003):

- The Master Routings option on the Manufacturing Constants Revisions form (W3009B) is turned on for the branch.

- The parent item has a cross-reference item defined for master routing. (The cross-reference item must be defined with a cross-reference type of MR and the Address field must be blank.)

- An item routing has been defined for the cross-reference item.

► **To review a costed routing**

On the Product Costing menu (G3014), choose Costed Routing/Process Inquiry.

1. On Work With Costed Routing/Process, complete the following fields and click Find:

   - Branch/Plant

   - Item Number

2. Review the following fields:

   - Requested Quantity

   - As of Date

   - Cost Method

- Skip to Op. Seq.

- Extras

- Work Center

- Oper Seq#

- Labor

- Machine

- Overhead

- Components

- Total

3. To toggle between frozen and simulated costs, choose Frozen or Simulated from the View menu.

4. To review detailed calculations, choose an operation, and then choose Details from the Row menu.

5. On Costed Routing Details, review the following fields:

- Category

- Cost Type

- Description

- Cost

6. Click Close.

7. On Work With Costed Routing/Process, choose OP Bucket Window from the Form menu to review an item's operation buckets.

   The Operation Bucket Key Window appears. This form displays the cost components and the buckets into which they are grouped.

Processing Options for Costed Routing/Process Inquiry (P30208)

Defaults
1. Enter the cost method (ie., 01, 02, 03) to be used for Sub-Contracted Items. (Blanks will default to a "01")

Outside Operations Cost Method
2. Enter the cost method (ie., 01, 02, 03) to be used for Purchased Items. (Blanks will default to the cost from the Mode, ie., Standard Cost.)

Purchased Cost Method
Display
1. Enter a '1' to display the costs 'UP TO' and including the operation sequence entered in the 'Skip to ' form control. If left blank, the costs will be displayed beginning with the entered operation's costs.

Skip to flag
Process

1. Enter a '1' to include cost buckets 1 and 2 in the total. If left blank, the total will only include costs buckets 3-6.

Include 1 and 2 in total

Updating Frozen Costs

From the Product Costing menu (G3014), choose Frozen Update.

After you perform simulated rollups to determine the effect of any changes, you can update your frozen costs with simulated values by running the Frozen Update program (R30835). Most companies run this program at the beginning of a new fiscal year to create their manufacturing costs for the next fiscal period.

You can set a processing option to run a work-in-process revaluation automatically when you run the Frozen Update program. In this case, the WIP Revaluation program (R30837) runs for all items that are processed through the Frozen Update program. If any item is flagged for cost change in the Item Cost File table (F4105), any open work order that contains this item is revalued, along with any work orders to which the parent item was issued. This logic is carried through to the highest-level parent item.

Note

This program uses the costs generated by the most recent version of the Simulate Standard Rollup program (R30812). If you have changed information since the last simulated cost rollup, those changes will not be reflected by the frozen update.

The Frozen Update program uses the costs that were generated by the Simulate Standard Rollup program to perform the following actions:

- Update unit costs in the Item Cost File table for the cost method selected

- Update frozen costs in the Item Cost Component Add-Ons table (F30026) for the cost method selected

- Update labor and overhead rates in the Work Center Rates File table (F30008)

- Print report totals by company, branch/plant, and G/L category code

- For on-hand balances, create an Item Balance (IB) record in the Item Ledger File table (F4111) if the cost method selected matches the sales and inventory cost method for an item

- For on-hand balances, write journal entries to the Account Ledger table (F0911) in either detail or summary format, creating batch type NC (Frozen Cost Update)

    The system creates an item ledger record when the cost method selected for update is the sales and inventory cost method. The item ledger record indicates a change in inventory value for the updated items. The number of item ledger records written depends on the cost level of the item, which is defined in the Item Master table (F4101). For example, items at cost level 2 have an item ledger record for each branch/plant at which they are defined because costs can differ by branch/plant.

The program creates journal entries in either detail or summary format in amounts that match the item ledger records. Thus, the program maintains integrity between the Item Ledger File table and the Account Ledger table (F0911). Use the Item Ledger/Account Integrity report (R41543) to verify this integrity.

The process flow for updating frozen costs is as follows:

- The program creates a journal entry only if an item ledger record has been written.

- An item ledger record is written only if an item cost ledger record has been updated.

- An item cost ledger record is updated only if a cost component record has been updated.

The program accesses the following AAIs to obtain the object account:

AAI table number	Description	Use
4134	Inventory	• Debit to show increase in item cost • Credit to show decrease in item cost
4136	Expense or COGS	• Debit to show expense or loss • Credit to show income or gain

The following list identifies information about detail and summary journal entries:

Detail journal entries

The program can generate several journal entries by cost component for the same item and branch, depending on how you set up the AAIs.

If you choose detail format, the program creates matching debit and credit account ledger records for every item ledger record created. Use the detail format when you want a detailed audit trail. However, consider that the potential volume is large and could cause disk space problems.

Summary journal entries

If you choose summary format, the program creates debit and credit records by subtotals of company, general ledger class code, and transaction type. Use the summary format to reduce the amount of detail in the general ledger. You can still run a report to provide a detailed audit trail.

The program produces the following output:

Error messages

The program produces error messages if it finds any general ledger errors while formatting the journal entries. One error message indicates the same combination of AAI number, account number, and G/L class code. Correct any errors and run the Frozen Update program (F30835) again. To determine whether error messages exist, review your workflow messages for submitted jobs.

Item Cost Ledger Update report (R30834)

This report shows the effect of the inventory revaluation based on the changes made to the cost revision records for the inventory items. You can print all items or only those that have a cost change. You can run the report in proof mode or final mode. The report provides the following information:

- Old and new costs for each updated item

- Variances between old and new costs

- Item quantity on hand

- Net amount of change in cost

- Summary of the amount changed by item general ledger category

- G/L exception errors

- Whether G/L transactions have been written

- Either G/L subtotals by company and G/L class code or G/L class code only

Processing Options for Item Cost Component - Frozen Update (R30835)

Default Tab

These processing options control the default values for cost method and "as of" date.

1. Cost Method

Blank = 07

Use this processing option to specify the cost method that the system uses to update the Item Cost Component Add-Ons table (F30026) and the Item Cost table (F4105). If you leave this processing option blank, the system uses cost method 07 (standard costs) to calculate costs.

2. As Of Date

Blank = System Date

Use this processing option to specify the date that determines which routing and bill of material for each item the system uses in the rollup, based on their effectivity dates. If you leave this processing option blank, the system uses the current date.

Processing Tab

These processing options control processing criteria.

1. Update Costs

Blank = Proof Mode
1 = Final Mode

Use this processing option to specify whether the system updates costs. If you leave this processing option blank, the system creates exception reports and error messages, but does not update costs. Valid values are:

Blank
Do not update costs.

1
Update costs.

2. Single Level

Blank= Complete Update
1 = Single Level Update

Use this processing option to specify whether the system performs a complete cost rollup in a bill of material or updates only the cost for a selected item or items without updating the other costs. For example, you might have a new item to cost, although you do not want to recost the other items. After you create simulated costs for the new item, you can update its frozen costs without updating the costs of lower-level components. Valid values are:

Blank
Perform a complete cost rollup.

1
Perform a single-level cost rollup.

3. Update Work Center Rates

Blank = Do Not Update
1 = Updates all rates in all work centers across all companies and all branch plants
2 = Updates all work centers associated with items being frozen

Use this processing option to specify whether the system updates work center rates in final mode. Valid values are:

Blank

Do not update rates.

1

Update all rates in all work center across all companies and all branch plants.

2

Update all work centers associated with items being frozen.

4. Use Flex Accounting

Blank = Do Not Use Flex Accounting
1 = Use Flex Accounting

Use this processing option to enable flexible accounting. The system looks for your flex accounting rules to determine how to populate the cost object fields. Valid values are:

Blank

Do not use flexible accounting.

1

Use flexible accounting

5. WIP Revaluation

Blank = Do not Invoke WIP Revaluation
1 = Invoke WIP Revaluation

Use this processing option to specify whether the system automatically runs the WIP Revaluation program (R30837) to update work-in-process costs. Valid values are:

Blank

Do not run the WIP Revaluation program.

1

Run the WIP Revaluation program.

Process Mfg Tab

If you use process manufacturing, this processing option controls whether the system updates the costs for co-/by-products.

1. Update Co/By Products

Blank = Do Not Update

1 = Update

Use this processing option to specify whether the system updates the costs of co-/by-products for process manufacturing. If you leave this processing option blank, the system updates costs for the parent process only. Valid values are:

Blank

Do not update the costs of co-/by-products.

1

Update the costs of co-/by-products.

G/L Tab

These processing options controls the G/L data and how the system creates journal entries for the General Ledger.

1. G/L Date

Blank= System Date

Use this processing option to specify the date that appears on Item Ledger transactions and journal entries. If you leave this field blank, the program uses the system date.

2. G/L Transactions

Blank= None

1 = Detailed

2 = Summarized

Use this processing option to specify how the system creates journal entries for the general ledger. Valid values are:

Blank

Do not create G/L journal entries.

1

Create detailed G/L journal entries for item balance (IB) transactions.

2

Create summarized G/L entries (one entry for each account).

Versions Tab

This processing option control which version of the following program the system uses when the program is called from the Frozen Update program.

1. WIP Revaluation

Blank = ZJDE0001

Use this processing option to specify the version of the WIP Revaluation program (R30837) to use. If you leave this processing option blank, the system uses version ZJDE0001 to adjust WIP (Work in Process) to changing costs.

Print Tab

This processing option controls whether all items or only changed items appear on the Item Cost Ledger Update report.

1. WIP Revaluation

Blank = ZJDE0001

Use this processing option to control print output. Valid values are:

Blank

Print all items.

1

Print all items.

2

Print only changed items.

Freezing Work Center Rates

From the Product Costing menu (G3014), choose Freeze Work Center Rates.

You can use the Freeze Work Center Rates program (R30860) to update frozen work center rates. You run this program when any of the work center rates have changed. You can perform this task using the Frozen Standard Update program (R30835); however, for actual costing, you do not need to simulate costs and perform a rollup. Running the Freeze Work Center Rates program ensures that work centers are updated with changed costs in an actual costing environment.

In addition, the Freeze Work Center Rates program allows you to update frozen costs for selected work centers, as opposed to updating all work center rates in the system.

Processing Options for Freeze Work Center Rates (R30860)

Processing Tab

This processing option controls whether the system simulates or freezes work center rates.

Update Rates Mode

Blank = Proof Mode

1　　= Final Mode

Use this processing option to specify whether the system simulates or freezes work center rates when you run the Freeze Work Center Rates program (R30860). Valid values are:

Blank

Simulate work center rates.

1

Freeze work center rates.

Print Tab

This processing option controls whether the system prints a report when running the program, and which records the report includes.

Print Work Centers

Blank = No Printing Reports
1　　= Print All Work Centers
2　　= Print Changed Work Centers

Use this processing option to specify which records the system includes on the report when you run the Freeze Work Center Rates program (R30860). Valid values are:

Blank
Do not generate a report.

1
Include all work center records.

2
Include changed work center records only.

Reviewing Costing Information

After you run the Frozen Update program (R30835) to revalue your inventory, you should review the updated costing information. These costs stay in effect until you run the update again. You can review frozen costs in the Enter/Change Cost Components program (P30026). You can also create a report based on the information in this program. The Item Ledger Inquiry (the CARDEX) program (P4111) provides information about the transactions that have affected the item that you are reviewing, including cost changes. You can review costs by viewing the bill of material and compare frozen standard costs to the unit costs in the Item Cost File table (F4105).

Reviewing Frozen Cost Components

After you run the Frozen Update program (R30835) to revalue your inventory, you can use the Enter/Change Cost Components program (P30026) to review the frozen costs that are broken down by cost component.

► To review frozen cost components

From the Product Costing menu (G3014), choose Enter/Change Cost Components.

1. On Work With Cost Components, complete the following fields and click Find:

    - Item Number

    - Branch/Plant

    - Cost Method

2. Review the following field:

    - Frozen

3. To toggle between frozen and simulated costs, choose Frozen or Simulated from the View menu.

4. Click Close.

Reviewing the Cost Components Report

From the Product Costing Reports menu (G3023), choose Cost Components.

Use the Cost Components report (R30026P) to review the component costs and total cost for each item. This information comes from the Enter/Change Cost Components program (P30026).

You can customize this report to meet your specific needs. For example, you can do the following:

- Process the report using any valid cost method.

- Review the cost type and description by item number.

- Identify items.

- Define the exact information that appears on the report from data selection options. For example, you can select specific items and choose whether to include factors or rates for add-on and extra costs.

- Print the report for a single item, several items, or all items.

You can include any of the cost components that you define for an item in the cost bucket that you specify.

Processing Options for Cost Components (R30026P)

Defaults
1. Enter "1" to print Simulated costs, "2" to print Frozen Costs. If left blank, simulated costs will print.

Simulated/Frozen Cost Selection

Reviewing the Item Ledger

Use the Item Ledger Inquiry (The CARDEX) program (P4111) to view item balance (IB) transactions for an item. The Frozen Update program (R30835) transfers IB transactions to the item ledger if all of the following statements are true:

- The frozen cost changes in the Item Cost File table (F4105) for a given cost method

- That cost method is used as the sales and inventory cost method

- A quantity on-hand exists

► To review the item ledger

From the Product Costing menu (G3014), choose Item Ledger Inquiry (The CARDEX).

1. On Work With Item Ledger, complete the following field:

   - Item Number

2. Type IB in the following field and click Find:

   - Document Type

3. Review the following fields:

   - Transaction Date

   - Unit Cost

4. Click Close.

Processing Options for Item Ledger Inquiry (CARDEX) (P4111)

Default
Enter a Document Type. If left blank, '*' will be the default value and all document types will be shown.

1. Document Type
Versions
Enter the version to be used for each program. If left blank, ZJDE0001 will be used.

1. Load and Delivery Ledger Inquiry (FUTURE)
Display

1. Enter a '1' to display Quantity in Primary Units of Measure along with Quantity in Transaction Units of Measure.

Reviewing the Costed Bill Report

From the Product Costing Reports menu (G3023), choose Costed Bill.

Use the Costed Bill report (R30440) to review the total cost of parent items detailed by component costs. Use this information to develop more accurate financial plans by monitoring product costs.

You can customize this report to help you in your analysis. For example, you can:

- Process the report using any valid cost method

- Process the report for simulated or frozen costs

- Specify a date in the processing options from which the information is retrieved if you do not want to use the current date

- Print all product costs and user defined categories on the report

- Print the report for one branch, selected branches, or all branches

This report presents the component costs in five user-defined cost buckets. In addition, the report shows totals of the cost buckets for each item. Each cost bucket can contain several cost components, depending on how you set up your user defined codes.

Processing Options for Costed Bill (R30440)

Defaults
1. Enter the "As of" date for the Bill of Material. If left blank the current date will be used.

As of Date
Display
1. Enter the Cost Method to be used (ie., 01, 02, 03). Blanks will default to 07 cost method (standard).

Cost Method
2. Enter the Costs to be printed. '1' for Simulated or '2' for Frozen.

Simulated/Frozen
3. Enter the number of units to Cost. (ie., 10,000).

Quantity - Requested Quantity

Reviewing the Multi Level Costed Bill Report

From the Product Costing Reports menu (G3023), choose Multi Level Costed Bill.

Use the Multi Level Costed Bill report (R30445A) to review lists of the total cost of parent items detailed by component costs. Use this information to develop more accurate financial plans by monitoring product costs.

You can customize this report to help you in your analysis. For example, you can:

- Specify the number of units that the program costs when you run the report

- Process the report using any valid cost method

- Process the report for simulated or frozen costs

- Specify a date for the program to use as a criterion when accessing information

- Print all product costs and user defined categories on the report

- Print the report for one branch, selected branches, or all branches

This report presents the component costs in five user-defined cost buckets. In addition, the program totals the cost buckets for each item. Each cost bucket can contain several cost components, depending on how you set up your user defined codes.

Processing Options for Multi Level Costed Bill (R30445A)

Defaults
1. Enter the 'As of Date' for the Bill of Material. If left blank the current date will be used.

As of Date
Display
1. Enter the cost method to be used. Blanks will default to '07' (standard).

Cost Method
2. Enter the costs to be printed   1 = Simulated   2 = Frozen

Simulated / Frozen
3. Enter the units to Cost. (ie. 10000)

Quantity - Requested Quantity
Print
1. Enter a '1' to print an indented Costed Bill of Material Report.

Indented Report Switch
2. Enter a '1' to print a "Unit Cost" line of detail. If left blank, only one line of detail will be printed for each item.

Unit Cost Detail

Reviewing the Cost Integrity Report

From the Product Costing Reports menu (G3023), choose Cost Integrity.

Use the Cost Integrity report (R30543) to compare the sum of the frozen standard cost components for an item on the Enter Cost Components form (W30026B) and the unit cost in the Item Cost File table (F4105) and to review the variances. For cost-level 3 items, the program uses the unit cost for the primary location of the item in the Item Cost File table.

Note

If you use actual costing, do not run this report because it does not produce accurate and relevant information about your company's costs.

Processing Options for Cost Integrity (R30543)

Report Option
Enter a '1' to see report detail for all items processed. If left blank, only items with cost discrepancies will be printed.

Selection value

Working with Additional Costing Features

You can use several additional features to work with costing information. You can copy costs for an item from one cost method to another. You can reset your simulated costs to their frozen values. You can update the costs in your sales orders with the most current cost values. You can update costs for an item globally, using an amount or a percentage change. You can also update item cost levels. In addition, you can run a batch program to revalue work in process inventory for standard and for actual costing.

Copying Costs

From the Product Costing Reports menu (G3023), choose Copy Cost Values.

Use the Copy Cost Values program (R30890) to copy the simulated or frozen costs and work center rates from one cost method to another cost method. You can also copy work center rates between cost methods within the same work center.

Based on the processing option values, the program copies information from the Item Cost Component Add-Ons table (F30026) and the Work Center Rates File table (F30008) to update costs and work center rates for the cost method that you specify. You can replace only simulated costs, not frozen costs, in the *copy to* branch. Run the Frozen Update program (R30835) to update frozen costs.

Caution

To ensure acceptable results, J.D. Edwards recommends that you carefully plan which costs and rates you want to copy to which cost methods. Write down your choices and processing option setting before you complete the copy. This program does not generate a report of the updated costs.

Processing Options for Copy Cost Values (R30890)

Process
COPY FROM INFORMATION:
1. Enter a '1' to copy simulated costs or a '2' to copy frozen costs.

Simulated or Frozen
2.   Enter the Branch/Plant and Cost Method to copy.

Branch/Plant to copy:

Cost Method to copy:
COPY TO INFORMATION:
3. Enter the Branch/Plant and Cost Method to update.

Branch/Plant to update

Cost Method to update:

Copying Frozen Costs to Simulated Costs

From the Product Costing Reports menu (G3023), choose Reset Simulated Costs.

For the cost method and branches that you choose, use the Reset Simulated Costs program (R30850) to reset simulated costs to their frozen values. Resetting costs allows you to begin a simulation again.

Processing Options for Reset Simulated Values (R30850)

Process
1. Enter the Branch for Cost Reset processing ('*' for all branches).

Branch
2. Enter a '1' to reset rates in the Work Center Rates Table for the selected Cost Centers and Cost Methods.

Reset Rates

Updating Sales Order Price and Cost

From the End of Day Processing menu (G4213), choose Update Sales Price/Cost.

Use the Update Sales Price/Cost program (R42950) to update the unit and extended cost in your sales orders with the most current cost values that are specified in the Item Cost File table (F4105). If multicurrency processing is active in the system, the program updates the Foreign Unit and Extended Cost fields, as well. Use data selection to specify the exact information to be processed.

Caution

When you run this program, the system updates your active sales order detail information. Therefore, J.D. Edwards recommends that you use extreme caution when you set up data selections.

See Also

❑ *Updating Prices for a Customer* in the *Sales Order Management Guide* for information about updating prices for a specific customer instead of for all sales

Processing Options for Sale Order Batch Price/Cost Update (R42950)

Cost Options

Enter a '1' to update sales order with most current unit cost. (Any other value will leave cost unchanged.)

Enter a '1' to update the currency exchange rate (only domestic amounts will be recalculated). Enter a blank to leave unchanged.

Enter '1' to update the inter-company currency exchange rate. Foreign amounts will not be re-calculated. If left blank, will not update the inter-company exchange rate.
Price Options

Enter a '1' to update the unit price of the sales order. Any other entry will leave unit price unchanged.
' ' - Transaction Date; '1' - Requested Ship Date; '2' - Promised Ship Date; '3' - Original Promise Date;
'4' - Actual Ship Date; '5' - System Date; '6' - Invoice Date;
'*' - System Constant

Specify the date on which to base all price recalculations.

Enter '1' to recalculate the Transfer Price for inter-branch sales. The pricing method specified when the order was entered will be used.

Enter a '1' to retain the override Price Effective Date or the Price Based on Date Preference. If left blank, the override Price Effective Date or the Price Based on Date preference will not be retained and the previous processing option to specify the date on which all price recalculations will be used.
Adv. Pricing O

Enter the Line Type of the new Sales Detail Line item. This line item will contain the difference between the old sales price and the newly recalculated price. If left blank, will update the new price directly to the item. This must be a non-inventory Line Type.

If you have specified in the last processing option to create a sales detail record to record the price difference, enter the Override Next Status of the detail line. If left blank, will use the original detail line's Next Status.

Enter '1' to base recalculation on the original order quantity. If left blank, the system will recalculate based on the current quantities of the Order.

Free Good Processing when repricing with R42950:

Leave a Blank to reprice the entire order,cancelling free goods if any and readding it if the order qualifies for one.

Enter a '1' to preserve free goods on the order and reprice the remaining order.
Versions

Sales Order Entry (P4210)

Updating Product Costs

Use the Speed Cost Maintenance program (P41051) to update costs for purchased items in the branch/plants, locations, and lots that you choose. You can increase or decrease costs by a percentage or monetary amount, or you can specify a new monetary amount. You can also specify the cost method for which you want to update costs.

This program updates costs for purchased items in the Item Cost File table (F4105). Run the Frozen Update program (R30835) to update costs in the Item Cost Component Add-Ons table (F30026) for purchased and manufactured items.

Note

The information that appears on the Work with Location Costs form depends on the cost level for the item. For example, when an item has a cost level of 2, the system displays costs for all branch/plants. When an item has a cost level of 3, the system displays costs for all locations at the branch/plant that you specify.

See Also

❑ *Updating Item Costs* in the *Inventory Management Guide* for additional information about updating costs

► **To update product costs**

From the Inventory Price & Cost Updates menu (G4123), choose Speed Cost Maintenance.

1. On Work With Location Costs, complete the following fields and click Find:

   • Item Number

   • Cost Method

2. Choose a branch/plant and click Select.

3. On Cost Revisions, complete the following fields:

   • Amount

   • Amount Type

Processing Options for Speed Cost Maintenance

Defaults

1. Enter the default cost method to display.
Process

1. Enter a '1' to prevent the standard cost from   being changed

Changing Item Cost Levels

From the Inventory Advanced & Technical Operations menu (G4131), choose Item Cost Level Conversion.

After you have entered cost information, you might need to change an item's cost level. To change an item's cost level after you have entered cost information, you must use the Item Cost Level Conversion program (R41815).

This program deletes all existing cost records for the item in the Item Cost File table (F4105) and creates new cost records that correspond to the level. For the item to create the new cost records, the system uses the cost method that you identified for sales and inventory on the Cost Revisions form.

The program does not change the cost valuation of items and does not create journal entries. For example, if you change an item's cost level from branch/plant and location to branch/plant, all existing cost records for the branch/plant and location must contain the same sales and inventory cost method and cost.

You can run this program in either proof mode or final mode. When you run the program in proof mode, the system generates the Item Cost Level Conversion report, which shows errors that need correction. You should always run the program in proof mode first and correct any discrepancies.

When you run the program in final mode, the system updates the following information:

- The Inventory Cost Level field in the Item Master (F4101)
- The Item Cost File table (F4105)

Caution

When you change your item cost levels, the changes affect data throughout the system. You should restrict access to this program.

Before You Begin

❑ Back up your data tables completely before you begin the data conversion process. If the results of the conversion are unsatisfactory, you can use the backup tables to restore data tables to their original format.

❑ Verify that no users access the Item Master (F4101) or Item Cost File (F4105) tables when this program is running in final mode.

Processing Options for Item Cost Level Conversion (R41815)

Process
1. Enter the Cost Level to update to.

Level - Inventory Cost
2. If updating to cost level '1', enter the branch to default the costs from. If updating from a cost level '3',

the costs will default from the primary location.

Branch/Plant
3. Enter a '1' to run in final mode and update files. If blank, no file updates will occur.

Update Mode
4. Enter a '1' to print only exceptions on the edit report. A blank will print all items.

Print Mode

Revaluing Work in Process

From the Product Cost menu (G3014), choose WIP Revaluation.

Whether you use standard costing or an actual costing method, your business must be able to revalue work in process inventory whenever material or labor costs change. Whenever the costs for an item change, the Cost Changed Flag field (CCFL) for this item is set to 1 in the Item Cost File table (F4105). This cost change might be caused by a company's decision to update costs to reflect changed circumstances and to maintain realistic pricing.

The WIP Revaluation program (R30837) can be run for standard costed items in discrete, process and configured work orders. For actual costing, you can run the WIP Revaluation program only for material cost changes in discrete work orders.

The purpose of work in process revaluation is to revalue the production costs for all open work orders in the Production Cost table (F3102), including standard, current, planned, actual completed, and scrapped costs, based on the latest item cost. The report displays any differences between the original WIP values and the new WIP values. You can set a processing option to create journal entries in the Account Ledger table (F0911) for differences between the old and the new WIP values. You can choose to let the system supply the default work order number in the Subledger field in the Account Ledger table. The WIP Revaluation program does not revalue on-hand inventory and cannot be performed for closed work orders. Closed work orders are characterized by a value of 3 for the Variance Flag field (PPFG) in the Work Order Master File table (F4801).

If you use standard costing, performing an automated WIP revaluation ensures that work in process inventory always reflects any updates to component and labor costs and eliminates artificial variances that are generated by cost changes in the middle of a work order life-cycle. It also makes manual journal entries for WIP revaluation unnecessary.

For actual costing, WIP revaluation accounts for a situation in which subassembly work order costs are reported after the actual cost subassembly item was already issued to the parent item. Without WIP revaluation, the true costs of the subassembly work order are not reflected in the parent work order.

You can access the WIP Revaluation program in three different ways to revalue work in process. For standard costing, you can call the WIP Revaluation program from the Frozen Update program (R30835) by setting a processing option and specifying the desired program version. In this case, the system runs WIP Revaluation for all items that are processed through the Frozen Update program. If any item is flagged for cost change, any open work order that contains this item is revalued, along with any work orders to which the parent item was issued. This logic is carried through to the highest-level parent item. All cost types in the Production Cost table (F3102) are included in the data selection.

For actual costing, you can call the WIP Revaluation program either from the Work Order Inventory Completion (P31114) or the Variances program (R31804) by setting the

appropriate processing option and specifying the desired program version. Running WIP Revaluation updates the parent item's production cost based on the subassembly item's latest production cost. If you call the WIP Revaluation program from the Work Order Inventory Completion program, the system revalues the work orders with the completed item, as well as their parent work orders. Only the material cost types in the Production Cost table are included in the data selection.

Note

If an actual costed item is defined with a cost level of 3 (item, branch, location, and lot), the costs for this item have to be tracked at the lot or location level in order to accurately calculate and revalue the costs. Completing work orders to and issuing them from a lot or location allows the system to associate the item unit costs that are calculated for the lot or location at the time of completion to any orders to which the item is issued.

When WIP Revaluation is initiated from the Variances program, it revalues all open work orders with items that are flagged for cost change in the Item Cost File table, as well as their parent work orders. When work in process in revalued, the system clears the cost change flag. All cost types in the Production Cost table are included in the data selection.

You can also call the program as a standalone batch program from the menu. This choice allows you to perform WIP revaluation without having to change existing processes. It also enables you to rerun WIP revaluation if the revaluation process was terminated abnormally when another program called it. You can run the program for actual and standard costed items. All cost types in the Production Cost table are included in the data selection.

You can set a processing option to run the WIP Revaluation program in proof or final mode. If you call WIP Revaluation from another program, however, the mode of the calling program overrides this setting.

Processing Options for WIP Revaluation (R30837)

Defaults Tab

These processing options control the default setting for performing WIP revaluations, such as which document type the system uses and whether it updates costs.

1. Document Type

Blank = 'IB'

Use this processing option to specify the document type (UDC 00/DT) that the system uses. If you leave this processing option blank, the system uses IB (item cost changes).

2. G/L Transactions

Blank = No G/L Transactions

1 = Write Detailed G/L Transactions

2 = Write Summarized G/L Transactions

Use this processing option to specify whether the system updates costs. If you leave this processing option blank, the system creates exception reports and error messages, but does not update costs. Valid values are:

Blank

Do not update costs.

1

Update costs.

3. Default to Sub-Ledger

Blank = Do not default the Production Document Number to the Sub-Ledger field.

1 = Default the Production Document Number to the Sub-Ledger field.

Use this processing option to specify whether the system uses the production document number as the default subledger number. Valid values are:

Blank

Use the production document number as the default subledger number.

1

Do not use the production document number as the default subledger number.

4. Proof Or Final

Blank = Proof Mode

1 = Final Mode

Use this processing option to specify whether to run the WIP Revaluation program (R30837) in proof or in final mode. In proof mode, the system performs all calculations and displays the results on the report. In final mode, the program also updates the Production Cost table (F3102) and creates journal entries for changes in work-in-process costs in the Account Ledger table (F0911).

Note: When the WIP Revalution program is launched from another program, the mode (proof or final) of that program overrides this processing option.

Applying Extra Costs for Manufacturing Actual Costing

When you use actual costing for one or all items, you might want to apply extra costs to the cost of the parent item. To apply the extra costs for actual costing, you follow most of the setup tasks and some of the steps that you complete for standard product costing. The system calculates cost extras based on a template that is stored in the Item Cost Component Add-Ons table (F30026). Applying extra costs for actual costing includes the following tasks:

- Set up cost components in UDC 30/CA for each extra cost.

- Set up the cost method for each item as either 02 (Weighted Average) or 09 (Actual or Manufacturing Last).

- Set up the simulated rates for any cost method that you want to use for the extra costs.

- Create the simulated rollup.

- Update the frozen extra costs. You must enter cost method 02 or 09 in the processing option on the Defaults tab. Enter the same cost method that you set up in step 2.

- Review the frozen costs to verify that they are set up correctly and that they match those in the report that the program generates when you updated the frozen costs.

Before You Begin
- ❑ Set up the cost levels for your items.
- ❑ Set up the rate and factor codes for your extra costs.

Working with Product Costing in Various Supply Chain Environments

Few manufacturing companies use only one type of operating environment. Often, process manufacturing companies use discrete methodologies when performing packing and shipping activities. Companies that use discrete or job shop manufacturing methods often adopt more efficient operations using rate-based, or batch processing methods. Any combination of operating methods is possible, depending on the industry and the product mix.

Companies that can use a combination of manufacturing methods must also consider how to account for costs incurred from those various methods. Each method has specific strategies for establishing and collecting cost information. In combination, certain adjustments or restrictions might be necessary so that costing information flows from the most basic of cost components through the rolled up or completely costed end products.

As your company refines its production processes and automates costing activities, you should create detailed definitions of the costing processes. Verify that your cost techniques support any manufacturing method that you use. The ultimate goal is to decrease the lead time required to maintain and monitor product costing information throughout the entire manufacturing process.

If you use the Product Costing system in any special environment, such as using batches, kits, processes, or configured items, or in distribution, the system calculates product costs differently.

Note

If you use the 02 (Weighted Average) or 09 (Actual, Manufacturing Last) cost method, processes and configured items are not supported and the content in this section does not apply.

Product Costing for Batch Manufacturing

For bills of material and routings, you can have a batch quantity for products that are normally built in specific batch sizes, such as chemicals, food, or petroleum.

To obtain a correct rollup when you use a batch quantity, the accounting cost quantity, the bill of material batch size, and the routing batch size must match, as follows:

- Labor and overhead costs are rolled up only when the accounting cost quantity matches the routing batch size
- Material costs are rolled up only when the accounting cost quantity matches the bill of material batch size

The following table illustrates these possibilities:

Accounting Cost Quantity	Bill Batch Size	Routing Batch Size	Rollup
10,000	10,000	10,000	Complete
5,000	10,000	10,000	None
10,000	5,000	10,000	Labor and Overhead Only
10,000	10,000	5,000	Material Only

If the Simulate Rollup (R30812) program does not find a bill of material for which the batch quantity matches the accounting cost quantity, it uses the zero batch bill.

Product Costing for Kit Items

When you use kit items with options, the Simulate Rollup program (R30812) calculates the average cost of the parent phantom item, based on the feature costing percentage, as follows:

- The parent phantom item must have a stocking type of M (manufactured). The options can be manufactured or purchased.

- The feature costing percentages of the components are user defined on the bill of material.

- The Simulate Rollup program multiplies the feature costing percentage by the cost of the option (from the Item Cost File table [F4105]) to determine the option's share of the parent phantom item's average cost.

- The program then adds monetary amounts for each option to determine the average cost for the parent phantom item.

The following graphic provides an example of product costing for a kit item.

Product Costing for a Kit Item
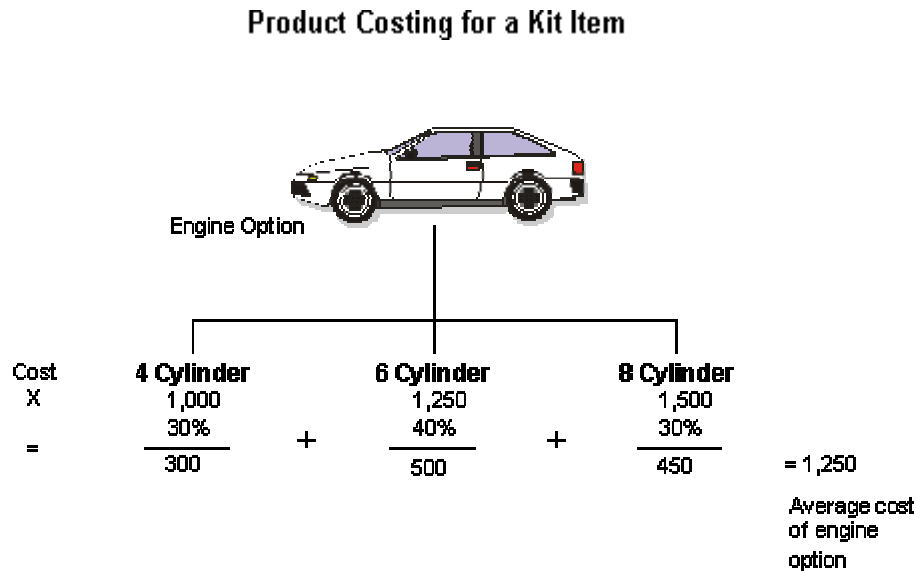
Working with Product Costing for Configured Items

Costing for configured items is different from costing for non-configured items because configured items do not have a standard bill of material or routing. Because no standard configuration exists, costing cannot be established before you enter an order. The discrete standard cost roll-up concept does not apply to a configured item, so the Cost Simulation – Build Temp program (R30812) is never executed and no frozen standard costs exist in the Item Cost Component Add-Ons table (F30026).

However, standard costs for purchased parts and manufactured parts that are used by configured items must be established and frozen (07 Cost Method) in the Item Cost File table (F4105) to be factored into the calculated costs for configured item work orders.

The Order Processing (R31410) program performs a cost rollup when it attaches a parts list and routing to a work order for a configured item. A processing option instructs the program to calculate the costs. The costs are stored in the Column 1 - Frozen Standard field in the Production Cost table (F3102), not table F30026.

The costs are the accumulation of the standard costs for the components, the labor and overhead values that are defined in manufacturing constants, the attached routing and work center information, and work order values.

For a configured item, the A1 material cost is calculated from the total cost of its direct components. The components are defined by the P and Q assembly inclusion rules.

B1 direct labor cost is calculated from the item's routing, which is defined by the R assembly inclusion rule.

Cost defined by the X assembly inclusion rules affects only the sales order and not the work order. Thus, associated X assembly inclusion rule costs are not seen in table F3102.

Note

If you use cost method 02 (Weighted Average) or cost method 09 (Actual, Manufacturing), processes and configured items are not supported. The content in this topic does not apply.

After Order Processing establishes the standard costs for the configured items, journal entries for configured items are created in the same way as for non-configured items.

Sales quotes for configured items are an exception to the standard costing rule for configured items. The standard cost for a configured item on a sales quote is calculated without running Order Processing if the Cost Sales Quote functionality is turned on in Configurator Constants (P3209).

The following table indicates the source of cost generation in table F3102 for configured items:

Costing Method	Standard	Current	Planned	Actual	Completed	Scrapped	Unaccounted Completed	Unaccounted Scrapped
Standard Costing	R31410	Not used	R31802A	R31802A	R31802A	R31802A	Not used	Not used

Working with Standard Costing in Process Manufacturing

Process manufacturing creates a product by mixing, separating, forming, or performing chemical reactions. This is usually a two-step procedure, which consists of a mixing or

blending step, followed by a filling or packaging step. This type of manufacturing can also include intermediate steps, such as curing, baking, or fermenting.

Some of the items that process manufacturing companies create include:

- Liquids

- Fibers

- Powders

- Gases

Pharmaceuticals, foods, and beverages are specific examples of industries that often use process manufacturing.

A process includes ingredients (equivalent to parts on a work order) and a process routing or recipe. The output from a process includes the following:

Intermediate   The output from an operation that is used as the input to the next operation. No cost is associated with an intermediate.

By-product   The material produced incidental to (or as a residual) of the process.

Co-product   An end item produced as a result of the process. Usually, two or more co-products result from a process.

You define a process item with ingredient relationships. These relationships also determine intermediates, by-products, co-products, and substitutions. You also define the steps that are required to produce a manufactured item with process routings. These routings determine work centers and labor standard costs.

When you run the Simulate Rollup program (R30812), you must set the processing option to include the cost for the co- and by-products. To determine the cost for the co- and by-products as produced in the process, the system performs the following calculation:

> Divides the costs for the process into the co-and by-products according to how the feature cost percentage is set up

The system then uses the information from the Co-Products Planning/Costing Table (F3404) to allocate the cost from each process and to determine the standard cost for the co- and by-products.

Reviewing Product Costing for Processes

Use this form to review the costs for each step in the process.

► **To review product costing for a process**

From the Daily PDM Process menu (G3012), choose Enter/Change Process.

1. On Work with Routing Operations, complete the following fields and click Find:

- Branch/Plant

- Item Number

- Batch Quantity

2. Review the following fields:

   - Run Labor

   - Run Machine

   - Setup Labor

3. Choose Revision from the Form menu.

4. On Enter Process Information, review the following fields:

   - Crew Size

   - Cost Type

   - Type Oper

   - Yield %

   - Cum Yield %

   - Time Basis

Reviewing Product Costing for Ingredients

Ingredients are the components of a process. You attach an ingredients list to a process (in the same way that you attach a parts list to a routing) as part of setup.

If an ingredient in a process has extra costs built into its cost, the system allocates the extra costs to the co-and by-products in the same way that the ingredients are allocated. That is, the extra costs are allocated in the same sequence that the ingredients are consumed and at the feature cost of the co-by-product.

▶ **To review product costing for ingredients**

From the Daily PDM Process menu (G3012), choose Enter/Change Process.

1. On Work with Routing Operations, complete the following fields and click Find:

    • Branch/Plant

    • Item Number

2. Choose Revision from the Form menu.

3. On Enter Process Information, choose Ingredients from the Form menu.

4. On Enter Ingredients, review the following fields:

    • Item Number

    • Quantity

- UM

- F V

- Feat Cost %

- Percent Scrap

- Operation Scrap Percent

Reviewing Product Costing for Co-/By-Products

Co-products are produced, usually together, as a result of a process routing. They are normally the main products (end items) that are sold to customers.

A by-product is a material of value that is produced incidental to or as a residual of the production process. By-products can be recycled, sold as-is, or used for other purposes.

Co-products and by-products are costed using the Feature Cost Percent field. Extra costs for co-/by-products do not use feature cost percents.

Example: Feature Cost Percent and Co-/By-Product Costing

The following information applies to the example of feature cost percent and co-/by-product costing:

- Cumulative cost = cost this operation + cost of previous operation - cost of the co-/by-product produced in the previous operation.

- The total of all percentages at an operation cannot exceed 100 percent.

- The total of all percentages at the last operation must equal 100 percent.

Operation	Co-/By-Product	%	Cost This Operation	Cumulative Cost	Co-/By-Product Cost
10	By 1	10	100.00	100.00	10.00
20	Co 1	30	100.00	100.00 + (100.00 - 10.00) = 190.00	57.00
	Co 2	20			38.00
30			100.00	100.00 + (190.00 - 95.00) = 195.00	
40	Co 3	60	100.00	100.00 + 195.00 = 295.00	177.00
	Co 4	30			88.50
	Co 5	10			29.50

The following list identifies calculations for feature cost percent and co-/by-product costing:

- Co-/by-product cost at an operation = cumulative cost at an operation multiplied by the feature cost percent.

- Cumulative cost = cost this operation + cost of previous operation - cost of the co-/by-product produced in the previous operation.

- The total of all percentages at an operation cannot exceed 100%.

- The total of all percentages at the last operation must equal 100%.

Example: Extra Costs for Co-/By-Products

Extra costs are not associated with a particular step of the process. Therefore, feature cost percentages are not used for distributing the extra costs. Instead, the system performs the following actions:

1. Determines the total of the net-added B1 through C4 costs for all of the co-/by-products
2. Calculates the percent of this total that each co-/by-product represents
3. Uses this percentage to allocate the extra costs

In the following simulated rollup of cost components for a process, the cost of extra cost X3 (Outbound Freight) is included for the amount of the process:

Cost Type	Net Added	Total
A1 Material		40.00
B1 Direct Labor	20.00	20.00
B2 Setup Labor	40.00	40.00
B3 Machine Run	20.00	20.00
C1 Machine Variable	20.00	20.00
C2 Machine Fixed Overhead	20.00	20.00
C3 Labor Variable	60.00	60.00
C4 Labor Fixed Overhead	60.00	60.00
X# Freight Out	40.00	

Simulated, Frozen, and Cost Ledger are each 280.00

When you run a cost rollup program to include the X3 cost type, the program determines the percentage that each co-/by-product contributes to the total B1 through C4 costs, as shown in the following table:

Cost Type	BY 1	BY 2	CO 1	CO2	Total
B1		10.00	5.00	5.00	20.00
B2	10.00	10.00	10.00	10.00	40.00
B3	10.00		5.00	5.00	20.00

C1	10.00		5.00	5.00	20.00
C2	10.00		5.00	5.00	20.00
C3	10.00	20.00	15.00	15.00	60.00
C4	10.00	20.00	15.00	15.00	60.00
Totals	60.00	60.00	60.00	60.00	240.00
% of Total	25%	25%	25%	25%	100%

Because all four co-/by-products have the same total costs, each is allocated 25 percent of the extra cost X3 (Freight Out) in the rollup. When you review the cost for this item after the rollup, the simulated cost appears as follows:

Cost Type	Net Added	Total
A1 Material		10.00
B1 Direct Labor	5.00	5.00
B2 Setup Labor	10.00	10.00
B3 Machine Run	5.00	5.00
C1 Machine Variable	5.00	5.00
C2 Machine Fixed Overhead	5.00	5.00
C3 Labor Variable	15.00	15.00
C4 Labor Fixed Overhead	15.00	15.00
X# Freight Out	10.00	10.00

Simulated Cost = 80; Frozen and Cost Ledger each = 70.00

► **To review inputs to co-/by-product costing**

From the Daily PDM Process menu (G3012), choose Enter/Change Process.

1. On Work with Routing Operations, complete the following fields and click Find:
   - Branch/Plant
   - Item Number

2. Choose Revision from the Form menu.
3. On Enter Process Information, choose Co/By Revision from the Form menu.
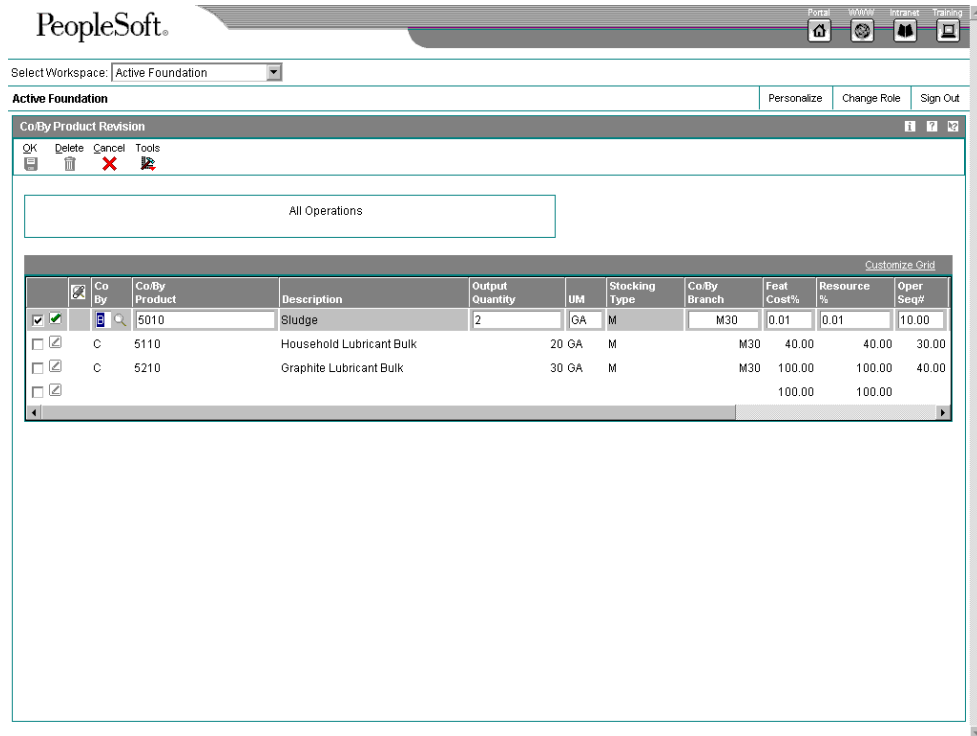
4. On Co/By Product Revision, review the following fields:

- Output Quantity

- UM

- Feat Cost%

- Resource %

► **To review co-/by-product costs**

From the Daily Product Costing menu (G3014), choose Enter/Change Cost Components.

1. On Work With Cost Components, complete the following fields and click Find:

- Branch/Plant

- Item Number

2. From the Form menu, choose Co/By Product.
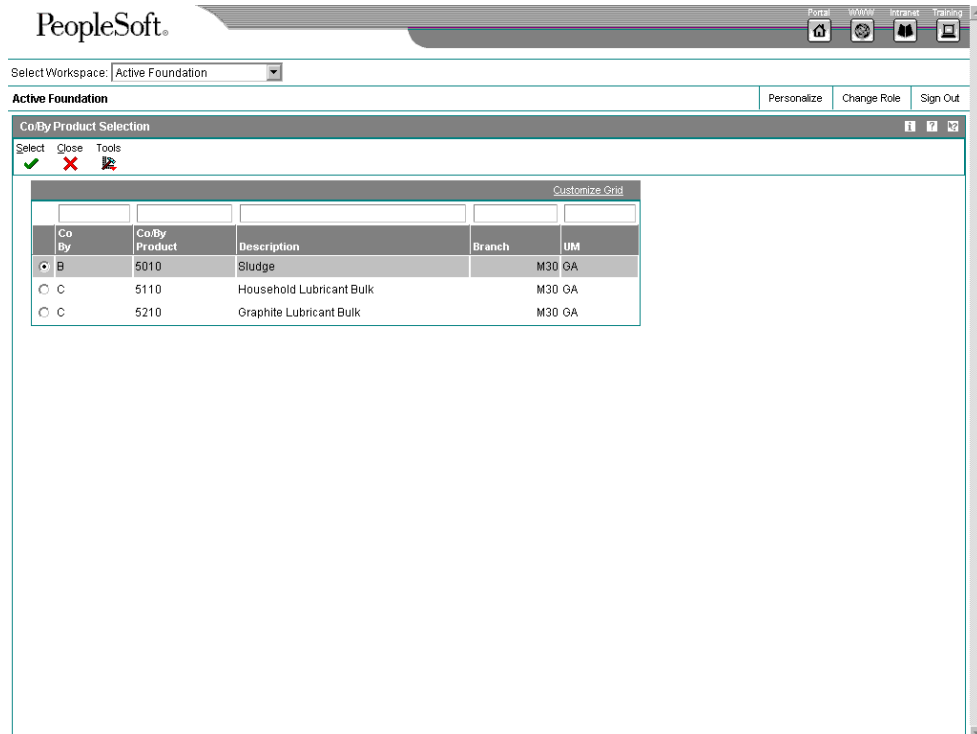
3. On Co/By Product Selection, choose a co-/by-product and click Select.

   The system displays the costs for the co-/by-product on the Work With Cost Components form.

Reviewing a Costed Process

Use the Costed Routing/Process Inquiry program (P30208) to review the summarized costs of an item for each operation in the process. This information can help you effectively manage production costs. For example, you can do the following:

- Review the work center that is responsible for an operation.

- Determine whether a work center performs multiple operations.

- Display simulated or frozen costs for labor, machine, and overhead values by cost method.

- Calculate the totals for all costs by cost categories.

- Review the costs of the ingredients.

- Review the costs of the co- and by-products.

- Review the costs for different quantities and units of measure. This feature allows you to simulate different scenarios and review the costing effect.

This program calculates the cost associated with each cost component in the same way as the Simulate Rollup program (R30812) calculates costs.

► **To review a costed process**

From the Product Costing menu (G3014), choose Costed Routing/Process Inquiry.

1. On Work With Costed Routing/Process, complete the following fields and click Find:

    *   Branch/Plant

    *   Item Number

2. Review the following fields:

    *   Requested Quantity

    *   As of Date

    *   Cost Method

    *   Routing Batch Qty

    *   BOM Batch Qty

    *   Work Center

    *   Oper Seq#

    *   Labor

        Labor costs are calculated each time that you access this form.

    *   Machine

    *   Overhead

    *   Components

    *   Total

3. To toggle between frozen and simulated costs, choose Frozen or Simulated from the View menu.

4. To review the item's operation buckets, choose Op Bucket Window from the Form menu.

5. On Operation Bucket Key Window, review the information and then click Close.

6. On Work With Costed Routing/Process, choose Costed Bill from the Form menu.

7. On Work With Costed Bill, review the information.

    You can review the ingredient costs for a single operation or for all ingredients throughout all operations in the process. These costs are from the Cost Components program (P30026) and reflect the last simulated rollup. Thus, the costs might differ from those on Work With Costed Routing/Process if you have changed the process since the last rollup.

8. Click Close.

9. On Work With Costed Routing/Process, to review all of the costs that are associated with an operation, choose Details from the Row menu.

10. On Costed Routing Details, review the information.

    The cost components are grouped according to cost buckets.

11. Click Close.

Setting Up the Co-/By-Products Planning Table

You use the Co/By Products Planning Table program (P3404) to determine the following:

- The percentage of the demand for co-products that is satisfied from process work orders

- The percentage of the manufacture for the item that is satisfied from other sources, such as purchase orders or work orders for the co-products themselves

You set up the planning table to specify the process that the system uses to calculate the costs of co- and by-products, as well as the processes that the system uses for demand planning. Because a co- or by-product can be produced by more than one process, depending on how often a process is used, you can assign a weight to the costs for each process on the planning table.

Normally, all demand for co- and by-products is satisfied from process work orders. However, you can specify a percentage from the item process and from a bill of material and routing for a discrete co-product. To do so, enter less than 100 percent in the table. For example, you might enter 50 percent for the item process. The remainder is satisfied by discrete work orders for the co-product.

You can also have a co-product that is produced entirely by more than one process. For example, two processes can have a 75 percent to 25 percent relationship between them. Both processes appear on the Co/By-Products Planning Table form when you locate the co-product. In these situations, you must set up the co-/by-products planning table with a cost percent equal to 100. This ensures that the rollup program calculates the costs of co- and by-products correctly.

When more than one process creates the same co- or by-product, use the planning table to allocate the cost of the co- or by-product among the processes. You can assign a weight to the costs from each process.

For example, you might have a co-product that is produced by two processes, such as the following:

- The normal manufacturing process, which you use 90 percent of the time.

- A second process, which you use for rush orders 10 percent of the time, and that has costs that are much higher than the normal.

You can set up the planning table that allows the co-product's standard cost to reflect the extra costs that you incur 10 percent of the time.

▶ **To set up the co-/by-products planning table**

From the Product Costing Setup menu (G3042), choose Co/By Products Planning Table.

1. On Work with Co/By-Products Planning Table, complete the following fields and click Find:

   - Branch/Plant

- Co/By-Product

2. Choose a process and click Select.
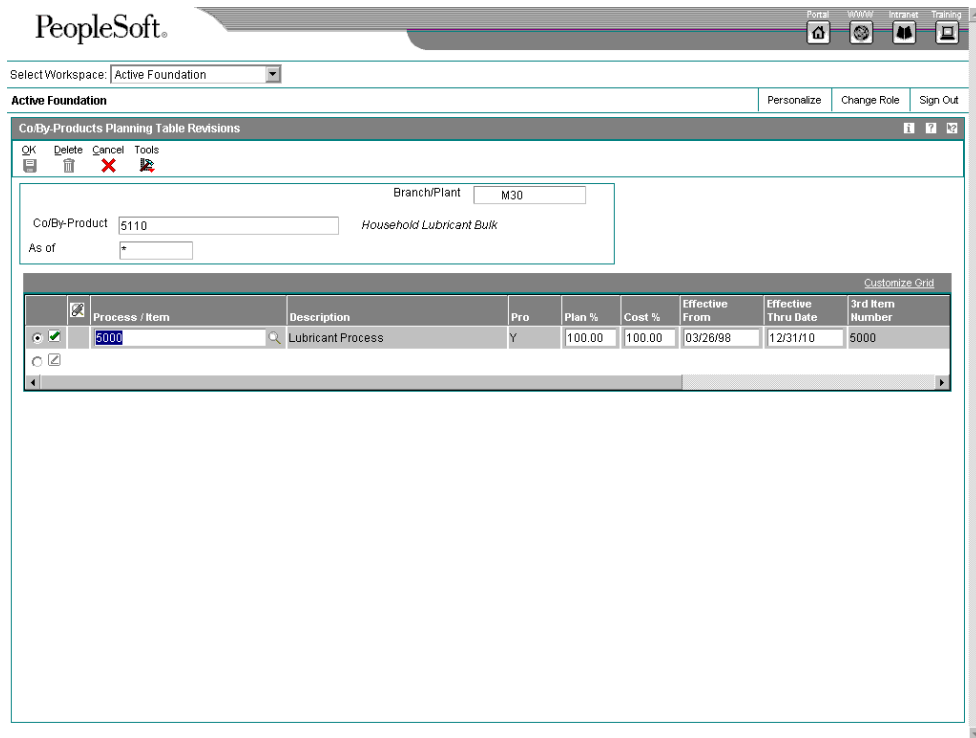
3. On Co/By-Products Planning Table Revisions, complete the following fields for each process:

- Process / Item

- Plan %

- Cost %

- Effective From

- Effective Thru Date

4. When the information is accurate for all listed processes, click OK.

See Also

❑ *Defining Co-Products and By-Products* in the *Requirements Planning Guide* for additional information about setting up the planning table

Reviewing Product Costing for Percent Bills of Material

In either process or discrete manufacturing environments, you use a percent bill of material to express the parts or ingredients as a percentage of the parent quantity.

If you use percent bills of material, the system calculates costs based on the quantities specified in the percent bill. Quantities are expressed in percentages (such as 75 for 75 percent), and the total of the component quantities must equal 100. Components must have a unit of measure that can convert to the parent unit of measure without causing rounding errors. For bills of materials with a zero batch quantity, the cost rollup calculates the cost for one primary unit of measure for the parent product.

► **To review product costing for a percent bill of material**

From the Daily PDM Discrete menu (G3011), choose Enter/Change Bill.

1. On Work with Bill of Material, complete the following fields and click Find:

   - Branch/Plant

   - Item Number

2. Choose a record and click Select.
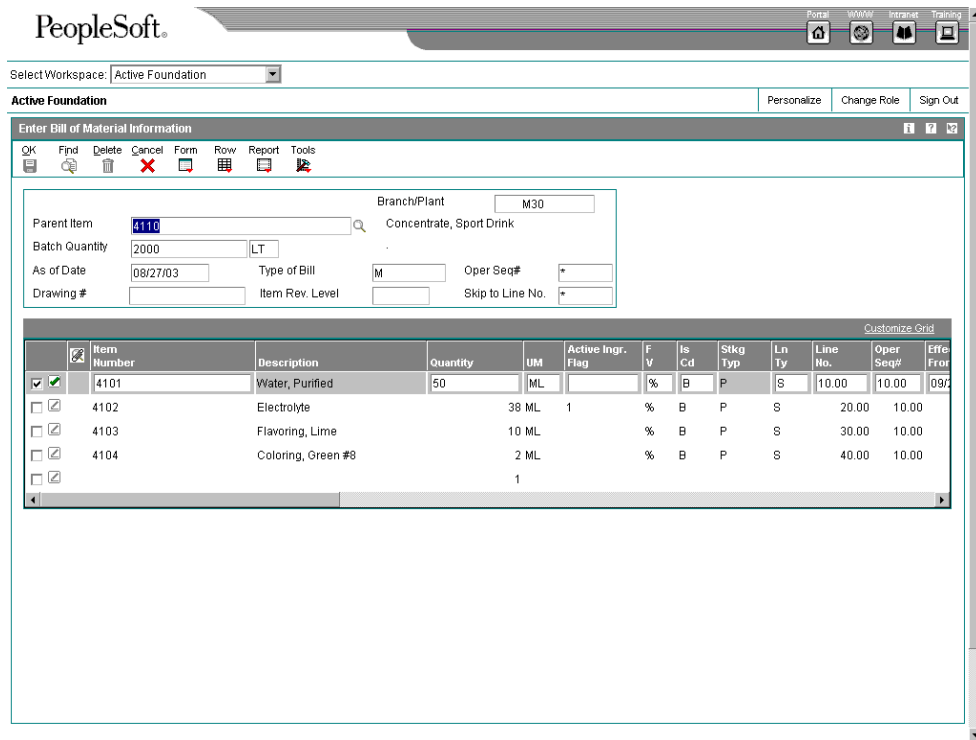
3. On Enter Bill of Material Information, review the following fields:

   - Quantity

   - F V

Manufacturing Accounting

To remain competitive in a changing business environment, companies must integrate all aspects of their operation. This includes identifying operations that reduce lead times, expedite speed to market, and reduce operating costs. The objective is to reduce costs that are passed along to customers and to remain a competitive market player.

After a company defines item costs and identifies where each cost is derived, it might choose to transfer these cost records into the accounting records. When a manufacturing accounting system is used, it enables the company to track the costs that are associated with each activity within the manufacturing process. As material is received into inventory, issued to a manufacturing order, and used at various stages within the manufacturing cycle, the company maintains detailed accounting records that reflect debits and credits to predetermined financial accounts. These records can be transferred to the general ledger to balance financial records throughout the manufacturing cycle.

The ability to perform standard costing (comparisons based on frozen costs), or actual costing (comparison of expected cost versus actual cost) enables companies to accurately account for the cost of manufacturing. Comparisons can identify areas that deviate from original cost expectations. Managers can then make better-informed decisions and implement a course of action to reflect current costs in the ultimate cost of the products. Work in process and on-hand inventory can be revalued to reflect these updated costs.

In volatile and dynamic industries, such as electronics and other technologies, constant changes in technology and customer demand, product configuration, and production processes need to be constantly monitored. Changes need to be integrated and reflected throughout product life cycles as quickly as possible. Industries remain competitive in the global marketplace only if they minimize time to market for new products and reduce costs.

The following graphic illustrates the interaction between the Manufacturing Accounting system and the General Accounting system.

Interaction Between Manufacturing Accounting and General Accounting Systems

Transaction Inputs
· Issues
· Labor
· Work Order Completion

Transaction Reporting
Batch Control Records (F0011)
Account Ledger (F0911)

· Ledger Inquiry
· Transaction Batch Review

General Ledger Posting

Account Balances (F0902)

Transaction Inputs
· Account Master (F0901)
· Business Unit Master (F0006)
· Company Constants (F0010)
· General Constants (F0009)
· Distribution/Manufacturing — AAI Values(F4095)
· Date Fiscal Patterns (F0008)
· User Defined Codes (F0005)

Financial Reporting
Financial Reports

· Trial Balances
· Balances by Period

The following two-part graphic illustrates the flow of the Manufacturing Accounting system.

Manufacturing Accounting System Flow

Online Chart of Accounts (P0909)

Account Master (F0901)

Distribution/Manufacturing — AAI Record Type (F4090)

Automatic Accounting Instructions (P40950)

Enter/Change Order (P48013)

Work Order Master File (F4801)

Production Cost (F3102)

Order Processing (R31410)

Work Order Routing (F3112)

Inventory Issues (P31113)

Work Order Parts List (F3111)

Hours and Quantities (P311221)

Work Order Time Transactions (F31122)

Work Order Inventory Completion (P31114)

Hours and Quantities Update (R31422)

To Work Order Activity (continued)

Manufacturing Account System Flow

Accounting Fundamentals

Before you set up your company's Manufacturing Accounting system, you must have a basic understanding of the general ledger and of accounting concepts. After you understand the underlying framework, you can use the Manufacturing Accounting system to do the following:

- Create journal entries for work order or rate schedules
- Create variance journal entries

Chart of Accounts

The chart of accounts is a record of the valid accounts that you assign to the business units within your company's reporting structure. When you set up your chart of accounts, you define the location of the accounts by using automatic accounting instructions (AAIs).

The following chart of accounts begins with the major headings of the transactions and continues with detailed transaction descriptions:

Assets   (Balance Sheet)

Liabilities   (Balance Sheet)

Owners' Equity (Balance Sheet)

Revenues   (Income Statement)

Expenses   (Income Statement)

The chart of accounts displays the following elements:

- The account number and description
- The posting edit codes
- The level of detail (LOD) that is assigned to the account
- The accounts that are assigned to each business unit

The following graphic provides an excerpt of the balance sheet chart of accounts for company 200:

Balance Sheet Chart of Accounts

Acct	Description	Post Edit	LOD	B/S BU200
1000	**Assets**	**N**	**3**	**x**
1001	Current Assets	N	4	x
1100	Cash	N	5	x
1110	Cash in Bank	N	6	x
1130	Short-Term investments		6	x
1200	Accounts Receivable	N	5	x
1210	Trade Accounts Receivable	M	6	x
1215	Allow for Doubtful Accounts		6	x
1400	Inventory	N	5	x
1800	Prepaid Expenses	N	5	x
1810	Prepaid insurance		6	x
1890	Other Prepaid Expenses		6	x
2000	**Fixed Assets**	**N**	**4**	**x**
2001	Property and Equipment	N	5	x
2020	Buildings		6	x
2060	Furniture & Office Equipment		6	x
2100	Accumulated Depreciation	N	5	x
2120	Accum Depr – Buildings		6	x
2160	Accum Depr – Furniture & Equipment		6	x
2170	Accum Depr – Computer		6	x
3900	Other Assets	N	5	x

Accounts and Account Numbers

The account code structure provides a method for the system to enter transactions in the general ledger. When you set up your system, you must do the following:

- Assign business unit, object, and subsidiary codes
- Determine how amounts are posted
- Assign levels of detail, which the system uses to roll up balances into a structured hierarchy of accounts

An account number includes both the business unit and object and subsidiary codes. You set up the general accounting constants to use periods, commas, or other user defined symbols to separate the components of the account number.

The following graphic illustrates the structure of an account number:

Object and Subsidiary Accounts

```
           Where                              What

     |             |                    |             |
  BBBBBBBBBBBB                       OOOOOO       SSSSSSSS

   Business Unit                     Object       Subsidiary

                                     MAJOR         MINOR
```
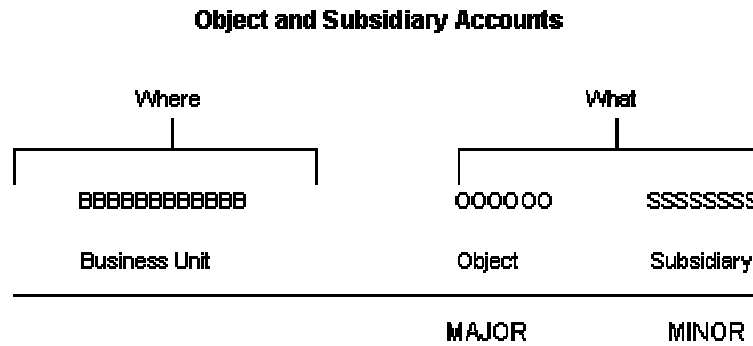
The following list defines the structure of an account number:

Business Units   Business units are an important part of the basic account structure. Business units identify where general ledger activity occurs. They are the lowest organizational level within your business and the level at which you account for all revenues, expenses, assets, liabilities, and equity.

A company can have several revenue and expense business units, such as the following:

- Department A
- Department B
- Machine shop

Object and Subsidiary Accounts   Most business units that you define consist of object accounts. Optionally, an object account can also have a subsidiary account, which further defines the transaction activity. The object and subsidiary accounts define the kind of transaction with which you are working (such as rent, paper supplies, and so on). These items make up your chart of accounts.

Object, or Major Account   The object, or major account, describes the type of transaction with which you are working. The system requires objects for each transaction entry, such as the following:

- Rent expense
- Service sales
- Finished goods inventory

You can use up to six alphanumeric characters in this field. To make data entry more efficient, you should consider using only numbers in the object account.

Subsidiary, or Minor Account   Subsidiary accounts are subdivisions of object accounts. Use a subsidiary account when you need more detailed accounting activity for an object account. You can use up to eight alphanumeric characters in this field. For example, you can categorize the Cash in Banks object (account 1110) into the following subsidiary accounts:

1110.BEAR for Bear Creek National Bank

1110.FIB for First Interstate Bank

1110.FRANCE for First Bank of France

Level of Detail   You assign a level of detail (LOD) to each account to control which accounts are subtotaled during the rollup process. The system also displays the level of detail online and in printed reports.

Use LOD 3 through 9 for accounts. LOD 1 is reserved for companies, and LOD 2 is reserved for business units. The system underlines LOD 3 on balance sheet reports and LODs 3 and 4 on income statement reports.

The following graphic illustrates the LOD hierarchy.

Levels of Detail

Label	Level
Company	LOD 1
Business Units	LOD 2
Assets	LOD 3
Current Assets	LOD 4
Cash	LOD 5
Cash-In-Banks	LOD 6
Bank Account	LOD 7
	LOD 8
	LOD 9

Recommended for Job Cost
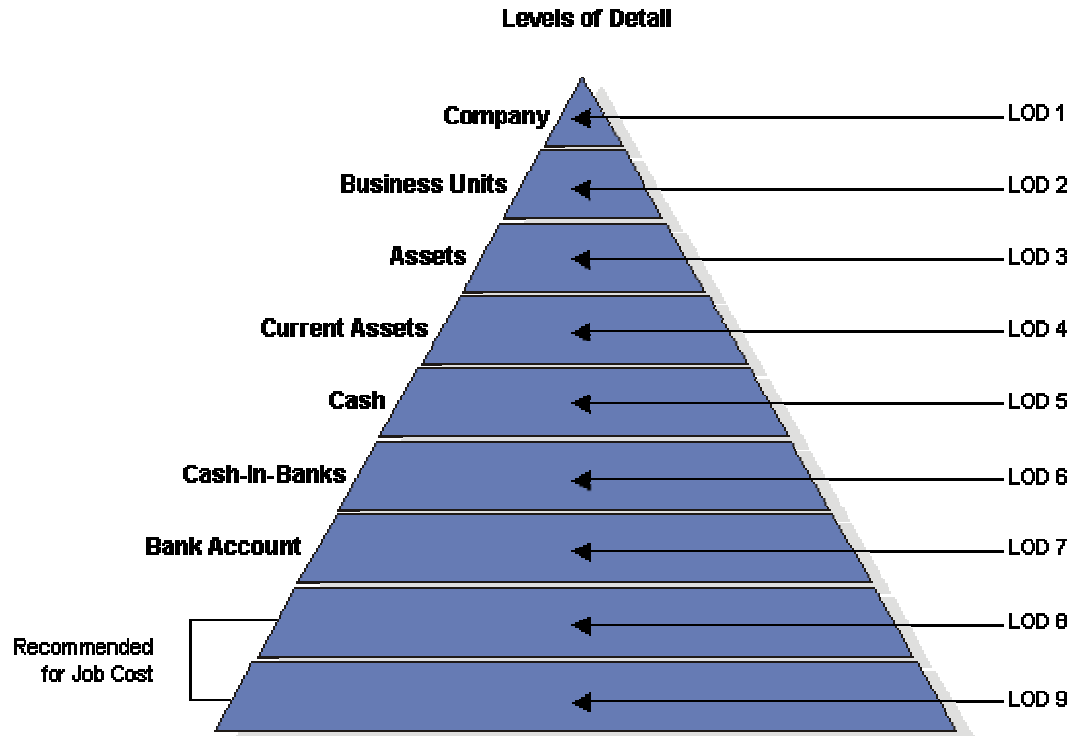
Apply the following guidelines when you assign levels of detail to accounts:

- Assign LODs sequentially and do not skip an LOD. Nonsequential LODs cause rollup errors in financial reports that run at a level that you did not use.

- Assign LOD 3 to balance sheet title accounts for assets, liabilities, and equity.

- Assign either LOD 3 or LOD 4 to major title accounts on the income statement, such as the following:

  - Revenues

  - Direct costs

  - General and administrative expenses

  - Other income and expenses

Subledger Accounting

In addition to the regular business unit/object/subsidiary method of account coding, you can use subledger accounting. Subledgers are subdivisions of account details for categories that you do not want to include in the permanent chart of accounts.

The subledger and subledger type for a general ledger account work together to provide detailed accounting in the Account Master table (F0901). The subledger numbers allow an audit trail for the posted subledger transactions.

You can use subledger types to group and report transactions that are posted to a general ledger account. Subledger types allow you to review account totals in more detail. You can also report on subledgers across accounts. For example, you can report all accounting activity by asset ID or by work order number.

Subledgers differ from subsidiary accounts in the following ways:

- Subledgers do not create additional records in the Account Master table (F0901).
- You enter and post transactions to the same account using different codes in the Subledger and Subledger Type fields, rather than to different accounts.
- Subledgers can create additional records in the Account Balances table (F0902). You control this by using the posting edit code on the Account Master table.

Subledger Types

Eight predefined subledger types exist. For each type, the system verifies that the subledger number exists in a master table.

Core subledger types	A - Address book number. The system verifies that the subledger number exists in the Address Book Master table (F0101). It is the most commonly used subledger type and is used for the detail method of intercompany settlements.
	C - Business unit number. This number is edited against the Business Unit Master table (F0006).
Other subledger types	E - Equipment number. The system verifies that the subledger number exists in the Asset Master File table (F1201).
	L - Lease item number. The system verifies that the subledger number exists in the Tenant/Lease Master table (F1501).
	I - Item number (short). The system verifies that the subledger number exists in the Item Master table (F4101).
	O - Order number. The system verifies that the subledger number exists in the Sales Order Detail File table (F4211).
	S - Structure subledger. The system verifies that the subledger number exists in Chart of Accounts Reference File table (F0909).
	W - Work order number. The system verifies that the subledger number exists in the Work Order Master File table (F4801).

In addition, you can define three subledger types (X, Y, and Z) with user defined codes (00/ST). The system does not verify that these types exist in any tables. You set up these types if you want the system to verify the values using a format requirement rather than a specific value.

Posting Edit Codes

Use posting edit codes (PECs) to designate which accounts use subledgers and how the system posts accounts. These codes define how the system updates the general accounting tables and the type of information for which you can search or print a report.

Set the PEC on the Account Master table (F0901) for all accounts that use subledger accounting. For subledger accounting, use one of the following PECs:

S   Summary. The system posts subledgers in summary format on every transaction that references the account. You see only subledger detail in the Account Ledger table (F0911).

      This code requires subledger entry.

L   Long. The system posts subledgers in detailed format. The system stores the subledger in detail in both the Account Ledger (F0911) and the Account Balances tables (F0902).

      This code requires subledger entry.

X   The system does not allow subledger entry for the account.

Blank   The system allows all posting. The system posts the subledger in detailed format. A blank code does not require subledger entry.

General Ledger Transactions

The following example shows how transactions are recorded in the general ledger.

General Ledger Transactions

INVENTORY			WORK IN PROCESS (WIP)	
Debit	Credit		Debit	Credit
2000	500	→	500	600
(Beginning balance)	Inventory issued for work order		100	(=550+50)

550 Finished Goods
50 Scrap

FINISHED GOODS		VARIANCE		PAYROLL ACCRUAL	
Debit	Credit	Debit	Credit	Debit	Credit
500	←	→ 50			100
					Labor hours for work order
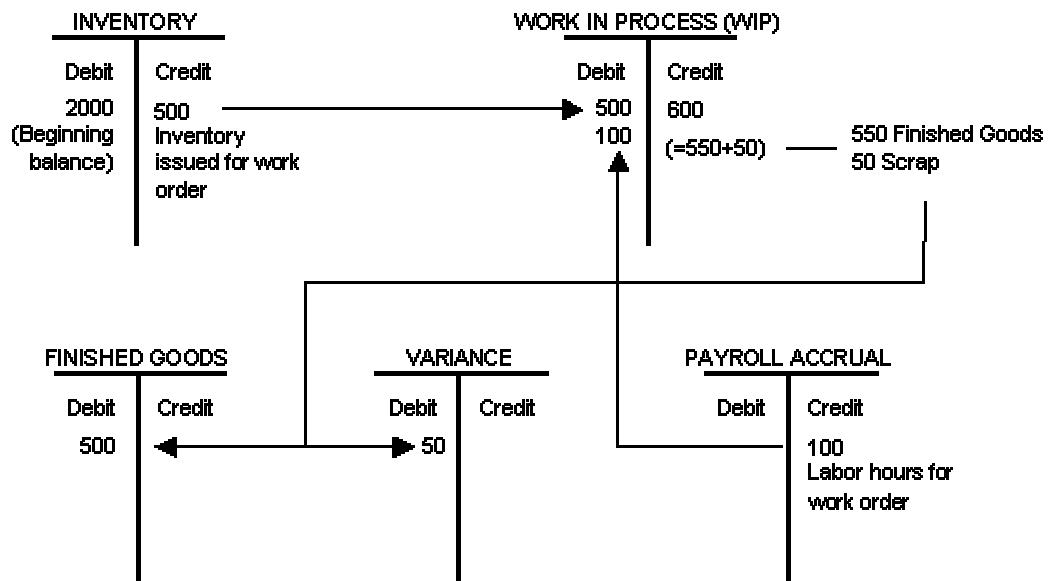
After work is complete, inventory transfers out of WIP to Finished Goods. The difference between the total inventory and the finished goods is the scrap, which transfers to the variance account, or to another account based on AAIs.

Manufacturing Variances

Variances occur when the actual cost differs from the predefined or expected cost. These variances can be due to differences in labor or overhead, or changes to the bill of material or routing.

The following graphic illustrates typical manufacturing variances:

Manufacturing Variances

Frozen	Current	Planned	Actual

Engineering Variance

Frozen Material, Routing, and Overhead versus Current Materials, Routing, and Overhead

Planned Variance

Current Bills, Routing, and Overhead versus Work Order Parts List and Routing Instructions

Actual Variance

Material Usage, Labor Efficiency, Work Order Parts List, and Routing versus Actual Transactions

The following table describes each variance type:

Engineering	The difference between the frozen standard costs (material, labor, and overhead) and the current costs that are derived from the bills of material, routings, and overhead rates.
Planned	The difference between the current costs that are derived from the bills of material, routings, and overhead rates at the time that the parts list and routing were attached, and the costs that are based on the work order or rate schedule parts list and routing instructions. Planned variances can occur when you revise a work order or rate schedule.
Actual	The difference between the cost values derived from the work order or rate schedule parts list and routing, and the material and labor that were actually reported for that work order or rate schedule. Actual variances can occur when you do the following: • Issue material • Enter hours and quantities • Enter completions
Labor Efficiency	The difference between the planned and actual labor costs, based on the work order or rate schedule routing.
Material Usage	The difference between the planned and actual material costs, based on the work order or rate schedule parts list.

Other   A variances that results from one of the following:

- A cost rollup that occurred in the middle of a work order or routing. You can eliminate this type of variance by running the WIP Revaluation program (R30837).

- A rounding error. When a difference exists between the number of decimals in the Production Cost table (F3102) and Item Cost Component Add-Ons table (F30026) and the Account Ledger table (F0911), the system produces a rounding variance.

- Over- or under-completing a work order. This variance can be avoided by setting a processing option for the Variances program (R31804) to restate production costs.

Transaction Flow for Manufacturing Accounting

The following table identifies which tables the manufacturing programs update. Unless specified separately, the update applies to both standard and actual costing.

	Work Order Master File (F4801) and Work Order Master Tag File (F4801T)	Work Order Parts List (F3111) and Shop Floor Control Parts List Tag Table (F3111T)	Work Order Time Transactions (F31122)	Work Order Routing (F3112) and Shop Floor Control Routing Instructions Tag Table (F3112T)	Production Cost (F3102)	Item Ledger File (F4111)	Account Ledger (F0911)
Order Processing (R31410)	Work order status and quantity on order Cost method in the tag file	Required quantity Accumulated costs in tag file		Required hours Outside operations in the tag file	Standard costing: standard units and amounts, current units and amounts Actual costing: current units and amounts		
Inventory Issues (P31113)		Quantity issued Unaccounted units and amounts in the tag file				Creates IM transactions (no batch number or G/L date)	
Component Scrap (P31116)		Unaccounted units and amounts in the tag file					
Hours and Quantities (P311221) and Speed Time Entry (P051121)			Processed flag Hours reported				
Hours and Quantities Update (R31422)			Activates the processed flag	Unaccounted units and amounts			
Full Completion (P31114)	Work order status, unaccounted units and amounts for completions and scrap				Actual costing: unaccounted units and amount for completions and scrap	Creates IC and IS transactions (no batch number)	
Work in Progress	Work order status	Resets unaccounted		Resets unaccounted	Planned, actual,	Batch number and	Creates IM, IH, IS, and

(R31802A)	status Resets unaccounted units to zero	units to zero		units to zero	completions and scrap units and amounts Actual costing: resets unaccounted units and amounts for completions and scrap to zero	G/L date for IM, IC and IH transactions	IC transactions
Variances (R31804)	Work order status, production price variance flag				Records variances and optionally updates standard, current, and planned amounts and units	For Cost Method 09 only Creates IB transactions	Creates IV transactions in the Account Ledger Actual Costing: creates IC, IS, and SO transactions

When you run the Work in Progress program, it updates the W.O. Cross Reference File table (F3106) with the work order number, document number, document type, G/L Date, and batch number, type, and date.

When you run the Post General Journal program (R09801), it updates all account balances in the Account Balances table (F0902).

Work Orders in Accounting

The Manufacturing Accounting system tracks costs that are associated with work orders and creates journal entries for all shop floor transactions. Each step in the work order process can affect manufacturing accounting. The principal effect is that, when you complete any step in the process, you create a transaction that can be the source of a variance. The system calculates the variances when you run the Variances program (R31804).

A work order is a request to produce a certain quantity of an item by a given date. A work order consists of the following:

- A header

- A parts list

- Routing instructions

To create a work order, you identify on the header the item, its branch/plant and quantity, and the requested date for the work order. After you have determined what resources are required to produce an item, you can schedule the work order and begin the work. As you complete the work order, you must track the following:

- Completed items

- Materials used

- Quantities scrapped

- Hours of machine and personnel time used

Parts List and Routing

After you have created a work order header, you must attach a work order parts list and work order routing to indicate the parts, personnel, machinery, and time required to make the items. You can attach the parts list and routing instructions in one of the following ways:

- Manually, by entering the required parts on the Work Order Parts List form (W3111A)

- Interactively, from the Enter/Change Order program (P48013). This method uses the data from the item's bill of material or routing as the default data for the parts list or routing instructions. You can modify the data.

- Automatically, through the Order Processing program (R31410). This method makes copies of the item's bill of material and routing and uses them for the initial parts list and routing instructions. You can modify the data. This method also allows you to attach the parts lists and routing instructions in a batch. You also use this method to generate a purchase order for outside operations.

Standard Costing

When the parts list and routing are attached either interactively or in batch, the system compares the frozen standard costs and the current costs and updates the Production Cost table (F3102). The frozen standard costs come from the Item Cost Component Add-Ons table (F30026), based on the original bill of material and routing. The current costs are calculated from the values in the Item Cost Component Add-Ons table, based on the current bill of material and routing instructions.

If a discrepancy exists between the frozen standard costs and the current costs, the amount of the discrepancy becomes the engineering variance. You can view engineering variances after you attach a parts list and routing instructions to a work order.

Actual Costing

For actual costing, the system calculates current costs and updates the Production Cost table (F3102). The system retrieves costs from the Item Cost File table (F4105), using the component's inventory cost method.

For current routing costs, the system retrieves labor and machine rates based on the manufacturing constants. The system can retrieve machine rates from the Equipment Rates table (F1301) and labor rates from the Employee Rates table (31/ER) that is set up in the Generic Message/Rates Records program (P00191). If you choose the Employee Rates table as a source of labor costs and the Equipment Rates table as a source of machine costs in the manufacturing constants, but do not enter them on the routing, the system issues a warning message and uses the rates from the Work Center Rates File table (F30008).

Revising Work Orders

After you create a work order and attach a parts list and routing, you might need to make revisions. If you revise the quantity requested, the parts list, or the routing, you might also revise the cost of the work order. These revised costs are called planned costs.

When you run the Work in Progress program (R31802A), the system calculates the planned costs from the values in the parts list and routing instructions and updates the Production Cost table (F3102). The system compares the current costs to these revised planned costs. When a discrepancy exists between the current costs and the planned costs, the amount of the discrepancy becomes the planned variance.

Unaccounted Units

Unaccounted units represent the quantities and amounts of transactions that occur for a work order when you issue parts, or record labor or completions. You can use the Universal Table Browser to review unaccounted units. They are stored by the system until you run the Work in Process program (R31802A) for work in process or completions. That program creates journal entries for the unaccounted units and then purges the unaccounted units.

The Work Order Parts List table (F3111) stores unaccounted units and amounts that are updated by work order issues.

The Work Order Routing table (F3112) stores unaccounted labor units and amounts. These are updated when you report labor and machine hours by running the Hours and Quantities Update program (R31422).

For standard costing, the Work Order Master File table (F4801) stores unaccounted units that are updated by work order completions. For actual costing, the Production Cost table (F3102) stores unaccounted units and amounts that are updated by work order completions.

Issuing Material

You must send the required materials (parts) to the shop floor for production. You use the Inventory Issues program (P31113) to deduct from inventory the quantities issued to the shop floor through an issue transaction. This transaction reports the actual quantities and cost of materials that were used in the production process to the Inventory Management and Manufacturing Accounting systems.

Inventory issue transactions do not have to occur at the same time that the physical transfer of inventory takes place. You can choose the point in the production process where you want your inventory records to reflect the issue of the parts to the work order.

The following list identifies the four ways to issue material:

Manual issues	Materials are deducted from inventory when you enter the issue transactions on the Issues form.
Preflushing	If the processing option is set to do so, materials are automatically deducted from inventory when a work order is processed through the Order Processing program (R31410).
Backflushing	Materials are deducted from inventory when items on the work order are reported as complete. This might be when you report partial completions throughout the production process or when you report full completions at the last routing operation.
Super backflushing	Materials are automatically deducted from inventory at operations that are defined as pay points throughout the routing, when the pay points are reported as complete or partially complete. The Super Backflush program (P31123) allows you to simultaneously backflush materials and labor hours and report items that are complete at an operation.
	If you use the Super Backflush program to complete work orders that use actual costing, you issue all raw materials up to the last pay point and update the hours before proceeding to the Work Order Inventory Completion program (P31114). If you set the processing options to run the program in blind mode, the cost does not include the B1 through C4 costs for the transactions that you processed in this mode.

When you issue parts to a work order, the system immediately relieves parts from inventory and writes a material issue (IM) transaction to the Item Ledger File table (F4111). The unaccounted units and amounts are updated in the Work Order Parts List table (F3111) until you run the Work In Process program (R31802A) for work in process or completions.

Regardless of the method that you use to issue materials to a work order, when you run the Variances program (R31804), the system compares the cost of materials issued to the cost of materials specified on the parts list. The program calculates an actual variance for any discrepancy.

Depending on the costing method that you are using, the system performs the following calculations when you issue materials:

Standard costing (method 07)	Calculates the amounts using the frozen value of the cost components, as taken from the Item Cost Component Add-Ons program (P30026).
Actual costing (method 02 or 09)	Calculates the amounts using the value in the Item Cost File table (F4105) for the component's inventory cost method.

Recording Hours and Quantities

As you produce items on a work order, you record the hours spent on production and the number of items completed during that time.

You can enter hours and quantities data in one of the following two programs:

- Speed Time Entry (P051121)
- Work Order Time Entry (P311221)

The Shop Floor Management system interfaces with the Speed Time Entry program so that transaction data is usable in both the Shop Floor Management and the Payroll systems. You can record hours and quantities per work order or per employee to accommodate both piece-

work and hourly-rate employees. The information entered in Payroll can update tables in the Manufacturing systems, but hours and quantities information entered through the Manufacturing programs does not update the tables in the Payroll system.

Use the Hours and Quantities program (P311221) to charge actual hours and quantities to a work order. The header information comes from the Work Order Master File table (F4801). The information that you enter is stored in the Work Order Time Transactions table (F31122).

Review programs and reports allow you to review and revise the hours and quantities reported by employee and by work order. After you have entered hours and quantities data, you post the transactions to the Work Order Routing table (F3112), where they are used to create journal entries. You can perform the post interactively when you record the hours and quantities, or you can run the Work Order Hours and Quantities Update program (R31422). The update takes the hours and quantities recorded for work order operations from the Work Order Time Transactions table and updates their respective fields in the Work Order Routing table (F3112). The transaction data is then available for use by the Work In Progress program (R31802A) for work in process or completions.

Standard Costing

When you update labor and machine hours, unaccounted units are stored in the Work Order Routing table. When you run manufacturing accounting, the system multiplies the unaccounted units by the frozen work center rates to calculate the amounts. Journal entries generated from routing activity are IH journal entries.

When you run the Variances program (R31804), the program compares the cost of materials and labor that was reported to the cost of materials and labor that is specified on the work order parts list and routing instructions. If a discrepancy exists, the program updates the actual variance in the Production Cost table (F3102).

Actual Costing

The system retrieves rates from one of the following three sources, depending on how you set up manufacturing constants:

Labor rates	• Work Center Rates File table (F30008)
	• Employee rates from the Generic Message/Rates table (F00191)
	• Manually entered rates
Machine rates	• Work Center Rates File table
	• Equipment Rates table (F1301)
	• Manually entered rates

Receive Outside Operations

When you receive a purchase order for outside operations, you enter the quantity received, and the system displays the Routing Quantities and Status Window program (P3103) so that you can complete the transaction. When you receive the purchase order, the system creates an OV transaction to the Item Ledger File table (F4111) to increase the on-hand inventory for the quantity received. When you complete the routing information, the system updates the Item Ledger File table with an offsetting IM transaction. The net effect on the Item Ledger File table is a zero on-hand balance.

The receipt also updates the unaccounted units in the Work Order Routing table (F3112).

Depending on the cost method that you are using, the system does one of the following:

Standard costing (method 07)	Uses the frozen standard cost for the outside operations amount for cost method 07
Actual costing (method 02 or 09)	Updates the amounts from the purchase order costs in the Work Order Routing table for cost methods 02 and 09

Recording Component Scrap

After you issue parts to a work order, you might need to report some of them as *scrapped*. Scrap is unusable material that results from the production process. You use the Component Scrap program (P31116) to specify the amount of material to be scrapped and the reason.

When you report the quantity of component material scrapped, you create a memo-only Item Scrap transaction (IO) in the Item Ledger File table (F4111). When you run the Manufacturing Accounting Journal Entries program (R31802A) for work in process or completions, the program calculates the new A2 cost value for the parent. When the amount of the scrapped material differs from the percent scrap amount on the bill of material, the system uses this difference to update the amount of the actual variance.

The Work Order Parts List table (F3111) stores unaccounted scrap amounts and units.

Recording Completions

When you finish production of a work order on the shop floor, you must record the completions to finished goods inventory. These transactions update records in the Inventory Management and Manufacturing Accounting systems.

Completions occur when you enter finished product into inventory as complete. The Shop Floor Management system provides several ways to complete products into inventory, including the following:

- Super backflushing

- Partial completion

- Full completion

- Backflushing at completion

When you record completions and parent scrap, unaccounted units and amounts are updated in the Work Order Master File table (F4801). For actual costing, units and amounts for completions and parent scrap are updated in the Production Cost table (F3102). Completion transactions (IC) are written to the Item Ledger File table (F4111). Scrap transactions (IS) are written to the Item Ledger File table as memo-only transactions.

The main difference between discrete manufacturing accounting and process manufacturing accounting is that with a process, completions are reported for the co-/by-products, and not for the parent process. You set a processing option to allow completions of unplanned co-/by-products. However, variances are reported for the process.

For actual costing, the system calculates a new unit cost and recalculates and updates the item cost record in the Item Cost File table (F4105) if the cost method is 09. The system updates the item cost record with the new unit cost and revalues on-hand inventory every time that you complete an item. The on-hand quantity is revalued at all lots and locations

where the completion occurred. To revalue the work order being completed, you can set a processing option to automatically call the WIP Revaluation program (R30837) when you run the Work Order Inventory Completion program (P31114). The system revalues the work orders with the completed item, as well as their parent work orders.

Creating Journal Entries

Before you post transactions to the general ledger, you create journal entries for work in process (issues, labor, and machine run time), completions, and manufacturing variances

If you have extra costs on purchased items, and you want to calculate their costs separately, you need to understand purchase price variance and material burden cost.
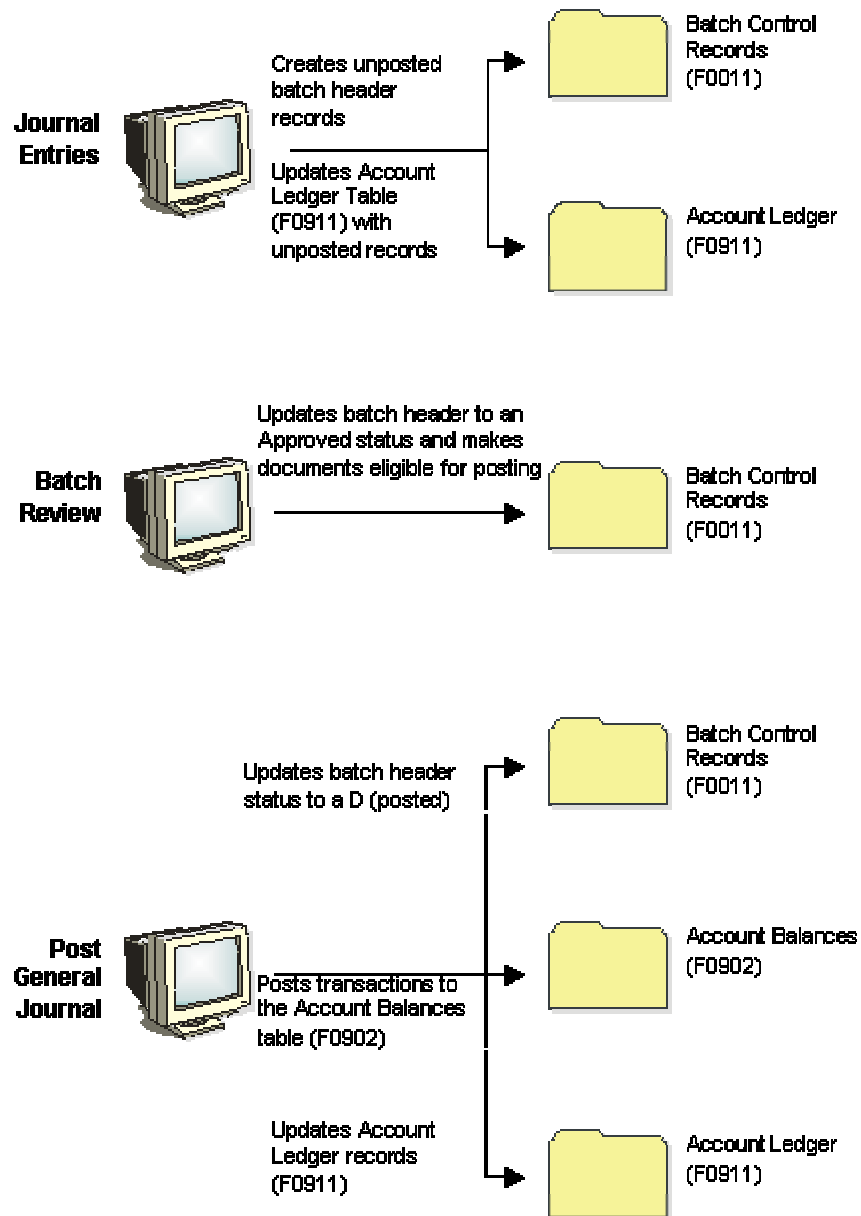
Journal Entries and the Three-Tier Process

When you enter daily journal entries, you are performing the first of three steps in the J.D. Edwards three-tier process. This process is used throughout all J.D. Edwards entry programs and includes the following steps:

4. Entering journal entries into a batch
5. Reviewing and approving the batch for posting
6. Posting the batch transactions

The following graphic illustrates the three-tier process:

Three-Tier Process

Journal Entries — Creates unposted batch header records → Batch Control Records (F0011)

Updates Account Ledger Table (F0911) with unposted records → Account Ledger (F0911)

Batch Review — Updates batch header to an Approved status and makes documents eligible for posting → Batch Control Records (F0011)

Post General Journal — Updates batch header status to a D (posted) → Batch Control Records (F0011)

Posts transactions to the Account Balances table (F0902) → Account Balances (F0902)

Updates Account Ledger records (F0911) → Account Ledger (F0911)

Journal entries can occur in either of the following two ways:

- Manually, when you use the General Accounting system to enter transactions such as the following:

  - Accruals

  - Adjustments

  - Reclassifications

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- Automatically, when the Manufacturing Accounting Journal Entries program (R31802A) for work in process or completions generates journal entries based on transactions in another system, such as the following:

    - Manufacturing Accounting (variances)

    - Shop Floor Management

In the Manufacturing Accounting system, you create journal entries for various types of shop floor activity, including the following:

- Material issues

- Labor and machine reporting

- Completions

- Scrap

- Variances, including the following:

    - Engineering

    - Planned

    - Actual (material usage, labor efficiency)

    - Other (volume)

Detail and Summary Journal Entries

You can enter detail or summary entries for both debit and credit journal entry transactions. Use the object portion of the account number to control the level of detail of your journal entries.

Detail Journal Entries

To enter detail journal entries for a work order or rate schedule by cost component, enter a different object or subsidiary account number for each cost component.

For example:

Cost Component	Business Unit	Account Number
A1	M30	1341
B1	M30	1342
B2	M30	1343

Summary Journal Entries

To summarize the cost components for an item on a work order into a single journal entry, enter the costs with the same object and subsidiary account number.

For example:

Cost Component	Business Unit	Account Number
A1	M30	1340

B1	M30	1340
B2	M30	1340

In addition, you can set processing options for the Manufacturing Accounting Journal Entries program (R31802A) to do the following:

- Summarize material issues (document type IM) by account number within a work order. Each unique combination of account number and work order number has one journal entry.

- Summarize all journal entries by account number across work orders. The summary has one entry for the batch for each account. The entry is the sum of all work order transactions for each account by document type.

- Print a summarized accounting transaction report.

Creating Journal Entries for Work in Process or Completions

From the Manufacturing Accounting menu (G3116), choose either Work in Process or Completions.

The You can create journal entries for shop floor activity. You can report transactions for material issues, completions, and labor and machine hours for a work order or rate schedule.

For standard costing, you can use processing options to specify whether the G/L class code for inventory issue transactions is retrieved from the issue location or from the item branch record for the item. You can do so if the item has a valid record in the Item Location File table (F41021). Defining accounts for inventory cost allows you to more specifically track customer inventory, for example, as opposed to single-owner inventory.

If you use project accounting, you complete top-level items to project inventory accounts. However, when inventory is needed for sales orders, the system checks general inventory accounts, not project accounts. In order for the Sales Order Management system to access end the items that a project produces, you can set a processing option to create duplicate journal entries that credit a contra account and debit the general inventory account.

When you turn on the Cost by Work Center option in the Manufacturing Constants program (P3009), the system updates the Production Cost table (F3102) by the work center when you generate journal entries.

The program produces error messages if it finds any general ledger errors while formatting the journal entries. To read these error messages, review your workflow messages.

This program uses the following AAI tables to match inventory and cost transactions to general ledger accounts:

3110 **Credit inventory, raw materials/subassemblies**	Moves inventory cost from inventory during issue reporting. This AAI is not used for variance accounting.
3120 **Debit/credit work in process**	Moves inventory cost to WIP during inventory issue and shop hours reporting. This AAI also moves inventory from WIP during inventory completion reporting.
3130 **Debit inventory, subassemblies/ finished goods**	Moves inventory cost to inventory when completions are reported. This AAI is not used for variance accounting. For Engineering Project Management projects, you set up the general inventory account using this AAI.
3401 **Credit accruals**	Moves shop hour cost to accruals during shop hours reporting. This AAI is not used for variance accounting.
3140 **Project Inventory Contra Account**	Debits and credits the contra account that allows the Sales Order Management system to access inventory that is produced by a project.

The system uses the following data to match the transaction to the AAI account:

- Work order type for the AAI.
- Company number that is associated with the work order or component branch/plant. If the system does not find a match, it uses 00000.
- Document type associated with the transaction.
- G/L category code for the transaction item. If the system does not find a match, it uses **** (four asterisks).
- Cost component.
- Branch/plant.

Standard Accounting

When you create journal entries, the program locates unaccounted units in the Work Order Parts List table (F3111), Work Order Routing table (F3112), and Work Order Master File table (F4801), and creates journal entries for them. The program then purges the unaccounted units.

The program also updates actual, planned, completed and scrapped costs in the Production Cost table (F3102). This information is used by the Variances program (R31804) to create journal entries for transactions with variances.

Note

After the Order Processing program (R31410) establishes standard costs for configured items, journal entries for configured items are created in the same way as for non-configured items.

Actual Accounting

For actual accounting, the program calculates costs as follows:

Material Costs (Ax)	The program retrieves the unaccounted units and amounts from the Work Order Parts List table (F3111).
Routing Labor Costs (Bx)	The program retrieves the unaccounted units and amounts from the Work Order Routing table (F3112).
Routing Overhead Costs (Cx)	Depending on the Overhead option you selected in the Manufacturing Constants program (P3009), the program calculates overhead costs based on labor and machine costs. To retrieve work center rates, the program uses the item's inventory cost method.
Outside Operations (usually Dx)	The program retrieves outside operations costs from the unaccounted amount in the Work Order Routing table. When you receive the purchase order for the outside operation, the system updates the Work Order Routing table with the actual purchase order cost.
Extras (usually Xx)	The program calculates extra costs based on the item cost component record for the parent item in the Item Cost Component Add-Ons table (F30026).

The program updates the Production Cost table (F3102) with the new unit cost.

Processing Options for Manufacturing Accounting Journal Entries (R31802A)

Default Tab

These processing options control default values.

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1. General Ledger Date.

Blank - Default to the current date

Use this processing option to specify the date that appears on journal entries. If you leave this field blank, the program uses the system date.

2. Document Type for Scrapped Transactions.

Blank   - "IS"

Use this processing option to specify which document type (00/DT) to assign to scrap transactions. If you leave this field blank, the program uses document type IS.

3. Document Type for Shop Floor Activity.

Blank - "IH"

If you do not use routings, use this processing option to specify the document type (00/DT) for journal entries on extra cost components. If you use routings, the program automatically assigns a document type of IH. If you leave this field blank, the program uses document type IH.

4. Status Code for Work Order.

Blank - No Change

Use this processing option to enter a new work order status code (UDC 00/SS). The system updates the work order status only when the program is run in final mode. If you leave this processing option blank, the system does not update the work order status.

5. Subledger field .

1 - Default the Work Order Number
Blank - Don't Default WO Number.

Use this processing option to specify whether the work order number is used as the default in the Subledger field. This option does not apply when using summarized journal entries. Valid values are:

Blank Do not supply a default value.

1 Use the work order number as the default.

Process Tab

These processing options control processing criteria.

1. Journal Entries Mode.

      1   - Final Mode

     Blank - Proof Mode

Use this processing option to indicate whether the program runs in proof mode or final mode.

Regardless of which method you select, the status code on the work order is updated according to the value you enter in the Work Order Status Code processing option.

Valid values are:

   1   Final mode. The program creates journal entries and clears unaccounted units.

   Blank Proof mode. The program performs all calculations and edits, and prints them in the reports.

2. Summarize Material Issues WITHIN Work Order.

      1   - Summarize

    Blank - Don't Summarize

Use this processing option to specify whether to summarize material issue journal entries by account within a work order. The program creates one journal entry for each unique combination of account number and work order number.

If you summarize, you will not be able to post detail journal entries using the Enterprise-Wide Profitablity Solution.

Valid values are:

   1   Summarize by account.

Blank Do not summarize by account.

3. Summarize by Account ACROSS Work Orders.

1   - Summarize

Blank - Don't Summarize

Use this processing option to specify whether to summarize all journal entries by account across work orders.

Valid values are:

1   Summarize all journal entries. This option will reduce the number of journal entries.

Blank Do not summarize.

4. Flex Accounting .

1   - Use Flex Accounting

Blank - Flex Accounting not used

Use this processing option to indicate whether this program searches for flex accounting rules to populate cost objects in the Account Ledger table (F0911).

Flex accounting is required to attach cost objects to the journal entries.

Valid values are:

1   Use flex accounting.

Blank Do not use flex accounting.

5. Issues of Material credit - Business Unit

1   - Use Charge to Cost Center
Blank - Use Component Branch/Plant

Use this processing option to indicate which branch/plant the program uses as the business unit for the credit side of material issue (IM) transactions.

Valid values are:

1   Use the branch/plant from the Charge to Cost Center field on the work order.

Blank Use the component branch/plant.

6. **Journal Entries by Work Center**

Blank = Do not write accrual journal entries by Work Center
1 = Write accrual journal entries by Work Center

Use this processing option to specify whether the system generates accrual journal entries by work center or cost type for shop floor activity. If you leave this processing option blank, accrual journal entries are generated by cost type.

Blank
Write accrual journal entries by cost type.

1
Write accrual journal entries by work center.

7. **Create Duplicate Journal Entries for Projects.**

Blank = Do not create duplicate journal entries
1 = Create duplicate journal entries

Use this processing option to specify whether the system generates a duplicate set of journal entries when you transfer amounts from a project-specific WIP account to a project-specific inventory account. The duplicate set of journal entries debits the general inventory account and credits the Contra account. This processing option applies to end-item manufacturing work orders for Engineering Project Management. If this processing option is blank, the system creates journal entries to debit only the project-specific WIP account and credit the project-specific inventory account. You must create manual journal entries to transfer amounts from the project-specific inventory account to the general inventory account. Valid values are:

Blank
Do not generate duplicate journal entries.

1
Generate duplicate journal entries.

8. G/L Class Code for Material Issues

Blank = Use the G/L Class Code associated with the Item Branch record
1 = Use the G/L Class Code associated with the issue location

Use this processing option to specify which GL class code the system applies to the credit side of material issue transactions (IM) when you use standard costing. Valid values are:

Blank
Use the GL class code associated with the item branch record for the material.

1
Use the GL class code associated with the location from which the material was issued.

Print Tab

These processing options control print criteria.

1. Accounting Journal.

    1   - Print a Journal Entry Report

   Blank - Don't print a Journal Entry

          Report

Use this processing option to specify whether to print a report.

Valid values are:

1   Print a report.

Blank Do not print a report.

2. Subtotals .

    1   - Subtotal by Document Type

       and Document

   Blank - Don't Print SubTotals.

Use this processing option to specify whether to print subtotals by document type and document number.

Valid values are:

1   Print subtotals by document type and document number.

Blank Do not print subtotals by document type and number.

3. Summarize Material Issues WITHIN Work Order for Report.

   Blank - Don't Summarize on Report.

Use this processing option to specify whether to summarize journal entries from material issues (IM transactions) by account number within a work order on the report. This processing option does not affect the number of journal entries that the program creates. You can summarize the journal entries on the report whether you summarize the actual journal entries.

Valid values are:

1   Summarize journal entries for material issues on the report.

Blank Do not summarize journal entries for material issues on the report.

4. Summarize ACROSS Work Orders for Report.

Blank - Don't Summarize on Report.

Use this processing option to specify whether to summarize all journal entries by account across work orders on the report. This processing option does not affect the number of journal entries that the program creates. You can summarize the journal entries on the report whether you summarize the actual journal entries.

Valid values are:

1   Summarize all journal entries on the report.

Blank Do not summarize all journal entries on the report.

Reviewing Production Costs

The Production Cost Inquiry program (P31022) displays the costs and variances that are associated with a work order or rate schedule. When you activate the Cost by Work Center option in the Manufacturing Constants program (P3009) and define cost components by work center, the Production Cost Inquiry program displays cost information by work center. It also displays subtotals by cost components for the work centers in which they occur. You can review variances by comparing amounts that the system calculated in one mode to amounts that the system calculated in another mode. Modes include:

- Standard

- Current

- Planned

- Actual

- Completed

- Scrapped

The system updates the standard amount fields with information from the parts list and the routing when they are attached to the work order. The amounts represent the work order quantity multiplied by the frozen standard costs of the parent.

The system updates the current amounts from the parts list and routing when they are attached to the work order and represent the parts list quantity multiplied by the current frozen standard component costs and the current routing values multiplied by the frozen work center rates.

To generate the planned amounts, run the Manufacturing Journal Entries program (R31802A) in proof mode. These amounts represent the current parts list quantity multiplied by the frozen standard component costs and the current routing values multiplied by the frozen work center rates.

When you run the Manufacturing Journal Entries program in final mode, the system generates the following amounts:

- Actual amounts, which represent the actual quantity multiplied by the frozen standard costs and the actual reported hours multiplied by the frozen work center rates

- The completed and scrapped amounts, which represent the quantities completed and scrapped multiplied by the frozen standard costs of the parent item for each cost type

For standard costing, review variances to identify errors before you run the Variances program (R31804). For example, if you did not issue parts to a work order or rate schedule, a large actual variance appears. You can issue the parts, rerun the Manufacturing Journal Entries program, and review the variances again. After you correct any errors, run the Variances program.

Note

You must use standard costing for configured items. If you manufacture configured items, no bill of material exists, so no engineering variance exists.

► **To review production costs**

From the Manufacturing Accounting menu (G3116), choose Production Cost Inquiry.

1. On Production Cost Inquiry, choose the Selection Criteria tab and complete the following field:

   - Order Number

2. Choose the Display tab.

3. Specify whether the system displays costs for the parent, component, or co-/by-product by clicking one of the following options:

   - Parent

   - Component

   - CoBy

4. Specify what information the system displays by clicking any or all of the following options under the Display Columns heading:

   - Amounts

   - Units

   - Variance

5. Specify whether the system displays scrap amounts or units by clicking one of the following options:

   - Include Scrap

   - Don't Include Scrap

6. Choose the Columns tab.

7. Specify the mode that the system displays in column 1 by clicking one of the following options:

- Standard

- Current

- Planned

- Actual

- Completed

- Scrapped

8. Specify the mode that the system displays in column 2 by clicking one of the following options:

- Standard.

- Current.

- Planned.

- Actual.

- Completed.

- Scrapped.

9. Click Find.

10. Depending on whether you chose to display amounts, units, or both, and whether you chose to display variances, review the information that appears in the detail area.

Processing Options for Production Cost Inquiry (P31022)

Display

1. Enter default level:
   - 1 - Parent
   - 2 - Component
   - 3 - Co/By Product

If left blank the default value will be Parent.

2. Enter 1 to display Amounts.

3. Enter 1 to display Units.

4. Enter 1 to display the Variances.
Columns

1. Enter amount type to be displayed in column 1:
   - 1 - Standard
   - 2 - Current
   - 3 - Planned
   - 4 - Actual
   - 5 - Completed
   - 6 - Scrapped.

2. Enter amount type to be displayed in column 2:
   - 1 - Standard
   - 2 - Current
   - 3 - Planned
   - 4 - Actual
   - 5 - Completed
   - 6 - Scrapped
Versions

1. Enter the version for Inventory Issues.

2. Enter the version for Work Order Entry.

3. Enter the version for Production Status.

Creating Journal Entries for Variances

From the Manufacturing Accounting menu (G3116), choose Variances.

When you create journal entries for variances, the program generates error messages if it finds any general ledger errors while formatting the journal entries. You can review these error messages by reviewing your workflow messages.

You can set a processing option to call the WIP Revaluation program (R30837) and to determine which version of this program the system uses. You use this program to revalue all open work orders with items that are flagged for cost change in the Item Cost File table (F4105), as well as their parent work orders. After work in process is revalued, the system

clears the cost change flag. All cost types in the Production Cost table (F3102) are included in the data selection.

If you turned on the Cost by Work Center option in the Manufacturing Constants program (P3009), the variance journal entries for each cost component are generated for the work center based on the information in the Production Cost table. At the work center level, you can generate only debits to the variance accounts (AAIs 3220, 3240, 3260, 3270, 3280); credits to the WIP account are not affected. They are still generated by branch/plant.

When you run this program in final mode, the system creates a batch of journal entries for posting to the general ledger.

Standard Costing

In standard cost accounting, the Variances program (R31804) creates detail or summary journal entries for work order or rate schedule variances. These include engineering, planned, actual, and other variance transactions for the following items:

- Material costs

- Routing-related costs

- Cost extras

Actual Costing

When the cost method in the work order header for the end product is any method *except* 07 (Standard), the system applies actual costing logic. The system retrieves the correct account from AAI table 3210 for scrap, completions, and cost of goods sold for account information.

When you run the Variances program (R31804) and the system discovers no unaccounted amounts, the system clears work in process and creates a new unit cost based on the following calculation: Total actual amount divided by completed + scrapped units. If any unaccounted amounts exist, and the work order is to receive a closed status, the Variances program stops and creates an error message. You must run the Manufacturing Journal Entries program (R31802A) to complete the manufacturing accounting again.

For cost method 02, (Weighted Average Cost) the system performs the following actions:

- Updates the weighted average cost

- Creates IV journal entries to clear work in process

- Creates a record in the Item Ledger File table (F4111) table for unaccounted amounts using the following calculation: Actual - Completed + Scrap

For cost method 09 (Actual or Manufacturing Last) the system performs the following actions:

- Creates IV journal entries to clear work in process.

- Transfers all work in process to finished goods by creating journal entries for completion (IC) and scrap (IS).

- Revalues on-hand inventory based on the new unit cost (according to cost level item; item and branch; or item, branch, lot, and location).

- Creates a record in the Item Ledger File table (F4111) for inventory revaluation.

- Updates the Item Cost File table (F4105).

- Creates additional sales order lines to reflect the latest cost changes. The system creates these sales order lines only if the work order is closed. It creates additional sales order detail lines for sales order lines that contain sales from locations or lots to

which the work order was completed. The Cost of Goods Sold Update program (R31805) generates a report that lists the new sales order lines by lot and location. This information is then included when you print the Update Customer Sales report (R42800).

Processing Options for Variances (R31804)

Defaults
1. General Ledger Date

   Blank - Defaults to the current date
2. Document Type - For Manufacturing Variance

   Blank - "IV"
3. Sub Ledger Value

   1   - Default WO Number into
           SubLedger Field
   Blank - Does not Default WO Number.
4. Work Order Status Code .

   Blank - Status will not be changed
5. Closed Work Order Status

   Blank - 99
6. Actual Costing Document Types:

      Scrap
      Blank - "IS"

      Completion
      Blank - "IC"
Process
1. Journal Entries Mode.

    1   - Final Mode
   Blank - Proof Mode
2. Summarize ACROSS Work Orders.

    1   - Summarize Across WOs
   Blank - Doesn't Summarize Across WOs
3. Flex Accounting.

    1   - Use Flex Accounting
   Blank - Flex Accounting not used

4. WIP Revaluation

    1   - Invoke WIP Revaluation
   Blank - Do not invoke WIP Revaluation
Print
1. Accounting Journal.

    1   - Print Journal Report
   Blank - Don't Print Journal Report
2. Subtotals

    1   - Print Subtotals by Document
   Blank - Don't Print SubTotals
3. Summarize Report ACROSS Work Orders.

    1   - Summarize Report by Account

Blank - Don't Summarize Report by
        Account.
OverUnderComp
1. Restate Production Costs

   1   - Restate Costs
   Blank - Don't Restate Costs.

Versions

1. WIP Revaluation

Blank = ZJDE0001
Sales Orders

Line Type
Blank - original line type

Status Code - Next
Blank - 620

Reviewing G/L Batches

After you generate journal entries, you review and approve them before posting them to the general ledger. This review is the second step in the J.D. Edwards three-tier process. In addition, you can review manufacturing journal entries for summarized work orders.

Before You Begin

❑ Set the approval route code in the Branch/Plant Constants program (P41001) for approving journal entries for posting.

▶ **To review general ledger batches**

From the Manufacturing Accounting menu (G3116), choose G/L Review - by Work Order Number.

1. On Work With G/L Review - by WO Number, complete one or more of the following fields to locate a batch of journal entries and click Find:

    • User ID

    • Document Number From

    • Document Number To

    • Work Order Number

    • G/L Date From

    • G/L Date To

2. Choose a record and click Select.

3. On General Journal Review, choose a transaction and click Select.

4. On Journal Entry, enter any necessary changes and click OK.

Posting Manufacturing Journal Entries to the General Ledger

From the Manufacturing Accounting menu (G3116), choose Post General Journal.

After you enter, review, and approve journal entries, use the General Ledger Post Report program (R09801) to post the journal entries to the general ledger. Update your account balances with amounts from journal entries by posting the journal entries to the general ledger. After posting, the system provides several reports that you can use to view the posted journal entries.

You can run only one post at a time. You must ensure that all post menu selections are routed to the same job queue and that the job queue allows only one job to process at a time.

Caution

J.D. Edwards strongly recommends that you do not customize the post program.

Posting represents the third step of the J.D. Edwards three-tier process.

Before You Begin

❑ Verify that the batch has an approved status.

❑ Verify that the post is submitted to a single-threaded job queue.

Prepost Process

The prepost process consists of the following elements:

Selection   The General Ledger Post Report program (R09801) selects unposted, approved transactions that have a batch type of 0 and other criteria that you specified in the processing options. These transactions are retrieved from the Account Ledger table (F0911).

Detail edit   The program validates each transaction to determine whether any of the following are true:

- The account exists in the Account Master table (F0901) and is a posting account
- The business unit is valid in the Business Unit Master table (F0006)
- The G/L date is valid
- Intercompany transactions exist
- Detail currency restatement should be performed

Batch edit   The program validates each batch to ensure that it is approved and in-balance. If the program finds any errors, it does not post the batch.

Posting Edit report   This report lists all batch errors that occur. It prints in batch sequence.

Error conditions   If any transaction in the batch is in error, the program places the entire batch in error, which prevents the batch with the error from posting.

Caution

You should not change the accounts, AAIs, intercompany settlements, general accounting constants, or processing options when you run the post.

The following graphic illustrates the prepost process:

Check that status=
approved and that journal
entries are in balance.

IN

The system selects unposted,
approved batches with a Batch
Type of 0.

Batch of Journal Entries

Correct
Batch

Incorrect
Batch

Change Batch Status Code to D
(posting if correct and in
balance).

Change Batch Status
Code to E (error).

Posting Edit Report

Correct Batch

Incorrect Batch

POST

ERROR CONDITION
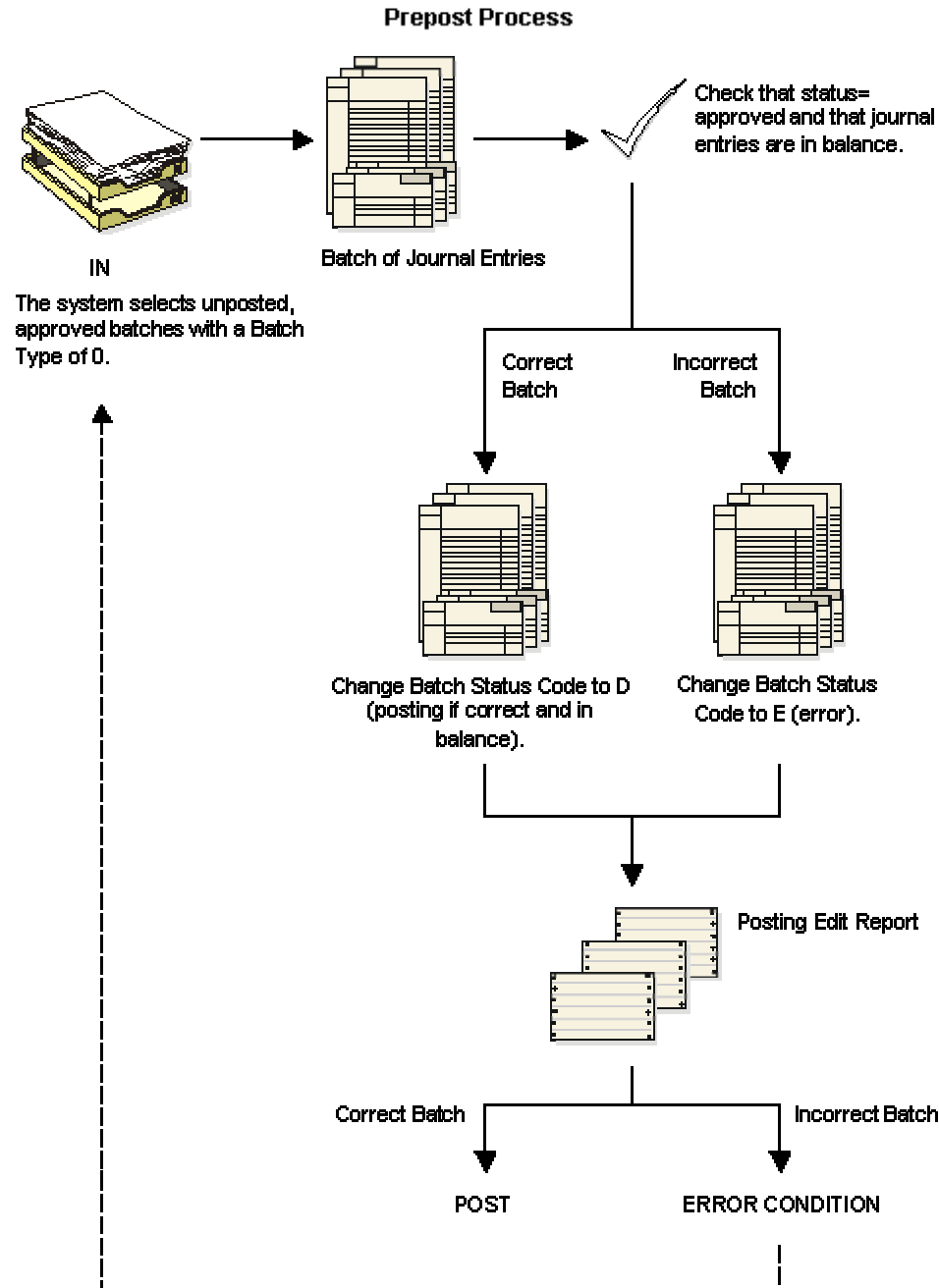
Post Process

The General Ledger Post Report program (R09801) posts only batches for which no errors are found in the prepost process. In general, the program performs the following actions:

- Posts transactions to the Account Balances table (F0902) and marks each transaction and the batch header as posted in the Account Ledger table (F0911) and the Batch Control Records table (F0011)

- Changes the batch status for the Batch Control Records table to D

- Marks each transaction with a status of P (posted)
- Performs intercompany settlements for ledger types AA, XA, YA, CA, AZ, and ZA, if requested
- Creates reversing entries, if requested

The following graphic illustrates the post process:

Post Process
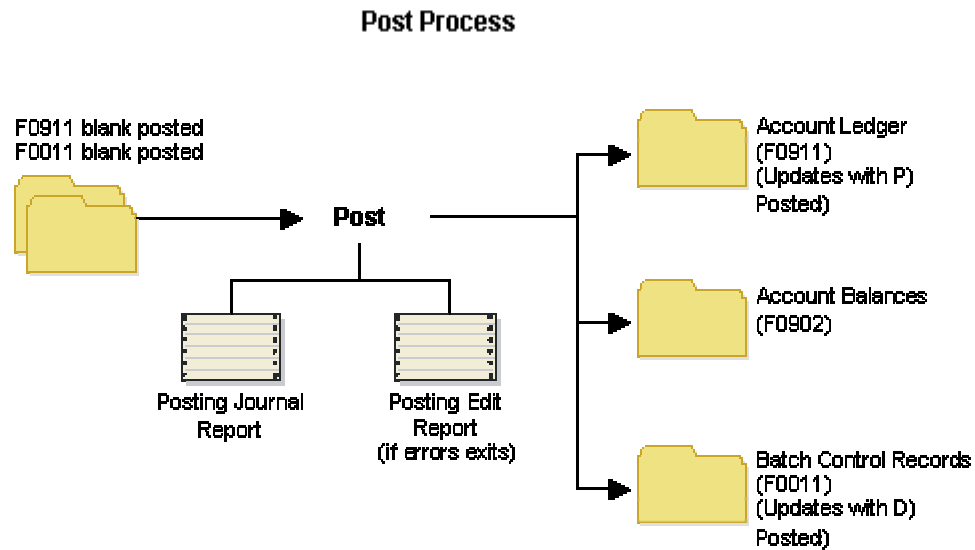
The General Ledger Post Report program produces the following two reports

- Posting edit report
- Posting journal report

Posting Edit Report

This report lists errors detected during the post. If the program finds errors, it does not post the batch. You must correct all errors before you can post the batch.

The following table lists common posting errors and their causes:

Batch not approved for posting	This error message is caused by a batch with a pending or error status.
Account not set up in Account Master table (F0901)	The following two situations can cause this error message:

- An undefined account number (designated as # during journal entry) was entered. To correct this, locate the document number and line number on the Journal Entry form (W0911A) and change the # on the detail line to the valid account number.
- No account number was set up prior to posting, or the account number does not meet the model account criteria to be automatically created by the system. Add the G/L account number in the Review and Revise Accounts program (P0901).

Batch journal entries out-of-balance	This error message occurs when debits do not equal credits. If the out-of-balance journal entry was entered in error, correct the error and post the batch again.

Other situations, such as the following, can cause a journal entry to be out-of-balance:

- A power failure might have occurred during entry or posting
- A valid, one-sided journal entry might have been entered to correct a conversion error made during setup

Posting Journal Report

This report lists the transactions that the system posted to the Account Balances table (F0902) and to the Account Ledger table (F0911).

Processing Options for General Ledger Post Report (R09801)

Print Tab

1. Account Format

Blank = Default Account Format

1 = Structured Account

2 = Short Account ID

3 = Unstructured Account

Use this processing option to specify the account format that you want to print on the General Ledger Post report.

2. Print Error Messages

Blank = No error message will print

1 = Error message will print

Use this processing option to specify whether to print error messages on the General Ledger Post report. If you leave this processing option blank, an error message still prints in the work center when an error message is detected. Valid values are:

Blank

Do not print error messages.

1

Print error messages.

1. Detail Currency Restatement Version

Blank = No Detail Currency Restatement entries created

Enter a version of Detail Currency Restatement (R11411) to execute (i.e. ZJDE0001).

Use this processing option to specify the version of the Detailed Currency Restatement program (R11411) that you want to run to create entries. If you leave this field blank, the program does not run and does not create detailed currency restatement entries.

2. Fixed Asset Post Version

Blank = No Fixed Asset entries created

Enter a version of FIxed Asset Post (R12800) to execute (i.e. ZJDE0001).

Use this processing option to specify the version of the Fixed Asset Post program (R12800) that you want the system to run to create fixed asset entries. If you leave this field blank, the Fixed Asset Post program (R12800) does not run and does not create fixed asset entries.

3. 52 Period Post Version

Blank = No 52 Period Post entries created

Enter a version of 52 Period Post (R098011) to execute (i.e. ZJDE0001).

Use this processing option to specify the version of the 52 Period Post program (R098011) to update the Account Balances table and the Account Balances - 52 Period Accouting table. If you leave this field blank, the 52 Period Post Program does not run and does not update the tables.

Edits Tab

1. Update Transaction

Blank = No editing

1 = Update transaction

Use this processing option to update Account ID, Company, Fiscal Year, Period Number, Century, and Fiscal Quarter on unposted records in the Account Ledger table (F0911). You might need to update these fields if you have records in the Account Ledger table that were created by a custom program and may not contain the correct values in these fields.

The system uses the value in the G/L Account Number field of the unposted record in the Account Ledger table to update the Account ID and Company fields.

The system calculates the correct values for the Fiscal Year, Period Number, and Century fields using the value in the G/L date field of the unposted record in the Account Ledger table.

The system will update the Fiscal Quarter field on the unposted record in the Account Ledger table to blank.

1. Update Tax File

Blank = No update to Tax File

1 = VAT or Use Tax only

2 = For all Tax Amount

3 = For all Tax Explanation Codes

Use this processing option to specify whether and how to update the Taxes table (F0018) when you post transactions with tax information to the general ledger. Valid values are:

Blank

The system does not update the Taxes table.

1

The system updates the Taxes table for the following tax explanation codes only: V, VT, V+, U, and UT.

2

The system updates the Taxes table for all tax amounts. The system does not update the Taxes table for transactions with tax explanation code E (exempt).

3

The system updates the Taxes table for all tax explanation codes including E (exempt).

2. Update VAT Discounts

Blank = No Adjustment

1 = Update VAT only

2 = Update VAT, Ext Price and Taxable

Use this processing option to specify whether to adjust the tax amount fields, and which fields to adjust, when discounts are taken. The system adjusts the tax amount fields only for transactions with tax explanation code V.

Note: The following options in the tax rules must be turned on to use this processing option:

o Tax on Gross Including Discount

o Discount on Gross Including Tax

Valid values are:

Blank

The system does not adjust tax amounts for discounts taken.

1

The system updates only the tax amount field (STAM).

2

The system updates the tax (STAM), taxable (ATXA), and extended price (AEXP) amount fields.

The system uses the following algorithms to calculate the adjustment amounts to the tax, taxable, and gross (extended price) amount fields for discounts taken:

o Adjustment to the gross amount (extended price) = discount taken

o Adjustment to the taxable amount = (taxable amount / gross amount) x discount taken

o Adjustment to the tax amount = (tax amount / gross amount) x discount taken

For example:

Tax Rate = 25%

Discount Taken = 12.50 USD

Gross Amount (Extended Price) = 1,250.00 USD

Taxable Amount = 1,000.00 USD

Tax Amount = 250.00 USD

Based on the example, using the adjustment algorithms, the system calculates the following adjustment amounts:

- o Adjustment to the Gross Amount = 12.50
- o Adjustment to the Taxable Amount = 10.00
- o Adjustment to the Tax Amount = 2.50

To calculate the adjustments, the system subtracts the adjusted amount from the original amount:

- o Adjusted Gross Amount: 1,250.00 - 12.50 = 1,237.50
- o Adjusted Taxable Amount: 1,000.00 - 10.00 = 990.00
- o Adjusted Tax Amount: 250.00 - 2.50 = 247.50

3. Update VAT Receipts and W/O

Blank = No Adjustment

1 = Update VAT only

2 = Update VAT, Ext Price and Taxable

Use this processing option to specify whether to adjust the tax fields, and which fields to adjust, when the receipt has a write-off. The system adjusts the tax amount fields only for transactions with tax explanation code V. Valid values are:

Blank

The system does not adjust tax amounts for write-offs.

1

The system updates only the tax amount field (STAM).

2

The system updates the tax (STAM), taxable (ATXA), and extended price (AEXP) amount fields.

The system uses the following algorithms to calculate the adjustment amounts to the tax, taxable, and gross (extended price) amount fields for write-off amounts:

o Adjustment to the gross amount (extended price) = write-off amount

o Adjustment to the taxable amount = (taxable amount / gross amount) x write-off amount

o Adjustment to the tax amount = (tax amount / gross amount) x write-off amount

For example:

Tax Rate = 25%

Write-off Amount = 12.50 USD

Gross Amount (Extended Price) = 1,250.00 USD

Taxable Amount = 1,000.00 USD

Tax Amount = 250.00 USD

Based on the example, using the adjustment algorithms, the system calculates the following adjustment amounts:

o Adjustment to the Gross Amount = 12.50

o Adjustment to the Taxable Amount = 10.00

o Adjustment to the Tax Amount = 2.50

To calculate the adjustments, the system subtracts the adjusted amount from the original

amount:

- o Adjusted Gross Amount: 1,250.00 - 12.50 = 1,237.50

- o Adjusted Taxable Amount: 1,000.00 - 10.00 = 990.00

- o Adjusted Tax Amount: 250.00 - 2.50 = 247.50

Process Tab

1. Explode parent item time

Blank = No exploding

1 = Explode parent item time

Use this processing option to specify whether the system explodes the time entries for a parent asset down to the children of the parent asset. If you enter a 1 for this processing option, the General Ledger Post Report program (R09801) creates time entries for the parent asset's children. The system uses the unit of time from the parent asset entries and the rates from the child asset to calculate the appropriate entries. This processing option applies only to batch type T entries. Valid Values are:

Blank

Do not explode the time entries for a parent asset down to the children of the parent asset.

1

Explode the time entries for a parent asset down to the children of the parent asset.

1. Units Ledger Type

Blank = ZU

Enter a valid value from the UDC 09/LT or blank will default the ZU ledger type.

Use this processing option to specify the units ledger type for the system to use for cash basis entries. You must use a valid ledger type from UDC 09/LT. If you leave this processing option, the system uses a default ledger type of ZU.

Reviewing the Item Ledger/Account Integrity Report

From the Inventory Reports menu (G41111), choose Item Ledger/Account Integrity Report.

The Item Ledger/Account Integrity report (R41543) displays the following types of discrepancies between the Item Ledger (F4111) and Account Ledger (F0911) tables:

- Item ledger detail records exist with no corresponding general ledger detail records.
- Item ledger does not balance with the corresponding general ledger detail.

The report displays summary lines that represent specific totals by:

- Document type
- Document number
- Key company

The report also displays the solutions to the discrepancies. A blank report indicates that no discrepancies exist. You can run this report as many times as needed because no tables are updated.

If you use summarized journal entries for work orders, the program ignores material issue transactions (IM), completions (IC), and scrap transactions (IS) against those summarized work orders because they are not actual work orders.

Certain types of general ledger (G/L) batches, such as procurement and sales, require exceptions to the basic program logic that the system uses to create the report. These batches contain multiple types of journal entries that are not appropriate for the report. To ensure that the program selects only the inventory entries, you set up exception rules in the Inventory Integrity Report UDC (41/IN). The exception rules must be entered in the Description-1 field for the document types that your organization uses. The following table explains the types of exception rules:

Rule 0: Used for Manufacturing Issues of Material	Exception rule 0 is necessary because the Account Ledger table (F0911) uses frozen standard costs and the Item Ledger table (F4111) uses the inventory costing method that the user has chosen. If the methods are not the same, set up this code.
	For documents to which the integrity check applies, this rule ensures that if records exist in the Item Ledger table, they also exist in the Account Ledger table.
Rule 1: Used for Sales Invoices	Exception rule 1 is necessary because journal entries such as revenue or loss entries, taxes, freight, and intercompany settlements are written to the Account Ledger table when sales transactions take place.
	The program checks AAI 4240 from the Distribution/Manufacturing - AAI Values table (F4095) to determine which object accounts to include. The program compares only journal entries with these object accounts in the Account Ledger table to the journal entries in the Item Ledger table.
Rule 2: Used for Purchase Vouchers	Exception rule 2 is necessary because journal entries such as favorable or unfavorable price variances, taxes, and freight are written to the Account Ledger table when purchase transactions take place.
	The program checks AAI items 4330, 4340, and 4350 from the Distribution/Manufacturing - AAI Values table to determine which object accounts to include. The program compares only journal entries with these object accounts in the Account Ledger table to the journal entries in the Item Ledger table.

Note

If the exception rules in UDC 41/IN are set up correctly, the report prints only incorrect transactions.

Before You Begin

❑ Verify that you have set up exception rules in UDC (41/IN).

See Also

❑ *Customizing User Defined Codes* in the *Foundation Guide*

Data Sequence

You must use the following data sequence:

- Document type
- Document
- Document company

Processing Options for Item Ledger/Account Integrity (R41543)

Report Display

1. Enter From G/L Date

2. Enter Thru G/L Date

Blank = Today's Date

3. Enter Work Order Completion Document Type

Blank = IC

4. Enter Work Order Issue Document Type

Blank = IM

Reviewing Reports for Manufacturing Accounting

Manufacturing accounting reports help you review your production costs and variances. You might want to run them before you run the Variances program (R31804), or you can run them after you run the Variances program to verify the accuracy of the journal entries.

Reviewing Work Order Activity by Amounts

From the Manufacturing Accounting menu (G3116), choose Work Order Activity - Amounts.

This report lists standard, current, planned, actual, and completed amounts of work orders. The reports lists the costs of the components first, and then the costs of the parents.

Reviewing Work Order Activity by Units

From the Manufacturing Accounting menu (G3116), choose Work Order Activity - Units.

This report lists standard, current, planned, actual, and completed units of work orders. The report lists the costs of the components first, and then the costs of the parents.

Reviewing Engineering Variances

From the Manufacturing Accounting Reports menu (G3123), choose Discrete Engineering Variance.

This report lists work orders, their standard and current amounts, and their engineering variances.

Reviewing Planned Variances

From the Manufacturing Accounting Reports menu (G3123), choose Discrete Planned Variance.

This report lists all work orders and their planned variances. The purpose of the report is to compare the current amounts to planned amounts.

Reviewing Efficiency Variances

From the Manufacturing Accounting Reports menu (G3123), choose Discrete Labor Efficiency Variances.

This report shows planned and actual labor hours (all cost components except A1), extended by standard rates, and the monetary amount of variance by work order and item number.

Reviewing Total/WIP and Other Variances

From the Manufacturing Accounting Reports menu (G3123), choose Discrete Total/WIP and Other Variances.

This report shows the standard, actual, and completed amounts, as well as total and other variances by cost component and item for your work orders.

Reviewing Completed Work Order Valuation

From the Manufacturing Accounting Reports menu (G3123), choose Discrete Completed Order Valuation.

This report shows the standard, actual, completed, and outstanding balance amounts by cost component and item for your completed work orders. The Manufacturing Journal Entries (R31802A) and the Variances programs (R31804) have already been run for these work orders. The report displays the total for each type of cost by work order and a grand total of each cost for all of the work orders listed.

Reviewing Work Order Amount Variances

From the Manufacturing Accounting Reports menu (G3123), choose Discrete Completed Order Variances.

This report shows detailed production costs and variance amounts for your work orders.

Reviewing Accounting Summary (Closed Work Orders)

From the Manufacturing Accounting Reports menu (G3123), choose either Discrete Summary of Costs by Order or Process Summary of Costs by Order.

The Accounting Summary - Closed Work Orders report (R31401) lists completed work orders and their accumulated costs. This report lists the total standard and total actual costs and the variance between the two. Actual costs are detailed by material, labor, and overhead.

The system retrieves the following information:

- Labor and miscellaneous costs come from values in the Work Order Time Transactions table (F31122) for the work order.

- Overhead costs are the machine hours in the Work Order Time Transactions table multiplied by the overhead rates entered for the work center in the Work Center Rates File table (F30008).

- The total actual cost is the accumulated detail for labor, overhead, material, and miscellaneous costs.

- The total standard cost is the number of items completed on the work order multiplied by the parent item's frozen standard cost from the Item Cost File table (F4105).

Reviewing Purchase Price Variance

From the Manufacturing Accounting Reports menu (G3123), choose either Discrete Material Price Variance or Process Material Price Variance.

The Purchase Price Variance Report (R31425) lists the actual price paid for an item, the standard price that you estimated for the item, and the variance between the two. It also lists a percent of variance for each item and the total costs by item for the entire report.

The system retrieves the following information:

- Standard costs from the Item Cost File table (F4105)

- Actual costs from the Purchase Order Receiver File table (F43121)

Reviewing Material Usage Variances

From the Manufacturing Accounting Reports menu (G3123), choose either Discrete Material Usage Variance - Std or Process Material Usage Variance - Std.

The Material Usage Variances Report (R31426) lists the standard costs on a work order parts list and the actual costs recorded for the parts issued. The report contains the following elements:

- The standard units required on a work order

- The actual units consumed

- The variance between the two in both units and cost

The system performs the following calculations:

- The standard units are the parent quantity specified on the work order or the quantity of the component specified on the work order parts list. When the work order is completed (status 99), the report lists the work order quantity completed, rather than the original parent quantity ordered.

- The variance percentage results from the actual units or amounts divided by the standard units or amounts. The variance percentage provides an accuracy value. For example, an accuracy value of 100.00 indicates that the planned quantity or amount was the same as the actual quantity or amount used.

Reviewing Labor Rate Variance

From the Manufacturing Accounting Reports menu (G3123), choose Discrete Labor Rate Variance or Process Labor Rate Variance.

The Labor Rate Variance Report (R314271) lists current and standard labor rates, and hours or amounts. It details labor rate variances between the standard rates that you estimated and the actual rates that you charged, and lists the percentage of variance.

The system performs the calculations based on the following information:

- The standard rates come from the Work Center Rates File table (F30008)

- The standard hours come from the Work Order Routing table (F3112)

- The actual amounts are the actual hours from the Work Order Time Transactions table (F31122) multiplied by the standard rate

Reviewing Work Order Labor Efficiency

From the Manufacturing Accounting Reports menu (G3123), choose Discrete Labor Efficiency or Process Labor Efficiency.

The Work Order Labor Efficiency Report (R31428) is a detailed analysis of direct labor efficiency hours accumulated for a work order. It lists standard and actual hours, and calculates the cost of the variance between them based on standard labor rates. To select work orders for the report by status, enter a range of statuses in the processing options.

The system retrieves the following information:

- The actual values, which are the values from the Work Order Time Transactions table (F31122) for the operation sequence and employee.

- The frozen standard hours, which are from the Work Order Routing table (F3112).

- The frozen standard labor rates, which are from the Work Center Rates File table (F30008), based on the type code for the operation sequence.

Calculations in Cost Rollup

This section provides information about how hard-coded cost components are generated in the cost rollup process. These calculations can vary according to your manufacturing constants and your processing option choices.

The Simulate Rollup program (R30812) program adjusts direct labor hours and direct machine hours by time basis, crew size, and cumulative yield, as appropriate. The program adjusts component material quantities by operation scrap, percent scrap, and shrink.

Material Cost Components

The following table illustrates how the material cost components A1 and A2 reflect the cost incurred from purchasing material and from material scrap:

A1 (Purchased Material)	• If you enter a cost method in the Purchased Item processing option on the Simulate Rollup program (R30812), the program uses that cost method to retrieve the cost from the Item Cost File table (F4105) • If you leave the processing option blank, the program uses the values that you enter manually on the Enter Cost Components form
A2 (Material Scrap)	• The cost component is used for items that have a percent of scrap defined in their bill of material • The net-added cost comes from scrap incurred when the components are assembled • Component material scrap cost = the percent of scrap from the bill of material x quantity per parent item x the total cost of the component

Routing Cost Components

Routing cost components (cost components B and C) can be controlled manually or through the Simulate Rollup program (R30812).

B1 (Direct Labor)

B1 costs can be calculated as follows:

- Parent direct labor costs = sum of direct labor calculations for all operations on the item's routing

- Operation direct labor cost = (((operation direct labor hours / operation time basis) x operation crew size) / (operation cumulative yield % / 100)) x work center direct labor rate

B2 (Setup Labor)

B2 costs can be calculated as follows:

- Parent setup labor cost = sum of all setup labor calculations for all operations on the item's routing
- Operation setup labor cost = (operation setup labor hours x work center setup labor rate) / accounting cost quantity (if the accounting cost quantity is not zero)

B3 (Machine Run)

B3 costs can be calculated as follows:

- Parent machine run cost = sum of machine run calculations for all operations on the item's routing
- Operation machine run cost = ((operation machine run hours / operation time basis) / (operation cumulative yield / 100)) x work center machine run rate

B4 (Labor Efficiency)

This cost component increases or decreases the cost of the labor required to produce an item. If you have set the manufacturing constants to modify costs by work center efficiency, the program creates a cost component (B4) for labor efficiency when you run the Simulate Rollup program (R30812). In addition, if the efficiency for a work center is equal to zero, then the system does not perform a calculation for that work center. The system calculates labor efficiency only for direct labor hours, as follows:

Parent labor efficiency cost = sum of all efficiency calculations for all operations on the item's routing

Calculating the operation labor efficiency cost requires the following calculations:

Direct labor hours x time basis code / crew size / operation yield % = factored labor hours

work center efficiency / percentage conversion x factored labor hours = factored efficiency hours

labor efficiency cost = factored labor hours – factored efficiency x direct labor rate

C1, C2 (Variable and Fixed Machine Overhead)

The system calculates C1 and C2 costs only if you have set the manufacturing constants for the branch/plant to include variable and fixed machine overhead in the cost. You must also specify whether you want the system to calculate machine overhead costs from manually entered rates in the Work Center Master File table (F30006) or as a percent of machine run costs.

Parent variable and fixed machine overhead cost is the sum of all variable and fixed machine overhead calculations for the item's routing. Calculating variable machine overhead costs requires the following steps:

Machine variable labor overhead percent / percentage conversion x machine run rate = Variable machine overhead rate

Machine run hours / time basis code / operation yield percent = Variable machine overhead run hours

Machine variable overhead cost = Variable machine overhead run hours x variable machine overhead run rate

Calculating fixed machine overhead costs requires the following steps:

Machine fixed labor overhead percent / percentage conversion x machine run rate = Fixed machine overhead rate

Machine run hours / time basis code / operation yield % / primary UOM conversion factor = Fixed machine overhead run hours

Machine fixed overhead cost = Fixed machine overhead run hours x fixed machine overhead run rate

C3, C4 (Variable/Fixed Labor Overhead)

The system displays the following calculations as rates. If you indicate on the Work Center Master Revisions form that variable and fixed labor overhead costs should be calculated as a percent of labor costs, multiply the work center labor rate by the percent divided by 100 to obtain the labor overhead rate. For example:

Operation variable labor overhead rate = (work center variable labor overhead percent / 100) x work center direct labor rate

These costs are calculated only if you have set the manufacturing constants for the branch/plant to include variable and fixed labor overhead in the cost. In this table, you must also determine whether labor overhead costs are calculated from manually entered rates in the Work Center Master File table (F30006) or as a percent of labor costs. In addition, you can set the manufacturing constants to factor labor overhead by work center efficiency.

- Parent variable and fixed labor overhead cost = Sum of all variable and fixed labor overhead calculations for all operations on the item's routing.

- Variable and fixed labor overhead cost = Direct labor overhead cost + setup labor overhead cost:

  - Direct labor overhead cost by rate:

    - Without labor efficiency: direct labor hours x work center variable and fixed labor overhead rate

    - With labor efficiency: (direct labor hours + work center efficiency) x work center variable and fixed labor overhead rate

      Work center efficiency = Labor hours - ((work center efficiency percent / 100) x labor hours)

  - Setup labor overhead cost by rate = (operation setup labor hours / accounting cost quantity) x work center variable and fixed labor overhead rate. Accounting cost quantity is factored if it is not equal to zero.

Outside Operation Cost Components (Usually Dx)

You can manually enter outside operations cost components on the Enter Cost Components form (W30026B) or let the system retrieve them from the Item Cost File table (F4105) when you run the Simulate Rollup program (R30812). The Order Processing program (R31410) creates item numbers for outside operations as follows:

*Parent*Op*xx*

> where Parent represents the parent item number, and xx represents the whole-number portion of the outside operation's operation sequence number. For example, for item 333, an outside operation at operation sequence number 30 receives an item number of 333*OP30.

If you enter a cost method in the Outside Operations processing option for the Simulate Rollup program, the program uses that cost method to retrieve the cost from the Item Cost File table. If the value is zero, and a value previously existed in the Item Cost Component Add-Ons table (F30026), the original value remains. If you leave the processing option blank, the program uses the values that you manually entered on the Enter Cost Components form.

Purchase Price Variance

For purchased items, a purchase price variance (PPV) results when the standard cost differs from the actual purchase price. If you use extra costs on purchased items, the total standard cost might differ from the A1 (material) cost. This difference is the material burden cost.

When you receive a purchase order, the system updates the accounts payable account using the price on the purchase order. The system updates the inventory account with the standard item cost from the Item Cost File table (F4105). Any difference between the two costs is made up of PPV and material burden. PPV is the difference between the frozen A1 cost and the purchase order cost. Material burden cost is the difference between the total standard cost from the Item Cost File table (F4105) and the A1 cost, as follows:

> PPV = A1 cost - purchase order unit cost

> Material burden cost = total standard cost - A1 cost

Example: Purchase Price Variance and Material Burden

The Item Cost File Table (F4105) includes the following information:

- Average cost = 14.00
- Standard cost = 16.00

The Item Cost Component Add-Ons Table (F30026) includes the following information:

- A1 cost = 13.00
- X1 cost = 3.00

The following T-accounts show the accounting flow for price variance and material burden:

Material Inventory		Material Received (AP)	
16.00			12.00
total standard cost			Purchase Order cost

Material Burden		PPV	

3.00		1.00	

Material issued to the work order relieves the inventory account and posts to the WIP account with the fully loaded standard cost for the item.

Material Inventory		**WIP**	
	16.00	16.00	

At period end, a manual journal entry closes the PPV to the Cost of Goods Sold account.

PPV		**COGS**	
1.00	Credit	1.00	

AAI table 4337 posts the material overhead. If you have multiple cost extras and you want to post to different accounts for each of them, you must use landed cost.