JD Edwards World

Product Data Management - Discrete Guide

Version A9.1

Revised - January 15, 2007

JD Edwards World
Product Data Management - Discrete Guide

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JD Edwards World Release A9.1 Documentation, Revised - January 15, 2007

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1 Overview

Overview to Product Data Management – Discrete

The Product Data Management (PDM) system enables you to organize and maintain information about each item you manufacture. Use the Product Data Management system to define the relationships between inventory items (and other purchased or non-stock items) and how they can be combined to manufacture a saleable product.

This system provides basic data for other manufacturing systems. You should verify that your product data is accurate to ensure the efficiency of associated systems such as Shop Floor Control and Master Production Scheduling.

This section contains the following:

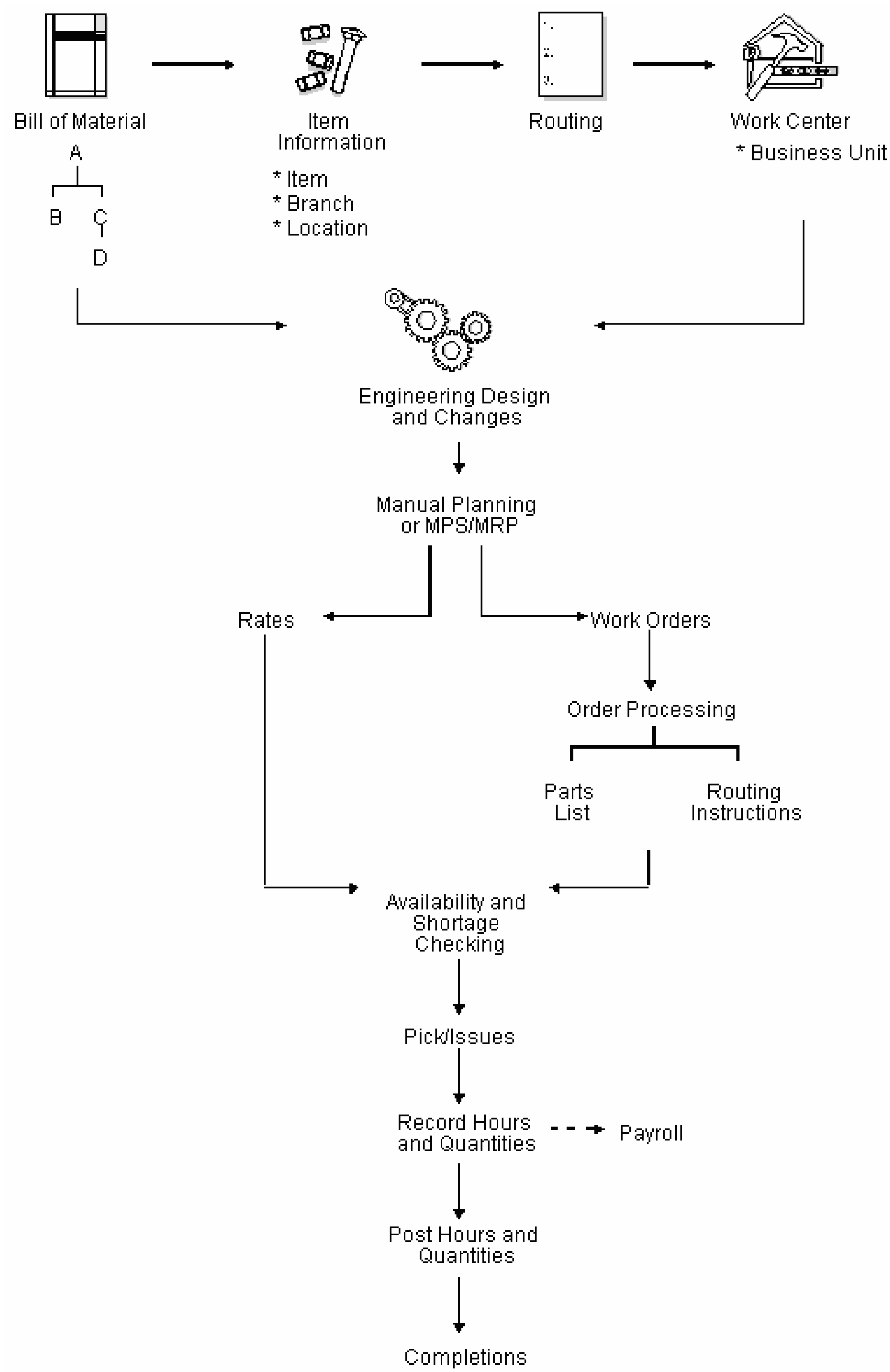
- System Integration
- Features
- System Concepts
- Menu Overview

System Integration

PDM integrates with the following systems:

System	Description
Inventory Management	Supplies the basic information about each item (or ingredient), such as part number, description, unit of measure, stocking type, location, and material cost.
Shop Floor Control	Uses bills of material and routings to process work orders and schedule work activity within the plant

System	Description
Manufacturing and Distribution Planning	▪ Uses the PDM information to plan finished goods and the raw material and purchased parts required to manufacture them ▪ Uses sales orders and forecasts to pass demand for items down through the bills of material to the components ▪ Uses the bills of material to determine component requirements for planned orders and work orders without a parts list
Product Costing and Manufacturing Accounting	▪ Uses bill of material, routing, and work center information to calculate total material, labor, machine, and overhead costs ▪ Uses bills of material during a cost rollup to determine the material cost for the parent ▪ Calculates costs for labor, overhead and material for each primary unit of the parent using routing and work center information
Sales Order and Purchase Order Management	Uses bills of material for kit processing
Resource Requirements Planning	Retrieves a master scheduled item's multi-level bill of material and selects the routings for the components



Features

The Product Data Management system includes the following:

Item	Description
Bills of material	▪ Enter multiple bills of material to maintain many arrangements for an item without creating additional part numbers ▪ Access items online using item description search ▪ Define quantities of intermediate products in any unit of measure as they progress the manufacturing process ▪ Enter similar items by copying bills of material, routings, and processes and changing only unique information
Work centers	▪ Define work center number, description and link to business unit ▪ Define queue and move times ▪ Define operator, machine and hours per day capacity ▪ Define set up, labor, machine and overhead rates ▪ Define information for Capacity Planning ▪ Define where an item is produced
Routings	▪ Define each step of the manufacturing process with allowances for anticipated yield and scrap for each operation ▪ Add alternate operations to routings
Engineering Change Management	▪ Control item changes from a single source ▪ Incorporate approved changes to bills of material automatically

System Concepts

The Product Data Management system encompasses:

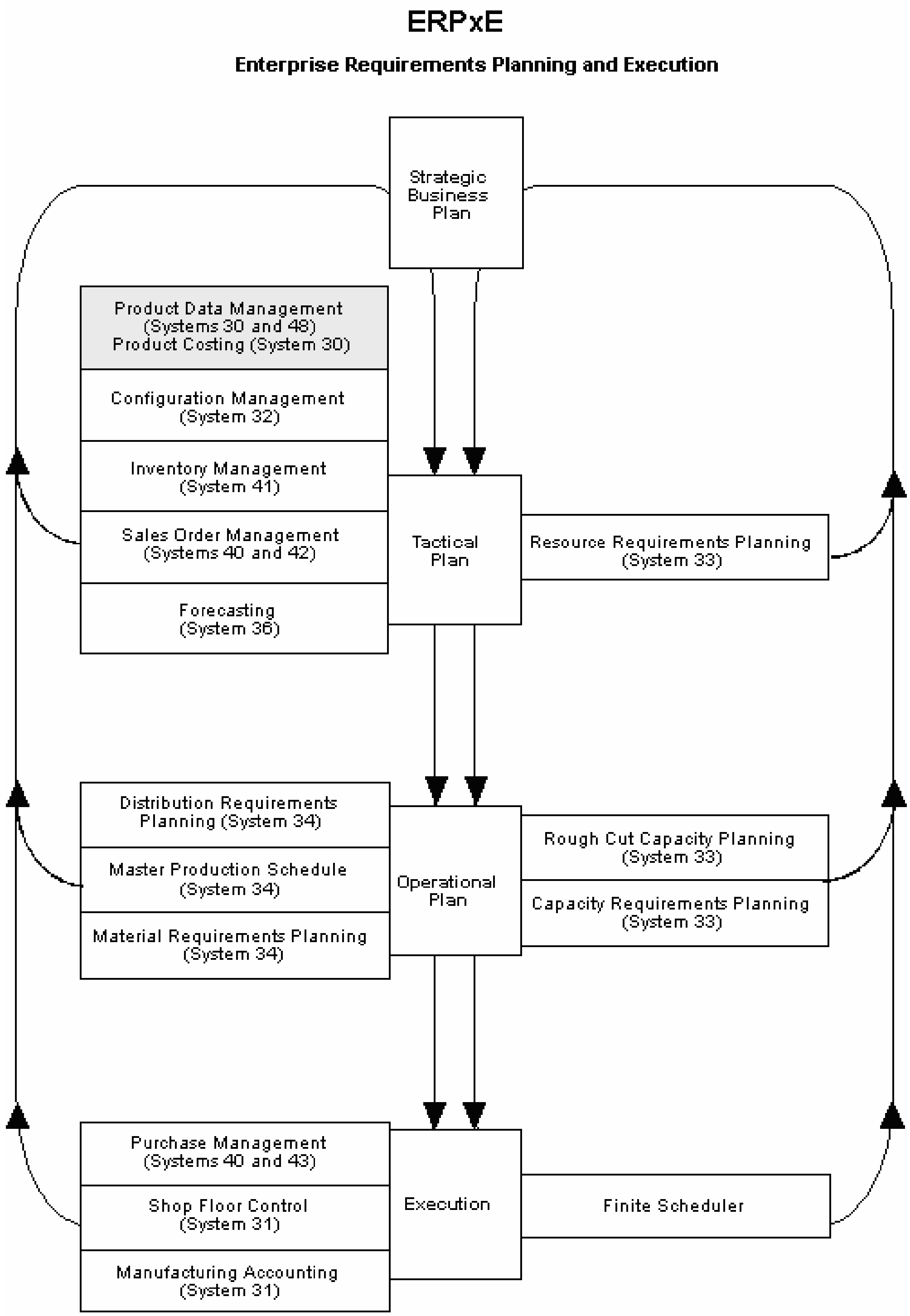
Item	Description
Bills of material	The components and relationships required to produce a parent item.
Routings	The operations required to produce the parent item.
Work centers	The facilities on the shop floor where the routing operations occur.
Engineering change orders (ECOs)	The document that you use to define and implement changes to your products, production lines, and assembly processes.

Enterprise Requirements Planning and Execution Review

Product Data Management is one of many systems within the Enterprise Requirements Planning and Execution (ERPx) system.

Use the ERPx system to coordinate your inventory and labor resources to deliver products according to a managed schedule. It is a closed-loop manufacturing system that formalizes company and operations planning, and the implementation of those plans.

The ERPx system includes the following JD Edwards World systems:



Menu Overview

JD Edwards World systems are menu-driven. System functions are organized according to their function and frequency of use. Access the Product Data Management system menus from the Manufacturing Systems menu.

Fast Path Commands

The following table illustrates the fast path commands you can use to move among the Product Data Management menus:

Fast Path	Menu	Title
APD	G3031	Advanced PDM
DEC	G3013	Engineering Change Management
ECO	G3013	Engineering Change Management
DPDD	G3011	Daily PDM Discrete
DPDP	G3012	Daily PDM Process
PPDD	G3021	Periodic PDM Discrete
PPDP	G3022	Periodic PDM Process
SPD	G3041	Setup PDM

2 Item Entry

Overview to Item Entry

Objectives

- To provide the system with details about the stock and non-stock items in inventory.

About Item Entry

This chapter is an overview of item entry from the Inventory Management system. For information about item entry not included in this chapter, see the *Inventory Management Guide.*

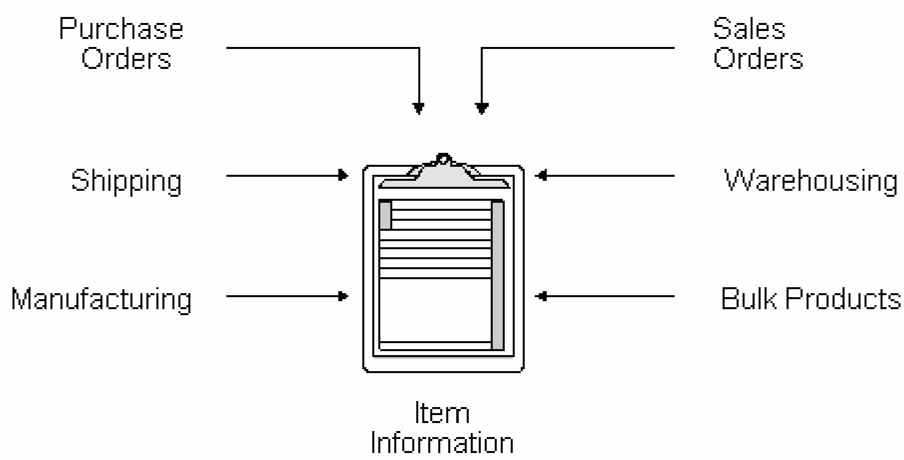
Prior to working with your inventory, you must provide the system with information about the items you stock. When you enter each inventory item, you provide the system with details such as:

- Item identifiers
- Item descriptions (foreign and domestic)
- Item rules
- Item costs and prices
- Item weights and measures

You must also provide the system with information about the location of each item, including:

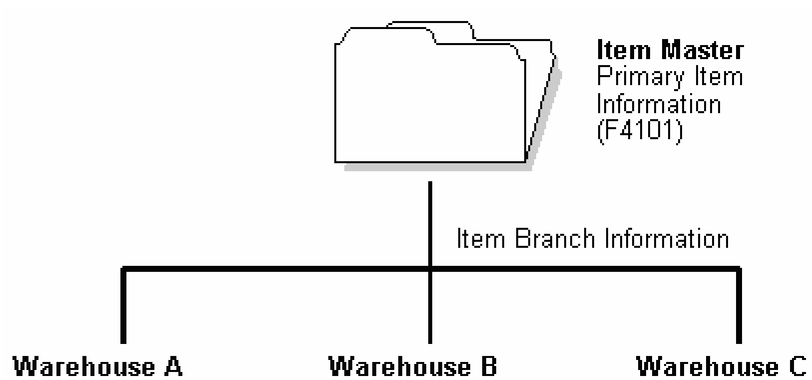
- The branch / plant where each item resides
- The locations used within each branch / plant

The system uses this information to help track and process each item through your distribution and manufacturing systems.

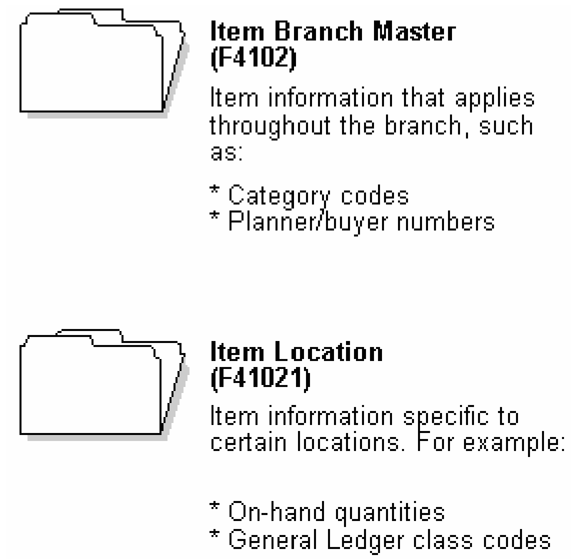


Entering an item includes two steps:

1. Enter item master information, which includes basic information about an item.
2. Customize the item master information to suit each branch or plant that the item occupies.



When you enter item master information, the system creates a record in the Item Master table (F4101). When you enter branch/plant information for an item, the system creates records in the Item Branch Master table (F4102) and the Item Location Information table (F41021).



To enter item information, complete the following steps:

- Enter item master information
- Enter branch/plant information

Before You Begin

- Read System Setup
- Set up G/L class codes
- Review and modify branch/plant constants
- Set up next numbers
- Set up default locations and printers
- Set up applicable user defined code tables, including:
  - G/L posting categories
  - Stocking type codes
  - Units of measure
  - Classification code categories
  - Cost method codes
  - Language preference codes

Enter Item Master Information

This chapter is an overview of item master information from the Inventory Management system. For information about item master information not included in this chapter, see the *Inventory Management Guide*.

This section contains the following:

Entering Item Master Information

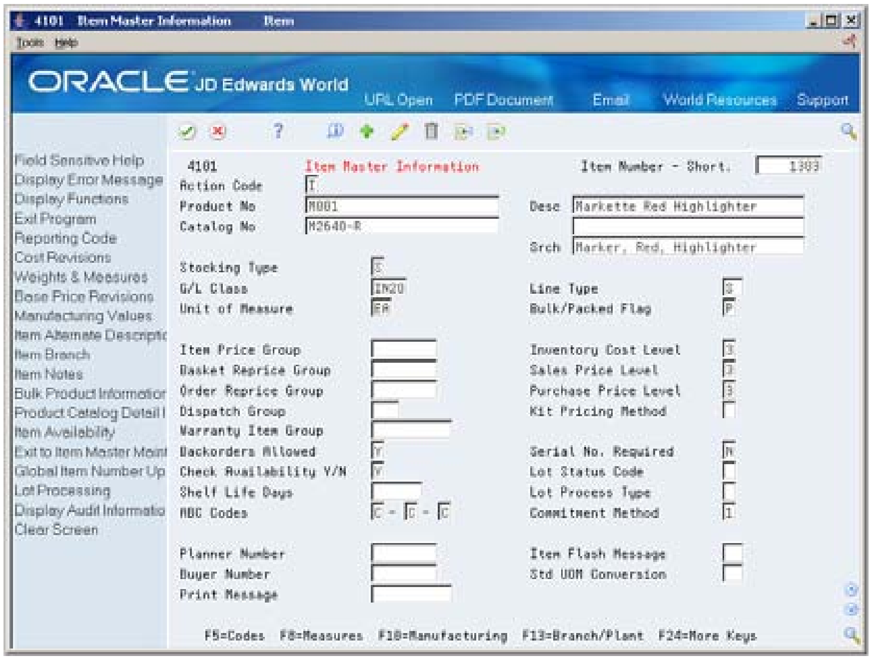
From Inventory Management (G41), choose **Inventory Master/Transactions**
From Inventory Master/Transactions (G4111), choose **Item Master Information**

You must enter general information for all stock and non-stock items. The system uses this information to identify and process each item in the distribution and manufacturing systems.

To enter item information, complete the following tasks:

- Enter basic item information
- Enter item text (optional)
- Assign item responsibility (optional)
- Enter item classification codes (optional)
- Enter item units of measure information (optional)
- Enter item manufacturing information (optional)
- Enter item grade and potency information (optional)

When you enter a new item, the system creates an item master record in the Item Master Information table (F4101).



What You Should Know About

Setting up a template

You might want to set up a template that contains common values for fields. Do this by entering an item with the common field values, later locate the item, and enter the new item information as necessary.

Deleting item master information

You cannot delete master information for an item if any of the following exists:

- Item branch records
- Bills of material
- Item cross-reference numbers
- Supplier relationships
- Sales prices

Displaying additional item information

You can set processing options to display additional item information subsequent to item master information (for example, item branch / plant information).

See Also

- *Entering Item Cost Information (P4105)* for information about entering master information that pertains to item costs
- *Entering Sales Price Information (P4106)* for information about entering master information that pertains to item prices

Entering Basic Item Information

To enter basic item information, complete the following tasks:

- Enter item identifiers
- Enter item descriptions and search text
- Enter item processing information

Each item can have up to three identifiers. You use the identifiers to locate the item. These identifiers can represent universal product codes (UPCs), bar codes, supplier numbers, or a user-defined value.

In Branch / Plant Constants, you must specify a primary item identifier. You must also enter an item description and the text on which a user is most likely to search when trying to locate the item. You can also translate item descriptions and search text into multiple languages to accommodate those users who must locate items using alternate languages.

Item processing information consists of values that control how the system processes the item. These values pertain to stocking, packaging, accounting transactions, system interfaces, and so on.

What You Should Know About

Locating other identifiers	To locate an item using an identifier other than the primary identifier, you can perform a wildcard search by typing a special symbol, such as an asterisk (*), before the identifier. This only applies for forms that contain the Item Number field.

- *Defining Branch/Plant Constants (P41204)* for more information about specifying the primary item identifier

To enter item identifiers

On Item Master Information

Complete the following fields:

- Item Number - Short
- Product No (Product Number)
- Catalog No (Catalog Number)

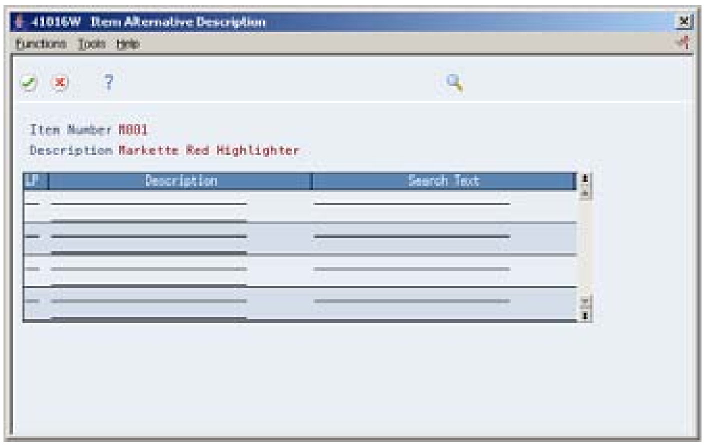
See Also

- *Defining Branch/Plant Constants (P41204)* for more information about specifying the primary item identifier

To enter item descriptions and search text

On Item Master Information

1. To enter descriptions and search text in your native language, complete the following fields:
   - Desc (Description)
   - Srch (Search)
2. To enter descriptions and search text in alternate languages, access Item Alternative Description.



3. On Item Alternative Description, complete the following fields:
   - LP (Language Preference)
   - Description
   - Search Text

To enter item processing information

On Item Master Information

Complete the following fields:

- Stocking Type
- G/L Class
- Line Type
- Bulk/Packed Flag
- Backorders Allowed
- Unit of Measure
- Check Availability Y/N
- ABC Codes

Field	Explanation
Item Number - Short	An inventory item number. The system provides three separate item numbers plus an extensive cross reference capability to alternate item numbers (see data item XRT) to accommodate substitute item numbers, replacements, bar codes, customer numbers, supplier numbers, and so forth. The item numbers are: 1. Item Number (short) - An eight-digit, computer-assigned item number. 2. 2nd Item Number - The 25-digit, free-form, user-defined alphanumeric item number. 3. 3rd Item Number - Another 25-digit, free-form, user-defined alphanumeric item number. *Form-specific information* The first of three identifiers you can assign to an item. The system assigns this number if you activate the Next Number program. This field is numeric only. If you leave the other two item identifier fields blank, the system copies this number to those fields.
Product No	The 2nd Item Number - A 25-digit, free-form, user-defined, alphanumeric item number. *Form-specific information* The second of three identifiers that you can assign to an item. This field is alphanumeric. If you leave the third identifier field blank, the system copies this number to that field.
Catalog No	The 3rd Item Number - Another 25-digit, free-form, user-defined alphanumeric item number. *Form-specific information* The third of three identifiers you can assign to an item. This field is alphanumeric. If you leave the second identifier field blank, the system copies that number to this field.
Description:	A brief description of an item, a remark, or an explanation.

Field	Explanation
Srch:	A field that specifies how the system searches for an item. Your entry should be specific and descriptive of the item. Type the words in the order in which you are likely to enter them. In single-byte environments, where computer storage space can contain only Latin-based language character sets, the system inserts the first 30 characters from the item's description if you do not enter search text. In double-byte environments where computer storage space can contain more complex language character sets (in languages such as Japanese, Chinese, and Korean), you must complete this field. This is a single-byte field that you complete with single-byte characters to phonetically represent the item description (which can be single-byte, double-byte, or both).
Stocking Type	A user-defined code (41/I) that indicates how you stock an item (for example, as finished goods, or as raw materials). The following stocking types are hard-coded and you should not change them: B Bulk floor stock C Configured item E Emergency/corrective maintenance F Feature K Kit parent item N Non-stock O Obsolete

Field	Explanation
G/L Class	A user-defined code that identifies the G/L offset to use when the system is searching for the account to which it will post the transaction. If you do not want to specify a class code, you can enter **** (four asterisks) in this field. The table of Automatic Accounting Instructions (AAIs) allows you to predefine classes of automatic offset accounts for the Inventory, Procurement, and Sales Order Management systems. G/L categories might be assigned as follows: IN20 Direct Ship Orders IN60 Transfer Orders IN80 Stock Sales The system can generate accounting entries based upon a single transaction. As an example, a single sale of a stock item can trigger the generation of accounting entries similar to these: Sales-Stock (Debit) xxxxx.xx A/R Stock Sales (Credit) xxxxx.xx Posting Category: IN80 Stock Inventory (Debit) xxxxx.xx Stock COGS (Credit) xxxxx.xx
Line Type	A code that controls how the system processes lines on a transaction. It controls the systems with which the transaction interfaces (General Ledger, Job Cost, Accounts Payable, Accounts Receivable, and Inventory Management). It also specifies the conditions under which a line prints on reports and is included in calculations. Codes include: S Stock item J Job cost N Non-stock item F Freight T Text information M Miscellaneous charges and credits W Work order
Unit of Measure	A user-defined code (system 00, type UM) that identifies the unit of measure that the system uses to express the quantity of an item, for example, EA (each) or KG (kilogram). *Form-specific information* The default for this field is the primary unit of measure you specify in processing options.

Field	Explanation
Bulk / Packed Flag	A code that indicates if the item is a bulk liquid product. If it is a bulk product, you must perform temperature and density / gravity conversions. To record the movement of bulk products, you must use forms designed specifically for bulk products. If you try to record movement using standard inventory forms, the system prevents the movement. Valid values are: P Packaged B Bulk liquid If you leave this field blank, the system uses P.
Backorders Allowed	A code that indicates whether you allow backorders for this item. You can allow backorders by item (through Item Master or Item Branch / Plant), or by customer (through Billing Instructions). Y Yes, allow backorders for this item. N No, do not allow backorders for this item, regardless of the backorders code assigned to the customer. **Note:** The system does not use this information if you have set the option on Branch / Plant Constants to indicate that you do not allow backorders in your operating environment.
Check Availability Y / N	This field controls whether availability checking is performed throughout the Sales Order Management system. You might want to check availability for some items. For other items, you can assume that an adequate supply is available. Valid values are: Y Check availability N Do not check availability

Field	Explanation
ABC Codes	A code that specifies this item's ABC ranking by sales amount. Valid values are: A Assign this item to the first (largest) amount ranking. B Assign this item to the second (intermediate) amount ranking. C Assign this item to the third (smallest) amount ranking. D Do not include this item when you run ABC Analysis. There are three types of ABC analysis, which include sales, margin, and on-hand value. Within each type of analysis, you can have three groups, including A, B, and C. The ABC Code fields contain a percentage that defines the A, B, and C groups for categorizing items during ABC analysis. Each group measures a total within the type of analysis. For all groups, the system compares the appropriate sales, margin, or on-hand value totals of a single item to the appropriate total for all items and calculates the value of each item. An item's value is its percentage of the appropriate total. The system arranges the values of all items from highest to lowest value and accumulates the percentages. Then, depending on the group, the system processes the information as follows: A: If an item's value causes the accumulated total to exceed the A accumulated percentage, the system assigns the item to the B group. B: When the accumulated total reaches the percentage you entered for items in the A group, it continues to add values until it reaches the percentage you entered for items in the B group. The system assigns all items whose value falls between the A and B percentages to the B group. C: The C group consists of items whose accumulated value exceeds the B percentage. The percentage that you usually enter for the C group is .999.

Entering Item Text

You might want to enter text about an item that others can view or print when working with the item. When you enter item master information, you can use one of two methods to enter item text:

- Attach messages to an item
- Enter notes for an item

Item messages are predefined, so you can attach the same message to multiple items.

Unlike item messages, item notes are not predefined. If notes already exist for an item, the words *See Memo* appear as highlighted text at the top of Item Master Information.

Before You Begin

- Before you can attach a predefined message to an item, you must create text for the message. Where you create this text depends on the message type.

To attach messages to an item

On Item Master Information

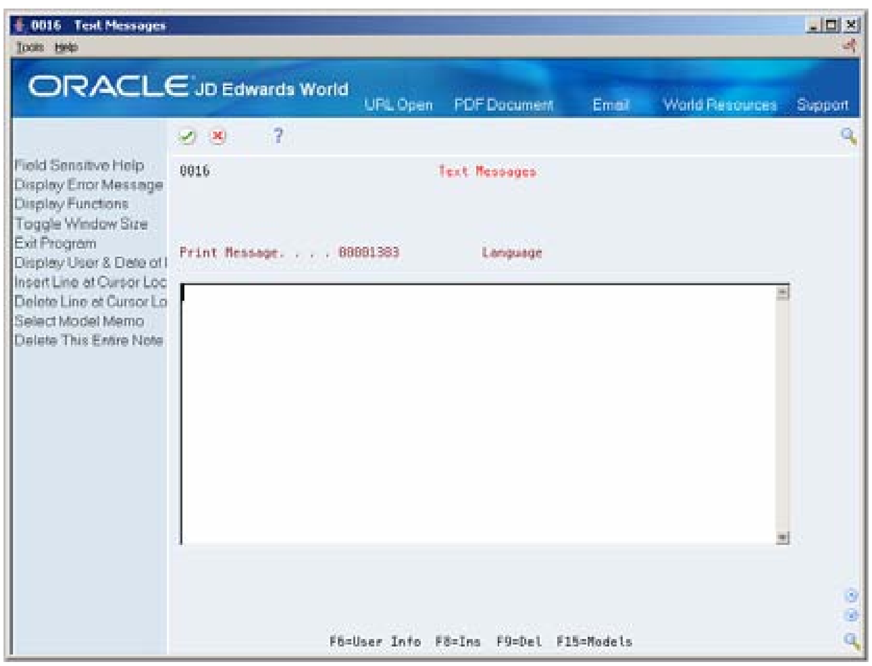
Complete the following fields:

- Print Message
- Item Flash Message

To enter notes for an item

On Item Master Information

1. Access Item Notes.



2. On Text messages, enter the appropriate text.

Field	Explanation
Print Message	A code that you assign to each print message. Examples of text messages are engineering specifications, hours of operation during holiday periods, and special delivery instructions.
Item Flash Message	User-defined code system 40, type FL, which is used to flash a warning message about a particular item.

Assigning Item Responsibility

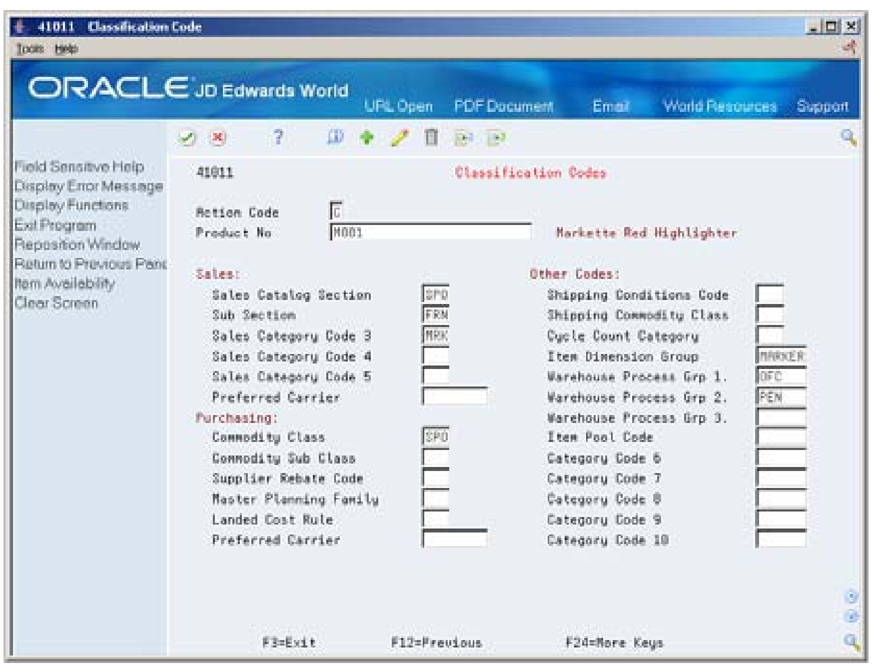
When you enter master information for an item, you can specify those persons or businesses that are responsible for the item, including the buyer, planner, and preferred carriers.

Before you can assign a responsible person or business to an item, each must have an address book number in the Address Book system.

To assign item responsibility

On Item Master Information

1. Complete the following fields:
   - Planner Number
   - Buyer Number
2. Access Classification Codes (F5) from Item Master Information.



3. On Classification Codes, complete the following fields:
   - Sales: Preferred Carrier
   - Purchasing: Preferred Carrier

Field	Explanation
Planner Number	The address number of the material planner for this item.
Buyer Number	The address number of the person responsible for setting up and maintaining the correct stocking levels for the item.
Sales: Preferred Carrier	The address number for the preferred carrier of the item. The customer or your organization might prefer a certain carrier due to route or special handling requirements.
Preferred Carrier	The address number for the preferred carrier of the item. The supplier or your organization might prefer a certain carrier because of route or special handling requirements.

See Also

- *Working with Basic Address Book Information (P01051)* in the Address Book system for more information about adding address numbers

Entering Item Classification Codes

You might want to group items with similar characteristics so that you can work with the entire group at the same time. For example, for sales analysis, you can group items together for reporting purposes.

To group items, you assign classification codes to them. You can assign classification codes to items when you enter item master information or when you enter item branch / plant information.

There are several categories of classification codes. Each category represents a different item classification or property type, such as shipping conditions. From the shipping conditions category, you can select a code that indicates the condition under which you ship an item, such as fragile.

You can assign one of four groups of classification codes. Each group relates to one of the following JD Edwards World systems:

- Sales Order Management
- Procurement
- Inventory Management
- Advanced Warehouse Management

Complete the following optional tasks:

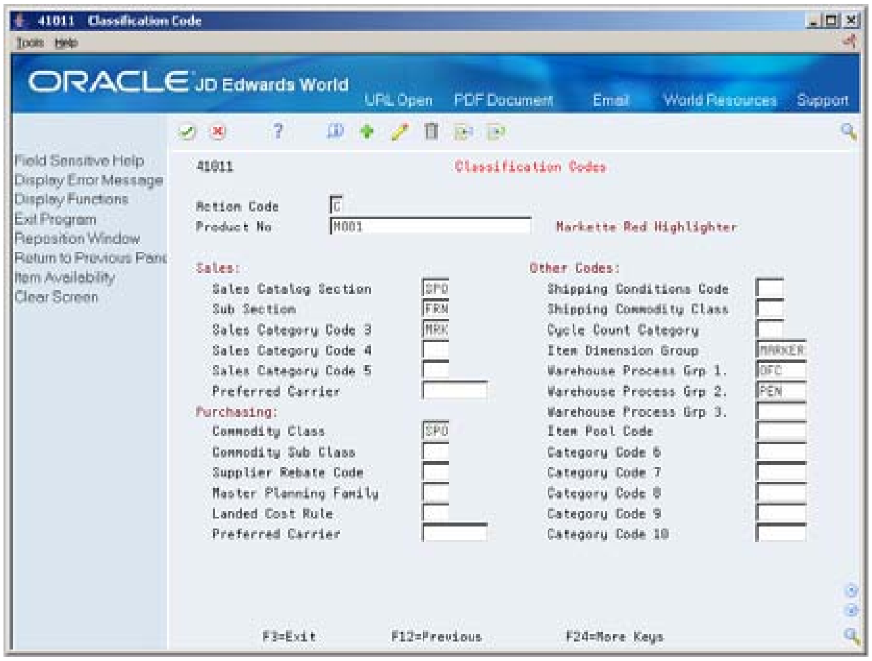
- Enter sales classification codes
- Enter purchasing classification codes

- Enter inventory classification codes
- Enter warehouse classification codes

To enter sales classification codes

On Item Master Information

1. Access Classification Codes.



2. On Classification Codes, complete the following fields:

- Sales Catalog Section
- Sub Section
- Sales Category Code 3
- Sales Category Code 4
- Sales Category Code 5
- Preferred Carrier
- Category Code 6
- Category Code 7
- Category Code 8
- Category Code 9
- Category Code 10

To enter purchasing classification codes

On Item Master Information

1. Access Classification Codes.
2. On Classification Codes, enter a classification code for each of the following fields:
   - Commodity Class
   - Commodity Sub Class
   - Supplier Rebate Code
   - Master Planning Family
   - Landed Cost Rule

To enter inventory classification codes

On Item Master Information

1. Access Classification Codes.
2. On Classification Codes, enter a classification code for each of the following fields:
   - Shipping Conditions Code
   - Shipping Commodity Class
   - Cycle Count Category

To enter warehouse classification codes

On Item Master Information

1. Access Classification Codes.
2. On Classification Codes, enter a classification code for each of the following fields:
   - Item Dimension Group
   - Warehouse Process Group 1
   - Warehouse Process Group 2
   - Warehouse Process Group 3

Field	Explanation
Sales Catalog Section	One of ten category codes for sales coding purposes. These codes can represent such things as color, material content, or use.

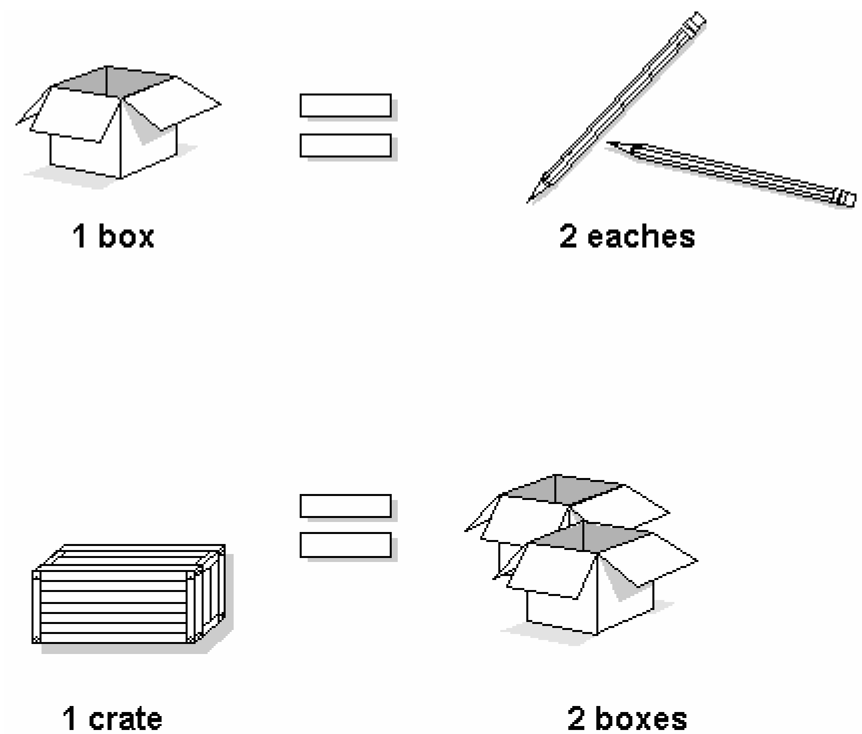
Field	Explanation
Sub Section	One of ten category codes for sales coding purposes. These codes can represent such things as color, material content, or use. This field represents one of ten property type categories available for sales purposes.
Sales Category Code 3	One of ten category codes for sales coding purposes. These codes can represent such things as color, material content, or use.
Category Code 6	One of ten category codes for sales coding purposes. These can represent such things as color, material content, or use.
Commodity Class	A code (table 41 / P1) that represents an item property type or classification, such as commodity type, planning family, or so forth. The system uses this code to sort and process like items. This field is one of six classification categories available primarily for purchasing purposes.
Commodity Sub Class	A code (table 41 / P2) that represents an item property type or classification, such as commodity type, planning family, or so forth. The system uses this code to sort and process like items. This field is one of six classification categories available primarily for purchasing purposes.
Supplier Rebate Code	A code (UDC table 41 / P3) that represents an item property type or classification, such as commodity type, planning family, or so forth. The system uses this code to sort and process like items. This field is one of six classification categories available primarily for purchasing purposes.
Master Planning Family	A code (table 41 / P4) that represents an item property type or classification, such as commodity type, planning family, or so forth. The system uses this code to sort and process like items. This field is one of six classification categories available primarily for purchasing purposes.

Field	Explanation
Landed Cost Rule	A user-defined code (41/P5) that indicates the landed cost rule for an item. The landed cost rule determines purchasing costs that exceed the actual price of an item, such as broker fees, commissions, and so forth. You set up landed cost rules on Landed Cost Revisions. *Form-specific information* When you enter a purchase order for the item, this is the default landed cost rule. If you enter a landed cost rule for the entire purchase order, it overrides the landed cost rule for the item. This is the only purchasing classification category that is hard coded. You can use it for landed cost rules only. This field corresponds to purchasing reporting code 5.
Shipping Conditions Code	A code (table 41/C) that represents an item property type or classification, such as special shipping conditions. The system uses this code to sort and process like items. This field is one of three classification categories available primarily for inventory and shipping purposes.
Shipping Commodity Class	A user-defined code (system 41/type E) that represents an item property type or classification, such as international shipment handling. The system uses this code to sort and process like items. This field is one of three classification categories available primarily for inventory and shipping purposes.
Cycle Count Category	A code (table 41/8) that represents the family or cycle in which an item is counted. Cycle counting means that you count different inventory items at different times. Cycle codes commonly represent item values, item locations, time frames, or product groups. *Form-specific information* This inventory classification category is hard coded. You can use it for cycle count codes only.
Item Dimension Group	A code (system 41/type 01) that identifies a group of items that share the same size specifications, such as height and width. An item dimension group defines the size specifications for all items that belong to the group. After you set up an item dimension group, you can assign items to the group through Classification Codes.

Entering Item Unit of Measure Information

You must provide the system with the item units of measure that are most common to each of your distribution processes, such as sales, purchasing, and so on. For example, you might purchase an item in pallets, stock it in boxes, and ship it in individual containers.

If you work with an item in multiple units of measure, you must specify how to convert one unit of measure to another. For example, if you stock items in boxes and crates, you must specify the number of individual items in a box and the number of boxes in a crate.



In some instances, the system must work with an item in its smallest (primary) unit of measure. The item conversions you specify must enable the system to trace all units of measure back to the primary unit of measure.

You can set up unit of measure conversions that are specific to an item or to an item and branch / plant combination. You specify whether item conversions are specific to a branch / plant in System Constants. You can also set up units of measure that are standard for all items.

You must set up all units of measure for an item in the Unit of Measure Conversion table (F41002) or the Standard Unit of Measure Conversion table (F41003). The system verifies the item unit of measure conversions before using standard unit of measure conversions.

Complete the following tasks:

- Enter default units of measure for items
- Define item unit of measure conversions

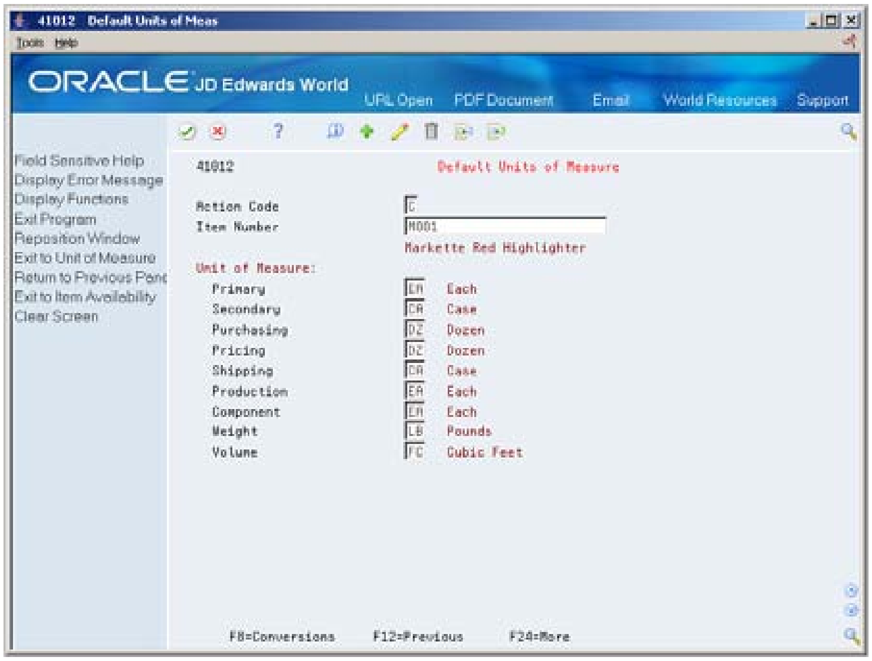
See Also

- *Setting Up Standard Units of Measure (P41003)*

To enter default units of measure for items

On Item Master Information

1. Access Weights & Measures.



2. On Default Units of Measure, complete the following field to locate the item:

- Item Number

3. Complete the following fields:

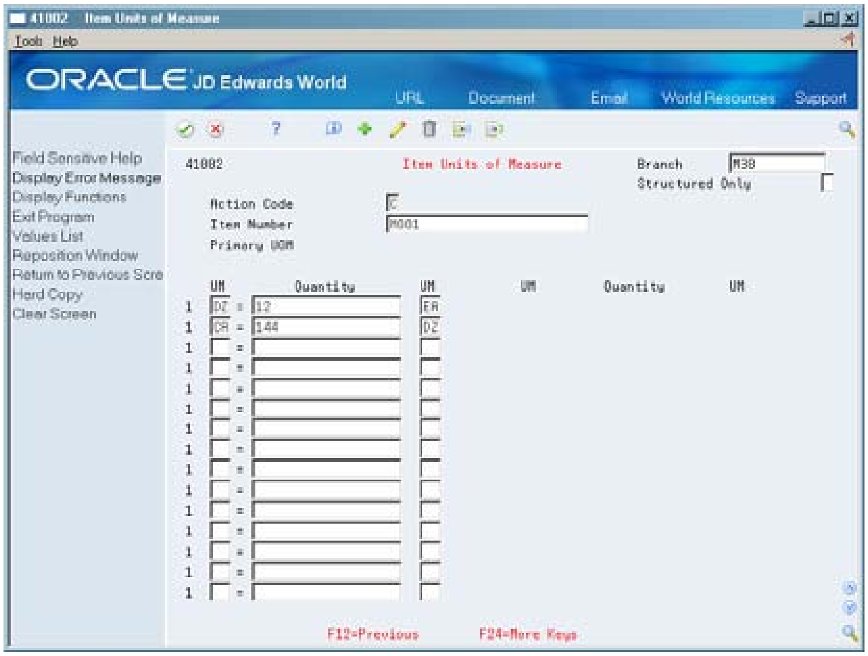
- Primary
- Secondary
- Purchasing
- Pricing
- Shipping
- Production
- Component
- Weight
- Volume

To define item unit of measure conversions

On Item Master Information

1. Access Weights & Measures.

2. On Default Units of Measure, exit to Unit of Measure.



3. On Item Units of Measure, complete the following fields:
    - Branch
    - Structured Only
    - Item Number
    - Primary UOM

    The Branch field displays only if item unit of measure conversions are specific to branch / plants.

4. For each unit of measure that the system must convert for the item, complete the following fields:
    - UM (Unit of Measure To)
    - Quantity
    - UM (Unit of Measure From)

Field	Explanation
Primary	A user defined code (system 00, type UM) that identifies the unit of measure that the system uses to express the quantity of an item, for example, EA (each) or KG (kilogram). *Form-specific information* This is the primary stock accounting unit of measure that the system uses to store all inventory. If you change the primary unit of measure, the conversion factors in the item-level conversion table will no longer be valid. The default for this field is the unit of measure that you specify for the item on Item Master Information.

Field	Explanation
Secondary	A code that indicates an alternate unit of measure for the item. See the User Defined Code table for system 00, record type UM. *Form-specific information* The default for this field is the primary unit of measure that you specify in processing options for Item Master Information.
Purchasing	A user defined code (00 / UM) that identifies the unit of measure in which you usually purchase the item. *Form-specific information* The default for this field is the primary unit of measure that you specify in processing options for Item Master Information.
Pricing	A code (system 00 / type UM) that indicates the unit of measure in which you usually price the item. *Form-specific information* The default for this field is the primary unit of measure that you specify in processing options for Item Master Information.
Shipping	A code (table 00 / UM) that indicates the unit of measure in which you usually ship the item. *Form-specific information* The default for this field is the primary unit of measure that you specify in processing options for Item Master Information.
Production	A code (table 00 / UM) that indicates the unit of measure in which you produce the item. *Form-specific information* The default for this field is the primary unit of measure that you specify in processing options for Item Master Information. This code serves as the default for: ▪ The order quantity when you create a work order ▪ The batch quantity when you create a new bill of material or routing ▪ The rate schedule quantity in Rate Schedule Revision

Field	Explanation
Component	A code (table 00 / UM) that indicates the unit of measure for an item when it serves as a component. *Form-specific information* The default for this field is the primary unit of measure that you specify in the processing options for Item Master Information. This code serves as the default value for: ▪ The quantity per parent when you add the component item to a bill of material or work order parts list ▪ The quantity in the assembly inclusion rules in Configuration Management
Weight	A user defined code (system 00 / type UM) that identifies the unit of measure that the system uses to display weight for this item. You can specify ounces, grams, kilograms, and so on, as weight standards. The system uses this unit of measure for the item or overrides it for an individual item or container. *Form-specific information* The default for this field is the weight unit of measure you specify in processing options for Item Master Information.
Volume	A code (system 00 / table UM) that indicates the unit of measure by metric conversion for ambient volume. For example, the unit of measure code for a gallon might be GL, or for a liter might be LT.
Structured Only	A code that determines whether the system displays all units of measure for an item and branch / plant or only the structured units of measure that have been set up for the Advanced Warehouse Management system. *Form-specific information* If you use the Advanced Warehouse Management system, you must structure conversions from large to small. For example: ▪ 1 Pallet (24 Cases) - Structure Code 1 ▪ 1 Case (36 Boxes) - Structure Code 2 ▪ 1 Box (6 Eaches) - Structure Code 3 You assign structure code 1 to the largest unit of measure and codes 2, 3, and so on, to the smaller units of measure. NOTE: You do not have to define the primary unit of measure within a structure. This value is always the default for the lowest level.

Field	Explanation
UM	A code (UDC table 00 / UM) that indicates a secondary unit of measure. *Form-specific information* The unit of measure from which you are converting. This unit of measure, in conjunction with the quantity, equals the unit of measure to which you are converting.
Quantity	The factor that the system uses to convert one unit of measure to another unit of measure. *Form-specific information* The quantity and the unit of measure from which you are converting must equal the unit of measure to which you are converting.

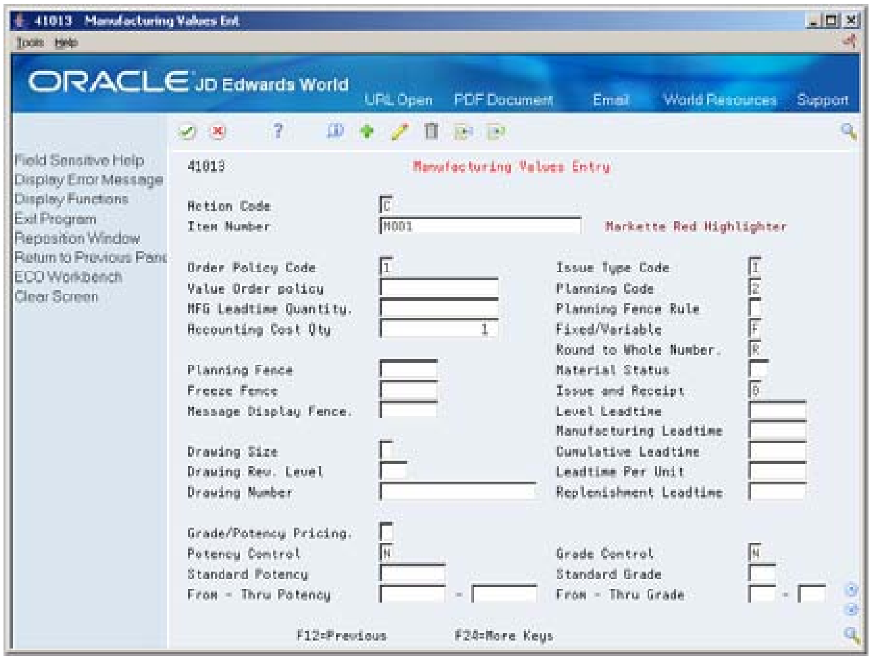
Entering Item Manufacturing Information

You can define manufacturing information about an item when you enter item master information. This information includes:

Requirements planning information	You enter requirements planning information to develop a planning forecast for the items that you use to run your distribution and manufacturing operations.
Lead time information	You enter lead time information to calculate the time frames that are necessary to assemble or manufacture an item.
Engineering information	You enter reference information about the drawing plans for an item, so that you can refer back to the plans as necessary.

Complete the following tasks:

- Enter requirements planning information
- Enter lead time information
- Enter engineering information



To enter requirements planning information

On Item Master Information

1. Access Manufacturing Values Entry.
2. On Manufacturing Values Entry, complete the following fields:
   - Value Order Policy
   - Planning Code
   - Planning Fence Rule
   - Accounting Cost Qty
   - Round to Whole Number
   - Planning Fence
   - Freeze Fence
   - Message Display Fence

To enter lead time information

On Item Master Information

1. Access Manufacturing Values Entry.
2. On Manufacturing Values Entry, complete the following fields:
   - MFG Lead time Quantity
   - Fixed / Variable
   - Lead time Level

- Lead time Manufacturing
- Lead time Cumulative
- Lead time Per Unit
- Issue Type Code

To enter engineering information

On Item Master Information

1. Access Manufacturing Values Entry.
2. On Manufacturing Values Entry, complete the following fields:
   - Drawing Size
   - Last Revision No
   - Drawing Number

Field	Explanation
Value Order policy	A field that the system uses in conjunction with the order policy code. It can show three types of data: ▪ The value of the fixed order quantity when you select order policy code 2 (fixed order quantity). ▪ The number of additional days of supply after demand is encountered when you select order policy code 4 (periods of supply). ▪ The desired inventory level when you select order policy code 5 (rate scheduled item). If the ending available quantity does not meet or exceed the desired inventory level, then MPS / MRP / DRP generation issues an “increase rate to” or a “decrease rate to” message.
Planning Code	A code that indicates how Master Production Schedule (MPS), Material Requirements Planning (MRP), or Distribution Requirements Planning (DRP) processes this item. Valid codes are: 0 Not Planned by MPS, MRP, or DRP 1 Planned by MPS or DRP 2 Planned by MRP 3 Planned by MRP with additional independent forecast 4 Planned by MPS, Parent in Planning Bill 5 Planned by MPS, Component in Planning Bill These codes are hard-coded.

Field	Explanation
Planning Fence Rule	A code (system 34, table TF) that the system uses in conjunction with the Planning Time Fence Days field to determine how forecast demand or actual customer demand is used. For example: S Use customer demand before the time fence and forecast after the time fence F Use forecast before the time fence and forecast plus customer demand after the time fence For example, if you enter 5 in the Planning Time Fence Days field and S in this field, then the system uses only customer demand for the regeneration for the first 5 days. After 5 days, the system uses the forecast for the regeneration. Valid codes are: C Customer demand before, greater of forecast or customer demand after F Forecast before, forecast plus customer demand after G Greater of forecast or customer demand before, forecast after H Forecast consumption periods S Customer demand before, forecast after 1 Zero before, forecast after 3 Zero before, forecast plus customer demand after
Accounting Cost Qty	An amount that the system uses in the cost rollup program to determine the allocation of setup costs. The system totals the setup costs and divides the sum by this quantity to determine a unit setup cost. The default is 1.
Round to Whole Number	A code that determines if an item should be rounded to the closest whole number for planning purposes. Valid codes are: R Round either up or down to the closest whole number U Round up to the nearest whole number Blank Do not round For example, if the calculated requirements for an item are 4.6 and this field contains a Round to Whole Number code of R, the system rounds the quantity required to 5. If the calculated requirements are 4.4, the system rounds the quantity required to 4.

Field	Explanation
Planning Fence	The number of days that the system uses in conjunction with the time fence rule to determine how the forecast is used. Enter the number of days from the start date, after which the time fence rule changes from the first rule to the second rule. For example, if the time fence rule is S (customer demand before the time fence, forecast after the time fence), and the planning time fence is 5 days, the system plans for the first 5 days using customer demand. After the fifth day, the system plans using the forecast.
Freeze Fence	The number of days from the generation start date within which the system should not generate order messages. For example, if the generation start date is 01/01/99, and the freeze time fence is 6 days, the planning system does not issue messages with dates less than or equal to 01/07/99.
Message Display Fence	The number of days after the generation start date that the system should not generate order messages. For example, if the generation start date is 01/01/99, and the message time fence is 60 days, the system does not issue messages with dates greater than or equal to 03/01/99. However, the planning horizon for orders continues past this date and is reflected in available to promise totals.
MFG Lead time Quantity	The quantity that determines the lead time level for a manufactured item. Each of the routing steps for the item are extended by this quantity. For the system to calculate the lead time level, the quantity in this field must be a value other than zero.
Fixed/Variable	A code that determines whether the system uses fixed or variable lead times. This code works in conjunction with the value from either the Level Lead time field or the Lead time Per Unit field. Valid codes are: F Fixed lead time - The system calculates work order start dates using the value from the Lead time Level field. V Variable lead time - The system calculates work order start dates using the value from the Lead time Per Unit field.
Level Lead time	A value that represents the lead time for an item at its assigned level in the production process, as defined on Plant Manufacturing Data. The system uses this value to calculate the start dates for work orders using fixed lead times. Level lead time is different for purchased and manufactured items: You can enter level lead time manually on Manufacturing Values Entry, or you can use the Lead time Rollup program calculate it. To calculate level lead time using the Lead time Rollup program, you must first enter a quantity in the Manufacturing Lead time Quantity field in the Item Branch table (F4102).

Field	Explanation
Manufacturing Lead time	The total number of days required to build an item from its lowest level components to the final assembly. This value is the total of the level lead times for all manufactured items, plus the highest manufacturing lead time for all its components. If all components are purchased, the manufacturing lead time equals the item’s level lead time. Purchased item lead times are not included in the calculation of manufacturing lead times. You can enter the manufacturing lead time manually or you can have the system calculate it when you run the Lead time Rollup program.
Cumulative Lead time	The total number of days required to build an item from its lowest level components to the final assembly. The system calculates the value differently for manufactured and purchased items. Manufactured - The total of all level lead times for all manufactured items, plus the highest cumulative lead time of all its components. Purchased - The item’s level lead time. Purchased item lead times are included in the calculation of cumulative lead times. You can enter this value manually or you can have the system calculate it when you run the Lead time Rollup program.
Lead time Per Unit	The total number of hours required to build one unit as specified on the routing. This value is factored by the time basis code. You can enter this value manually, or you can have the system calculate it when you run the Lead time Rollup program. The system overwrites this value when you run the Lead time Rollup program. The system uses this field to calculate start dates for work orders when you use variable lead times.

Field	Explanation
Issue Type Code	A code that defines how the system issues each component in the bill of material from stock. In shop floor control, it indicates how the system issues a part to a work order. Valid codes are: I Manual issue (default) F Floor stock (no issue) B Backflush (when part is reported as complete) P Preflush (when parts list is generated) U Super backflush (at pay-point operation) S Sub-contract item (send to supplier) Blank Shippable end item You can issue a component in more than one way within a specific branch / plant by using a different code on the bill of material and work order parts list. The bill of material code overrides the branch / plant value.
Drawing Size	A code that represents the engineering drawing size. For example: A A-size drawing D D-size drawing
Drawing Rev. Level	This number is a subset to the drawing number. It provides an additional description of the drawing and is useful should the system use an engineering drawing as a reference for this item.
Drawing Number	An engineering drawing number that might be the same as the part or item number.

Entering Item Grade and Potency Information

After you enter item master information or item branch / plant information, you specify whether grade or potency applies to an item.

Grades enable you to classify items by critical chemical or physical properties that differentiate them from other items with the same item number. A good example of items with different grades would be grade A eggs and grade B eggs.

Potency allows you to specify the active ingredient in a product (for example, the percentage of alcohol in liquor).

When you activate grade or potency control for an item, you can enter a standard grade or potency for the item and a range of acceptable values. If you receive or issue items that are not within the range, the system provides a warning message. You cannot perform sales on items that are not within the range.

Item grade and potency are applicable only to items that are produced in lots. Grade and potency controlled items *must* be controlled by lot or serial number. In addition, you cannot use both grade control and potency control for the same item.

See Also

- *Entering Information for Lots (P4108)* for information about specifying grade and potency values for lots

To enter item grade and potency information

On Item Master Information

1. Access Manufacturing Values Entry.
2. On Manufacturing Values Entry, complete the following fields:
    - Grade / Potency Pricing
    - Potency Control
    - Standard Potency
    - From Potency
    - Thru Potency
    - Grade Control
    - Standard Grade
    - From Grade
    - Thru Grade

Field	Explanation
Grade / Potency Pricing	A code that indicates whether you price the item by grade or potency range. You must control the item by grade to price it by grade, just as you must control the item by potency to price it by potency. Valid values are: Blank No potency or grade pricing 1 Potency pricing 2 Grade pricing
Potency Control	A code that indicates whether you control the item by potency.
Standard Potency	The percentage of active ingredients normally found in an item.
From Potency	A number that indicates the minimum potency, or percentage of active ingredients, acceptable for an item. The system displays a warning message if you try to purchase or issue items that do not meet the minimum acceptable potency. The system does not allow you to sell items that do not meet the minimum acceptable potency.

Field	Explanation
Thru Potency	A number that indicates the maximum potency, or percentage of active ingredients, that is acceptable for an item. The system displays a warning message if you try to purchase or issue items that have a potency that exceeds the maximum potency acceptable. The system does not allow you to sell items that have a potency that exceeds the maximum potency acceptable.
Grade Control	A code that indicates whether you control the item by grade.
Standard Grade	A code (table 40/LG) that represents the normal grade for an item.
From Grade	A code (system 40, type LG) that indicates the minimum grade that is acceptable for an item. The system displays a warning message if you try to purchase or issue items with grades that do not meet the minimum grade acceptable. The system does not allow you to sell items with grades that do not meet the minimum acceptable level.
Thru Grade	A code (system 40, type LG) that indicates the maximum grade that is acceptable for an item. The system displays a warning message if you try to purchase or issue items with grades that exceed the maximum grade acceptable. The system does not allow you to sell items with grades that exceed the maximum grade acceptable.

What You Should Know About

Lots	You can specify the grade or potency of all items in a specific lot on Lot Master Revisions. If you do not specify a grade or potency, the system uses the standard grade or potency from Item Master or Item Branch Information.
Grade and potency ranges for sales purposes	You can specify an acceptable grade or potency range for each of your customers using preference profiles. For more information, see Setting Up Preference Types in the Sales Order Management Guide.

See Also

- *Entering Information for Lots (P4108)* for information about specifying grade and potency values for lots

Processing Options

See Item Master Revisions (P4101).

Enter Branch/Plant Information

This chapter is an overview of branch / plant information from the Inventory Management system. For information about branch / plant information not included in this chapter, see the *Inventory Management Guide.*

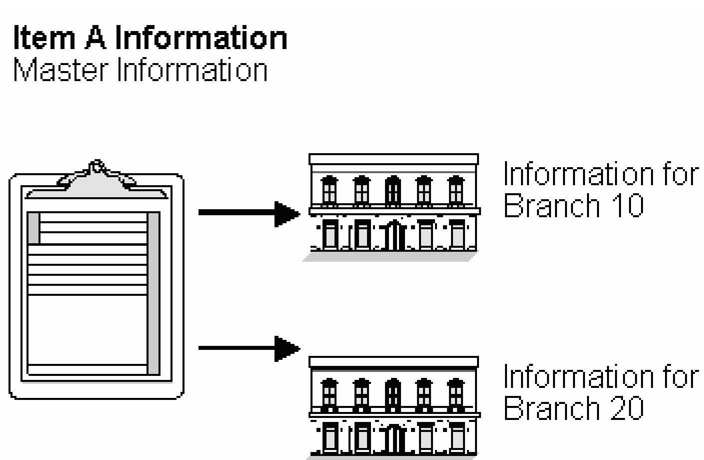
This section contains the following:

Entering Branch/Plant Information

From Inventory Management (G41), choose Inventory Master/Transactions
From Inventory Master/Transactions (G4111), choose Item Branch/Plant Information

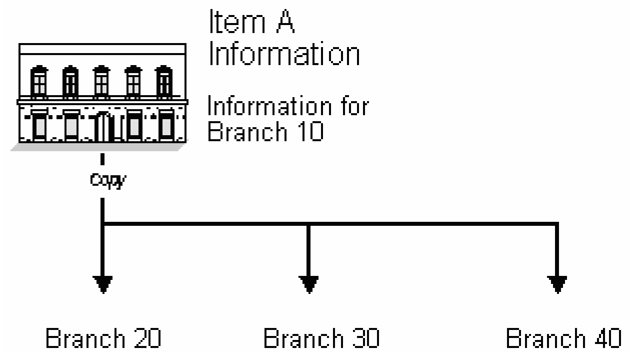
Information about an item might differ from warehouse to warehouse. For example, taxes might be applicable to an item in one warehouse, but not in another. You might also have different quantity requirements for each item based on the warehouse.

After you enter master information for an item, you can assign the item to different warehouses or branch / plants. You can then customize the item information for each branch / plant. You can also specify the locations in the branch / plant in which the item is stored.



Every JD Edwards World system that retrieves item information searches for an item's branch / plant information before using an item's master information.

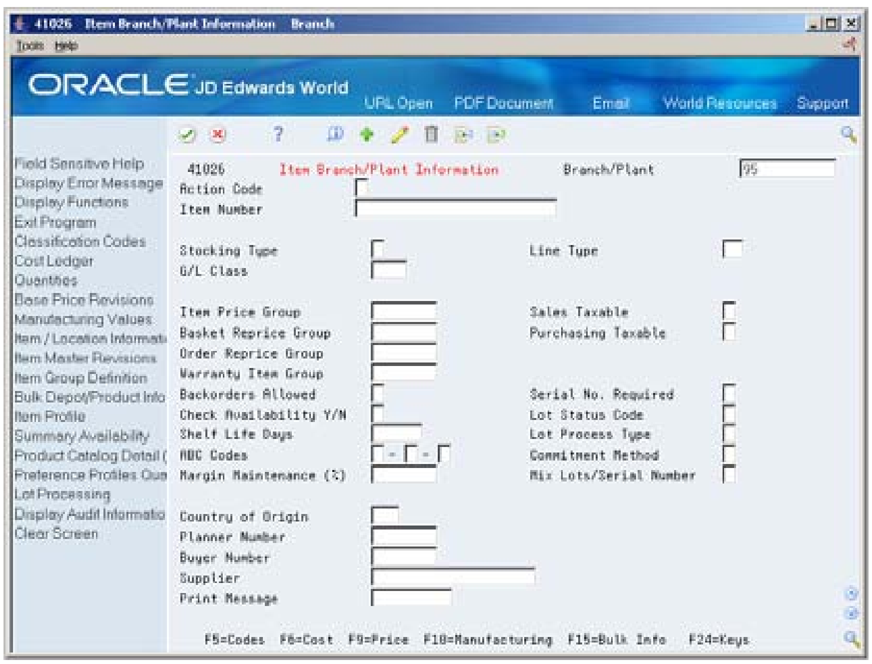
You can enter item information for a single branch / plant or copy existing item information and duplicate it for multiple branch / plants.



To enter item branch / plant information, complete the following tasks:

- Assign an item to a branch / plant
- Work with item locations
- Enter item manufacturing information (optional)

After you enter item information for a specific branch / plant, the system creates a record in the Item Branch table (F4102).



What You Should Know About

Default values

Most fields on Item Branch / Plant Information are identical to those on Item Master Information. The system uses the default values from Item Master Information. Fields that do not exist on Item Master Information are:

- Branch / Plant
- Sales Taxable
- Purchasing Taxable
- Country of Origin
- Supplier
- Margin Maintenance (%)

Accessing other branch/plant information

Use processing options to specify that other item information displays subsequent to item branch / plant information, such as item unit of measure defaults.

Assigning an Item to a Branch/Plant

After you enter master information for an item, you must assign the item to a specific branch / plant. After assigning the branch / plant, you can locate the item and branch / plant to customize the master information.

To assign an item to a branch/plant

On Item Branch / Plant Information

Complete the following fields:

- Branch / Plant
- Item Number

Field	Explanation
Branch / Plant	An alphanumeric field that identifies a separate entity within a business for which you want to track costs. For example, a business unit might be a warehouse location, job, project, work center, or branch / plant. You can assign a business unit to a voucher, invoice, fixed asset, and so on, for purposes of responsibility reporting. For example, the system provides reports of open accounts payable and accounts receivable by business units to track equipment by responsible department. Security for this field can prevent you from locating business units for which you have no authority. **Note:** The system uses this value for Journal Entries if you do not enter a value in the AAI table. *Form-specific information* This is the branch / plant or warehouse to which this item information is applicable.

Working with Item Locations

After you assign an item to a branch / plant, you can indicate multiple locations in which the item resides. For each branch / plant, you can assign:

- A primary location
- Multiple secondary locations

The system usually processes an item through its primary location. For example, when you receive an item, the system assigns the item to its primary location, unless you specify a secondary location.

The system prompts you for the primary location immediately after you assign an item to a branch / plant. You can assign secondary locations to an item when you enter branch / plant information. The system automatically assigns a secondary location if you enter a location other than the primary location for an item when you receive it.

If you specify location control on Branch / Plant Constants, you can assign an item to only those locations set up on Branch / Plant Location Master. If you do not specify location control, you can assign an item to any location.

Each time you enter a location for an item, the system creates a record in the Item Location table (F41021).

In addition to assigning locations to an item and branch / plant, you can assign multiple lot numbers to each location. You can enter lot numbers manually when you enter item locations or when you receive the items.

Complete the following tasks:

- Assign a primary location to an item
- Assign a secondary location to an item

- Change the primary location for an item

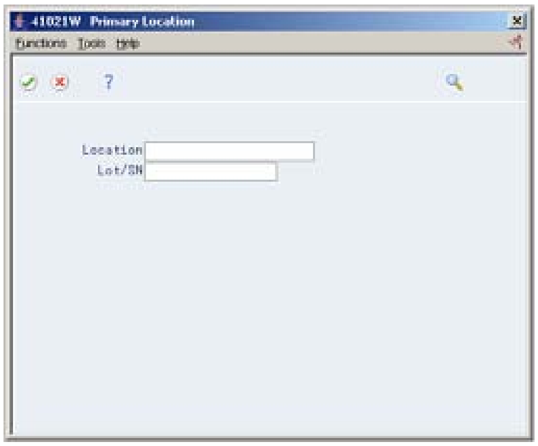
See Also

- *Entering Information for Lots (P4108)* for information about defining lot details
- *Working with Lot Statuses (P00051)* for information about putting lots and locations on hold

To assign a primary location to an item

On Item Branch / Plant Information

1. Assign a branch / plant to an item.

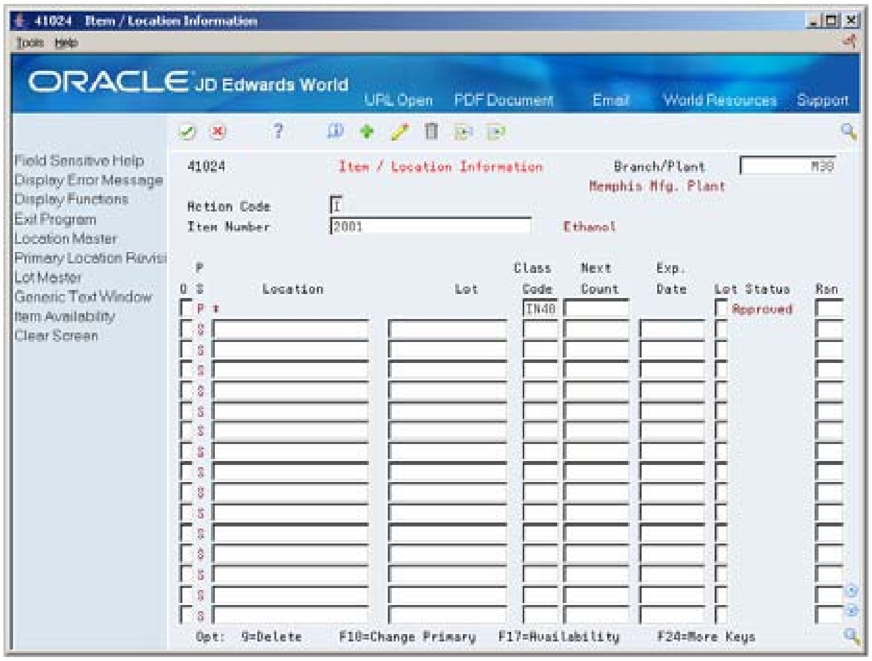


2. On Primary Location, complete the following fields:
   - Location
   - Lot

To assign a secondary location to an item

On Item Branch / Plant Information

1. Access Item / Location Information.

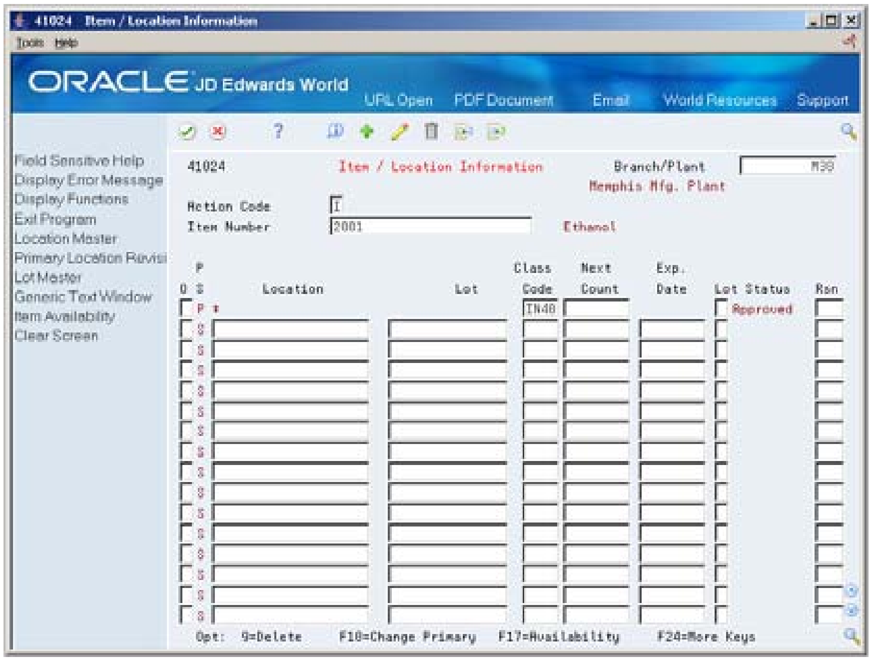


2. On Item / Location Information, enter S in the following field to identify the secondary (S) locations for an item:
   - P / S (Primary / Secondary Location)
3. Complete the following fields for each secondary location and lot:
   - Location
   - Lot
   - Lot Status

To change the primary location for an item

On Item Branch / Plant Information

1. Access Item / Location Information.



2. On Item / Location Information, enter P in the following field to identify the primary (P) location for the item:
   - P / S (Primary / Secondary Location)
3. Access Primary Location.
4. On Primary Location, complete the following fields:
   - Location
   - Lot
5. Return to Item / Location Information.
6. On Item / Location Information, complete the following field:
   - P / S (Primary / Secondary Location)

   After you change the primary location for an item, the previous primary location becomes a secondary location.

Field	Explanation
Location	A code that identifies inventory locations in a branch / plant. You define the format of the location identifier by branch / plant. *Form-specific information* If you do not specify a location in this field, the system uses the blank location set up for the branch / plant in Branch / Plant Location Master.
Lot / SN	A number that identifies a lot or a serial number. A lot is a group of items with similar characteristics.
P S	A value that indicates if this is the primary or secondary location for this item within this stocking location. Valid values are: P Primary storage location S Secondary storage location **Note:** You can only have one storage area within each branch or warehouse marked as primary. In some cases, the system uses the primary storage area as the default.
Lot status change	A user defined code (table 41 / L) that indicates the status of the lot. If you leave this field blank, it indicates that the lot is approved. All other codes indicate that the lot is on hold. You can assign a different status code to each location in which a lot resides on Item / Location Information or Location Lot Status Change. *Form-specific information* The default for this field comes from the lot status code (including a blank value) that you assign to the item on Item Master Information or Item Branch / Plant Information. The code that you enter here serves as the lot status default when you assign an item to a secondary location.

What You Should Know About

Effects on quantities

If you change an item's primary location and any of the following quantities exist, the quantities transfer to the new primary location:

- Quantity on backorder
- Quantity on purchase order
- Quantity on work order
- Other purchasing 1
- Quantity on soft commit

Deleting a primary location

To delete a primary location, you must first change it to a secondary location. You cannot delete the primary location. No quantities can exist in the locations that you delete.

Entering Item Branch/Plant Manufacturing Information

You can define manufacturing information for an item that is specific to each branch / plant. This information includes:

Information	Description
Requirements planning information	You enter information about inventory shrinkage for the item to plan for the quantity you need to replace due to shrinkage.
Lead time information	You enter lead time information to calculate the time frames that are necessary to assemble or manufacture an item.
Engineering information	You enter reference information about the drawing plans for an item, so that you can refer back to the plans.

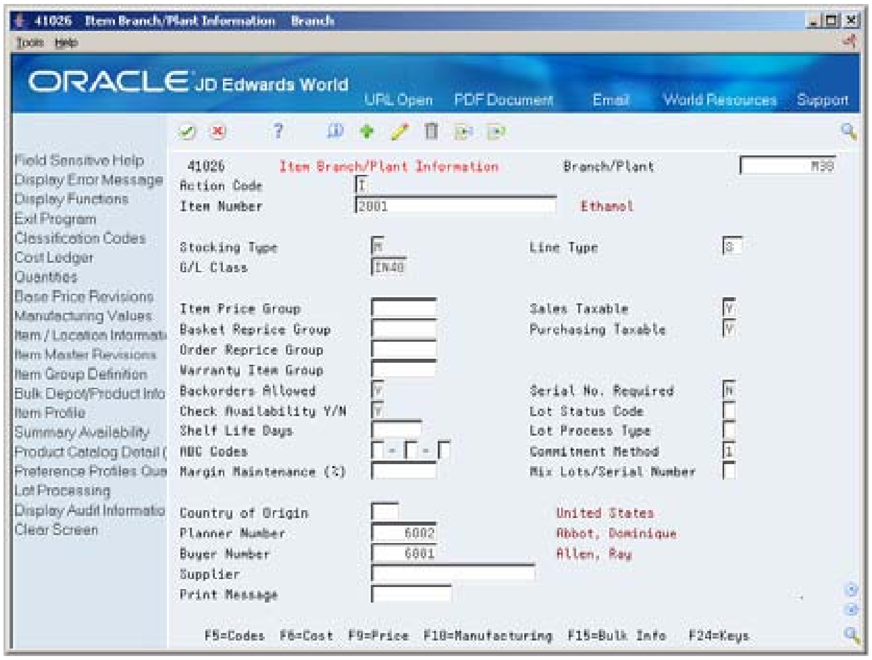
Complete the following tasks:

- Enter requirements planning information
- Enter lead time information
- Enter engineering information

What You Should Know About

Default values

Most of the items on Plant Manufacturing Data are identical to those on Manufacturing Values Entry. The system uses the default values from Manufacturing Values Entry.



To enter requirements planning information

On Item Branch / Plant Information

1. Access Plant Manufacturing Data.
2. On Plant Manufacturing Data, complete the following fields:
   - Shrink Factor
   - Shrink Factor Method

To enter lead time information

On Item Branch / Plant Information

1. Access Plant Manufacturing Data.
2. On Plant Manufacturing Data, complete the following fields:
   - Time Basis
   - Queue Hours
   - Standard Setup Hours

To enter engineering information

On Item Branch / Plant Information

1. Access Plant Manufacturing Data.
2. On Plant Manufacturing Data, complete the following fields:
   - ECO Reason

- ECO Number
- ECO Date
- Item Revision Level

Field	Explanation
Shrink Factor	A fixed quantity or percentage that the system uses to determine inventory shrinkage for an item. The system increases the planned order quantity by this amount in MPS/MRP/DRP generation. The shrink factor method you specify for the item determines whether the shrink factor is a percentage or a fixed quantity. If you are entering a percentage, enter 5% as 5.00 and 50% as 50.00.
Shrink Factor Method	A value that determines whether the shrink factor you enter for this item is a percentage or a fixed quantity. Valid values are: % Percentage of order or requested quantity F Fixed amount to be added to quantity
Time Basis	A user-defined code (system 30, type TB) that identifies the time basis or rate for machine or labor hours entered for any routing step. You can set rates per unit, per 10, per 1000, and so on. The system uses the values in the Description-2 field on the User Defined Codes form for costing and scheduling calculations. The description is what the code represents, but is not used in calculations.
Setup Labor	The standard setup hours you expect to incur in the normal completion of this item.
ECO Reason	A code (table 40/CR) that identifies the reason for the engineering change order.
ECO Number	The number assigned to an engineering change order.
ECO Date	The date of the engineering change order.
Item Revision Level	The revision level for an item. If you enter a revision level, verify that the revision level of the routing for an item matches the revision level on the bill of material for the item.

Processing Options

See Branch/Plant Item Information (P41026).

See Item/Branch Duplication (P41015).

3 Discrete Manufacturing

Overview to Discrete Manufacturing

Objectives

- To understand the discrete manufacturing concepts
- To set up discrete manufacturing
- To enter bills of material
- To enter routings
- To enter work centers
- To generate lead times

About Discrete Manufacturing

Discrete manufacturing is the production of distinct items. Cars, furniture, electronics and airplanes are examples of discrete manufacturing products.

This type of manufacturing is usually characterized by strategies such as:

- Make-to-stock, either highly repetitive or based on work orders
- Any of the to-orders, including:
  - Make-to-order
  - Assemble-to-order
  - Engineer-to-order
- One-of or job shop production

Some industries may be subject to federal Food and Drug Administration (FDA) or Sarbanes – Oxley regulations regarding electronic approvals. To comply, JD Edwards World offers the option to use secure electronic signatures when entering and changing routings and bills of material.

This section contains the following:

- About Bills of Material
- About Component Locators
- About Work Centers
- About Routings
- About Lead Times
- Training Class Case Study

- Tables

About Bills of Material

Use a bill of material to detail the specific items and quantities that are used to assemble the parent item, define the items as parents or components in the assembly, and provide the foundation for Product Costing and Master Production Schedule programs. It is the basis for creating a parts list for a work order in the Shop Floor Control system.

A bill of material defines the manufacture of any of the following:

- Finished products (end items)
- Subassemblies
- Components

A properly structured bill of material:

- Supports the Product Costing system
- Allows for efficient storage and maintenance of bill of material information
- Reflects material flow and how the product is built
- Permits easy order entry
- Allows the system to display the master schedule in the fewest end items possible
- Allows for forecasting of optional product features

An inaccurate bill leads to:

- Poor material planning
- Material shortages
- Inaccurate product costing
- Increased production costs
- Delayed shipments
- Excess and obsolete inventory
- Poor specification control
- Increased product liability

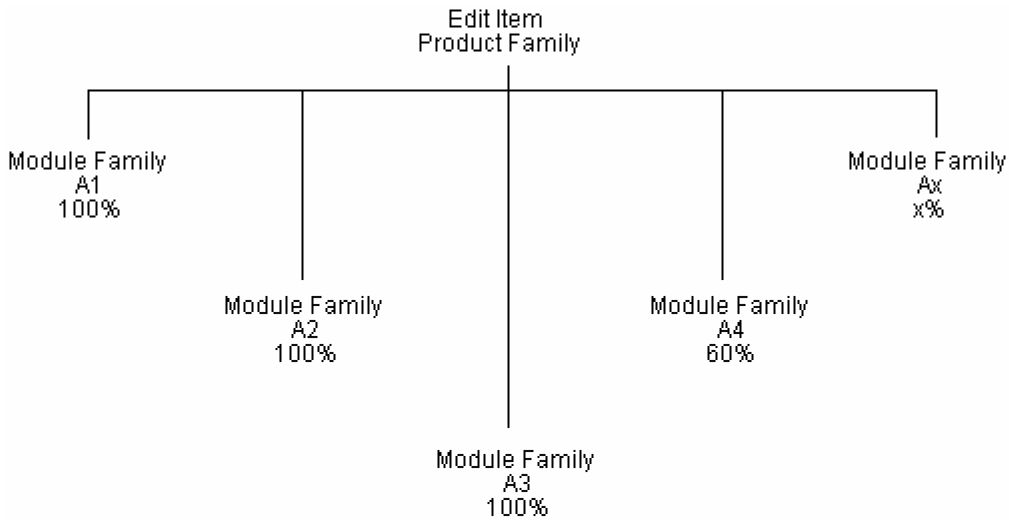
A bill of material is used as a master list when generating parts lists for work orders, cost rollups, lead time rollups, MPS / MRP / DRP generation, and kit processing for sales orders.

Types of Bills of Material (BOM)

Type	Description
Planning bill of material	Use a planning bill to facilitate master scheduling and material planning by categorizing product features or options. This bill includes the ratio of each item determined from revision history. It is also known as: ▪ Super BOM ▪ Modular BOM ▪ Transient BOM ▪ Aggregate BOM
Batch bill of material	Use a batch bill to accommodate physical constraints, such as ovens or vats, in industries where products are produced in fixed quantities.
Percent bill of material	Use a percent bill to express components as a percentage of parent item or process quantity. In this type of bill, the component or ingredient quantities are in direct proportion to each other.
Information bill of material	Use an information bill of material to view the bill of material online. These bills are also known as: ▪ Indented BOM ▪ Where-Used BOM ▪ Price / Costed BOM
Manufacturing bill of material	Use a manufacturing bill to document and track components. This type of bill is also known as: ▪ As-Built BOM ▪ Customer Order Configured BOM ▪ Frozen BOM

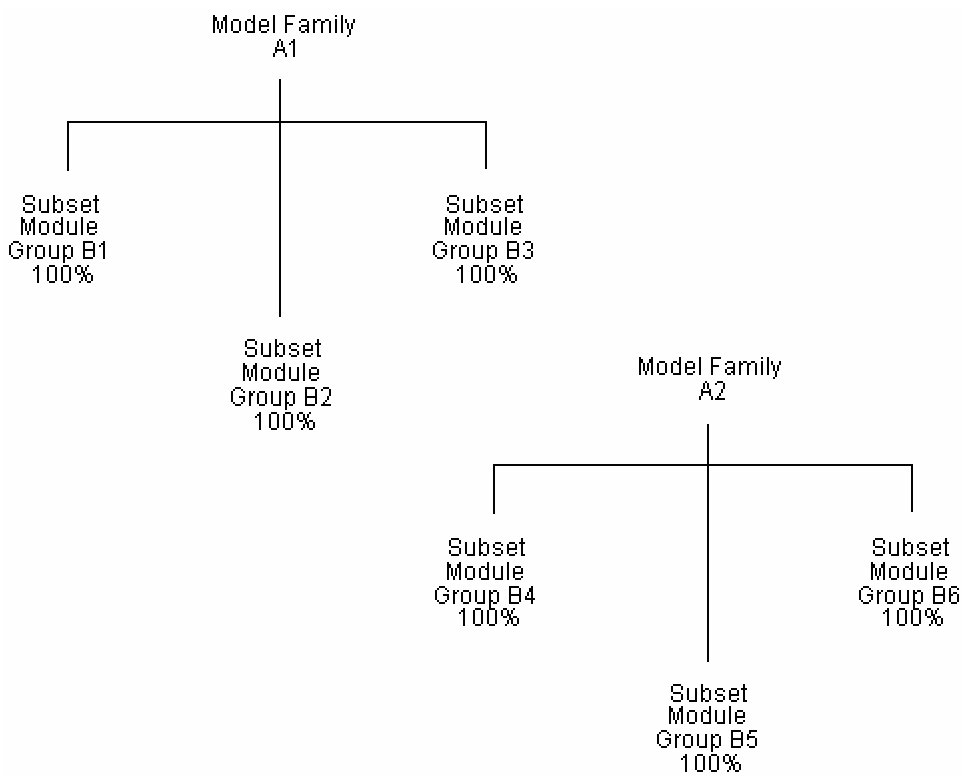
Super Bill of Material

The following structure represents a super bill of material:



Modular Bills of Material

The following structure represents a modular bill of material:



Percent Bill of Material

A percent bill of material enables you to express component quantities as a percent of the parent item or process batch quantity.

The system processes percent information as follows:

- Converts the batch quantity to the primary unit of measure for the parent item or process

The system stores quantities for components as follows:

- Calculates a percentage for the component in relation to the batch size
- Converts the batch unit of measure to the component unit of measure and stores the quantity for the component

Example: Percent Bill

The parent item is Soft Drink and its batch quantity is 300 GA.

Components	Quantity	UM	F/V
Vanilla	50	GA	%
Water	40	QT	%
Concentrate	10	LT	%

The system calculates the following:

% Calculation and Conversion to Batch Unit of Measure	Storage
Vanilla = .5 X 300 = 150 GA	150 GA
Water = .4 X 300 = 120 GA	480 QT
Concentrate = .1 X 300 = 30 GA	114 LT

The system uses the component unit of measure in the percent bill to convert the number of gallons that correspond to the percent for each component. In this example, the system calculates the water and concentrate components to be 120 GA and 30 GA of the batch size. The system converts the unit to component unit of measure and stores them as 480 QT and 114 LT.

Note: You must set up the unit of measure conversion for percent bills to work properly. Verify that all components can convert to the Batch Quantity Unit of Measure. The minimum batch size for percent bills is 100.

Phantom Item

A phantom is an individual item that can exist anywhere in the bill of material. The term phantom has many aliases throughout the manufacturing industry, such as:

- Transient

- Module
- Blow-Through
- Non-Stocked Subassembly
- Self Consumed
- Partial List

An example of a phantom item, a spray pump nozzle, occurs during automated assembly. The pump is a combination of a button, tubing, and an insert. The first operation specifies placing the button and inserting items in an automated assembly machine. The machine combines them into a phantom part called a button unit. This unit goes directly to the next step. After the next operation attaches the tubing, the item is complete. The button unit is never stocked.

Batch Bill of Material

The MRP system plans orders to fill net requirements by using one or multiple batch quantities. If the system does not find a batch quantity for the net requirement, it uses the next largest batch size. If there isn't a larger batch size, MRP uses the closest smaller batch size until the requested amount is supplied.

Example: MRP Orders

The MRP system functions differently when you have defined more than one batch bill. When there is only one batch bill, the MRP system uses the batch quantity as a multiple if the net requirements are greater than the batch quantity, or as a minimum if the net requirements are less than the batch quantity.

Batch Quantity	MRP Requirement	Resulting MRP Planned Order
1000	1500	1000
		1000
1000	967	1000

If multiple batch bills exist and the net requirement is greater than all of the batch quantities, then the system uses the largest batch quantity in combination with any of the others to satisfy the requirement.

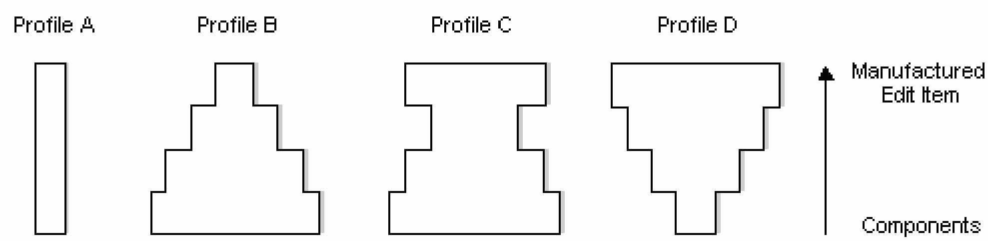
Batch Quantity	MRP Requirement	Resulting MRP Planned Order
400	1500	1000
600		600
800		
1000		

If multiple batch bills exist and the net requirement does not match but is less than the largest batch quantity, then the system uses the smallest batch bill that satisfies the requirements.

Batch Quantity	MRP Requirement	Resulting MRP Planned Order
400	780	800
600		
800		
1000		

Bill of Material Configurations

The manufacturing industry classifies bills of material by configuration, depending on the number of components and possible end items.



Profile	Description
Profile A	Few components produce few end item configurations
Profile B	Many components produce few end item configurations
Profile C	Few modules (made from many components) produce many end item configurations
Profile D	Few components produce many end item configurations

Features

The bill of material enables you to:

- Replace all occurrences of one component with another
- Plan for component scrap in the Product Costing and Shop Floor Control systems
- Substitute one component for another

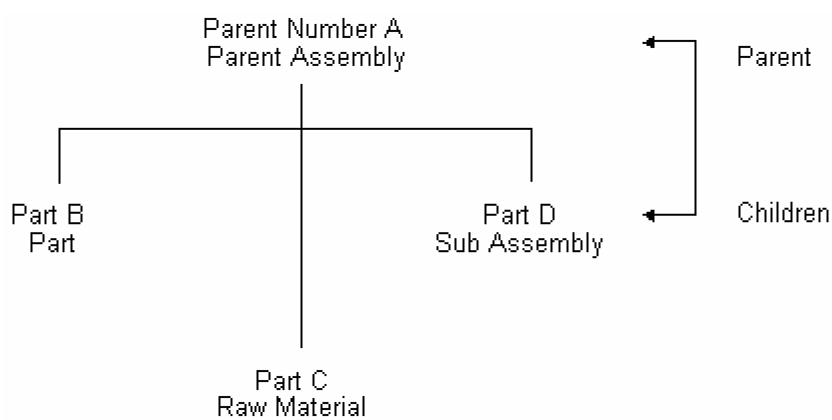
- View the producible quantity of an end item for the amount of the component you enter
- Print complete bill of material information
- Copy an existing bill of material and make changes for a new item
- Offset the required date of a component in a work order from the order start date
- Use bills of material in a multi-plant environment. This allows you to define manufacturing data for an item used in different branches
- Specify when a component part goes into effect and when it is no longer in effect on a bill of material
- Define non-stock, bulk, and expense items, as well as notes describing tool requirements
- Locate all bills of material that use a specified part
- Create multiple versions of your bills of material to present information in formats tailored to the needs of different departments
- Track the status of all bill of material changes
- Define where a component is located within a specific assembly
- Check an item's low-level codes

Parent/Component Relationship

A parent/component relationship defines the association between a parent item and the components that you use to produce it. Parent/component relationships are used in engineering change orders to define the proposed item change.

Example: Relationships in a Single Level Bill of Material

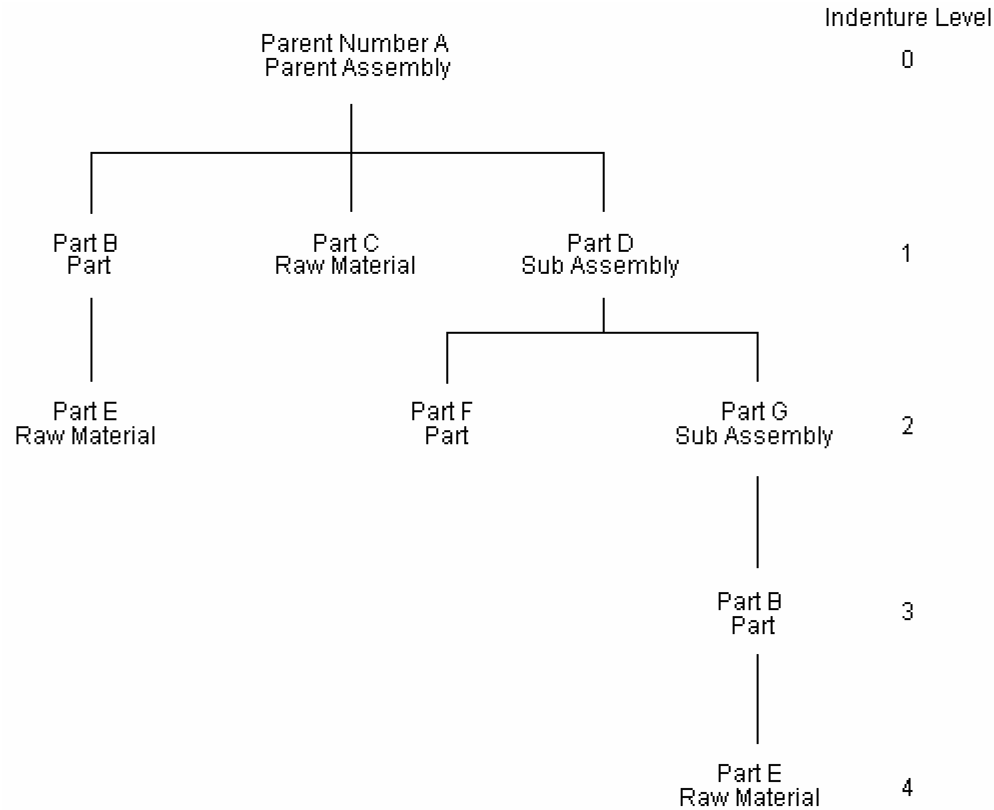
The following example shows the relationship of a parent item to components in a single-level bill of material that includes parts, raw materials, and subassemblies.



Part #	Description	Make/Buy	Unit of Measure	Quantity
A	Parent Assembly	M	EA	
B	Part	M	EA	1.0
C	Raw Material	B	EA	3.0
D	Sub Assembly	M	EA	.25

Example: Relationships in an Indented Bill of Material

The following example shows a complex relationship of a parent item to components. Part B is both an independent part and part of the subassembly that makes up Part G.



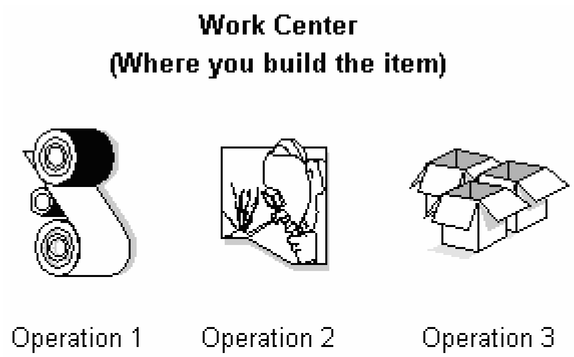
Substitute Item

You can define a substitute item for components within your parent item. You might need to do this for several reasons, such as quality concerns, inventory shortages, or supplier delivery problems.

About Component Locators

A component locator indicates the specific location of a component within a subassembly. This is a common feature in the electronics industry. For example, the printed key pads that cover the keys on your computer keyboard must be placed in a specific sequence. Use a component locator to indicate the location of each key pad cover to ensure that each is correctly placed during production.

About Work Centers



A work center consists of people and machines. It is a specific production facility on the shop floor where the routing operations occur. For each work center, you can define the following:

- Number, description, and link to business unit
- Queue and move times
- Operator, machine, and hours per day capacity
- Rates for set up, labor, machine, and overhead

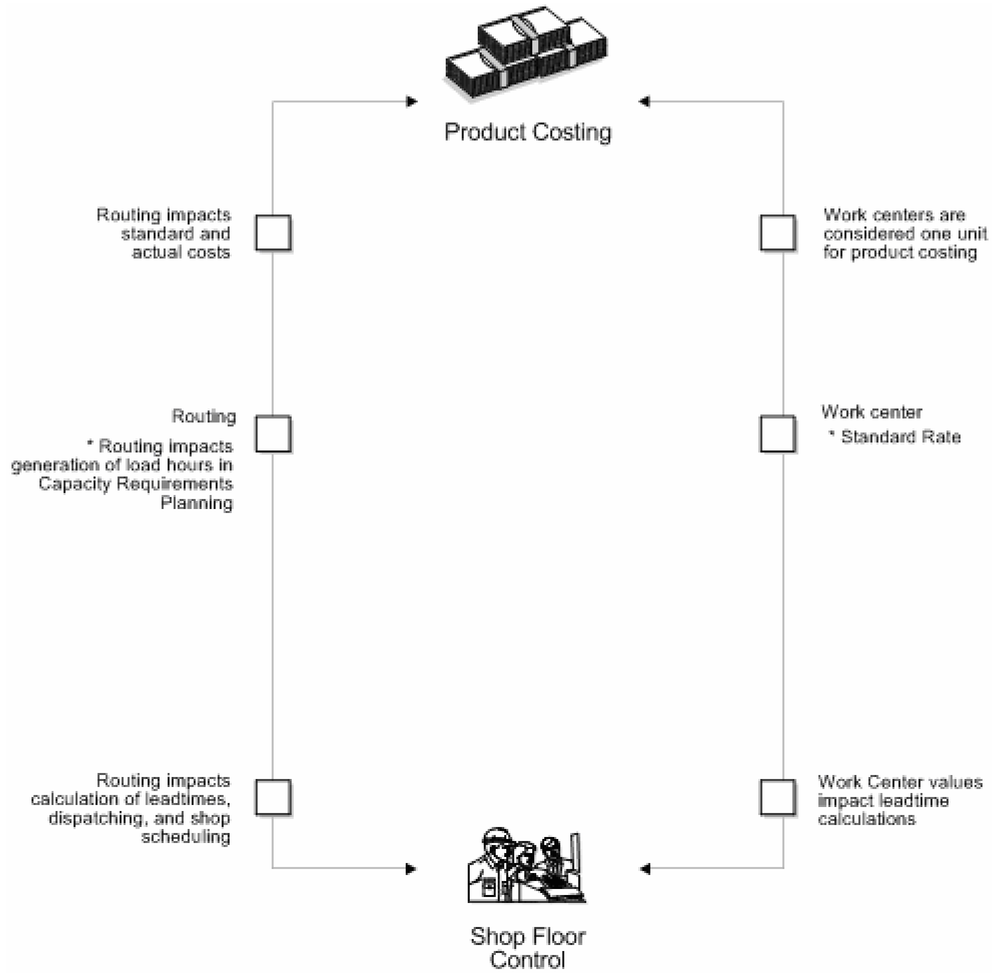
In discrete manufacturing, examples of work centers include lathe, drill, heat treat, mill, and cut-off.

A work center enables you to:

- Set up a dispatch group for departments that perform similar operations
- Specify if an operation is a reporting point for material and or labor
- Define crew size per work center
- Specify the work center efficiency for Product Costing
- Define work center labor, machine, and setup rates

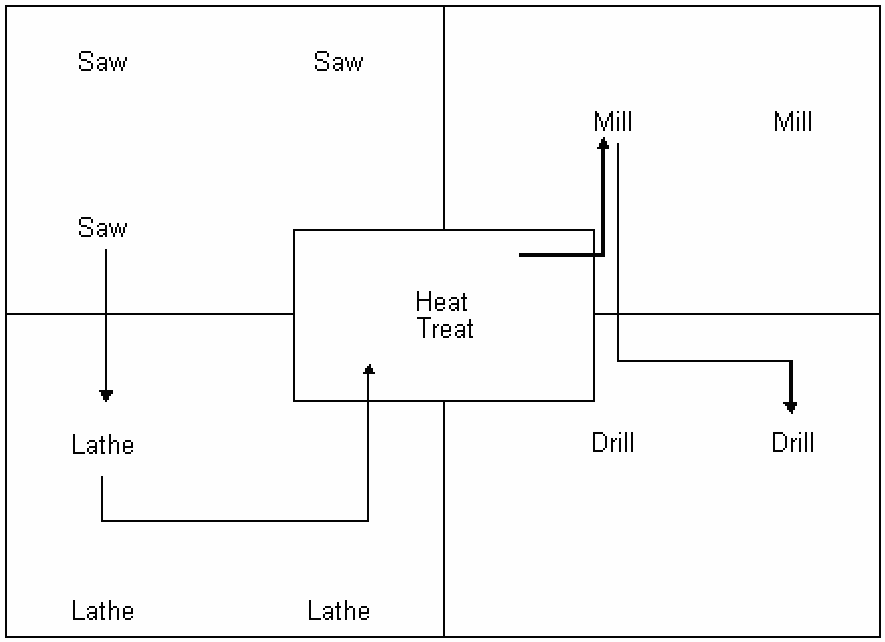
Work Center System Integration

The following graphic describes how work centers integrate with other manufacturing systems.

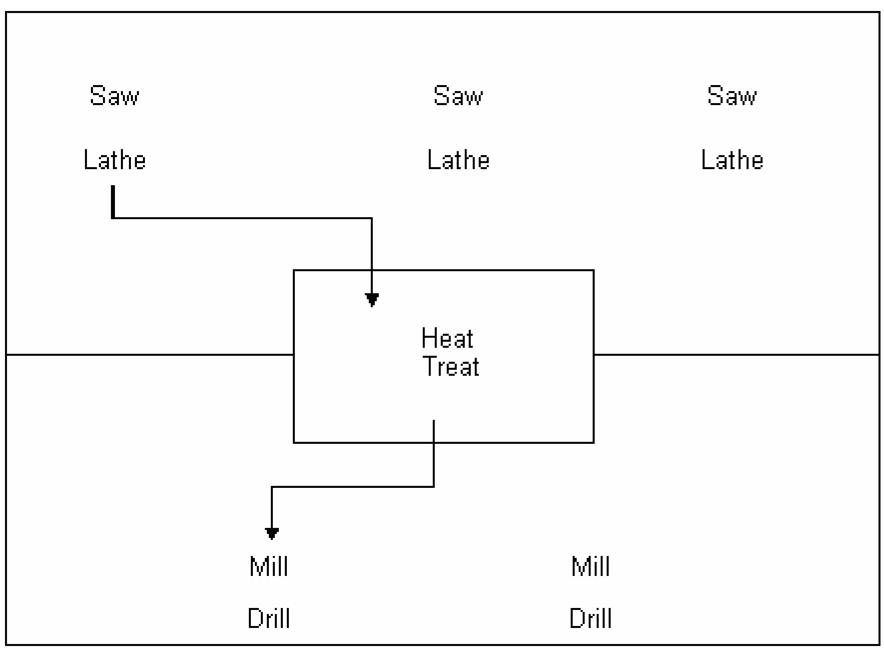


Work Center Arrangement

In this example, the same types of equipment are located in the same areas. Work in process moves from one area to the next. This functional layout provides an indirect path which might produce bottlenecks in the work flow.



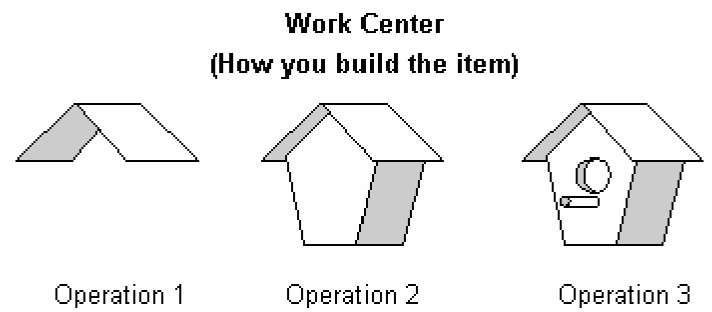
In this example, equipment is grouped by operations. This structured flow layout provides a direct path and ensures efficient work flow.



About Routings

After you have defined the item's components (bill of material), and where each operation occurs on the factory floor (work center), you must define the sequence of operations necessary to manufacture the item (routing).

Routings define the steps or operations that are required to produce a manufactured item. Routings are critical for Capacity Requirements Planning, Product Costing and for measuring production efficiency.



For each item, you define routings that describe:

- Production process
- Tool requirements
- Operator skill level
- Inspection criteria
- Operations
- Sequence
- Applicable work centers
- Standards for setup, machine, and labor times

Features

Specific routing features enable you to:

- Define the sequence of operations
- Use the Effective From and Thru Dates to enter and date routing changes as they occur
- For multi-plant environments, set up identical or different routings for an item by plant
- Add multi-line descriptions for each operation
- Record a tool ID number for each operation
- Attach text to an operation to describe details
- Use master routings to create one routing for parts that use the same manufacturing steps
- Use batch routings for products that are commonly made in batch quantities

- Define outside operations

Master Routing

The master routing allows you to create one routing for many parts that use the same manufacturing steps. This eliminates the need for duplicate routings. For example, during the manufacture of furniture, the frame and fabric might change, but the routing is the same.

PDM uses the master routing for an item if you have:

- Set the Master Routing field to Y on Manufacturing Constants for the branch/plant where the item will be manufactured
- Defined a cross-reference for the item using the master routing
- Defined an item routing for the master routing item

Batch Routing

Batch routings are useful in industries such as pharmaceuticals, foods, or petroleum, where products are manufactured in fixed quantities or batches.

You can create different batch routings for the same item by branch, type, batch quantity produced, or a combination.

Alternate Operation

You can define an alternate routing operation to be performed only if required, such as using drill B if drill A is unavailable for any reason. An alternate routing operation is information for shop floor personnel. The system ignores it during product costing and backscheduling.

About Lead Times

Determining lead time is an essential part of any manufacturing or scheduling process. For any product that you purchase or manufacture, you encounter a time lag between when you order or start it and when you receive or finish it. To account for the lag, you must estimate the extra time and allow for it in your planning.

First, define lead times for an item at each routing step, then run the Leadtime Rollup program to update lead time information in the item's Manufacturing Data table.

Training Class Case Study

The sample data for discrete manufacturing within the ERPx system covers the manufacture of an oak desk and chair from manufactured and purchased parts. Item 5120 is the parent item. Use review screens to review its subassemblies and components.

Tables

Discrete Manufacturing uses the following tables:

Table	Description
F3002	The Bill of Material Master table defines warehouse (plant level) information about bills of material, such as quantities of components, features, options, and levels of detail for each bill.
F3009	The Manufacturing Constants table contains constants for maintaining bills of material, including whether to write changes to the bills to the history file or to perform online validation.
F3011	The Bill of Material Changes table stores all changes made to any bill of material, including dates, ECO reasons, and effectivity dates.
F3003	The Routing Master table contains information describing how an item is manufactured, such as operation numbers, work centers, labor, set-up labor and machine hours, and outside operations.
F30006	The Work Center Master table contains the labor, machine, and overhead rates for each work center.
F4101	The Item Master table stores basic information about each defined item, such as item numbers, descriptions, category codes, and units of measure.
F4102	The Branch / Plant Master table defines and maintains plant level information, such as costs, quantities, physical location, and branch level category codes.
F4104	The Item Cross Reference table stores information about relating item numbers together for a specific purpose. You may establish your own codes that define relationships.
F0101	The Address Book table is the central repository for all address information relating to customers, vendors, employees, and prospects.
F0006	The Business Unit Master table identifies branch, plant, warehouse, work center and business unit information, such as company, description (name), and category codes assigned to that unit.
F30008	The Work Center Rates table stores work center rate information, such as simulated and frozen costs for labor, machines, and overhead.
F3015	The Component Locators table stores the location of a component you define within an assembly.

Set Up Discrete Manufacturing

Setting Up Discrete Manufacturing

You need to set up several user defined codes and constants that are unique to your branch/plants.

This section contains the following:

- Setting Up Manufacturing Constants
- Setting Up Bill of Material Types
- Setting Up Time Basis Codes
- Setting Up Standard Procedure Descriptions
- Setting Up a Shop Floor Calendar
- Setting Up a Make/Buy Table
- Setting Up Routing Types
- Setting Up Kanbans

Before You Begin

- Define your items in the Inventory Management system. See *Entering Item Master Information (P4101).*

Setting Up Manufacturing Constants

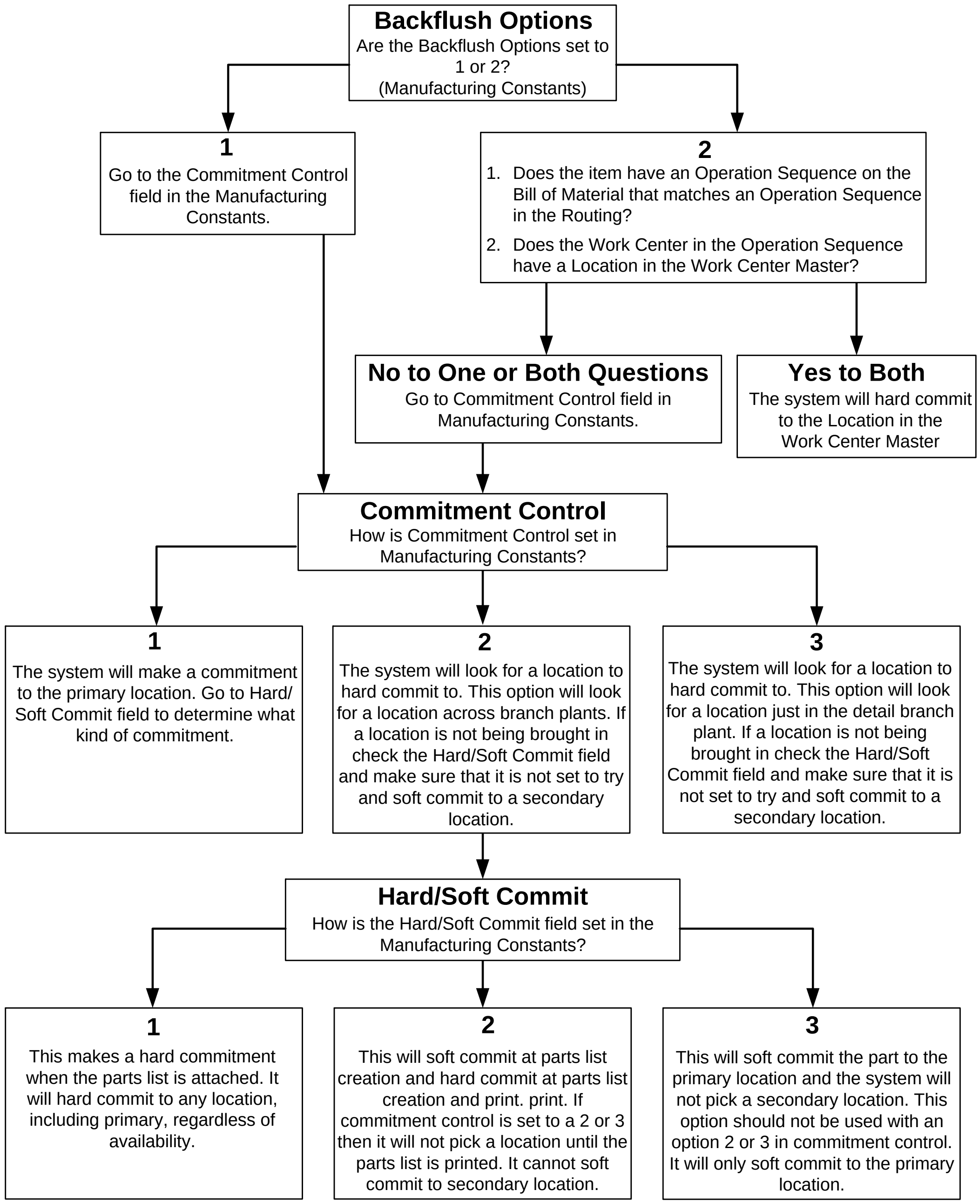
From any Product Data Management menu (G30), enter 29
From Product Data Management Setup (G3041), choose Manufacturing Constants

Establish information that is unique to your branch/plants. ERPx systems use manufacturing constants to determine:

- How to allocate, commit, and backflush inventory
- How to calculate overhead costs
- Whether to consider work center efficiency when calculating direct labor and overhead
- If an audit trail tracks all changes to bills of material
- Whether to validate bills of material online as you enter them

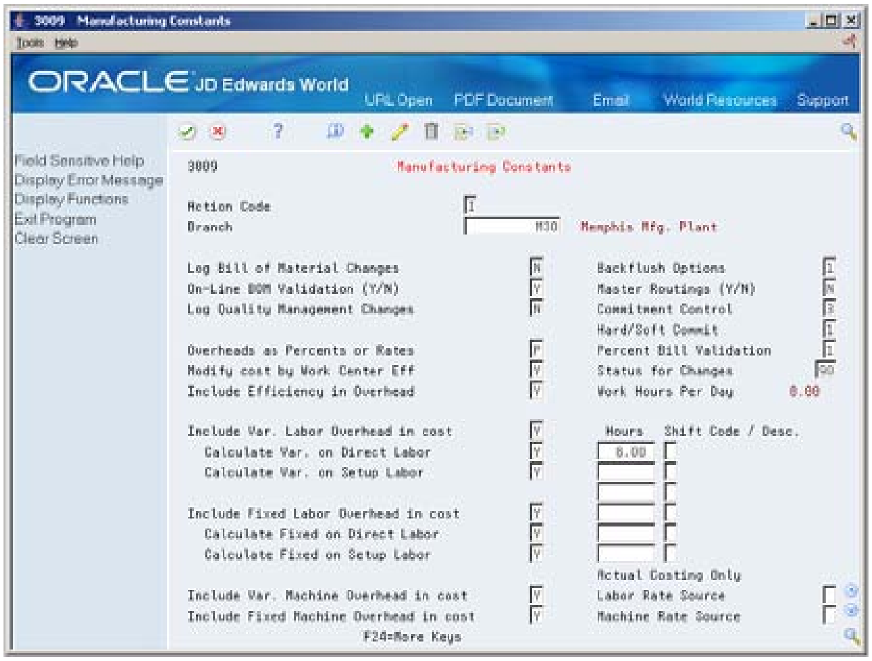
This graphic illustrates how to set up commitments in manufacturing constants.

Commitment Flowchart



To set manufacturing constants

On Manufacturing Constants



Complete the following optional fields:

- Log Bill of Material Changes
- Online BOM Validation (Y/N)
- Master Routings (Y/N)
- Status for Changes
- Work Hours Per Day
- Hours
- Shift Code/Description

Field	Explanation
On-Line BOM Validation (Y/N)	Determines whether the system performs an online component/parent validation and low-level code assignment when you revise a bill of material. Valid values are: Y Yes, validate items online. N No, do not validate items online. Note: JD Edwards World recommends that you validate items online (enter Y) unless your bills of material are extremely large. Important: If you enter N, you must validate the items in batch. Run the Integrity Analysis program (P30601) after bill of material updates and before you run the Frozen Cost Update program (P30835) or perform a DRP/MPS/MRP generation (P3482).
Log Bill of Material Changes	This field determines whether changes to the bill of material are recorded in the Bill of Material Change table (F3011). Valid values are: Y Yes, log changes. N No, do not log changes. Blank will assume an N. When you log bill of material changes, the system saves the old bill of material and the new changed bill of material.
Master Routings (Y/N)	This field controls whether the system uses the master routing for an item or a routing defined for the parent item. Both routings are retrieved from the Routing Master table (F3003). Valid values are: Y Yes, use the master routing for an item, if one exists. The Shop Floor Control system will check the Item Cross Reference table (F4104), Cross Reference Type MR, for the parent item. If it finds a cross-reference, the system uses the master routing from the Routing Master table (F3003). If it does not find a cross-reference, the system uses the routing defined for the parent item. N No, do not check for a master routing for the item. The system will always use the parent item's routing from the Routing Master table (F3003).
Status for Changes	This field specifies the status beyond which work orders and rates can not be changed in the Line Scheduling and Line Sequencing Workbench programs.
Work Hours Per Day	The number of work hours that the manufacturing plant typically operates in a day. This value is calculated based on hours defined in the manufacturing constants fields: WRHR + WRH2 + WRH3 (shift hours 1, 2, 3). This value is used in Back/Forward Scheduling.

Field	Explanation
Hours	The number of work hours that the manufacturing plant operates per day. *Form-specific information* For repetitive manufacturing, identify the number of work hours per shift for the specified branch. The Resource Generation program uses the corresponding shift hours to calculate the available resource units for each shift, and the total for the day. Since the shift hours may apply to different days of the week, the system uses the total of the first three hours to define the work hours per day value.
Shift Code / Desc	A user defined code (07/SH) that identifies daily work shifts. In payroll systems, you can use a shift code to add a percent or amount to the hourly rate on a timecard. For payroll and time entry: If an employee always works a shift for which a shift rate differential is applicable, enter that shift code on the employee’s master record. When you enter the shift on the employee’s master record, you do not need to enter the code on the timecard when you enter time. If an employee occasionally works a different shift, you enter the shift code on each applicable timecard to override the default. *Form-specific information* For repetitive manufacturing, use the six corresponding shift fields to identify all production line shifts for the specified branch. The Resource Generation program uses the corresponding shift hours to calculate the available resource units for each shift, and the total for the day.

What You Should Know About

Backflush options

This option determines if the location that is on the work center master (P3006) is used or not. If the operation sequence on the Bill of Material points towards a valid operation sequence on the routing, and the work center in that operation sequence has a valid location in the work center master then it will use the work center location regardless of available quantity. If this option is set to use the commitment control (1) then it will disregard the work center location.

Commitment control

This option is different than the commitment control in the Item Master / Branch. This option in the Manufacturing Constants controls where the commitments will happen. This option has three choices:

1 Primary location

2 Location with availability in any branch plant that may include primary

3 Location with availability in the detail branch plant

If the client wants commitments against their primary location this should be set to 1. If the client wants the system to select a location or locations to fill the order they should select 2 or 3 based on if they take inventory from different branch plants:

2 The system can cross branch boundaries to fill commitments

3 The system cannot cross branch boundaries

Hard and soft commits

This option determines what kind of commitment will happen and when it will happen. It works in tandem with commitment control to determine what kind of commitment should be made. This option also has three choices:

1 Hard commit when the parts list is attached

2 Soft Commit when parts list is attached and Hard commit when that parts list is printed

3 Soft Commit when the parts list is attached until inventory is relieved

A soft commitment cannot be generated for a secondary location. So if there is a location that is filled in on the parts list the part has to be hard committed. This is a hard rule that overrides other rules. If the system is set to soft commit until inventory is relieved, the system will not use the commitment control field because only a soft commitment to the primary location will be created and used until the inventory is issued. The system will not create a soft commitment to a secondary location.

To set up actual costing

On Manufacturing Constants

Complete the following fields:

- Labor Rate Source
- Machine Rate Source

Field	Explanation
Labor Rate Source	Selects either of two choices for the source of labor rates. The field is not used for standard costing. Valid values are: 1 System uses frozen work center rates from the Work Center Rates table (F30008) 2 System uses employee labor rates from the Employee Labor Rates table (F00191)
Machine Rate Source	Selects either of two choices for the source of machine rates. The field is not used for standard costing. Valid values are: 1 System uses frozen work center rates from the Work Center Rates table (F30008) 2 System uses the Equipment Rental Rate table (F1301)

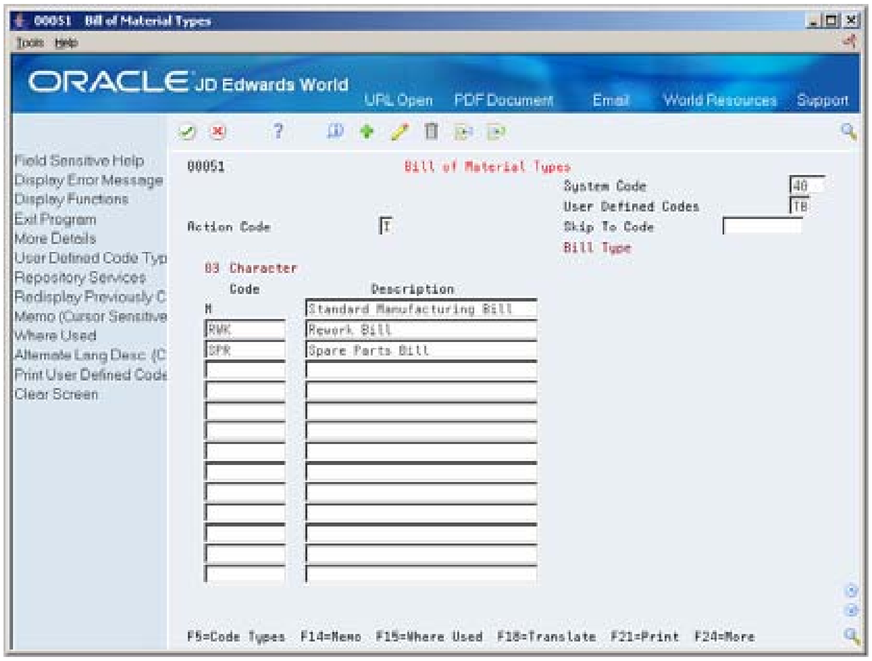
Setting Up Bill of Material Types

From any Product Data Management menu (G30), enter 29
From Product Data Management Setup (G3041), choose Bill of Material Types

You can set up user defined codes (40/TB) to define bill of material types, such as manufacturing bills, rework bills, and spare parts bills.

To set up a bill of material type

On Bill of Material Types



Complete the following fields:

- Code
- Description

Field	Explanation
User Defined Codes	Identifies the table that contains user defined codes. The table is also referred to as a code type.
Description	A user defined name or remark.

Setting Up Time Basis Codes

	From any Product Data Management menu (G30), enter 29 From Product Data Management Setup (G3041), choose **Time Basis Codes**

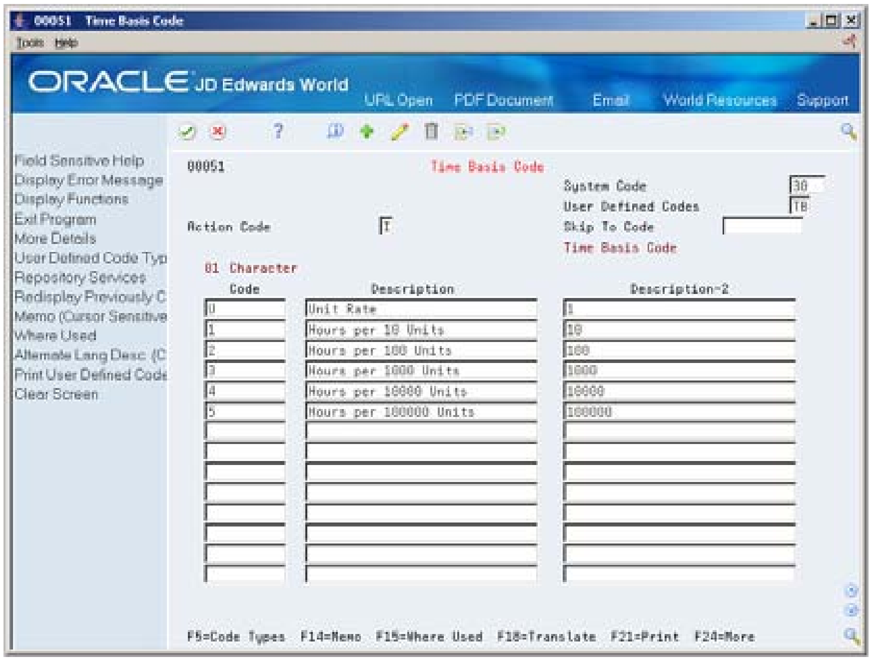
You can set up user defined codes (30/TB) to define time basis codes. You use time basis codes to identify the rate used for machine or labor hours as you enter a routing. The following programs use the time basis code value to determine run time per unit:

- Lead time Rollup
- Product Costing
- Capacity Requirements Planning

- Shop Floor Control

To set up a time basis code

On Time Basis Code



Complete the following fields:

- Code
- Description
- Description-2

Field	Explanation
Code	This column contains a list of valid codes for a specific user defined code list. The number of characters that a code can contain appears in the column title.

Setting Up Standard Procedure Descriptions

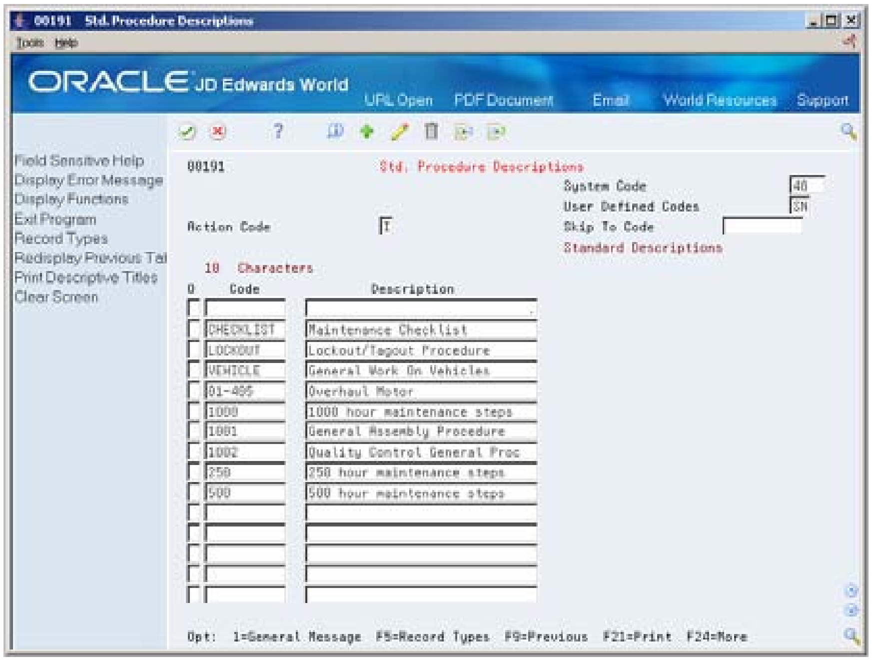
From any Product Data Management menu (G30), enter 29 From Product Data Management Setup (G3041), choose Standard Procedure Descriptions

You can set up user defined codes (48/SN) to represent standard procedures for your company. For each code, you can define message text that is standard to your business.

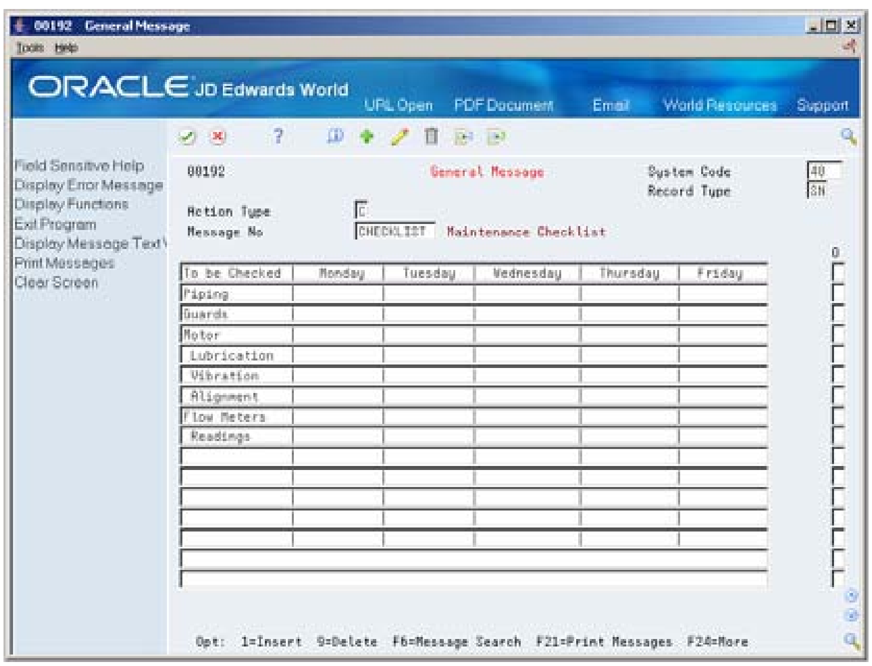
If you use a standard procedure description code when you enter a routing, the system prints the standard procedure text on shop floor documents.

To set up a standard procedure description

On Standard Procedure Descriptions



1. Access General Message for a code.



2. On General Message, type the text for the message.

Setting Up a Shop Floor Calendar

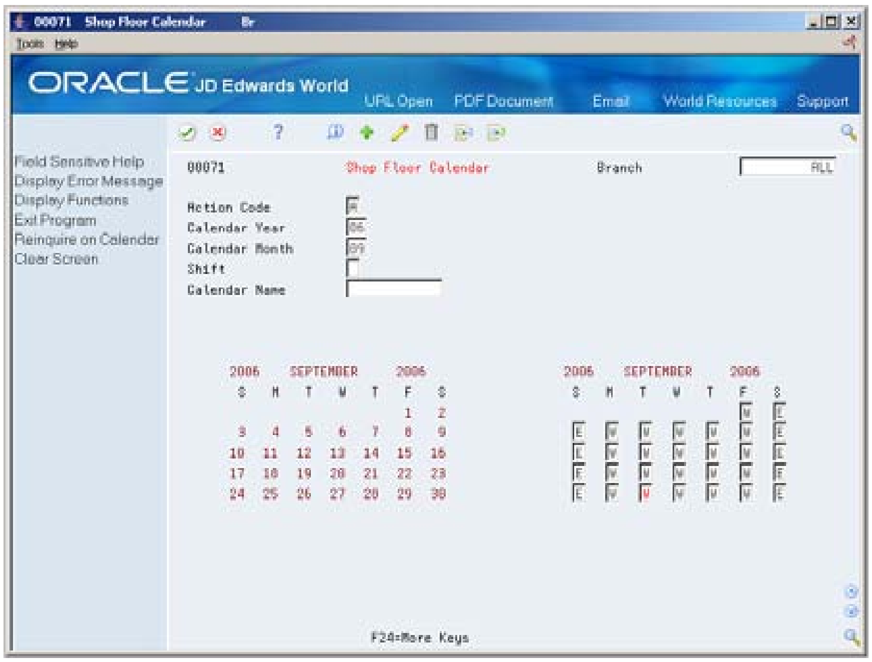
	From any Product Data Management menu (G30), enter 29 From Product Data Management Setup (G3041), choose **Shop Floor Calendar**

Use the shop floor calendar to define work days by month and year for all branches/plants. The system uses this calendar to determine:

- Manufacturing schedules
- Start dates for work orders
- Start and complete dates for work order routings

To set up a shop floor calendar

On Shop Floor Calendar



1. Locate the month and year to define.

   The calendar on the left displays the calendar days for the month and year. The calendar on the right displays the defined work days.

2. To specify a work day, type W.

   Note: W is hard-coded to represent a work day. You can specify any other letter to indicate nonwork days.

What You Should Know About

Using other day types

Use UDC table 00/TD to define work days. For example:

- A absent
- E weekend
- H holiday
- S shut down
- V vacation

Defining shift calendars

You can define up to six shift calendars. The shift hours must match the hours you set up in the manufacturing constants table.

For production lines using the default shop floor calendar, leave the Shift and Calendar fields blank.

Processing Options

See Work Day Calendar (P00071).

Setting Up a Make/Buy Table

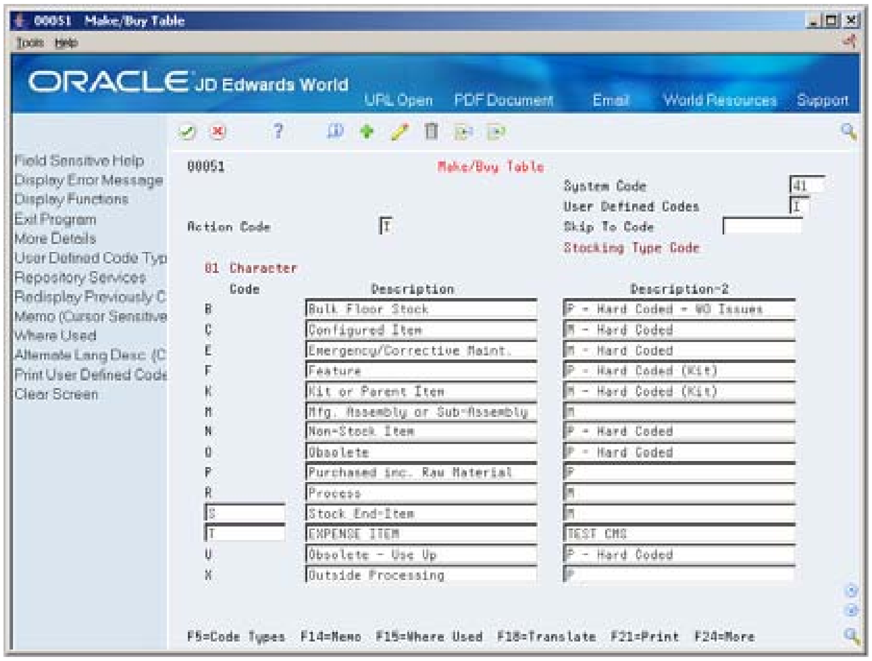
	From any Product Data Management menu (G30), enter 29 From Product Data Management Setup (G3041), choose Make Buy Table

Use the Make/Buy table (41/I) to maintain codes that indicate whether an item is purchased or manufactured. For example, you can define types such as subassemblies and purchased raw material.

M (manufactured) and P (purchased) are hard-coded and appear in the first character in Description - 2. You can use any other letter to define additional Make/Buy values.

To set up a make/buy table

On Make / Buy Table



Complete the following fields:

- Code
- Description
- Description - 2

Field	Explanation
Description-2	A user defined name or remark.

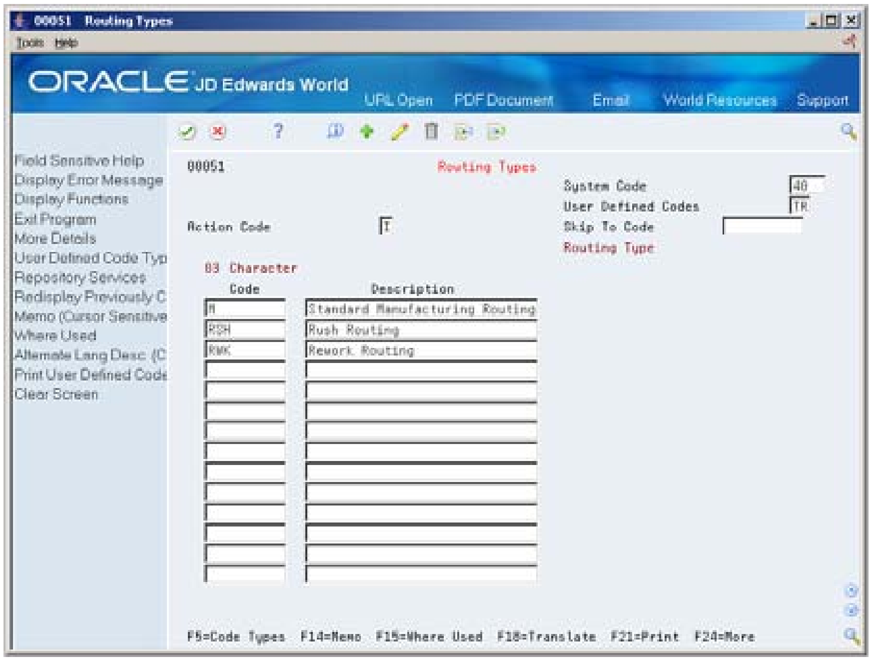
Setting Up Routing Types

	From any Product Data Management menu (G30), enter 29 From Product Data Management Setup (G3041), choose **Routing Types**

You can set up user defined codes (40 / TR) to define routing types such as alternate routing, standard manufacturing routing, rush routing, and rework routing.

To set up a routing type

On Routing Types



Complete the following fields:

- Code
- Description

Setting Up Kanbans

	From Product Data Management (G30), enter 29 From Product Data Management Setup (G3041), choose Kanban Master Revisions

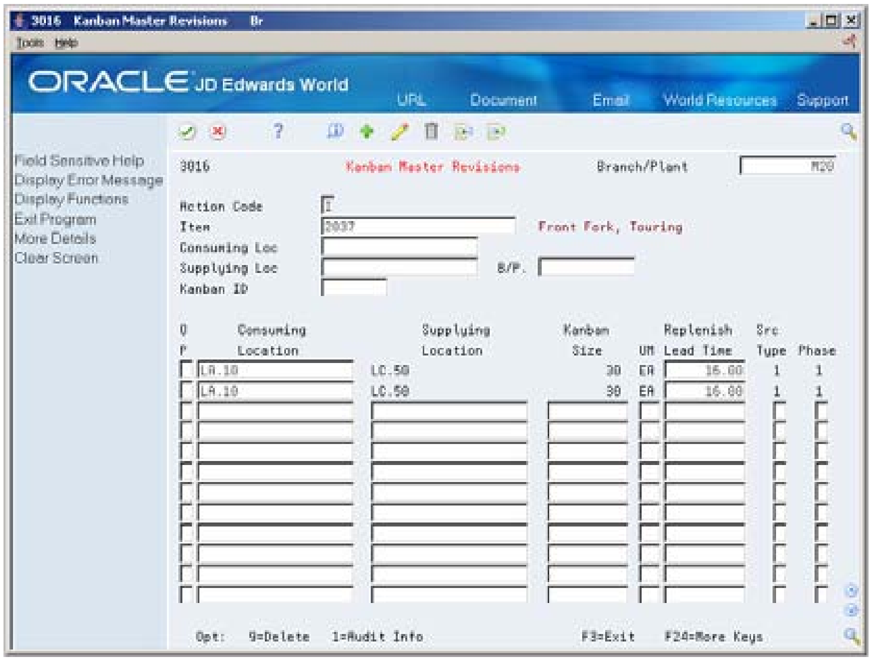
Before you can initiate any kanban transactions, you must set up a kanban master record for the item. You set up kanban master records in the Kanban Master Revisions program (P3016). When you set up the kanban master record, you define the information that the system uses to generate the transaction when you initiate a kanban trigger.

Each record in the F3016 table has a unique kanban ID. Each of these kanban records can have multiple containers or cards. When you define an item as kanban-controlled, you essentially define the relationship between a supplying location and consuming location. You define a kanban-controlled item by item number, consuming branch / plant, consuming location, supplying branch / plant, and supplying location. The system generates a unique kanban identifier for this specific relationship.

After you define kanban-controlled items, use Kanban Calculation to size the kanban, depending on the amount of inventory available. However, if you set the override flag on, the system does not update the record when you run the calculation program.

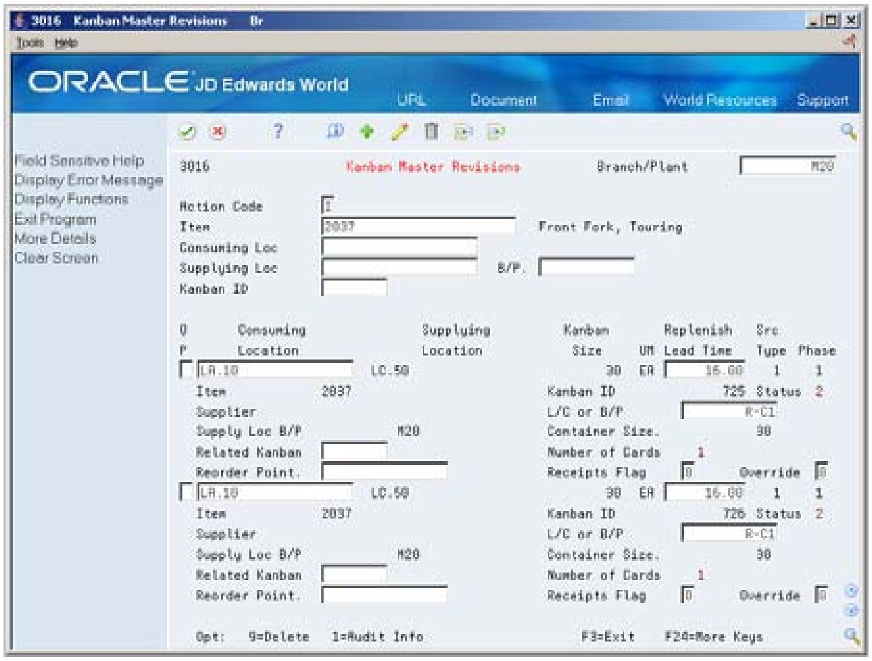
To set up kanban controlled items

On Kanban Master Revisions



1. Complete the following fields:
   - Item
   - Branch / Plant
   - Consuming Location
   - Supplying Location
2. Complete the following optional fields:
   - Kanban Size
   - Replenishment Lead Time
   - Source Type (this field is required when adding a record)
   - Phase

3. Access the detail area (F4).



4. Complete the following optional fields:

- Kanban ID
- Supplier
- Item
- Supplying Location Branch / Plant
- Line / Cell or Source Branch / Plant
- Container Size
- Override Flag
- Receipts Flag
- Related Kanban
- Reorder Point

Field	Explanation
Supplier	A number that identifies an entry in the Address Book system. Use this number to identify employees, applicants, participants, customers, suppliers, tenants, and any other Address Book members.
Replenish Lead Time	The time required before a consuming work center will have a replacement kanban available from its supplying location. This value is used only for kanban card processing in Shop Floor Control.

Field	Explanation
Container Size	The capacity of a container in a kanban controlled environment.
Override Flag	This flag can be used to lock the kanban size and quantity to prevent changes by the Kanban Calculation program.
Kanban Size	The total size of the kanban.
Receipts	Flag used to indicate the receipts process will be executed at kanban check in time. This is only used for a source type 3 (supplier)
Phase	This field indicates the method used to transfer completed units from the supplying to the consuming location: 1 One phase transfer. The completion is done directly to the consuming location. 2 Two phase transfer. The completion is performed against the supplying location. A subsequent receipt of inventory is needed at the consuming location.
Kanban ID	Unique identifier for the first kanban assigned to an item in a specified branch / plant, consuming location, or supplying location.
Line / Cell or Source Branch / Plant	Defines a production line or cell. Detailed work center operations can be defined inside the line or cell. For rate based manufacturing to use this value for reporting. *Form-Specific Information* When the source type is a 1 (work center), this field identifies the production line producing the kanban item. When the source type is a 5 (branch / plant), this field is used to establish the source branch / plant.
Supplying Location	A code that identifies the location in a branch / plant from which inventory is supplied.
Source Type	Indicates the type of supplying location for a kanban. Valid values are: 1 Work center 2 Inventory 3 Supplier 4 (Not Currently Used) 5 Branch / Plant **Note:** When you check in or complete a kanban that is a source type 5, you must create a transfer order (ST / OT) in order to transfer inventory between the two Branch / Plants. You must then receive the transfer purchase order using the Enter Receipts by PO program (P4312).

Field	Explanation
Consuming Location	A code that identifies the location in a branch / plant to which inventory is received.
Item	A number that the system assigns to an item. It can be in short, long, or 3rd item number format.
Related Kanban	An additional Kanban ID used to replenish quantity of the original Kanban ID during a reorder point assessment of undersupply. If a Kanban is undersupplied, the system checks-out the related kanban and creates either a purchase order or work order, if needed, based on the related kanban source type.
Reorder Point	A quantity to trigger a replenishment Kanban upstream in the supply chain when the available quantity is below this defined order point.

Generating Kanbans

	From Product Data Management (G30), enter 29 From Product Data Management Setup (G3041), choose Kanban Calculation

After you set up the item on Kanban Master Revisions, you can use the Kanban Calculation program to generate and print a kanban per item. However, you can set the override flag on Kanban Master Revisions to prevent the system from updating the master record.

Use the processing options to:

- Run the program in proof mode
- Print the calculation report
- Update the Kanban Master
- Specify a safety stock other than what is defined in the Item Branch
- Control what percentage the system can change the size of the kanban
- Specify the source for the demand
- Specify a customized calculation program

See Also

- *Process Kanbans* in the *Shop Floor – Process Guide.*
- *Process Kanbans* in the *Shop Floor – Discrete Guide.*

Processing Options

See Kanban Size Calculation (P30450).

Work With Bills of Material

Working With Bills of Material

A bill of material defines an item as a parent or component in the assembly. It details the specific components and quantities that are used to assemble the parent item and provides the foundation for costing and planning activities.

This section contains the following:

As you define a bill of material, you combine information from the Manufacturing Constants, Item Master, and Branch / Plant tables. The resulting bill of material is stored in the Bill of Material table. Changes are stored in the Bill of Material Audit table (if you choose to track them).

Before You Begin

- If you are using batch bills of material, define a bill of material for batch bills, define routings that correspond to the batch sizes, and set the processing options for Enter / Change Bill and Work Order Entry to activate batch functions.

  See *Setting up Bill of Material Types (P0051)* and *Entering a Routing (P3003)*.

What You Should Know About

Deleting a bill of material	When you delete a parent item's bill of material, the item's lower level components and subassemblies are not affected. When you delete a bill of material, you are prompted to confirm the deletion.

Entering similar bills of material

If you want to enter bills of material for the same parent item but to multiple locations, you can use the “same as except” method. Locate the existing bill, change the appropriate data, and reenter it.

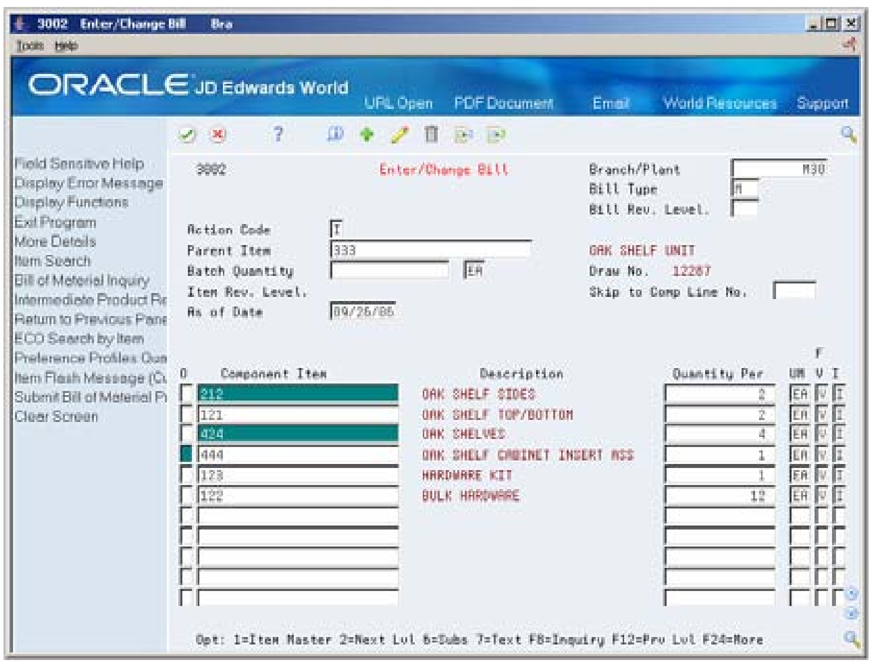
Entering Parent Items

From Daily Product Data Management (G30), choose **Daily PDM Discrete**
From Daily PDM Discrete (G3011), choose **Enter/Change Bill**

Note: This program supports Import/Export functionality. See Technical Foundation for more information.

To enter parent item

On Enter/Change Bill



1. Complete the following required fields:
   - Branch/Plant
   - Bill Type
   - Parent Item
2. Complete the following optional fields:
   - Item Revision Level
   - As of Date

- Skip to Component Line Number

Field	Explanation
Branch / Plant	A secondary or higher level business unit. Sometimes used to reference a branch or plant with several departments or jobs subordinate to it. Branch / Plant - (MMCU) Dept A - (MCU) Dept B - (MCU) Job 123 - (MCU) *Form-specific information* The branch or plant from which the component is selected. In multi-plant processing, the branch for the component and the parent should be the same. The default value is the parent branch. If this value is the same as the parent branch, then the Multi-Plant Generation program (P3483) produces transfer orders for the component at the demand branch based on the branch / plant relationships table. If this value is not the same as the parent branch, then no transfer orders are generated at the demand branch. A valid item branch record is not required for components. You can set a processing option for Enter / Change Bill (P3002) so that the system does not check for a component's item branch information. However, you should ensure that a valid location exists for that component if you want to maintain Engineering Change Management information.

Field	Explanation
Bill Type	A user defined code (system 40, type TB), that designates the type of bill of material. You can define different types of bills of material for different uses. For example: M (Default)Standard manufacturing bill RWK Rework bill SPR Spare parts bill The system enters bill type M in the work order header when you create a work order, unless you specify another bill type. The system reads the bill type code on the work order header to know which bill of material to use to create the work order parts list. MRP uses the bill type code to identify the bill of material to use when it attaches MRP messages. Batch bills of material must be type M for shop floor control, product costing, and MRP processing. *Form-specific information* Type M is not required, but MRP uses it to explode component requirements for work orders without parts lists. Enter an asterisk (*) to display all bill types. This value defaults from the processing options for Enter / Change Bill (P3002).
Item Rev. Level	The revision level for an item. If you enter a revision level, verify that the revision level of the routing for an item matches the revision level on the bill of material for the item.
As of Date	This field is used for effectivity checking. Enter a specific date to display documents (orders, bills of material, routings, and substitute components) that are effective on or after that date. The current system date is the default, but you can enter any future or past date.
Comp. Line Number	A number that indicates the sequence of the components on a bill of material. It initially indicates the relative sequence in which a component was added to a kit or single level bill of material. You can modify this number to change the sequence in which the components appear on the bill of material. Skip To fields allow you to enter a component line number that you want to begin the display of information. *Form-specific information* In the Skip to Sequence field, you can enter a sequence number to position the component with that number as the first line of information displayed. The default value is the next sequential number.

On Enter / Change Bill

1. Complete the necessary steps to enter a parent item.
2. Complete the following fields:
   - Batch Quantity
   - Batch Unit of Measure

Field	Explanation
Batch Quantity	The quantity of finished units that you expect this bill of material or routing to produce. This field allows you to specify varying quantities of components based on the amount of finished goods produced. For example, 1 ounce of solvent is required per unit up to 100 units of finished product. However, if 200 units of finished product are produced, 2 ounces of solvent are required per finished unit. In this example, you would set up batch quantities for 100 and 200 units of finished product specifying the proper amount of solvent per unit.
UM	A user defined code (system 00 / type UM) that identifies the unit of measurement for an amount or quantity. For example, it can represent a barrel, box, cubic yard, gallon, an hour, and so on.

See Also

- *Work with PC Import/Export* in the *Technical Foundation guide.*

Working With Components

	From Daily Product Data Management (G30), choose Daily PDM Discrete From Daily PDM Discrete (G3011), choose Enter/Change Bill

After you have defined the parent item, you must define the components of the item.

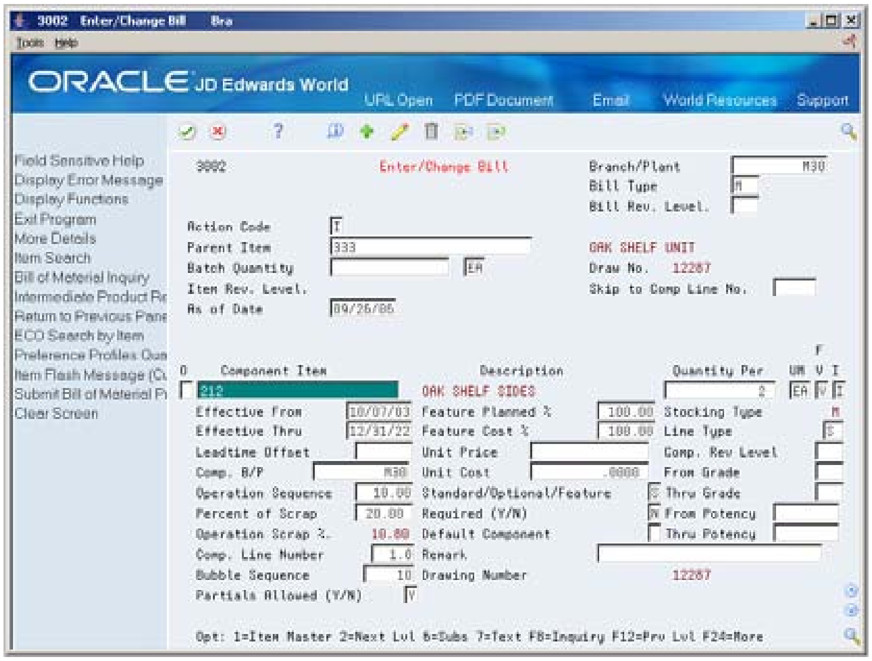
Complete the following tasks:

- Add components (required)
- Enter additional manufacturing information
- Enter reference information
- Enter a percent bill
- Enter grade and potency information
- Enter substitute items

To add components

On Enter / Change Bill

1. Access the detail area.



2. Complete the following required fields for each component:
   - Component Item
   - Quantity Per
   - Unit of Measure
   - Effective From
   - Effective Thru
   - Component Branch / Plant
3. Complete the following fields:
   - Partials Allowed (Y / N)
   - Revision Level

Field	Explanation
Quantity Per	The number of units to which the system applies the transaction. *Form-specific information* A number that indicates how many components you use to manufacture the parent item. A quantity of zero is valid. The default value is 1.

Field	Explanation
UM	A user defined code (system 00 / type UM) that identifies the unit of measurement for an amount or quantity. For example, it can represent a barrel, box, cubic yard, gallon, an hour, and so on.
Effective From	A date that indicates one of the following: ▪ When a component part goes into effect on a bill of material ▪ When a routing step goes into effect as a sequence on the routing for an item ▪ When a rate schedule is in effect The default is the current system date. You can enter future effective dates so that the system plans for upcoming changes. Items that are no longer effective in the future can still be recorded and recognized in Product Costing, Shop Floor Control, and Capacity Requirements Planning. The Material Requirements Planning system determines valid components by effectivity dates, not by the bill of material revision level. Some forms display data based on the effectivity dates you enter.
Effective Thru	A date that indicates one of the following: ▪ When a component part is no longer in effect on a bill of material ▪ When a routing step is no longer in effect as a sequence on the routing for an item ▪ When a rate schedule is no longer active The default is December 31 of the default year defined in the Data Dictionary for Century Change Year. You can enter future effective dates so that the system plans for upcoming changes. Items that are no longer effective in the future can still be recorded and recognized in Product Costing, Shop Floor Control, and Capacity Requirements Planning. The Material Requirements Planning system determines valid components by effectivity dates, not by the bill of material revision level. Some forms display data based on the effectivity dates you enter.

Field	Explanation
Branch / Plant	A secondary or higher level business unit. Sometimes used to reference a branch or plant with several departments or jobs subordinate to it. Branch / Plant - (MMCU) Dept A - (MCU) Dept B - (MCU) Job 123 - (MCU) *Form-specific information* The branch or plant from which the component is selected. In multi-plant processing, the branch for the component and the parent should be the same. The default value is the parent branch. If this value is the same as the parent branch, then the Multi-Plant Generation program (P3483) produces transfer orders for the component at the demand branch based on the branch / plant relationships table. If this value is not the same as the parent branch, then no transfer orders are generated at the demand branch. A valid item branch record is not required for components. You can set a processing option for Enter / Change Bill (P3002) so that the system does not check for a component’s item branch information. However, you should ensure that a valid location exists for that component if you want to maintain Engineering Change Management information.
Partials Allowed (Y / N)	When you specify component and substitute items on the bill of material, this field indicates whether the total quantity is required to be available or if a partial quantity available is acceptable to commit. Example: 100 lb of item A is available: 150 lb of item A is needed. If substitutes are not used and Partials Allowed is set to Y for item A, then the 100 lb will be committed. If substitute processing is used, substitutes will be checked next, and Partials Allowed on the substitute record will be considered.
Comp. Rev Level	The current revision level of a component on the bill of material. It is usually used with an engineering change notice or order (ECN or ECO).

Field	Explanation
Operation Sequence Number	In routings, this number is used to sequence the fabrication or assembly steps in the manufacture of an item. You can track costs and charge time by operation. In bills of material, this number designates the routing step in the fabrication or assembly process that requires a specified component part. You define the operation sequence after you create the routing for the item. The Shop Floor Control system uses this field in the backflush/preflush by operation process. In engineering change orders, this number is used to sequence the assembly steps for the engineering change. Skip To fields allow you to enter an operation sequence that you want to begin the display of information. You can use decimals to add steps between existing steps. For example, use 12.5 to add a step between steps 12 and 13. *Form-specific information* JD Edwards World recommends that you do not use an operation number more than once within the same work center.
Percent of Scrap	Scrap is the percentage of unusable component material created during the manufacture of a particular parent item. During DRP/MPS/MRP generation, the system increases gross requirements for the component item to compensate for the loss. Note: Shrink is the expected loss of parent items (and hence, components) due to the manufacturing process. Shrink and scrap are compounded to figure the total loss in the manufacture of a particular item. Accurate shrink and scrap factors can help to produce more accurate planning calculations. Enter percents as whole numbers: 5% as 5.0 *Form-specific information* The Shop Floor Control and Material Requirements Planning systems inflate component requirements by this percentage. This scrap percent is unique to the relationship of one parent and one component.
Operation Scrap %	The system uses this value to increase or decrease the amount of materials to account for loss within the operation. The system updates this value on Enter/Change Bill of Material when you run the Planned Yield Update program. The system calculates this value by compounding the yield percentages from the last operation to the first operation. Use a processing option in Enter/Change Routing to enable the system to calculate the component scrap percent.

What You Should Know About

Indicating reusable tools

If the tool is located on the shop floor and reused as needed, you can indicate that it is a necessary component item required for the parent item. To do so, enter reusable tools as text lines or non-stock items in the bill of material.

Indicating expendable tools

You enter expendable tools (that is, tools used one time) on the bill of material like any other component item. The manufacturing process commits and consumes expendable tools in the same way as the other components. Examples of expendable tools are paint roller pads and drill bits.

Transitioning new components

You might need to replace one part with another in the bill of material. You can either scrap the old part or use up the inventory. To do so:

- Set the lead time to 0 (zero)
- Set the order policy code in the branch / plant record to lot-for-lot
- Enter the bill of material so that the new part is a component of the old part
- Set the appropriate Stocking Type

MRP uses up the quantity of the old part. When the quantity reaches zero and there are still requirements, the system generates a planned order release. This planned order becomes the requirement for the new item in the same period (because the lead time of the old part is zero). MRP then plans the new part. This alerts the material planner to change the bill of material by removing the old part.

To enter additional manufacturing information

On Enter / Change Bill

1. Access the detail area.
2. Complete the following fields:
   - Operation Sequence
   - Percent of Scrap

   The following field displays manufacturing information:

   - Operation Scrap Percent

To enter reference information

On Enter / Change Bill

1. Access the detail area.
2. Complete the following fields:

- Component Line Number
- Bubble Sequence
- Line Type
- Remark

The following fields display stocking information:

- Stocking Type
- Drawing Number

Field	Explanation
Bubble Sequence	A secondary bill of material sequence number to indicate the drawing bubble number.
Line Type	A code that controls how the system processes lines on a transaction. It controls the systems with which the transaction interfaces (General Ledger, Job Cost, Accounts Payable, Accounts Receivable, and Inventory Management). It also specifies the conditions under which a line prints on reports and is included in calculations. Codes include: S Stock item J Job cost N Non-stock item F Freight T Text information M Miscellaneous charges and credits W Work order *Form-specific information* The Branch / Plant table (F4102) supplies the default for this field. You can use line type T to display a text line on this form in the sequence you define. The text does not display on review forms.
Stocking Type	A user defined code (41 / I) that indicates how you stock an item (for example, as finished goods, or as raw materials). The following stocking types are hard-coded and you should not change them: B Bulk floor stock C Configured item F Feature K Kit parent item N Non-stock
Drawing Number	An engineering drawing number that might be the same as the part or item number.

What You Should Know About

Using nonstock items	Nonstock items include drawings, bulk items, or reference materials. The system does not plan for nonstock items, but they appear on the bill of material and parts list for shop floor personnel.
Using bulk items	You use bulk items on the shop floor. Bulk items are not closely tracked, but ordered in large quantities as they are needed. Examples include tape, rubber bands, lubricants, cleaning fluid, rivets, and nails. You must enter bulk items in the Item Master / Branch Plant.
Using floor stock items	Floor stock items are like normal inventory items, but are available on the shop floor. Floor stock is set up as stocking type B in Item Branch / Plant information to bypass inventory issues. Also, the Issue Type Code is set to F to default for bills of material and ensure accurate cost accounting for the parent item.
Drawing numbers	You can enter drawing numbers on your bills of material as nonstock items so that they print on the shop paperwork. If your drawing numbers differ for each branch / plant, enter the drawing number as a component.

To enter a percent bill

On Enter / Change Bill

1. Complete the task to enter a parent item.
2. For each component, enter a % (percent sign) in the following field:
   - Fixed / Variable

Field	Explanation
F V	Indicates if the quantity per assembly for an item on the bill of material varies according to the quantity of the parent item produced or is fixed regardless of the parent quantity. This value also determines if the component quantity is a percent of the parent quantity. Valid values are: F Fixed Quantity V Variable Quantity (Default) % Quantities are expressed as a percentage and must total 100% For fixed quantity components, the Work Order and MRP systems do not extend the component's quantity per assembly value by the order quantity. For Process Manufacturing, the system stores percent components. Therefore, the system treats zero batch sizes like variable-quantity components, and treats batch sizes greater than zero like fixed-quantity components.

What You Should Know About

Working with components in a percent bill	You can enter as many components as necessary, but the sum of the percentages must equal 100%. The system uses the batch size to calculate percentages of the bill for each component. Verify that each component can convert to the bill unit of measure either by item conversion or standard unit of measure conversion. See also *Defining Default Units of Measure (P41012)*.

To enter grade or potency information

You can define either grade or potency information, but not both.

On Enter / Change Bill

1. Access the detail area.
2. For grade information, complete the following fields:
   - From Grade
   - Thru Grade
3. For potency information, complete the following fields:
   - From Potency
   - Thru Potency

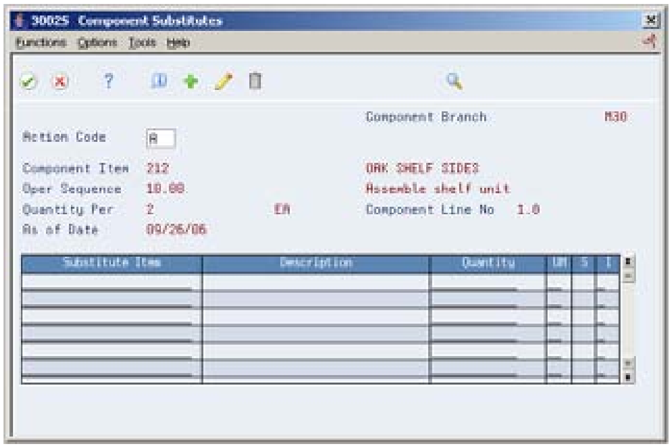
Field	Explanation
From Grade	A code (system 40, type LG) that indicates the minimum grade that is acceptable for an item. The system displays a warning message if you try to purchase or issue items with grades that do not meet the minimum grade acceptable. The system does not allow you to sell items with grades that do not meet the minimum acceptable level.
Thru Grade	A code (system 40, type LG) that indicates the maximum grade that is acceptable for an item. The system displays a warning message if you try to purchase or issue items with grades that exceed the maximum grade acceptable. The system does not allow you to sell items with grades that exceed the maximum grade acceptable.
From Potency	A number that indicates the minimum potency, or percentage of active ingredients, acceptable for an item. The system displays a warning message if you try to purchase or issue items that do not meet the minimum acceptable potency. The system does not allow you to sell items that do not meet the minimum acceptable potency.
Thru Potency	A number that indicates the maximum potency, or percentage of active ingredients, that is acceptable for an item. The system displays a warning message if you try to purchase or issue items that have a potency that exceeds the maximum potency acceptable. The system does not allow you to sell items that have a potency that exceeds the maximum potency acceptable.

To enter a substitute item

On Enter / Change Bill of Material

1. Choose the Bill Substitutes option (6) for the component to substitute.

On Component Substitutes



2. Complete the following fields:

- Substitute Item
- Substitute Item Sequence

Field	Explanation
Substitute Item	A number that the system assigns to an item. It can be in short, long or 3rd item number format. *Form-specific information* The number assigned to a substitute item.
Substitute Item Sequence Number	Indicates the sequence the substitute items for a component. The system looks for substitute items by this sequence number. For the component being substituted, set this field to zero.

What You Should Know About

Identifying substitutions	The system highlights a component's item description to indicate a substitution.
Automatic substitutions	You can make component substitutions automatically when the parts list is attached to the work order. Set up manufacturing constants to hard commit at creation of the parts list. Soft commits will commit to the original component, regardless of availability.

Global substitutions	Use component substitution for a specific component. Use item cross references for global substitutions. See *Defining Item Cross Reference (P41040)*.
Item Cross-Reference Substitutions	Item Cross-Reference substitutions are used when one item can be universally substituted for another item. To use this substitution, the substitute relationship must be set up as a cross-reference type S in the Item Cross-Reference Table (P41040). Enter 8 in the option code field for a component on the parts list (P3111). This will display screen P31042, where the quantities to substitute are entered manually. Substitutes will only display on this screen if there are units available. If there are no units available for any substitutes, the screen will display blank, even though substitutes are set up in the item cross-reference table. This substitution method can only be performed manually, as the processing options for P31410 and P48013 only apply to Bill of Material substitutions.

Enter Planning Bill and Kit Information

From Daily Product Data Management (G30), choose Daily PDM Discrete
From Daily PDM Discrete (G3011), choose Enter/Change Bill

The manufacturing industry uses planning bills and kits to produce items in which components are features and might not be listed as separate inventory items. When you enter these components as parts of kits, the system places them in the planning and manufacturing processes.

Note: You must have a branch record for an item listed on a kit bill of material if processing option #1 behind P3002 is turned on. This option validates for the branch/item record, and JD Edwards World recommends that this option be turned on. Normally, non-stock items set up in Item Master do not require an Item Branch/Plant record.

To enter planning bill and kit information

On Enter/Change Bill

1. Access the detail area.
2. For each component, complete the following fields:
   - Feature Planned Percent
   - Feature Cost Percent
   - Unit Price
   - Unit Cost
   - Standard/Optional/Feature

- Required (Y/N)
- Default Component

Field	Explanation
Feature Planned %	The percentage of demand for a specified feature based on projected sales. For example, a company might sell 35% of their computers with a standard keyboard and 65% of them with an extended keyboard, based on customer demand. The Material Planning system uses this percentage to accurately plan for a feature's component items. Enter percents as whole numbers: 5% as 5.0. The default value is 100%.
Feature Cost %	A percentage used by the Simulate Cost Rollup program to calculate the cost of a feature or option item as a percentage of the total cost of the parent. Enter the percentage as a whole number: 5% as 5.0
Unit Price	A base or default price that is used with multipliers from the pricing rules to develop discounted prices. If no formula applies to an item or no discounts apply to a customer, this price is used directly. This field is only used for pricing on sales orders when a non-stock item is part of a kit. *Form-specific information* The system uses price rather than price record F4106 if the bill of material contains non-stock items. The default value comes from the Sales Order detail line.
Unit Cost	The amount per unit (the total cost divided by the unit quantity). This field is only used for costing on sales orders when a non-stock item is part of a kit. *Form-specific information* The system uses this cost rather than cost record F4105 if the bill of material contains non-stock items. The default value comes from the Sales Order detail line.
Standard/Optional/Feature	A code that indicates whether a component is standard or optional within a bill of material or for kit processing. Valid codes are: S Standard. The item is always included in any transaction involving the bill of material. O Optional. In order entry, you can specify whether the item will be included in a particular sale. F Feature. The item has features that you must specify at order entry. The default value is S.

Field	Explanation
Required (Y/N)	A code that specifies whether a component is required. The default is N. Valid codes are: Y This component is required. N This component is not a required selection during order processing. The default value is N.
Default Component	If you are creating Sales Orders using the EDI/Batch Order Edit and Creation Process (P40211Z), you can use this field to specify a default component. Enter Y in this field to mark this line as a default component. When you specify a kit master item, the EDI/Batch Order Creation system will automatically select all related standard and default components.

See Also

- *Enter Item Master Information (P4101)* in the *Inventory Management Guide*

Enter Production Information

	From Daily Product Data Management (G30), choose Daily PDM Discrete From Daily PDM Discrete (G3011), choose Enter/Change Bill

For each component, you can enter production information used by the Shop Floor Control system.

To enter production information

On Enter/Change Bill

1. Access the detail area.
2. For each component, complete the following fields:
   - Issue Type
   - Lead time Offset

<table>
<tr><th>Field</th><th>Explanation</th></tr>
<tr><td>I</td><td>A code that defines how the system issues each component in the bill of material from stock. In shop floor control, it indicates how the system issues a part to a work order. Valid codes are:
I Manual issue (default)
F Floor stock (no issue)
B Backflush (when part is reported as complete)
P Preflush (when parts list is generated)
U Super backflush (at pay-point operation)
S Sub-contract item (send to supplier)
Blank Shippable end item
You can issue a component in more than one way within a specific branch / plant by using a different code on the bill of material and work order parts list. The bill of material code overrides the branch / plant value.</td></tr>
<tr><td>Leadtime Offset</td><td>Indicates the number of days a part is needed before or after the start date of a manufacturing work order. The system adds the lead time offset days for the part to the start date of the work order to determine the actual date the part is required. To indicate that a part is needed prior to the work order start date, enter the days as a negative number. To indicate how many days after the work order start date that the part is required, enter a positive number.</td></tr>
</table>

What You Should Know About

Issue type code	When committing components to a location indicated in the Work Center Master Table (F3006), the issue type code must be U (back flush at pay point operation) or B (back flush when part is reported as complete).

Processing Options

See Bill of Material Revisions (P3002).

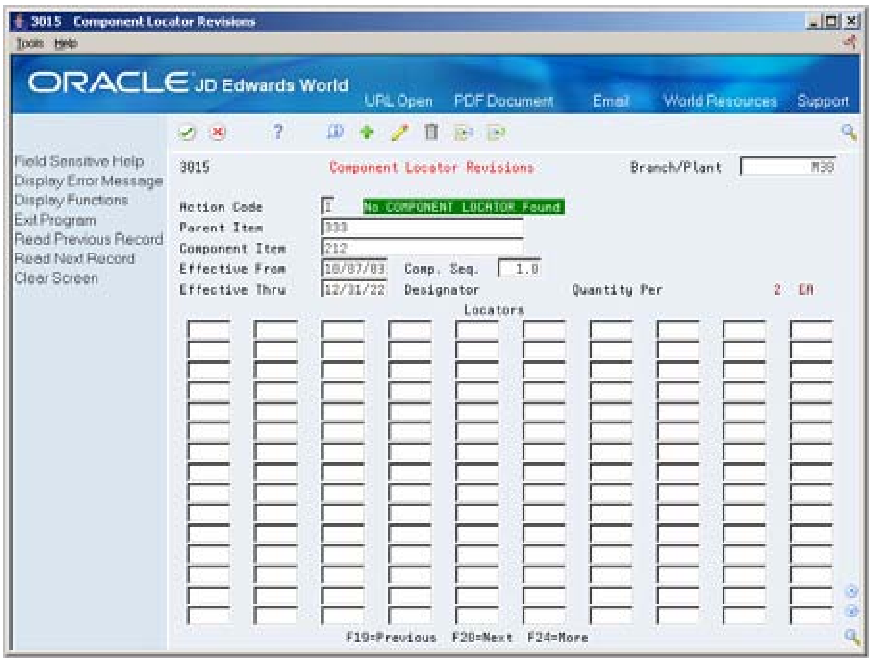
Enter Component Locators

	From Daily Product Data Management (G30), choose **Daily PDM Discrete** From Daily PDM Discrete (G3011), choose **Component Locators**

Use component locators to indicate the specific location of a component within a subassembly.

To enter a component locator

1. On Enter/Change Bill, choose the Component Location (4) option.



2. On Component Locator Revisions, complete the following field:

- Locators

Field	Explanation
Locators	This field identifies the specific location of a component in the assembly of an item, for example, the location of a part on a circuit board.

What You Should Know About

Reviewing component locators	You can specify a locator and display the components that belong in that location.
Reviewing additional component locators	To review other component locators, you must enter values in all fields in the header.

Defining locations	You can define locations with any combination of characters, but the number of locations must equal the quantity per assembly.

Processing Options

See Component Inquiry by Locator (P30155).

Working With Text

You can create text for a routing and bill of material and attach this text to the work order parts list and work order routing. Attached text is indicated by a highlight on the form.

You can locate the text on the following forms within the Shop Floor Control system:

- Work Order Parts List
- Routing Revisions
- Rate Based Hours Entry
- Rate Based Inventory Issues

When you locate the text on any of these forms, the text is unique to the parts list, routing, rate based schedule, or inventory. You can change the text and it will not impact the text originally entered on bill of material or routing. You can create separate text for the different batch bills of a parent item.

Working with text consists of the following:

- Entering text
- Revising text
- Copying text models
- Reviewing user information

See Also

- *Attaching Parts List (P3111)* in the *Shop Floor Control Guide*
- *Attaching the Routing (P3112)* in the *Shop Floor Control Guide*
- *Creating Rate Schedules (P3104)* in the *Shop Floor Control Guide*
- *Issuing Materials (P31113)* in the *Shop Floor Control Guide*

To enter text

On Enter / Change Bill

1. Choose the Text (7) option.

On BOM Component Master Text

2. Type the text and press Enter.

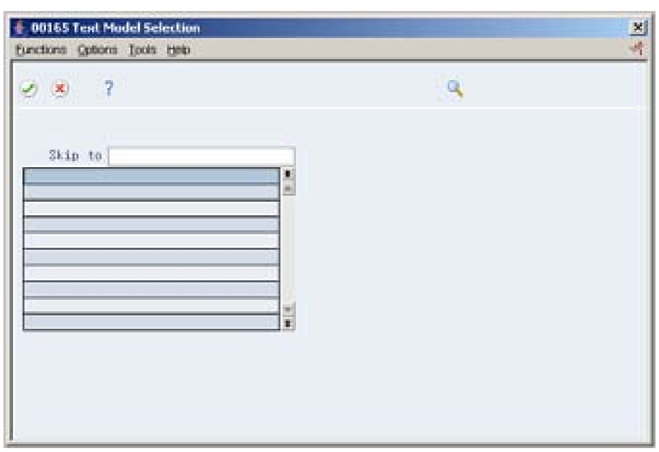
To revise the text

On BOM Component Master Text

1. Press F9 to delete a line.
2. Press F8 to insert a line.
3. Press Enter to save your revisions.

To copy text models

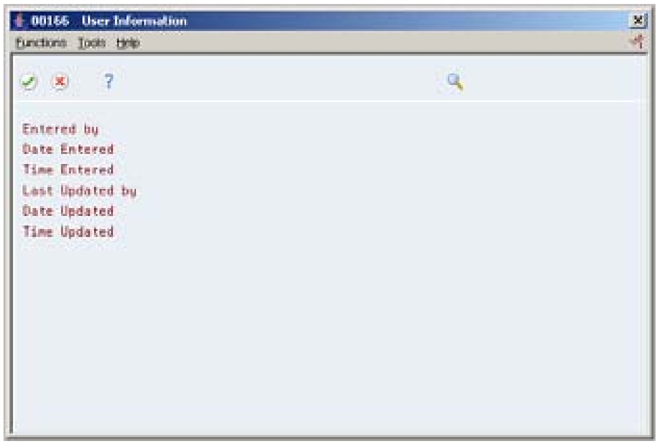
1. On BOM Component Master Text, choose the Select Model Memo function.



2. Select a model.

To review user information

On BOM Component Master Text, choose the Display User & Date of Entry & Update function.



Changing Multiple Bills of Material

	From Product Data Management (G30), enter 27 From Advanced Product Data Management (G3031), choose Where Used Update

You change multiple bills of material by running the Where Used Update program. This program also prints a report indicating the changes. You can use this program to perform mass updates such as:

- Replacing one component item with another
- Deleting an item
- Changing effectivity dates for an item
- Changing the quantity per assembly value for an item
- Changing the Issue Type Code
- Changing the unit of measure

First specify the items you want to change, and then define the change with processing options. The system locates all occurrences of the item (as a component) and updates the bills of material. You can also update a component which has past or future effectivity dates.

You can run this program in either proof or final mode. In proof mode, the system generates a report of the proposed changes for your review but doesn't update the data. In final mode, the system generates a report that identifies the changes and updates to the data.

Caution: You can potentially change many bills of material in your system if you run this program. JD Edwards World recommends that you run this program in proof mode first to verify your choices before running it in final mode to change the data. You might want to restrict access to this program.

Before You Begin

- Review your bills of material to verify that the item you are updating is active (within the effectivity dates) and appears in at least one bill of material. See *Reviewing Bills of Material (P30200).*

What You Should Know About

Changing and deleting	If you want to make changes to a bill of material and remove the old records, run the program twice. First, run the program to create the new records and then run it again to delete the old ones.
Change limitations	The system stores these changes in the Bill of Material table. The existing parts lists, MRP calculations, and Costing information are not automatically updated. The program updates the following fields: ▪ Low Level Code in the Item Master table ▪ Net Change Flag in the Item Balance table

Example: Where Used Update Report

This report indicates the following changes for item 212:

- The quantity per assembly changed from 2 to 10
- The issue type code changed from I to B, effective on 12/14/17

```
  30520                                          JD Edwards World                                        Page -        1
                                               Where Used BOM Update                                   Date - 12/14/17


                                                                                                       .     Effective.
Parent Item                    Parent Description    Component Item               Component Description  I   Qty. Per    From     Thru
------------------------- -------------------- ------------------------- --------------------- - ----------  -------- --------
333                       OAK SHELF UNIT        212                        OAK SHELF SIDES        I      2      09/13/17 12/31/20
                                    Updated to:                                                   B     10     12/14/17 12/31/20
```

Processing Options

See Where Used BOM Update (P30520).

Verifying Bills of Material

	From Product Data Management (G30), enter 27 From Advanced Product Data Management (G3031), choose Integrity Analysis

To check your bills of material for low-level codes and product structure errors (where a parent item is listed as a component of itself), use the Integrity Analysis program.

This program generates a report that identifies any bills of material you need to correct. If the report indicates errors, you should correct the bills of material and run the Integrity Analysis program again. When the program does not find errors in the bills of material, it updates the low level codes in both the Item Master and the Branch / Plant tables.

JD Edwards World recommends that you run the Integrity Analysis program immediately after a data conversion, such as system startup, and then on a periodic basis, such as two or four times a year. You should also run the Integrity Analysis program before running the Simulated Cost Rollup or DRP / MPS / MRP Generation programs.

Example: Integrity Analysis Report with Errors

This report indicates that the parent item's bill of material has an error; a component has not been defined on Item Master Information.

```
 30601                                     JD Edwards World                                     Page  -          2
                                       Bill of Material Analysis                                Date  -   12/13/17


Parent Item               Parent Description                Parent Branch
       Component Item            Component Description           Comp Branch   Seq         Error Message
----------------------- --------------------------------- --------------- ----- ----------------------------------------

           00007270 was not found in the Item Master file (F4101)

  .       Structure Analysis Completed with Errors - Correct Errors and Submit Again.
          ** CAUTION **   Low Level Codes have not been adjusted.  Report must be rerun!!
```

Example: Integrity Analysis Report without Errors

This report indicates that the parent item's bill of material is correct.

```
 30601                                        JD Edwards World                                 Page  -          2
                                          Bill of Material Analysis                            Date  -   12/13/17


Parent Item               Parent Description                Parent Branch
        Component Item            Component Description           Comp Branch   Seq         Error Message
----------------------- --------------------------------- --------------- ----- ----------------------------------------

    Product Structure Contains NO Errors.
    All Low Level Codes have been adjusted.
```

What You Should Know About

Verifying bills of material online	There is an alternate procedure to running Integrity Analysis. You can activate online validation and the system validates items as you enter them. In this procedure, the system does not allow you to enter recursive components. An error message is displayed, and you will not be able to enter a parent item as a component of itself.

Caution: When Integrity Analysis is selected from the menu, it submits a job. There are no data selections or processing options. Users should be excluded from F3002, F4101, and F4102 while the program runs.

See Also

- *Setting Up Manufacturing Constants (P3009)*

Copying Bills of Material

	From Product Data Management (G30), enter 27 From Advanced Product Data Management (G3031), choose Copy BOM by Branch/Plant

You can copy a bill of materials from one branch / plant to another. When you set up a new branch / plant, this saves you the time and effort of manually setting up new bills of materials from scratch.

The Copy Bill of Material by Branch / Plant program (P3002CPY) can be run in a Proof or Final mode. In both modes, the program creates exception and detail reports. The exception report edits items against the Item Branch File (F4102) and adds item records to the file if they do not already exist. It also shows the records to be added to the Bill of Materials Master file (F3002) for the "To" branch. The detail report lists the BOMs and items created during the process.

When you run the program in Final mode, it updates all of the necessary data in the Manufacturing database.

> **Note:** JD Edwards World strongly recommends that you first run the program in Proof mode to review the reports and verify what you are about to do.

To copy a bill of materials

On Copy BOM by Branch / Plant

1. Enter 1 in the Option field and press Enter to run the program.
2. Follow the processing option instructions to enter the following:
   - From Branch / Plant
   - To Branch / Plant
   - Proof or Final mode
   - Component Branch / Plant values
   - Bills of Materials for Batch Quantities
3. Press Enter to run the program.

What You Should Know About

Component branch/plant values	You can set a processing option value to compare the component branch / plant to the From branch / plant. If they are different, you can update the To branch / plant values.
Bills of materials for batch quantities	When you run the program, you have the option of either creating BOMs for all batch quantities or only those with a batch quantity of zero.

Review Bills of Material

Reviewing Bills of Material

You can review bills of material to:

- Plan and research engineering change orders (ECO)
- Simulate “what if” scenarios such as “If I change the component, what parent items are affected?”
- Evaluate capacity, manpower, and resources
- Evaluate equipment needs
- View the results of a pending product change
- Determine the effect of an item shortage
- View changes to bills of material

This section contains the following:

- Locating ECO Information
- Locating Bills of Material
- Comparing Bills of Material
- Reviewing the BOM Change Log
- Printing Bill of Material Information

What You Should Know About

Part usability	You can set processing options to review part usability. When you locate a component item quantity, the forms display subassemblies and manufactured items that use the component, as well as the producible quantity for each. You can also enter a component quantity to display the amount of parent items that can be produced using that component quantity. You can also use the part usability format to create a work order or view the item availability for the selected end item and quantity.
Viewing batch bills	When you have defined several batch bills for an item, the system displays them by batch size in a separate window. You must choose one to work with.
Quantity per mode	The system displays the components required for the parent item requirements, but does not extend the calculations to the component items.

Extended quantity mode	The system factors the relationship between the levels of components into the totals. It projects the component item requirements down to the lowest level.
Bill Comparison	When comparing bills of material, components are summarized by work center or item. This is done at a single level or multiple levels.

Locating ECO Information

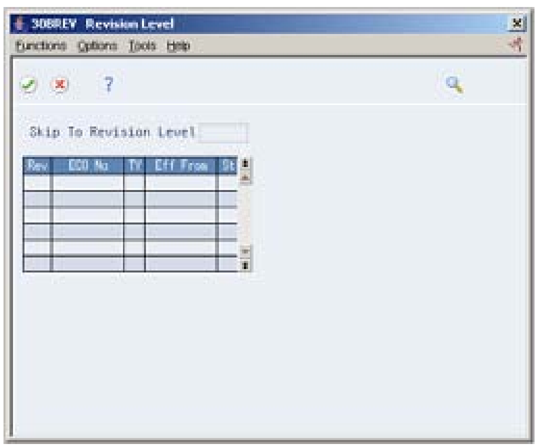
From Daily Product Data Management (G30), choose **Daily PDM Discrete**
From Daily PDM Discrete (G3011), choose **Enter/Change Bill**

Use the Revision Level window to locate bills of material by revision number.

To locate ECO information

On Enter / Change Bill of Material, tab into the Bill Revision Level field and press F1.

On Revision Level



The following fields display ECO information:

- Revision
- ECO Number
- Type
- Effective From
- Status

Locating Bills of Material

Locating bills of material consists of the following optional tasks:

- Locating a single level bill of material

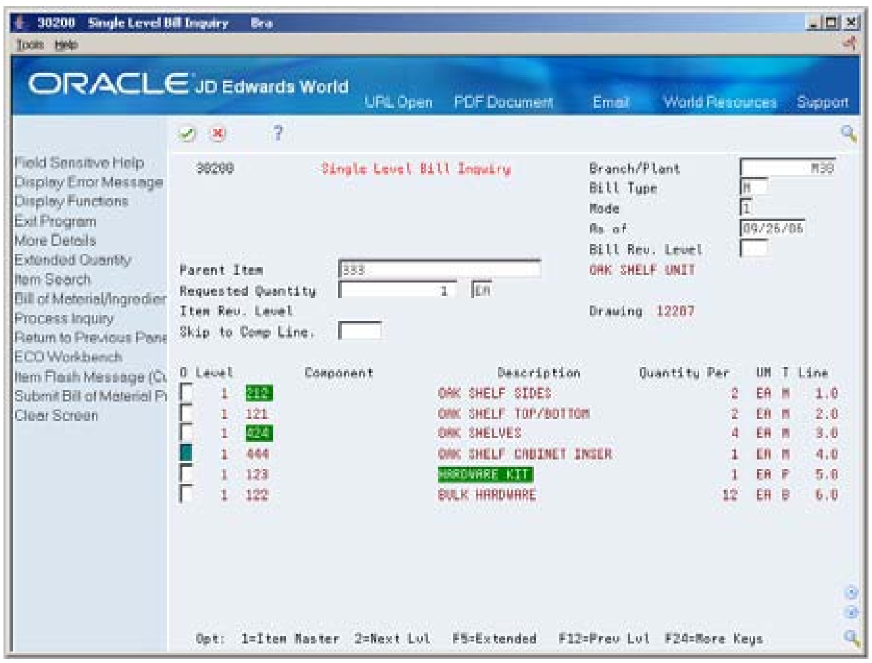
- Locating a multi-level bill of material
- Locating where a single level bill of material is used
- Locating where a multi-level bill of material is used

To locate a single level bill of material

	From Product Data Management (G30), choose **Daily PDM Discrete** From Daily PDM Discrete (G3011), choose **Single Level Bill Inquiry**

Note: This program supports Batch Export functionality. See Technical Foundation for more information.

On Single Level Bill Inquiry



Complete the following fields:

- Branch / Plant (required)
- Parent Item (required)
- Mode
- Requested Quantity
- As Of

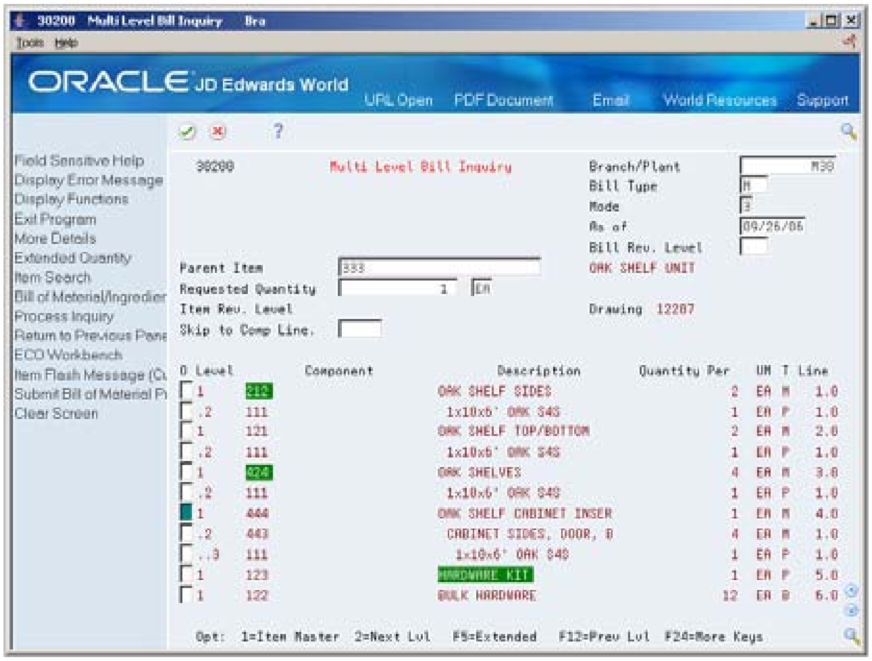
See Also

- *Work with PC Import/Export* in the *Technical Foundation guide.*

To locate a multi-level bill of material

	From Product Data Management (G30), choose **Daily PDM Discrete** From Daily PDM Discrete (G3011), choose **Multi Level Bill Inquiry**

On Multi-Level Bill Inquiry



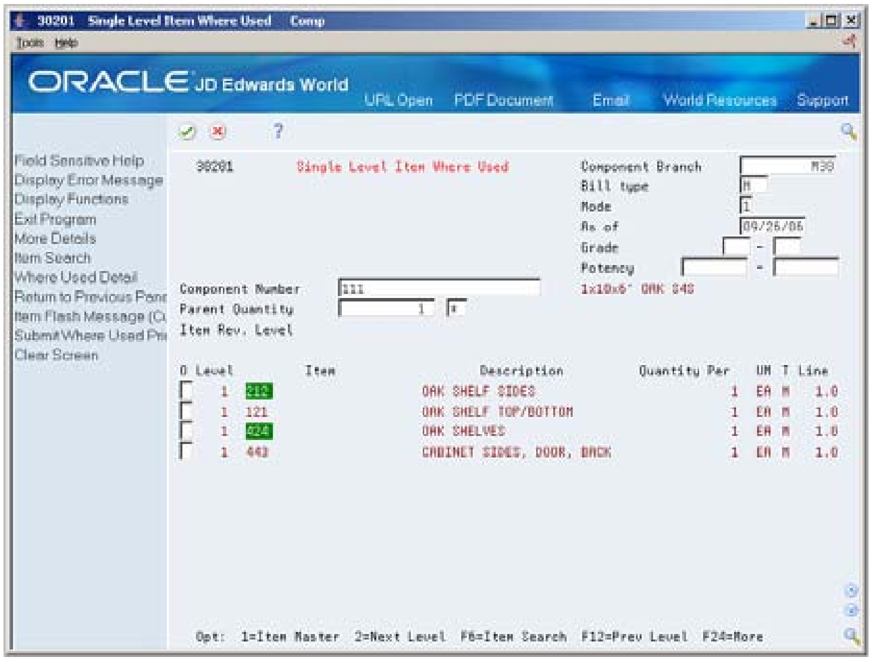
Complete the following fields:

- Branch / Plant (required)
- Parent Item (required)
- Mode
- Requested Quantity
- As Of

To locate where an item is used in a single level bill of material

	From Product Data Management (G30), choose **Daily PDM Discrete** From Daily PDM Discrete (G3011), choose **Single Item Where Used**

On Single Level Item Where Used



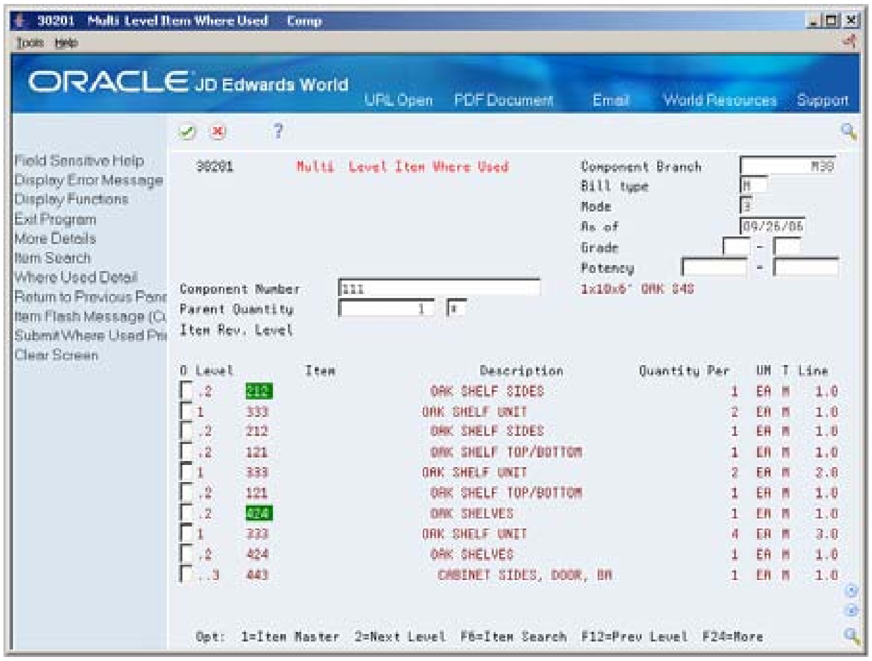
Complete the following fields:

- Component Branch (required)
- Component Number (required)
- Parent Quantity
- Mode
- Requested Quantity
- As Of
- Grade
- Potency

To locate where an item is used in a multi-level bill of material

	From Product Data Management (G30), choose **Daily PDM Discrete** From Daily PDM Discrete (G3011), choose **Multi Item Where Used**

On Multi Level Item Where Used



Complete the following fields:

- Component Branch (required)
- Component Number (required)
- Parent Quantity
- Mode
- Requested Quantity
- As Of
- Grade
- Potency

Field	Explanation
Mode	Indicates the display mode for the bill of material. 1 Single Level Bill of Material. Shows level one (direct) components only. 2 Multi-Level Bill of Material. Shows all levels of components, with proximity to the parent item indicated by level 1, 2, 3, and so forth. 3 Indented Bill of Material. The multi-level bill of material with each level indented for differentiation. You can also set this value in the processing options.

Field	Explanation
eParent Quantity	The number of parent items you want to process. The system calculates lower-level values in quantity per the number of parent items requested. For example, if 3 components are needed for a parent item, and the requested quantity is 10, the system plans for 30 components.
Item Number	A number that the system assigns to an item. It can be in short, long, or 3rd item number format.
Item Rev. Level	The revision level for an item. If you enter a revision level, verify that the revision level of the routing for an item matches the revision level on the bill of material for the item.

Processing Options

See Bill of Material Inquiry (P30200).

See Where Used Inquiry (P30201).

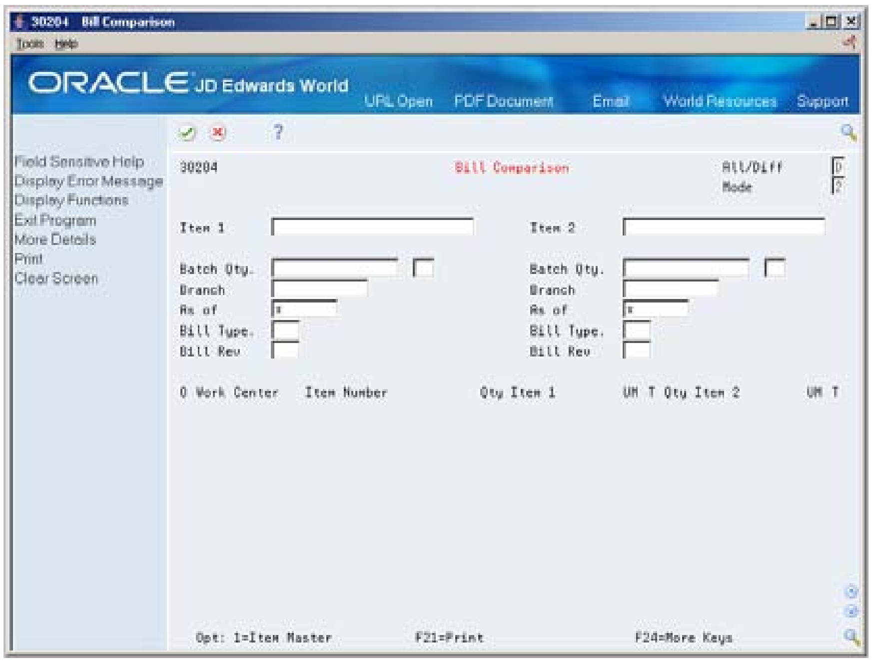
Comparing Bills of Material

	From Product Data Management (G30), choose **Daily PDM Discrete** From Daily PDM Discrete (G3011), choose **Bill Comparison**

Use Bill Comparison to compare two bills of material. The system displays all the components of both bills of material or only those components that are different between the two.

To compare bills of material

On Bill Comparison



Complete the following fields:

- All/Different
- Mode
- Item 1
- Item 2
- Branch
- Batch Qty
- Branch
- As Of
- Bill Type
- Bill Rev

Field	Explanation
All / Diff	Display All records or those that have Differences.
Mode	Indicates the display mode for the bill of material comparison. 1 Single Level Bill of Material comparison (direct components only). 2 Multi-Level Bill of Material comparison (All levels of components). You can also set this value in processing option.
Batch Qty	The quantity of finished units that you expect this bill of material or routing to produce. This field allows you to specify varying quantities of components based on the amount of finished goods produced. For example, 1 ounce of solvent is required per unit up to 100 units of finished product. However, if 200 units of finished product are produced, 2 ounces of solvent are required per finished unit. In this example you would set up batch quantities for 100 and 200 units of finished product specifying the proper amount of solvent per unit.
Branch	An alphanumeric field that identifies a separate entity within a business for which you want to track costs. For example, a business unit might be a warehouse location, job, project, work center, or branch / plant. You can assign a business unit to a voucher, invoice, fixed asset, and so on, for purposes of responsibility reporting. For example, the system provides reports of open accounts payable and accounts receivable by business units to track equipment by responsible department. Security for this field can prevent you from locating business units for which you have no authority. **Note:** The system uses this value for Journal Entries if you do not enter a value in the AAI table.
As of	This field is used for effectivity checking. Enter a specific date to display documents (orders, bills of material, routings, as applicable) that are effective on or after that date. The current system date is the default, but you can enter any future or past date.

Field	Explanation
Bill Type	A user defined code (system 40, type TB), that designates the type of bill of material. You can define different types of bills of material for different uses. For example: M (Default)Standard manufacturing bill RWK Rework bill SPR Spare parts bill The system enters bill type M in the work order header when you create a work order, unless you specify another bill type. The system reads the bill type code on the work order header to know which bill of material to use to create the work order parts list. MRP uses the bill type code to identify the bill of material to use when it attaches MRP messages. Batch bills of material must be type M for shop floor control, product costing, and MRP processing.
Batch Qty	The quantity of finished units that you expect this bill of material or routing to produce. This field allows you to specify varying quantities of components based on the amount of finished goods produced. For example, 1 ounce of solvent is required per unit up to 100 units of finished product. However, if 200 units of finished product are produced, 2 ounces of solvent are required per finished unit. In this example you would set up batch quantities for 100 and 200 units of finished product specifying the proper amount of solvent per unit.

Processing Options

See Bill of Material Comparison (P30204).

Reviewing the BOM Change Log

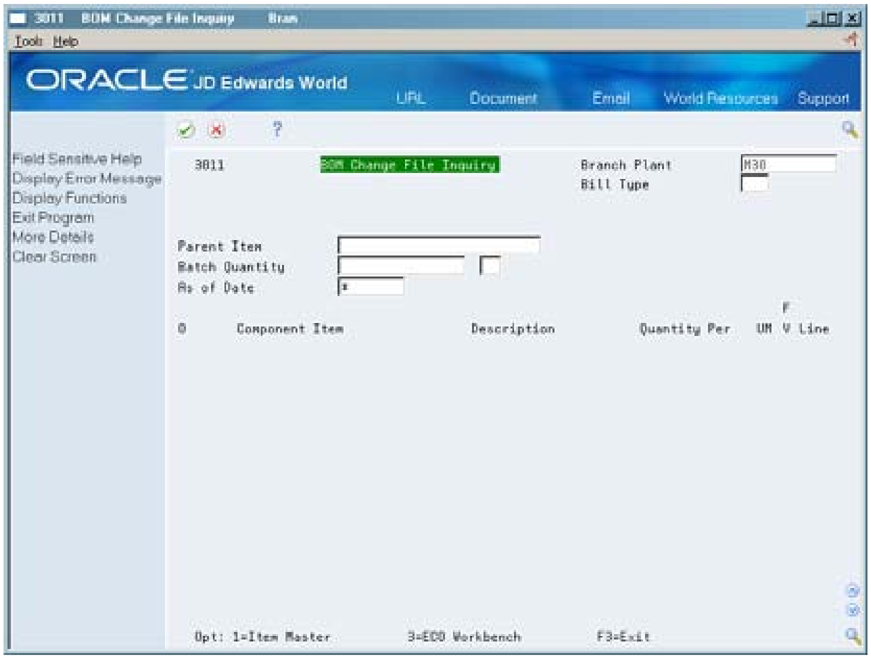
From Product Data Management (G30), choose **Daily PDM Discrete**
From Daily PDM Discrete (G3011), choose **BOM Change File Inquiry**

You can view the Bill of Material Change Log to review all changes made to the bill of material, such as additions, subtractions, or substitutions of parts.

Note: You can only view the Bill of Material Change Log if logging has been enabled in Manufacturing Constants.

To review the BOM change log

On BOM Change File Inquiry



Complete the following fields:

- Branch Plant
- Parent Item

Printing Bill of Material Information

There are several reports you can generate to review bill of material information. These reports include:

- Single Level Bill Report
- Multi-Level Bill Report
- Where Used Report
- Bill Comparison Report

Caution: JD Edwards World recommends that you do not change the first two data sequences from the settings in the DEMO version of these reports.

Single Level Bill Report

From Product Data Management (G30), choose **Periodic PDM Discrete**
From Periodic PDM Discrete (G3021), choose **Single Level Bill of Material Report**

Single Level Bill Report displays an item's first level components.

```
  30410                                                  JD Edwards World                          Page      -          2
                                                   Single Level Bill of Material                   Date      -    1/28/17
Parent Item               Parent Description           Batch Quantity       . . Effective . .         Oper    O  Ln
   Component Item            Component Description         Branch/Plant  Quantity Per   UM T   From      Thru    Level Seq No R F  Ty
------------------------- ------------------------------- ------------ -------------- -- - -------- -------- ----- ------ - -  --
DA333                     Deepak Oak Shelf  Unit                    DA                 EA Bill Type M   Bill Rev      Item Rev
   Drawing 12287              Drawing Rev
   212                       OAK SHELF SIDES                       M30                2  EA B 10/07/11 12/31/20     1  10.00 N S  S
   121                       OAK SHELF TOP/BOTTOM                  M30                2  EA M 10/07/11 12/31/20     1  25.00 N S  S
   424                       OAK SHELVES                           M30                1  EA M 01/09/17 12/31/20     1   1.00 N S  S
   444                       OAK SHELF CABINET INSERT ASS          M30                1  EA M 10/07/11 12/31/20     1  30.00 N S  S
   123                       HARDWARE KIT                          M30                1  EA P 10/07/11 12/31/20     1  40.00 N S  S
   122                       BULK HARDWARE                         M30               12  EA B 10/07/11 12/31/20     1  40.00 N S  S
   FP333                     OAK SHELF UNIT                         DA                 EA Bill Type M   Bill Rev      Item Rev
   Drawing 12287              Drawing Rev
   FP212                     OAK SHELF SIDES                        FP                2  EA M 10/07/11 12/31/20     1  10.00 N S  S
   121                       OAK SHELF TOP/BOTTOM                  M30                2  EA M 10/07/11 12/31/20     1  25.00 N S  S
   424                       OAK SHELVES                           M30                4  EA M 10/07/11 12/31/20     1  30.00 N S  S
   FP111                     1x10x6' OAK S4S                        FP               10  EA P 10/07/11 12/31/20     1  30.00 N S  S
   123                       HARDWARE KIT                          M30                1  EA P 10/07/11 12/31/20     1  40.00 N S  S
   122                       BULK HARDWARE                         M30               12  EA B 10/07/11 12/31/20     1  40.00 N S  S
```

Processing Options

See Single Level Bill of Material (P30410).

Multi-Level Bill Report

From Product Data Management (G30), choose **Periodic PDM Discrete**
From Periodic PDM Discrete (G3021), choose **Multi Level Bill of Material Report**

The Multi Level Bill Report lists all the levels of components.

```
 30415                                                  JD Edwards World                                        Page      -          1
                                                        Bill of Material                                        Date      -    1/28/17
                                                          Multi-Level
 Parent Item               Parent Description                     Batch Quantity       . . Effective . .        Oper    O Ln
   Component Item             Component Description         Branch/Plant  Quantity Per   UM T   From     Thru   Level Seq No R F Ty
 ------------------------- ------------------------------- ------------ --------------- -- - -------- -------- ----- ---- 4661D
                           4661d                                   ED                  BX Bill Type M    Bill Rev      Item Rev
   Drawing DRAWING ############ Drawing Rev
   4663D                      4663d                                ED                1  EA 0 12/26/16 12/31/20 1       1.00 N S S
   4667D                       4667d                               ED                1  EA M 12/26/16 12/31/20 .2      1.00 N S S
   4668D                       4668d                               ED                1  EA M 12/26/16 12/31/20 .2      1.00 N S S
   4662D                      4662d                                ED                1  EA M 12/26/16 12/31/20 1       2.00 N S S
   4664D                      4664d                                ED                1  EA M 01/07/07 12/31/20 1       1.00 N S S
   4663D                      4663d                                ED                   EA Bill Type M    Bill Rev      Item Rev
   Drawing                      Drawing Rev
   4667D                      4667d                                ED                1  EA M 12/26/16 12/31/20 1       1.00 N S S
   4668D                      4668d                                ED                1  EA M 12/26/16 12/31/20 1       1.00 N S S
   4665D                     4665d                                   ED                  EA Bill Type M    Bill Rev      Item Rev
   Drawing                      Drawing Rev
   4666D                      4666d                                ED                1  EA M 12/26/16 12/31/20 1       1.00 N S S
   4667D                      4667d                                ED                1  EA M 01/13/07 12/31/20 1       1.00 N S S
   4668D                      4668d                                ED                1  EA M 01/13/07 12/31/20 1       1.00 N S S
   ED1                        ed1                                  ED                   EA Bill Type M    Bill Rev ZZZ Item Rev ZZZ
   Drawing ABC-123              Drawing Rev
   ED2                        ed2                                  ED         99999999  EA P 01/16/07 12/31/20 1       1.00 N S S
   Lead        Offset         Comp Rev XXX Draw ZZZ-321         Rev     Item Rev XXX Grade     -      Potency          -
   ED3                         ed3                                 ED        888999991  EA P 01/09/07 12/31/20 .2      1.00 N S S
   Lead        Offset         Comp Rev 999 Draw                 Rev     Item Rev XXX Grade     -      Potency          -
   ED5                         ed5                                 ED                1  EA P 01/09/07 12/31/20 ..3     1.00 N S S
   Lead        Offset         Comp Rev     Draw XX              Rev     Item Rev 333 Grade     -      Potency          -
   ED9                          ed9                                ED                1  EA P 12/30/16 12/31/20 ...4    1.00 N S S
   Lead        Offset         Comp Rev AA  Draw                 Rev     Item Rev AA  Grade     -      Potency          -
   ED4                           ed4                               ED            77777  EA P 01/16/07 12/31/20 ....5   1.00 N S S
   Lead        Offset         Comp Rev     Draw 12345678-AAAAAAAAA Rev     Item Rev PPP Grade     -      Potency          -
```

Processing Options

See Multi-Level Bill of Material (P30415).

Where Used Report

From Product Data Management (G30), choose **Periodic PDM Discrete**
From Periodic PDM Discrete (G3021), choose **Material Where Used Report**

The Where Used Item report lists the parent assemblies that contain a specific component.

```
 30420                                                JD Edwards World                                  Page      -        2
                                                          Material                                      Date      - 05/25/17
                                                         Where Used


Component Item             Component Description                        Drawing Number      . . Effective . .         Oper    O Ln
   Parent Item                Parent Description             Plant       Quantity Per  UM T   From     Thru    Level Seq No R F Ty
-------------------------- ------------------------------- ----------- --------------- -- - -------- -------- ----- ------ - - --
   5120                       Oak Desk With Chair                M30                1  EA M 10/07/11 12/31/20 1      10.00 N S S

4133                       SIDE ASSY, 30x30 OAK DESK             M30
   5120                       Oak Desk With Chair                M30                4  EA M 10/07/11 12/31/20 1      20.00 N S S

2417                       LEG CAP, 1.5x1.5x1.5, BRASS           M30
   3390                         LEG OAK, 1.5x1.5x30              M30                1  EA M 06/30/13 12/31/20 ..3    20.00 N S S
   4133                        SIDE ASSY, 30x30 OAK DESK         M30                2  EA M 10/07/11 12/31/20 .2     10.00 N S S
   5120                       Oak Desk With Chair                M30                4  EA M 10/07/11 12/31/20 1      20.00 N S S

3390                       LEG OAK, 1.5x1.5x30                   M30
   4133                        SIDE ASSY, 30x30 OAK DESK         M30                2  EA M 10/07/11 12/31/20 .2     10.00 N S S
   5120                       Oak Desk With Chair                M30                4  EA M 10/07/11 12/31/20 1      20.00 N S S

2611                       OAK BOARD, 2x2x10                     M30
   3390                         LEG OAK, 1.5x1.5x30              M30                1  EA M 10/07/11 12/31/20 ..3    10.00 N S S
   4133                        SIDE ASSY, 30x30 OAK DESK         M30                2  EA M 10/07/11 12/31/20 .2     10.00 N S S
   5120                       Oak Desk With Chair                M30                4  EA M 10/07/11 12/31/20 1      20.00 N S S

3386                       SIDE PANEL, OAK, 28.5x28.5            M30
   4133                        SIDE ASSY, 30x30 OAK DESK         M30                1  EA M 10/07/11 12/31/20 .2     10.00 N S S
   5120                       Oak Desk With Chair                M30                4  EA M 10/07/11 12/31/20 1      20.00 N S S

1899                       OAK PLYWOOD 60x60x.75 ACA             M30
   3386                         SIDE PANEL, OAK, 28.5x28.5       M30                1  EA M 10/07/11 12/31/20 ..3    10.00 N S S
   4133                        SIDE ASSY, 30x30 OAK DESK         M30                1  EA M 10/07/11 12/31/20 .2     10.00 N S S
   5120                       Oak Desk With Chair                M30                4  EA M 10/07/11 12/31/20 1      20.00 N S S
```

Processing Options

See Material Where Used List (P30420).

Bill Comparison Report

From Product Data Management (G30), choose **Periodic PDM Discrete** From Periodic PDM Discrete (G3021), choose **Bill of Comparison Report**

Use the Bill Comparison Report to compare two bills of material. The report prints all the components of both bills of material or only those components that are different between the two.

```
                              The Following Report Distributions were Entered:
                                ** None Selected **
 30425                                                 JD Edwards World                              Page No. . . . .    3
                                                  Bill Of Material Comparison                        Date . . . .  1/28/17
 Item 1 . . . . . 5120                                 Item 2 . . . . . 333                             All/Diff. D
 Oak Desk With Chair                                   OAK SHELF UNIT                                   Mode. . . 1
 Batch Quantity .               GA                     Batch Quantity .             EA
 Branch/Plant . .          M30                         Branch/Plant . .          M30
 As of. . . . . . 01/28/17                             As of. . . . . . 01/28/17
 Bill Type  . . . M                                    Bill Type. . . . M
                                                                         Item 1                Item 2
 Work Center  Item Number                Description                    Quantity Per     UM T Quantity Per     UM T
 ------------ -------------------------- ------------------------------ ---------------- -- - ---------------- -- -
              4277                       FRAMING KIT, 30x60 DESK                       1  EA P
              4133                       SIDE ASSY, 30x30 OAK DESK                     4  EA M
              3999                       BACK, OAK, 30x60, DESK                        1  EA M
              3881                       DRAWER SLIDES & HARDWARE, 30in                7  EA P
              3980                       CENTER DRAWER FOR 30x60 DESK                  1  EA M
              3981                       SIDE DRAWER, 30x60 DESK                       4  EA M
              3982                       FILE DRAWER, DESK, OAK                        2  EA M
              4218                       OAK DESK TOP 30 x 60                          1  EA M
              2111                       SEMI GLOSS HI TEST VARNISH 240                2  GA P
              5666                       CHAIR, 5 LEG, W/TILT                          1  EA P
              212                        OAK SHELF SIDES                                                      2  EA B
              121                        OAK SHELF TOP/BOTTOM                                                 2  EA M
              424                        OAK SHELVES                                                          1  EA M
              444                        OAK SHELF CABINET INSERT ASSY                                        1  EA M
              123                        HARDWARE KIT                                                         1  EA P
              122                        BULK HARDWARE                                                       12  EA B
```

Processing Options

See Bill of Material Comparison Print (P30425).

Work with Work Centers

Working with Work Centers

Work centers consist of people and machines. They are the specific production facilities on the shop floor where the routing operations occur. For each work center, you can define the following:

- Work center number, description, and link to business unit
- Queue and move times
- Operator, machine, and hours per day capacity
- Set up, labor, machine, and overhead rates

In discrete manufacturing, examples of work centers include:

- Lathe
- Drill
- Heat treat
- Mill
- Cut-off

This section contains the following:

- Entering Work Centers
- Entering Costing and Accounting Information
- Reviewing Operations by Work Center

The system stores work center information in the Work Center Master table.

Before You Begin

- Define all work centers as business units. See *Defining Business Units (P0006A).*

Entering Work Centers

From Daily Product Data Management (G30), choose **Daily PDM Discrete** From Daily PDM Discrete (G3011), choose **Enter/Change Work Center**

Enter work center information that corresponds to the facilities on your shop floor.

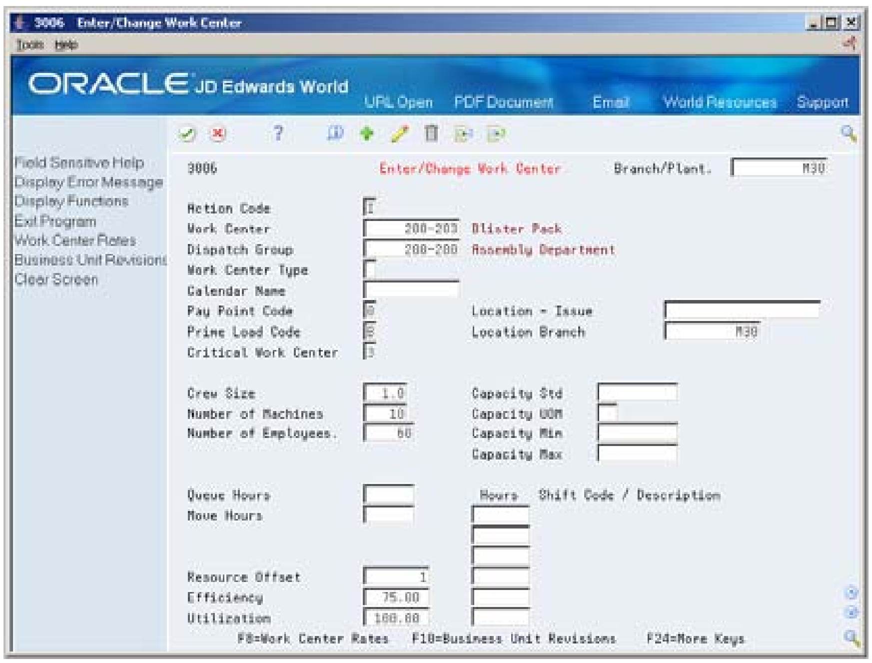
Complete the following tasks:

- Enter a work center
- Enter work center hours

Note: This program supports Batch Export functionality. See Technical Foundation for more information.

To enter a work center

On Enter/Change Work Center



1. To identify the work center, complete the following fields and click Add:
   - Work Center (required)
   - Dispatch Group
2. To enter repetitive manufacturing information, complete the following fields:
   - Work Center Type
   - Calendar Name
   - Capacity Standard
   - Capacity UOM

- Capacity Minimum
- Capacity Maximum
- Hours
- Shift Code / Description

3. Complete the following fields:
   - Pay Point Code
   - Prime Load Code
   - Critical Work Center
   - Crew Size
   - Number of Machines
   - Number of Employees
   - Resource Offset
   - Efficiency
   - Utilization
   - Location
   - Branch

Note: To commit components to a work center, the Pay Point Code must be M (Backflush material only) or B (Backflush material and labor).

Field	Explanation
Work Center	An alphanumeric field that identifies a separate entity within a business for which you want to track costs. For example, a business unit might be a warehouse location, job, project, work center, or branch / plant. You can assign a business unit to a voucher, invoice, fixed asset, and so on, for purposes of responsibility reporting. For example, the system provides reports of open accounts payable and accounts receivable by business units to track equipment by responsible department. Security for this field can prevent you from locating business units for which you have no authority.
Dispatch Group	A super category code to group work centers within an overall business unit. For example, you can group like machines operating out of several work centers that report to one business unit under a dispatch group.

Field	Explanation
Work Center Type	Defines the type of work center. Possible values are: Blank Stand alone work center 1 Production line in a repetitive environment 2 Reporting work station within a production line *Form-specific information* For repetitive manufacturing, the system verifies the value is not valid as a work center for an operation from the routing.
Calendar Name	Enter the value of the calendar which corresponds to the calendar type. For example, if the calendar type is ROUTE, enter a valid route code to display the calendar for a particular route.
Capacity Std	The standard capacity level at which a production line usually operates.
Capacity Min	The lower limit capacity beyond which the production line should not operate. This value is decided by management based on efficiencies, costs, etc.
Capacity Max	The upper limit capacity beyond which a production line can not produce.
Hours	The number of work hours that the manufacturing plant operates per day. *Form-specific information* For repetitive manufacturing, identify the number of work hours per shift for the specified work center. Use the six corresponding shift fields to identify all production line shifts for the specified work center.
Shift Code / Description	A user defined code (07/SH) that identifies daily work shifts. In payroll systems, you can use a shift code to add a percent or amount to the hourly rate on a timecard. For payroll and time entry: If an employee always works a shift for which a shift rate differential is applicable, enter that shift code on the employee's master record. When you enter the shift on the employee's master record, you do not need to enter the code on the timecard when you enter time. If an employee occasionally works a different shift, you enter the shift code on each applicable timecard to override the default.

Field	Explanation
Pay Point Code	A code that indicates if a work center will have labor, material, or both, backflushed through it when quantities are reported against operations occurring in the work center. The default value for this code is the routing sequence record unless overridden when the routing is defined. Valid codes are: 0 Not a backflush work center B Backflush material and labor M Backflush material only L Backflush labor only P Preflush material only If you leave this field blank, the system uses the value in the Enter / Change Routing table.
Prime Load Code	This value determines if a work center is machine or labor intensive. These codes are also used in Resource Requirements Planning and Capacity Requirements Planning calculations to develop load profiles. Valid codes are: L Run labor hours only M Machine hours only B Run labor plus setup labor hours C Machine plus setup hours O Other (will not generate resource units)
Critical Work Center	A code that identifies the work center as critical or not critical when the system calculates capacity. Valid values are: N Not a critical work center 1 A critical work center in calculating resource requirement planning only 2 A critical work center in calculating capacity requirements planning only 3 A critical work center in calculating resource requirements planning and capacity requirements planning 4 Not a capacity work center (will not be generated in capacity planning) **Note:** The system displays Type 3 work centers whenever type 1 or type 2 is selected in this field.

Field	Explanation
Crew Size	The number of people who work in the specified work center or routing operation. The system multiplies the Run Labor value in the Routing Master table (F3003) by crew size during costing to generate total labor dollars. If the Prime Load Code is L or B, the system uses the total labor hours for backscheduling. If the Prime Load Code is C or M, the system uses the total machine hours for backscheduling without modification by crew size. *Form-specific information* For Shop Floor Control: If you leave the Hours field on the Routing Revisions form blank, the system uses the value entered in this field for lead time and scheduling calculations.
Number of Machines	This represents the normal number of machines in this work center. When you run the Work Center Resource Units Refresh program, this number is multiplied by the number of work hours per day from the Manufacturing Constants table (F3009) to generate the total gross machine hours available in the work center each day.
Number of Employees	This represents the normal number of employees in this work center. When you run the Work Center Resource Units Refresh program, the system multiplies this number by the Number of Work Hours Per Day from the Manufacturing Constants table (F3009) to generate the total gross labor hours available in the work center each day.
Resource Offset	A value used in the Resource Profile table (F3303) to determine the number of days that the actual use of a work center resource should be offset from the forecasted need date.
Location - Issue	A code that identifies inventory locations in a branch / plant. You define the format of the location identifier by branch / plant. *Form-specific information* This location and the backflush options in Manufacturing Constants (P3009) control the location from which a component is backflushed.
Location Branch	This is the branch plant of the location associated with the work center.

To enter work center hours

On Enter / Change Work Center

Complete the following fields:

- Queue Hours
- Move Hours
- Replenishment Hours

Field	Explanation
Queue Hours	The total time (in hours) that an order is expected to be in queue at work centers and moving between work centers. The system stores this value in the Item Branch table (F4102). You can calculate this value using the Lead time Rollup program or you can enter it manually. When you run the Lead time Rollup program, the system overrides manual entries with calculated values. *Form-specific information* If the Routing Master values are blank, the default value comes from the work order routing. However, the system uses these values only for back scheduling variable lead time items.
Move Hours	The planned time in hours that is required to move the order from this operation to the next operation in the same work center. If the Routing Master values are blank, the default value comes from the work order routing. However, the system uses these values only for backscheduling variable lead time items. *Form-specific information* If you leave the Hours field on the Routing Revisions form blank, the system uses the value entered in this field for lead time and scheduling calculations.
Replenishment Hours - Standard	The time required before a consuming work center will have a replacement container of goods available from this supplying work center. This value is used only for KANBAN card processing in Shop Floor Control.

See Also

- *Work with PC Import/Export* in the *Technical Foundation guide.*

Entering Costing and Accounting Information

	From Daily Product Data Management (G30), choose **Daily PDM Discrete** From Daily PDM Discrete (G3011), choose **Enter/Change Work Center**

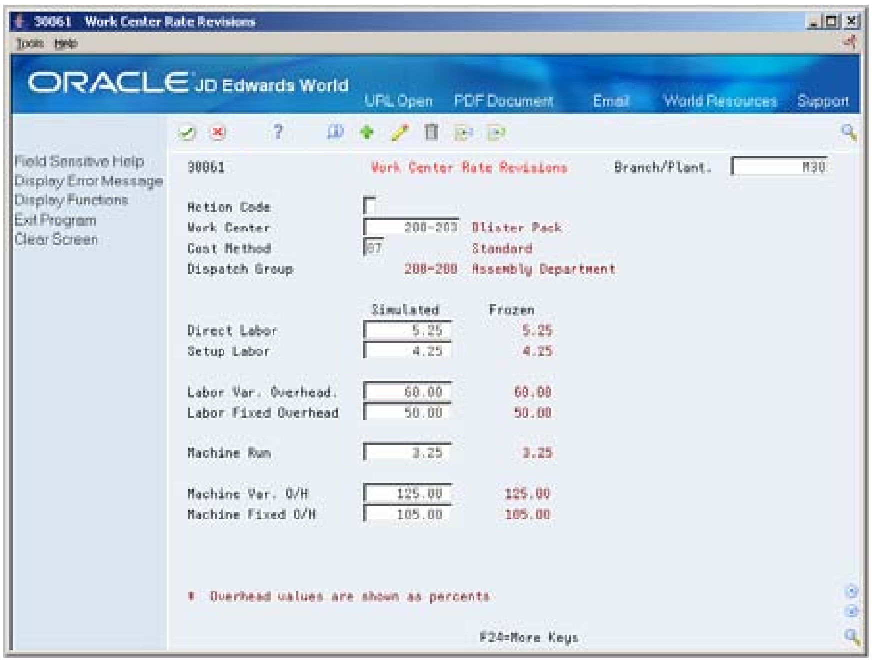
After you enter a work center, you can enter simulated rates for machine and labor hours. The Product Costing and Manufacturing Accounting systems use these values to generate reports, rollups, and journal entries. The Cost Rollup program uses all of these values to calculate the simulated cost.

You can update the simulated rates, but not the frozen values. The system updates frozen values when you run Frozen Update.

To enter costing and accounting information

On Enter / Change Work Center

1. Choose the Work Center Rates function.



2. On Enter / Change Work Center Rate, complete the following fields:

- Cost Method
- Direct Labor (Simulated)
- Setup Labor (Simulated)
- Labor Variable Overhead (Simulated)
- Labor Fixed Overhead (Simulated)
- Machine Run (Simulated)
- Machine Variable Overhead (Simulated)

- Machine Fixed Overhead (Simulated)

Field	Explanation
Cost Method	A user defined code (system 40, type CM) that identifies a cost method. Cost methods 01 through 08 are hard-coded. *Form-specific information* This code was entered on Branch / Plant Constants.
Direct Labor Simulated	This rate, in cost per hour, is the rate used to calculate the current labor cost as of the last simulation and update.
Setup Labor Simulated	This rate, in cost per hour, is the rate used to calculate the current setup labor cost as of the last simulation and update.
Labor Var. Overhead Simulated	This rate, in cost per hour or percent of labor, is the rate used to calculate the current variable labor overhead cost as of the last simulation and update.
Labor Fixed Overhead Simulated	This rate, in cost per hour or percent of labor, is the rate used to calculate the current fixed labor overhead cost as of the last simulation and update.
Machine Run Simulated	This rate, in cost per hour, is the rate used to calculate the current machine cost as of the last simulation and update.
Machine Var. O / H Simulated	This rate, in cost per hour or percent of labor, is the rate used to calculate the current variable machine overhead cost as of the last simulation and update.
Machine Fixed O / H Simulated	This rate, in cost per hour or percent of labor, is the rate used to calculate the current fixed machine overhead cost as of the last simulation and update.

See Also

- *Creating Rate Schedules (P3104)* in the *Shop Floor Control Guide*
- *Updating Frozen Costs (P30835)* in the *Product Costing and Manufacturing Accounting Guide*

Reviewing Operations by Work Center

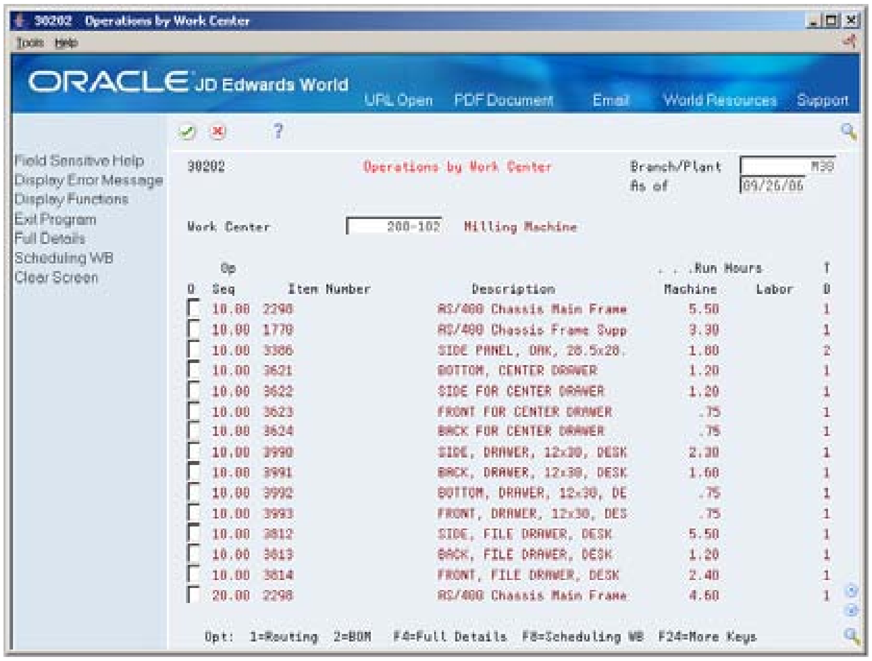
From Daily Product Data Management (G30), choose Daily PDM Discrete
From Daily PDM Discrete (G3011), choose Operations by Work Center

You can review operations by work center to:

- Plan capacity, resource and manpower
- Evaluate equipment needs
- Display which items include routing operations at the work center

To review operations by work center

On Operations by Work Center



Complete the following required fields:

- Work Center
- Branch / Plant

Work center hour information displays in the following fields:

- Machine Hours
- Labor Hours

Field	Explanation
Run Hours Machine	This is the standard machine hours expected to be incurred in the normal production of this item.
Run Hours Labor	This is the standard hours of labor expected in the normal production of this item. The run labor hours in the Routing Master table (F3003) are the total hours it takes the specified crew size to complete the operation. The hours are multiplied by the crew size during shop floor release and product costing.

Work with Routings

Working with Routings

After you define the item's components in the bill of material and identify where each operation occurs on the factory floor (that is, the work center), you must define the sequence of operations necessary to manufacture the item (routing).

For example, the routing for item 5120, an oak desk and chair, is:

1. Assemble the frame
2. Assemble the sides and back to frame
3. Attach the drawer slide kits
4. Attach the top
5. Finish
6. Package with the chair

For each item, you define routings that describe:

- Production process
- Operations
- Sequence
- Applicable work centers
- Standards for setup and run times

This section contains the following:

- Entering Routings
- Entering Outside Operations
- Working With Text
- Updating Component Scrap
- Reviewing Routing Information
- Printing Routing Information

Routing information is stored in the Routing table (F3003).

Before You Begin

- If you are using batch routings, define your routing types and set the processing options for Work Order Entry and Enter/Change Routing to activate routing batch and type functions.

Entering Routings

	From Daily Product Data Management (G30), choose **Daily PDM Discrete** From Daily PDM Discrete (G3011), choose **Enter/Change Routing**

After you enter a bill of material, you must define the routing information for each item and for each branch/plant.

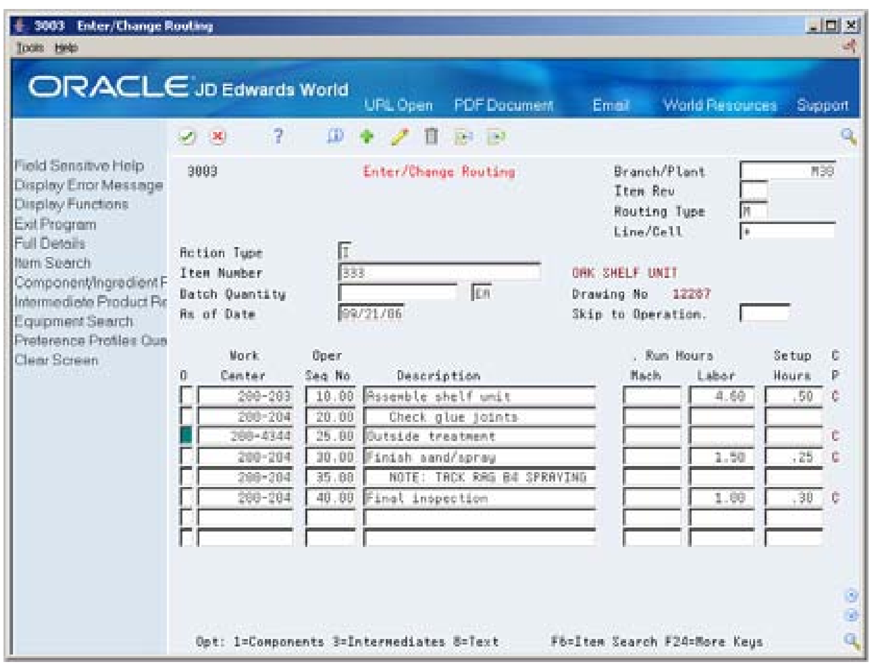
Entering a routing consists of the following tasks:

- Enter a parent item routing
- Enter engineering information
- Enter batch routing information (optional)
- Enter routing hours

> **Note:** This program supports Import/Export functionality. See Technical Foundation for more information.

To enter a parent item routing

On Enter/Change Routing



1. Complete the following fields:
   - Branch/Plant
   - Item Number
   - Routing Type
   - Item Revision

- Line / Cell
- Batch Quantity
- Batch Quantity Unit of Measure

Field	Explanation
Routing Type	User defined code (system 40, type TR) that designates the type of routing. You can define different types of routing instructions for different uses. For example: M Standard Manufacturing Routing RWK Rework Routing RSH Rush Routing You define the routing type on the work order header. The specific type of routing defined will then be used in the work order routing. Product Costing and Capacity Planning systems use only M type routings.
Item Rev	Indicates the revision level of a routing. It is usually used in conjunction with an engineering change notice or order (ECN or ECO). The revision level of the routing should match the revision level of its associated bill of material (data item BREV), although the system does not check this. This value is user defined and not maintained by the system.
Line / Cell	Defines a production line or cell. Detailed work center operations can be defined inside the line or cell. For rate based manufacturing to use this value for reporting, this value must match the line cell in the header.

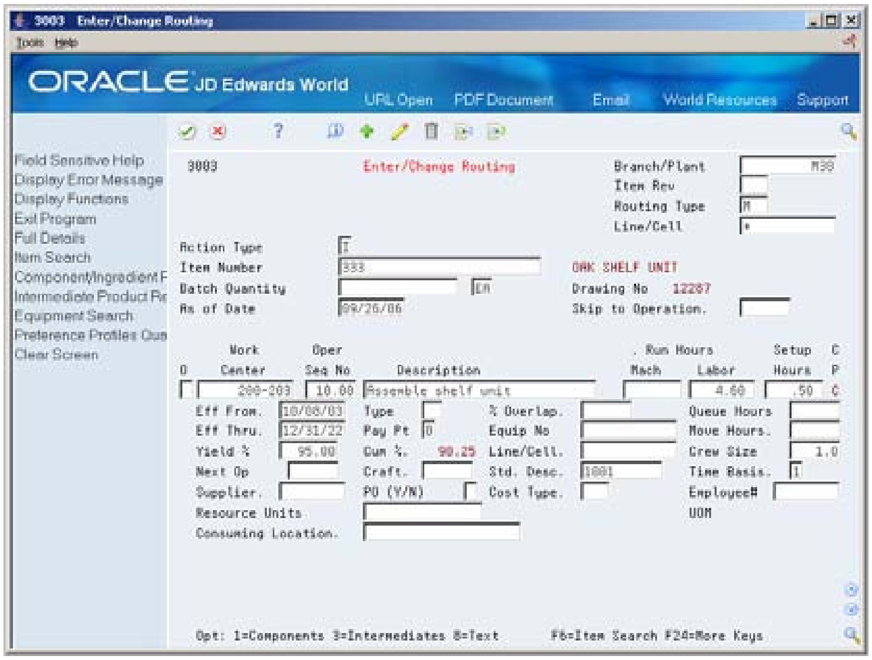
What You Should Know About

Deleting a routing	When you delete a routing, the system prompts you to confirm the deletion.

To enter engineering information

On Enter / Change Routing

1. To define a routing step, complete the following fields:
   - Work Center
   - Operation Sequence Number
   - Description



2. Access the detail area.

3. To enter repetitive manufacturing information, complete the following fields:

   - Line / Cell
   - Resource Units Consumed
   - Replenishment Location
   - UOM

4. Complete the following fields:

   - Effective From
   - Effective Thru
   - Next Operation
   - Yield Percent
   - Type Operation
   - Pay Point
   - Craft
   - Percent of Overlap
   - Equipment Number
   - Standard Description
   - Crew Size
   - Time Basis

Field	Explanation
Oper Seq No	In routings, this number is used to sequence the fabrication or assembly steps in the manufacture of an item. You can track costs and charge time by operation. In bills of material, this number designates the routing step in the fabrication or assembly process that requires a specified component part. You define the operation sequence after you create the routing for the item. The Shop Floor Control system uses this field in the backflush / preflush by operation process. In engineering change orders, this number is used to sequence the assembly steps for the engineering change. Skip To fields allow you to enter an operation sequence that you want to begin the display of information. You can use decimals to add steps between existing steps. For example, use 12.5 to add a step between steps 12 and 13.
Yield %	Represents the planned output yield percent for a step. The Planned Yield Update program uses this value to update the Cumulative Percent in the bill of material and the Operation Scrap Percent in the routing. Materials Requirements Planning uses the step scrap percent and the existing component scrap percent to plan component demand.
Typ Op	A user defined code (system 30, type OT) that indicates the type of operation. For example: A Alternate routing TT Travel time IT Idle time T Text (Enter text at Description) *Form-specific information* For Product Costing: Only operations with a “blank” type operation code are costed.
Craft. BB	A user defined code (07 / G) that defines the jobs within your organization. You can associate pay and benefit information with a job type and apply that information to the employees who are linked to that job type.

Field	Explanation
% Overlap	The overlapping of successive operations. The actual overlap percentage entered for the operation sequence is the percent by which that operation overlaps the prior operation. For example, if you enter 80%, this indicates that work can begin on the overlapped operation when 20% of the prior operation is completed. **Note:** 1. Overlapping has no effect on move and queue calculations. 2. The percent entered must be less than or equal to 100%. Enter percents as whole numbers: 5% as 5.00
Time Basis	A user defined code (system 30, type TB) that identifies the time basis or rate for machine or labor hours entered for any routing step. You can set rates per unit, per 10, per 1000, and so on. The system uses the values in the Description-2 field on the User Defined Codes form for costing and scheduling calculations. The description is what the code represents, but is not used in calculations.
Resource Units Consumed	Indicates how many of the line's resource units are needed to produce one item.
Replenishment Location	A code that identifies inventory locations in a branch / plant. You define the format of the location identifier by branch / plant.
UOM	Production unit of measure used to express the capacity of a production line. For example Stamps, injections, etc.

To enter batch routing information

On Enter / Change Routing

1. Complete the task to enter a routing.
2. Complete the following fields:
   - Batch Quantity
   - Batch Unit of Measure

Field	Explanation
Batch Quantity	The quantity of finished units that you expect this bill of material or routing to produce. This field allows you to specify varying quantities of components based on the amount of finished goods produced. For example, 1 ounce of solvent is required per unit up to 100 units of finished product. However, if 200 units of finished product is produced, 2 ounces of solvent are required per finished unit. In this example, you would set up batch quantities for 100 and 200 units of finished product specifying the proper amount of solvent per unit.

To enter routing hours

On Enter/Change Routing

1. Complete the following fields:
   - Run Hours Machine
   - Run Hours Labor
   - Setup Hours
2. Access the detail area.
3. Complete the following fields:
   - Queue Hours
   - Move Hours

After you enter a parent item routing, you can enter outside operations.

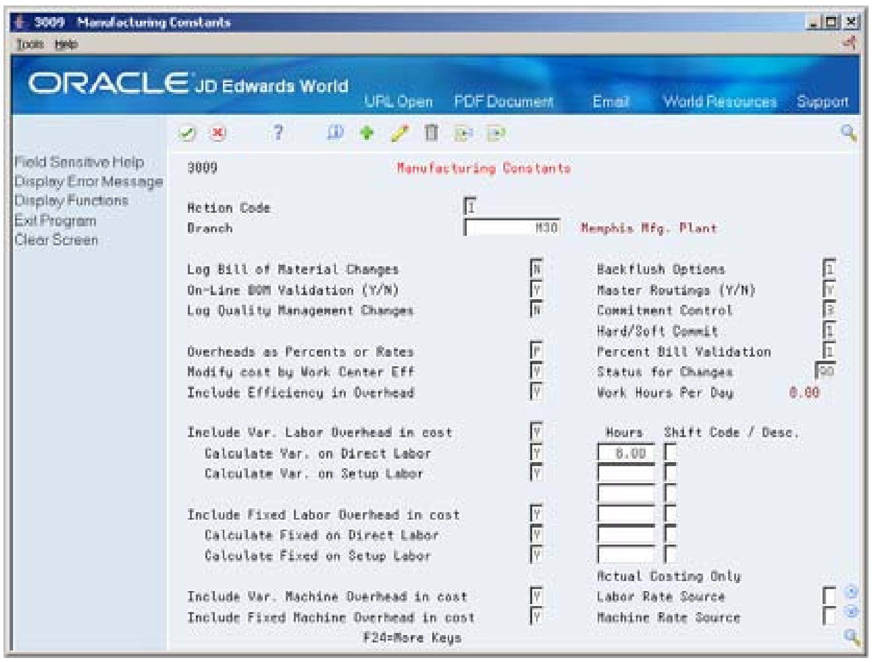
Field	Explanation
Setup Labor	This is the standard hours of labor expected in the normal production of this item. The run labor hours in the Routing Master table (F3003) are the total hours it takes the specified crew size to complete the operation. The hours are multiplied by the crew size during shop floor release and product costing. *Form-specific information* For Equipment/Plant: This is the estimated number of hours needed to complete a maintenance activity.

To enter a master routing

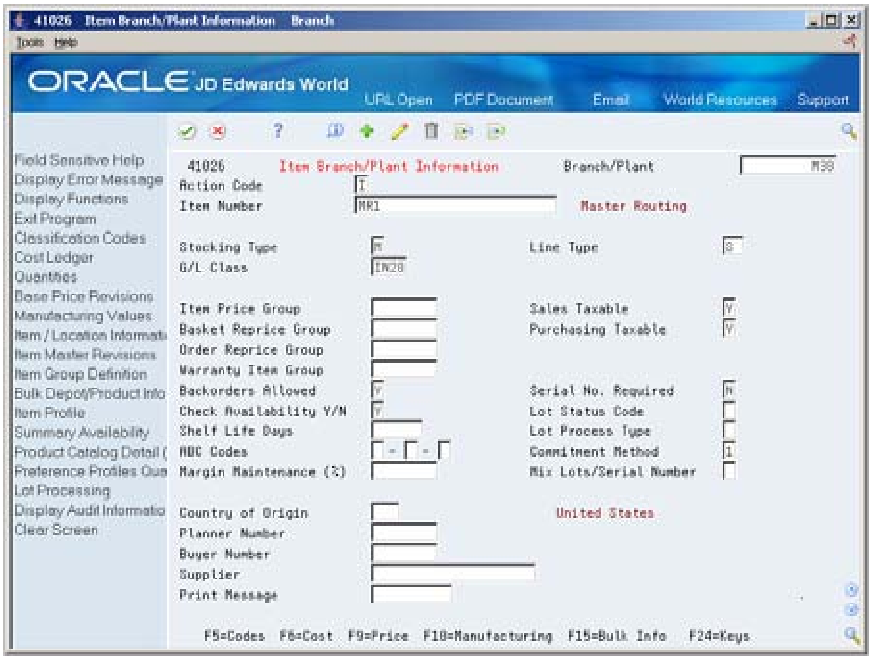
The purpose of a master routing is to reduce repetitive maintenance in situations where many manufactured items use the same routing.

A master routing is set up the same as a part in Item Branch / Plant Information. The routing is assigned an item number prefixed by MR to indicate that it is a master routing and not a true part number. You then assign a routing as in the Entering Routings section. The last step is to associate the master routing with a parent item in Item X-Reference Revisions.

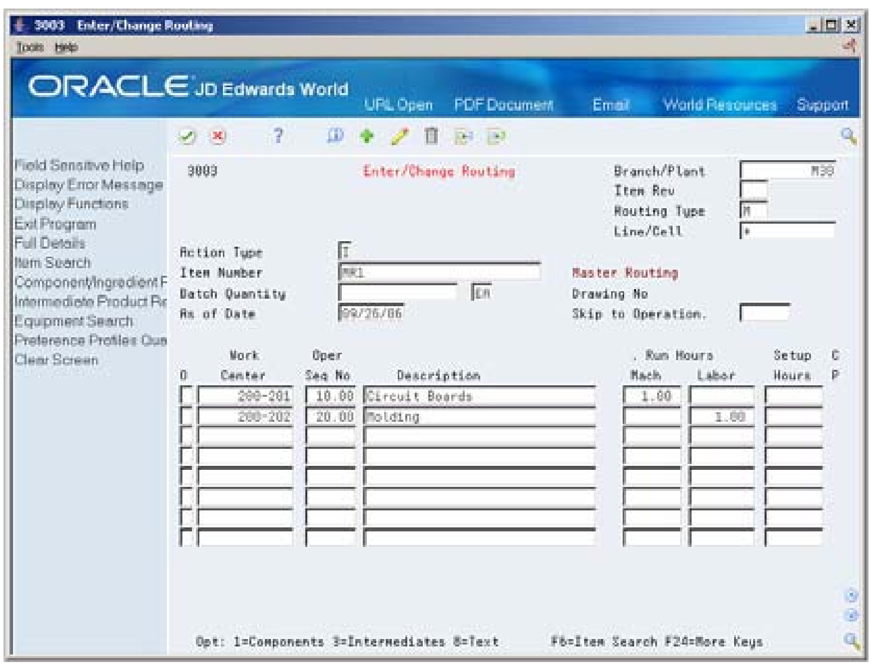
1. Enter a "Y" in the Master Routing field in Manufacturing Constants (3009). This instructs the system to check the Item Cross-Reference table.



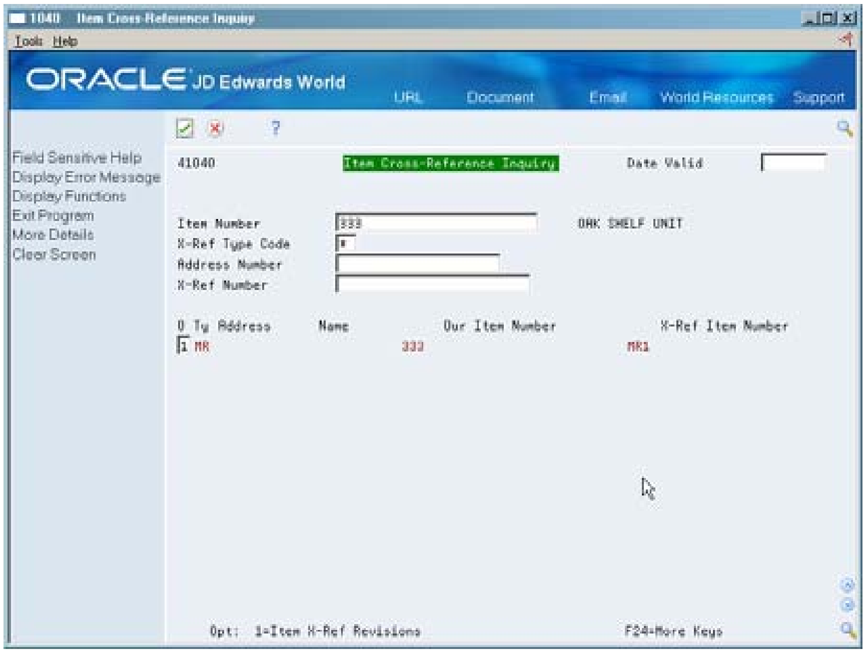
2. Access Item Branch / Plant Information (41026) and set up the master routing as an item. Stocking Type should be M.



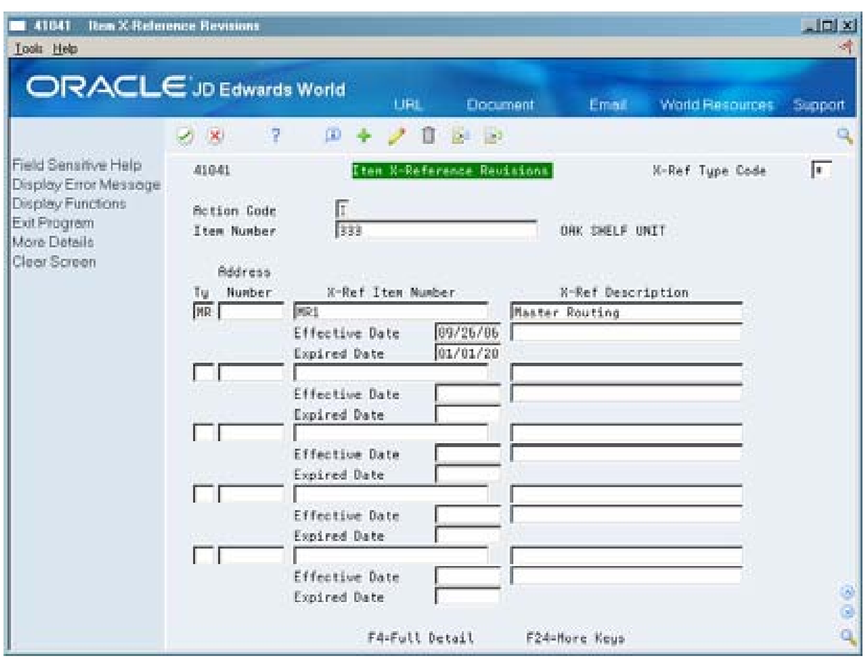
3. Access Enter / Change Routing (3003) and enter the routing to be used as the master routing.



4. Access Item Cross-Reference Inquiry and inquire on the master routing item number you just set up.



5. Enter 1 in the Option field and press Enter to access Item X-Reference Revisions.
6. Complete the following fields:
   - Action Code – A
   - Item Number – Enter the item number for the parent item.
   - Do not input an Address Number
7. Press F4 to display details and update the effectivity dates.



What You Should Know About

Reviewing equipment	You can review equipment that an operation uses to manufacture a certain part on Asset Search and Location.
Master routings	Operations by Work Center (P30202) will only display the master routing item number that you set up. It does not display the parent item for which master routing is used. When you generate a work order for an item that uses a master routing, the system will generate a soft error "Routing does not exist."

Entering Outside Operations

From Daily Product Data Management (G30), choose Daily PDM Discrete
From Daily PDM Discrete (G3011), choose Enter/Change Routing

You can define an outside routing operation to be performed on an item by an external supplier.

When listing the outside operation routing step, make sure that this step is followed by another routing step. An outside operation cannot be the final step in a routing for two reasons:

- When using Super Backflush, the final operation must be a payable pay point. The pay point for an outside operation work center is zero.
- The purchasing receipt generated does not update the Purchase Order Receiver file table. This prevents a voucher match.

To enter outside operations

On Enter/Change Routing

Complete the following fields:

- Supplier
- Purchase Order (Y/N)
- Cost Type

Field	Explanation
Supplier	The address book number of the preferred provider of this item. You can enter the number for the supplier or you can have the system enter it each time that you receive the item from a supplier. You specify whether the system enters the supplier using processing options for Enter Receipts. *Form-specific information* The supplier can be entered in the item branch record for an item manually, or you can choose to update this field when the item is first received.
PO (Y / N)	Determines if the Work Order Generation program (P31410) or Interactive Routing Instruction Revisions (P3112) creates a purchase order for a subcontracted operation within a routing. Valid values are: Y Yes, create a purchase order. N No, do not create a purchase order. You will always create a purchase order for outside operations.
Cost Type	This code designates each element of cost for an item. An example of the coding structure is: A1 Purchased raw material B1 Direct labor routing sheet rollup B2 Setup labor routing sheet rollup C1 Variable burden routing sheet rollup C2 Fixed burden routing sheet rollup Dx Usually used for outside processing routing sheet rollup Xx Usually used for extra add-ons, such as electricity, water, and so forth. Up to 99 add-ons can be defined. Use the D cost component type for outside operations. If multiple outside operation steps exist on the same routing, use a different number for each outside operation. For example: D1, D2, D3, and so on. The optional add-on computations usually operate with the type “X” extra add-ons. This cost structure allows you to use an unlimited number of cost components to calculate alternative cost rollups. The system then associates these cost components with one of six user defined summary cost buckets.

What You Should Know About

Using alternate routings	If you manually link the routing to a work order, the system includes alternate routing steps with the work order routings. If the Process Work Orders program links the routing, then the system does not include the routing steps.

Processing Options

See Standard Routing Information (P30430).

Working With Text

You can create text for a routing and bill of material and attach this text to the work order parts list and work order routing. Attached text is indicated by a highlight on the form.

You can locate the text on the following forms within the Shop Floor Control system:

- Work Order Parts List
- Routing Revisions
- Rate Based Hours Entry
- Rate Based Inventory Issues

When you locate the text on any of these forms, the text is unique to the parts list, routing, rate based schedule or inventory. You can change the text and it will not impact the text originally entered on bill of material or routing.

You can create separate text for the different batch routings of a parent item.

Working with text consists of the following:

- Entering text
- Revising text
- Copying text models
- Reviewing user information

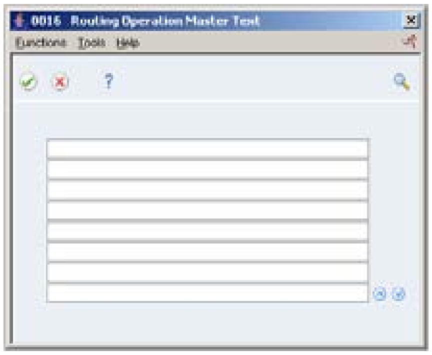
See Also

- *Attaching the Parts List (P3111)* in the *Shop Floor Control Guide*
- *Attaching the Routing (P3112)* in the *Shop Floor Control Guide*
- *Creating Rate Schedules (P3104)* in the *Shop Floor Control Guide*
- *Issuing Materials (P31113)* in the *Shop Floor Control Guide*
- *Work with PC Import/Export* in the *Technical Foundation guide.*

To enter text

On Enter/Change Routing

1. Choose the Text option.



2. On Routing Operation Master Text, type the text and press Enter.

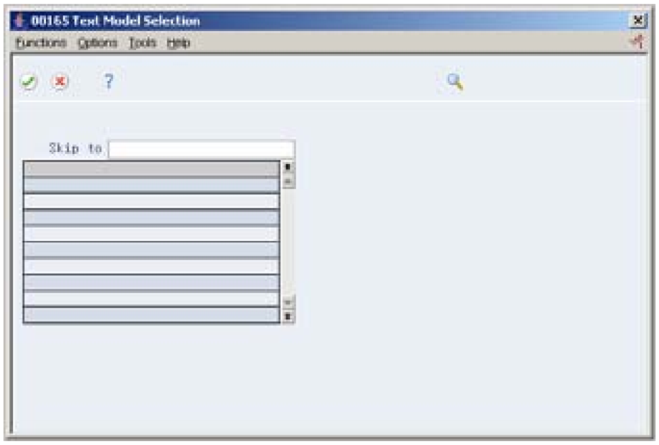
To revise the text

On Routing Operation Master Text

1. Press F9 to delete a line.
2. Press F8 to insert a line.
3. Press Enter to save your revisions.

To copy text models

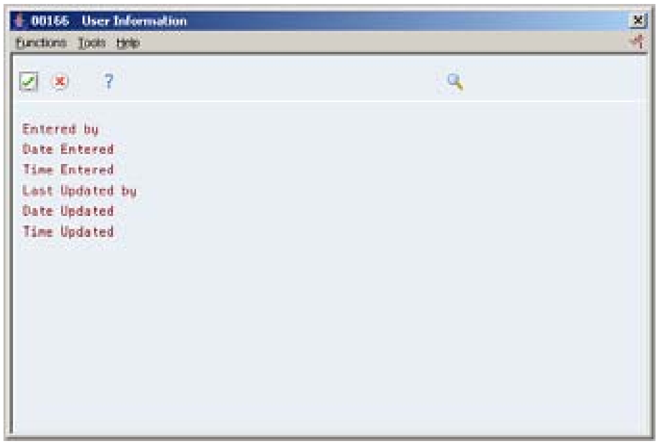
1. On Routing Operation Master Text, choose the Select Model Memo function.



2. Select a model.

To review user information

On Routing Operation Master Text, choose the User Info option.



Updating Component Scrap

	From Product Data Management (G30), enter 27 From Advanced Product Data Management (G3031), choose Planned Yield Update

During manufacturing, material loss often occurs at operations. Examples of loss include evaporation or items damaged during move time. You can update the amount of materials and labor hours to account for operation loss by running Planned Yield Update.

For the operations you choose, this program uses the operational planned yield percent to update the cumulative percent for the routing, and the operation scrap percent for the bill of material.

For example:

Step	Operational Planned Yield %	Cumulative Planned Yield %	Operation Scrap %
40	80%	80%	(100% / 80%) - 100% = 25%
30	90%	80% x 90% = 72%	(100% / 72%) - 100% = 39%
20	100%	72% x 100% = 72%	(100% / 72%) - 100% = 39%
10	95%	72% x 95% = 68%	(100% / 68%) - 100% = 25%

What You Should Know About

Operational planned yield percent

You enter this value on the routing.

This value represents the planned output yield percent for a step. The system uses this value to adjust the operation scrap percent for the components at that step. This enables MRP to use the step scrap percent along with the existing component scrap percent to plan component demand.

Operation scrap percent

The system updates operation scrap percent on the bill of material.

This represents the expected scrap at each operation. The system calculates this value by compounding the yield percentages from the last operation to the first operation.

The system uses this value to increase or decrease the amount of materials to account for loss within the operation.

Cumulative planned yield percent

The system updates the cumulative planned yield percent on the routing.

This represents the item quantity that an operation is expected to produce. It is the ratio of usable output to input quantity. This value can be less than 100% due to loss at one or more operations.

The system uses this value to increase or decrease the amount labor hours needed to make up for loss within the operation.

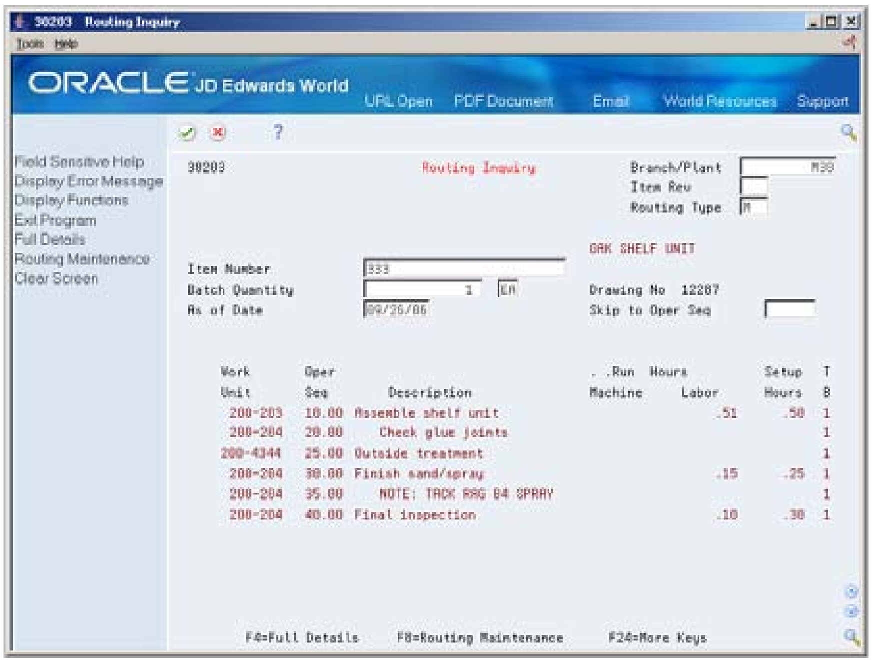
Reviewing Routing Information

	From Daily Product Data Management (G30), choose **Daily PDM Discrete** From Daily PDM Discrete (G3011), choose **Routing Inquiry**

You might need to review routings to verify operations, labor, and setup hours.

To review routing information

On Routing Inquiry



Complete the following fields:

- Branch/Plant (required)
- Parent Item (required)
- As of
- Requested Quantity
- Skip to operation

Lead time information displays in the following fields:

- Run Hours Labor
- Run Hours Machine
- Setup Hours

What You Should Know About

Viewing multiple routings When you have defined more than one routing for an item, the system displays all available routings in a separate window. Choose a routing to work with.

Processing Options

See Routing Inquiry (P30203).

Printing Routing Information

Use the Routing Instructions report to print all routing operations for an item.

Caution: JD Edwards World recommends that you do not change the order of the first three data selections.

```
    30430                                                JD Edwards World                             Page      -        2
                                                    Standard Routing Information                      Date      - 05/25/17



Item Number                              Plan       . .Run Hours. .        Setup           Move                 T . .Effective. .
 Work Center  Seq #  Description         Yield   Machine   Labor    % Ovlp Hours     Crew  Hours   Instruct  Cd B From  Thru
------------ ------- ------------------- ------ --------- --------- ------ -------- ------ ------ ---------- -- - --------
5120                 Oak Desk With Chair          Batch Quantity              EA Branch . . . .          M30 Type of Routing. M
                                                  RRL..     Drawing #.. 12287                Lead time Lvl..      5
     200-204   10.00 Assemble frame        0.00               5.00            2.50     1.0   2.50               1 10/07/01 12/31/10
               20.00 Assemble sides/back   0.00               4.00                     1.0                      1 10/07/01 12/31/10
               30.00 Attach drawer slide   0.00               3.80            0.25     1.0                      1 10/07/01 12/31/10
               40.00 Attach top            0.00               1.80                     1.0                      1 10/07/01 12/31/10
     200-202   50.00 Finish                0.00               0.50                     1.0                      1 10/07/01 12/31/10
     200-204   60.00 Package with chair    0.00               3.00                     1.0                      1 10/07/01 12/31/10

4133                 SIDE ASSY, 30x30 OAK DESK    Batch Quantity              EA Branch . . . .          M30 Type of Routing. M
                                                  RRL..     Drawing #..                      Lead time Lvl..      4
     200-203   10.00 Assemble side panel   0.00               9.00            0.50     1.0                      1 10/07/01 12/31/10

3390                 LEG OAK, 1.5x1.5x30          Batch Quantity              EA Branch . . . .          M30 Type of Routing. M
                                                  RRL..     Drawing #..                      Lead time Lvl..      2
     200-101   10.00 Cut leg to size/mil   0.00              20.00            3.00     1.0                      2 10/07/01 12/31/10
     200-102   20.00 Attach leg cap        0.00              10.00                     2.0                      2 10/07/03 12/31/10
     200-103   30.00 Inspect               0.00     5.00      8.00                     1.0                      2 10/07/03 12/31/10

3386                 SIDE PANEL, OAK, 28.5x28.5   Batch Quantity              EA Branch . . . .          M30 Type of Routing. M
                                                  RRL..     Drawing #..                      Lead time Lvl..      2
     200-102   10.00 Cut side panel to s 100.00     1.80                      0.50     2.0                      2 10/07/01 12/31/10
```

Work with Lead Times

Working with Lead Times

Determining lead time is an essential part of any manufacturing or scheduling process. For any product that you purchase or manufacture, you encounter a time lag between when you order an item or start production and when you receive the item or finish production. To account for the lag, you must estimate the extra time and allow for it in your planning.

This section contains the following:

- Reviewing Lead Times
- Generating Lead Times

The system stores lead time information in the Bill of Material table.

What You Should Know About

Actual lead time	Actual lead times display the lead times as updated in the Branch / Plant table by the Leadtime Rollup program.
Calculated lead time	Calculated lead times display how many days you must start to manufacture a part prior to the need date of the parent.

See Also

- *Appendix A - Lead Time Calculations*
- *Appendix A - Lead Times* in the *Shop Floor Control - Process Guide*
- *Appendix B - Lead Times* in the *Shop Floor Control - Discrete Guide*

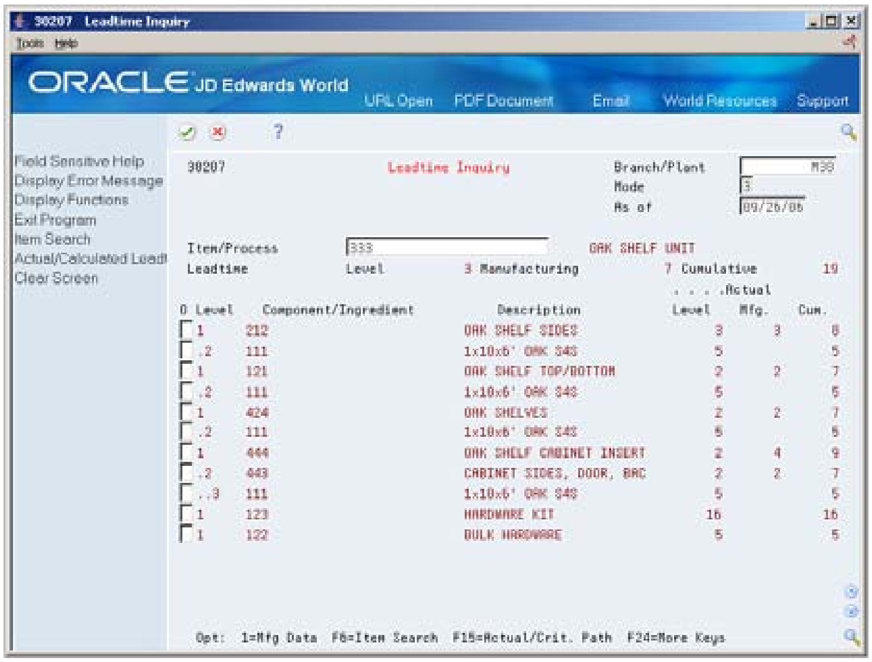
Reviewing Lead Times

From Daily Product Data Management (G30), choose **Daily PDM Discrete**
From Daily PDM Discrete (G3011), choose **Leadtime Inquiry**

You can review lead times to compare both actual and calculated lead times for an item.

To review lead times

On Leadtime Inquiry



1. Complete the following required fields:
   - Parent Item
   - Branch / Plant
2. Complete the following optional fields:
   - Mode
   - As Of

   The following fields display lead time information:
   - Level
   - Manufacturing
   - Cumulative

What You Should Know About

Critical paths	If a component's cumulative lead time is greater than or equal to the parent item's lead time, the system highlights the Cumulative Leadtime field.

Processing Options

See Lead Time Inquiry (P30207).

Generating Lead Times

	From any PDM menu (G30), enter 29 From Advanced PDM (G3031), choose **Leadtime Rollup**

You must generate lead times for the Material Requirements Planning and Capacity Requirements Planning systems. The Leadtime Rollup program calculates planned level lead times for manufactured items and updates them on Manufacturing Data in the Branch / Plant table. This program calculates:

- Queue and setup hours
- Lead time per unit
- Level, manufactured, and cumulative lead times for selected items

You cannot run this program in proof mode. It updates the records according to the data selection and processing options you choose. Plan your data selection carefully, because changes to lead times will affect the Materials Requirements Planning and Capacity Requirements Planning systems. You can update new items by entering them separately in the data selection.

Processing Options

See Lead Time Generator (P30822).

4 Engineering Change Management

Overview to Engineering Change Management

Objectives

- To learn how to create and maintain engineering change orders (ECOs)
- To understand the notification process
- To understand the approval process

About Engineering Change Management

Manufacturers must respond quickly with engineering changes in order to maintain and increase market share. Engineering changes might be necessary to respond to market demand, governmental requirements, safety issues, service requirements, or functional and competitive reasons.

Some industries may be subject to federal Food and Drug Administration (FDA) or Sarbanes – Oxley regulations regarding electronic approvals. To comply, JD Edwards World offers the option to use secure electronic signatures when creating, working with, and approving engineering change orders.

Use the Engineering Change Management system to create, plan, review, approve, and implement ECOs.

Engineering change management consists of the following tasks:

- Setting up engineering change orders
- Working with engineering change orders
- Reviewing engineering change orders
- Approving engineering change orders

What Is an ECO (Engineering Change Order)?

ECOs are numbered documents that you use to track product changes within the Engineering Change Management system. After you have tested and approved an ECO, you can implement it and modify your standard product or process.

Product or process changes can impact many areas within your company, including:

- Customer service
- Tooling
- Standards

- Suppliers
- Master production schedule
- Product cost
- Service parts
- Inventory
- Plant layout

Features

ECOs enable you to:

Feature	Description
Define who approves the ECO	▪ Establish levels of approval, so that each member of the first review group must approve the ECO before the next group receives notification ▪ Locate the status of an ECO and review who has approved it and who has yet to approve it ▪ Use electronic mail to notify and approve ECOs ▪ Create and maintain bill of material data that is associated with the change ▪ Notify reviewers during the approval process ▪ Limit access to the approval records
Define which items to change	▪ Describe the change ▪ Define the parts and processes that are necessary to implement the ECO ▪ Include multiple parent item / process or component / ingredient relationships on the same change order
Define the change routing	▪ Itemize the steps required to make the change
Define additional detail	▪ Enter supporting data, such as costs, dates, reasons, status, affected work and purchase orders, approval history, and implementation steps into a centralized database ▪ Identify the originator and reason for the change ▪ Set up user defined codes to define reason, status, and disposition of the change order ▪ Attach supplemental information

System Integration

ECOs integrate with the following systems:

System	Description
Shop Floor Control	Uses the revision level maintained by ECOs to retrieve the appropriate bill of material for a work order. You can create a work order from a prior ECO revision level.
Inventory Management	Updates the Item Master revision level.
Product Data Management	Uses the Engineering Change Population program to update bills of material.
ERPx	Activates flash messaging in Material Requirements Planning, Purchase Order Management and Inventory Management to warn of a pending ECO. The Master Production Scheduling system uses the effectivity dates established by ECOs to plan and introduce products.

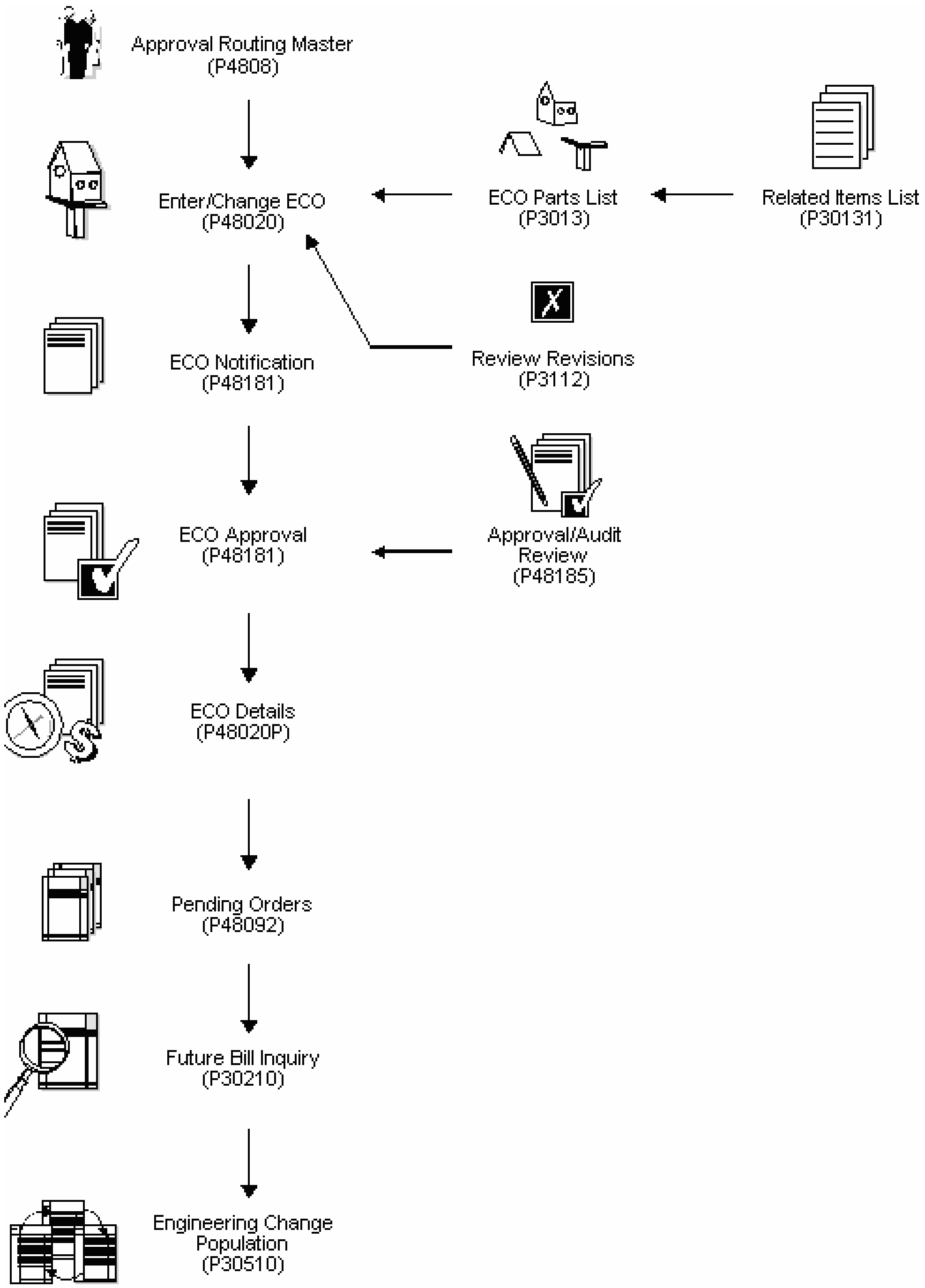
Who Is Involved in the ECO Process?

The ECO process includes the following personnel:

1. The administrator sets up the ECO by:
   - Setting up the approval routing master
   - Reviewing and modifying the ECO codes
   - Setting up next numbers
2. The coordinator creates the ECO by:
   - Verifying that no prior ECO exists for this change
   - Entering the ECO
   - Defining the change with a list of affected parent and component items
   - Establishing the new routing operations to implement the ECO
   - Maintaining supplemental details
   - Running the notification program
3. The reviewer approves the ECO by:
   - Reviewing the ECO after system notification.
   - Running reports with information for an individual ECO or a list of open ECOs
   - Indicating approval or rejection
   - Periodically checking for outstanding ECOs
4. The coordinator implements the ECO by:

- Running the Engineering Change Population (P30510) program

The following graphic illustrates the ECO process.



What Kinds of Changes Can I Define?

You can define the engineering change order by determining the type of change to make and identifying parent and component items.

For example, you can determine whether to:

- Add a new part
- Change an existing part
- Swap an old part with a new part
- Remove an existing item

The values you enter in the Change Type and Parent/Child Relationship fields define these changes and determine how the Engineering Change Population program updates the bill of material for the item.

You can use the following values:

Field	Value
Change Type	N - add new part C - change existing part S - swap old part with new part R - remove existing part
Parent/Child Relationship	P - parent item C - component item

These fields allow several possible combinations:

ECO Parts List form Change Type	P/C Rel	Enter the following:	Related Items form Revision Level	Enter the following:
Add a new bill:				
N	P	New parent item for the new bill	New parent revision	Components for the new parent
Change the bill:				
S	P	Swap to parent information in fold	Swap to parent rev in fold	Not allowed
Swap a parent item:				
		Swap from parent	Rev of swap from parent in fold	
Remove a bill:				
R	P	Current parent information	Current revision	Not allowed
Add a new component				

ECO Parts List form Change Type	P/C Rel	Enter the following:	Related Items form Revision Level	Enter the following:
N	C	New component	New component revision	Parent bills using component (where used)
Change a component				
C	C	The component to change	New revision of component	Parent bills that will have component changes
Swap a component:				
S	C	Swap to component in fold	Revision of swap to component in fold	Parent bill having components swapped
		Swap from component	Revision of swap from component in fold	
Remove a component:				
R	C	Component to remove	Revision of component to remove	Parent bills have component removed (where used)

About ECO Revision Levels

A revision level is an alphanumeric character that represents the number of times an item has been changed. This usually indicates a permanent change to an item's form, fit, or function. For efficient tracking of changes with revision levels, the revision levels for an item's bill of material and routing should match. You can use an ECO to update an item's revision level and a drawing's revision level.

Use ECOs to manage the following revision level information:

- Set up the next revision levels (30/NR) for ECOs
- Load parent revision levels for component being added or modified
- Locate the revision levels of an ECO
- Assign ECO revision levels automatically
- Maintain drawing revision levels for each item changed by an ECO, and update the drawing revision in either the Bill of Material or Item Master tables.

Tables

The Engineering Change Management system uses the following tables:

Table	Description
F4801	The ECO Work Order Master table stores the ECOs and the manufacturing work orders.
F3002	The Bill of Material Master table defines and maintains branch / plant information about bills of material, such as quantities of components, features and options, effectivity dates, grade / potency and lot constants, and levels of detail.
F48092	The ECO Supplemental table stores additional information about ECOs, such as implementation costs.
F3013	The ECO Parts List table contains the list of parts that are affected by the ECO.
F4808	The ECO Approval Routing Master table contains the address book numbers of the people who are responsible for approving ECOs and determines the order in which they should be notified.
F4818	The ECO Approval Audit table contains the approval history of an ECO.
F0101	The Address Book table is the central repository for all address information pertaining to customers, vendors, employees, prospects, and so forth.
F0006	The Business Unit Master table identifies branch, plant, warehouse, and business unit information, such as company, description (name), and category codes assigned to that entity.
F3112	The Routing Revisions table contains the routing steps for implementing the ECO.
F4102	The Branch / Plant Master table contains the ECO number, date, reason, and item revision level information for the branch / plant.

Before You Begin

- Define your items in the Inventory Management system. See *Entering Item Master Information*.
- Define your work centers. See *Entering Work Centers*.

Set Up Engineering Change Orders

Setting Up Engineering Change Orders

Before you use the Engineering Change Management system, you need to set up various codes and the approval routing master.

This section contains the following:

- Setting Up Engineering Change Order Codes
- Setting Up Next Numbers for Engineering Change Orders
- Setting Up Approval Routings

Setting Up Engineering Change Order Codes

Define ECO codes for information that is unique to your branch / plant:

Code	Description
Revision levels	Revision levels indicate the number of times an item has changed.
Type codes	Type codes indicate the classification of an ECO, such as G for government or R for rework.
Priority codes	Priority codes indicate the priority of an ECO, such as H for high priority and 3 for normal priority.
Status codes	Status codes, such as 90 through 99, indicate the date completed on the order. Examples include EM for emergency and A for approved.
Phase in codes	Phase in codes indicate how an ECO is to be implemented.
Existing disposition codes	Existing disposition codes indicate what to do with an existing item that is affected by the ECO. Examples of existing disposition codes are UAI for use as is and SCP for scrap.
Reason codes	Reason codes indicate why you create an ECO. Examples of ECO reason codes include CC for Customer Change Request and FR for Federal Requirement.

Complete the following tasks:

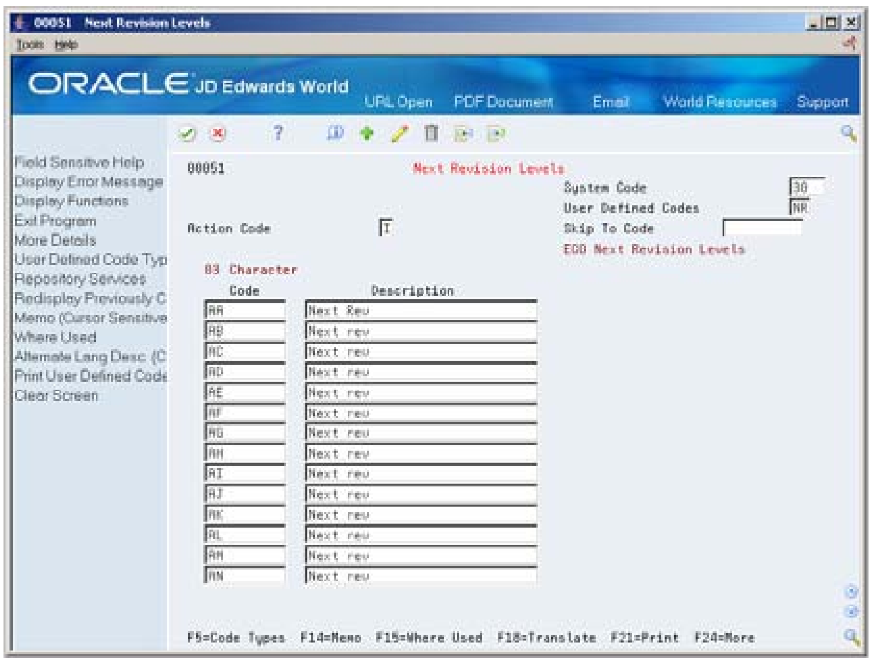
- Set up revision levels

- Set up type codes
- Set up priority codes
- Set up status codes
- Set up phase in codes
- Set up existing disposition codes
- Set up reason codes

To set up revision levels

	From Product Data Management (G30), enter 29 From Product Data Management Setup (G3041), choose **ECO Next Revision Levels**

On ECO Next Revision Levels



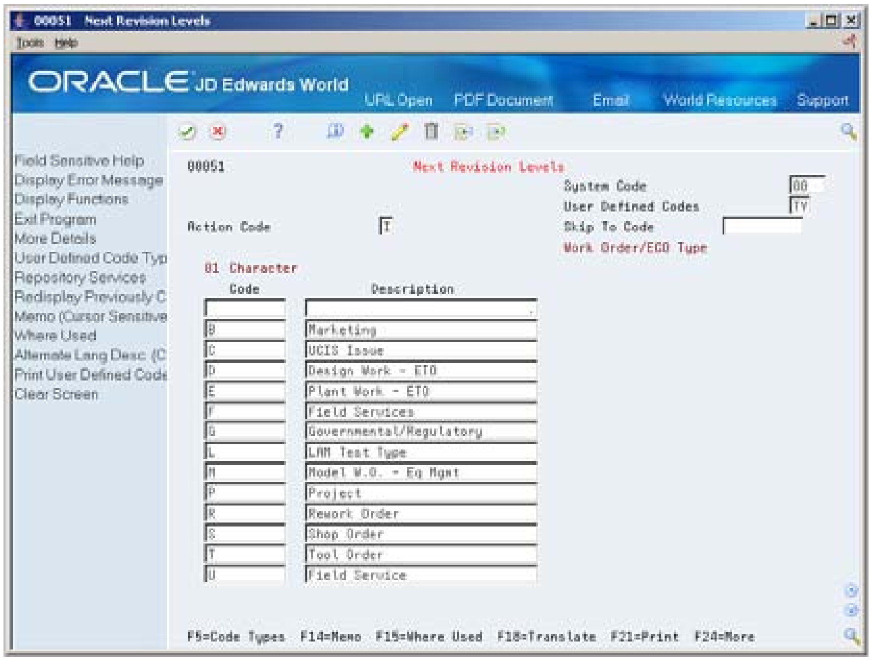
Complete the following fields:

- Character Code
- Description

To set up type codes

You can set up user defined codes (table 00/TY) to define types of ECOs such as G for government or R for rework.

On Type Code



Complete the following fields:

- Code
- Description
- Description 2

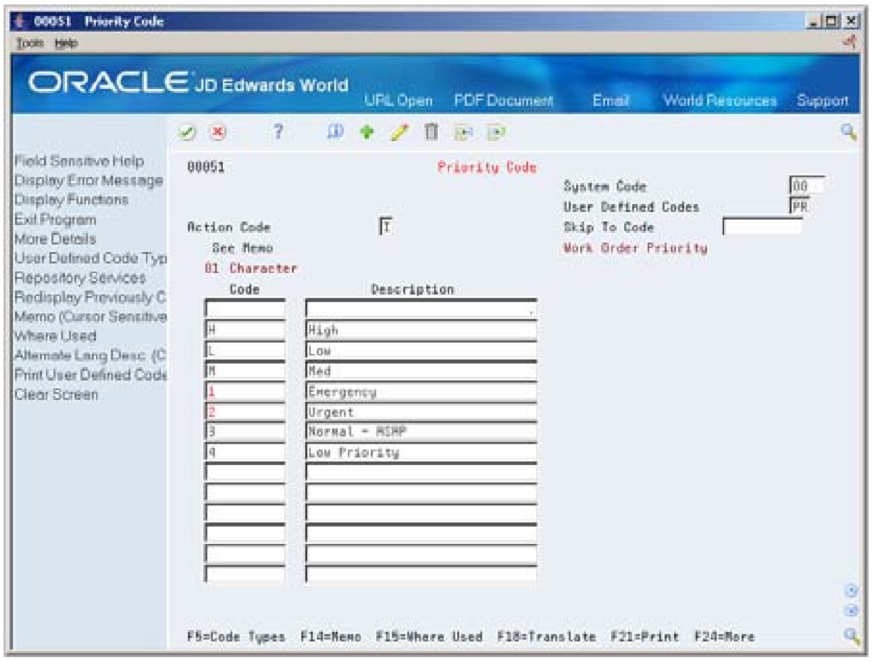
Field	Explanation
User Defined Codes	Identifies the table that contains user defined codes. The table is also referred to as a code type.
Description	A user defined name or remark.
Description-2 Description	A user defined name or remark.

To set up priority codes

	From Product Data Management (G30), enter 29 From Product Data Management Setup (G3041), choose **Priority Code**

You can set up user defined codes (table 00 / PR) to define priorities of ECOs such as H for high priority or 3 for normal priority.

On Priority Code



Complete the following fields:

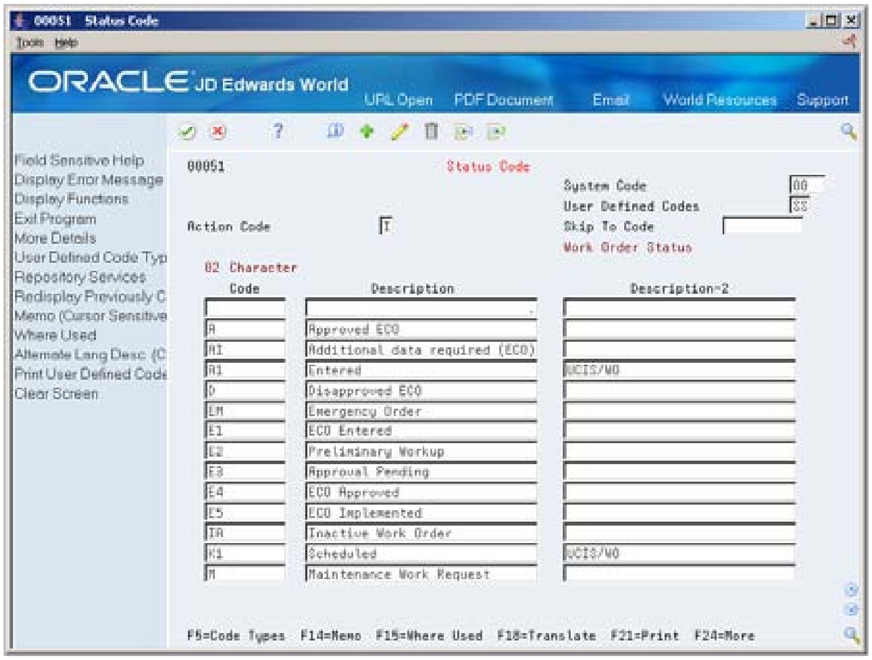
- Code
- Description

To set up status codes

	From Product Data Management (G30), enter 29 From Product Data Management Setup (G3041), choose **Status Code**

You can set up user defined codes (table 00/SS) to define the status of ECOs such as EM for emergency and A for approved.

On Status Code



Complete the following fields:

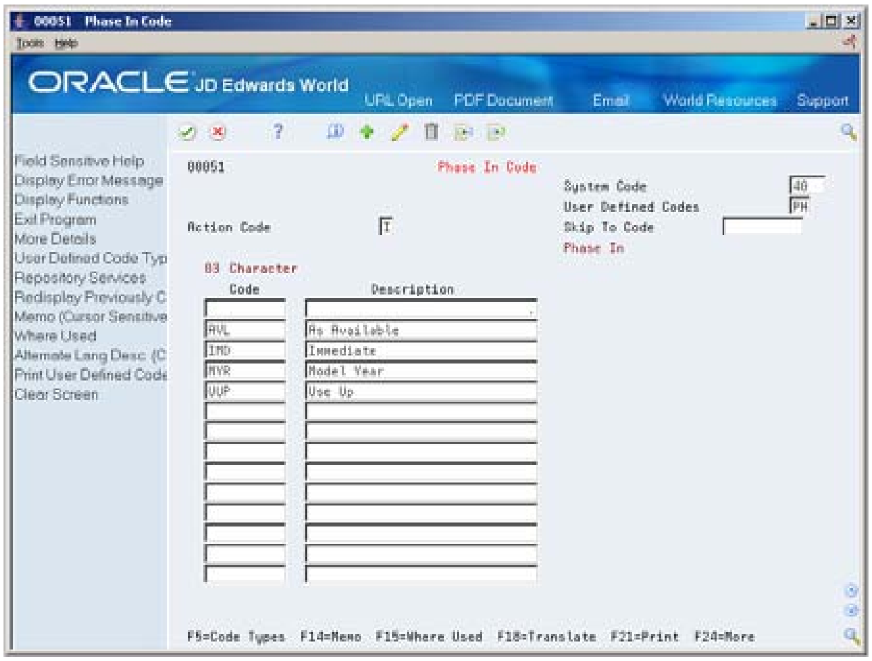
- Code
- Description

To set up phase in codes

From Product Data Management (G30), enter 29
From Product Data Management Setup (G3041), choose **Phase In Code**

You can set up user defined codes (table 00/PH) to define how to phase in ECOs such as IMD for immediate and AVL for as available.

On Phase In Code



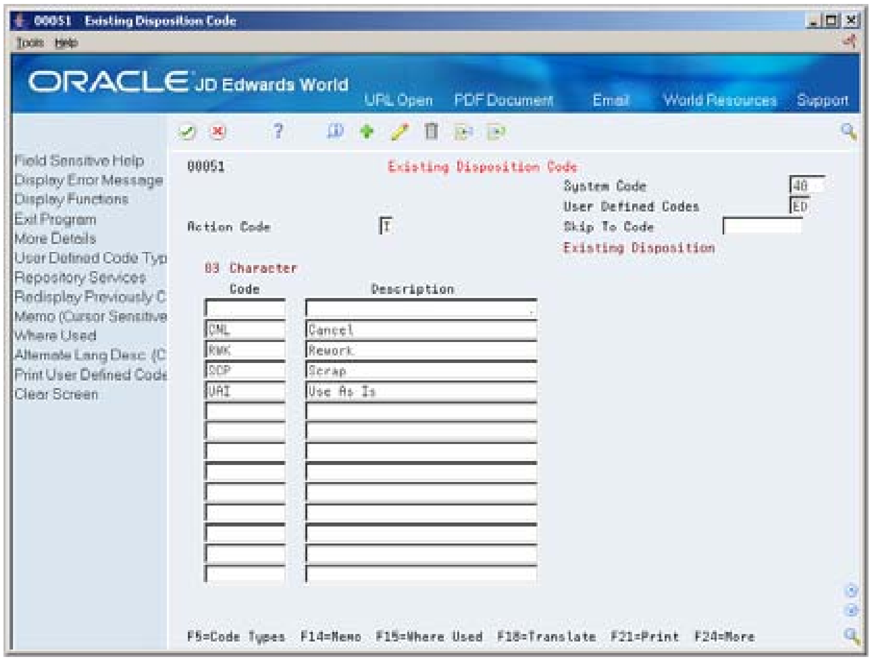
Complete the following fields:

- Code
- Description

To set up existing disposition codes

	From Product Data Management (G30), enter 29 From Product Data Management Setup (G3041), choose Existing Disposition Codes

On Existing Disposition Code



Complete the following fields:

- Code
- Description

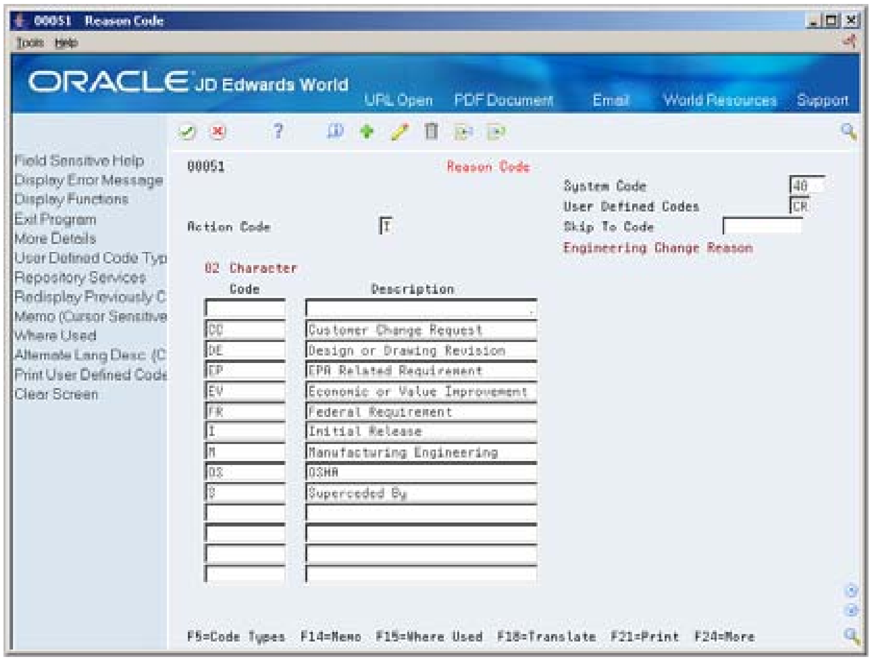
You can set up user defined codes (table 00/ED) to define what to do with existing items that are affected by the ECO, such as CNL for cancel and RWK for rework.

To set up reason codes

	From Product Data Management (G30), enter 29 From Product Data Management Setup (G3041), choose Reason Codes

You can set up user defined codes (table 40 / CR) reasons for defining ECOs such as CC for customer change and FR for federal requirements.

On Reason Code



Complete the following fields:

- Code
- Description

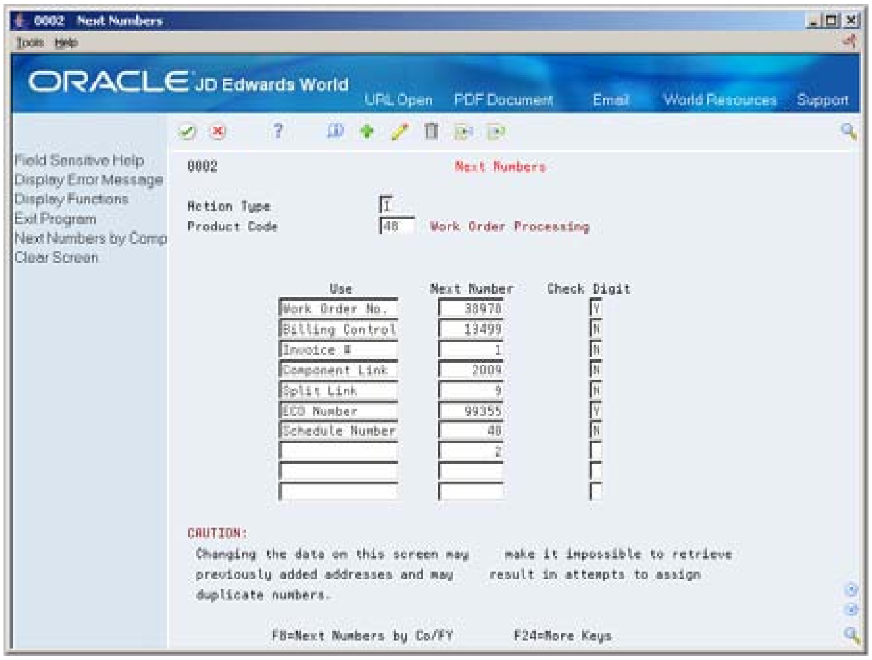
Setting Up Next Numbers for Engineering Change Orders

From Product Data Management (G30), enter 29
From Product Data Management Setup (G3041), choose **Next Numbers**

Next numbers is an automatic document numbering feature. It allows you to enter a starting document number for each document type such ECOs. If you do not assign an ECO number manually, the system automatically assigns the next number to the ECO.

You can also use a check digit. This is an additional number that the system attaches to the end of the next number. Check digits prevent transpositions and data entry errors. Check digits are not sequential.

Caution: If you change the numbering scheme, you must change the next number to a value that is greater than the previously assigned numbers.



To set up next numbers for engineering change orders

1. Locate next numbers for system 48 Work Order Processing.
2. For ECO Number, complete the following fields:
   - Next Number
   - Check Digit

Field	Explanation
Next Number	The next number which will automatically be assigned by the system. Next numbers can be used for many types of documents including voucher numbers, invoice numbers, journal entry numbers, employee numbers, address numbers and so on. Next numbers can be reviewed from the Operations Control Menu. You must adhere to the next numbers that have been pre-established unless custom programming has been provided.
Check Digit	A number that prevents the Next Numbers program (P0002) from assigning transposed numbers. If you use check digits, the system automatically adds a number to the end of each number that it assigns through Next Numbers.

See Also

- *Setting Up Next Numbers (P0002)* in the *General Accounting Guide*

Setting Up Approval Routings

Use an approval routing to maintain a list of reviewers by that should receive an electronic mail notification of pending ECOs.

You can set up two types of approval routing. The approval routing master applies to a specific branch / plant and order type combination. Order specific approval routing applies to a specific ECO. After you have set up an approval routing master for your branch / plant, you can customize the routing for a specific ECO.

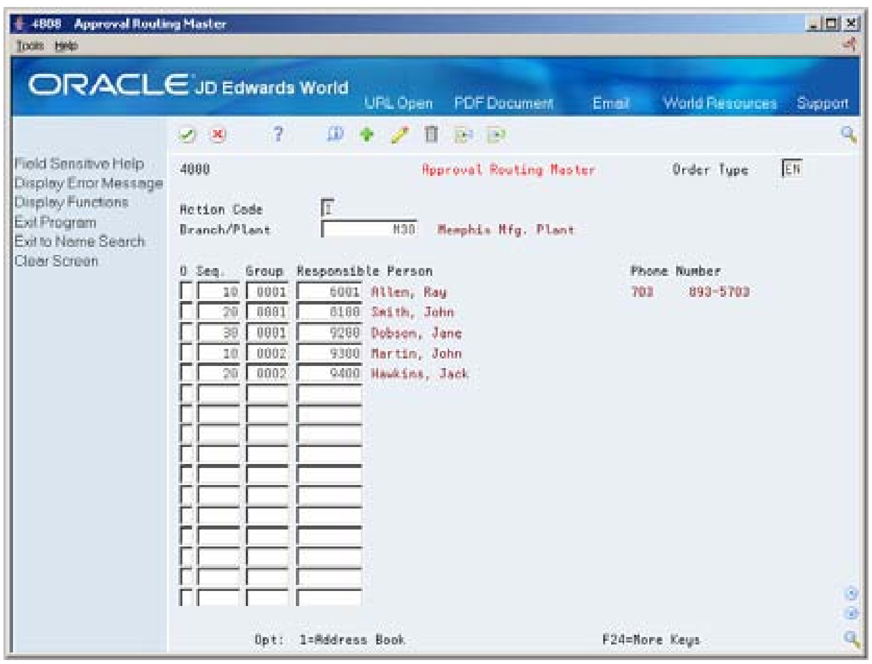
Setting up approval routings consists of the following tasks:

- Setting up an approval routing master
- Setting up an order specific routing (optional)

To set up approval routings

	From Product Data Management (G30), choose **Engineering Change Management** From Engineering Change Management (G3013), choose **Approval Routing Master**

On Approval Routing Master



Complete the following fields:

- Branch / Plant
- Sequence Number
- Group
- Responsible Person

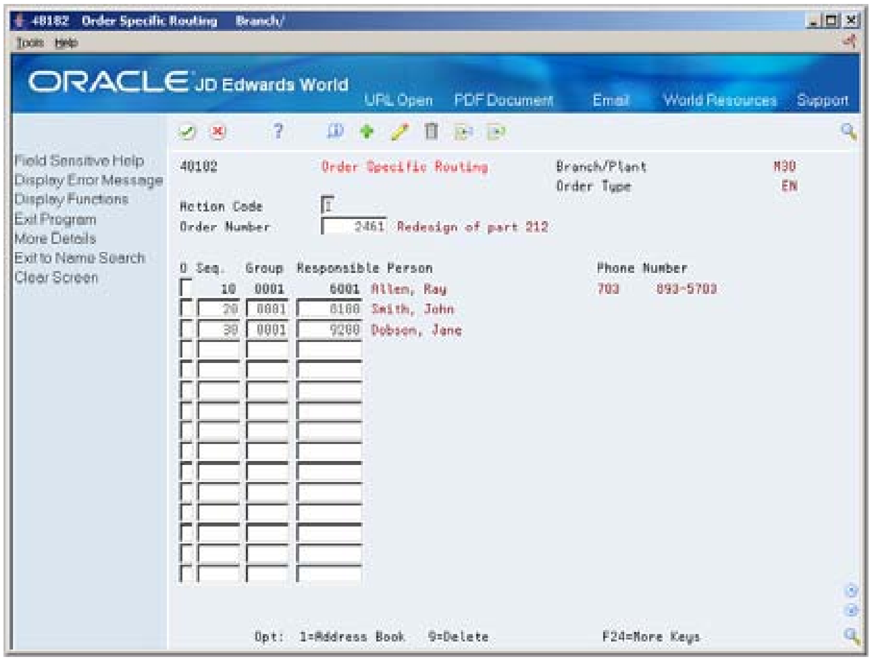
Processing Options

See Approval Routing Master (P4808).

To set up an order-specific approval routing

	From Product Data Management (G30), choose **Engineering Change Management** From Engineering Change Management (G3013), choose **Order Specific Routing**

On Order Specific Routing



Complete the following fields:

- Order Number
- Group
- Sequence
- Responsible Person

What You Should Know About

Assigning reviewers to groups	The system notifies all reviewers in a group at the same time. The system notifies the groups in the order that they are defined within the user defined code. The codes do not have to be numeric. The system waits to send notification to a group until all members in the prior group have approved the ECO.
Deleting an approval list	When you delete an approval list, the system prompts you to confirm the deletion.

Work With Engineering Change Orders

Working With Engineering Change Orders

Use ECOs to plan, approve, and implement product changes. The creator of the ECO typically performs the following tasks:

- Locating Existing ECOs
- Entering ECOs
- Defining Routings for ECOs
- Defining Changes
- Reviewing Pending Orders
- Defining Details for ECOs
- Notifying ECO Reviewers

What You Should Know About

Working with rejected ECOs	If any of the ECO reviewers rejects the ECO, the notification process stops. You must start the ECO notification process again.

Locating Existing ECOs

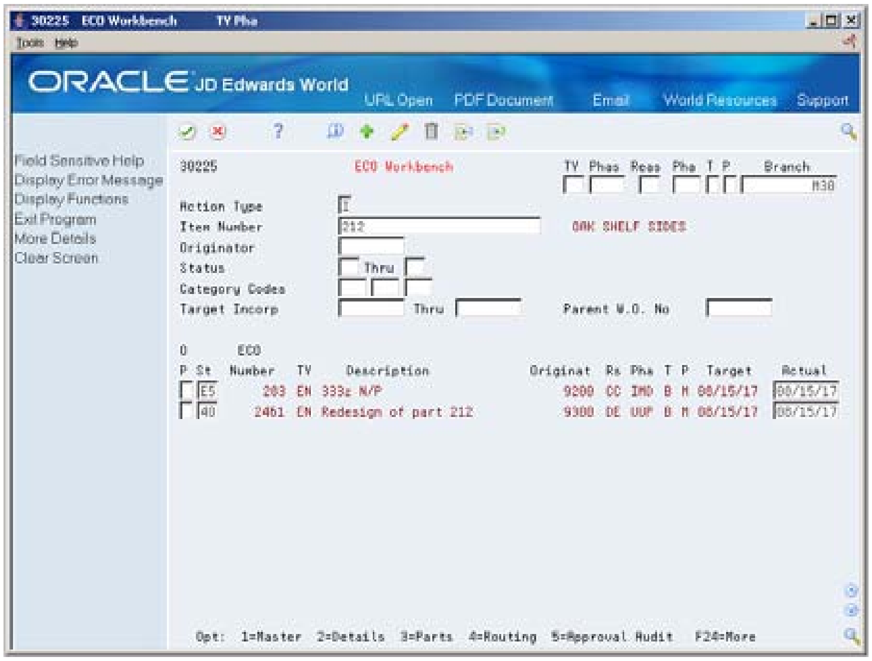
	From Manufacturing Systems (G3), choose Engineering Change Management From Engineering Change Management (G3013), choose ECO Workbench

Before you create an ECO, you might want to verify that one does not exist for the change. Use the ECO Workbench to view and manage ECO information and check on ECOs progress.

You can locate an ECO using ECO Workbench or ECO Workbench By Item.

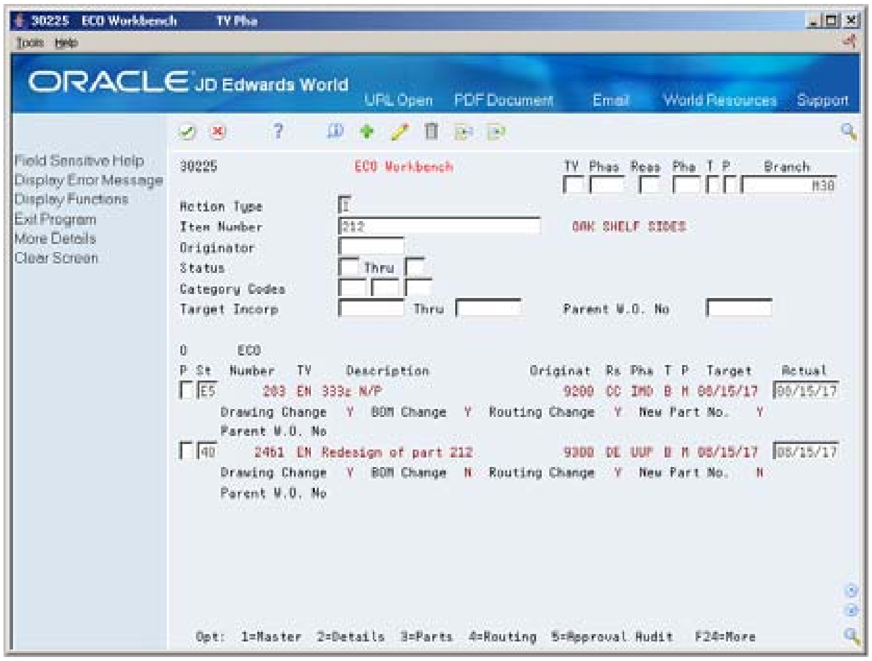
To locate existing ECOs

On ECO Workbench



1. Complete the following fields:
   - Branch
   - Item Number
   - Parent Work Order

2. Access the detail area.



The following fields display ECO information:

- Status
- ECO Number
- Type
- Description
- Originator
- Reason
- Phase
- Priority
- Target
- Actual
- Item Number (required)
- Parent Work Order

Field	Explanation
Branch	A code that represents a high-level business unit. It can be used to reference a branch or plant that might have departments or jobs, which represent lower-level business units (data item MCU), subordinate to it. For example: ▪ Branch / Plant (MMCU) ▪ Dept A (MCU) ▪ Dept B (MCU) ▪ Job 123 (MCU) Business unit security is based on the higher-level business unit.
Item Number	A number that the system assigns to an item. It can be in short, long, or 3rd item number format.
ECO Number	The number that identifies an original document. This can be a voucher, an order number, an invoice, unapplied cash, a journal entry number, and so on. *Form-specific information* This number identifies the engineering change order. You can either assign the order number or allow the system to assign a number with the Next Numbers feature.
Parent W.O. No	This is the parent work order number. You can use this number to: 1. Enter default values for newly added work orders, for example, Type, Priority, Status, or Manager. 2. Group work orders for project setup and reporting
TY (Order Type)	A user defined code (00 / DT) that identifies the type of document. This code also indicates the origin of the transaction. JD Edwards World has reserved document type codes for vouchers, invoices, receipts, and time sheets, which create automatic offset entries during the post program. (These entries are not self-balancing when you originally enter them.) The following document types are defined by JD Edwards World and should not be changed: P Accounts Payable documents R Accounts Receivable documents T Payroll documents I Inventory documents O Purchase Order Processing documents J General Accounting / Joint Interest Billing documents S Sales Order Processing documents
Originator	The address book number of the person who originated the change request.

Field	Explanation
Reason	User defined code system 40, type CR that indicates the reason for an engineering change order.
Phase In	User defined code system 40, type PH, that indicates how an engineering change order will be phased in.
Type	A user defined code (00/TY) that indicates the type classification of a work order or engineering change order. You can use work order type as a selection criteria for work order approvals.
Priority	A user defined code (system 00, type PR) that indicates the relative priority of a work order or engineering change order in relation to other orders. A processing option for some forms lets you enter a default value for this field. The value then displays automatically in the appropriate fields on any work order you create on those forms and on the Project Setup form. You can either accept or override the default value.
Target	The date the work order is planned to be completed. *Form-specific information* The date the engineering change order is planned to be completed.
Actual	The date the work order or engineering change order is completed or canceled.

Processing Options

See ECO Workbench (P30225).

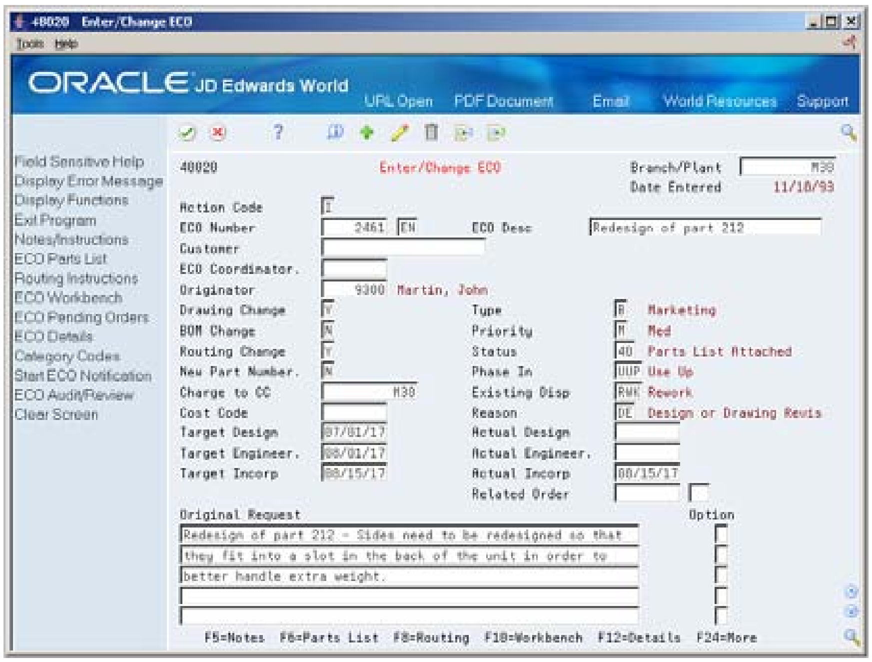
Entering ECOs

	From Manufacturing Systems (G3), choose **Engineering Change Management** From Engineering Change Management (G3013), choose **Enter/Change ECO**

You must first define the ECO number and codes that determine its priority, status, effectivity dates, and so on. Later you must define the routing, parts list and detail information.

To enter ECOs

On Enter/Change ECO



Complete the following required fields:

- Branch/Plant
- ECO Number
- ECO Description
- Originator
- ECO Coordinator
- Drawing Change
- BOM Change
- Routing Change
- New Part Number
- Target Design
- Target Engineer

- Target Incorporation
- Type
- Priority
- Status
- Phase In
- Existing Disposition
- Reason
- Actual Design
- Actual Engineer
- Actual Incorporation
- Parent Work Order Number
- Document Type
- Full Description of Request

Field	Explanation
Charge to CC	A code that represents a high-level business unit. It can be used to reference a branch or plant that might have departments or jobs, which represent lower-level business units (data item MCU), subordinate to it. For example: ▪ Branch / Plant (MMCU) ▪ Dept A (MCU) ▪ Dept B (MCU) ▪ Job 123 (MCU) Business unit security is based on the higher-level business unit.
Originator	The address book number of the person who originated the change request.
ECO Coordinator	Address number of the person assigned to do the work. *Form-specific information* Address number of the person assigned to coordinate the ECO.
Customer	A number that identifies an entry in the Address Book system. Use this number to identify employees, applicants, participants, customers, suppliers, tenants, and any other Address Book members. *Form-specific information* Use this value to indicate the customer requesting the change.

Field	Explanation
Drawing Change	Indicates whether the engineering change order involves a drawing change. Valid values are: Y Yes, a drawing change is involved. N No, a drawing change is NOT involved. If you leave this field blank, the system uses N.
BOM Change	Indicates whether the engineering change order involves a bill of material change. Valid values are: Y Yes, a bill of material change is involved. N No, a bill of material change is not involved. If left blank the system uses N.
Routing Change	Indicates whether the engineering change order involves a routing change. Valid values are: Y Yes, a routing change is involved. N No, a routing change is not involved. If you leave this field blank, the system uses N.
New Part Number	Indicates whether a new part number is required for an engineering change order. Valid values are: Y Yes, a new part number is required. N No, a new part number is not required. If you leave this field blank, the system uses N.
Cost Code	A subdivision of an object account. Subsidiary accounts include more detailed records of the accounting activity for an object account.
Target Design	The date that an item is to arrive or that an action is to be complete. *Form-specific information* The planned completion date for the engineering change order.
Target Engineer	The date the person responsible for the work order receives the work order. *Form-specific information* The date that the person responsible for the ECO receives the ECO.
Target Incorp	The date the work order is planned to be completed. *Form-specific information* The date the engineering change order is planned to be completed.

Field	Explanation
Status	A user defined code (00/SS) that describes the status of a work order or engineering change order. Any status change from 90 thru 99 automatically updates the date completed.
Existing Disp	User defined code system 40, type ED that identifies the disposition of the existing item affected by the engineering change order.
Actual Design	This is a start date that you can enter, or an automatic start date which the planning system calculates using a backscheduling routine. The routine starts with the required date and offsets the total lead time to calculate the appropriate start date. Will default from system date or you can enter a date. *Form-specific information* This is the start date for the ECO. You can enter the date manually or leave this field blank and the system enters the current date.

What You Should Know About

Deleting ECOs	To delete an ECO, you must first delete the ECO parts list, and then delete the ECO.
Work orders	Specify a parent work order number on the ECO and you can retrieve related work orders, and review the history of a product.

See Also

- *Defining Next Numbers (P0002)*

Processing Options

See ECO Maintenance (P48020).

Defining Routings for ECOs

From Manufacturing Systems (G3), choose Engineering Change Management
From Engineering Change Management (G3013), choose Enter/Change ECO

After you enter the ECO, you can define a routing that indicates the steps necessary to implement the ECO. For example, the engineering department might request that your business try a new manufacturing process before implementation.

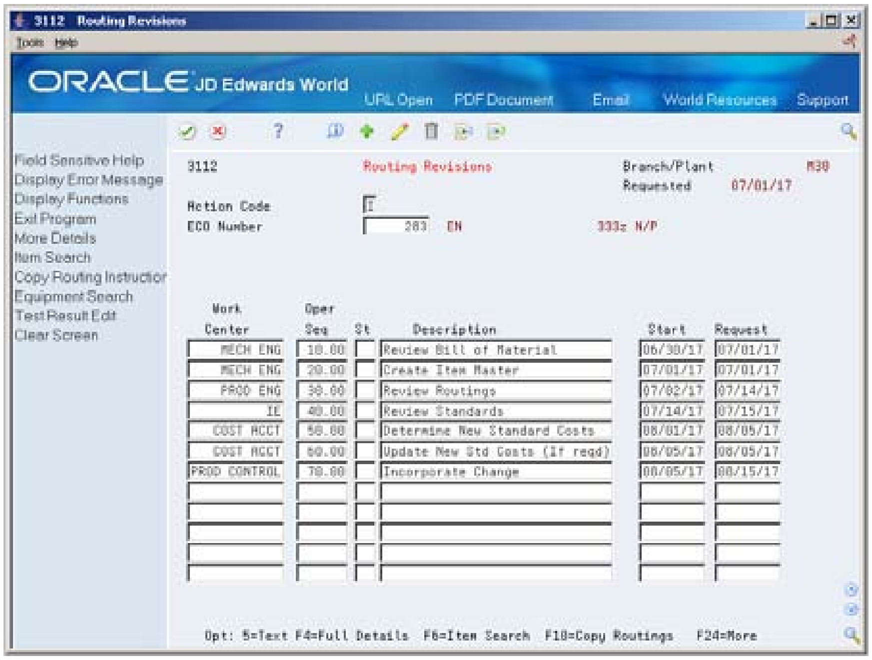
Note: You cannot use this program to change production routings.

To define routings for ECOs

On Enter / Change ECO

1. Choose the Routing function.

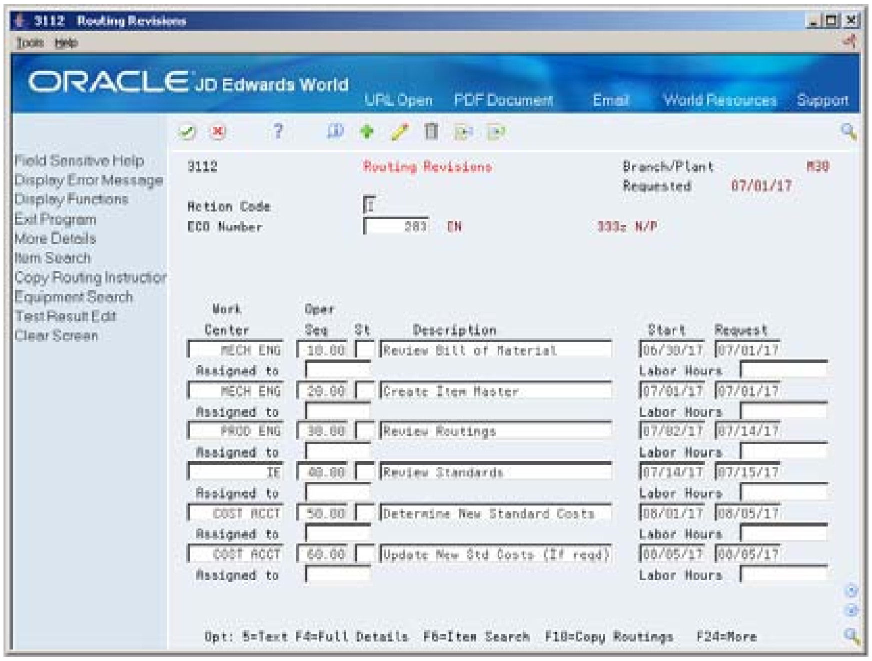
On Routing Revisions



2. Complete the following fields:

   - Work Center
   - Operations Sequence Number
   - Operation Status
   - Description
   - Start
   - Request

3. Access the detail area.



4. Complete the following fields:

- Assigned to
- Labor Hours

Field	Explanation
Work Center	An alphanumeric field that identifies a separate entity within a business for which you want to track costs. For example, a business unit might be a warehouse location, job, project, work center, or branch / plant. You can assign a business unit to a voucher, invoice, fixed asset, and so on, for purposes of responsibility reporting. For example, the system provides reports of open accounts payable and accounts receivable by business units to track equipment by responsible department. Security for this field can prevent you from locating business units for which you have no authority. *Form-specific information* This is the code for the work center or assembly line.

Field	Explanation
Oper Seq	In routings, this number is used to sequence the fabrication or assembly steps in the manufacture of an item. You can track costs and charge time by operation. In bills of material, this number designates the routing step in the fabrication or assembly process that requires a specified component part. You define the operation sequence after you create the routing for the item. The Shop Floor Control system uses this field in the backflush / preflush by operation process. In engineering change orders, this number is used to sequence the assembly steps for the engineering change. Skip To fields allow you to enter an operation sequence that you want to begin the display of information. You can use decimals to add steps between existing steps. For example, use 12.5 to add a step between steps 12 and 13.
St	A user defined code (31 / OS) that identifies the current status of a work order or engineering change order as the operation steps in the routing are completed.
Start	This is a start date that you can enter, or an automatic start date which the planning system calculates using a back scheduling routine. The routine starts with the required date and offsets the total lead time to calculate the appropriate start date. Will default from system date or you can enter a date.
Requested	The date that an item is to arrive or that an action is to be complete. *Form-specific information* The planned completion date for the engineering change order.
Assigned to	A number that identifies an entry in the Address Book system. Use this number to identify employees, applicants, participants, customers, suppliers, tenants, and any other Address Book members. *Form-specific information* Identifies an entry in the Address Book system. Use this number to identify ECO reviewers.

Field	Explanation
Labor	This is the standard hours of labor expected in the normal production of this item. The run labor hours in the Routing Master table (F3003) are the total hours it takes the specified crew size to complete the operation. The hours are multiplied by the crew size during shop floor release and product costing. *Form-specific information* For engineering change orders: This is the standard hours of labor expected to complete this step for the ECO.

Defining Changes

From Manufacturing Systems (G3), choose Engineering Change Management
From Engineering Change Management (G3013), choose ECO Parts List

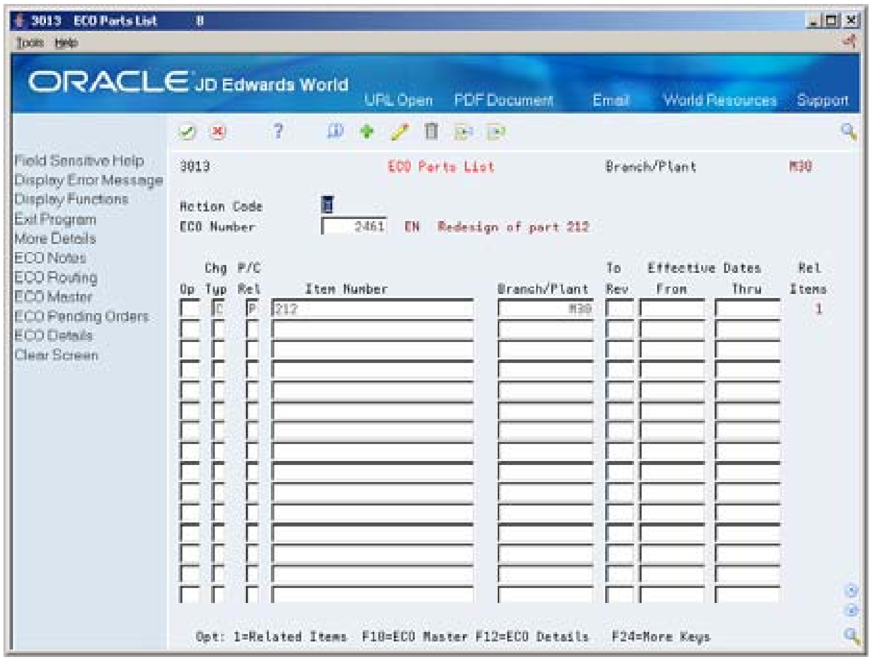
After you have created the ECO and defined the routing, you must define the change and identify the affected items.

Complete the following required tasks:

- Define affected items
- Define engineering changes

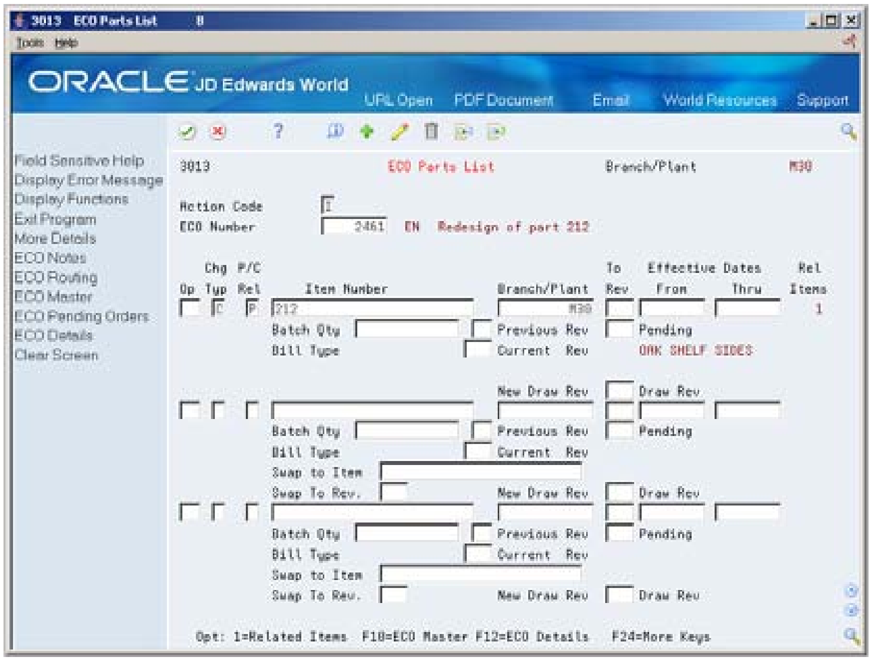
To define affected items

On ECO Parts List



1. Complete the following fields:
    - ECO Number
    - Change Type
    - Parent / Child Relationship
    - Item Number
    - Branch / Plant
    - To Revision
    - Effective From Date
    - Effective Thru Date

2. Access More Details.



3. Complete the following fields for the parent item:

- Batch Quantity
- Unit of Measure
- From Revision Level
- Bill Type
- Swap to Item
- Swap to Revision
- To/Current Drawing Revision

Field	Explanation
ECO Number	The number that identifies an original document. This can be a voucher, an order number, an invoice, unapplied cash, a journal entry number, and so on.
Chg Type	A code that describes the type of item change. This value is used by the Related Items window to determine the number and nature of related items allowed. The value is also used during Engineering Change Population to determine the changes. Valid values are: N New component or bill S Swapping or replacing one item with another C Change an existing component or bill R Remove an existing component or bill

Field	Explanation
P / C	A code that indicates whether the item is a parent or component. Using this value, the system selects items for you on the Related Items window when you perform a where used inquiry for components or a single / multi-level inquiry for parent items. The Engineering Change Population program uses this value to determine the requested change. Valid values are: P The item is a parent. C The item is a component.
Item Number	A number that the system assigns to an item. It can be in short, long, or 3rd item number format.
Branch / Plant	A code that represents a high-level business unit. It can be used to reference a branch or plant that might have departments or jobs, which represent lower-level business units (data item MCU), subordinate to it. For example: ▪ Branch / Plant (MMCU) ▪ Dept A (MCU) ▪ Dept B (MCU) ▪ Job 123 (MCU) Business unit security is based on the higher-level business unit. *Form-specific information* In the Engineering Change Management system, entering *ALL in this field allows changes across multiple plants.
To Revision Level	The revision level for the part that will be reported next. This might not be the next sequential revision.

Field	Explanation
Effective Dates From	A date that indicates one of the following: ▪ When a component part goes into effect on a bill of material ▪ When a routing step goes into effect as a sequence on the routing for an item ▪ When a rate schedule is in effect The default is the current system date. You can enter future effective dates so that the system plans for upcoming changes. Items that are no longer effective in the future can still be recorded and recognized in Product Costing, Shop Floor Control, and Capacity Requirements Planning. The Material Requirements Planning system determines valid components by effectivity dates, not by the bill of material revision level. Some forms display data based on the effectivity dates you enter. *Form-specific information* You must specify effectivity dates for the changes you want to make. The Engineering Change Population program does not process ECOs without effectivity dates.
Thru	A date that indicates one of the following: ▪ When a component part is no longer in effect on a bill of material ▪ When a routing step is no longer in effect as a sequence on the routing for an item ▪ When a rate schedule is no longer active The default is December 31 of the default year defined in the Data Dictionary for Century Change Year. You can enter future effective dates so that the system plans for upcoming changes. Items that are no longer effective in the future can still be recorded and recognized in Product Costing, Shop Floor Control, and Capacity Requirements Planning. The Material Requirements Planning system determines valid components by effectivity dates, not by the bill of material revision level. Some forms display data based on the effectivity dates you enter. *Form-specific information* You must specify effectivity dates for the changes you want to make. The Engineering Change Population program does not process engineering change orders without effectivity dates. Effectivity dates cannot overlap.

Field	Explanation
Batch Qty	The quantity of finished units that you expect this bill of material or routing to produce. This field allows you to specify varying quantities of components based on the amount of finished goods produced. For example, 1 ounce of solvent is required per unit up to 100 units of finished product. However, if 200 units of finished product are produced, 2 ounces of solvent are required per finished unit. In this example, you would set up batch quantities for 100 and 200 units of finished product specifying the proper amount of solvent per unit.
Bill Type of Material	A user defined code (system 40, type TB), that designates the type of bill of material. You can define different types of bills of material for different uses. For example: M (Default)Standard manufacturing bill RWK Rework bill SPR Spare parts bill The system enters bill type M in the work order header when you create a work order, unless you specify another bill type. The system reads the bill type code on the work order header to know which bill of material to use to create the work order parts list. MRP uses the bill type code to identify the bill of material to use when it attaches MRP messages. Batch bills of material must be type M for shop floor control, product costing, and MRP processing.
Swap to Item	The component that will be substituted for another when an item substitution (S) is specified for an ECO change.

What You Should Know About

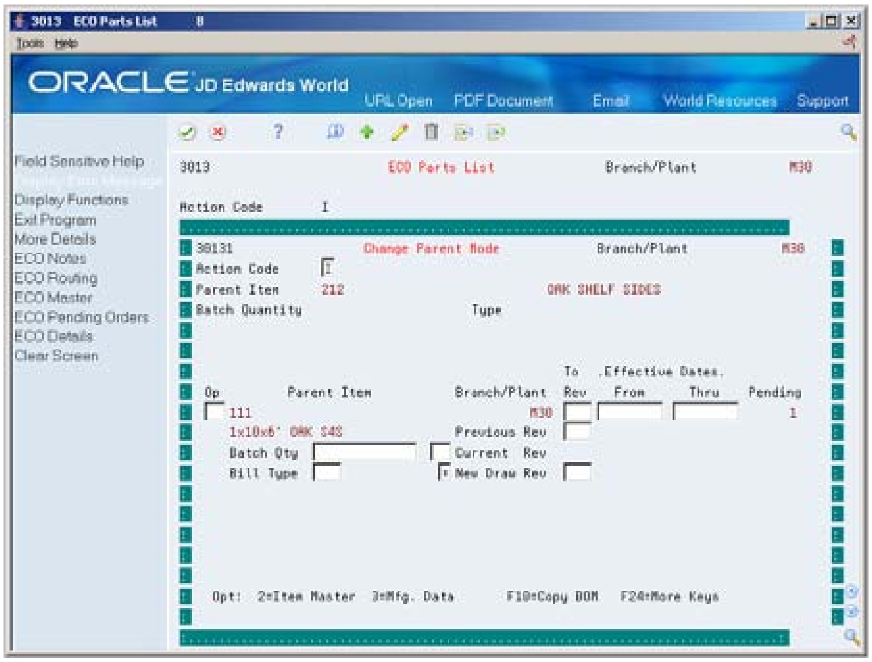
Related items	For all engineering change types (except swap parent) you must enter information about the change for other items on Related Items.
Updating ECO revision levels	You can use the ECO Next Revision Levels user defined code table (00 / NR) to automatically update revision levels based on the sequence you define.
Updating component revision levels	Set a processing option to pre-load all single level parent revision levels for the component you're changing.
Updating drawing revision levels	You can maintain the drawing revision level for each item. The ECO Population program can update the drawing revision level in either the Bill of Material or the Item Master tables.

To define engineering changes

On ECO Parts List

1. Choose the Related Items option.

> **Note:** The name of this form varies depending on the Change Type and Parent/Child Relationship values.



2. On Related Items, complete the following fields for each related item:
   - Item
   - Branch/Plant
   - To Revision Level
   - Effective From Date
   - Effective Thru Date
3. Access the detail area.
4. Complete the following fields:
   - From Revision
   - Batch Quantity
   - Unit of Measure
   - Bill Type
   - Swap to Item
   - Swap to Revision

- To / Cur Drawing Revision
- Component Sequence Number
- Quantity Per
- Operation Sequence Number
- Fixed / Variable

5. Press Enter to accept the changes and exit the Related Items window.

6. Press Enter to accept the changes and exit the Parts List form.

Field	**Explanation**
Type Bill of Material	A user defined code (system 40, type TB), that designates the type of bill of material. You can define different types of bills of material for different uses. For example: M (Default)Standard manufacturing bill RWK Rework bill SPR Spare parts bill The system enters bill type M in the work order header when you create a work order, unless you specify another bill type. The system reads the bill type code on the work order header to know which bill of material to use to create the work order parts list. MRP uses the bill type code to identify the bill of material to use when it attaches MRP messages. Batch bills of material must be type M for shop floor control, product costing, and MRP processing.
From	A date that indicates one of the following: ▪ When a component part goes into effect on a bill of material ▪ When a routing step goes into effect as a sequence on the routing for an item ▪ When a rate schedule is in effect The default is the current system date. You can enter future effective dates so that the system plans for upcoming changes. Items that are no longer effective in the future can still be recorded and recognized in Product Costing, Shop Floor Control, and Capacity Requirements Planning. The Material Requirements Planning system determines valid components by effectivity dates, not by the bill of material revision level. Some forms display data based on the effectivity dates you enter.
Component Sequence	A number that indicates the sequence of the components on a bill of material. It initially indicates the relative sequence in which a component was added to a kit or single level bill of material. You can modify this number to change the sequence in which the components appear on the bill of material. Skip To fields allow you to enter a component line number that you want to begin the display of information.

Field	Explanation
Qty Per	The number of units to which the system applies the transaction.
Fixed / Variable Quantity	Indicates if the quantity per assembly for an item on the bill of material varies according to the quantity of the parent item produced or is fixed regardless of the parent quantity. This value also determines if the component quantity is a percent of the parent quantity. Valid values are: F Fixed Quantity V Variable Quantity (Default) % Quantities are expressed as a percentage and must total 100% For fixed quantity components, the Work Order and MRP systems do not extend the component's quantity per assembly value by the order quantity. For Process Manufacturing, the system stores percent components. Therefore, the system treats zero batch sizes like variable quantity components, and treats batch sizes greater than zero like fixed quantity components.

To remove one of the items listed above, select the row and click Delete before you click OK.

What You Should Know About

Updating the bills of material

This task does not update the work order parts list for the item. You can update your bills of material with engineering change information using one of the following methods:

- Manually
- Run the Where Used Update program
- Run the Engineering Change Population program

Deleting or changing the parts list

You cannot delete or change the parts ECO parts list after you have run the Engineering Change Population program.

Using effectivity dates and revision levels

Use effectivity dates to phase in and out any product or process changes. Effectivity dates might not require an ECO process and are for smaller, shorter term or lower impact changes.

Revision levels usually require an ECO and are for permanent, long term changes. Revision levels include changes to form, fit, or function and should match on a bill of material and routing for the item. You can track changes in a bill of material with revision levels. Use the Revision Level field to display a revision history of the bill. These revision levels are user defined and for reference only.

Updating revision levels	You can only update an ECO with the next revision level if there are no pending ECOs for the item. If there are pending ECOs, the system displays and error message and does not update the revision level.
Auto Inquiry	The ECO system automatically selects related items based on the change type and parent/child relationship values. An option is available to deselect related items on which you do not want to implement the change.
***ALL**	The *ALL function only works with ECOs that use Auto Inquiry. The Engineering Change Population program only updates branch/plant records that match the defined parts list.

Processing Options

See Parts List Detail (P3013).

Reviewing Pending Orders

From Manufacturing Systems (G3), choose **Engineering Change Management**
From Engineering Change Management (G3013), choose **ECO Parts List**

After you process existing work orders and purchase orders, you can review pending orders for items affected by the ECO.

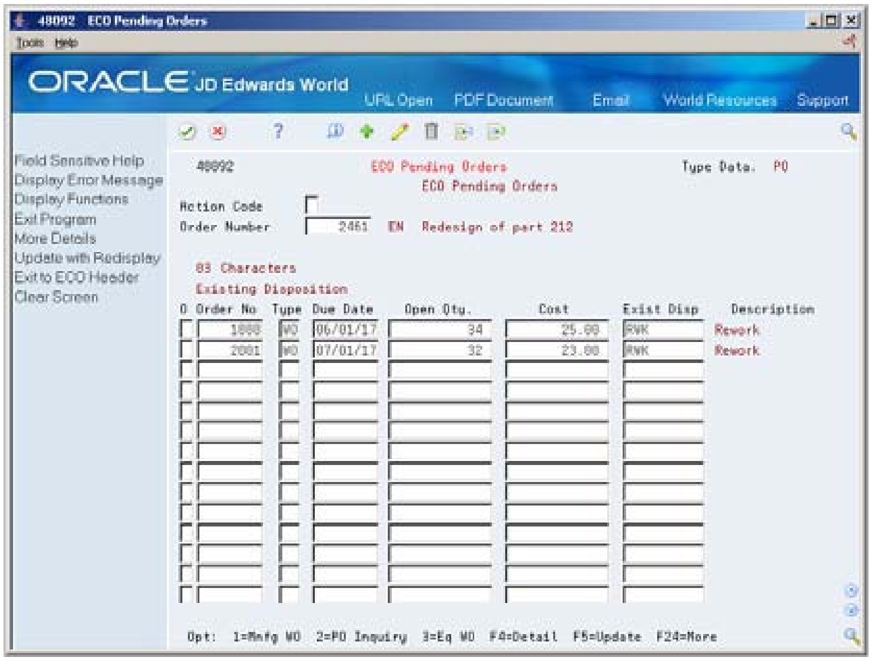
Use pending orders to perform the following:

- Enter a quantity and cost estimate of incorporating the ECO into the work order or part on the purchase order
- Work with existing work orders or purchase orders
- Work with open work orders or purchase orders

The system displays the orders based on the Supply/Demand Inclusion Rules you specify in the processing options.

To review purchase orders

On ECO Parts List, choose the Pending Orders function.



The following fields display ECO information:

- Order Number
- Type
- Due Date
- Open Quantity
- Cost
- Exist Disposition

Field	Explanation
Order Number	The number that identifies an original document. This can be a voucher, an order number, an invoice, unapplied cash, a journal entry number, and so on.
Type Data	User defined code (00/WT) that indicates the type of data being entered within the supplemental database. The code is often an abbreviation for the data it represents, for example, EC might represent Engineering Change.
Characters	The length of the user defined code. It cannot be greater than 10 characters.
Description	A user defined name or remark.

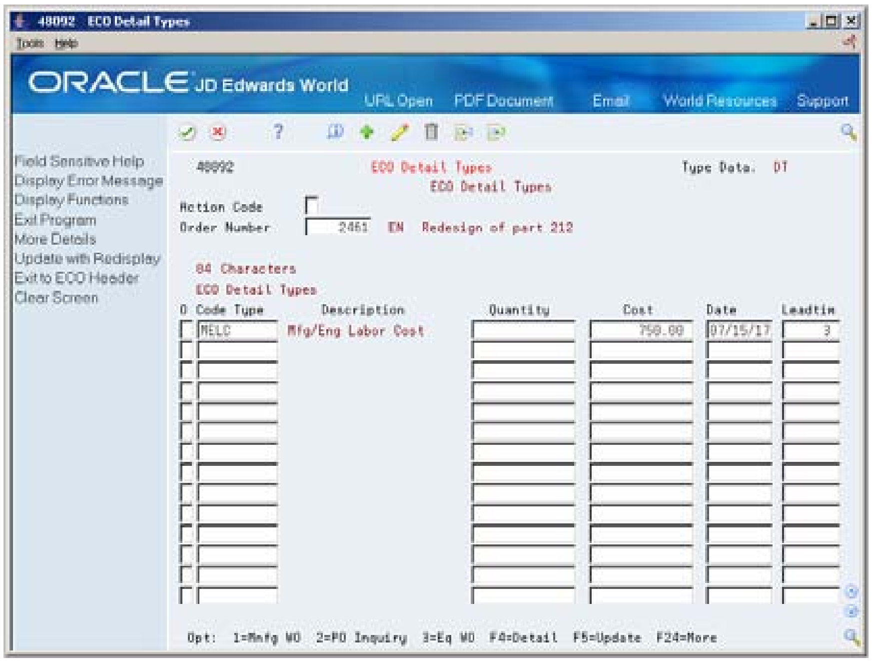
Defining Details for ECOs

	From Manufacturing Systems (G3), choose **Engineering Change Management** From Engineering Change Management (G3013), choose **Enter/Change ECO**

Use ECO Details to enter supporting data such as costs, dates, affected work orders, purchase orders, and approval history.

Complete the following optional tasks:

- Enter a text description
- Enter supplemental info



To enter a text description

1. On Enter/Change Parts List, choose the ECO Detail option.
2. Complete the following fields:
   - Record Type
   - ECO Number
   - ECO Description

To enter supplemental information

You can enter supplemental data items to track the ECO. For example, you could note the costs and lead times involved in the implementation of the ECO. This screen is for information only and does not affect processing of the ECO.

On ECO Detail Types

Complete the following fields:

- ECO Number
- Code Type
- Quantity
- Cost
- Date
- Lead time

See Also

- *Setting Up Category Codes (P00051)* in the *Shop Floor Control Guide*

Processing Options

See Data Entry - ECO Detail (P48092).

Notifying ECO Reviewers

	From Manufacturing Systems (G3), choose **Engineering Change Management** From Engineering Change Management (G3013), choose **ECO Notification**

After you define an ECO and its routings and parts list, use the ECO Notification program to send notices to the reviewers that you have defined in the approval routing master.

You run this program once. After all of the reviewers in the first review group have reviewed the ECO, the system sends notification to the next review group.

What You Should Know About

Notifying reviewers	You can run ECO Notification in two ways: ▪ To process several ECOs, use the data selection in ECO Notification ▪ To process a single ECO, run ECO Notification from Enter/Change ECO

Item flash notice	You can set a processing option to activate flash messages for the item affected by the ECO. You can then view the flash message from inquiry programs. The system deactivates the flash message when you run the Engineering Change Population program to update the bill of material for the item.

Processing Options

See Order Approval Notification (P48181).

See Also

Defining the Change with a Parts List (P3013) to verify that the ECO parts list contains the change type and relationship values you want.

Review Engineering Change Orders

Reviewing Engineering Change Orders

An ECO reviewer reviews ECO and checks outstanding ECOs that await approval.

An ECO coordinator reviews ECO information to:

- Check work orders and purchase orders for affected items
- Determine if anyone has rejected an ECO
- Check an ECO's progress
- Plan and schedule work
- Review who is in the process of reviewing an ECO
- Review who is pending notification

This section contains the following:

- Locating ECO Information
- Reviewing Future Bills of Material
- Printing ECO Information

Locating ECO Information

Locating ECO information consists of the following optional tasks:

- Locate ECO revision information
- Locate approval audit information
- Locate open tasks

For an ECO, you can locate all the revision level changes made to the item. In order to view the most current revision information, you should run the ECO Population program daily.

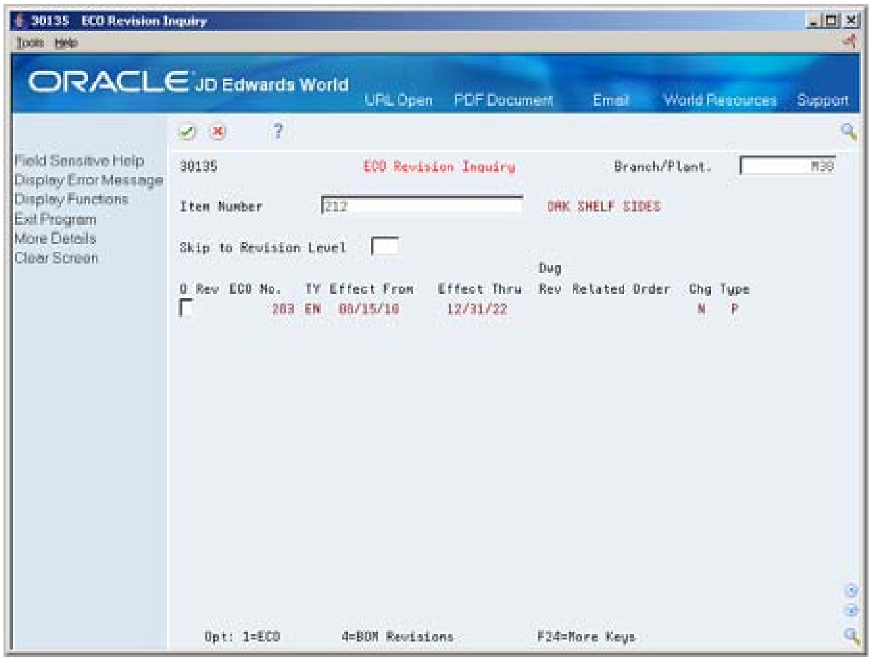
You can review the approval status of an ECO to display which reviewers have approved it, are in the process of reviewing it, and who is pending notification.

You can locate an ECO for requested dates, start dates, and labor hours by operation to help you plan and schedule work.

To locate ECO revision information

	From Manufacturing Systems (G3), choose **Engineering Change Management** From Engineering Change Management (G3013), choose **ECO Revision Inquiry**

On ECO Revisions Inquiry



Complete the following fields:

- Branch / Plant
- Item Number

The following fields display revision information:

- Drawing Revision
- Related Order
- Change Type
- Type Bill
- Batch Quantity
- Unit of Measure
- From Revision

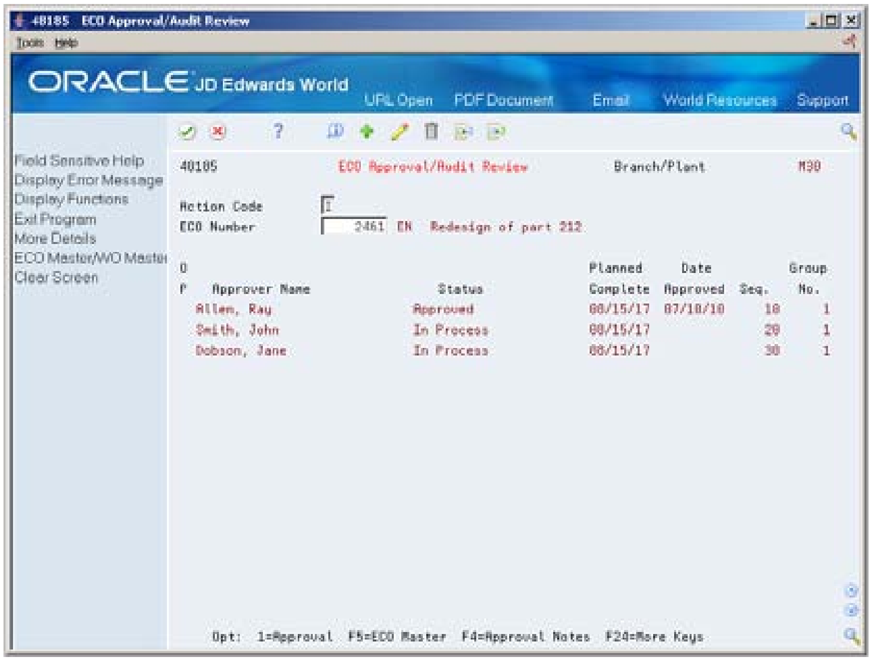
Processing Options

See ECO Revision Inquiry (P30135).

To locate approval audit information

From Manufacturing Systems (G3), choose **Engineering Change Management**
From Engineering Change Management (G3013), choose **ECO Approval/Audit Review**

On ECO Approval/Audit Review



Complete the following field:

- ECO Number

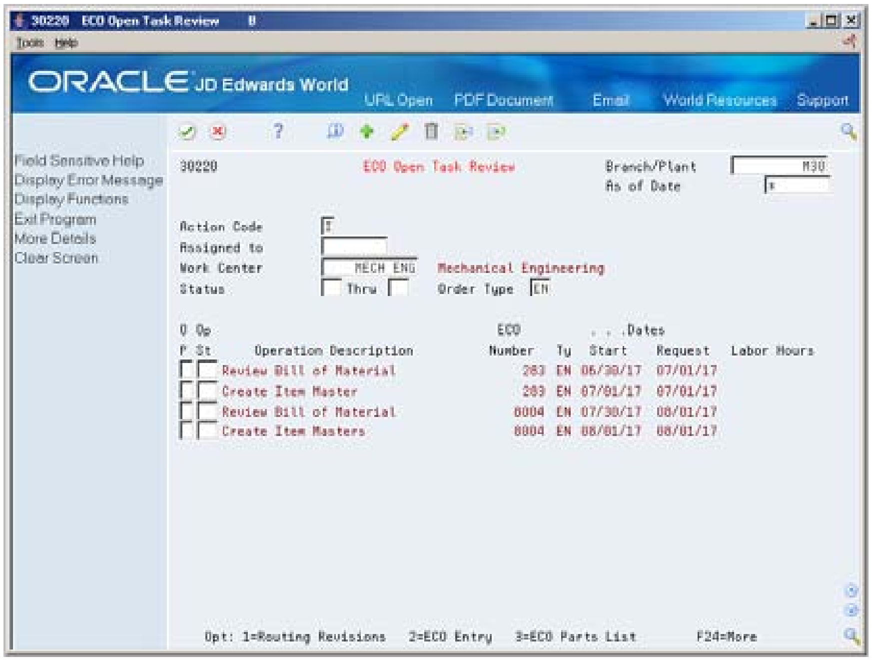
Processing Options

See Approval Audit/Review (P48185).

To locate open tasks

From Manufacturing Systems (G3), choose **Engineering Change Management**
From Engineering Change Management (G3013), choose **ECO Open Task Review**

On ECO Open Task Review



Complete the following fields:

- Branch / Plant
- As of Date
- Assigned to
- Work Center
- Status

Field	Explanation
As of Date	A numeric code that identifies either the period number or the date that you want to locate. If you leave this field blank, the system uses the ending date of the current period that is set up for the company. Valid period numbers are 1 through 14.
Status	User defined code system 31, type OS. The from operation status is used as a beginning point to select work order information to display.
Thru	A user defined code (system 31, type OS) used as an end point to select work order information to display.

Processing Options

See Assignment Review (P30220).

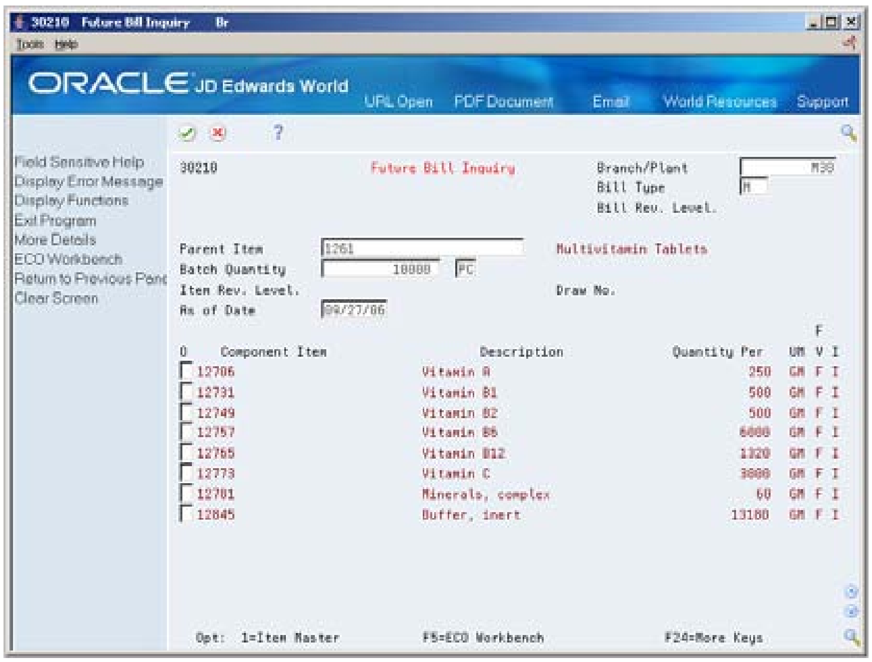
Reviewing Future Bills of Material

	From Manufacturing Systems (G3), choose **Engineering Change Management** From Engineering Change Management (G3013), choose **Future Bill Inquiry**

You can review a bill of material as it would look at a specified date in the future, if pending ECOs are implemented.

To review future bills of material

On Future Bill Inquiry



1. Complete the following fields:

- Branch / Plant
- Parent Item

Note: If more than one selection type exists, the system displays Batch Quantity / Type Selection.

2. On Batch Quantity / Type Selection, enter the selection option next to the future bill of material that you want to review.

3. To review more information about the future bill of material, access the detail area.

Processing Options

See Future Bill Inquiry (P30210).

Printing ECO Information

You can print ECO information to help you manage the ECOs you create. There are two ECO reports available:

- ECO Details Report
- Open ECO Report

ECO Details Report

	From Manufacturing Systems (G3), choose **Engineering Change Management** From Engineering Change Management (G3013), choose **ECO Details Report**

You can generate the ECO Details report to list all details for a specific ECO. Set up processing options to specify the amount and type of information in the report.

```
 48020P                                          JD Edwards World                                  Page -           3
                                                ECO Work Order Print                               Date -     5/30/17



ECO Number . . .     2436 EN

Description. . . Redesign of part 212                                      Date Entered . . 10/15/13
Originator . . .                                                           Branch/Plant . .          CHI

Drawing Change . Y           Status . . . . . 40  Started Labor or Material       Type   . . . . . B Marketing
BOM Change . . . N           Reason . . . . . DE  Design or Drawing Revision      Priority . . . . M Med
Routing Change . Y           Phase In . . . . UUP Use Up
New Part Number. N           Existing Disp. . RWK Rework

. . . .Target Dates. . . .    . . . .Actual Dates. . . .                    . . . . . . Category Codes . . . . . . .
Design . . . . . 07/01/17    Design . . . . .                                                 .              .
Engineering. . . 08/01/17    Engineering. . .                                                 .              .
Incorporation. . 08/15/17    Incorporation. .                                                 .              .

Full Description of Request
Redesign of part 212 - Sides need to be redesigned so that
they fit into a slot in the back of the unit in order to
better handle extra weight.
                                                 ECO Parts List

               Parent Item                           Effective Dates    Frm To
                Related Item    Branch    P/C TOC   From       To     Rev Rev   Seq
--------------------------
--------------------------- ------------ --- --- --------  -------- --- ---  -----
303-A                                 CHI  N   C                          03
  303-A                               CHI                                 03
  212                                 M30
  111                                 M30                                        1.0
  XYZ                                 M30        09/15/17  12/31/20     NEW
  333Z                                M30        09/15/17  12/31/20     A        1.0
  701                                 M20        05/15/17  12/31/20 NEW A
  205                                 M20        05/15/17  12/31/20     A        2.0
  303-A                               M40                                 03
```

Processing Options

See ECO Work Order Print (P48020P).

Open ECO Report

	From Manufacturing Systems (G3), choose **Engineering Change Management** From Engineering Change Management (G3013), choose **Open ECO Report**

Use the Open ECOs report to list the ECOs that are currently in the approval process or as a basis for running the ECO Population program.

You can customize this report as follows:

- Set up the report by document type and status code
- Set up the report by category code and product family
- Set up the report by status code for pending approval
- Set up the report by status code for ECOs that have been approved

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ECO Summary by Branch/Plant Date - 5/30/17

Branch/ Plant	ECO Number	Ty	Date Entered	Description	St	Rea	Pha	Dsp	T Y	P R	Target Date	Actual Date	Originator
M30	3421	EN	11/18/13	Redesign Projector Case	E1	EV	UUP	UAI	B	H	07/15/17		Dobson, Jane
M30	3439	EN	11/18/13	Redesign chair for Desk Set	E1	EV	MYR	UAI	C	H	09/01/17		Allen, Ray
M30	3447	EN	11/18/13	Add extra screws to hardware	A	M	IMD	RWK	B	M	03/31/17		Wright, Allen
M20	84531	EN	03/24/15	701A Swap Component in 205	E1	CC	IMD		B	M	05/15/17		Planner, Mark
M30	283	EN	07/28/14	333z N/P	E5	CC	IMD		B	M	08/15/17	08/15/17	Dobson, Jane
CHI	2436	EN	10/15/13	Redesign of part 212	40	DE	UUP	RWK	B	M	08/15/17		
M30	2461	EN	11/18/13	Redesign of part 212	40	DE	UUP	RWK	B	M	08/15/17		Martin, John
M30	8004	EN	07/28/14	XYZ N/C in Parent 333z	E1	CC	IMD		B	M	09/15/17		Dobson, Jane
M40	84558	EN	03/30/15	Change Seasoning	E1	CC	AVL		B	M	07/25/17		Abbot, Dominique

Approve Engineering Change Orders

Approving Engineering Change Orders

After you have located an ECO for review, you must indicate your approval or rejection. The reviewer typically performs this task.

After the last person in the approval routing has approved the ECO, the system updates the status code with the value you specify in a processing option.

Approving engineering change orders consists of the following tasks:

- Reviewing ECOs for Approval
- Updating Bills of Material

Before You Begin

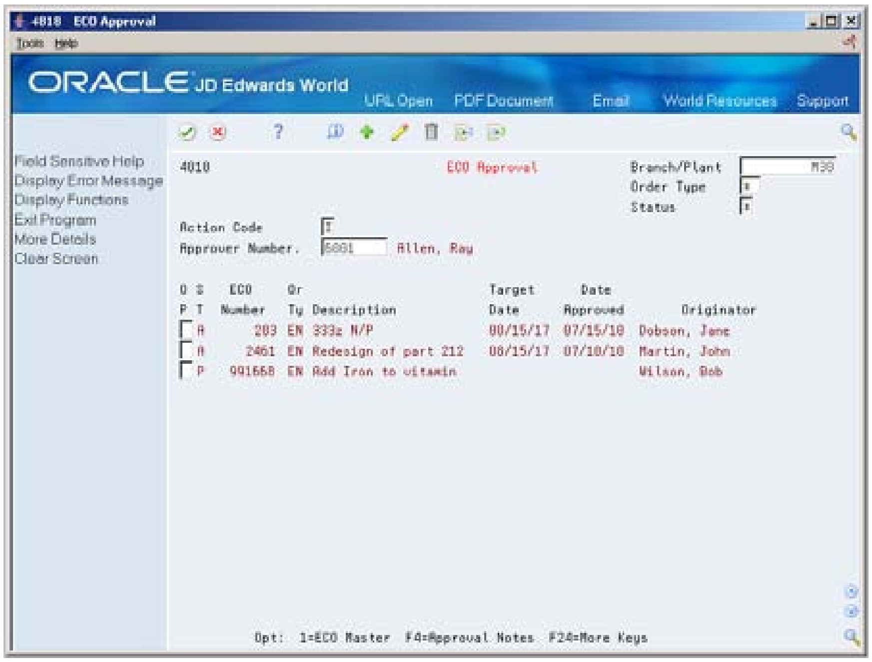
- Locate the ECOs that have been assigned for your review. You can either have the system notify you automatically or you can locate open ECOs with ECO Approval. See *Reviewing ECOs.*

Reviewing ECOs for Approval

	From Manufacturing Systems (G3), choose **Engineering Change Management** From Engineering Change Management (G3013), choose **ECO Approval**

To review an ECO for approval

On ECO Approval



1. Locate the ECOs that await your approval.
2. Complete the following fields:
   - Approver Number (required)
   - Branch / Plant (required)
   - Status
3. For each ECO, complete the following fields to indicate your approval or rejection:
   - Status (required)
   - Date Approved
   - Note

Field	Explanation
Approver Number	A number that identifies an entry in the Address Book system. Use this number to identify employees, applicants, participants, customers, suppliers, tenants, and any other Address Book members.
Status	User defined code system 30, type ST, which indicates the approval status of an engineering change order. For example: A Accept (initiates notification of next review group) R Reject (stops the notification process)
Date Approved	The date on which an approval authority has approved or rejected an ECO. The default value is the current system date.
Note	A 40-character generic description.

What You Should Know About

Protecting the approval field	You can set a processing option to protect the approval field so that only the current user can change approval status.
Defining additional status codes	You can define additional approval status codes on UDC 30/ST. Approval status code A is hard-coded and is the only value that initiates the notification of other review groups.
Entering text	You can type text in the detail area to provide more information regarding your approval.
Rejecting an ECO	To reject an ECO, use status code R. This stops the notification process. After a reviewer rejects an ECO, the creator of the ECO must redefine the ECO and restart the notification process.

Processing Options

See ECO Approval (P4818).

Updating Bills of Material

From Manufacturing Systems (G3), choose **Engineering Change Management**
From Engineering Change Management (G3013), choose **Engineering Change Population**

For ECOs with attached parts lists, you can process the ECO parts list and related items list to update the Bill of Material table with the requested changes.

The Engineering Change Population program performs the following:

- Processes the ECOs
- Updates the bills of material for the items on the ECO
- Creates a report in proof or final mode that describes the requested changes
- Updates ECO related information in the Branch / Plant table
- Updates the Item Master table for item flash messages based on other outstanding ECOs
- Validates the ECO for full approval before accepting the requested changes
- Updates the effectivity dates
- Updates the drawing revision level
- Copies substitute items from the old component to the new component
- Updates the parent / component revision level

Caution: JD Edwards World recommends that you first run this program in proof mode. In proof mode, the report lists all requested changes without actually changing any files. Review the report and then run the program in final mode to update files. After you run this program and update the Bills of Material table, you cannot change the parts list and run the program again.

The Engineering Change Population program only updates the bill of material. You must update the routing to include the same item revision level as the bill of material if you want to synchronize them.

Before You Begin

- Verify that the ECO has been approved by all reviewers
- Verify that the ECO parts list contains the change type and relationship values you want. See *Defining the Change.*
- Verify that the ECO related items list contains the items that you want to include in the change.

Example: Engineering Change Population Report

In proof mode, the report lists all requested changes without actually changing any files.

```
 30510                                            JD Edwards World                                Page -             3
                                               Bill of Material Population                        Date -        6/02/17


ECO Number . . .     8004 EN
Description. . . XYZ N/C in Parent 333z                            Date Entered . . 07/28/13
Originator . . .     9200  Dobson, Jane                            Branch/Plant . .          M30 Memphis Mfg. Plant

Drawing Change . Y          Status . . . . . E1  ECO Entered                 Type   . . . . . B Marketing
BOM Change . . . Y          Reason . . . . . CC  Customer Change Request     Priority . . . . M Med
Routing Change . Y          Phase In . . . . IMD Immediate
New Part Number. Y          Existing Disp. .                                         .

. . . .Target Dates. . . .  . . . .Actual Dates. . . .                 . . . . . . Category Codes . . . . . . .
Design . . . . . 08/01/17   Design . . . . .                                             .                          .
Engineering. . . 09/01/17   Engineering. . .                                             .                         .
Incorporation. . 09/15/17   Incorporation. .                                             .                          .

                                                Bill of Material Changes - F3002
                                                -------------------------------
BEFORE CHANGE                                                    AFTER CHANGE
-----------------------------------------------------------------  -----------------------------------------------------------------
Parent Item                                         Batch       BOM Parent Item                                     Batch        BOM
  Component Item              Branch    Typ   Quantity     UM Rev   Component Item               Branch    Typ   Quantity    UM Rev
--------------------------
--------------------------- ------------ --- ------------ -- ---  -------------------------- ------------ --- ------------ -- ---
                                                                 333Z                                  M30 M                 A
                                                                 OAK SHELF UNIT
                                                                   XYZ                                 M30      Comp. Rev. .  NEW
                                                                    1x10x6' OAK S4S                             Eff From 09/15/17
                                                                   Qty Per            2  EA Comp.Seq   1.1      Eff Thru 12/31/20
                                                                   Fixed/Variable V          Op Seq.  10.00
```

What You Should Know About

Revision Level Control

You can protect the item revision level that you set up in Plant Manufacturing Data with a processing option so that it is only updated by the Engineering Change Population program.

Drawing Information

You can protect the item drawing information that you set up in Item Master Revisions with a processing option so that it is only updated by the Engineering Change Population program.

Processing Options

See ECO-Bill of Material Population (P30510).

5 Processing Options

Item Entry Manufacturing Processing Options

Item Master Revisions (P4101)

Processing Option	Processing Options Requiring Further Description
DEFAULT VALUES : 1. Primary Unit of Measure (Blanks=EA) 2. Weight Unit of Measure (Blanks=LB)	
PROCESS CONTROL : 3. Specify the from and thru dates to be used for effective dates in the Item Notes File : From Date (Blank = System date) Thru Date (Blank = 12/31 with the year = to the default value for the data dictionary item Century Change Year (#CYR))	
4. Enter a '1' for each additional Item Master information screen to display when performing an add or change. If blank, the screen will not display. Classification Codes Cost Revisions (Conditional) Price Revisions (Conditional) Units & Measures Manufacturing Values Bulk Product Information UCC Codes & UOMs Lot Processing	

Processing Option	Processing Options Requiring Further Description
5. Enter a '1' to use the window version of the screens selected above. If left blank, the full screen versions will be displayed. 6. Enter a '1' to automatically call the Item Branch Program (P41026) when adding a new item number and return to the Item Master Screen. Enter a '2' to call the Item Branch program automatically and remain on the Item Branch Screen. If left blank, the Item Branch Program will not be called.	
GLOBAL UPDATE: 7. Enter a '1' to transfer changes made to the 2nd (LITM) and the 3rd (AITM) item numbers to the Item Branch (F4102) item records. (F19 from Item Master Revisions allows you to update other files). or Enter a '2' to transfer changes to records in the selected files (see User Defined Codes 40/IC). Press F1 to display the selected files.	
DREAM WRITER VERSIONS: Enter the version to be used for each program. If left blank, ZJDE0001 is used. 8. Item Availability (P41202) 9. Item Branch (P41026) 10. Product Catalog Detail (P41903)	
DRAWING INFORMATION: 11. Enter a '1' to protect item drawing information from update.	

Branch/Plant Item Information (P41026)

Processing Option	Processing Options Requiring Further Description
PROCESS CONTROL: 1. Enter a '1' to select the Item Location information screens to automatically call when performing an add or a change. If left blank, screen will not display. Classification Codes Cost Revisions (conditional) Price Revisions (conditional) Unit of Measure Quantities Manufacturing Values Item Profile Bulk Product Information Lot Processing	
2. Enter '1' to use the window version of the screens selected above. If left blank, the full screens will display.	
DREAM WRITER VERSIONS: 3. Summary Availability (P41202) 4. Item / Location Information (P41024) 5. Product Catalog Detail Information (P41903)	
REVISION LEVEL CONTROL: 6. Enter '1' to protect ECO revision information from update.	

Item / Branch Duplication (P41015)

Processing Option	Processing Options Requiring Further Description
DEFAULT VALUES:	

Processing Option	Processing Options Requiring Further Description
1. Enter the branch / plants to which you want to duplicate the items: 1) 2) 3) 4) 5) 6) 7) 8) 9) 10)	
SCREEN DEFAULTS: 2. Enter the data selection fields you want displayed on the video (Enter the data dictionary field name.): Data Item One Data Item Two Data Item Three Data Item Four 3. Enter a '1' to pre-load all selection options with a '1' to duplicate those lines.	
FILE UPDATES: 4. Enter a '1' next to each file to duplicate. If left blank, the file will not be duplicated: Cost Ledger File (F4105) Base Price File (F4106) UOM Conversion Factors (F41002) Bulk Depot / Product Info. (F41022) Warehouse Item Profile (F46010) Warehouse Item UOM / Profile (F46011)	

Discrete Manufacturing Processing Options

Work Day Calendar (P00071)

Processing Option	Processing Options Requiring Further Description
BUSINESS UNIT EDIT: 1. Enter a '1' to bypass editing the calendar names against the Business Unit master file.	

Bill of Material Revisions (P3002)

Processing Option	Processing Options Requiring Further Description
INVENTORY VALIDATION: 1. Enter a '1' to validate for an existing Branch/Item record.	
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. **Note:** Options 2 and 3 are used ONLY to set Printer Overrides. 2. Single-Level BOM Print (P30410) 3. Multi-Level BOM Print (P30415) 4. ECO Workbench (P30225) 5. Component Maintenance (P3015)	
DREAM WRITER VERSION FROM WINDOW:	

Processing Option	Processing Options Requiring Further Description
6. Enter the version of ECO Revisions (P48020) to call from the Revisions Window (P30BREV). If left blank, version 'ZJDE0001' will be used.	
COMPONENT BRANCH: 7. Enter a '1' to change the Component Branch (Additions Only) to that which is displayed at the top of the screen.	
FIELD DISPLAY: 8. Enter a '1' by the following fields to activate them: Bill Type Batch Quantity	
DEFAULT VALUES: 9. Bill Type (Optional)	
DATE EFFECTIVITY: 10. Enter a date to default into the As of Date or '*' to display all dates. If left blank, the system date will be used.	
COMPONENT SEQUENCING: 11. Enter the sequence to be displayed: 1 - Component Line Number 2 - Operation Sequence Number **Note:** If left blank, components will be sequenced by Component Line Number.	
REVISION LEVEL CONTROL: 12. Enter a '1' to protect Component Revision Level from update.	

Component Inquiry by Locator (P30155)

Processing Option	Processing Options Requiring Further Description
CATEGORY CODES:	

Processing Option	Processing Options Requiring Further Description
1. Enter the category code to display in the Component Designator. (e.g., S1 - Sales Code 1 P1 - Purchasing Code 1)	
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. 2. Locator Revisions (P3015) 3. Component Locator Window (P30LC) 4. Bill of Materials (P3002)	

Where Used BOM Update (P30520)

Processing Option	Processing Options Requiring Further Description
PROCESSING CONTROL: 1. Enter a '1' if this is to be run in Final mode. If left blank, the program will run in Proof mode. 2. Enter a '1' to DELETE existing records from the Bill of Materials file (F3002). If left blank, records will not be deleted. **Note:** Records will not be updated if delete is selected. 3. Enter a '1' to validate the new component against the Item Branch File (F4102). If left blank, the new item will not be validated.	
REPLACEMENT VALUES: 4. Component Item Number 5. Quantity Per 6. Effective From 7. Effective Thru 8. Unit of Measure 9. Issue Type Code	

Processing Option	Processing Options Requiring Further Description
BILL OF MATERIAL SELECTION: 10. Enter the Branch / Plant to be processed. If left blank, no processing will be performed.	

Bill of Material Inquiry (P30200)

Processing Option	Processing Options Requiring Further Description
DEFAULT VALUES: 1. Enter one of the following: 1 = Single-Level 2 = Multi-Level 3 = Indented 4 = All processes where a co- or by-product is produced If left blank, the Single-Level mode will be displayed. 2. Bill Type (Optional)	
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. NOTE: Options 2a - 2b are used only to set Printer Overrides. No Data Selection or Sequencing is possible. 2a. Single-Level BOM Print (P30410) 2b. -or- Multi-Level BOM Print (P30415) 3. ECO Workbench (P30225)	
DREAM WRITER VERSION FROM WINDOW: 4. Enter the version of ECO Revisions (P48020) to call from the Revisions Window (P30BREV). If left blank, version 'ZJDE0001' will be used.	
COMPONENT SEQUENCING:	

Processing Option	Processing Options Requiring Further Description
5. Enter one of the following: 1 = Sequence components by component line number 2 = Sequence components by operation sequence number If left blank, components will be sequenced by component line number.	
DISPLAY OPTIONS: 6. Enter a '1' to prevent displaying the components for a Subassembly with a Stocking Type of 'P'. If left blank, the components will display on the video.	

Where Used Inquiry (P30201)

Processing Option	Processing Options Requiring Further Description
DEFAULT VALUES: 1. Enter one of the following: 1 = Single-Level 2 = Multi-Level 3 = Indented 4 = All processes where a co- or by-product is produced 5 = Part / Ingredient Availability If left blank, the Single-Level mode will be displayed. 2. Bill Type (Optional)	
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. NOTE: Option 6 is only valid if System 13 (Equipment) is available. 3. Item Search (P41200) 4. Material Where-Used Print (P30420) 5. Work Order Entry (P48013) 6. Item Availability (P30205)	

Processing Option	Processing Options Requiring Further Description
7. Where-Used Detail (P13226)	

Bill of Material Comparison (P30204)

Processing Option	Processing Options Requiring Further Description
DEFAULT VALUES: 1. Enter bill type. If left blank, 'M' will be used. 2. Enter one of the following: 1 - Single-level comparison 2 - Multi-level comparison If left blank, '1' will be used.	
TYPE OF COMPARISON: 3. Enter one of the following: 1 - Summary by work center 2 - Summary by item If left blank, '1' will be used.	
COMPONENT SELECTION: 4. Enter '1' to exclude subassemblies. 5. Enter '1' to include phantoms.	
DREAM WRITER VERSION FROM WINDOW: 6. Enter the version of ECO Revisions (P48020) to call from the Revisions Window (P30BREV). If left blank, version 'ZJDE0001' will be used.	

Single Level Bill of Material (P30410)

Processing Option	Processing Options Requiring Further Description
BILL EFFECTIVITY:	

Processing Option	Processing Options Requiring Further Description
1. Enter the As Of Date for the bill of material. If left blank, the system date will be used.	
REPORT FORMAT: 2. Enter a '1' to print a second line of detail for items appearing on the report. If left blank, only one line of detail will be printed.	
GENERIC TEXT: 3. Enter '1' to print generic text from the Bill of Materials file (F3002).	

Multi-Level Bill of Material (P30415)

Processing Option	Processing Options Requiring Further Description
BILL EFFECTIVITY: 1. Enter the As Of Date for the bill of material. If left blank, the current date will be used.	
REPORT FORMAT: 2. Enter a '1' to print an indented bill of material. 3. Enter a '1' to print a second line of detail for items appearing on the report. If left blank, only one line of detail will be printed.	
COMPONENT LOCATOR: 4. Enter a '1' to print the component locations.	
GENERIC TEXT: 5. Enter '1' to print generic text from the Bill of Materials file (F3002).	
COMPONENTS OF A SUBASSEMBLY WITH A STOCKING TYPE 'P':	

Processing Option	Processing Options Requiring Further Description
6. Enter a '1' to prevent printing the components for a Subassembly with a Stocking Type of 'P'. If left blank, the components will print on the report.	

Material Where Used List (P30420)

Processing Option	Processing Options Requiring Further Description
REPORT FORMAT: 1. Enter the format of the report to print: 1 = Single-Level 2 = Multi-Level 3 = Multi-Level Indented 2. Enter a '1' to print a second line of detail on the report. If left blank, only one line of detail will be printed.	
BILL EFFECTIVITY: 3. Enter the "as of" date for the bill of material. If left blank, the current date will be used.	

Bill of Material Comparison Print (P30425)

Processing Option	Processing Options Requiring Further Description
ITEM / PROCESS 1: 1. Item Number (Required) 2. Branch / Plant (Required) 3. Batch Quantity (Default = 0) 4. Unit of Measure (Default = Prod) 5. As of Date (Default = System) 6. Bill Type (Default = 'M')	

Processing Option	Processing Options Requiring Further Description
ITEM / PROCESS 2: 7. Item Number (Required) 8. Branch / Plant (Required) 9. Batch Quantity (Default = 0) 10. Unit of Measure (Default = Prod) 11. As of Date (Default = System) 12. Bill Type (Default = 'M')	
TYPE OF COMPARISON: 13. Enter one of the following: 1 = Single-Level 2 = Multi-Level If left blank, a Single-Level comparison will be printed. 14. Enter one of the following: 1 = Item summary by work center 2 = Regardless of work center If left blank, items will be summarized by work center.	
COMPONENT PRINT SELECTION: 15. Enter a '1' to exclude subassemblies 16. Enter a '1' to include phantoms. 17. Enter a '1' to print all items. If left blank, only differences will be printed.	

Standard Routing Information (P30430)

Processing Option	Processing Options Requiring Further Description
GENERIC TEXT: 1. Enter '1' to print generic text from the Routing Master File (F3003).	

Routing Inquiry (P30203)

Processing Option	Processing Options Requiring Further Description
DEFAULT VALUES: 1. Routing Type (Optional)	

Lead Time Inquiry (P30207)

Processing Option	Processing Options Requiring Further Description
LEAD TIME CALCULATION: 1. Enter a '1' to use the lead time values from the Item Branch File (F4102). If left blank, calculated lead times will be displayed.	
DISPLAY OPTIONS: 2. Enter a '1' to prevent displaying the components for a Subassembly with a Stocking Type of 'P'. If left blank, the components will display on the video.	

Lead Time Generator (P30822)

Processing Option	Processing Options Requiring Further Description
PROCESSING CONTROL: 1. Enter the Branch / Plant to be processed or '*' to process all Branch / Plants. 2. Enter the effectivity date for routings. If left blank, the system date will be used.	

Engineering Change Management Processing Options

Approval Routing Master (P4808)

Processing Option	Processing Options Requiring Further Description
DEFAULT VALUES: 1. Order Type (Default is 'EN')	

ECO Workbench (P30225)

Processing Option	Processing Options Requiring Further Description
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. **Note:** Option 3 will use 'ZJDE0002'. 1. ECO Entry (P48020) 2. ECO Details (P48092) 3. ECO Pending (P48092) 4. ECO Parts List (P3013) 5. ECO Approval Audit/Review (P48185)	
DEFAULT VALUES: 6. Reason Code (Optional) 7. Phase Code (Optional) 8. Work Order Type (Optional) 9. Priority (Optional) 10. Originator (Optional)	

Processing Option	Processing Options Requiring Further Description
11. From Status (Optional) 12. Thru Status (Optional) 13. Item Number (Optional) 14. Document Type (Optional) 15. Phase (Optional)	
CATEGORY CODE SELECTION DEFAULTS: 16. Enter a '1' next to three Category Codes to further define the ECOs displayed: a. Category 02 b. Category 03 c. Category 04 d. Category 05 e. Status f. Service Type g. Skill Type h. Experience Level i. Category 10 If left blank, Category Codes 02, 03, and 04 will be used.	

ECO Maintenance (P48020)

Processing Option	Processing Options Requiring Further Description
DEFAULT VALUES: 1. Document Type (Default is 'EN') 2. Status (Optional) 3. Note Type (Default is 'A')	
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. 4. ECO Details (P48092)	

Processing Option	Processing Options Requiring Further Description
5. ECO Parts List (P3013) 6. ECO Workbench (P30225) 7. ECO Pending Orders (P48092) 8. ECO Approval Notification (P48181) 9. ECO Approval Audit / Review (P48185)	

Parts List Detail (P3013)

Processing Option	Processing Options Requiring Further Description
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. **Note:** Option 10 will use 'ZJDE0002'. 1. Item Master Revisions (P4101) 2. Item Inquiry w / Word Search (P41200) 3. Supply and Demand Inquiry (P4021) 4. Bill of Material Inquiry (P30200) 5. Where Used Inquiry (P30201) 6. Purchase Order Inquiry (P430301) 7. W.O. Scheduling Workbench (P31225) 8. ECO Revisions (P48020) 9. ECO Details (P48092) 10. ECO Pending (P48092)	
INCLUSION RULES: 11. Enter the version of Supply / Demand Inclusion Rules to use when adding orders to the ECO Pending Orders Detail. If left blank, no orders will be added.	
REVISION LEVELS: 12. Enter a '1' to default the To Rev field to the Next Revision when no pending ECOs exist.	

Processing Option	Processing Options Requiring Further Description
13. Enter the UDC table to retrieve the Next Revision Level. If left blank, UDC table 30/NR will be used.	

Data Entry - ECO Detail (P48092)

Processing Option	Processing Options Requiring Further Description
SELECTION CRITERIA: 1. Enter the Supplemental Data Base code for the type to be reviewed: E = Engineering Change Orders 2. Enter the specific Type of Data on which to inquire.	

Order Approval Notification (P48181)

Processing Option	Processing Options Requiring Further Description
ECO APPROVAL NOTIFICATION: 1. Enter the Flash Message to activate. If left blank, the Flash Message will not be updated. 2. Enter a '1' to notify children when a parent is notified of an ECO	

ECO Revision Inquiry (P30135)

Processing Option	Processing Options Requiring Further Description
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. 1. ECO Entry (P48020)	

Processing Option	Processing Options Requiring Further Description
2. BOM Revisions (P3002)	

Approval Audit/Review (P48185)

Processing Option	Processing Options Requiring Further Description
ORDER APPROVAL TYPE: 1. Enter a '1' to approve Work Orders. If left blank, ECO orders will be approved.	
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. 2. ECO Approval (P4818) 3. Work Order Approval (P4818) 4. ECO Master (P48020) 5. Work Order Header (P48013)	
APPROVAL ACCESS: 6. Enter a '1' to allow access to all approval records. If left blank, only current user's records will be available for approval.	

Assignment Review (P30220)

Processing Option	Processing Options Requiring Further Description
DEFAULT VALUES: 1. Enter the document type to use or '*' for all document types. If left blank, a '*' will be used. 2. From Status (Optional) 3. Thru Status (Optional)	

Processing Option	Processing Options Requiring Further Description
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. 4. ECO Entry (P48020) 5. ECO Parts List (P3013)	

Future Bill Inquiry (P30210)

Processing Option	Processing Options Requiring Further Description
DEFAULT VALUES: 1. Bill Type (Optional)	
DATE EFFECTIVITY: 2. Enter a date to default into the As of Date or '*' to display all dates. If left blank, the system date will be used.	
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. 3. ECO Workbench (P30225)	
DREAM WRITER VERSION FROM WINDOW: 4. Enter the version of ECO Revisions (P48020) to call from the Revisions window (P30BREV). If left blank, version 'ZJDE0001' will be used.	

ECO Work Order Print (P48020P)

Processing Option	Processing Options Requiring Further Description
REPORT FORMAT: Enter a '1' to print the following: 1. ECO Notes	

Processing Option	Processing Options Requiring Further Description
2. ECO Additional Details 2a. Enter the Supplemental Data Base code for the type to be reviewed. E = Engineering Change Order 2b. Enter the specific Type of Data on which to inquire. 3. ECO Parts List	
NOTE TYPE: 4. Enter the Note Type to be printed. If left blank, 'A' will be used.	

ECO Approval (P4818)

Processing Option	Processing Options Requiring Further Description
ORDER APPROVAL TYPE: 1. Enter a '1' to approve Work Orders. If left blank, ECO orders will be approved.	
ORDER TYPE: 2. Enter the default search order type. If left blank, all order types will be used.	
APPROVAL PROCESSING: 3. Enter the default search approval status. If left blank, all statuses will be used.	
DREAM WRITER VERSIONS: Enter the version for each program. If left blank, 'ZJDE0001' will be used. 4. ECO Entry (P48020) 5. Work Order Entry (P48013) 6. ECO Approval Notification (P48181)	
APPROVAL ROUTING COMPLETION:	

Processing Option	Processing Options Requiring Further Description
7. Enter the status code to update the Work Order Master file (F4801) when approval routing is complete. If left blank, status will not be updated.	
APPROVAL ACCESS: 8. Enter a '1' to allow access to all approval records. If left blank, only current user's records will be available for approval.	

ECO - Bill of Material Population (P30510)

Processing Option	Processing Options Requiring Further Description
PROOF OR FINAL MODE: 1. Enter a '1' if this is to be run in Final mode. If left blank, program will run in Proof mode.	
ECO APPROVAL VALIDATION: 2. Enter a '1' to validate ECO as fully approved before allowing final mode update.	
FINAL MODE UPDATES: 3. Enter a '1' to update the ECOs Actual Incorporation Date with system date. If left blank, no date update will occur. 4. Enter the ECO Status to use for updating the ECO as incorporated. If left blank, no status change will occur. 5. Enter a '1' to update the Item Balance File (F4102) Revision Level when the Bill of Material Revision Level is updated for a parent. If left blank, no change will occur to the Item Balance Revision Level (IBMERL). 6. Enter a '1' to update the Item Balance file (F4102) ECO Revision Information. If left blank, no update will occur.	

Processing Option	Processing Options Requiring Further Description
6a. Enter a '1' to prevent the update of component(s) Item Balance file (F4102) ECO Revision Information when processing a Change Parent ECO. If left blank, parent and component items will be updated per option 6. 7. Enter the Item Flash Message to use when resetting the flash message due to other outstanding ECOs. If left blank, no change will occur to the Item Flash Message. 8. Enter a '1' to update the Item Master File (F4101) Drawing Revision Level. If left blank, no change will occur to the Drawing Revision Level (IMRVNO). 9. Enter a '1' to copy substitute items from old components to new components. If left blank, substitute items will not be copied.	
REVISION LEVEL CONTROL: 10. Enter a '1' to update the Component Revision Level in all Bills of Material where a parent item is used. **Note:** Only items at the current Bill Revision Level will be updated.	

6 Appendices

Appendix A – Lead Time Calculations

Understanding Lead Time Calculations

Determining lead time is an essential part of any manufacturing or scheduling process. For any product that you purchase or manufacture, you encounter a time lag between when you order or start it and when you receive or finish it. To account for the lag, you must estimate the extra time and allow for it in your planning.

Several JD Edwards World Manufacturing systems use lead times. In Product Data Management, you enter routing and work center information, and run the Leadtime Rollup program to calculate lead times. The Shop Floor Control system uses the lead time information to calculate the start date of a work order based on the order's due date. For more information, see also *Appendix A - Lead Times* in the *Shop Floor Control - Process Guide* or *Appendix B - Lead Times* in the *Shop Floor Control - Discrete Guide*.

This appendix describes how the Leadtime Rollup program calculates lead times. The following information on the Enter/Change Routing form is used by the Leadtime Rollup program:

Field	Explanation
Time basis code	Identifies the rate used for machine or labor hours entered for any routing step. This is how run hours are expressed for an item (for example, 25 hours per 1000 pieces or 15 hours per 10000 pieces). You must define these codes on UDC 30/TB.
Run hours	Run hours consists of: ▪ Machine hours, which are the hours required to produce the amount from the time basis code. ▪ Labor hours, which are the number of labor hours necessary to produce the amount from the time basis code.
Move hours	The hours a work order is in transit from the completion of one operation to the beginning of the next.

The Leadtime Rollup program calculates the following:

Total Queue/Move Hours

The amount of time a work order is in queue at an operation and the amount of time to move the work order between operations. Total queue / move hours are the sum of the move hours and the queue hours.

```
(Move hours + Queue hours) = Total queue/move hours

Operation 30     (1+2)
Operation 60     (2+4)
Operation 80   + (0+0)
Queue Hours        9
```

Setup Hours

The hours required to set up machinery to run a specific item, regardless of quantity.

```
Sum of standard setup hours for each operation

Operation 30    1
Operation 60    0
Operation 80   +0
Setup Hours     1
```

Level Lead Time

The lead time for the item level in days. For manufactured items, work day calendar is used, and for purchased items, calendar days are used.

The system calculates this value if the Fixed Leadtime Flag is set to F and the Manufacturing Leadtime Quantity is greater that zero. Otherwise, the system uses the value you entered manually to calculate start dates of work orders.

The following values are defined:

- The level lead time has been calculated previously:
  - Queue hours = 9
  - Setup hours = 1
- M or L – Either the machine or labor hours based on the Prime Load Code
- SUM – Sum of all operations
- TIMB – Time Basis Code
- MLQ – Manufacturing Leadtime Quantity
- E – Number of employees in work center
- M – Number of machines in work center
- EF or UT – Efficiency or Utilization from work center

- CUM Yield – Cumulative yield percentage from the routing

For example:

$$\frac{\text{SUM}\left[\dfrac{[((\text{M or L}) / (\text{E or M})) / ((\text{EF or UT}) * (\text{CUM Yield}))] * \text{MLQ}}{\text{TIMB}}\right] + \text{Setup} + \text{Total (Queue + Move)}}{\text{Work hours per day (from Manufacturing Constants file)}}$$

$$\frac{\underset{\text{Operation 30}}{\dfrac{(8/1) * 2000}{10{,}000}} + \underset{\text{Operation 60}}{\dfrac{(12/1) * 2000}{10{,}000}} + \underset{\text{Operation 30}}{\dfrac{(12/1) * 2000}{10{,}000}} + 1 + 9}{8}$$

1.6 + 2.4 + 2.4 + 1 + 9 = 16.4

16.4/8 = 3 days level leadtime

Per Unit Lead Time

The system calculates this value when the Leadtime Flag is set to V (variable). It uses the time basis code from the routing to calculate lead time per unit and the time basis code from the Item Master as a common factor to multiply all the lead times per units.

The following values are defined:

- M or L – Either the machine or labor hours based on the Prime Load Code
- SUM – Sum of all operations
- TIMB1 – Time Basis Code in Item Branch / Plant Manufacturing Data
- TIMB2 – Time basis code from routing
- E – Number of employees in work center
- M – Number of machines in work center
- EF or UT – Efficiency or Utilization from work center
- CUM Yield – Cumulative yield percentage from the routing

For Example:

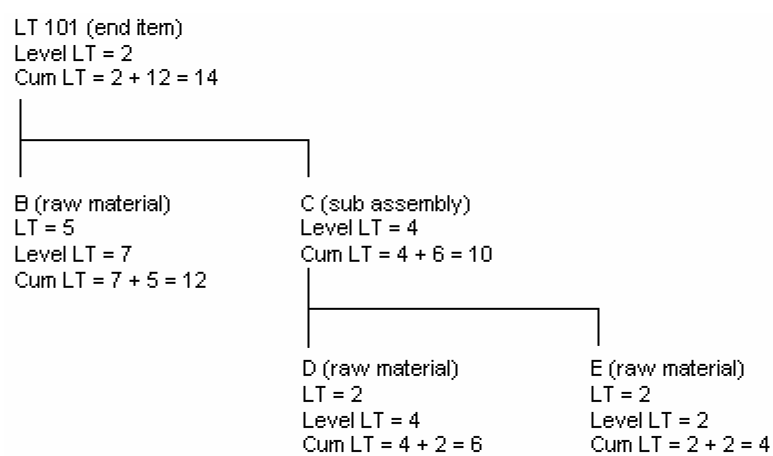
$$\frac{\text{SUM } [\{(\text{M or L}) / (\text{E or M})\} / \{(\text{EF or UT}) * \text{CUM Yield}\}] * \text{TIMB1}}{\text{TIMB2}}$$

$$\underset{\text{Operation 30}}{\frac{(8/1) * 10{,}000}{10{,}000}} + \underset{\text{Operation 60}}{\frac{(12/1) * 10{,}000}{10{,}000}} + \underset{\text{Operation 30}}{\frac{(12/1) * 10{,}000}{10{,}000}}$$

8 + 12 + 12 = 32 hours per unit leadtime

Cumulative Lead Time

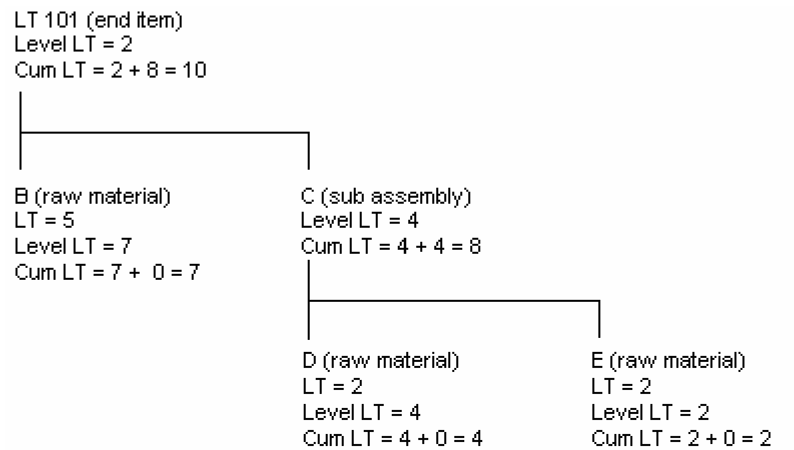
The cumulative lead time is the sum of the level lead time and the longest cumulative lead time of any of the item's next lower level components.



Manufacturing Lead Time

Manufacturing Lead time is the sum of the level lead time and the longest manufacturing lead time of any of the item's lower level components.

Manufacturing lead time assumes that all purchased components are in stock. Raw materials are not considered in the calculation.



Lead Times for Purchased Parts

For purchased parts you must set the level lead time. The cumulative lead time is equal to the level lead time. The following values are zero:

- Manufacturing lead time
- Lead time per unit
- Total queue / move hours
- Setup hours

Avoiding Common Mistakes

If you experience errors running the Leadtime Rollup program, do the following to make sure all data is set up correctly:

- Check your data selection. This program does not operate like R30812 Cost Rollup. All items that are components of the parent item, both manufactured and purchased, must be specified in the data selection. Enter the data selection on the branch / plant, master planning family, or enter each item individually.
- Make sure you have entered a Manufacturing Leadtime Quantity in the branch record. This field should contain a value greater than zero to calculate level lead time.
- Check the effectivity date range to make sure it is valid.
- Check Run or Machine hours in the routing to make sure you have entered hours for a machine-based operation by verifying that the hours match the work center prime load code.
- Make sure the correct time basis code is entered in the item branch record.
- Make sure Level Lead times are specified for purchased parts with a fixed lead time.
- Check to see if the number of employees / machines in the work center is correct.
- Run the Integrity Analysis to ensure low level codes are set correctly.

- If the Leadtime per unit is too small for the system to register, increase the time basis code in the Branch / Plant record for the manufactured item and rerun the rollup program.
- Check the Overlap. The Overlap on a routing step must overlap the previous operation. For example, OP-20 overlaps OP-10.

Appendix B – Functional Servers

About Functional Servers

Several JD Edwards World programs access functional servers. The purpose of functional servers is to provide a central location for standard business rules about entering documents, such as vouchers, invoices, and journal entries. These business rules establish the following:

- Data dictionary default values
- Field edits and valid values
- Error processing
- Relationships between fields or applications

The advantages of a functional server are:

- It reduces maintenance of entry programs because edit rules reside in one central location.
- You can standardize documents across all applications because you create them using the same business rules.
- Generally, the user interface (appearance and interaction) of a form is now separate from how a program works.

To set up business rules for an entry program

The steps for setting up business rules for an entry program are:

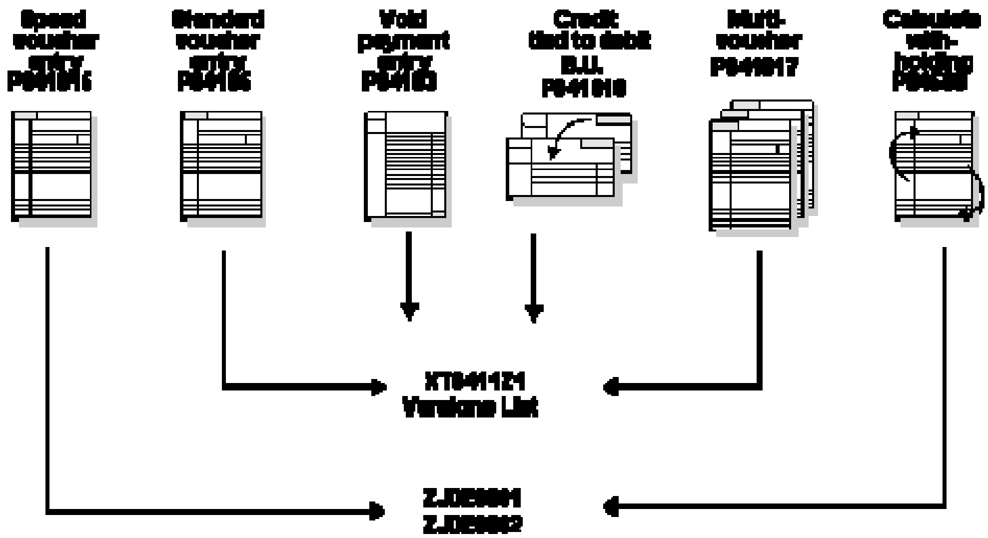
1. Create a DREAM Writer version for a specific functional server program (for example, XT0411Z1 for voucher entry).
2. Set the processing options within the version according to your company requirements.
3. Specify the version you want the entry program to use in the processing options for that entry program.

You can have all your entry programs use the same DREAM Writer version (and thus, use the same rules) or you can set up different DREAM Writer versions. JD Edwards World provides DREAM Writer version ZJDE0001 as the default functional server version for your entry programs.

Caution: Only the person responsible for system-wide setup should make changes to the functional server version. For more information about how to set up DREAM Writer versions, see the *Technical Foundation Guide.*

Example: Voucher Processing Functional Server

The following graphic shows the programs that use the voucher processing functional server. JD Edwards World provides two demo versions of the functional server, ZJDE0001 and ZJDE0002.



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