

Guide
June 1996



Product Data Management

Process Manufacturing

Release A7.3

JDEdwards[®]



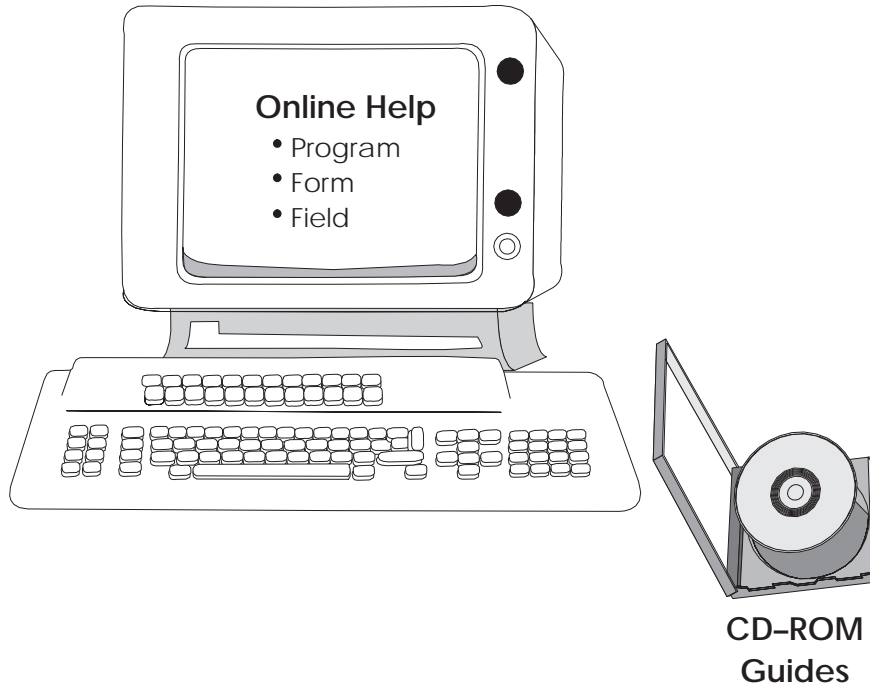
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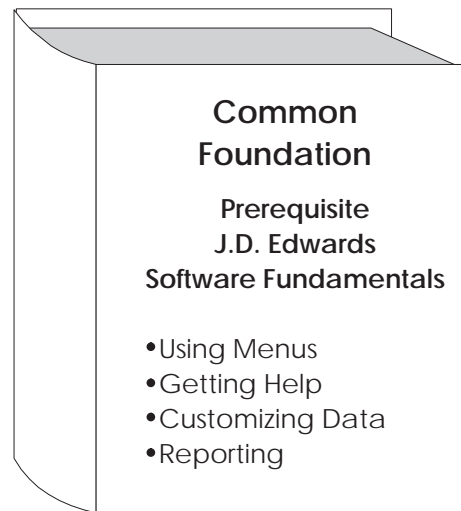
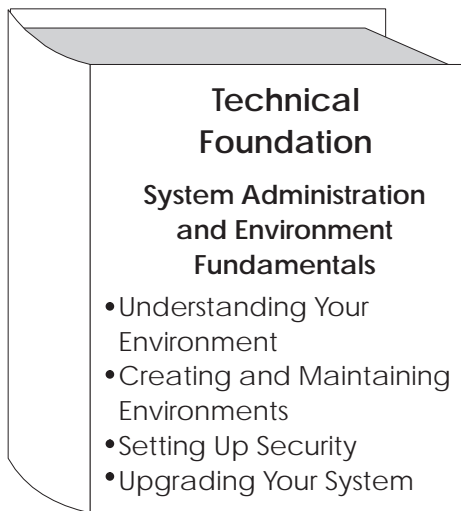
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Where Do I Look?



Guides



Important Note for Students in Training Classes

This guide is a source book for online helps, training classes, and user reference. Training classes may not cover all the topics contained here.

Welcome

About this Guide

This guide provides overviews, illustrations, procedures, and examples for release A7.3 of J.D. Edwards software. Forms (screens and windows) shown are only examples. If your company operates at a different software level, you might find discrepancies between what is shown in this guide and what you see on your screen.

This guide includes examples to help you understand how to use the system. You can access all of the information about a task using either the guide or the online help.

Before using this guide, you should have a fundamental understanding of the system, user defined codes, and category codes. You should also know how to:

- Use the menus
- Enter information in fields
- Add, change, and delete information
- Create and run report versions
- Access online documentation

Audience

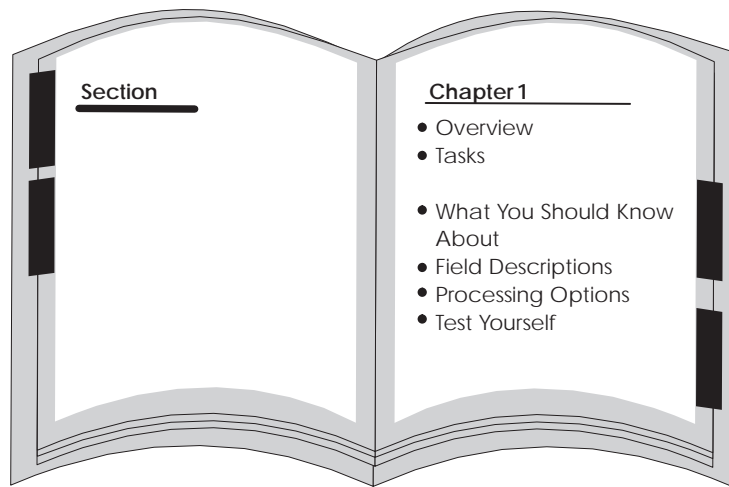
This guide is intended primarily for the following audiences:

- Users
- Classroom instructors
- Client Services personnel
- Consultants and implementation team members

Organization

This guide is divided into sections for each major function. Sections contain chapters for each task or group of related tasks. Each chapter contains the information you need to accomplish the task, run the program, or print the

report. Chapters normally include an overview, form or report samples, and procedures.



When it is appropriate, chapters also might explain automatic accounting instructions, processing options, and warnings or error situations. Some chapters include self-tests for your use outside the classroom.

This guide has a detailed table of contents and an index to help you locate information quickly.

Conventions Used in this Guide

The following terms have specific meanings when used in this guide:

- *Form* refers to a screen or a window.
- *Table* generally means “file.”

We assume an “implied completion” at the end of a series of steps. That is, to complete the procedure described in the series of steps, either press Enter or click OK, except where noted.

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Overview



Product Data Management Overview

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.

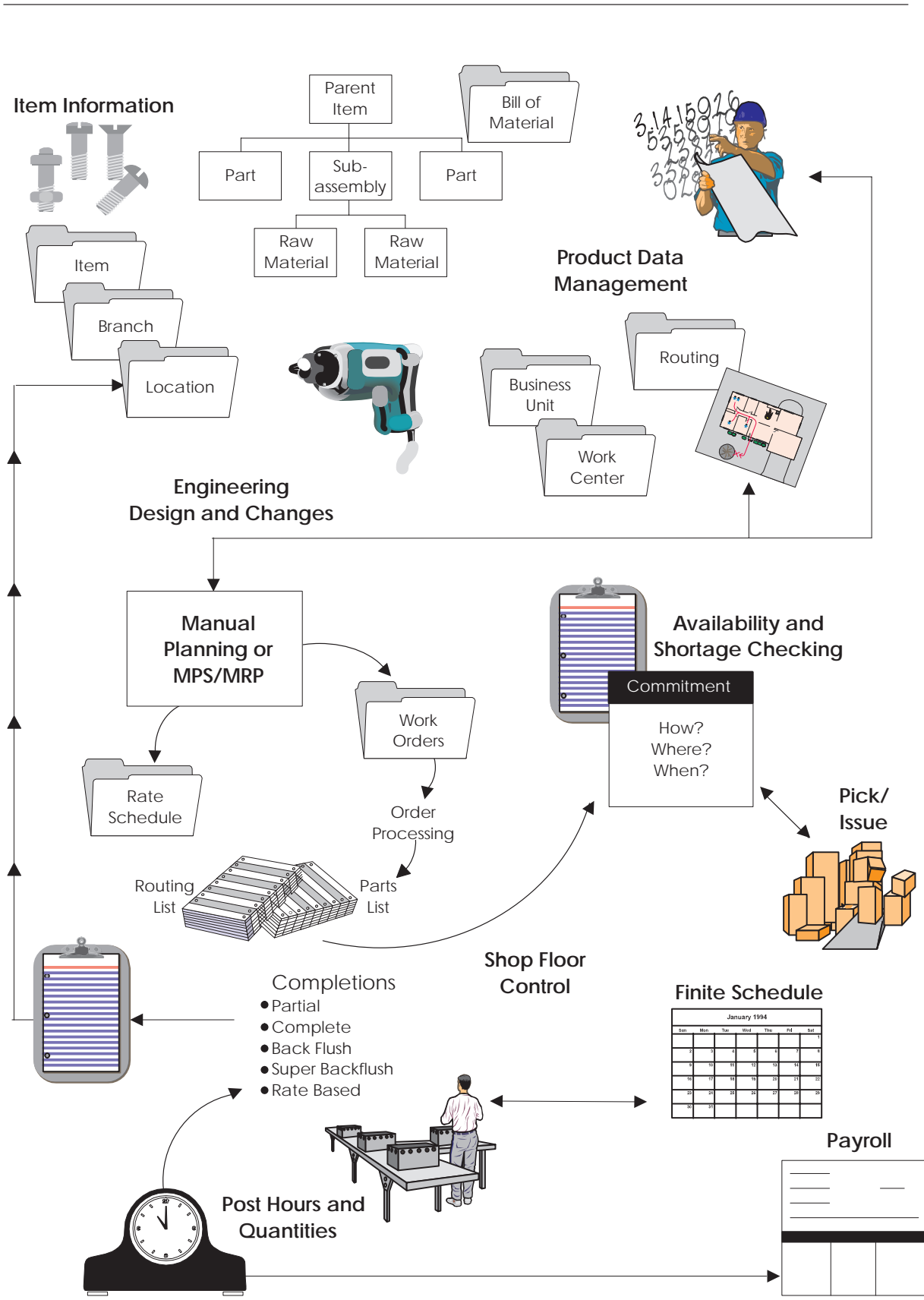
This system provides basic data for other manufacturing systems. You should verify that your product data is accurate to ensure the efficiency of associated systems such as Shop Floor Control and Master Production Scheduling.



System Integration

PDM integrates with the following systems:

Inventory Management	Supplies the basic information about each item (or ingredient), such as part number, description, unit of measure, stocking type, and location
Shop Floor Control	Uses bills of material and routings to process work orders and schedule work activity within the plant
Master Production Scheduling	<ul style="list-style-type: none">• 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
Material Requirements Planning	
Distribution Requirements Planning	
Product Costing/Manufacturing Accounting	<ul style="list-style-type: none">• 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
Sales Order Management and Purchase Order Management	Use bills of material for kit processing
Resource Requirements Planning	Creates a resource profile by retrieving a master scheduled item's multi-level bill of material and selecting the routings for the components



Features

The Product Data Management system enables you to:

Bills of material

- Enter multiple bills of material to maintain many configurations 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 through 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

Process manufacturing

- Define processes with co-products, by-products, and intermediates
- Define quantities of intermediate products in any unit of measure as they move through the manufacturing process
- Enter similar processes by copying ingredients, routings, and co-/by-products and changing only unique information

Engineering Change Management

- Control item changes from a single source
- Incorporate approved changes to bills of material automatically

System Concepts

The Product Data Management encompasses:

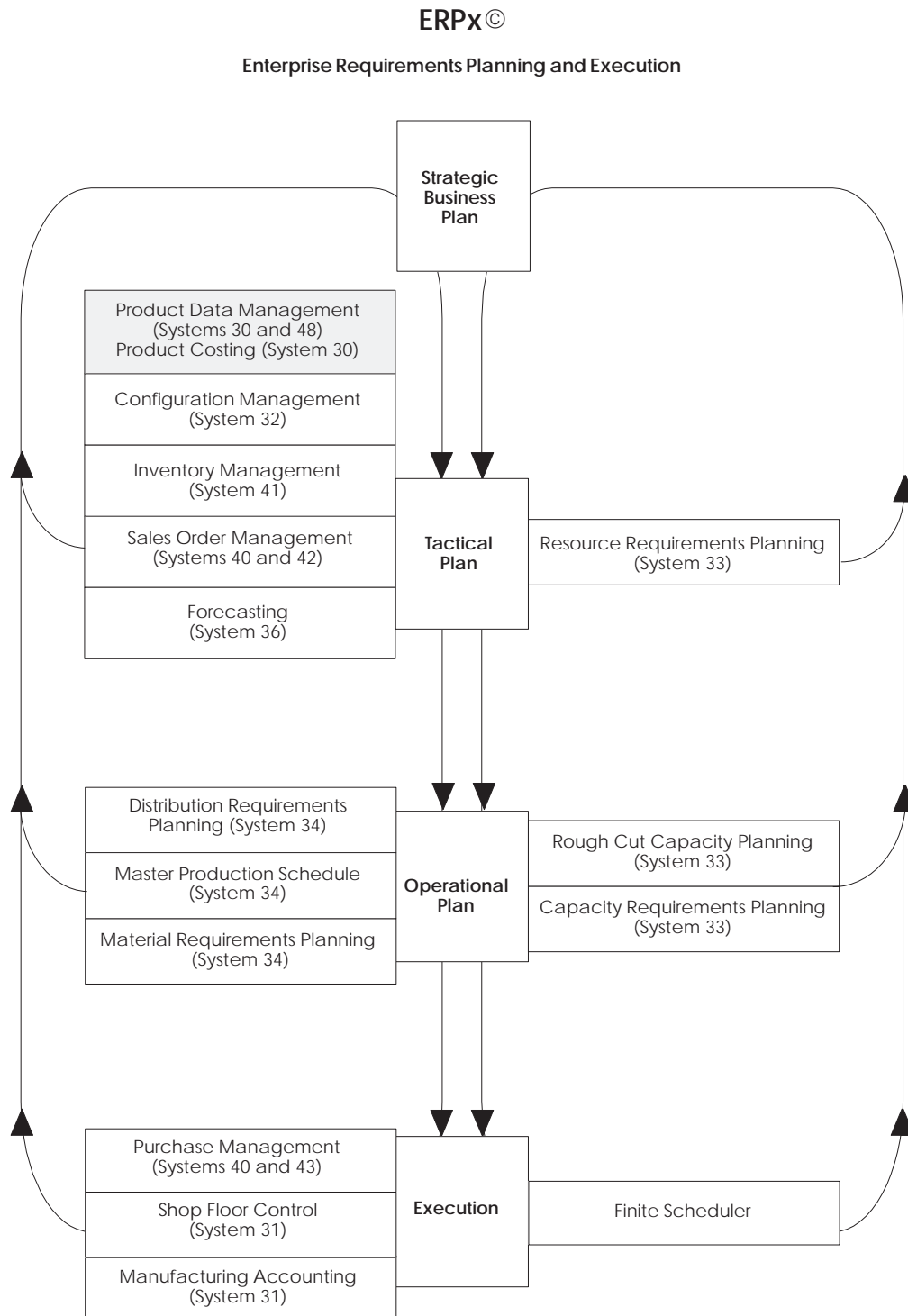
Bills of material	The components and relationships required to produce a parent item
Routings	The operations required to produce the parent item
Work centers	The facilities on the shop floor where the routing operations occur
Processes	An ingredient list and steps for blending or packaging the ingredients
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 (ERPx) Review

Product Data Management is one of many systems in the ERPx system.

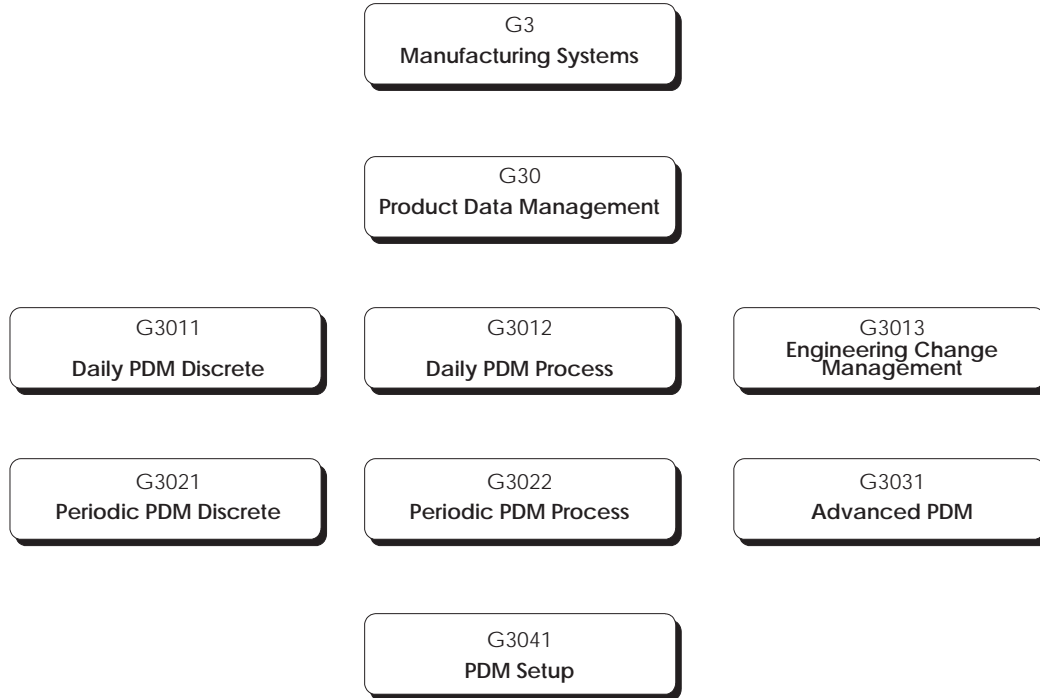
Use the ERPx system to coordinate your inventory and labor resources to deliver products according to a managed schedule. It is a closed-loop manufacturing system that formalizes company and operations planning, and the implementation of those plans.

The ERPx system includes the following J.D. Edwards systems:



Menu Overview

J.D. Edwards 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. From any menu, enter the fast path command at the command line.

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

Item Entry Overview

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

Objectives

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

About Item Entry

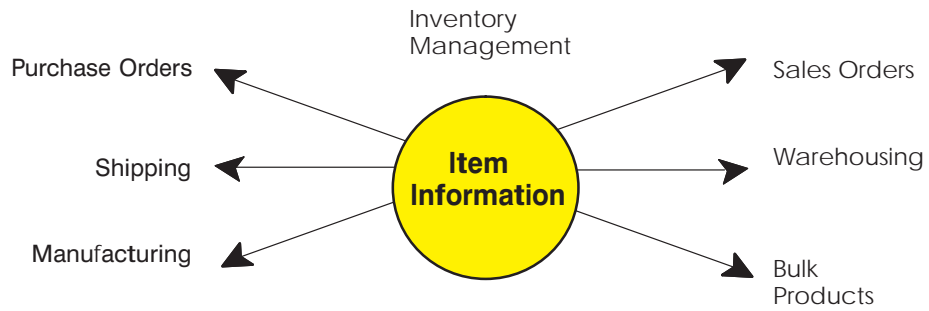
Prior to working with your inventory, you must provide the system with information about the items you stock. When you enter each inventory item, you provide the system with details such as:

- 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:

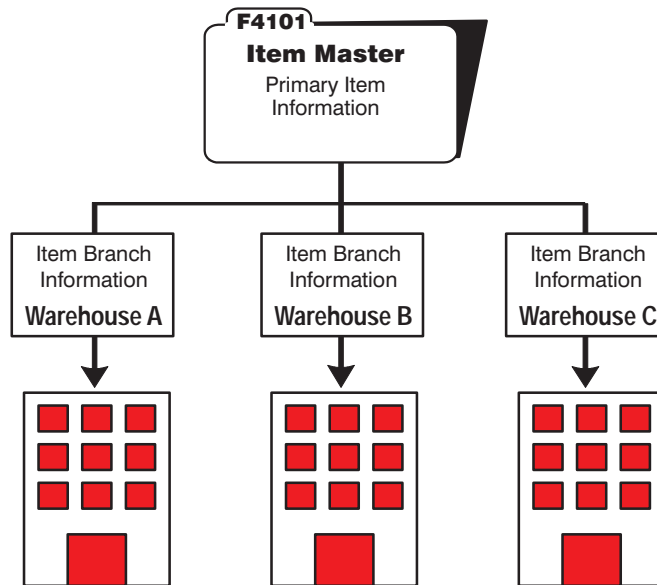
- The branches or plants where each item resides
- The locations used within each branch or plant

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



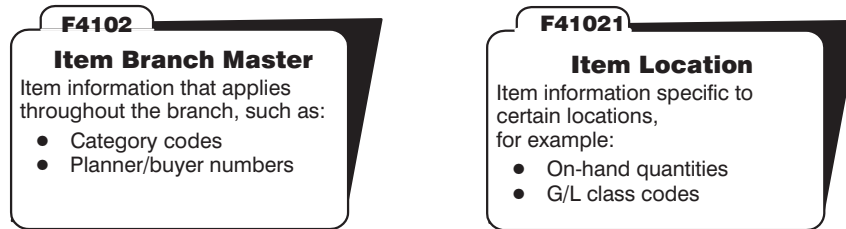
Entering an item includes two steps:

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

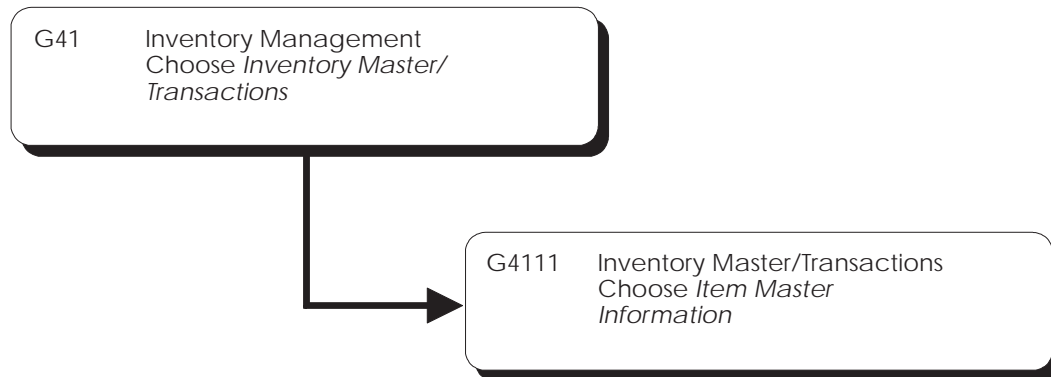
system creates records in the Item Branch Master table (F4102) and the Item Location Information table (F41021).



To enter item information, complete the following steps:

- Enter item master information
- Enter branch/plant information
- 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



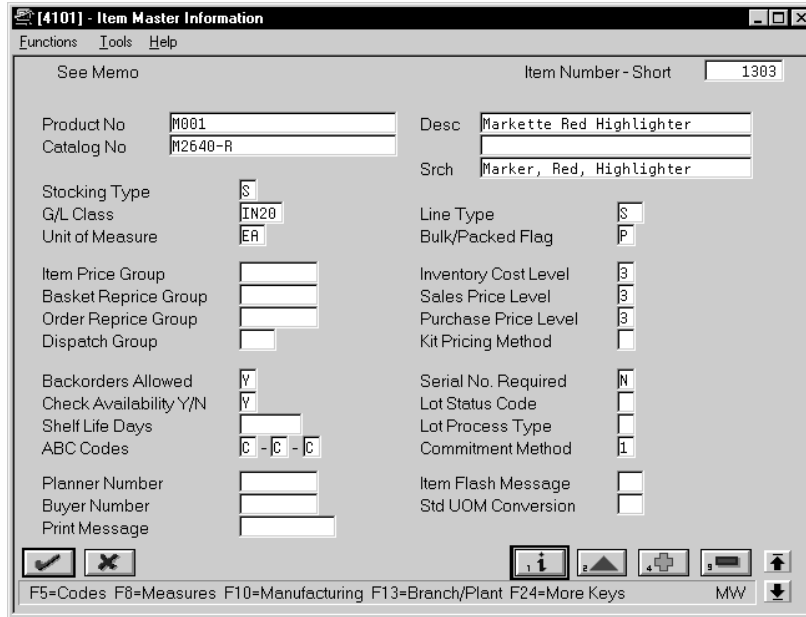
Entering Item Master Information

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

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. You can enter new items by locating the template and specifying new item numbers.

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 translate item descriptions and search text into multiple languages to accommodate those users who must locate items using alternate languages.

After you enter identifiers, a description, and search text for an item, you enter the 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.



To enter item identifiers

On Item Master Information

Complete the following fields:

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

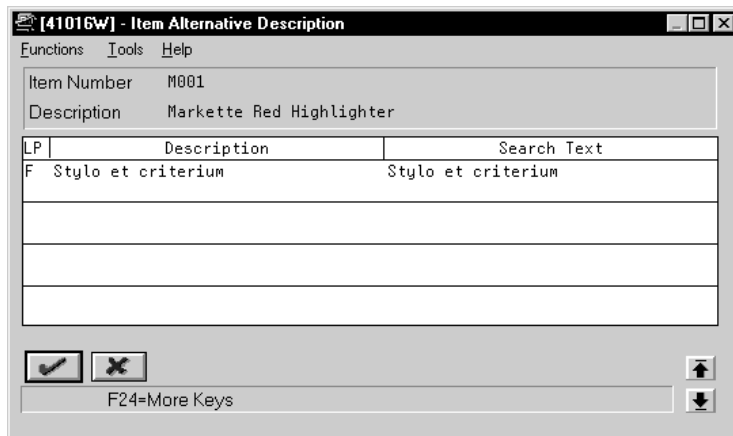
See Also

- *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)
 - Descriptions
 - 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	<p>An identifier for an item.</p> <p>..... <i>Form-specific information</i></p> <p>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.</p> <p>If you leave the other two item identifier fields blank, the system copies this number to those fields.</p>
Product No	<p>An identifier for an item.</p> <p>..... <i>Form-specific information</i></p> <p>The second of three identifiers that you can assign to an item. This field is alphanumeric.</p> <p>If you leave the third identifier field blank, the system copies this number to that field.</p>
Catalog No	<p>An identifier for an item.</p> <p>..... <i>Form-specific information</i></p> <p>The third of three identifiers you can assign to an item. This field is alphanumeric.</p> <p>If you leave the second identifier field blank, the system copies that number to this field.</p>
Desc	<p>A brief description of an item, a remark, or an explanation.</p>
Srch	<p>A field that lets you specify how the system searches for an item. Your entry should be specific and descriptive of the item. Type the words in the order a user is likely to enter them.</p> <p>In single-byte environments, where computer storage space can hold 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.</p> <p>In double-byte environments, where computer storage space can hold more complex language character sets (in languages such as Japanese, Chinese, and Korean), you must complete this field. It 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).</p>

Field	Explanation
Description	<p>A brief description of an item, a remark, or an explanation.</p> <p>..... <i>Form-specific information</i></p> <p>This text should correspond with the language you specify in the Language Preference field.</p>
Description – Line 2	<p>A second, 30-character description, remark, or explanation.</p> <p>..... <i>Form-specific information</i></p> <p>This text should correspond with the language you specify in the Language Preference field.</p>
Search Text	<p>A field that lets you specify how the system searches for an item. Your entry should be specific and descriptive of the item. Type the words in the order a user is likely to enter them.</p> <p>In single-byte environments, where computer storage space can hold 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.</p> <p>In double-byte environments, where computer storage space can hold more complex language character sets (in languages such as Japanese, Chinese, and Korean), you must complete this field. It 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).</p> <p>..... <i>Form-specific information</i></p> <p>This text should correspond with the language you specify in the Language Preference field.</p>
Stocking Type	<p>A user defined code (system 41, table I) that indicates how you stock an item, for example, as finished goods or raw materials. The following stocking types are hard coded and you should not change them:</p> <ul style="list-style-type: none"> B Bulk Floor Stock C Configured item F Feature K Kit parent item N Non-stock
G/L Class	<p>A user defined code (system 41/type 9) that controls which general ledger accounts receive the dollar amount of inventory transactions for this item.</p>

Field	Explanation
Line Type	<p>A code that controls how the system treats 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. For example:</p> <ul style="list-style-type: none"> S Stock item J Job cost N Non-stock item F Freight T Text information M Miscellaneous charges and credits
Unit of Measure	<p>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).</p>
Bulk/Packed Flag	<p>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> <ul style="list-style-type: none"> P Packaged B Bulk Liquid <p>If you leave this field blank, the system uses P.</p>
Backorders Allowed	<p>A code that specifies 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).</p> <ul style="list-style-type: none"> 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 <p>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.</p>
Check Availability Y/N	<p>This field controls whether availability checking is performed throughout the Sales Order Processing system. You might want to check availability for some items. For other items you might want to assume that an adequate supply is available. Valid values are:</p> <ul style="list-style-type: none"> Y Check Availability N Do Not Check Availability

Field	Explanation
ABC Codes	<p>A code that specifies this item's ABC ranking by sales amount.</p> <p>Valid values are:</p> <ul style="list-style-type: none">A Assign this item to the first (largest) amount rankingB Assign this item to the second (intermediate) amount rankingC Assign this item to the third (smallest) amount rankingD Do not include this item when you run ABC Analysis <p>There are three types of ABC analysis—sales, margin, and on-hand value. Within each type of analysis, you can have three groups—A, B, and C.</p> <p>The ABC Code fields contain a percentage that tells the system how to define the A, B, and C groups for categorizing items during ABC analysis. Each group measures a total within the type of analysis.</p> <p>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 then arranges the values of all items from highest to lowest value and accumulates the percentages. What happens next depends on the group:</p> <ul style="list-style-type: none">A group: 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 group: When the accumulated total reaches the percentage you entered for items in the A group, it continues adding 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 group: 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

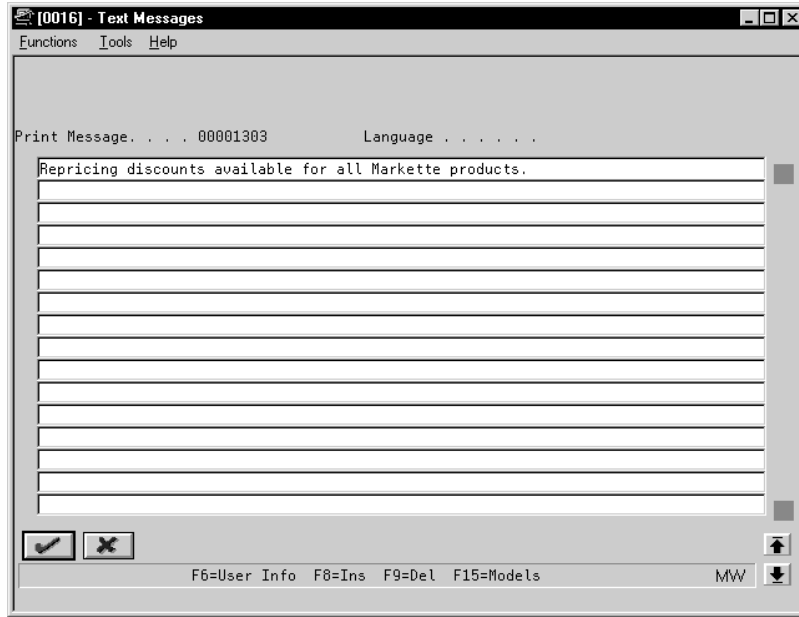
Complete the following fields:

- Print Message
- Item Flash Message

▶ **To enter notes for an item**

On Item Master Information

1. Access Text Messages.



2. On Text Messages, enter the appropriate text.

Field	Explanation
Print Message	A code (table 40/PM) that represents a predefined message set up on Print Message Revisions. You can have the message print on sales orders, purchase orders, and so forth, for the item.
Item Flash Message	<p>A code (table 40/FL) that directs the system to display a particular message each time someone works with the item. The message is the description for the user defined code.</p> <p>When you work with an item that has a flash message, the message displays next to the item number or the system highlights the item number. If the number is highlighted, you can access the message by placing the cursor on the item number and performing the appropriate function called for by the program.</p>

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 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. This value serves as the carrier default when you enter a sales order for the item.
Purchasing: Preferred Carrier	The address number for the preferred carrier of the item. The supplier or your organization may prefer a certain carrier due to route or special handling requirements. This value serves as the carrier default when you enter a purchase order for the item.

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, you can group items that are fragile so that the system prints special shipping conditions on invoices for items from the group.

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 J.D. Edwards systems:

- Sales Order Management
- Purchase Management
- 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.

[41011] - Classification Codes

Functions Tools Help

Product No 1001 Markette Red Highlighter

Sales

Sales Catalog Section SP0

Sub Section FRN

Sales Category Code 3 MRK

Sales Category Code 4

Sales Category Code 5

Preferred Carrier

Purchasing

Commodity Class SP0

Commodity Sub Class

Supplier Rebate Code

Master Planning Family

Landed Cost Rule

Preferred Carrier

Other Codes

Shipping Conditions Code

Shipping Commodity Class

Cycle Count Category

Item Dimension Group MARKER

Warehouse Process Grp 1 DFC

Warehouse Process Grp 2 PEN

Warehouse Process Grp 3

Item Pool Code

Category Code 6

Category Code 7

Category Code 8

Category Code 9

Category Code 10

F3=Exit F12=Previous F24=More Keys MW

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 to be used for sales coding purposes. These codes can represent such things as color, material content, or use.
Sub Section	One of ten category codes to be used 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.

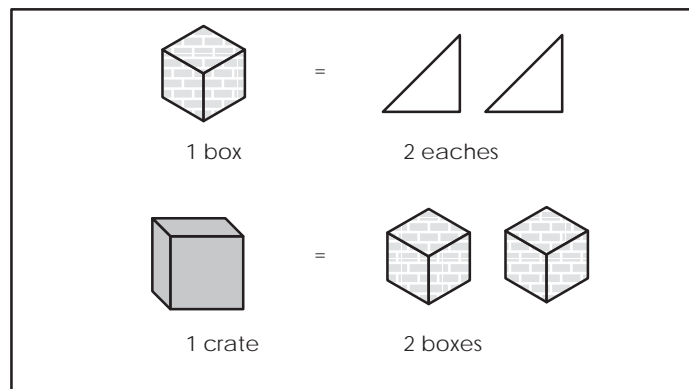
Field	Explanation
Sales Category Code 3	One of ten category codes to be used for sales coding purposes. These codes can represent such things as color, material content, or use.
Carrier Number	The address number for the preferred carrier of the item. The customer or your organization might prefer a certain carrier due to route or special handling requirements.
Category Code 6	One of ten category codes to be used for sales coding purposes. These can represent such things as color, material content, or use.
Commodity Class	<p>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.</p> <p>This field is one of six classification categories available primarily for purchasing purposes.</p>
Commodity Sub Class	<p>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.</p> <p>This field is one of six classification categories available primarily for purchasing purposes.</p>
Supplier Rebate Code	<p>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.</p> <p>This field is one of six classification categories available primarily for purchasing purposes.</p>
Master Planning Family	<p>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.</p> <p>This field is one of six classification categories available primarily for purchasing purposes.</p>

Field	Explanation
Landed Cost Rule	<p>A code (table 41/P5) that indicates the landed cost rule for an item, which defines purchasing costs that exceed the actual price of the item. These costs might be for broker fees, commissions, and so forth. You set up landed cost rules on Landed Cost Revisions.</p> <p>..... <i>Form-specific information</i></p> <p>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.</p> <p>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.</p>
Shipping Conditions Code	<p>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.</p> <p>This field is one of three classification categories available primarily for inventory and shipping purposes.</p>
Shipping Commodity Class	<p>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.</p> <p>This field is one of three classification categories available primarily for inventory and shipping purposes.</p>
Cycle Count Category	<p>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.</p>
Group – Item Dimension	<p>A code (system 41/type 01) that identifies a group of items that share the same dimensions. An item dimension group defines the dimensions 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 (41011).</p>
Process Group 1	<p>A code (system 41/type 02) that identifies a group of items that you want to move the same way. An item's process group determines the movement instructions the system uses to put away, pick, and replenish the item. You assign items to process groups using Classification Codes (P41011).</p>

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

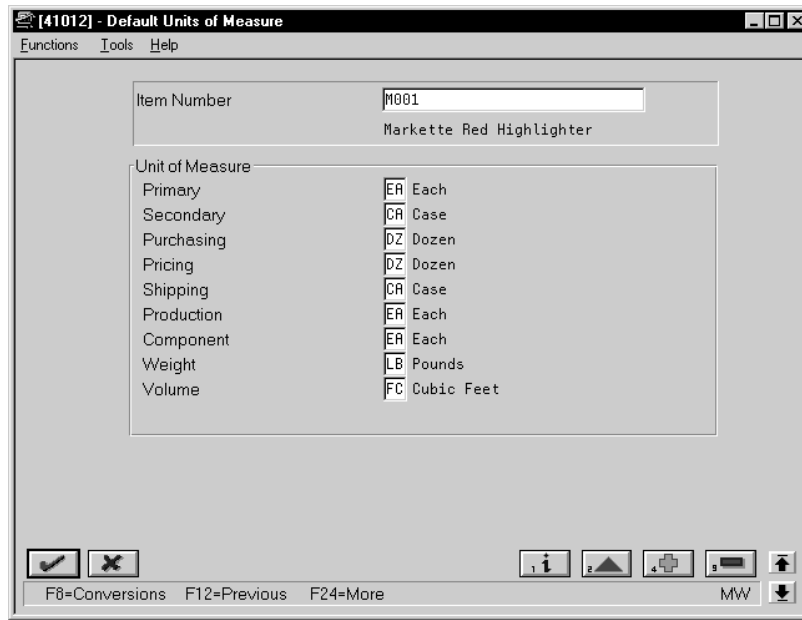
See Also

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

► **To enter default units of measure for items**

On Item Master Information

1. Access Default Units of Measure.

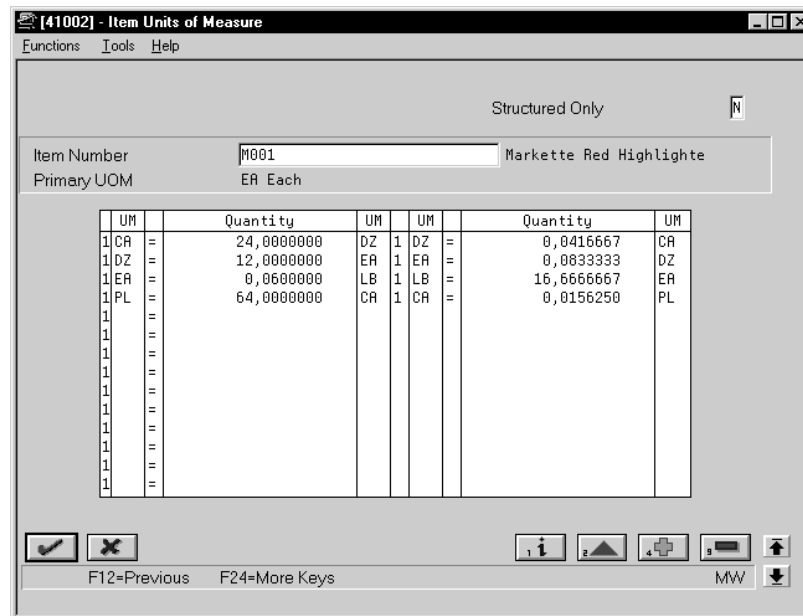


2. On Default Units of Measure, complete the following field to locate the item:
 - Item Number
3. Complete the following fields:
 - Primary
 - Secondary
 - Purchasing
 - Pricing
 - Shipping
 - Production
 - Component
 - Weight
 - Volume

► **To define item unit of measure conversions**

On Item Master Information

1. Access Default Units of Measure.
2. On Default Units of Measure, access Item Units 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	<p>A code (table 00/UM) that indicates the primary unit of measure for the item. The primary unit of measure should also be the smallest unit of measure in which you handle the item.</p> <p>..... <i>Form-specific information</i></p> <p>This is the primary stock accounting unit (PSAU) 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.</p> <p>The default for this field is the unit of measure you specify for the item on Item Master Information.</p>
Secondary	<p>A code (table 00/UM) that indicates an alternate unit of measure for the item.</p> <p>..... <i>Form-specific information</i></p> <p>The default for this field is the primary unit of measure that you specify in processing options for Item Master Information.</p>
Purchasing	<p>A code (table 00/UM) that identifies the unit of measure in which you usually purchase the item.</p> <p>..... <i>Form-specific information</i></p> <p>The default for this field is the primary unit of measure that you specify in processing options for Item Master Information.</p>
Pricing	<p>A code (system 00/type UM) that indicates the unit of measure in which you usually price the item.</p> <p>..... <i>Form-specific information</i></p> <p>The default for this field is the primary unit of measure that you specify in processing options for Item Master Information.</p>
Shipping	<p>A code (table 00/UM) that indicates the unit of measure in which you usually ship the item.</p> <p>..... <i>Form-specific information</i></p> <p>The default for this field is the primary unit of measure that you specify in processing options for Item Master Information.</p>

Field	Explanation
Production	<p>A code (table 00/UM) that indicates the unit of measure in which you produce the item.</p> <p>..... <i>Form-specific information</i></p> <p>The default for this field is the primary unit of measure that you specify in processing options for Item Master Information.</p> <p>This code serves as the default for:</p> <ul style="list-style-type: none"> • 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
Component	<p>A code (table 00/UM) that indicates the unit of measure for an item when it serves as a component.</p> <p>..... <i>Form-specific information</i></p> <p>The default for this field is the primary unit of measure that you specify in processing options for Item Master Information.</p> <p>This code serves as the default value for:</p> <ul style="list-style-type: none"> • The quantity per parent when adding the component item to a bill of material or work order parts list • The quantity in the assembly inclusion rules in Configuration Management
Weight	<p>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.</p> <p>..... <i>Form-specific information</i></p> <p>The default for this field is the weight unit of measure you specify in processing options for Item Master Information.</p>
Volume	<p>A code (system 00/table UM) that indicates the volumetric unit of measure for ambient volume, for example, gallon (GL) or liter (LT).</p>

Field	Explanation
Structured Only	<p>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 set up for the Advanced Warehouse Management system.</p> <p>..... <i>Form-specific information</i></p> <p>If you use the Advanced Warehouse Management system, you must structure conversions from large to small. For example:</p> <p style="padding-left: 40px;">1 Pallet (24 Cases) — Structure Code 1 1 Case (36 Boxes) — Structure Code 2 1 Box (6 Eaches) — Structure Code 3</p> <p>You assign structure code 1 to the largest unit of measure and codes 2, 3, and so on, to the smaller units of measure.</p> <p>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.</p>
UM	<p>A user defined code (system 00/type UM) that identifies the unit of measure for an item. For example, it can be eaches, cases, boxes, and so on.</p> <p>..... <i>Form-specific information</i></p> <p>This unit of measure to which you are converting.</p>
Quantity	<p>The factor that the system uses to convert one unit of measure to another unit of measure.</p> <p>..... <i>Form-specific information</i></p> <p>The quantity and the unit of measure from which you are converting equal the unit of measure to which you are converting.</p>
UM	<p>A code (UDC table 00/UM) that indicates a secondary unit of measure.</p> <p>..... <i>Form-specific information</i></p> <p>The unit of measure you are converting from. This unit of measure in conjunction with the quantity equals the unit of measure to which you are converting.</p>

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.
- Leadtime information** You enter leadtime 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 leadtime information
- Enter engineering information

The screenshot shows a software window titled "[41013] - Manufacturing Values Entry" for item "M001 Markette Red Highlighter". The window contains the following fields and values:

Item Number	M001	Markette Red Highlighter	
Order Policy Code	1	Issue Type Code	I
Value Order policy		Planning Code	2
MFG Leadtime Quantity		Planning Fence Rule	
Accounting Cost Qty	1	Fixed/Variable	F
		Round to Whole Number	R
Planning Fence		Material Status	
Freeze Fence		Leadtime Level	
Message Display Fence		Leadtime Manufacturing	
Drawing Size		Leadtime Cumulative	
Last Revision No		Leadtime Per Unit	
Drawing Number			
Grade/Potency Pricing		Grade Control	N
Potency Control	N	Standard Grade	
Standard Potency		From - Thru Grade	
From - Thru Potency			

At the bottom of the window, there are navigation buttons: a checkmark, an 'X', a help icon, a home icon, a plus icon, a minus icon, and an up/down arrow. Below these buttons are the labels "F12=Previous", "F24=More Keys", and "MW".

▶ **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 leadtime information**

On Item Master Information

1. Access Manufacturing Values Entry.
2. On Manufacturing Values Entry, complete the following fields:
 - MFG Leadtime Quantity
 - Fixed/Variable
 - Leadtime Level
 - Leadtime Manufacturing
 - Leadtime Cumulative
 - Leadtime 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	<p>A field that the system uses in conjunction with the order policy code. It can show three types of data:</p> <ul style="list-style-type: none"> • The value of the fixed order quantity when order policy code 2 (fixed order quantity) is selected. • 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 is below or above the desired inventory level, then MPS/MRP/DRP generation issues an “increase rate to” or a “decrease rate to” message.
Planning Code	<p>A code that indicates how Master Production Schedule (MPS), Material Requirements Planning (MRP), or Distribution Requirements Planning (DRP) processes this item. Valid codes are:</p> <ul style="list-style-type: none"> 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 <p>These codes are hard coded.</p>

Field	Explanation
Planning Fence Rule	<p>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.</p> <p>For example:</p> <ul style="list-style-type: none"> S tells the system to plan using customer demand before the time fence and forecast after the time fence F tells the system to plan using forecast before the time fence and forecast plus customer demand after the time fence <p>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.</p> <p>Valid codes are:</p> <ul style="list-style-type: none"> 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 S Customer demand before, forecast after 1 Zero before, forecast after 3 Zero before, forecast plus customer demand after
Accounting Cost Quantity	<p>An amount 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.</p>
Round to Whole Number	<p>A code that determines if an item should be rounded to the closest whole number for planning purposes. Valid codes are:</p> <ul style="list-style-type: none"> R Round to the closest whole number Blank Do not round <p>For example, if the calculated requirements for an item are 4.6 and this field has an R, the system rounds the quantity required to 5. If the calculated requirements are 4.4, the system rounds to 4.</p>

Field	Explanation
Planning Fence	<p>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.</p> <p>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.</p>
Freeze Fence	<p>The number of days from the generation start date within which the system should not generate order messages.</p> <p>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.</p>
Message Display Fence	<p>The number of days after the generation start date that the system should not generate order messages.</p> <p>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.</p>
MFG Leadtime Quantity	<p>The quantity that determines the leadtime level for a manufactured item. Each of the routing steps for the item are extended by this quantity. For the system to calculate the leadtime level, the quantity in this field must be a value other than zero.</p>
Fixed/Variable	<p>A code that determines whether the system uses fixed or variable leadtimes. This code works in conjunction with the value from either the Level Leadtime field or the Leadtime Per Unit field. Valid codes are:</p> <ul style="list-style-type: none"> <li data-bbox="776 1430 1370 1520">F Fixed leadtime – The system calculates work order start dates using the value from the Leadtime Level field. <li data-bbox="776 1524 1403 1612">V Variable leadtime – The system calculates work order start dates using the value from the Leadtime Per Unit field.

Field	Explanation
Leadtime Level	<p>The leadtime 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 leadtimes. Level leadtime is different for purchased and manufactured items:</p> <p>Purchased – The number of calendar days required for the item to arrive at your branch/plant after the supplier receives your purchase order.</p> <p>Manufactured – The number of work days required to complete the fabrication or assembly of an item once all the components are available.</p> <p>You can enter level leadtime manually on Manufacturing Values Entry, or you can let the Leadtime Rollup program calculate it. To calculate level leadtime using the Leadtime Rollup program, you must first enter a quantity in the Manufacturing Leadtime Quantity field in the Item Branch table (F4102).</p>
Leadtime Manufacturing	<p>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 leadtimes for all manufactured items, plus the highest manufacturing leadtime for all its components.</p> <p>If all components are purchased, the manufacturing leadtime equals the item's level leadtime. Purchased item leadtimes are not included in the calculation of manufacturing leadtimes.</p> <p>You can enter the manufacturing leadtime manually or you can have the system calculate it when you run the Leadtime Rollup program.</p>
Leadtime Cumulative	<p>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.</p> <p>Manufactured – The total of all level leadtimes for all manufactured items, plus the highest cumulative leadtime of all its components.</p> <p>Purchased – The item's level leadtime. Purchased item leadtimes are included in the calculation of cumulative leadtimes.</p> <p>You can enter this value manually or you can have the system calculate it when you run the Leadtime Rollup program.</p>

Field	Explanation
Leadtime Per Unit	<p>The total number of hours required to build one unit as specified on the routing. This value is factored by the time basis code.</p> <p>You can enter this value manually or you can have the system calculate it when you run the Leadtime Rollup program. The system overwrites this value when you run the Leadtime Rollup program.</p> <p>The system uses this field to calculate start dates for work orders when you use variable leadtimes.</p>
Issue Type Code	<p>A code that defines how each component in the bill of material is issued from stock. In shop floor control, it indicates how a part is issued to a work order. Valid codes are:</p> <ul style="list-style-type: none"> 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 Backflush (at pay-point operation) S Sub-contract item (send to supplier) Blank Shippable end item <p>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.</p>
Drawing Size	<p>A code that represents the engineering drawing size. For example:</p> <ul style="list-style-type: none"> A A-size drawing D D-size drawing
Last Revision No.	<p>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.</p>
Drawing Number	<p>An engineering drawing number that might be the same as the part or item number.</p>

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 (for example, 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. You cannot use both grade control and potency control for the same item.

► **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 if you price the item by grade or potency range. You must control the item by grade to price it by grade. Likewise, 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.

Field	Explanation
From Potency	<p>A number that indicates the minimum potency, or percentage of active ingredients, acceptable for an item.</p> <p>The system displays a warning message if you try to purchase or issue items that fall below the minimum acceptable potency. The system does not allow you to sell items that fall below the minimum acceptable potency.</p>
Thru Potency	<p>A number that indicates the maximum potency, or percentage of active ingredients, acceptable for an item.</p> <p>The system displays a warning message if you try to purchase or issue items that have a potency above the maximum potency acceptable. The system does not allow you to sell items that have a potency above the maximum potency acceptable.</p>
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	<p>A code (system 40, type LG) that indicates the minimum grade acceptable for an item.</p> <p>The system displays a warning message if you try to purchase or issue items that have a grade below the minimum grade acceptable. The system does not allow you to sell items that have a grade below the minimum acceptable level.</p>
Thru Grade	<p>A code (system 40, type LG) that indicates the maximum grade acceptable for an item.</p> <p>The system displays a warning message if you try to purchase or issue items that have a grade above the maximum grade acceptable. The system does not allow you to sell items that have a grade above the maximum grade acceptable.</p>

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 Profiles* in the *Sales Order Management Guide*.

See Also

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

Processing Options for Item Master Information – Revisions

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. _____
- 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.

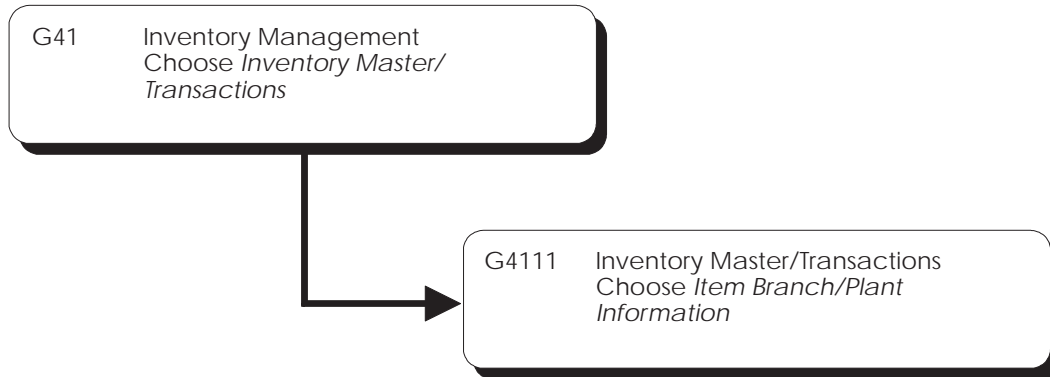
- | | | |
|----------------------|----------|-------|
| 8. Item Availability | (P41202) | _____ |
| 9. Item Branch | (P41026) | _____ |



Exercises

See the exercises for this chapter.

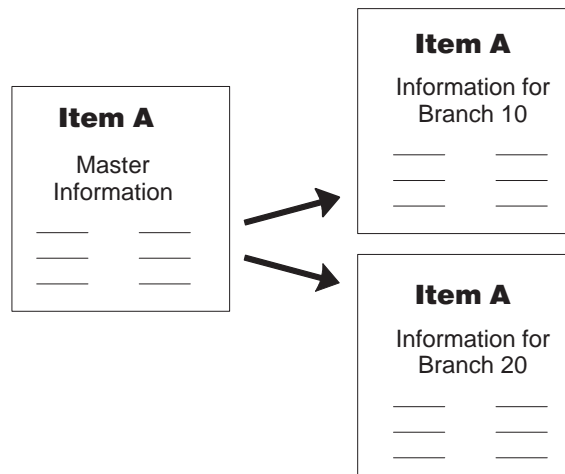
Enter Branch/Plant Information



Entering Branch/Plant Information

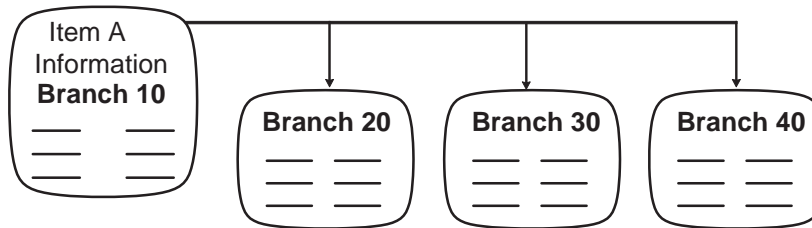
Information about an item might differ from warehouse to warehouse. For example, taxes might be applicable to an item in one warehouse, but not in another. You might also have different quantity requirements for each item based on the warehouse.

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 master information for each branch/plant. You can also specify the locations in the branch/plant in which the item is stored.



Every J.D. Edwards 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. The only 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	<p>A code that identifies a separate entity within a business for which you want to track items and costs. This entity might be a warehouse location, job, project, work center, or branch/plant. The Business Unit field is alphanumeric.</p> <p>..... <i>Form-specific information</i></p> <p>This is the branch/plant or warehouse to which this item information is applicable.</p>

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 System 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
- Change the primary location for an item
- Assign secondary locations to items

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.

```

41021W          Primary Location

Location . . . . . _____
Lot. . . . . . . . . _____

F6=Location Master      F24=More Keys
    
```

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

► **To change the primary location for an item**

On Item Branch/Plant Information

1. Access Item/Location Information.

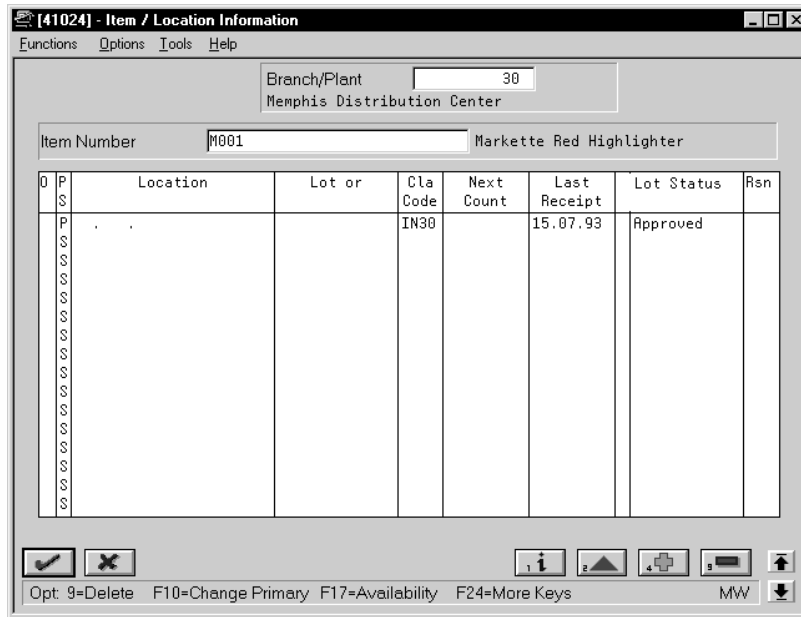
2. On Item/Location Information, enter P in the following field to identify the primary (P) location for the item:
 - P/S (Primary/Secondary Location)
3. Access Primary Location.
4. On Primary Location, complete the following fields:

- Location
 - Lot
5. Return to Item/Location Information.
 6. On Item/Location Information, complete the following field:
 - P/S (Primary/Secondary Location)

▶ To assign secondary locations to an item

On Item Branch/Plant Information

1. Access Item/Location Information.



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

Field	Explanation
Location	<p>A code that identifies inventory locations in a branch/plant. You define the format of the location identifier by branch/plant (P410012).</p> <p>..... <i>Form-specific information</i></p> <p>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.</p>
Lot	<p>A number that identifies a lot or a serial number. A lot is a group of items with similar characteristics.</p>
Primary Location (P/S)	<p>A value that indicates if this is the primary or secondary location for this item within this stocking location. Valid values are:</p> <p style="padding-left: 40px;">P Primary storage location S Secondary storage location</p> <p>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.</p>
Lot Status	<p>A user defined code (table 41/L) that indicates the status of the lot. If this field is blank, it indicates that the lot is approved. All other codes indicate that the lot is on hold.</p> <p>You can assign a different status code to each location in which a lot resides on Item/Location Information or Location Lot Status Change.</p>

What You Should Know About

Changing a primary location

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

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

Deleting a primary location

To delete a primary location you must first change it to a secondary location. No quantities can exist in the locations that you delete.

Entering Item Manufacturing Information

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

Requirements planning information You enter information about inventory shrinkage for the item to plan for the quantity you need to replace due to shrinkage.

Leadtime information You enter leadtime 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 leadtime 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.

Item Number	M001	Branch/Plant	30
Order Policy Code	1	Markette Red Highlighter	
Issue Type Code	I		
Value Order policy		Planning Code	2
MFG Leadtime Quantity		Planning Fence Rule	
Accounting Cost Qty	1	Fixed/Variable	F
Planning Fence			
Freeze Fence		Leadtime Level	
Message Display Fence		Leadtime Manufacturing	
Time Basis	4	Leadtime Cumulative	
Queue Hours		Leadtime Per Unit	
Setup Labor			
ECO Reason		Shrink Factor	
ECO Number		Shrink Factor Method	%
ECO Date		Item Revision Level	
Potency Control	N	Grade Control	N
Standard Potency		Standard Grade	
From - Thru Potency		From - Thru Grade	

► 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 leadtime 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	<p>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.</p> <p>If you are entering a percentage, enter 5% as 5.00 and 50% as 50.00.</p>				
Shrink Factor Method	<p>A value that determines whether the shrink factor you enter for this item is a percentage or a fixed quantity. Valid values are:</p> <table style="margin-left: 20px; border: none;"> <tr> <td style="padding-right: 10px;">%</td> <td>Percentage of order or requested quantity</td> </tr> <tr> <td>F</td> <td>Fixed amount to be added to quantity</td> </tr> </table>	%	Percentage of order or requested quantity	F	Fixed amount to be added to quantity
%	Percentage of order or requested quantity				
F	Fixed amount to be added to quantity				
Time Basis Code	<p>A user defined code (system 30, type TB) that identifies the time basis or rate to be used for machine or labor hours entered for any routing step. You can set rates per unit, per 10, per 1000, and so on.</p> <p>The system uses the values in the Description-2 field on the User Defined Codes form for costing and scheduling calculations. The Description field is a description of what the code represents, but is not used in calculations.</p>				
Queue Hours	<p>The time (in hours) that an order is expected to be in the queue while waiting to be processed through the work center.</p> <p>The system stores this value in the Item Branch table (F4102). This value is calculated by the Leadtime Rollup program (P30822) or you can enter it manually. When you run the Leadtime Rollup program, the system overrides manual entries with calculated values.</p>				
Standard Setup Hours	<p>The standard setup hours you expect to incur in the normal completion of this item.</p>				
ECO Reason	<p>A code (table 40/CR) that identifies the reason for the engineering change order.</p>				
ECO Number	<p>The number assigned to an engineering change order.</p>				

Field	Explanation
ECO Date	The date of the engineering change order.
Item Revision Level	The revision level for an item. If you enter a revision level in this field, 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 for Item Branch Information – Revisions

Process Control:

1. Enter a '1' to select the Item Balance 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. _____

2. Enter a '1' to use the window version of the screens selected above. If left blank, the full screen versions will be displayed. _____

Dream Writer Versions:

3. Summary Availability (P41202) _____
4. Item / Location Information _____
(P41024)
5. Test / Specification Revisions _____
(P3710)



Exercises

See the exercises for this chapter.

Process Manufacturing

Process Manufacturing

Objectives

- To understand the concepts of process manufacturing
- To set up and maintain processes
- To maintain ingredients, co- and by-products, substitutes, and intermediates for processes
- To set up and maintain process work centers
- To review and print process information

About Process Manufacturing

Process manufacturing adds value to a product by mixing, separating, forming, or performing chemical reactions.

Process manufacturing companies create a variety of items, including liquids, fibers, powders, or gasses. Pharmaceuticals, foods, and beverages are specific examples of these types of companies.

These manufacturers produce items in a two-step process:

- A mixing or blending step
- A filling or packaging step

This type of manufacturing can include intermediate steps, such as curing, baking, or fermenting.



Process manufacturing consists of the following:

- Setting up process manufacturing
- Working with work centers
- Working with processes
- Reviewing processes (optional)
- Working with leadtimes

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 and description
- Queue and move times
- Operator, machine, and work hours per day
- Rates for setup, labor, machine, and overhead

In process manufacturing, examples of work centers include vats, ovens, fermenting tanks, and blenders.

Features

Work centers enable 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 employees per work center
- Specify the work center efficiency for the Product Costing and Capacity Planning systems
- Define work center labor, machine, and setup rates
- Define overhead rates for labor and machine fixed and variable overheads

Work Center System Integration

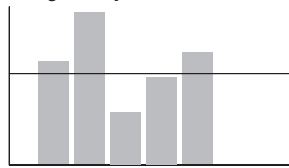
Product Costing



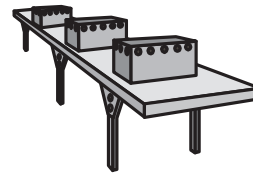
Capacity Requirements Planning

Routing
010 Cut
020 Assemble
030 Finish

Routing impacts generation of load hours

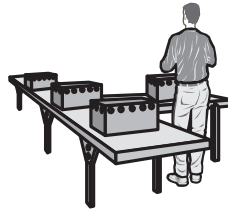


Work Center



Routing impacts calculation of leadtimes, dispatching and shop scheduling

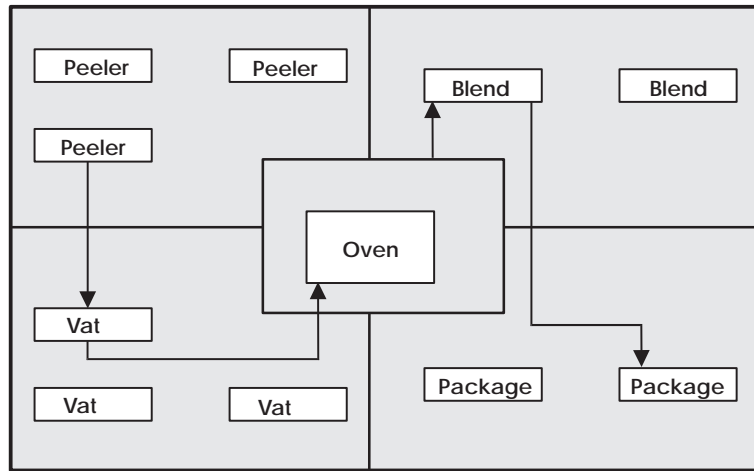
Shop Floor Control



Work center values impact Leadtime calculations

Work Center Arrangement

This example illustrates a work center layout for sample process 777.



Processes

Process manufacturing companies must produce, cost, plan, and schedule their products. Processes use a formula or recipe to add value to ingredients by mixing, separating, forming, or performing chemical reactions, in either batch or continuous mode.

Continuous mode does not use lots. Instead, products flow continuously rather than being divided.

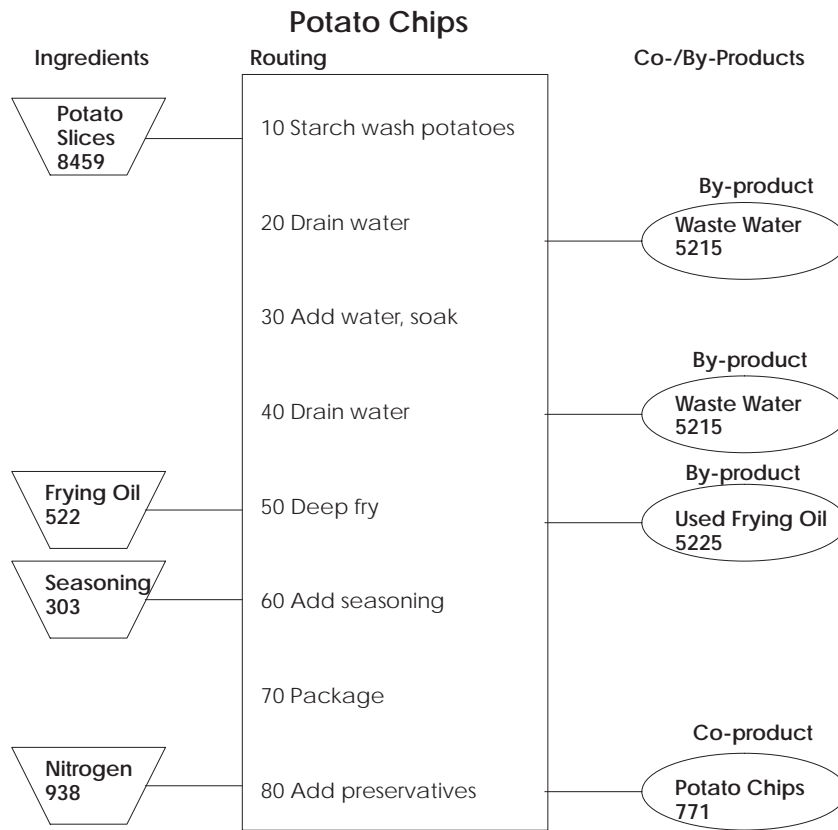
Batch mode produces scheduled quantities. Batch mode is based on a formula or recipe that produces a specific number of end items. You can define different processes for items based on batch size, because many processes vary by quantity.

Processes are basis for creating a parts list for a work order in the Shop Floor Control system. Processes include an ingredient relationship and routing. This relationship defines information including effectivity dates, fixed/variable quantities, and queue and move times.

You can define a process item with ingredient relationships on the Enter/Change Process form. These relationships also determine co-products, by-products, intermediates, and substitutions.

You define the steps that are required to produce a manufactured item with process routings. These routings define work centers and labor standards. Process routings are critical for the Capacity Planning and Product Costing systems, and for measuring production efficiency.

Example: Process 777



Co-Products

Many process steps create more than one output. A co-product is produced by process steps that are defined for specific ingredients. These are usually the main products that companies sell to customers. For example, the sample process “777 Potato Chips” creates one co-product, potato chips. Material Requirements Planning (MRP) plans for co-product demand, but does not plan for by-product demand.

By-Products

A by-product is produced as a residual or incidental item to the process steps. Companies can recycle, sell, or use by-products for other purposes. For example, the sample process “777 Potato Chips” creates two by-products: used frying oil and waste water. Material Requirements Planning (MRP) plans for co-product demand, but does not plan for by-product demand.

Ingredients

An ingredient is the purchased raw material or item that is combined during process manufacturing to produce the process end item.

Intermediates

Intermediates allow you to track the quantity of output of any operation in a work center at a specific time. You can define intermediates in different units of measure, item, or quantity. You can set up one intermediate per operation, but you cannot define an intermediate for the last operation.

Fermented liquid is an example of an intermediate. The liquid ferments for an extended period of time before being distilled. The resulting liquid is not a finished product, but it proceeds to the next operation.

Process Routings

A process routing details the method of manufacture for a specific process item. It includes operations, their sequence, work centers, and standards for setup and run. For a process routing, you can also define operator skill levels, inspection operations, and testing requirements.

Substitutes

You can define substitutes for a single ingredient within your process. You might need to do this for several reasons, such as quality concerns, inventory shortages, or supplier delivery problems.

Alternate Operations

You can define an alternate operation to be performed only as required, such as using oven B if oven A is unavailable. This information assists shop floor personnel, but it is not used by the Product Costing or ERPx systems.

Batch Processes

Food, petroleum and pharmaceutical industries use batch processes where items are produced in fixed quantities, or batches. The Batch Process feature allows you to define different processes for items based on quantity or batch size, since processes vary by quantity.

Percent Processes

Percent bills enable you to define processes with ingredient quantities expressed as a percent of the process batch quantity.

The system processes percent information as follows:

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

The system stores quantities for components as follows:

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

Example: Percent Process

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 ingredient unit of measure in the percent process to convert the number of gallons that correspond to the percent for each ingredient. In this example, the system calculates the ingredients water and concentrate to be 40 GA and 30 GA of the batch size. The system converts the unit to ingredient unit of measure and stores them as 480 QT and 114 LT.



You must set up unit of measure conversions for percent bills to work properly. Verify that all components can convert to the Batch Quantity Unit of Measure.

Leadtimes

Determining leadtime 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 leadtimes for an item at each routing step, then run the Leadtime Rollup program to update leadtime information in the item's Manufacturing Data table.

See Also

- *Appendix C — Leadtime Calculations*

Tables

Process Manufacturing uses the following tables:

- | | |
|---------------|--|
| 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, such as the maximum number of levels in the bills and 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 and machine hours, and outside operations. |
| F30006 | The Work Center Master table contains the rates for each work center, such as overhead, crew size, number of machines, number of employees, efficiency, and utilization. |
| 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 and machines.

Training Class Case Study

The sample data for process manufacturing within ERPx systems covers the manufacture of hash browns, potato chips, ethanol, and potatoes from processed and purchased ingredients.

Concepts

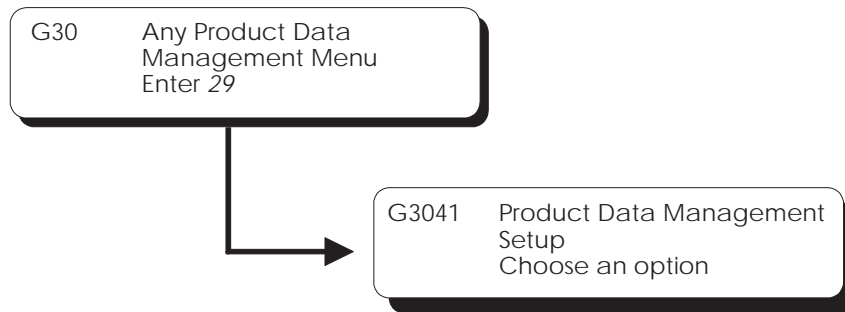
- Co-products of one process are ingredients in next process.
- The item numbering system provides clues to these relationships. For example, process 222 yields co-product 2221.
- The sample processes are set up for branch/plant M40.
- Processes must be defined with stock type R.

Product Data Management Process Manufacturing

The following table describes the processes:

Process	Part Number	Ingredient (stock type)	Co-product (stock type)	By-product (stock type)
845 Potato	745	Potatoes (P)		
	5215			Waste Water (M)
	8451		Food Grade Potato (M)	
	8452		Non-Food Grade Potato (M)	
888 Peeling	8451	Food Grade Potatoes (M)		
	5215			Waste Water (M)
	8455		Peelings (M)	
			Potato Slices (M)	
222 Hash Browns	8459	Slice/Dice Potatoes (M)		
	2221		Hash Brown Potatoes (M)	
777 Potato Chip	8459	Slice/Dice Potatoes (M)		
	5215			Waste Water (M)
	5215			Waste Water (M)
	522	Frying Oil (P)		
	5225			Used Frying Oil (M)
	303	Seasoning (P)		
	7771		Potato Chips (M)	
	938	Nitrogen (P)		
200 Ethanol	8452	Non-food Grade Potato (M)		
	5215	Waste Water (M)		
	2468	Yeast (Sodium Bi-sulphate) (P)		
	246	Enzymes (P)		
	2381		Potato Solids (M)	
	809	Contaminant (P)		
	2001		Ethanol (M)	

Set Up Process Manufacturing



Setting Up Process Manufacturing

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

Setting up process manufacturing consists of the following:

- Setting up manufacturing constants
- Setting up bill of material types
- Setting up time basis codes
- Setting up standard procedure descriptions
- Setting up the shop floor calendar
- Setting up the make/buy table
- Setting up routing types

Setting Up 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

► To set manufacturing constants

On Manufacturing Constants

The screenshot shows a software window titled "[3009] - Manufacturing Constants". The window has a menu bar with "Functions", "Tools", and "Help". The main area is divided into several sections. The "Branch" field is set to "M30". Below it are fields for "Log Bill of Material Changes", "On-Line BOM Validation (Y/N)", and "Work Hours Per Day" (set to "8.00"). There are several sections for overheads, each with a checkbox: "Overheads as Percents or Rates" (checked with "P"), "Include Var. Labor Overhead in cost", "Include Fixed Labor Overhead in cost", and "Include Var. Machine Overhead in cost". On the right side, there are four more checkboxes: "Backflush Options..." (checked with "I"), "Master Routings (Y/N)" (checked with "3"), "Commitment Control" (checked with "I"), and "Hard/Soft Commit" (checked with "I"). At the bottom, there is a toolbar with icons for OK, Cancel, Help, and other functions, and the text "F24=More Keys" below it.

Complete the following optional fields:

- Log Bill of Material Changes
- Online BOM Validation (Y/N)
- Master Routings (Y/N)

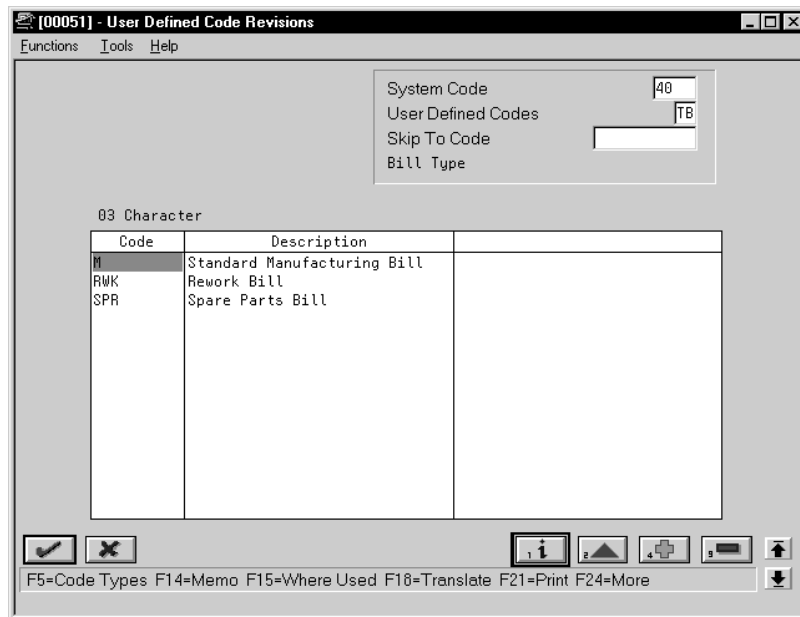
Field	Explanation
Log Bill of Material Changes	<p>This field determines whether changes to the bill of material are recorded in the Bill of Material Change table (F3011). Valid values are:</p> <ul style="list-style-type: none"> Y Yes, log changes. N No, do not log changes. <p>Blank will assume an N.</p> <p>When you log bill of material changes, the system saves the old bill of material and the new changed bill of material.</p>
Log Bill of Material Changes	<p>This field determines whether changes to the bill of material are recorded in the Bill of Material Change table (F3011). Valid values are:</p> <ul style="list-style-type: none"> Y Yes, log changes. N No, do not log changes. <p>Blank will assume an N.</p> <p>When you log bill of material changes, the system saves the old bill of material and the new changed bill of material.</p>
Master Routings	<p>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:</p> <ul style="list-style-type: none"> 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).

Setting Up Bill of Material Types

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

► To set up bill of material types

On Bill of Material Types



Complete the following fields:

- Code
- Description

Field	Explanation
User Defined Code	This column contains a list of valid codes for a specific user defined code table. The number of characters permitted for a code appears in the column title.
Description	A user defined name or remark that describes a field.

Setting Up Time Basis Codes

You can set up user defined codes 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:

- Leadtime Rollup
- Product Costing
- Capacity Requirements Planning
- Shop Floor Control

▶ To set up time basis codes

On Time Basis Code

The screenshot shows a window titled "[00051] - User Defined Code Revisions" with a menu bar containing "Functions", "Tools", and "Help". The window contains several input fields: "System Code" with the value "30", "User Defined Codes" with the value "TB", "Skip To Code" (empty), and "Time Basis Code" (empty). Below these fields is a section labeled "01 Character" containing a table with three columns: "Code", "Description", and "Description-2".

Code	Description	Description-2
U	Unit Rate	1
1	Hours per 10 Units	10
2	Hours per 100 Units	100
3	Hours per 1000 Units	1000
4	Hours per 10000 Units	10000

At the bottom of the window, there are several icons and a status bar with the text: "F5=Code Types F14=Memo F15=Where Used F18=Translate F21=Print F24=More".

Complete the following fields:

- Code
- Description
- Description-2

Field	Explanation
Description 02	Additional text that further describes or clarifies a field in J.D. Edwards systems.

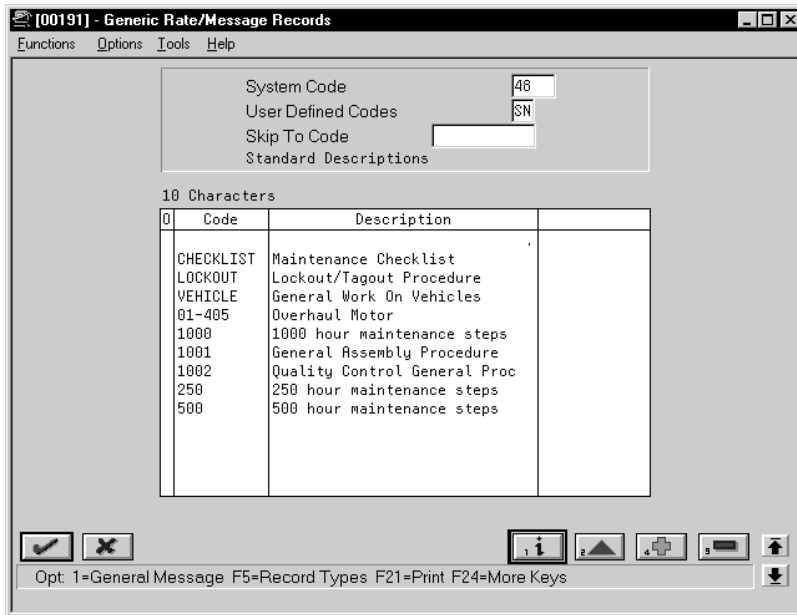
Setting Up Standard Procedure Descriptions

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

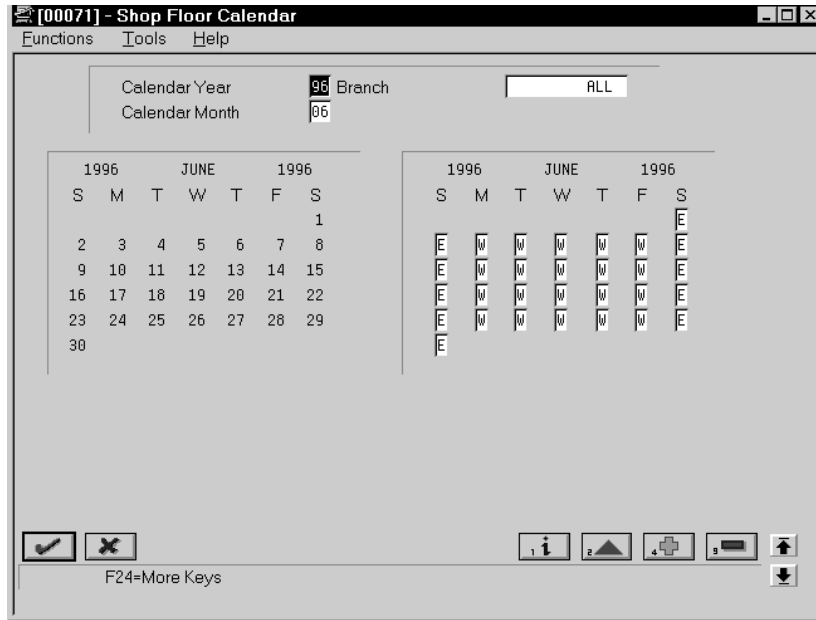
Use a standard procedure description code when you enter a routing and the system prints the standard procedure text on shop floor documents.

▶ To define a description

On Standard Procedure Descriptions



3. Access General Message for a code.



1. Locate the month and year you want 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.

W is hard-coded. You can specify any other letter to indicate non-work days.

What You Should Know About

Using other day types Use table 00/TD to define work days. For example:

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

Setting Up the Make/Buy Table

Use the Make/Buy table (user defined code 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 the make/buy table**

On Make/Buy Table

01 Character	Code	Description	Description-2
B		Bulk Floor Stock	P - Hard Coded - WO Issues
C		Configured Item	M - Hard Coded
E		Emergency/Corrective Maint.	M - Hard Coded
F		Feature	P - Hard Coded (Kit)
G		Maint component	P - Hard Coded (Kit)
K		Kit or Parent Item	M - Hard Coded (Kit)
M		Mfg. Assembly or Sub-Assembly	M
N		Non-Stock Item	P - Hard Coded
O		Obsolete	P
P		Purchased inc. Raw Material	P
R		Process	M
S		Stock End-Item	M
U		Obsolete - Use Up	P
X		Outside Processing	P

Complete the following fields:

- Code
- Description
- Description-2

Field	Explanation
Description 02	Additional text that further describes or clarifies a field in J.D. Edwards systems.

Setting Up Routing Types

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

▶ **To set up routing types**

On Routing Types

The screenshot shows a software window titled "[00051] - User Defined Code Revisions". It has a menu bar with "Functions", "Tools", and "Help". In the top right, there are input fields for "System Code" (containing "40"), "User Defined Codes" (containing "TR"), "Skip To Code" (empty), and "Routing Type" (empty). Below this is a section labeled "03 Character" containing a table with two columns: "Code" and "Description".

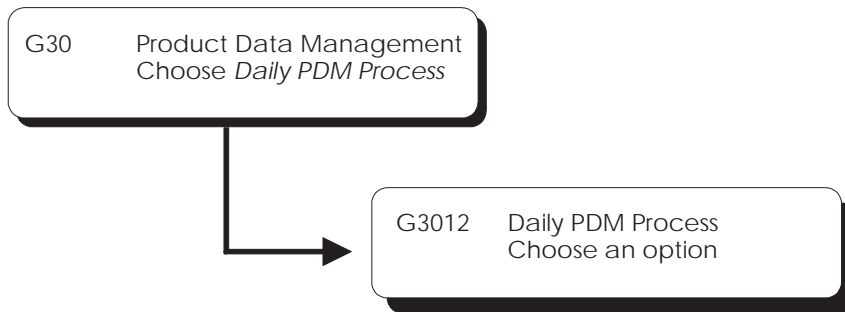
Code	Description
M	Standard Manufacturing Routing
RSH	Rush Routing
RWK	Rework Routing

At the bottom of the window, there is a toolbar with several icons and a status bar with the text: "F5=Code Types F14=Memo F15=Where Used F16=Translate F21=Print F24=More".

Complete the following fields:

- Code
- Description

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 process 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
- Rates for setup, labor, machine, and overhead

In process manufacturing, examples of work centers include ovens, vats, and mixers.

Working with work centers consists of the following:

- Entering a work center
- Entering costing and accounting information
- Reviewing operations by work center (optional)

Work center information is stored in the Work Center Master table.

Before You Begin

- Set up each work center as a valid business unit. See *Setting Up Business Units (P0006A)* in the *General Accounting Guide*.

Entering a Work Center

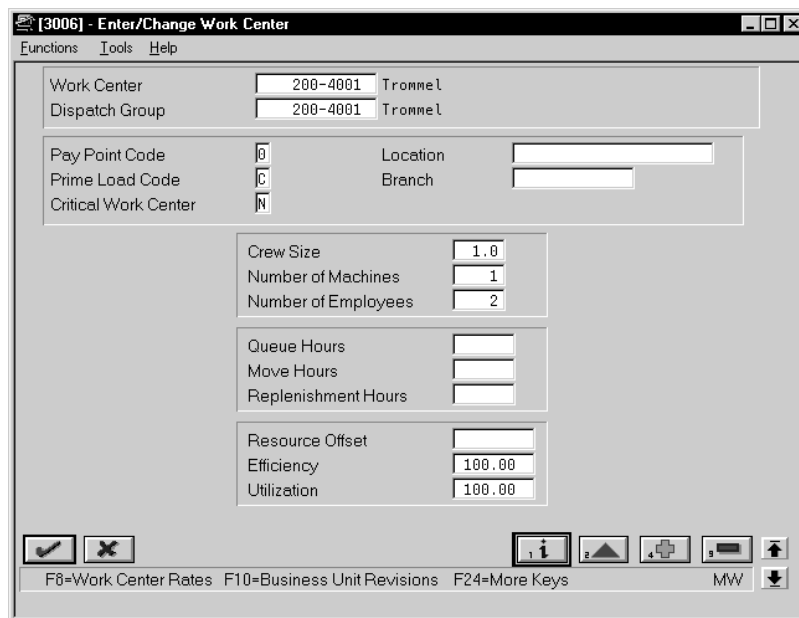
Before you work with processes, you must define general information about each work center for leadtime and ERPx calculations.

Complete the following tasks:

- Enter a work center
- Enter work center hours

To enter a work center

On Enter/Change Work Center



Work Center	200-4001	Trommel	
Dispatch Group	200-4001	Trommel	
Pay Point Code	0	Location	
Prime Load Code	C	Branch	
Critical Work Center	N		
Crew Size	1.0		
Number of Machines	1		
Number of Employees	2		
Queue Hours			
Move Hours			
Replenishment Hours			
Resource Offset			
Efficiency	100.00		
Utilization	100.00		

1. Complete the following required fields:
 - Work Center
2. Complete the following optional fields:
 - Dispatch Group
 - Pay Point Code

- Prime Load Code
- Critical Work Center
- Crew Size
- Number of Machines
- Number of Employees
- Resource Offset
- Efficiency
- Utilization
- Location
- Branch

Field	Explanation
Business Unit	<p>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. The Business Unit field is alphanumeric.</p> <p>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 A/P and A/R by business units, to track equipment by responsible department.</p> <p>Business unit security can prevent you from locating business units for which you have no authority.</p> <p>NOTE: The system uses this value for Journal Entries if a value is not entered in the AAI table.</p>
Dispatch Group – Work Centers	<p>This is used as 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.</p>

Field	Explanation
Pay Point Code	<p>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:</p> <ul style="list-style-type: none"> 0 Not a backflush work center B Backflush material and labor M Backflush material only L Backflush labor only P Preflush material only <p>If you leave this field blank, the system uses the value in the Enter/Change Routing table.</p>
Prime Load Code	<p>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.</p> <p>Valid codes are:</p> <ul style="list-style-type: none"> 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	<p>This code identifies the work center as critical or not critical when the system calculates capacity. Valid values are:</p> <ul style="list-style-type: none"> 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) <p>Note: Type 3 work centers will be included in the form display whenever type 1 or type 2 is selected in this field.</p>

Field	Explanation
Crew Size	<p>The number of people who work in the specified work center or routing operation.</p> <p>The system multiplies the Run Labor value in the Routing Master table (F3003):</p> <ul style="list-style-type: none"> • By crew size during costing to generate total labor dollars • During Process Work Orders and Order Maintenance to generate total labor hours <p>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 – without modification by crew size – for backscheduling.</p>
Number of Machines	<p>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.</p>
Number of Employees	<p>This represents the normal number of employees 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 labor hours available in the work center each day.</p>
Resource Offset	<p>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.</p>
Work Center Efficiency	<p>A user defined value that indicates how efficiently a work center operates. This value usually refers to people efficiency. When you enter a value in this field, and the Modify Cost by Work Center Efficiency field in the Job Shop Manufacturing Constants table (F3009) is set to Y, the system creates a new cost component (B4) from the cost calculated from the direct labor cost (B1). The system also uses this value to calculate rated capacity.</p> <p>Example: If the constant is set to Y, the value of this field is 80%, and the direct labor cost is 10, the system creates a B4 cost component for 2 in the Item Cost Component Add-Ons table (F30026).</p> <p>Enter percents as whole numbers, for example, enter 80% as 80.00.</p>

Field	Explanation
Work Center Utilization	<p>A percentage that indicates how intensively a work center is being used. This value usually refers to machine use. It is the ratio of the direct time charged for production activities to the planned hours. This value is also used to calculate rated capacity.</p> <p>Enter percents as whole numbers, for example, enter 80% as 80.00.</p>
Location	<p>A code that identifies inventory locations in a branch/plant. You define the format of the location identifier by branch/plant (P410012).</p>
Branch	<p>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:</p> <ul style="list-style-type: none"> • Branch/Plant (MMCU) • Dept A (MCU) • Dept B (MCU) • Job 123 (MCU) <p>Business unit security is based on the higher-level business unit.</p>

► To enter work center hours

On Enter/Change Work Center

Complete the following fields:

- Queue Hours
- Move Hours
- Replenishment Hours

Field	Explanation
Queue Hours	<p>The time (in hours) that an order is expected to be in the queue while waiting to be processed through the work center.</p> <p>The system stores this value in the Item Branch table (F4102). This value is calculated by the Leadtime Rollup program (P30822) or you can enter it manually. When you run the Leadtime Rollup program, the system overrides manual entries with calculated values.</p>

Field	Explanation
Move Hours	<p>The planned time in hours that is required to move the order from this operation to the next operation in the same work center.</p> <p>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 leadtime items.</p>
Replenishment Hours	<p>The time required before a consuming work center will have a replacement container of goods available from this supplying work center.</p> <p>This value is used only for KANBAN card processing in Shop Floor Control.</p>

Entering Costing and Accounting Information

After you set up 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 appropriate cost.

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

► To enter costing and accounting information

1. Choose the Work Center Rates function.

On Work Center Rate Revisions

	Simulated	Frozen
Direct Labor	<input type="text"/>	5.00
Setup Labor	<input type="text"/>	5.00
Labor Var. Overhead	<input type="text"/>	1.00
Labor Fixed Overhead	<input type="text"/>	1.00
Machine Run	<input type="text"/>	10.00
Machine Var. O/H	<input type="text"/>	2.00
Machine Fixed O/H	<input type="text"/>	.50

2. Complete the following required 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.
Direct Labor – Simulated	This rate, in cost per hour, is used with the Run Labor rate of the associated routing to calculate the standard run labor cost.
Setup Labor – Simulated	This rate or percent is used with the Setup Labor Hours rate of the associated routing to calculate the standard setup labor cost.
Labor Var. O/H – Simulated	This rate or percent, in cost per hour or percent of labor, is used to calculate the standard variable labor overhead cost.
Labor Fixed O/H – Simulated	This rate or percent, in cost per hour or percent of labor, is used to calculate the standard fixed labor overhead cost.
Machine Run – Simulated	This rate or percent is used with the Run Machine rate of the associated routing to calculate the standard machine labor cost.
Machine Var. O/H – Simulated	This rate or percent, in cost per hour or percent of machine, is used to calculate the future standard machine overhead cost.
Machine Fixed O/H – Simulated	This rate or percent, in cost per hour or percent of machine, is used to calculate the standard fixed machine overhead cost.

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

Review operations by work center to:

- Display which items have routing operations at a specific work center
- Plan capacity, resource, and manpower
- Evaluate equipment needs

► To review operations by work center

On Operations by Work Center

Oper Seq	Item Number	Description	Run Hours		T B
			Machine	Labor	
10.00	845	Potatoes		.25	3
10.00	845	Potatoes		1.00	3
20.00	845	Potatoes		.25	3
20.00	845	Potatoes		.50	3

Complete the following required fields:

- Work Center
- Branch/Plant

The following fields display leadtime information:

- Machine Hours
- Labor Hours

Field	Explanation
Branch/Plant	A number that identifies a branch, plant, work center, or business unit.
Run Machine – Standard	This is the standard machine hours expected to be incurred in the normal production of this item.

Test Yourself: Entering A Work Center

1. True or False

You must set up every work center as a valid business unit.

2. True or False

A pay point code of P indicates that the work center will have both labor and material backflushed through it.

3. True or False

The Work Center Rate Revisions form is where you maintain all cost methods for a work center.

4. True or False

Frozen costs are updated manually using the Work Center Rate Revisions form.

5. True or False

Move and queue hours are used for reference only.

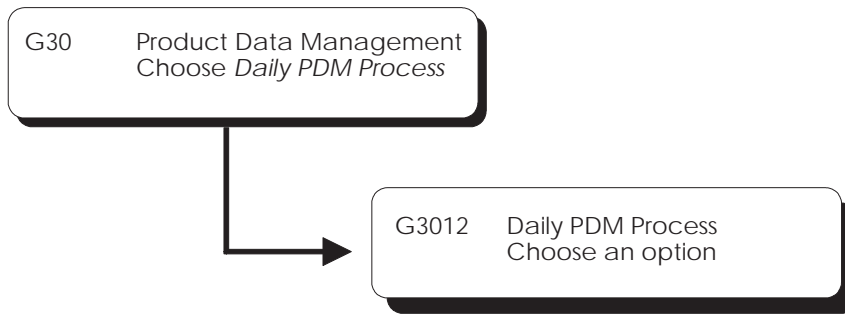
The answers are in *Appendix B*.



Exercises

See the exercises for this chapter.

Work With Processes



Working With Processes

Processes allow process manufacturing companies to produce, cost, plan, and schedule their products. Processes use a formula or recipe that includes an ingredient relationship and routing.

Working with processes consists of the following tasks:

- Entering a process
- Entering operations
- Entering ingredients
- Entering production information
- Entering co- and by-products
- Entering intermediates
- Working with text
- Updating component scrap
- Changing multiple processes
- Verifying processes

When you define a process, you combine information from the Manufacturing Constants, Item Master, Routing, and Branch/Plant tables. The resulting process 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

- To use batch processing, set the processing options for Enter/Change Process and Work Order Entry to activate batch and type functions.
- Define routings that correspond to your process types and batch sizes.

The screenshot shows a software window titled "[3003] - Enter/Change Process". It contains several input fields and a data table. The fields include: Branch/Plant (M40), Process Type (M), Line/Cell (*), Process (777), Batch Quantity (LB), As of Date (*), and Skip to Operation. The table below lists operations with columns for Work Center, Oper Seg#, Description, Run Hours (Machin and Labor), Setup Hours, and Cons Prod.

0	Work Center	Oper Seg#	Description	Run Hours Machin	Run Hours Labor	Setup Hours	Cons Prod
	200-4007	10.00	Starch wash potatoes	.50			Cons
	200-4007	20.00	Drain water		.04		Prod
	200-4007	30.00	Add water, soak	.50			
	200-4007	40.00	Drain water		.04		Prod
	200-4008	50.00	Deep Fry	.05	.05	.05	Both
	200-4015	60.00	Add seasoning		.02		Cons
	200-4016	70.00	Package	.04			
	200-4016	80.00	Add preservatives	.01			Both

At the bottom of the window, there are navigation icons and a status bar with the text: "Opt:1=Ingredients 2=C/B Products 3=Intermediates F6=Item Search F24=More MW".

Entering a Process

Complete the following tasks:

- Enter a new process
- Enter batch information (optional)

What You Should Know About

- Reviewing equipment** On Asset Search & Location, you can review equipment that an operation uses to manufacture a certain part.
- Deleting processes** When you delete a process, the system prompts you to confirm the deletion.

▶ To enter a new process

On Enter/Change Process

1. Complete the following required fields:
 - Branch/Plant
 - Process
2. Complete the following optional fields:
 - Routing Type
 - Line/Cell

Field	Explanation
Item Number	A number that the system assigns to an item. It can be in short, long, or 3rd item number format.

Field	Explanation
Type of Routing	<p>User defined code (system 40, type TR) that designates the type of routing. You can define different types of routing instructions for different uses.</p> <p>For example:</p> <ul style="list-style-type: none"> M Standard Manufacturing Routing RWK Rework Routing RSH Rush Routing <p>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.</p> <p>Product Costing and Capacity Planning systems use only M type routings.</p>
Line/Cell Identifier	<p>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.</p>

► To enter batch information

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

Field	Explanation
Units – Batch Quantity	<p>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.</p>
Unit of Measure	<p>A user defined code (system 00/ type UM) that indicates in what quantity an inventory item is expressed; for example, CS (case) or BX (box).</p>

Entering Operations

After you enter a process, you must enter the process operations. These operations define the work centers and labor standards required to manufacture the process item.

Complete the following tasks:

- Enter new operations
- Enter outside operations (optional)
- Enter work center hours

► To enter a new operation

On Enter/Change Process

1. Access the fold.

The screenshot shows the '3003 - Enter/Change Process' window. The title bar includes 'Functions', 'Options', 'Tools', and 'Help'. The main area contains several input fields: 'Branch/Plant' (M40), 'Process Type' (M), 'Line/Cell' (*), 'Process' (777), 'Batch Quantity' (LB), 'As of Date' (*), and 'Skip to Operation'. Below these fields is a table with columns: '0', 'Work Center', 'Oper Seq#', 'Description', '. Run Machin', 'Hours Labor', 'Setup Hours', and 'Cons Prod'. The table contains two main entries for work center 200-4007: 'Starch wash potatoes' and 'Drain water'. Each entry has sub-rows for 'Eff From', 'Eff Thru', 'Supplier', 'Next Oper', and 'Yield %'. At the bottom, there are several icons and a footer with keyboard shortcuts: 'Opt1=Ingredients 2=C/B Products 3=Intermediates F6=Item Search F24=More' and 'MW'.

0	Work Center	Oper Seq#	Description	. Run Machin	Hours Labor	Setup Hours	Cons Prod
	200-4007	10.00	Starch wash potatoes	.50			Cons
			Eff From 02/21/95 Type Oper % of Overlap			Queue Hours	
			Eff Thru 12/31/10 Pay Point 0 Equipment #			Move Hours	
			Supplier PO (Y/N) Cost Type			Crew Size	1.0
			Next Oper Craft Standard Desc			Time Basis	3
			Yield % 100.00 Cum % 85.50 Line/Cell				
	200-4007	20.00	Drain water	.04			Prod
			Eff From 02/21/95 Type Oper % of Overlap			Queue Hours	
			Eff Thru 12/31/10 Pay Point 0 Equipment #			Move Hours	
			Supplier PO (Y/N) Cost Type			Crew Size	1.0
			Next Oper Craft Standard Desc			Time Basis	3
			Yield % 100.00 Cum % 85.50 Line/Cell				

2. Complete the following required fields:

- Work Center
- Operation Sequence Number

3. Complete the following optional fields:

- Description
- Effective From

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

Field	Explanation
Sequence Number – Operations	<p>In routings, used to sequence the fabrication or assembly steps in the manufacture of an item. You can track costs and charge time by operation.</p> <p>In bills of material, 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.</p> <p>In engineering change orders, used to sequence the assembly steps for the engineering change.</p> <p>Skip To fields allow you to enter an operation sequence that you want to begin the display of information.</p> <p>You can use decimals to add steps between existing steps. For example, use 12.5 to add a step between steps 12 and 13.</p> <p>In the process, the sequence number that produces the intermediate product.</p>

Field	Explanation
Effective – From Date	<p>A date that indicates one of the following:</p> <ul style="list-style-type: none"> • 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 <p>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.</p>
Effective – Thru Date	<p>A date that indicates one of the following:</p> <ul style="list-style-type: none"> • 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 <p>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.</p>
Sequence Number – Next Operation	<p>The operation number that the current operation can simultaneously be processed with.</p>
Operational Planned Yield Percent	<p>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.</p>
Type Operation Code	<p>A user defined code (system 30, type OT) that indicates the type of operation. For example:</p> <ul style="list-style-type: none"> A Alternate routing TT Travel time IT Idle time T Text (Enter text at Description)

Field	Explanation
Job Type (Craft) Code	User defined code system 06, type G, which specifies job classifications for an organization. The codes can indicate pay rates, qualifications, skill levels, and so forth for employees linked to these classifications.
Percent – Overlap	<p>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.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Overlapping has no effect on move and queue calculations. 2. The percent entered must be less than or equal to 100%. <p>Enter percents as whole numbers: 5% as 5.00</p>
Unit or Tag Number	A 12-character alphanumeric code used as an alternate identification number for an asset. This number is not required, nor does the system assign a number if you leave the field blank when you add an asset. If you use this number, it must be unique. For equipment, this is typically the number stenciled on the equipment.
Message Number	A user defined code (system 48, type SN) that is assigned to a standard note, message, or general narrative explanation. You can use this code to add instructional information to a work order. You set up codes for this field on Standard Description.
Time Basis Code	<p>A user defined code (system 30, type TB) that identifies the time basis or rate to be used for machine or labor hours entered for any routing step. You can set rates per unit, per 10, per 1000, and so on.</p> <p>The system uses the values in the Description-2 field on the User Defined Codes form for costing and scheduling calculations. The Description field is a description of what the code represents, but is not used in calculations.</p>

► To enter outside operations

On Enter/Change Process

1. Access the fold.
2. Complete the following fields:
 - Supplier
 - Purchase Order (Y/N)

- Cost Type

Field	Explanation
Supplier	<p>The address book number of the preferred provider of this item.</p> <p>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.</p>
Purchase Order (Y/N)	<p>Determines if the Work Order Generation program (P31410) creates a purchase order for a subcontracted operation within a routing. Valid values are:</p> <p>Y Yes, create a purchase order.</p> <p>N No, do not create a purchase order.</p>
Cost Component	<p>This code designates each element of cost for an item. An example of the coding structure is:</p> <p>A1 Purchased raw material</p> <p>B1 Direct labor routing sheet rollup</p> <p>B2 Setup labor routing sheet rollup</p> <p>C1 Variable burden routing sheet rollup</p> <p>C2 Fixed burden routing sheet rollup</p> <p>Dx Usually used for outside processing routing sheet rollup</p> <p>Xx Usually used for extra add-ons, such as electricity, water, and so forth</p> <p>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.</p>

► To enter work center hours

On Enter/Change Process

1. Access the fold.
2. Complete the following fields:
 - Run Hours Machine
 - Run Hours Labor
 - Setup Hours
 - Queue Hours

- Move Hours

Field	Explanation
Run Labor – Standard	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.
Hours – Setup Labor Hours – Standard	The standard setup hours you expect to incur in the normal completion of this item.

Entering Ingredients

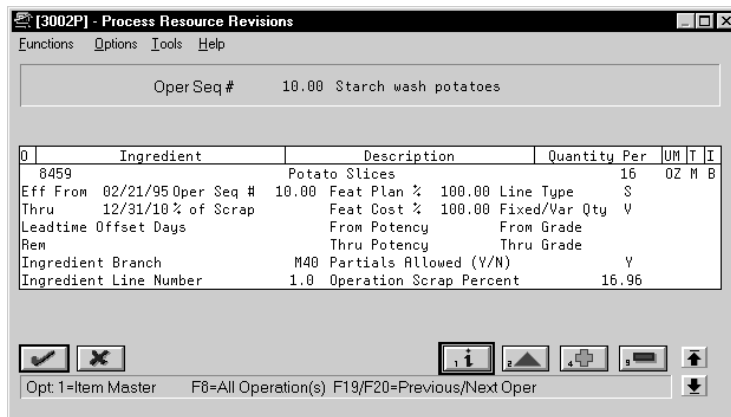
After you define operations for each process, enter the ingredients. These are the raw materials or items that are combined during operations to produce the process item.

Complete the following tasks:

- Enter a new ingredient (required)
- Enter grade and potency information
- Enter a substitute ingredient
- Enter ingredients as percent

▶ To enter a new ingredient

On Process Resource Revisions



Complete the following fields:

- Ingredient
- Quantity Per
- Unit of Measure
- Effective From
- Effective Thru
- Ingredient Branch
- Ingredient Line Number
- Operation Sequence Number
- Percent of Scrap
- Partials Allowed (Y/N)
- Line Type
- Remarks

Field	Explanation
Quantity – Standard Required Quantity	The number of units to which the system applied the transaction.
Component Branch	<p>A secondary or higher level business unit. Sometimes used to reference a branch or plant with several departments or jobs subordinate to it.</p> <p style="margin-left: 40px;">Branch/Plant – (MMCU) Dept A – (MCU) Dept B – (MCU) Job 123 – (MCU)</p>
Component Line Number	<p>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.</p> <p>Skip To fields allow you to enter a component line number that you want to begin the display of information.</p>

Field	Explanation												
Percent – Percent of Scrap	<p>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.</p> <p>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.</p> <p>Enter percents as whole numbers: 5% as 5.0</p>												
Partials Allowed (Y/N)	<p>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.</p> <p>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.</p>												
Line Type	<p>A code that controls how the system treats 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. For example:</p> <table data-bbox="716 1287 1187 1476"> <tr> <td>S</td> <td>Stock item</td> </tr> <tr> <td>J</td> <td>Job cost</td> </tr> <tr> <td>N</td> <td>Non-stock item</td> </tr> <tr> <td>F</td> <td>Freight</td> </tr> <tr> <td>T</td> <td>Text information</td> </tr> <tr> <td>M</td> <td>Miscellaneous charges and credits</td> </tr> </table>	S	Stock item	J	Job cost	N	Non-stock item	F	Freight	T	Text information	M	Miscellaneous charges and credits
S	Stock item												
J	Job cost												
N	Non-stock item												
F	Freight												
T	Text information												
M	Miscellaneous charges and credits												

► To enter grade and potency information

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

On Enter/Change Process

1. Choose the Ingredients option.
2. On Process Resource Revisions, access the fold.
3. For grade information, complete the following fields:

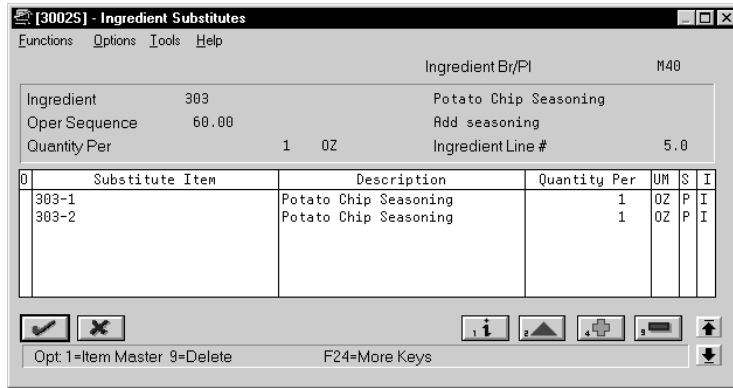
- From Grade
 - Thru Grade
4. For potency information, complete the following fields:
- From Potency
 - Thru Potency

Field	Explanation
From Grade	<p>A code (system 40, type LG) that indicates the minimum grade acceptable for an item.</p> <p>The system displays a warning message if you try to purchase or issue items that have a grade below the minimum grade acceptable. The system does not allow you to sell items that have a grade below the minimum acceptable level.</p>
Thru Grade	<p>A code (system 40, type LG) that indicates the maximum grade acceptable for an item.</p> <p>The system displays a warning message if you try to purchase or issue items that have a grade above the maximum grade acceptable. The system does not allow you to sell items that have a grade above the maximum grade acceptable.</p>
From Potency	<p>A number that indicates the minimum potency, or percentage of active ingredients, acceptable for an item.</p> <p>The system displays a warning message if you try to purchase or issue items that fall below the minimum acceptable potency. The system does not allow you to sell items that fall below the minimum acceptable potency.</p>
Thru Potency	<p>A number that indicates the maximum potency, or percentage of active ingredients, acceptable for an item.</p> <p>The system displays a warning message if you try to purchase or issue items that have a potency above the maximum potency acceptable. The system does not allow you to sell items that have a potency above the maximum potency acceptable.</p>

► **To enter a substitute ingredient**

On Process Resource Revisions

1. Choose the Substitute option.



2. On Ingredient Substitutes, complete the following fields:

- Substitute Item
- Substitute Item Sequence

Field	Explanation
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 an ingredient's item description to indicate a substitution.
- Global substitutions** Use ingredient substitution for a specific process. Use item cross references for global substitutions.

► **To enter ingredients as percents**

On Enter/Change Process

1. Complete the task to enter a process.

2. Choose the Intermediates option.
3. On Process Resource Revisions, for each ingredient, complete the following field:
 - Fixed/Variable

Field	Explanation						
Fixed or Variable Quantity	<p>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:</p> <table style="margin-left: 20px;"> <tr> <td>F</td> <td>Fixed Quantity</td> </tr> <tr> <td>V</td> <td>Variable Quantity (Default)</td> </tr> <tr> <td>%</td> <td>Quantities are expressed as a percentage and must total 100%</td> </tr> </table> <p>For fixed quantity components, the Work Order and MRP systems do not extend the component's quantity per assembly value by the order quantity.</p> <p>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.</p>	F	Fixed Quantity	V	Variable Quantity (Default)	%	Quantities are expressed as a percentage and must total 100%
F	Fixed Quantity						
V	Variable Quantity (Default)						
%	Quantities are expressed as a percentage and must total 100%						

What You Should Know About

Entering ingredients in a percent process	You can enter as many ingredients as necessary, but the sum of the percentages must equal 100%. The system uses the batch size to calculate percentages of the process for each ingredient. Verify that each ingredient can convert to the process unit of measure either by item conversion or standard unit of measure conversion. See <i>Defining Default Units of Measure (P41012)</i> .
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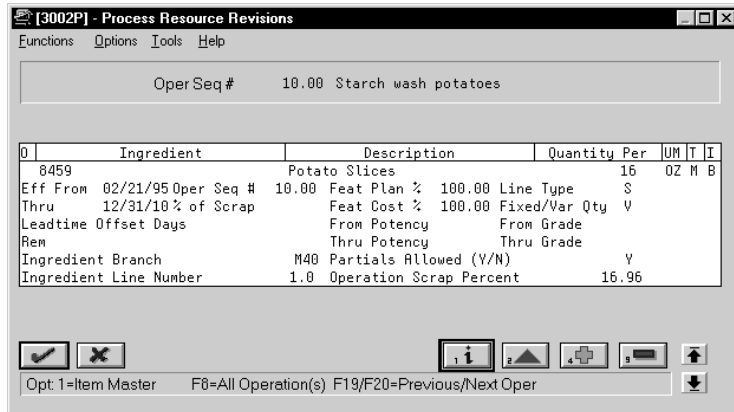
Entering Production Information

You can enter production and cost information based on demand for a specified feature.

▶ To enter production information

On Process Resource Revisions

1. Access the fold



2. Complete the following fields:

- Issue Type
- Leadtime Offset
- Feature Plan Percent
- Feature Cost Percent

Field	Explanation
Issue Type Code	<p>A code that defines how each component in the bill of material is issued from stock. In shop floor control, it indicates how a part is issued to a work order. Valid codes are:</p> <ul style="list-style-type: none"> 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 <p>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.</p>
Leadtime Offset Days	<p>Indicates the number of days a part is needed before or after the start date of a manufacturing work order. The system adds the leadtime 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.</p>

Field	Explanation
Feature Planned Percent	<p>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.</p> <p>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%.</p>
Feature Cost Percent	<p>A percentage used by the Simulated Cost Rollup program (P30820) to calculate the cost of a feature or phantom item as a percentage of the total cost of the parent.</p> <p>Enter the percentage as a whole number: 5% as 5.0</p>

Entering Co-/By-Products

Many process steps create more than one output. You can enter co-products which are usually the main products that companies sell to customers, or by-products, which are produced as a residual item to the process steps.



If you are entering co-/by-products for a batch process, verify that the ratio of the co-/by-products is the same for each batch quantity. For example, if a batch process with a batch quantity of 10 produces 10 each of a co-/by-product, then a batch quantity of 20 must produce 20 each of the co-/by-product.

▶ To enter co-/by-products

1. Choose the Co-/By Products option.

On Process Resource Revisions

C	Co/By Product	Description	Output Qty	UM	T
B	5215	Waste Water	9	02	M

2. Complete the following fields:
 - Co or By designator
 - Co/By Product
 - Output Quantity
 - Unit of Measure
 - Co-/By-Product Branch
 - Feature Cost Percent
 - Resource Percent
 - Operation Sequence Number
 - Co-/By-Product Line Number
 - Remarks

Field	Explanation
Co-/By-Products	<p>Distinguishes standard components or ingredients from co-products, by-products and intermediates. Valid values are:</p> <ul style="list-style-type: none"> C Co-Products are (concurrent) end items as the result of a process B By-Products are items that can be produced at any step of a process, but were not planned for. I Intermediate Products are items that are defined as a result of a step but are automatically consumed in the following step. Generally, intermediates are non-stock items and are only defined steps with a pay-point for reporting purposes. <p>blank Standard components (Discrete Manufacturing) or Ingredients (Process) consumed during the production process.</p>
Resource Percent	If this option is chosen, this value indicates what percent of the ingredients should be issued separately to co-products and by-products.

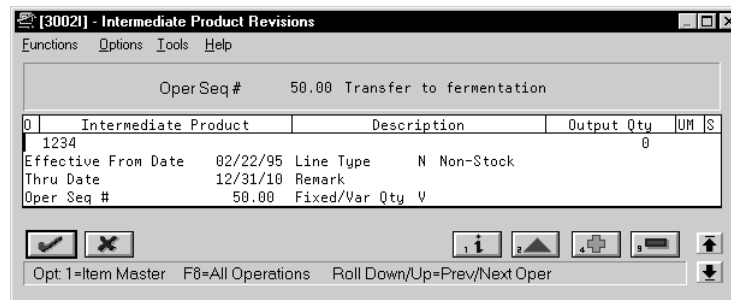
Entering Intermediates

Intermediates allow you to track the quantity of output of any operation in a work center at a specific time. You can set up one intermediate per operation, but you cannot define an intermediate for the last operation.

▶ To enter intermediates

On Enter/Change Process

1. Choose the intermediates option.



2. On Intermediate Product Revisions, complete the following fields:
 - Intermediate Product

- Output Quantity
- Unit of Measure
- Effective From
- Effective Thru
- Operation Sequence Number
- Line Type
- Remark
- Fixed/Variable Quantity

Processing Options for Enter/Change Process

Field Display:

1. Enter a '1' by the following fields to activate them:
 - a. Line/Cell
 - b. Routing Type
 - c. Batch Quantity

Screen Defaults:

Enter the values to preload to the screen at initial inquiry. If left blank, no value will be preloaded.

2. Routing Type

Update Options:

3. Enter a '1' to update the component operation scrap percent in the Bill of Material for the components on the operation and the Cumulative Yield Percent on the Routing, when updating the operation yield percent

Component Branch:

4. Enter a '1' to change component Branch (Additions Only) to that of the Routing Parent Branch Plant.

Working With Text

You can create text for a process 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 the process.

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

Working with text consists of the following:

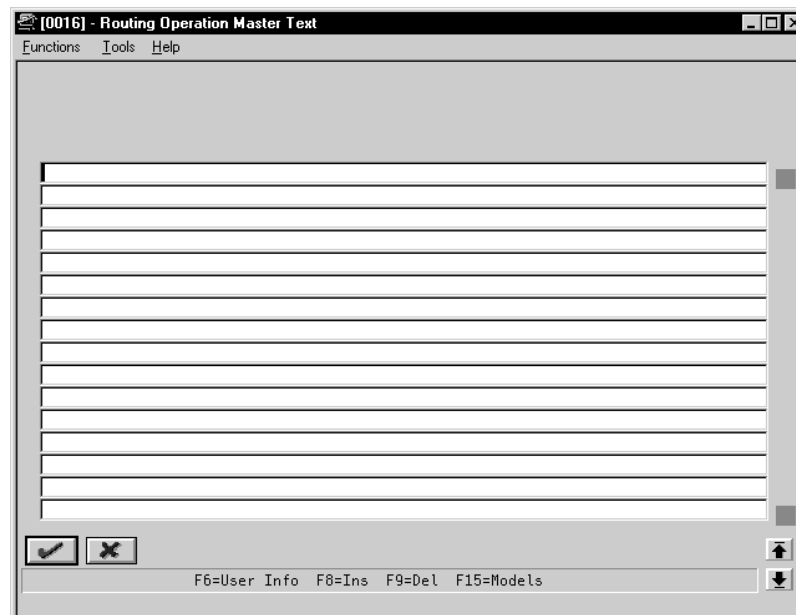
- Entering text
- Copying text models
- Reviewing user information

▶ **To enter text**

On Enter/Change Process

1. Access the Text option.

On Routing Operation Master Text



2. Type the text and press Enter.

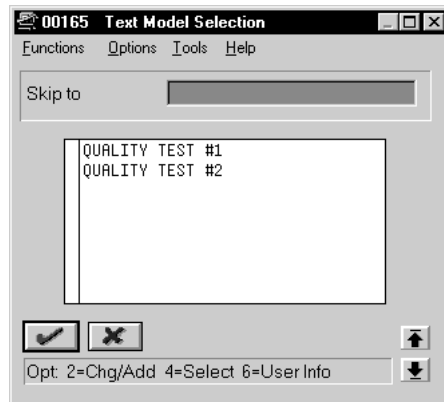
▶ To revise the text

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 generic text models

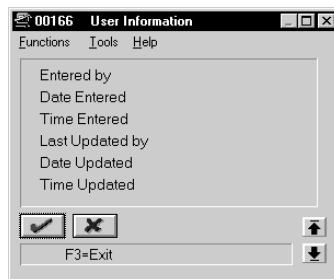
On Routing Operation Master Text, access Text Model Selection



Select a model.

▶ To review user information

On Routing Operation Master Text, access User Information

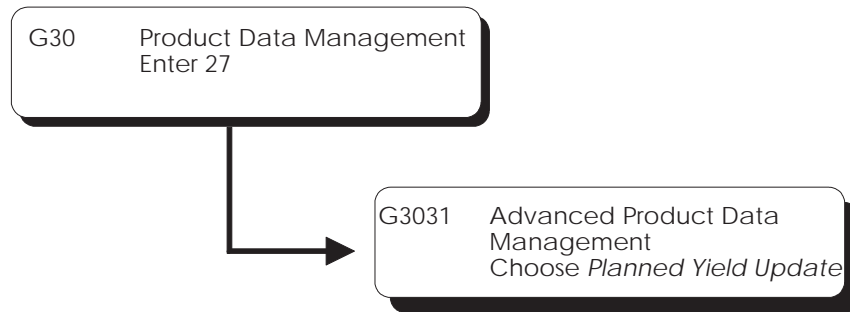


See Also

- *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.*

Updating Component Scrap



During manufacturing, material loss often occurs during 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 using Planned Yield Update.

For the operations you choose, this program uses the Operational Planned Yield Percent value to update the Cumulative Planned Percent for the bill of material, and the Operation Scrap Percent on the routing. For example:

Step	Operational Planned Yield %	Cumulative Planned Yield %	Operation Scrap %
40	80%	80%	$(100\%/80\%) - 100\% = 25\%$
30	90%	$80\% \times 92\% = 72\%$	$(100\%/72\%) - 100\% = 39\%$
20	100%	$72\% \times 100\% = 72\%$	$(100\%/72\%) - 100\% = 39\%$
10	95%	$72\% \times 95\% = 68\%$	$(100\%/68\%) - 100\% = 25\%$

Operational Planned Yield Percent

You enter this value on Enter/Change 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 the MRP system to use the step scrap percent along with the existing component scrap percent to plan component demand.

Operation Scrap Percent The system updates this value on Enter/Change Routing.

This value 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.

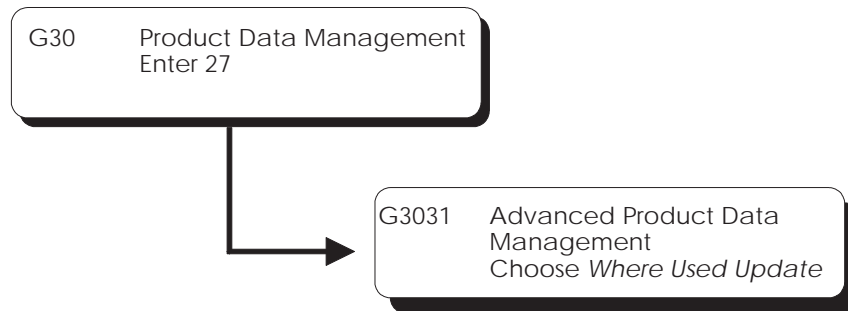
Cumulative Planned Yield Percent

The system updates this value on Enter/Change Bill of Material.

This value represents the item quantity that an operation is expected to produce. It is the ration 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.

Changing Multiple Processes



You can change multiple processes, for example to replace an old ingredient with a new one. Use Where Used Update to change the processes and print a report that indicates the changes. You can use this program to perform mass updates such as:

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

Use the Data Selection to specify the process items you want to change and define the change with processing options. This program finds all occurrences of the item (as an ingredient) in the Bill of Material table and updates the process. You can also update an ingredient that 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 lists the changes and updates the data according to your choices.



This program can potentially change many processes in your system at the same time. Therefore, J.D. Edwards recommends that you run it 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 process to verify that the item you are updating is active (within the effectivity dates) and appears in at least one process. See *Reviewing Processes (P30240)*.

What You Should Know About

Changing and deleting If you want to make changes to a process and remove the old records, run the program twice. First, create the new records and then delete the old ones.

Change limitations These changes are stored in the Bill of Material table only. Existing parts lists, MRP calculations, and costing information is 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.

Processing Options for Where Used Update

Operation Options:

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 the existing record(s) from the BOM file. No updating will be performed when delete is selected. If left blank no records will be deleted. _____
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. Enter the new Component Item number. If left blank, no change will be made to the component item number. _____
5. Enter the new Quantity Per amount. If left blank, no change will be made to the quantity per amount. _____
6. Enter the new Effective from date. If left blank, today's date will be used. _____
7. Enter the new Effective Thru date. If left blank, no change will be made to the effective thru date. _____
8. Enter the new Quantity Per Unit of Measure. If left blank, no change will be made to the new Quantity Per unit of measure. _____
9. Enter the new Issue Type Code. If left blank, no change will occur. _____

Bill Of Material Selection:

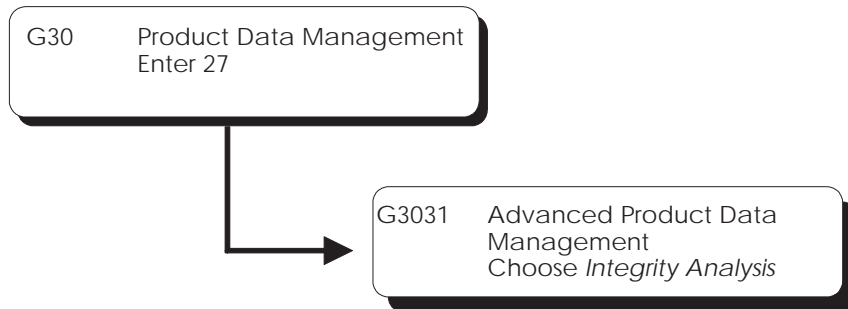
10. Enter the Branch/Plant location to select for BOM changes. (Required)
If left blank, no processing will be performed.

Where Used Update Report

This report indicates that for item 212 the quantity per assembly was changed from 2 to 10, and the issue type code changed from I to B, effective on 12/14/98.

Parent Item	Parent Description	Component Item	Component Description	I	Qty. Per	Effective From	Effective Thru
333	OAK SHELF UNIT Updated to:	212	OAK SHELF SIDES	I B	2 10	09/13/93 12/14/98	12/31/10 12/31/10

Verifying Processes



To check your processes for low level codes and product structure errors (where a process item is listed as an ingredient of itself), use the Integrity Analysis program.

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



J.D. Edwards 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.

What You Should Know About

Verifying processes online

There is an alternate procedure to running the Integrity Analysis. You can activate online validation so that system validates process items as you enter them. In this way, the system does not allow you to enter recursive ingredients. An error message is displayed and you will not be able to enter a parent process item as an ingredient of itself.

See Also

- *Setting Up Manufacturing Constants (P3009)*

Integrity Analysis Report With Errors

```

30601                                     J.D. Edwards & Company
                                           Open Query Function not Allowed
                                           Page - 2
                                           Date - 12/13/98

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!!
    
```

Integrity Analysis Report Without Errors

```

30601                                     J.D. Edwards & Company
                                           Open Query Function not Allowed
                                           Page - 2
                                           Date - 12/13/98

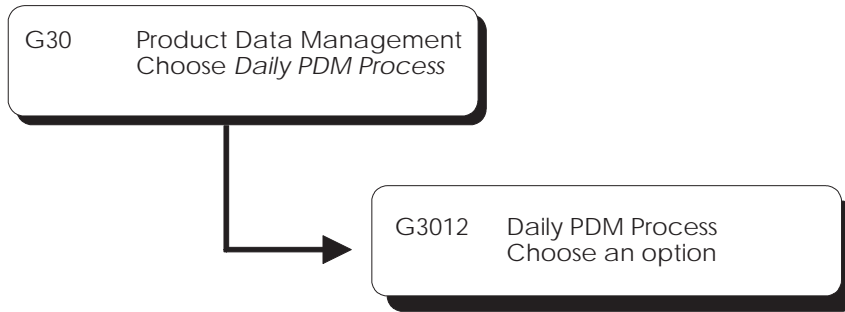
Parent Item      Parent Description      Parent Branch
Component Item   Component Description    Comp Branch   Seq   Error Message
-----
Product Structure Contains NO Errors.
All Low Level Codes have been adjusted.
    
```




Exercises

See the exercises for this chapter.

Review Processes



Reviewing Processes

You can review processes to:

- Plan and research ECOs
- Perform “what if” scenarios such as “If I change the ingredient, what processes 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

Complete the following tasks:

- Locating processes
- Printing process information

What You Should Know About

Ingredient usability

Ingredient usability is a format you can set with processing options for the review programs. When you locate an ingredient, the forms display processes that use the ingredient, as well as the producible quantity of each. You can also enter an ingredient quantity and the system displays the amount of process item that can be produced using that ingredient quantity. The ingredient usability format also allows you to create a work order or view the item availability for the selected process item and quantity.

Viewing batch bills

When you have defined several batch processes for a item, the system displays them by batch size in a separate window. You must choose one to work with.

Generating reports

J.D. Edwards recommends that you do not change the data item sequence for the reports.

Quantity per and extended quantity modes

Quantity per mode

The system displays the ingredients required for the process item requirements, but does not extend the calculations to the ingredients. The process item in this example would require 2 Ingredient X, 1 Ingredient Y, and 2 Ingredient Z, calculated by totaling each level of ingredients separately.

Extended quantity mode

The system factors the relationship between the levels of ingredients into the totals. It explodes the ingredient requirements down to the lowest level. Since each Ingredient X requires 2 of Ingredient Z, the process item would require 4 Ingredient Z.

Locating Processes

Locating processes consists of the following optional tasks:

- Locating ingredients
- Locating where an ingredient is used
- Locating co-/by-products
- Locating where a co-/by-product is produced
- Locating resources
- Locating process instructions

▶ To locate ingredients

On Ingredients Inquiry

Level	Ingredient	Description	Quantity Per	UM	T	Line
1	8459	Potato Slices	16	OZ	M	1.0
1	522	Frying Oil	30	OZ	P	4.0
1	303	Potato Chip Seasoning	1	OZ	P	5.0
1	938	Nitrogen	300	CI	P	6.0

Complete the following fields:

- Branch/Plant
- Process/Item
- Mode
- Requested Quantity
- As of

- Skip to

Field	Explanation
Mode – Bill of Material	<p>Indicates the display mode for the bill of material.</p> <ul style="list-style-type: none"> 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. <p>You can also set this value in the processing options.</p> <p>..... <i>Form-specific information</i></p> <p>You can set the processing options to automatically enter the mode number that you use the most.</p>
As of Date	<p>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.</p> <p>..... <i>Form-specific information</i></p> <p>Enter an “at” sign (@) in this field to see a history of components. All components, regardless of effectivity date, will display.</p>

Processing Options for Ingredients Inquiry

Default Information:

1. Type of Inquiry _____
 Select one of the following:
 - 1 = Single Level Bill of Material
 - 2 = Multi-Level Bill of Material
 - 3 = Indented Bill of Material
 - 4 = All Processes where a co- or by-product is produced
 (If left blank, Single Level Bill of Material will default.)

2. Enter the default Bill Type: _____

Versions To Execute:

- Enter the DREAM Writer versions to execute of the following programs. If left blank, 'ZJDE0001' will be used.
- NOTE: Processing options 2a - 2b are ONLY used 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) _____

Eco Header Version:

4. Enter the version of the ECO Header to call from the Revisions Window (P30BREV). If left blank version ZJDE0001 will be used.

Component Sequencing:

5. Enter a
 - '1' to sequence components by component line number
 - '2' to sequence components by operation sequence number
 (If left blank, components will be sequenced by component line number)

▶ **To locate where an ingredient is used**

On Ingredients Where Used

The screenshot shows a window titled '[30201] - Ingredients Where Used'. It has a menu bar with 'Functions', 'Options', 'Tools', and 'Help'. The window contains several input fields: 'Ingredient Branch' (M40), 'As of' (04/07/98), 'Bill type' (M), 'Grade' (-), and 'Potency' (-). Below these is a section for 'Ingredient' (8459) and 'Process Quantity' (1). The main part of the window is a table with the following data:

0	Process/Item	Description	Quantity Per	UM	T	Line
222		Hash Brown Process	3	OZ	R	1.0
777		Potato Chip Process	16	OZ	R	1.0

At the bottom of the window, there are buttons for 'Opt: 1=Item Master', 'F6=Item Search', and 'F24=More'.

1. Complete the following required fields:
 - Ingredient Branch
 - Ingredient
2. Complete the following optional fields:
 - As of
 - Bill Type
 - Process Quantity
 - Grade

- Potency

Field	Explanation
Type Bill of Material	<p>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:</p> <p style="margin-left: 20px;">M (Default) Standard manufacturing bill RWK Rework bill SPR Spare parts bill</p> <p>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.</p>

Processing Options for Ingredients Where Used

Versions To Execute:

1. Enter the version of Item Search (P41200) to execute. If left blank, version 'ZJDE0001' will be used. _____
2. Enter the version of Material Where Used Print (P30420) to execute. If left blank, version 'ZJDE0001' will be used. _____

Type Of Inquiry Default:

3. Select one of the following: _____
 - 1 = Single Level Where Used
 - 2 = Multi-Level Where Used
 - 3 = Indented Where Used
 - 4 = All Co-/By-Products for a Process
 - 5 = Part/Ingredient Useability (If left blank, Single Level Where Used will default.)

Part Useability Options:

- Enter the version to be used for each program. If left blank, ZJDE0001 is used.
4. Work Order Entry (P48013) _____
 5. Item Availability (P30205) _____

Screen Defaults:

6. Enter the default Bill Type to be used. If left blank, '*' will be used for all Bill Types. _____

► **To locate a co-/by-product**

On Co-/By-Products Inquiry

OCB	Co/By-Product	Description	Output Qty	UM	T	Line
B	5215	Waste Water	9	OZ	M	1.0
B	5215	Waste Water	9	OZ	M	2.0
C	7771	Potato Chips	14	OZ	M	4.0
B	5225	Used Frying Oil	1	OZ	M	3.0

Complete the following required fields:

- Process Branch/Plant
- Process

Processing Options for Co-/By-Product Inquiry

Versions To Execute:

1. Enter the version of Item Search (P41200) to execute. If left blank, version 'ZJDE0001' will be used. _____
2. Enter the version of Material Where Used Print (P30420) to execute. If left blank, version 'ZJDE0001' will be used. _____

Type Of Inquiry Default:

3. Select one of the following: _____
 - 1 = Single Level Where Used
 - 2 = Multi-Level Where Used
 - 3 = Indented Where Used
 - 4 = All Co-/By-Products for a Process
 - 5 = Part/Ingredient Useability (If left blank, Single Level Where Used will default.)

Part Useability Options:

Enter the version to be used for each program. If left blank, ZJDE0001 is used.

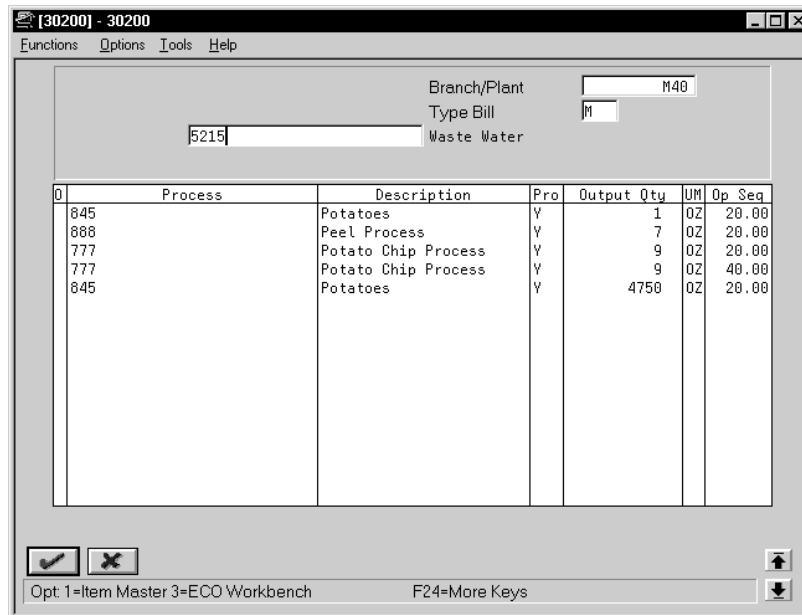
- 4. Work Order Entry (P48013) _____
- 5. Item Availability (P30205) _____

Screen Defaults:

- 6. Enter the default Bill Type to be used. If left blank, '*' will be used for all Bill Types. _____

▶ **To locate where a co-/by-product is produced**

On Where Produced Inquiry



Complete the following required fields:

- Branch/Plant
- Co/By Product

Processing Options for Where Produced Inquiry

Default Information:

- 1. Type of Inquiry
 Select one of the following: _____
 - 1 = Single Level Bill of Material
 - 2 = Multi-Level Bill of Material
 - 3 = Indented Bill of Material
 - 4 = All Processes where a co- or by-product is produced

(If left blank, Single Level Bill of Material will default.)

2. Enter the default Bill Type: _____

Versions To Execute:

Enter the DREAM Writer versions to execute of the following programs. If left blank, 'ZJDE0001' will be used.

NOTE: Processing options 2a - 2b are ONLY used 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) _____

Eco Header Version:

4. Enter the version of the ECO Header to call from the Revisions Window (P30BREV). If left blank version ZJDE0001 will be used. _____

Component Sequencing:

5. Enter a _____
 '1' to sequence components by component line number
 '2' to sequence components by operation sequence number
 (If left blank, components will be sequenced by component line number)

► **To review resources**

On Resources Inquiry

The screenshot shows a window titled "[30240] - Resources Inquiry" with a menu bar (Functions, Options, Tools, Help). It contains several input fields: Branch/Plant (M40), Routing Type (M), Process (777 - Potato Chip Process), Batch Quantity (LB), and Skip to Oper Seq. Below these is a summary table:

Work Unit	Oper Seq#	Description	Machine	Labor	Setup Hours	T
200-4007	10.00	Starch wash potatoes		0.50		3

Below the summary table is a detailed ingredients table:

Ingredients	Description	Quantity	Per	UM	ST
8459	Potato Slices	16		OZ	M
Co/By Products	Description	Quantity	Out	UM	Co
----- None Defined -----					

At the bottom, there are navigation icons and a key legend: F5=Revisions, F15=Intermediate, F19/F20=Prev/Next Oper, F24=More Keys.

Complete the following required fields:

- Business Unit
- Process

▶ **To review process instructions**

On Instructions Inquiry

The screenshot shows a window titled "[30203] - Instructions Inquiry" with a menu bar (Functions, Tools, Help). The window contains several input fields: Branch/Plant (M40), As of (04/07/98), Routing Type (M), Process/Item (777), Requested Quantity (1 LB), and Skip to Oper Seq. Below these fields is a table with the following data:

Work Plant	Oper Seq	Description	.Run Machine	Hours. Labor	Setup Hours	T B
200-4007	10.00	Starch wash potatoes				3
200-4007	20.00	Drain water				3
200-4007	30.00	Add water, soak				3
200-4007	40.00	Drain water				3
200-4008	50.00	Deep Fry			0.05	3
200-4015	60.00	Add seasoning				3
200-4016	70.00	Package				3
200-4016	80.00	Add preservatives				3

At the bottom of the window, there are icons for a checkmark and an 'X', and a status bar with the text: "F4=Full Details F8=Routing Maintenance F24=More Keys".

Complete the following required fields:

- Branch/Plant
- Process/Item

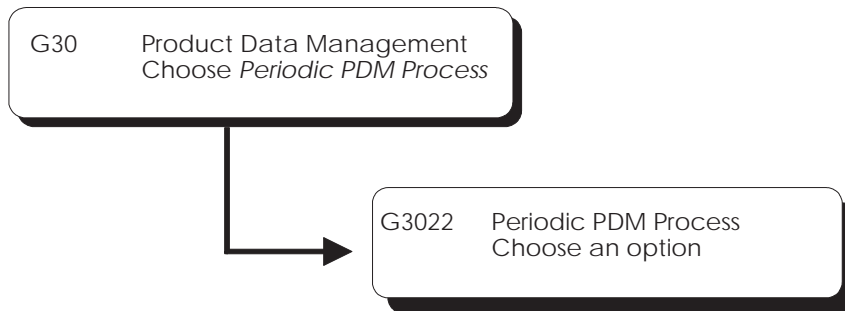
The following fields display leadtime information:

- Machine Hours
- Labor Hours
- Setup Hours

Field	Explanation
Run Machine – Standard	This is the standard machine hours expected to be incurred in the normal production of this item.

Field	Explanation
Run Labor – Standard	<p>This is the standard hours of labor expected in the normal production of this item.</p> <p>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.</p>
Hours – Setup Labor Hours – Standard	<p>The standard setup hours you expect to incur in the normal completion of this item.</p>

Printing Process Information



There are several DREAM Writer reports you can generate to review bill of material information.

You can print process information in single, multi, and multi-level indented formats. Specify a process and print the ingredients for that process. If there is more than one process (in the case of different batch sizes), the program prints each process separately.

These reports include:

- Single Level Ingredient Report
- Multi-Level Ingredient Report
- Where Used Ingredient Report
- Process Information
- Process Instructions

Example: Single Level Ingredient Report

30410		J.D. Edwards & Company			Page - 2				
		Bill of Material			Date - 4/10/98				
		Single Level							
Process Ingredient	Process Description Ingredient Description	Branch/Plant	Batch Quantity Quantity Per	UM T	Effective From Thru	Oper Level	O Seq No	R F	Ln Ty
845	Potatoes	M40		LB Type M	Rev	Draw			
745	Potatoes	M40	5000	LB P	02/21/95 12/31/10		1	10.00	S
845	Potatoes	M40	5000	LB Type M	Rev	Draw			
745	Potatoes	M40	1	LB P	02/21/95 12/31/10		1	10.00	S
222	Hash Brown Process	M40		OZ Type M	Rev	Draw			
8459	Potato Slices	M40	3	OZ M	02/20/95 12/31/10		1	10.00	S
777	Potato Chip Process	M40		LB Type M	Rev	Draw			
8459	Potato Slices	M40	16	OZ M	02/21/95 12/31/10		1	10.00	S
522	Frying Oil	M40	30	OZ P	02/21/95 12/31/10		1	50.00	S
303	Potato Chip Seasoning	M40	1	OZ P	02/21/95 12/31/10		1	60.00	S
938	Nitrogen	M40	300	CI P	02/21/95 12/31/10		1	80.00	S
888	Peel Process	M40		LB Type M	Rev	Draw			
8451	Food Grade Potato	M40	1	LB M	02/20/95 12/31/10		1	10.00	S
200	Ethanol Process	M40		GA Type M	Rev	Draw			
8452	Non-Food Grade Potato	M40	3	LB M	02/21/95 12/31/10		1	10.00	S
5215	Waste Water	M40	32	OZ M	02/21/95 12/31/10		1	20.00	S
2468	Yeast	M40	4	OZ P	02/21/95 12/31/10		1	40.00	S
246	Enzymes	M40	6	OZ P	02/21/95 12/31/10		1	50.00	S
809	Contaminant	M40	4	OZ P	02/21/95 12/31/10		1	80.00	S
8455	Peelings	M40	16	OZ M	02/22/95 12/31/10		1	10.00	S

Processing Options for Single Level Ingredient Report

Bill Effectivity:

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

Format Options:

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.

Example: Multi-Level Ingredient Report

30415		J.D. Edwards & Company			Page	-	2
		Bill of Material			Date	-	4/10/98
		Multi-Level					
Process Ingredient	Process Description Ingredient Description	Branch/Plant	Batch Quantity Quantity Per	UM T	. . Effective . . From Thru	Level	Oper O Ln Seq No R F Ty
845	Potatoes	M40		LB	Type M Rev	Drawing	
745	Potatoes	M40	5000	LB	P 02/21/95 12/31/10 1		10.00 S
845	Potatoes	M40	5000	LB	Type M Rev	Drawing	
745	Potatoes	M40	1	LB	P 02/21/95 12/31/10 1		10.00 S
222	Hash Brown Process	M40		OZ	Type M Rev	Drawing	
8459	Potato Slices	M40	3	OZ	M 02/20/95 12/31/10 1		10.00 S
777	Potato Chip Process	M40		LB	Type M Rev	Drawing	
8459	Potato Slices	M40	16	OZ	M 02/21/95 12/31/10 1		10.00 S
522	Frying Oil	M40	30	OZ	P 02/21/95 12/31/10 1		50.00 S
303	Potato Chip Seasoning	M40	1	OZ	P 02/21/95 12/31/10 1		60.00 S
938	Nitrogen	M40	300	CI	P 02/21/95 12/31/10 1		80.00 S
888	Peel Process	M40		LB	Type M Rev	Drawing	
8451	Food Grade Potato	M40	1	LB	M 02/20/95 12/31/10 1		10.00 S
200	Ethanol Process	M40		GA	Type M Rev	Drawing	
1234		M40	0		02/22/95 12/31/10 1		50.00 N
5215	Waste Water	M40	32	OZ	M 02/21/95 12/31/10 1		20.00 S
2468	Yeast	M40	4	OZ	P 02/21/95 12/31/10 1		40.00 S
246	Enzymes	M40	6	OZ	P 02/21/95 12/31/10 1		50.00 S
809	Contaminant	M40	4	OZ	P 02/21/95 12/31/10 1		80.00 S
8455	Peelings	M40	16	OZ	M 02/22/95 12/31/10 1		10.00 S

Process Manufacturing

Processing Options for Multi-Level Ingredient Report

Bill Effectivity:

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

Format Options:

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. _____

Ingredient Where Used Report

The Where Used Ingredient report shows all processes that use a specific ingredient.

Ingredient Process		Ingredient Description Process Description		Plant	Drawing Number	Quantity	Per	UM	T	Effective From	Effective Thru	Level	Oper Seq No	O R F	Ln Ty
30420 J.D. Edwards & Company Page - 2															
Material Date - 4/10/98															
Where Used															
8459		Potato Slices		M40											
	222	Hash Brown Process		M40		3	OZ	R		02/20/95	12/31/10	.2	10.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	2221	Hash Brown Potatoes		M40		0	OZ	M				1	50.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	777	Potato Slices		M40		16	OZ	R		02/21/95	12/31/10	..4	10.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	5215	Potato Chip Process		M40		0	LB	M				..3	20.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	200	Waste Water		M40		9	OZ	Offset							
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	2001	Ethanol Process		M40		32	OZ	R		02/21/95	12/31/10	.2	20.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	2001	Ethanol		M40		0	GA	M				1	90.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	777	Potato Slices		M40		16	OZ	R		02/21/95	12/31/10	..4	10.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	5215	Potato Chip Process		M40		0	LB	M				..3	20.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	200	Waste Water		M40		9	OZ	Offset							
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	2381	Ethanol Process		M40		32	OZ	R		02/21/95	12/31/10	.2	20.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	2381	Potato solids		M40		0	GA	M				1	60.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	777	Potato Slices		M40		16	OZ	R		02/21/95	12/31/10	.2	10.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	7771	Potato Chip Process		M40		0	LB	M				1	80.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	777	Potato Slices		M40		16	OZ	R		02/21/95	12/31/10	.2	10.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	5225	Potato Chip Process		M40		0	LB	M				1	50.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	200	Used Frying Oil		M40		1	OZ	Offset							
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	200	Non-Food Grade Potato		M40		3	LB	R		02/21/95	12/31/10	.2	10.00		S
	Type M	Leadtime Lvl	Drawing	Batch Qty											
	200	Ethanol Process		M40											

Processing Options for Where Used Ingredient

Format Option:

- Select the Mode or Style of report to be created.
1 = Single Level
2 = Multi-Level

3 = Multi-Level Indented

- Enter a '1' to print a second line of detail on the report. If left blank, only one line of detail will be printed.

Process Report

Use the Process Report to list a process's ingredients, co-/by-products, and intermediates by operation.

Item Number		Plan	Run Hours		Setup	Move		Effective						
Work Center	Seq #	Description	Yield	Machine	Labor	% Ovlp	Hours	Crew	Hours	Instruct	Cd	B	From	Thru
30430 J.D. Edwards & Company Page - 2 Standard Routing Information Date - 4/10/98														
777		Potato Chip Process												
200-4007	10.00	Starch wash potatoe	100.00	.50				1.0					3	02/21/95 12/31/10
	20.00	Drain water	100.00		.04			1.0					3	02/21/95 12/31/10
	30.00	Add water, soak	100.00	.50				1.0					3	02/21/95 12/31/10
	40.00	Drain water	100.00		.04			1.0					3	02/21/95 12/31/10
200-4008	50.00	Deep Fry	90.00	.05	.05		.05	1.0					3	02/21/95 12/31/10
200-4015	60.00	Add seasoning	100.00		.02			1.0					3	02/21/95 12/31/10
200-4016	70.00	Package	95.00	.04				1.0					3	02/21/95 12/31/10
	80.00	Add preservatives	100.00	.01				1.0					3	02/21/95 12/31/10
200		Ethanol Process												
200-4004	10.00	Grate potatoes with	100.00	.08			.10	1.0					3	02/21/95 12/31/10
	20.00	Add liquids from ot	100.00		.10			1.0					3	02/21/95 12/31/10
200-4011	30.00	Transfer liquid to	100.00		.20			1.0					3	02/21/95 12/31/10
	40.00	Add yeast killer	100.00		.01			1.0					3	02/21/95 12/31/10
200-4013	50.00	Transfer to ferment	100.00	96.00				1.0					3	02/21/95 12/31/10
200-4012	60.00	Separate solids fro	100.00		1.00			1.0					3	02/21/95 12/31/10
200-4014	70.00	Distillation of liq	100.00	24.00				1.0					3	02/21/95 12/31/10
	80.00	Add contaminants	100.00		.30			1.0					3	02/21/95 12/31/10
200-4016	90.00	Move to bulk storag	100.00		1.00			1.0					3	02/21/95 12/31/10

Instructions Report

Use the Instructions Report to list a process and its associated routing information.

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J.D. Edwards & Company
Process Report

Page - 2
Date - 4/10/98

Process 200 Ethanol Process
Batch Quantity . . GA
Branch/Plant . . . M40 Typ M

Oper Seq#	Work Center	Description	. . Run Hours . . Machine Labor Hours	Setup Hours	T Plan B Yield	Ty . . Op	. . Effective . . From Thru
10.00	200-4004	Grate potatoes with water	.08	.10	3 100.00		02/21/95 12/31/10

Ingredient	Description	Quantity Per	UM T Line	Branch	. . Effective . . From Thru
8452	Non-Food Grade Potato		3 LB M	1.0	M40 02/21/95 12/31/10
From Grade A04 Thru Grade A04					
8455	Peelings		16 OZ M	6.0	M40 02/22/95 12/31/10
Feat Plan % 100.00 Feat Cost % 100.00					

Oper Seq#	Work Center	Description	. . Run Hours . . Machine Labor Hours	Setup Hours	T Plan B Yield	Ty . . Op	. . Effective . . From Thru
20.00	200-4004	Add liquids from other process	.10		3 100.00		02/21/95 12/31/10

Ingredient	Description	Quantity Per	UM T Line	Branch	. . Effective . . From Thru
5215	Waste Water		32 OZ M	2.0	M40 02/21/95 12/31/10
Feat Plan % 100.00 Feat Cost % 100.00					

Oper Seq#	Work Center	Description	. . Run Hours . . Machine Labor Hours	Setup Hours	T Plan B Yield	Ty . . Op	. . Effective . . From Thru
30.00	200-4011	Transfer liquid to vats	.20		3 100.00		02/21/95 12/31/10

Oper Seq#	Work Center	Description	. . Run Hours . . Machine Labor Hours	Setup Hours	T Plan B Yield	Ty . . Op	. . Effective . . From Thru
40.00	200-4011	Add yeast killer	.01		3 100.00		02/21/95 12/31/10

Ingredient	Description	Quantity Per	UM T Line	Branch	. . Effective . . From Thru
2468	Yeast		4 OZ P	3.0	M40 02/21/95 12/31/10
Feat Plan % 100.00 Feat Cost % 100.00					

Oper Seq#	Work Center	Description	. . Run Hours . . Machine Labor Hours	Setup Hours	T Plan B Yield	Ty . . Op	. . Effective . . From Thru
50.00	200-4013	Transfer to fermentation	96.00		3 100.00		02/21/95 12/31/10

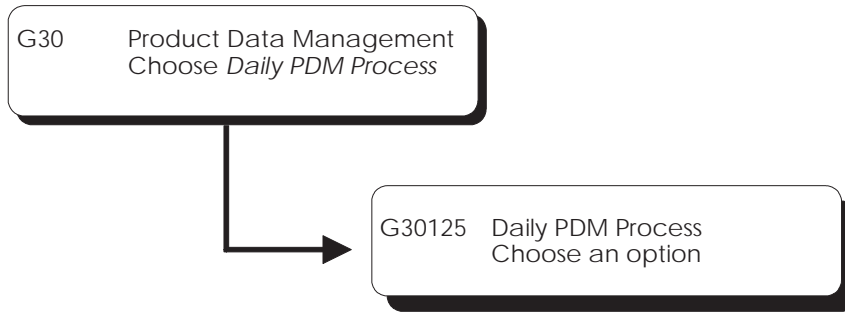
Intermediate
Output Qty 0
Effective 02/22/95 - 12/31/10



Exercises

See the exercises for this chapter.

Work With Leadtimes



Working With Leadtimes

Determining leadtime 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.

Working with leadtimes consists of the following:

- Reviewing leadtimes
- Generating leadtimes

The system stores leadtime information is stored in the Bill of Material table.

What You Should Know About

Actual leadtime

Actual leadtimes display the leadtimes as updated in the Branch/Plant table by the Leadtime Rollup program.

Calculated leadtime

Calculated leadtimes display how many days you must start to manufacture a part prior to the need date of the parent.

See Also

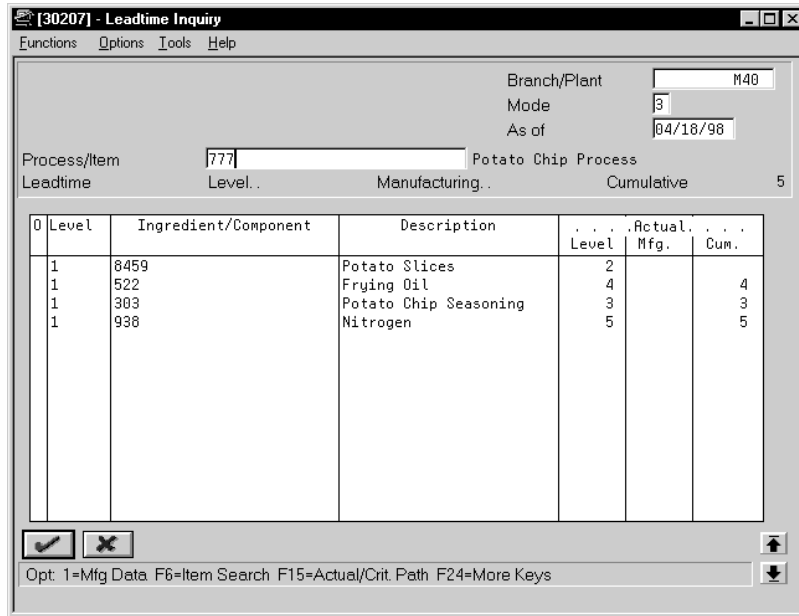
- *Appendix C – Leadtime Calculations*
- *Appendix A – Leadtimes in the Shop Floor Control Guide*

Reviewing Leadtimes

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

▶ To review leadtimes

On Leadtime Inquiry



Complete the following required fields:

- Branch/Plant
- Process/Item

The following fields display leadtime information:

- Level
- Manufacturing
- Cumulative

Field	Explanation
Parent Leadtime Level	<p>The leadtime 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 leadtimes. Level leadtime is different for purchased and manufactured items:</p> <ul style="list-style-type: none"> • Purchased – The number of calendar days required for the item to arrive at your branch/plant after the supplier receives your purchase order. • Manufactured – The number of workdays required to complete the fabrication or assembly of an item once all the components are available. <p>You can enter level leadtime manually on Manufacturing Values Entry, or you can let the Leadtime Rollup program calculate it. To calculate level leadtime using the Leadtime Rollup program, you must first enter a quantity in the Manufacturing Leadtime Quantity field in the Item Branch table (F4102).</p>
Manufacturing	<p>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 leadtimes for all manufactured items, plus the highest manufacturing leadtime for all its components.</p> <p>If all components are purchased, the manufacturing leadtime equals the item's level leadtime. Purchased item leadtimes are not included in the calculation of manufacturing leadtimes.</p> <p>You can enter the manufacturing leadtime manually or you can have the system calculate it when you run the Leadtime Rollup program.</p>
Cumulative	<p>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.</p> <p>Manufactured – The total of all level leadtimes for all manufactured items, plus the highest cumulative leadtime of all its components.</p> <p>Purchased – The item's level leadtime. Purchased item leadtimes are included in the calculation of cumulative leadtimes.</p> <p>You can enter this value manually or you can have the system calculate it when you run the Leadtime Rollup program.</p>

What You Should Know About

Critical paths

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

Processing Options for Leadtime Inquiry

Leadtime Preference:

1. Enter a '1' to use the leadtime values from the Item Branch File (F4102) or leave blank to display calculated leadtimes. _____

Generating Leadtimes

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

- Queue and setup hours
- Leadtime per unit
- Level, manufactured, and cumulative leadtimes 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 leadtimes 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 for Leadtime Calculation

1. Enter the Plant to be processed or an '*' for all Plants. _____
2. Enter date for routing effectivity: _____
Blanks will default to today's date.

Test Yourself: Generating Leadtimes

Match each inquiry form on the left with its description on the right:

- | | |
|------------------------------|---|
| 1. Operations by Work Center | A. Displays the unique routing for an item, including the operations and hours required to manufacture it |
| 2. Leadtime Inquiry | B. Display the level and accumulated leadtimes required to produce a parent item and its components |
| 3. Routing Inquiry | C. Displays all items that are routed through a selected work center |

1. True or False

Cumulative leadtime is the total number of days required to build an item from its lowest level components to the final assembly.

2. True or False

Manufacturing leadtime is the total number of days required to build an item from its purchased parts to the final assembly.

3. True or False

Overlapping operations can help reduce the manufacturing leadtime.

The answers are in *Appendix B*.



Exercises

See the exercises for this chapter.

Engineering Change Management

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.

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 ECOs
- Reviewing ECOs
- Approving ECOs



What is an ECO?

Engineering change orders (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:

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

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:

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?

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

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:

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 ten possible combinations:

	ECO Parts List form				Related Items form	
	Change Type	P/C Rel	Enter the following:	Revision Level	Enter the following:	Revision Level
Add a new bill	N	P	New parent item for the new bill	New parent revision	Components for the new parent	Revision level of added components
Change the bill	C	P	Current parent item	Current parent revision	Updated parent information	New revision
Swap a parent item	S	P	Swap to parent information in fold	Swap to parent rev in fold	Not allowed	Not allowed
			Swap from parent	Rev of swap from parent in fold		
Remove a bill	R	P	Current parent information	Current revision	Not allowed	Not allowed
Add a new component	N	C	New component	New component revision	Parent bills using component (where used)	Revision of new components' parent
Change a component	C	C	The component to change	New revision of component	Parent bills that will have component changes	Parent of new component revision
Swap a component	S	C	Swap to component in fold	Revision of swap to component in fold	Parent bill having components swapped	Revision of parent having component 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)	Revision of parent having component removed

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 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

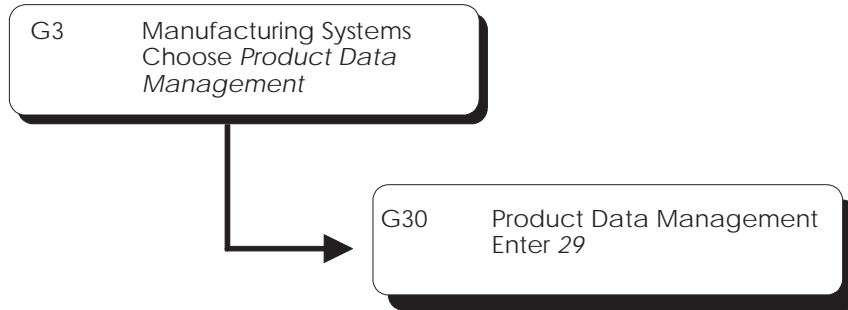
The Engineering Change Management system uses the following tables:

- 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.
- F3003** The Routing Master table contains master routing for your items.

Before You Begin

- Define your items in the Inventory Management system. See *Entering Item Master Information (P4101) in the Inventory Management Guide*.
- Define your work centers. See *Working With Work Centers (P3006)*.

Set Up Engineering Change Management



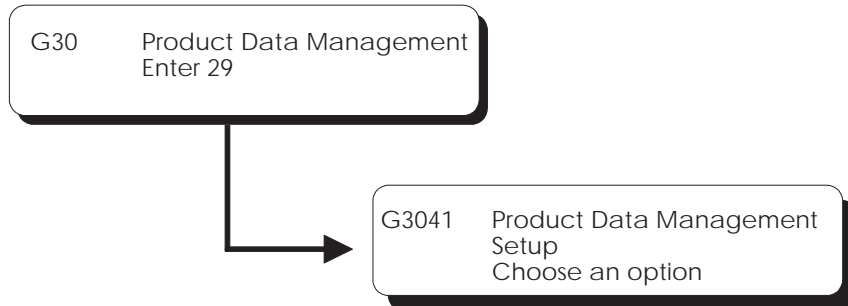
Setting Up Engineering Change Orders

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

Complete the following tasks:

- Set up codes
- Set up next numbers
- Set up approval routing master

Setting Up Engineering Change Order Codes



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

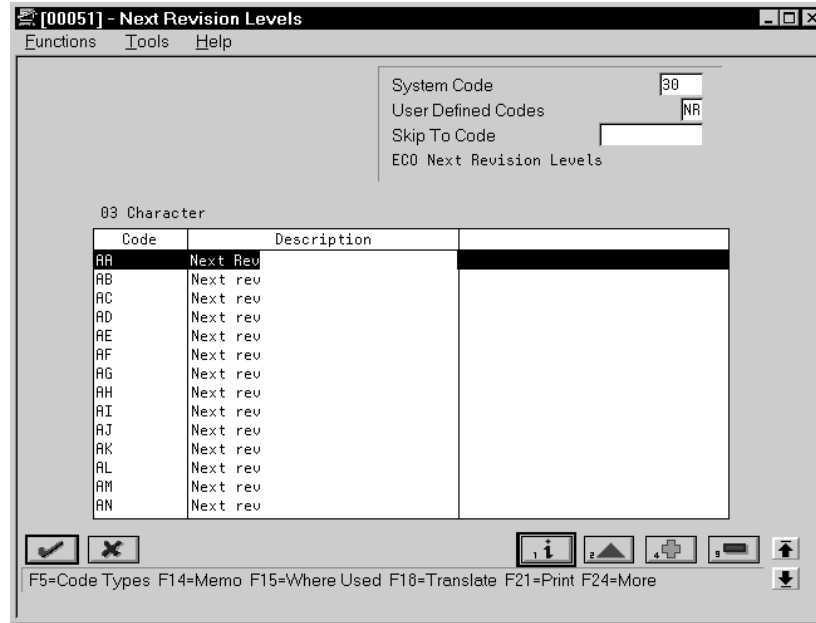
Revision levels	Revision levels indicate the number of times an item has changed.
Type codes	Type codes indicate the classification of an ECO, such as G for government or R for rework.
Priority codes	Priority codes indicate the priority of an ECO, such as H for high priority and 3 for normal priority.
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. Examples of phase in codes are IMD for immediate and UUP for use up.
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**

On ECO Next Revision Levels

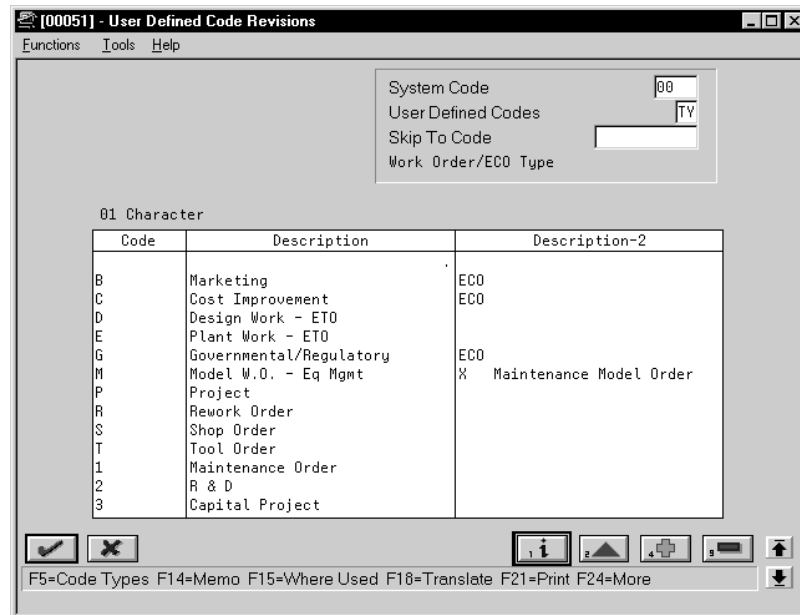


Complete the following fields:

- Character Code
- Description

► **To set up type codes**

On Type Code



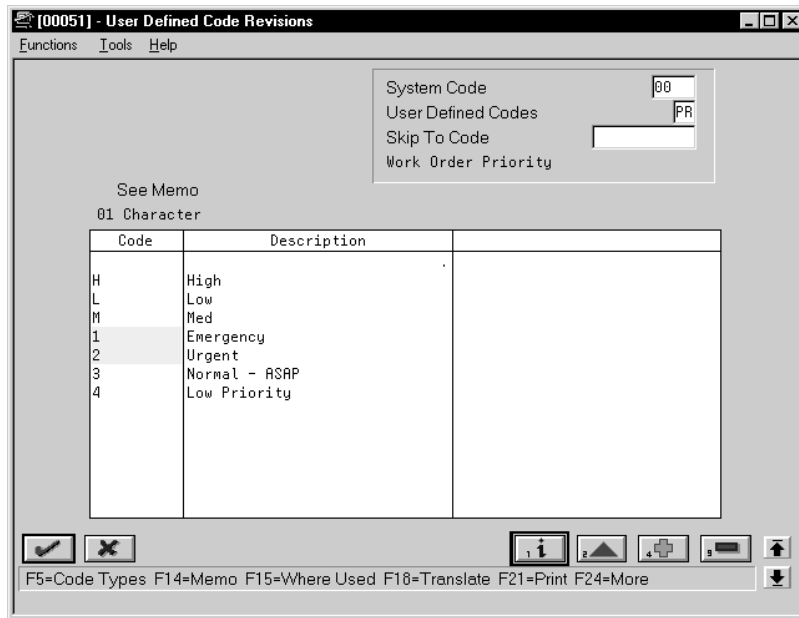
Complete the following fields:

- Code
- Description
- Description 2

Field	Explanation
User Defined Code	This column contains a list of valid codes for a specific user defined code table. The number of characters permitted for a code appears in the column title.
Description	A user defined name or remark that describes a field.
Description 02	Additional text that further describes or clarifies a field in J.D. Edwards systems.

▶ **To set up priority codes**

On Priority Code



Complete the following fields:

- Code
- Description

► **To set up status codes**

On Status Code

The screenshot shows a window titled "[00051] - User Defined Code Revisions". It has a menu bar with "Functions", "Tools", and "Help". In the top right, there are input fields for "System Code" (containing "00"), "User Defined Codes" (containing "\$\$"), "Skip To Code" (empty), and "Work Order Status" (empty). Below this is a section labeled "02 Character" containing a table with three columns: "Code", "Description", and "Description-2".

Code	Description	Description-2
A	Approved ECO	
AI	Additional data required (ECO)	
D	Disapproved ECO	
EM	Emergency Order	
E1	ECO Entered	
E2	Preliminary Workup	
E3	Approval Pending	
E4	ECO Approved	
E5	ECO Implemented	
IA	Inactive Work Order	
M	Maintenance Work Request	
M*	MWO Waiting Manager Approval	
MA	MWO Approved	

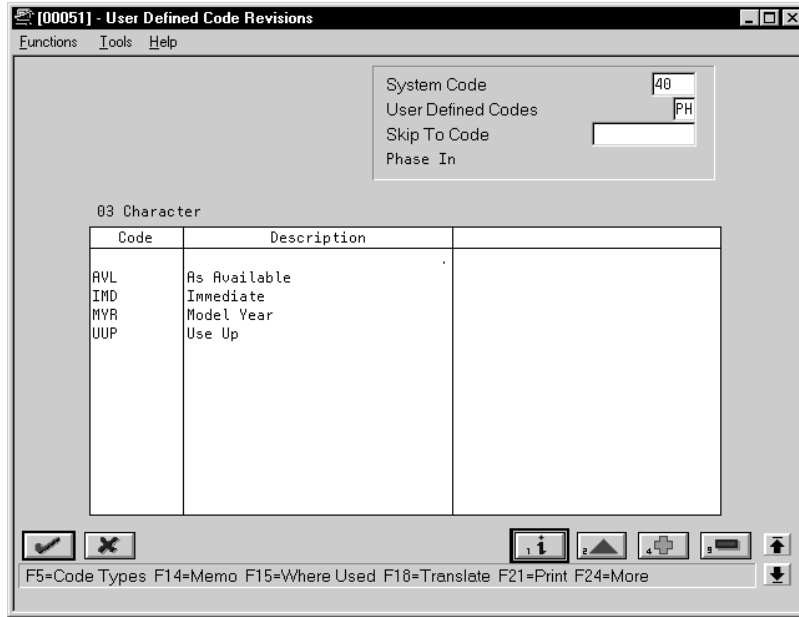
At the bottom of the window, there are several icons and a status bar with the text: "F5=Code Types F14=Memo F15=Where Used F18=Translate F21=Print F24=More".

Complete the following fields:

- Code
- Description

► **To set up phase in codes**

On Phase In Code

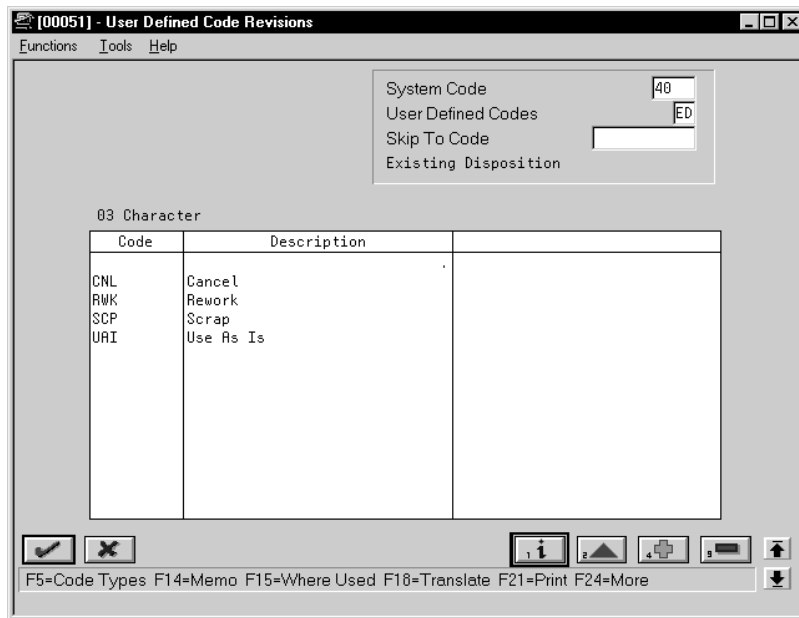


Complete the following fields:

- Code
- Description

▶ To set up existing disposition codes

On Existing Disposition Code

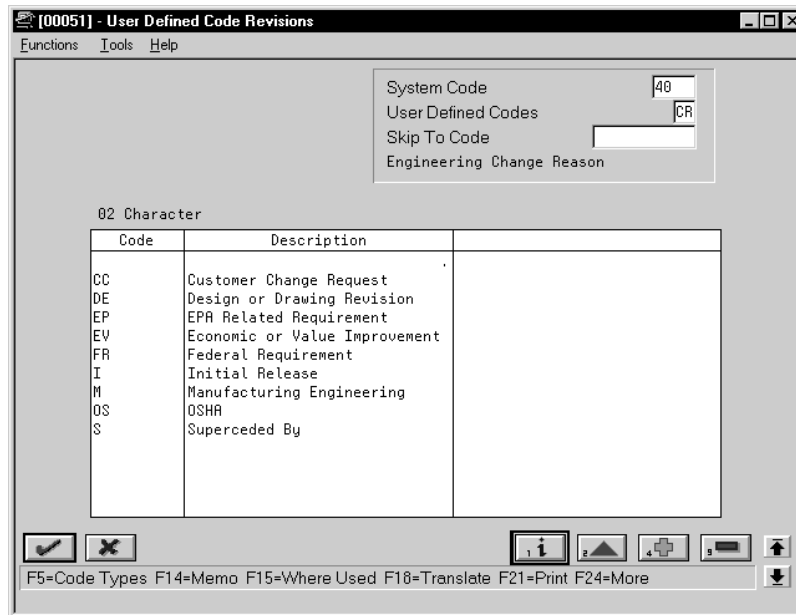


Complete the following fields:

- Code
- Description

▶ **To set up reason codes**

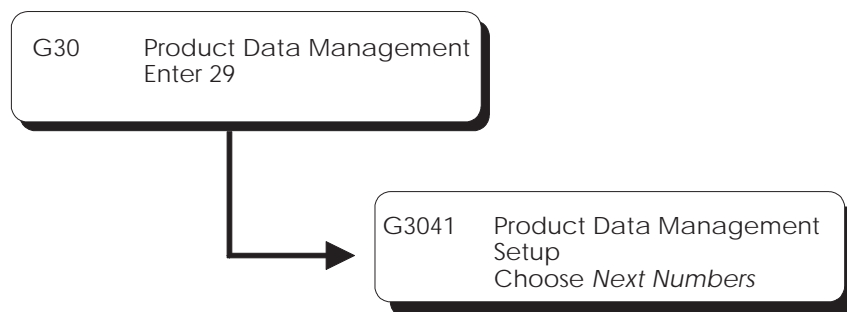
On Reason Code



Complete the following fields:

- Code
- Description

Setting Up Next Numbers for Engineering Change Orders



Next numbers is an automatic document numbering feature. It allows you to enter a starting document number for each document type such as 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.



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

Use	Next Number	Check Digit
Work Order No.	14180	Y
Billing Control	9150	N
Invoice #	1	N
Component Link	2011	N
Split Link	9	N
ECO Number	99199	Y
Schedule Number	1	N

CAUTION:
Changing the data on this screen may make it impossible to retrieve previously added addresses and may result in attempts to assign duplicate numbers.

F8=Next Numbers by Co/FY F24=More Keys

▶ To set up next numbers:

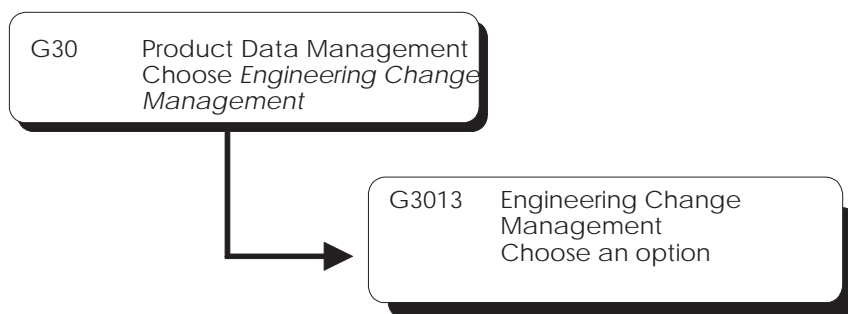
1. Locate next numbers for system 48 Work Order Processing.
2. Complete the following fields for ECO Number:
 - Next Number
 - Check Digit

See Also

- *Working With Next Numbers (P0002)* in the *General Accounting Guide*.

Field	Explanation
Next Number 006	The number which the system will use next for automatically assigning numbers. 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. You must adhere to the next numbers that have been preestablished, unless custom programming has been provided.
Check Digit 06	When next numbers are used you may add a digit to the end of each next number. If you are using check digits, and the next number is "2", the computer will add a check digit to the end of the number and assign "27". This check digit enhances automated next numbers by avoiding assignment of transposed numbers. For example, if "19" has been assigned, the computer will not assign "91".

Setting Up an Approval Routing



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

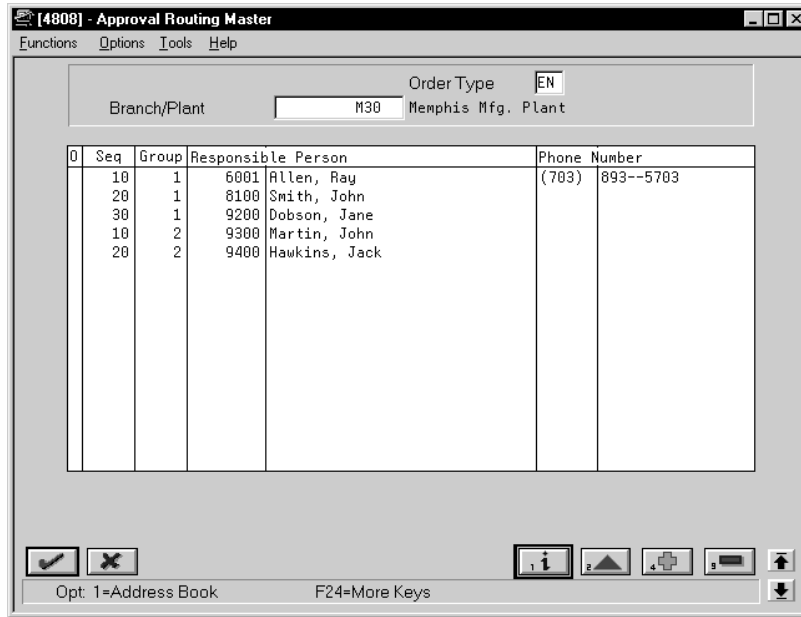
You can set up two types of approval routing. The approval routing master applies to a specific branch/plant and order type combination. Order specific approval routing applies to a specific ECO. After you have set up an approval routing master for your branch/plant, you can customize the routing for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

Setting up an approval routing consists of the following tasks:

- Setting up an approval routing master
- Setting up an order specific routing

► **To set up an approval routing master**

On Approval Routing Master



Complete the following fields:

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

► **To set up an order-specific approval routing**

On Order Specific Routing

[48182] - Order Specific Routing

Functions Options Tools Help

Branch/Plant M30
Order Type EN
Order Number 2461 Redesign of part 212

0	Seq	Group	Responsible Person	Phone Number
	10	1	6001 Allen, Ray	(703) 893--5703
	20	1	8100 Smith, John	
	30	1	9200 Dobson, Jane	

Opt: 1=Address Book 9=Delete F24=More Keys

Complete the following fields:

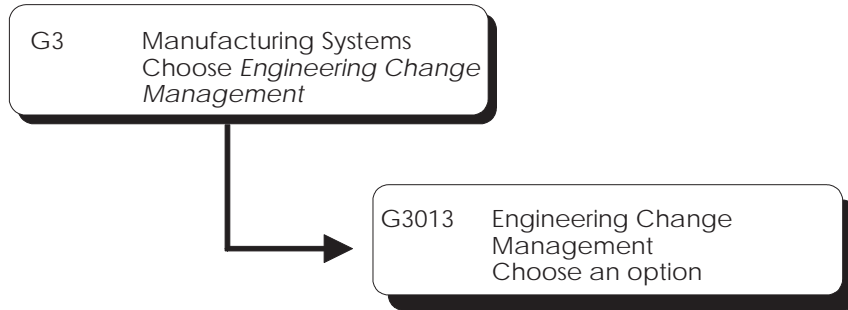
- Order Number
- Group
- Sequence
- Responsible Person

What You Should Know About

Assigning reviewers to groups

The system notifies the all reviewers in a group at the same time. The groups are notified 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.

Work With Engineering Change Orders



Working With ECOs

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

- Locating existing ECOs (optional)
- Entering an ECO
- Defining the routing
- Defining the change
- Working with pending orders
- Defining details (optional)
- Notifying reviewers
- Updating bills of material (optional)

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

Before you create an ECO, you might want to verify that one doesn't already exist for the change. Use the ECO Workbench to view and manage ECO information and check an ECOs progress.

► To locate ECOs

On ECO Workbench

O	St	ECO Number	TY	Description	Originat	Rs	Pha	T	P	Target	Actual
	E5	283	EN	333z N/P	9200	CC	IND	B	M	08/15/98	08/15/98
	40	2461	EN	Redesign of part 212	9300	DE	UUP	B	M	08/15/98	

1. Complete the following fields:
 - Branch (required)
 - Item Number (required)
 - Parent Work Order
2. Access the fold.

[30225] - ECO Workbench

Functions Options Tools Help

TY Phas Reas Pha T P Branch
 M30

Item Number OAK SHELF SIDES

Originator

Status Thru

Category Codes

Target Incorp Thru Parent W.O. No

0 P	St	ECO Number	TY	Description	Originat	Rs	Pha	T	P	Target	Actual
E5		283	EN	333z N/P	9200	CC	IMD	B	M	08/15/98	08/15/98
				Drawing Change	Y	BOM Change	Y	Routing Change	Y	New Part No	Y
				Parent W.O. No							
40		2461	EN	Redesign of part 212	9300	DE	UUP	B	M	08/15/98	
				Drawing Change	Y	BOM Change	N	Routing Change	Y	New Part No	N
				Parent W.O. No							

Opt: 1=Master 2=Details 3=Parts 4=Routing 5=Approval Audit F24=More

The following fields display ECO information:

- Status
- ECO Number
- Type
- Description
- Originator
- Reason
- Phase
- Type
- Priority
- Target
- Actual

Field	Explanation
Branch	<p>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:</p> <ul style="list-style-type: none"> • Branch/Plant (MMCU) • Dept A (MCU) • Dept B (MCU) • Job 123 (MCU) <p>Business unit security is based on the higher-level business unit.</p>
Item Number	<p>A number that the system assigns to an item. It can be in short, long, or 3rd item number format.</p>
ECO Number	<p>A unique number that identifies a work order in your system. If you leave this field blank during work order entry, the system uses the Next Numbers facility (system 48, index 01) to assign the work order number. The work order is stored in the Work Order Master table (F4801).</p> <p>..... <i>Form-specific information</i></p> <p>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.</p>
Number – Parent WO Number	<p>This is the parent work order number. You can use this number to:</p> <ol style="list-style-type: none"> 1. Enter default values for newly added work orders, for example, Type, Priority, Status, or Manager. 2. Group work orders for project setup and DREAM Writer selection. <p>Specify a work order number to display related ECO work orders.</p>
Order Type	<p>A user defined code (system 00/type DT) that identifies the type of document. This code also indicates the origin of the transaction. J.D. Edwards 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.)</p> <p>The following document types are defined by J.D. Edwards and should not be changed:</p> <ul style="list-style-type: none"> P Accounts Payable Documents R Accounts Receivable Documents T Payroll Documents I Inventory Documents O Order Processing Documents J General Accounting/Joint Interest Billing Documents

Field	Explanation
Address Number – Originator	The address book number of the person who originated the change request.
Reason for ECO	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 (system 00, type 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. <i>Form-specific information</i> 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 for ECO Workbench

Versions To Execute:

Enter the DREAM Writer version to use for each program listed. If left blank, ZJDE0001 will be used unless otherwise specified.

- 1. ECO Entry (P48020) _____
- 2. ECO Details **ZJDE0001** (P48092) _____
- 3. ECO Pending **ZJDE0002** (P48092) _____
- 4. ECO Parts List (P3013) _____
- 5. ECO Approval Audit/Review (P48185) _____

Screen Defaults:

Enter the values to preload to the screen at initial inquiry. If left blank, no value will be preloaded.

- 6. Reason Code. _____
- 7. Phase Code _____
- 8. Work Order Type. _____
- 9. Priority _____
- 10. Originator _____
- 11. From Status. _____

- 12. Thru Status. _____
- 13. Item Number. _____
- 14. Document Type. _____
- 15. Phase. _____

Category Code Selection Defaults:

Enter a '1' next to three Category Codes to further define the ECO's displayed. If left blank, Category Codes 02, 03, and 04 will be used.

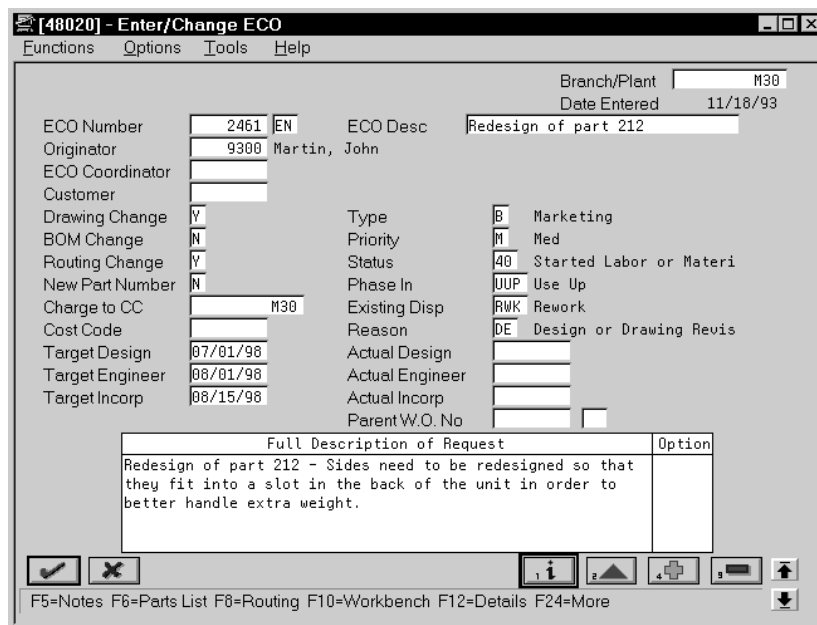
- 16a. Category 02 _____
- b. Category 03 _____
- c. Category 04 _____
- d. Category 05 _____
- e. Status _____
- f. Service Type _____
- g. Skill Type _____
- h. Experience Level _____
- i. Category 10 _____

Entering an 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 an ECO**

On Enter/Change ECO



Complete the following fields:

- Branch/Plant (required)
- 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 Business Unit	A number that identifies a branch, plant, work center, or 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. <i>Form-specific information</i> Address number of the person assigned to coordinate the ECO.

Field	Explanation
Customer	<p>A number that identifies an entry in the Address Book system. Use this number to identify employees, applicants, participants, customers, suppliers, tenants, special mailing addresses, and so on.</p> <p>..... <i>Form-specific information</i></p> <p>Use this value to indicate the customer requesting the change.</p>
Drawing Change	<p>Indicates whether the engineering change order involves a drawing change. Valid values are:</p> <p>Y Yes, a drawing change is involved.</p> <p>N No, a drawing change is NOT involved.</p> <p>If you leave this field blank, the system uses N.</p>
BOM Change	<p>Indicates whether the engineering change order involves a bill of material change. Valid values are:</p> <p>Y Yes, a bill of material change is involved.</p> <p>N No, a bill of material change is not involved.</p> <p>If left blank the system uses N.</p>
Routing Change	<p>Indicates whether the engineering change order involves a routing change. Valid values are:</p> <p>Y Yes, a routing change is involved.</p> <p>N No, a routing change is not involved.</p> <p>If you leave this field blank, the system uses N.</p>
New Part Number	<p>Indicates whether a new part number is required for an engineering change order. Valid values are:</p> <p>Y Yes, a new part number is required.</p> <p>N No, a new part number is not required.</p> <p>If you leave this field blank, the system uses N.</p>
Cost Code	<p>A subdivision of an object account. Subsidiary accounts include more detailed records of the accounting activity for an object account.</p>
Target Design	<p>The date that an item is to arrive or that an action is to be complete.</p> <p>..... <i>Form-specific information</i></p> <p>The planned completion date for the engineering change order.</p>
Target Engineer	<p>The date the person responsible for the work order receives the work order.</p> <p>..... <i>Form-specific information</i></p> <p>The date that the person responsible for the ECO receives the ECO.</p>

Field	Explanation
Target Incorporation	The date the work order is planned to be completed. <i>Form-specific information</i> The date the engineering change order is planned to be completed.
Status	A user defined code (system 00, type 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 Disposition	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 leadtime to calculate the appropriate start date. <i>Form-specific information</i> 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.
Actual Engineer	The date assigned for final inspection.
Actual Incorporation	The date the work order or engineering change order is completed or canceled.
Number – Parent WO Number	This is the parent work order number. You can use this number to: <ol style="list-style-type: none"> 1. Enter default values for newly added work orders, for example, Type, Priority, Status, or Manager. 2. Group work orders for project setup and DREAM Writer selection. Specify a work order number to display related ECO work orders.
Full Description of Request	A detailed narrative description to explain the pending work order or engineering change order. The field offers unlimited text. You can format it on the Record Types screen to divide a work order into sections.

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).*

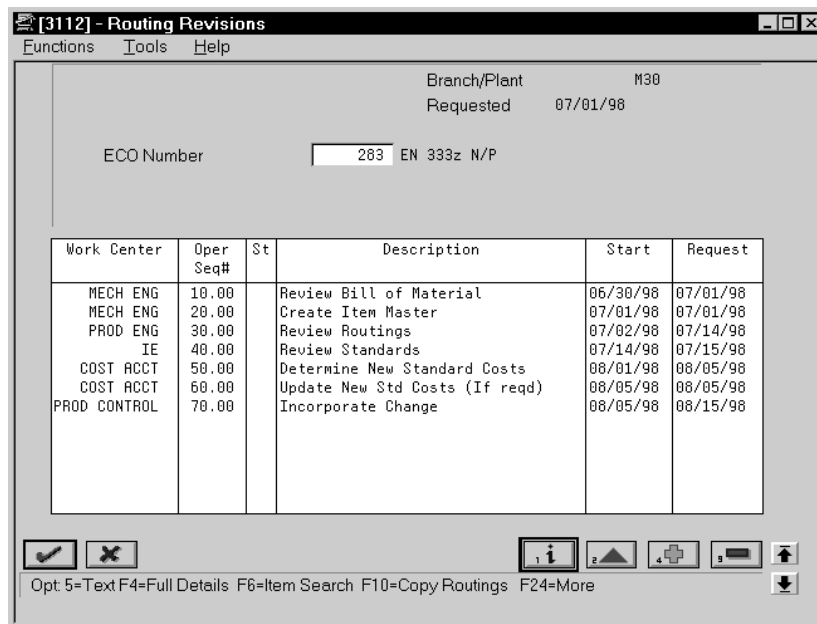
Defining the Routing

After you enter the ECO, you must 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.

You cannot use this program to change production routings.

► To define a routing

On Routing Revisions



1. Complete the following fields:
 - Work Center
 - Operations Sequence Number

- Operation Status
- Description
- Start
- Request

2. Access the fold

The screenshot shows a software window titled "[3112] - Routing Revisions". It contains a header section with the following information:

- Branch/Plant: M30
- Requested: 07/01/98
- ECO Number: 263 EN 333z N/P

Below the header is a table with the following columns: Work Center, Oper Seq#, St, Description, Start, and Request. The table contains several rows of data, each representing a different operation and its associated labor hours.

Work Center	Oper Seq#	St	Description	Start	Request
MECH ENG	10.00		Review Bill of Material	06/30/98	07/01/98
Assigned to Labor Hours					
MECH ENG	20.00		Create Item Master	07/01/98	07/01/98
Assigned to Labor Hours					
PROD ENG	30.00		Review Routings	07/02/98	07/14/98
Assigned to Labor Hours					
IE	40.00		Review Standards	07/14/98	07/15/98
Assigned to Labor Hours					
COST ACCT	50.00		Determine New Standard Costs	08/01/98	08/05/98
Assigned to Labor Hours					
COST ACCT	60.00		Update New Std Costs (If reqd)	08/05/98	08/05/98
Assigned to Labor Hours					

At the bottom of the window, there are several icons and a keyboard shortcut legend: Opt 5=Text F4=Full Details F6=Item Search F10=Copy Routings F24=More.

3. Complete the following fields:

- Assigned to
- Labor Hours

Field	Explanation
Work Center	<p>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. The Business Unit field is alphanumeric.</p> <p>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 A/P and A/R by business units, to track equipment by responsible department.</p> <p>Business unit security can prevent you from locating business units for which you have no authority.</p> <p>NOTE: The system uses this value for Journal Entries if a value is not entered in the AAI table.</p> <p>..... <i>Form-specific information</i></p> <p>Identifies the work order or assembly line.</p>
Sequence Number – Operations	<p>In routings, used to sequence the fabrication or assembly steps in the manufacture of an item. You can track costs and charge time by operation.</p> <p>In bills of material, 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.</p> <p>In engineering change orders, used to sequence the assembly steps for the engineering change.</p> <p>Skip To fields allow you to enter an operation sequence that you want to begin the display of information.</p> <p>You can use decimals to add steps between existing steps. For example, use 12.5 to add a step between steps 12 and 13.</p> <p>In the process, the sequence number that produces the intermediate product.</p>
Operation Status	<p>User defined code system 31, type OS. The operation status code that identifies the current status of a work order or engineering change order as the operation steps in the routing are completed.</p>
Start Date	<p>This is a start date for the work order or engineering change order. You can enter the date manually or let the system enter it for you. If the work order is associated with a parent work order, the system enters the start date from the parent work order. If there is no associated parent work order, the system enters the system date.</p>

Field	Explanation
Request Date	<p>The date that an item is to arrive or that an action is to be complete.</p> <p>..... <i>Form-specific information</i></p> <p>The planned completion date for the engineering change order.</p>
Assigned to	<p>A number that identifies an entry in the Address Book system. Use this number to identify employees, applicants, participants, customers, suppliers, tenants, special mailing addresses, and so on.</p> <p>..... <i>Form-specific information</i></p> <p>Identifies an entry in the Address Book system. Use this number to identify ECO reviewers.</p>
Labor Hours	<p>This is the standard hours of labor expected in the normal production of this item.</p> <p>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.</p> <p>..... <i>Form-specific information</i></p> <p>For engineering change orders:</p> <p>This is the standard hours of labor expected to complete this step for the ECO.</p>

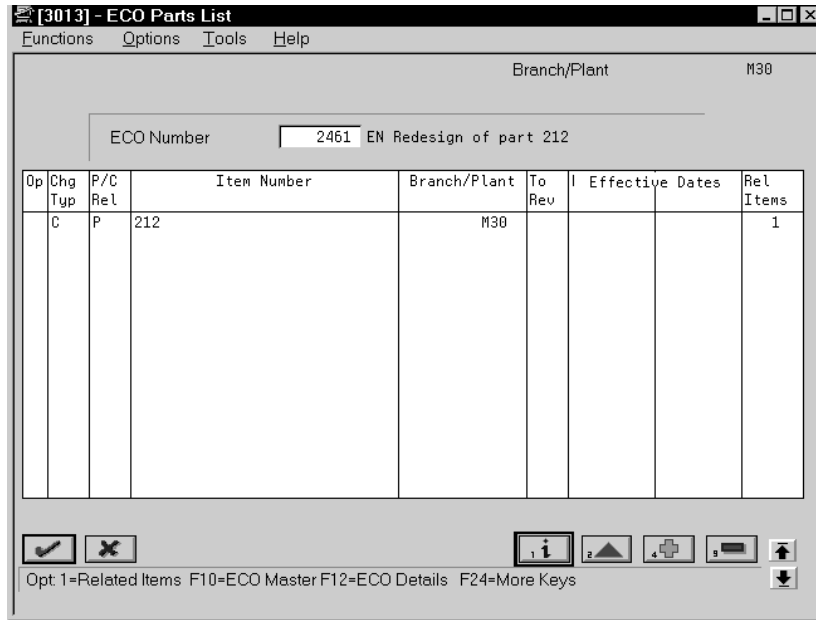
Defining the Change

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:

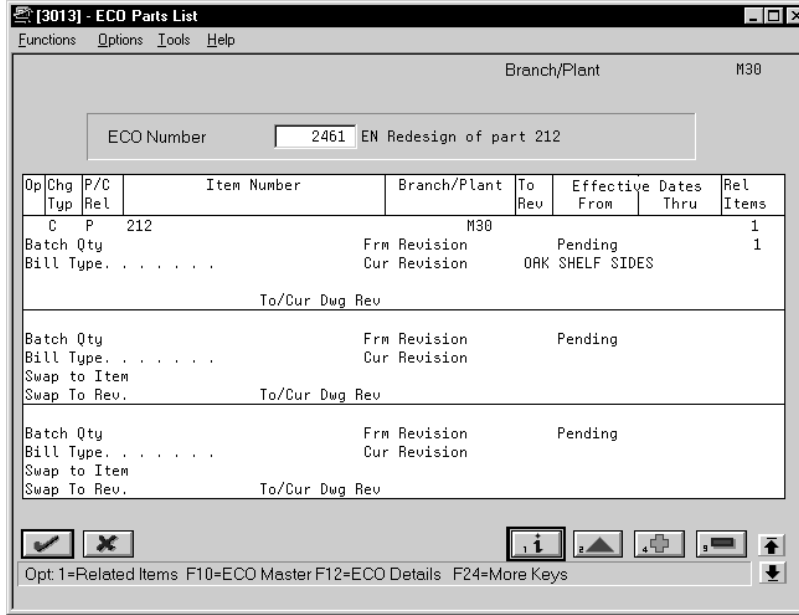
- Define the affected items
- Define the engineering change

▶ To define the 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 the fold.



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
Change 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
Parent/Child Relationship	<p>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> <ul style="list-style-type: none">P The item is a parent.C The item is a component.
Effective – From Date	<p>A date that indicates one of the following:</p> <ul style="list-style-type: none">• 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 <p>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.</p>
Effective – Thru Date	<p>A date that indicates one of the following:</p> <ul style="list-style-type: none">• 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 <p>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.</p>

Field	Explanation
Units – 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.
Unit of Measure	A user defined code (system 00/ type UM) that indicates in what quantity an inventory item is expressed; for example, CS (case) or BX (box).
Type Bill of Material	<p>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:</p> <p style="margin-left: 40px;">M (Default) Standard manufacturing bill RWK Rework bill SPR Spare parts bill</p> <p>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.</p>
Substitute Item – Format Unknown	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 and/or the Item Master tables.

► To define the engineering change

1. Access Related Items.



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

Op	Parent Item	Branch/Plant	To Rev	.Effective Dates From	Effective Dates Thru	Pending
111	1x10x6' OAK S4S	M30	Frm Revision	Cur Revision	To/Cur Dwg	1

2. On Related Items, complete the following fields for each related item:
 - To Revision Level
 - Effective From Date
 - Effective Thru Date
3. Access the fold.
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
Revision Level – To	The revision level for the part that will be reported next. This might not be the next sequential revision.
Revision Level – From	The revision level for the part that was previously reported. This might be the previous sequential revision.
Component Line Number	<p>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.</p> <p>Skip To fields allow you to enter a component line number that you want to begin the display of information.</p>
Quantity – Standard Required Quantity	The number of units to which the system applied the transaction.

Field	Explanation
Fixed or Variable Quantity	<p>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:</p> <ul style="list-style-type: none">F Fixed QuantityV Variable Quantity (Default)% Quantities are expressed as a percentage and must total 100% <p>For fixed quantity components, the Work Order and MRP systems do not extend the component's quantity per assembly value by the order quantity.</p> <p>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.</p>

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 an error message and does not update the revision level.

Processing Options for ECO Parts List

Versions To Execute:

Enter the Dream Writer version to use for each screen listed. If left blank, version ZJDE0001 will be used.

- 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 Master Revisions (P48020) _____
- 9. ECO Details **ZJDE0001**(P48092) _____
- 10. ECO Pending **ZJDE0002**(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 ECO's exist. _____
- 12a. Enter the user defined code table to retrieve the next revision level. If left blank, UDC table 30/NR will be used. _____

What You Should Know About Processing Options

When you set processing option 12 for updating to the next revision level, the system updates the revision level as follows for the change types:

New parent (N/P)

For new parent information on Parts List, the revision level is updated.

For component information on Related Items, the revision level is not updated.

Change parent (C/P)	<p>For existing parent information on Parts List, the revision level is not updated.</p> <p>For revised parent information on Related Items, the revision level is updated.</p>
Swap parent (S/P)	<p>For swap out parent information on Parts List, the revision level is not updated.</p> <p>For new parent information in the Parts List fold area, the revision level is updated.</p> <p>Updating the revision level on Related Items is not allowed.</p>
Remove parent (R/P)	<p>For parent to remove information on Parts List, the revision level is not updated.</p> <p>Updating revision levels on Related Items is not allowed.</p>
New component (N/C)	<p>For new component information on Parts List, the revision level is not updated.</p> <p>For parent information on Related Items, the revision levels are updated.</p>
Change component (C/C)	<p>For information on the component on Parts List, the revision level is updated.</p> <p>For information on Related Items, the revision level is updated.</p>
Swap component (S/C)	<p>For component to swap information on Parts List, the revision level is not updated.</p> <p>For new component information in the Parts List fold area, the revision level is not updated.</p> <p>For parent information on Related Items, the revision level is updated.</p>
Remove component (R/C)	<p>For component to remove information on Parts List, the revision level is not updated.</p> <p>For parent information on Related Items, the revision level is updated.</p>

Working With Pending Engineering Change Orders

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 work with pending engineering change orders

On ECO Parts List, access Pending Orders.

The screenshot shows a window titled "[48092] - ECO Pending Orders" with a menu bar (Functions, Options, Tools, Help). The window displays the following information:

ECO Pending Orders
Type Data P0
Order Number 2461 EN Redesign of part 212

03 Characters
Existing Disposition

Order No	Type	Due Date	Open Qty.	Cost	Exist Disp	Description
1888	WO	06/01/98	34	25.00	RWK	Rework
2001	WO	07/01/98	32	23.00	RWK	Rework

Opt: 1=Mnfg WO 2=PO Inquiry 3=Eq WO F4=Detail F5=Update F24=More

The following fields display ECO information:

- Order Number
- Type
- Due Date
- Open Quantity

- Cost
- Exist Disposition

Field	Explanation
Order Number	A number that identifies a secondary purchase order, sales order, or work order associated with the original order. This is for information only.
Date – User Defined	The date associated with the code defined for this supplemental data type. For example, Related Order Due date.
Quantity	The quantity of units affected by this transaction.
Cost	The statistical or measurable information related to the code defined for the data type. For example, if the data type relates to bid submittals codes, this field could be for bid amounts. Or if the data type relates to Human Resources Benefits Administration, this field could be for the cost of election coverage. If the data type relates to bonuses, this could be the bonus amount.
Code Type	This column contains a list of valid codes for a specific user defined code table. The number of characters permitted for a code appears in the column title.

Defining Details for Engineering Change Orders

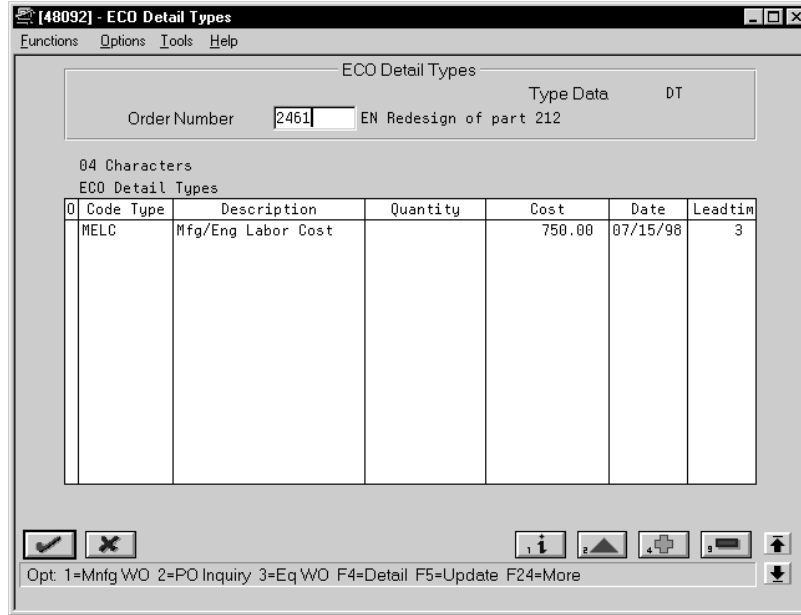
Use details to enter supporting data such as costs, dates, affected work orders, purchase orders, and approval history.

Complete the following optional tasks:

- Enter a text description
- Enter supplemental info

To enter a text description

On ECO Detail Entry



Complete the following fields:

- Record Type
- ECO Number
- ECO Description

Field	Explanation
Record Type	The detail specification record type. Record types are user defined. You can set them up on the Detail Specification Types screen and use them to describe certain types of work order or engineering change order information.
ECO Description	A detailed narrative description to explain the pending work order or engineering change order. The field offers unlimited text. You can format it on the Record Types screen to divide a work order into sections.

► To enter supplemental information

You can enter supplemental data items to track the ECO. For example, you could note the costs and leadtimes 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

Eco Status:

2. Enter the default value for ECO Status. If left blank, then blank will be used.

Note Type:

3. Enter the default value for the Note Type that will be displayed in the subfile. If left blank, then Note Type 'A' will be used. More...

Versions To Execute:

Enter the DREAM Writer version to use for each version listed. If left blank version ZJDE0001 will be used.

- 4. ECO Details (P48092)
- 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)

Notifying ECO Reviewers

After you define an ECO and its routings and parts list, use the ECO Notification program to send notices to the reviewers 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 for ECO Notification

Eco Approval Notification:

1. Enter the Flash Message to activate.
If left blank, the Flash Message will not be updated.
-

Updating Bills of Material

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 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.



J.D. Edwards 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.

You cannot use this program to change production routings.

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 with a Parts List (P3013)*.
- 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	J.D. Edwards & Company		Page -	3
	Bill of Material Population		Date -	6/02/95
ECO Number . . .	8004 EN	Date Entered . . .	07/28/94	
Description . . .	XYZ N/C in Parent 333z	Branch/Plant . . .	M30 Memphis Mfg. Plant	
Originator . . .	9200 Dobson, Jane			
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 08/01/98	Design			
Engineering . . . 09/01/98	Engineering . . .			
Incorporation . . 09/15/98	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 09/15/98	
					Qty Per	2	EA Comp. Seq	1.1	Eff Thru 12/31/10
					Fixed/Variable V		Op Seq.	10.00	

Processing Options for ECO – Bill of Material Population

Proof Or Final Mode:

1. Enter a '1' if this is to be run in Final Mode. If left blank the program will run in Proof Mode.

Eco Approval Validation:

2. Enter a '1' to validate ECO as fully approved before allowing final mode update. If left blank, no ECO approval validation will be performed.

Final Mode Updates:

3. Enter a '1' to update the ECO's Actual Incorporation Date with today's 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.

Final Mode Update (Cont):

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.

Final Mode Update (Cont):

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).

Final Mode Update (Cont):

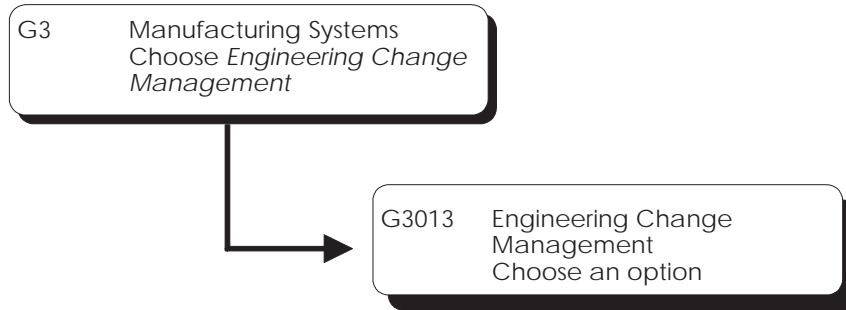
9. Enter a '1' to copy substitute items from old components to new components. If left blank, substitute items will not be copied.



Exercises

See the exercises for this chapter.

Review ECOs



Reviewing ECOs

An ECO reviewer reviews ECO and checks outstanding ECOs that are waiting for 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

Complete the following tasks:

- Locate ECO information
- Print ECO information

Locating ECO Information

Locating ECO information consists of the following optional tasks:

- Locate ECO revisions
- 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

On ECO Revisions Inquiry

0	Rev	ECO #	TY	Effect From	Effect Thru	Dwg Rev	Related Order	Chg	Type
		283	EN	08/15/98	12/31/10			N	P

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 for ECO Revision Inquiry

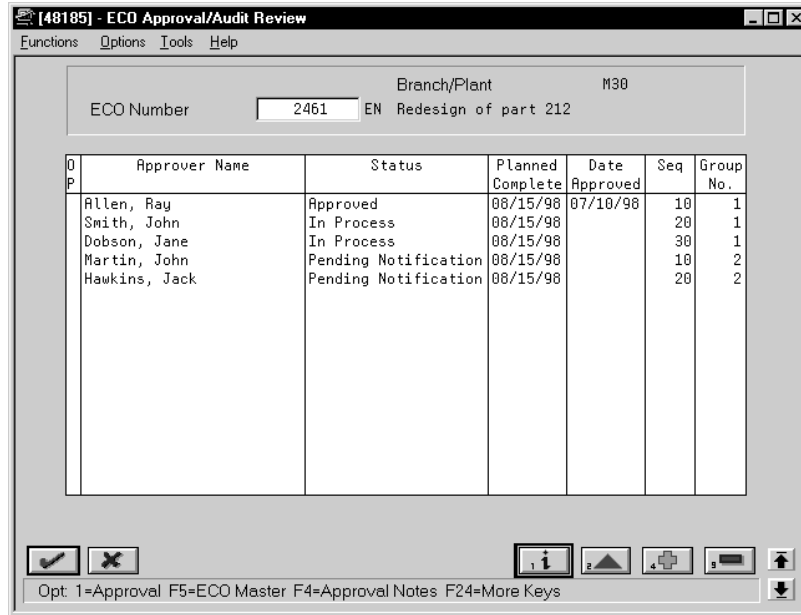
Versions To Execute:

Enter the DREAM Writer version to use for each program listed. If left blank, ZJDE0001 will be used unless otherwise specified.

- | | | |
|------------------|----------|-------|
| 1. ECO Entry | (P48020) | _____ |
| 2. BOM Revisions | (P3002) | _____ |

► **To review the approval audit**

On ECO Approval/Audit Review



Complete the following field:

- ECO Number

Processing Options for Order Approval Audit/Review

Versions To Execute:

Enter the DREAM Writer version to use for each program listed. If left blank, version 'ZJDE0001' will be used.

- | | | |
|-----------------|----------|-------|
| 1. ECO Approval | (P4818) | _____ |
| 2. ECO Master | (P48020) | _____ |

► **To locate open tasks**

On ECO Open Task Review

Op St	Operation Description	ECO Number	Ty	Start	Request	Labor Hours
	Review Bill of Material	283	EN	06/30/98	07/01/98	
	Create Item Master	283	EN	07/01/98	07/01/98	
	Review Bill of Material	8004	EN	07/30/98	08/01/98	
	Create Item Masters	8004	EN	08/01/98	08/01/98	

Complete the following fields:

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

Field	Explanation
As of Date	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.
Operation Status – From	User defined code system 31, type OS. The from operation status is used as a beginning point to select work order information to display.
Operation Status – Thru	A user defined code (system 31, type OS) used as an end point to select work order information to display.

Processing Options for ECO Open Task Review

Screen Defaults:

1. Enter the default document type to be used. If left blank, '*' will load all document types.

2. Enter the default value for From Status. _____

3. Enter the default value for Thru Status _____

Version To Execute:

Enter the DREAM writer version to use for each program listed. If no version is entered, ZJDE0001 will be used.

4. ECO Entry (P48020) _____
5. ECO Parts List (P3013) _____

Printing ECO Information

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

- ECO Details
- Open ECOs

ECO Details

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

J.D. Edwards & Company
ECO Work Order Print

Page - 3
Date - 5/30/95

ECO Number . . . 2436 EN

Description . . . Redesign of part 212
Originator . . .

Date Entered . . 10/15/93
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 07/01/98 Design
Engineering. . . 08/01/98 Engineering. . .
Incorporation. . 08/15/98 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 Related Item	Branch	P/C	TOC	Effective Dates		Frm Rev	To Rev	Seq
				From	To			
303-A	CHI	N	C				03	
303-A	CHI						03	
212	M30							
111	M30							1.0
XYZ	M30			09/15/98	12/31/10	NEW		
333Z	M30			09/15/98	12/31/10	A		1.0
701	M20			05/15/98	12/31/10	NEW A		
205	M20			05/15/98	12/31/10	A		2.0
303-A	M40						03	

Engineering Change mgmt.

Processing Options for ECO Details Report

Print Options:

Enter a '1' to print any of the following details:

- 1. ECO Notes _____
- 2. ECO Additional Details _____
- 3. ECO Parts List _____

Note Type:

- 4. Enter the default Note Type that will be printed. If left blank, Note Type 'A' will be used. _____

Open ECO Report

Use the Open ECOs report to list the ECOs that are currently in the approval process or 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.

Product Data Management Process Manufacturing

- 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.

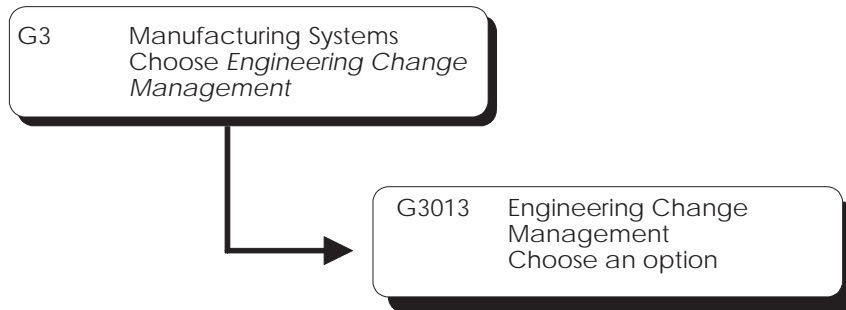
48421

J.D. Edwards & Company
ECO Summary by Branch/Plant

Page - 2
Date - 5/30/95

Branch/ Plant	ECO Number	Ty	Date Entered	Description	St	Rea	Pha	Dsp	T	P	Target Y R Date	Actual Date	Originator
M30	3421	EN	11/18/93	Redesign Projector Case	E1	EV	UUP	UAI	B	H	07/15/98		Dobson, Jane
M30	3439	EN	11/18/93	Redesign chair for Desk Set	E1	EV	MYR	UAI	C	H	09/01/98		Allen, Ray
M30	3447	EN	11/18/93	Add extra screws to hardware	A	M	IMD	RWK	B	M	03/31/98		Wright, Allen
M20	84531	EN	03/24/95	701A Swap Component in 205	E1	CC	IMD		B	M	05/15/98		Planner, Mark
M30	283	EN	07/28/94	333z N/P	E5	CC	IMD		B	M	08/15/98	08/15/98	Dobson, Jane
CHI	2436	EN	10/15/93	Redesign of part 212	40	DE	UUP	RWK	B	M	08/15/98		
M30	2461	EN	11/18/93	Redesign of part 212	40	DE	UUP	RWK	B	M	08/15/98		Martin, John
M30	8004	EN	07/28/94	XYZ N/C in Parent 333z	E1	CC	IMD		B	M	09/15/98		Dobson, Jane
M40	84558	EN	03/30/95	Change Seasoning	E1	CC	AVL		B	M	07/25/98		Abbot, Dominique

Approve ECOs



Approving ECOs

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.

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 (P30220)*.

To approve an ECO

On ECO Approval

O P T	ECO Number	Or Ty	Description	Target Date	Date Approved	Originator
A	283	EN	333z N/P	08/15/98	07/15/98	Dobson, Jane
R	2461	EN	Redesign of part 212	08/15/98	07/10/98	Martin, John
P	991668	EN	Add Iron to vitamin			Wilson, Bob

1. Locate the ECOs that await your approval.
2. Complete the following required fields:
 - Approver Number
 - Branch/Plant
 - Status
3. For each ECO, complete the following fields to indicate your approval or rejection:
 - 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, special mailing addresses, and so on.

Field	Explanation
Approval 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

- Entering text** You can type text in the fold 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.
- Defining additional status codes** You can define additional approval status codes using table 30/ST. Approval status code A is hard-coded and is the only value that initiates the notification of other review groups.

Engineering Change mgmt.

Processing Options for ECO Approval

- Order Type**
 1. Enter the default search order type. _____
 If left blank all order types will be used.
- Approval Status**
 2. Enter the default search approval status. If left blank all status's will be used. _____
- Versions To Execute:**
 Enter the DREAM Writer versions to execute for the programs listed below. If left blank ZJDE0001 will be used.
 3. ECO Entry (P48020) _____
 4. ECO Approval Notification (P48181) _____
- Approval Routing Completion:**
 5. Enter the ECO status code to update the ECO Order Master (F4801) when _____

approval routing is complete. If left blank, no ECO status update will occur.

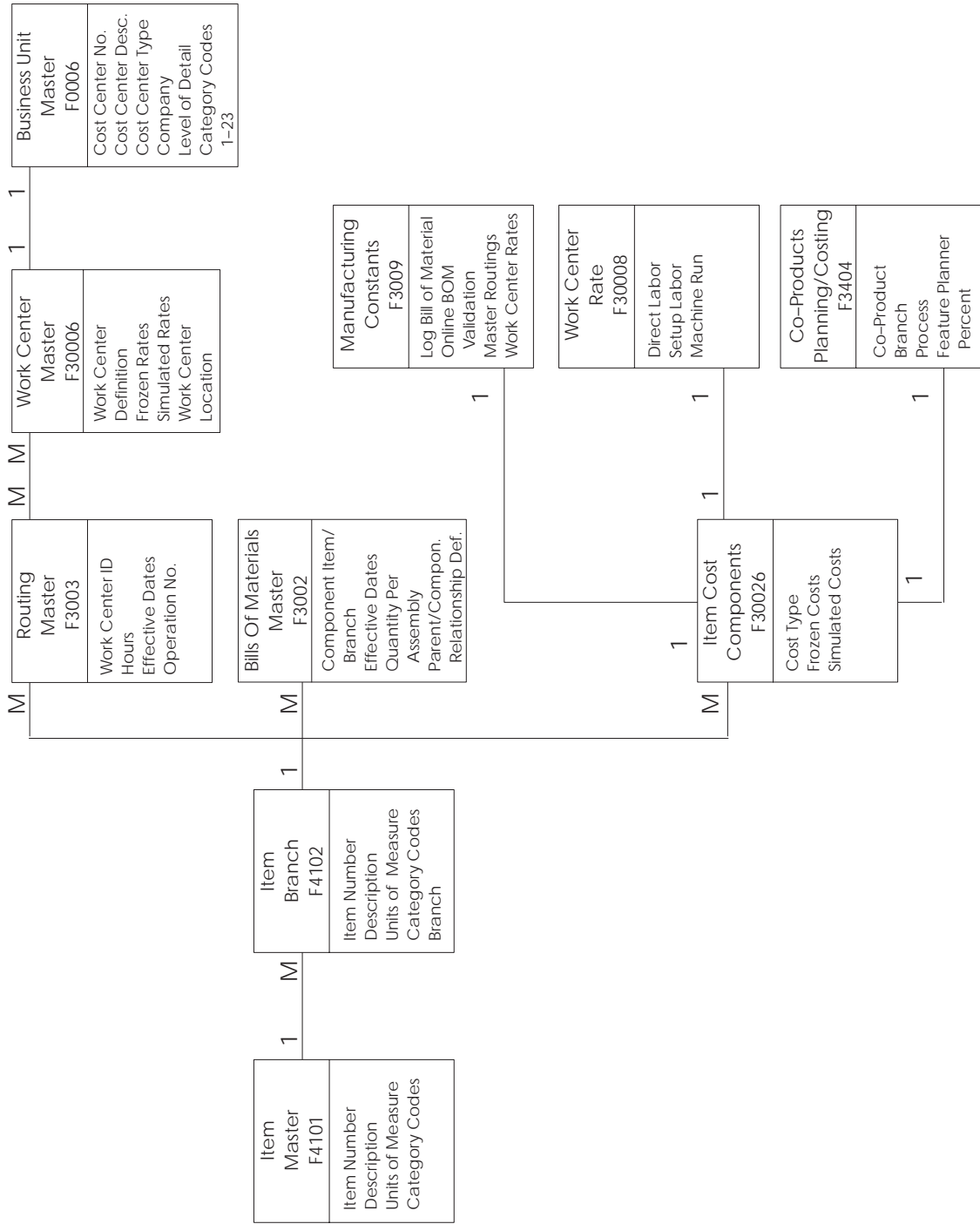


Exercises

See the exercises for this chapter.

Appendices

Appendix A — Data Model



Appendix B — Test Yourself Answers

Working With Work Centers

1. True
2. False
A pay point code of B indicates the work center will have both labor and material backflushed through it.
3. True
4. False
You must run the Frozen Cost Update program (P30835) to update frozen costs manually.
5. False
Move and Queue hours are used in leadtime and scheduling calculations.

Working With Leadtimes

1. C
 2. B
 3. A
1. True.
 2. Manufacturing leadtime is the total number of days required to build an item from its lowest level components (not including purchased parts) to the final assembly.
 3. True.

Appendix C — Leadtime Calculations

Understanding Leadtime Calculations

Determining leadtime 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 J.D. Edwards Manufacturing systems use leadtimes. In Product Data Management, you enter routing and work center information, and run the Leadtime Rollup program to calculate leadtimes. The Shop Floor Control system uses the leadtime information to calculate the start date of a work order based on the order's due date. For more information, see also *Appendix A – Leadtimes* in the *Shop Floor Control Guide*.

This section describes how the Leadtime Rollup program calculates leadtimes. The following information on the Enter/Change Routing form is used by the Leadtime Rollup program.

Time basis code

Identify 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 at the time basis code table, 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:

Queue Hours

The amount of time a work order waits to be worked on at an operation. Queue hours are the sum of the move hours and the queue hours divided by the number of employees or machines based on the prime load code for each operation.

(move hours + queue hours) / number of people or machines = queue hours

Operation 30	(1+2)/1
Operation 60	(2+4)/1
Operation 80	<u>+ (0+0)/1</u>
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	<u>+0</u>
Setup Hours	1

Level Leadtime

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

The following values are defined:

- The level leadtime 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

$$\text{SUM } \frac{\{(M \text{ or } L)/(E \text{ or } M)\} * \text{MLQ} + \text{setup} + \text{queue}}{\text{TIMB}}$$

Work hours per day (from constants file)

$$\frac{\text{Operation 30}}{(8/1) * 2000} + \frac{\text{Operation 60}}{(12/1) * 2000} + \frac{\text{Operation 30}}{(12/1) * 2000} + 1 + 9$$

$$\frac{10,000}{10,000} + \frac{10,000}{10,000} + \frac{10,000}{10,000} + 1 + 9$$

8

$$1.6 + 2.4 + 2.4 + 1 + 9 = 16.4$$

$$16.4/8 = 3 \text{ days level leadtime}$$

Per Unit Leadtime

The system calculates this value when the Leadtime Flag is set to V. It uses the time basis code from the routing to calculate leadtime per unit and the time basis code from the Item Master as a common factor to multiply all the leadtimes 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
- TIMB Time Basis Code
- E Number of employees in work center
- M Number of machines in work center

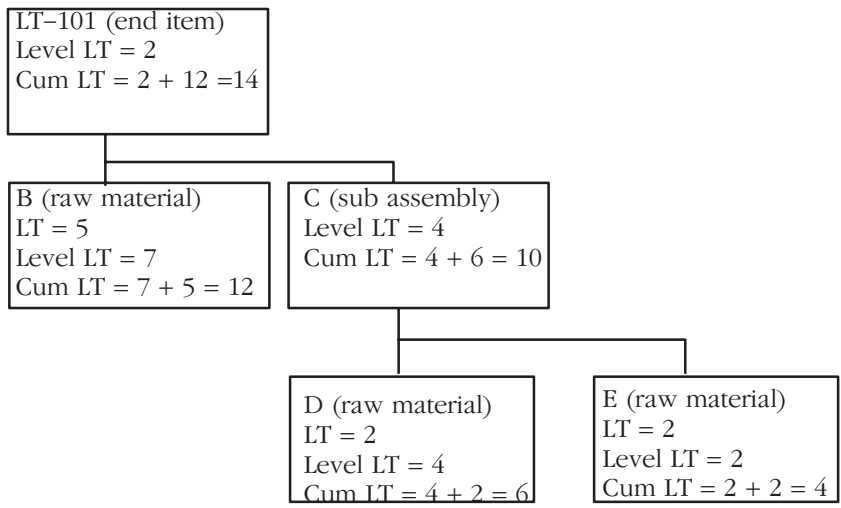
$$\text{SUM } \frac{\{(M \text{ or } L)/(E \text{ or } M)\} * \text{TIMB (item balance)}}{\text{TIMB (Routing)}}$$

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

8 + 12 + 12 = 32 hours per unit leadtime

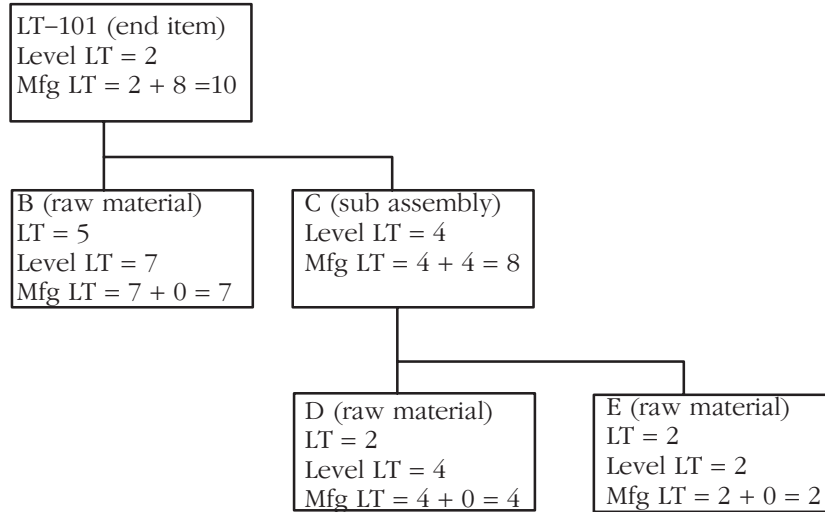
Cumulative Leadtime

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



Manufacturing Leadtime

Manufacturing Leadtime is the sum of the level leadtime and the longest manufacturing leadtime of any of the item's lower level components.



Leadtimes for Purchased Parts

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

- Manufacturing leadtime
- Leadtime per unit
- Queue hours
- Setup hours

Appendix D — Functional Servers

Several J.D. Edwards 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 screen is now separate from how a program works.

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.

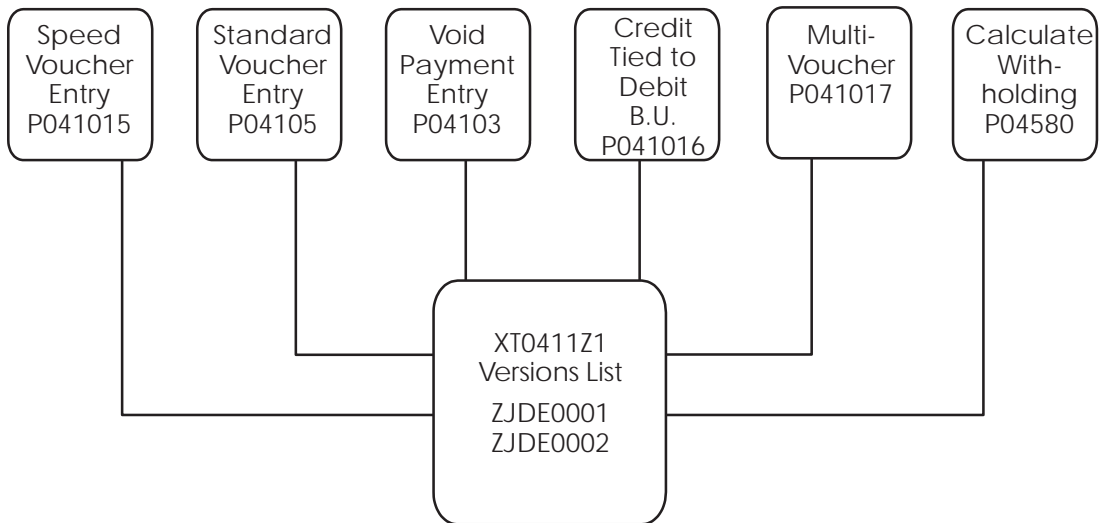
You can have all your entry programs use the same DREAM Writer version (and thus, use the same rules) or you can set up different DREAM Writer versions. J.D. Edwards provides DREAM Writer version ZJDE0001 as the default functional server version for your entry programs.



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. J.D. Edwards provides two demo versions of the functional server, ZJDE0001 and ZJDE0002.



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Glossary

Glossary

This glossary defines terms in the context of your use of JDE systems and the accompanying user guide.

access. To get to the information or functions provided by the system through menus, screens, and reports.

allocated material. Material on hand or on order that is assigned to specific future production or customer orders. Synonymous with *reserved material*.

alphabetic character. Represents data by using letters and other symbols from the keyboard (such as *&#). Contrast with *numeric character*.

alphanumeric character. Represents data in a combination of letters, numbers, and other symbols (such as *&#).

alternate operation. Replacement for a normal step in the manufacturing process or routing for an item.

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

assemble-to-order. A make-to-order product for which key components (bulk, semi-finished, intermediate, subassembly, fabricated, purchased, packaging, etc.) used in the assembly or finishing process are planned and stocked in anticipation of a customer order. Receipt of an order initiates assembly of the finished product. This is useful when a large number of finished products can be assembled from common components.

assembly. A group of subassemblies and/or parts that are put together and constitute a major subdivision for the final product. An assembly may be an end item or a component of a higher level assembly.

audit trail. The detailed, verifiable history of a processed transaction. The history consists of the original documents, transaction entries, and posting of records, and usually concludes with a report.

automatic accounting instruction (AAI). A code that points to an account in the chart of accounts. AAIs define rules for programs that automatically generate journal entries. This includes interfaces between Accounts Payable, Accounts Receivable, and Financial Reporting and the General Accounting system. Each system that interfaces with the General Accounting system has AAIs. For example, AAIs can direct the Post to General Ledger program to post a debit to a certain expense account and an automatic credit to a certain accounts payable account.

backflush. The deduction from inventory records of the component parts used in an assembly or subassembly by exploding the bill of material by the production count of assemblies produced.

back scheduling. A technique for calculating operation start dates and due dates. The schedule is computed starting with the due date for the order and working backward to determine the required start date and/or due dates for each operation.

backup copy. A copy of original data preserved on a magnetic tape or diskette as protection against destruction or loss.

batch. A group of like records or transactions that the computer treats as a single unit during processing. For identification purposes, the system usually assigns each batch a unique identifier, known as a "batch number."

batch bill of material. A bill of material in which the statement of quantity per is based on the standard batch quantity of the parent.

batch header. Information the computer uses as identification and control for a group of transactions or records in a batch.

batch job. A task or group of tasks you submit for processing that the system treats as a single unit during processing, for example, printing reports and purging files. The computer performs these tasks with little or no user interaction.

batch processing. A method by which the computer selects jobs from the job queue, processes them, and writes output to the outqueue. Contrast with *interactive processing*.

batch type. A code that designates which JDE system the associated transactions pertain to, thus controlling what records are selected for processing. For example, in the Post General Journal process, only unposted transaction batches with a batch type of G for General Accounting are selected for posting.

bill of material (BOM). A listing of all the subassemblies, parts, and raw materials that go into a parent assembly showing the quantity of each required to make the assembly. It is used in conjunction with the master production schedule to determine the items for which purchase requisitions and production orders must be released. There is a variety of display formats for bills of material, including: single level, multi level, indented, planning, and costed. Synonymous with *formula*, *recipe*, and *ingredients list*.

Boolean logic operand. In JDE's DREAM Writer, the parameter of the Relationship field. The Boolean logic operand tells the system to perform a comparison between certain records or parameters. Available operands are:

EQ = Equal To

LT = Less Than

LE = Less Than or Equal To

GT = Greater Than

GE = Greater Than or Equal To

NE = Not Equal To

NL = Not Less Than

NG = Not Greater Than

bubble chart. A diagram that attempts to display the interrelationships of systems, functions, or data in sequential flow. It derives its name from the circular symbols used to enclose the statements on the chart.

bucketed system. An MRP, DRP, or other time-phased system in which all time-phased data are accumulated into time periods or "buckets." If the period of accumulation is one week, then the system is said to have weekly buckets.

bucketless system. An MRP, DRP, or other time-phased system in which all time-phased data are processed, stored, and usually displayed using dated records rather than defined time periods or "buckets."

bulk issue. Parts issued from stores to work-in-process inventory, but not based on a job order. They are issued in quantities estimated to cover requirements of individual work centers and production lines. The issue may be used to cover a period of time or to fill a fixed-size container.

by-product. A material of value produced as residual of or incidental to the production process. The ratio of by-product to primary product is usually predictable. By-products may be recycled, sold as is, or used for other purposes.

CAD/CAP. Computer Assisted Design/Computer Assisted Programming. A set of automated programming tools for designing and developing systems. These tools automate system design, generate source code and documentation, enforce design standards, and help to ensure consistency throughout all JDE systems.

capacity requirements planning (CRP).

The function of establishing, measuring, and adjusting limits or levels of capacity. It is the process of determining in detail how much labor and machine resources are required to accomplish the tasks of production. Open shop orders and planned orders in the MRP system are input to CRP, which "translates" these orders into hours of work by work center and by time period.

category code. In user defined codes, a temporary title for an undefined category. For example, if you are adding a code that designates different sales regions, you could change *category code 4* to *Sales Region*, and define E (East), W (West), N (North), and S (South) as the valid codes. Category codes were formerly known as *reporting codes*.

character. Any letter, number, or other symbol that a computer can read, write, and store.

closed-loop MRP. A system built around material planning that includes the additional planning functions of sales and operations (production planning, master production scheduling, and capacity requirements planning). Once this planning phase is complete and the plans have been accepted as realistic and attainable, the execution functions come into play. These include the manufacturing control functions of input-output (capacity) measurement, detailed scheduling and dispatching, as well as anticipated delay reports from both the plant and supplier. The term "closed loop" implies that not only is each of these elements included in the overall system, but also that feedback is provided by the execution functions so that the planning can be kept valid at all times.

command. A character, word, phrase, or combination of keys you use to tell the computer to perform a defined activity.

component. Raw material, ingredient, part, or subassembly that goes into a higher level assembly, compound, or other item. This term may also include packaging materials for finished items.

component availability. The availability of component inventory for the manufacture of a specific parent order or group of orders or schedules.

constants. Parameters or codes that rarely change. The computer uses constants to standardize information processing by an associated system. Some examples of constants are allowing or disallowing out-of-balance postings and having the system perform currency conversions on all amounts. Once you set constants such as these, the system follows these rules until you change the constants.

Core. The central and foundational systems of JDE software, including General Accounting, Accounts Payable, Accounts Receivable, Address Book, Financial Reporting, Financial Modeling and Allocations, and Back Office.

costed bill of material. A form of bill of material that extends the quantity per of every component in the bill by the cost of the components.

crew size. The number of people required to perform an operation. The associated standard time should represent the total time for all crew members to perform the operation, not the net start to finish time for the crew.

cumulative leadtime. The longest planned length of time involved to accomplish the activity in question. For any item planned through MRP, it is found by reviewing the leadtime for each bill of material path below the item. Whichever path adds up to the greatest number defines cumulative leadtime. Synonymous with *aggregate leadtime*, *composite leadtime*, and *critical path leadtime*.

cumulative manufacturing leadtime.

The cumulative planned leadtime when all purchased items are assumed to be in stock.

cumulative MRP. The planning of parts and subassemblies by exploding a master schedule, as in MRP, except that the master scheduled items and therefore the exploded requirements are time phased in cumulative form. Usually these cumulative figures cover a planning year.

current cost. The current or replacement cost of labor, material, or overhead. Its computation is based on current performance or measurements, and it is used to address "today's" costs before production as a revision of annual standard costs.

cursor. The blinking underscore or rectangle on your screen that indicates where the next keystroke will appear.

cursor sensitive help. JDE's online help function, which allows you to view a description of a field, an explanation of its purpose, and, when applicable, a list of the valid codes you can enter. To access this information, move the cursor to the field and press F1.

data. Numbers, letters, or symbols that represent facts, definitions, conditions, and situations, that a computer can read, write, and store.

database. A continuously updated collection of all information a system uses and stores. Databases make it possible to create, store, index, and cross-reference information online.

data dictionary. A database file consisting of the definitions, structures, and guidelines for the usage of fields, messages, and help text. The data dictionary file does not contain the actual data itself.

default. A code, number, or parameter the system supplies when you do not enter one. For example, if an input field's default is N and the you do not enter something in that field, the system supplies an N.

demand. A need for a particular product or component. The demand could come from any number of sources, such as a customer order or forecast, or an interplant requirement or a request from a branch warehouse for a service part or for manufacturing another product.

dependent demand. Demand that is directly related to or derived from the bill of material structure for other items or end products. Such demands are calculated and need not and should not be forecast. A given inventory item may have both dependent and independent demand at any given time. For example, a part may simultaneously be the component of an assembly and also sold as a service part.

descriptive title. See *user defined code*.

detail. The individual pieces of information and data that make up a record or transaction. Contrast with *summary*.

detail file. A file which contains manufacturing, routing, or specification details. Contrast with *master file*.

direct labor. Labor that is specifically applied to the product being manufactured or utilized in the performance of the service.

direct material. Material that becomes a part of the final product in measurable quantities.

discrete manufacturing. Production of distinct items such as automobiles, appliances, or computers.

display. (1) To cause the computer to show information on a terminal's screen. (2) A specific set of fields and information that a JDE system might show on a screen. Some screens can show more than one display when you press a specified function key.

display field. A field of information on a screen that contains a system-provided code or parameter that you cannot change. Contrast with *input field*.

downstream operation. A task subsequent to the task currently being planned or executed.

DREAM Writer. Data Record Extraction And Management Writer. A flexible data manipulator and cataloging tool. You use this tool to select and sequence the data that is to appear on a programmed report.

edit. (1) To make changes to a file by adding, changing, or removing information. (2) The program function of highlighting fields into which you have entered inadequate or incorrect data.

effectivity date. The date on which a component or an operation is to be added or removed from a bill of material or an assembly process. The effective dates are used in the explosion process to create demands for the correct items. Normally, bill of material and routing systems provide for an effectivity "start date" (from) and "stop date" (thru), signifying the beginning and end of a particular relationship. Synonymous with *effective date*.

efficiency. A measure (as a percentage) of the actual output to the standard output expected. Efficiency measures how well something is performing relative to expectations; it does not measure output relative to any input. For example, if there is a standard of 100 pieces per hour and 780 units are produced in one eight-hour shift, the efficiency is 780 divided by 800, then multiplied by 100% or 97.5%.

electronic data interchange (EDI). The paperless (electronic) exchange of trading documents, such as purchase orders, shipment authorizations, advanced shipment notices, and invoices, using standardized document formats.

end item. A product sold as a completed item or repair part. Any item subject to a customer order or sales forecast. Synonymous with *end product*, *finished good*, and *finished product*.

engineering change order (ECO). A work order used to implement a change in a manufactured product. This can be a change in design, quantity or parts required, assembly or production process, and so forth.

engineer-to-order. Products whose customer specifications require unique engineering design or significant customization. Each customer order results in a unique set of part numbers, bills of material, and routings.

execute. See *run*.

exit. (1) To interrupt or leave a computer program by pressing a specific key or a sequence of keys. (2) An option or function key displayed on a screen that allows you to access another screen.

expedite. To "rush" or "chase" production or purchase orders that are needed in less than the normal leadtime. To take extraordinary action because of an increase in relative priority.

facility. A collection of computer language statements or programs that provides a specialized function throughout a system or throughout all integrated systems. Some examples DREAM Writer and FASTR.

FASTR. Financial Analysis Spreadsheet Tool and Report Writer. A report writer that allows you to design your own report specifications using the general ledger database.

feature. An accessory or attachment to an item.

field. (1) An area on a screen that represents a particular type of information, such as name, document type, or amount. Fields that you can enter data into are designated with underscores. See *input field* and *display field*. (2) A defined area within a record that contains a specific piece of information. For example, a vendor record

consists of the fields Vendor Name, Address, and Telephone Number. The Vendor Name field contains just the name of the vendor.

file. A collection of related data records organized for a specific use and electronically stored by the computer.

fixed cost. An expenditure that does not vary with the production volume, for example, rent, property tax, and salaries of certain personnel.

fixed order quantity. A lot-sizing technique in MRP or inventory management that will always cause planned or actual orders to be generated for a predetermined fixed quantity, or multiples thereof, if net requirements for the period exceed the fixed order quantity.

fixed overhead. Traditionally all manufacturing costs, other than direct labor and direct materials, that continue even if products are not produced. Although fixed overhead is necessary to produce the product, it cannot be directly traced to the final product.

fold area. An area of a screen, accessed by pressing F4, that displays additional information associated with the records or data items displayed on the screen.

forecast. An estimate of future demand. A forecast can be determined by mathematical means using historical data, created subjectively by using estimates from informal sources, or a combination of both techniques.

function. A separate feature within a facility that allows you to perform a specific task, for example, the field help function.

function key. A key you press to perform a system operation or action. For example, you press F4 to have the system display the fold area of a screen.

Gantt chart. A control chart designed to show graphically the relationship between planned performance and actual performance.

hard copy. A presentation of computer information printed on paper. Synonymous with *printout*.

header. Information at the beginning of a file. This information is used to identify or provide control information for the group of records that follows.

help instructions. Online documentation or explanations of fields that you access by pressing the Help key or by pressing F1 with your cursor in a particular field.

helps. See *help instructions*.

hidden selections. Menu selections you cannot see until you enter HS in a menu's Selection field. Although you cannot see these selections, they are available from any menu. They include such items as Display Submitted Jobs (33), Display User Job Queue (42), and Display User Print Queue (43). The Hidden Selections window displays three categories of selections: user tools, operator tools, and programmer tools.

implode. 1) Compression of detailed data in a summary-level record or report. 2) Tracing a usage and/or cost impact from the bottom to the top (end product) of a bill of material using where-used logic.

implosion. The process of determining the where-used relationship for a given component. Implosion can be single-level (showing only the parents on the next higher level) or multilevel (showing the ultimate top-level parent). Synonymous with *where used*. Contrast with *explosion*.

indented bill of material. A form of multilevel bill of material that lists the highest level parent items at the left margin and all the components going into these parents indented to the right of the margin. All subsequent levels of components are indented farther to the right. If a component is used in more than one parent within a given product structure, it will appear more than once, under every subassembly in which it is used.

indented where-used. A listing of every parent item, and the respective quantities required, as well as each of their respective parent items, continuing until the ultimate end item, or level-0 item, is listed. Each of these parent items is one that calls for a given component item in a bill of material file. The component item is shown closest to the left margin of the listing, with each parent indented to the right, and each of their respective parents indented even further to the right.

indirect costs. Costs that are not directly incurred by a particular job or operation. Certain utility costs, such as plant heating, are often indirect. An indirect cost is typically distributed to the product through the overhead rates.

indirect labor. Work required to support production in general without being related to a specific product, for example, sweeping the floor.

indirect materials. Items that become part of the final product or substances that are consumed in the manufacture of a product that have a negligible value relative to the value of the final product or the usage of which cannot be effectively determined. These components may or may not be included in the bill of material. Synonymous with *supplies*.

input. Information you enter in the input fields on a screen or that the computer enters from other programs, then edits and stores in files.

input field. An area on a screen, distinguished by underscores (_ _), where you type data, values, or characters. A field represents a specific type of information such as name, document type, or amount. Contrast with *display field*.

install system code. The code that identifies a JDE system. Examples are 01 for the Address Book system, 04 for the Accounts Payable system, and 09 for the General Accounting system.

interactive processing. A job the computer performs in response to commands you enter from a terminal. During interactive processing, you are in direct communication with the computer, and it might prompt you for additional information during the processing of your request. See *online*. Contrast with *batch processing*.

interface. A link between two or more JDE systems that allows these systems to send information to and receive information from one another.

issue. The physical movement of items from a stocking location and, often, the transaction reporting of this activity.

issue cycle. The time required to generate a requisition for material, pull the material from an inventory location, and move it to its destination.

item. Any unique manufactured or purchased part, material, intermediate, subassembly, or product.

item master record. The master record for an item. Typically, it contains identifying and descriptive data and control values (leadtimes, lot sizes, etc.) and may contain data on inventory status, requirements, planned orders, and costs. Item records are linked together by product structure records which define the bill of material for an item.

item number. A number that serves to uniquely identify an item. Synonymous with *part number*.

jargon. A JDE term for system specific help text. You base your help text on a specific reporting code you designate in the Data Dictionary Glossary. You can display this text as part of online help.

job. A single identifiable set of processing actions you tell the computer to perform. You start jobs by choosing menu selections, entering commands, or pressing designated function keys. An example of a computer job is check printing in the Accounts Payable system.

job queue. A screen that lists the batch jobs you and others have told the computer to process. When the computer completes a job, the system removes the job's identifier from the list.

justify. To shift information you enter in an input field to the right or left side of the field. Many of the facilities within JDE systems justify information. The system does this only after you press Enter.

Just-in-Time (JIT). A philosophy of manufacturing based on planned elimination of all waste and continuous improvement of productivity. The primary elements of zero inventories are to have only the required inventory when needed; to improve quality to zero defects; to reduce leadtimes by reducing setup times, queue lengths, and lot sizes; to incrementally revise the operations themselves; and to accomplish these things at minimum cost.

key field. A field common to each record in a file. The system uses the key field designated by the program to organize and retrieve information from the file.

Key General Ledger Account (Key G/L). See *automatic accounting instructions*.

labor cost. The dollar amount of added value due to labor performed during manufacturing.

leading zeros. A series of zeros that certain facilities in JDE systems place in front of a value you enter. This normally occurs when you enter a value that is smaller than the specified length of the field. For example, if you enter 4567 in a field that accommodates eight numbers, the facility places four zeros in front of the four numbers you enter. The result would look like this: 00004567.

leadtime. 1) A span of time required to perform a process (or series of operations).
2) In a logistics context, the time between

recognition of the need for an order and the receipt of goods. Individual components of leadtime can include order preparation time, queue time, move or transportation time, and receiving and inspection time.

leadtime offset. A technique used in MRP where a planned order receipt in one time period will require the release of that order in an earlier time period based on the leadtime for the item.

level. Every part or assembly in a product structure is assigned a level code signifying the relative level in which that part or assembly is used within the product structure. Normally the end items are assigned to level 0 with the components and subassemblies going into it assigned to level 1 and so forth. The MRP explosion process starts from level 0 and proceeds downward one level at a time.

level of detail. (1) The degree of difficulty of a menu in JDE software. The levels of detail for menus are as follows:

- A=Major Product Directories
- B=Product Groups
- 1=Basic Operations
- 2=Intermediate Operations
- 3=Advanced Operations
- 4=Computer Operations
- 5=Programmers
- 6=Advanced Programmers

Also known as *menu levels*.

(2) The degree to which account information in the General Accounting system is summarized. The highest level of detail is 1 (least detailed) and the lowest level of detail is 9 (most detailed).

master file. A computer file that a system uses to store data and information which is permanent and necessary to the system's operation. Master files might contain data or information such as paid tax amounts and vendor names and addresses.

load. The amount of planned work scheduled and actual work released for a facility, work center, or operation for a

specific span of time. It is usually expressed in terms of standard hours of work or, when items consume similar resources at the same rate, units of production.

lot. A quantity produced together and sharing the same production costs and resultant specifications.

lot number. A number that identifies a designated group of related items manufactured in a single run or received from a vendor in a single shipment.

lot number control. Assignment of unique numbers to each instance of receipt and carrying forth that number into subsequent manufacturing processes so that, in review of an end item, each lot consumed from raw materials through end item can be identified as having been used for the manufacture of this specific end item lot.

lot number traceability. Tracking parts by lot numbers to a group of items. This tracking can assist in the tracing of quality problems to their source.

lot traceability. The ability to identify the lot or batch numbers of consumption and/or composition for manufactured, purchased, and shipped items. This is a federal requirement in certain regulated industries.

low-level code. A number that identifies the lowest level in any bill of material at which a particular component may appear. Net requirements for a given component are not calculated until all the gross requirements have been calculated down to that level. Low-level codes are normally calculated and maintained automatically by the computer software. Synonymous with *explosion level*.

machine hours. The amount of time, in hours, that a machine is actually running. Machine hours, rather than labor hours, may be used for planning capacity and scheduling and for allocating costs.

make-to-order product. A product that is finished after receipt of a customer's order. The final product is usually a combination of standard items and items custom designed to meet the special needs of the customer. Frequently long leadtime components are planned prior to the order arriving in order to reduce the delivery time to the customer. Where options or other subassemblies are stocked prior to customer orders arriving, the term "assemble-to-order" is frequently used.

make-to-stock product. A product that is shipped from finished goods, "off-the-shelf," and therefore is finished prior to a customer order arriving. The master scheduling and final assembly scheduling are conducted at the finished goods level.

manufacturing leadtime. The total time required to manufacture an item, exclusive of lower level purchasing leadtime. It includes the time for order preparation, queue, setup, run, move, inspection, and put-away.

manufacturing resource planning (MRP II) A method for the effective planning of all resources of a manufacturing company. Ideally, it addresses operational planning in units, financial planning in dollars, and has a simulation capability to answer "what if" questions. It is made up of a variety of functions, each linked together: business planning, sales and operations (production planning), master production scheduling, material requirements planning, capacity requirements planning, and the execution support systems for capacity and material. Output from these systems is integrated with financial reports such as the business plan, purchase commitment report, shipping budget, inventory projections in dollars, etc. Manufacturing resource planning is a direct outgrowth and extension of closed-loop MRP.

master file. A computer file that a system uses to store data and information which is permanent and necessary to the system's

operation. Master files might contain data or information such as paid tax amounts and vendor names and addresses.

master planning. A classification scheme that includes the following activities: forecasting and order servicing (which together constitute demand management); production and resource planning; and master scheduling (which includes the final assembly schedule, the master schedule, and the rough cut capacity plan).

master production schedule (MPS). A detailed statement of how many items are planned to be produced and when. The MPS focuses on products to be made and, through the detailed planning system, identifies the resources (materials, work force, plant equipment and capital) needed and the timing of the need.

menu. A screen that displays numbered selections. Each of these selections represents a program. To access a selection from a menu, type the selection number and then press Enter.

menu levels. See *level of detail*.

menu masking. A security feature of JDE systems that lets you prevent individual users from accessing specified menus or menu selections. The system does not display the menus or menu selections to unauthorized users.

menu message. Text that appears on a screen after you make a menu selection. It displays a warning, caution, or information about the requested selection.

need date. The date when an item is required for its intended use. In an MRP system, this date is calculated by a bill of material explosion of a schedule and the netting of available inventory against that requirement.

next number facility. A JDE software facility you use to control the automatic numbering of such items as new G/L accounts, vouchers, and addresses. It lets you specify your desired numbering system

and provides a method to increment numbers to reduce transposition and typing errors.

nonsignificant part numbers. Part numbers that are assigned to each part but do not convey any information about the part. They are identifiers, not descriptors. Contrast with *significant part numbers*.

numeric character. Represents data using the numbers 0 through 9. Contrast with *alphabetic character* and *alphanumeric character*.

offline. Computer functions that are not under the continuous control of the system. For example, if you were to run a certain job on a personal computer and then transfer the results to a host computer, that job would be considered an offline function. Contrast with *online*.

online. Computer functions over which the system has continuous control. Each time you work with a JDE system-provided screen, you are online with the system. Contrast with *offline*. See *interactive processing*.

online information. Information the system retrieves, usually at your request, and immediately displays on the screen. This information includes items such as database information, documentation, and messages.

operand. See *Boolean logic operand*.

operation number. A sequential number, usually two, three, or four digits long, such as 010, 020, 030, and so forth, that indicates the sequence in which operations are to be performed within an item's routing.

operations sequence. The sequential steps for an item to follow in its flow through the plant. For instance, operation 1: cut bar stock; operation 2: grind bar stock; operation 3: shape; operation 4: polish; operation 5: inspect and send to stock. This information is normally maintained in the routing file.

option. A numbered selection from a JDE screen that performs a particular function or task. To select an option, you enter its number in the Option field next to the item you want the function performed on. When available, for example, option 4 allows you to return to a prior screen with a value from the current screen.

output. Information the computer transfers from internal storage to an external device, such as a printer or a computer screen.

output queue. A screen that lists the spooled files (reports) you have told the computer to write to an output device, such as a printer. After the computer writes a file, the system removes that file's identifier from the online list.

overhead. Costs incurred in the operation of a business that cannot be directly related to the individual products or services produced. These costs, such as light, heat, supervision, and maintenance, are grouped in several pools (department overhead, factory overhead, general overhead) and distributed to units of product or service by some standard allocation method.

overlap. The percentage that an operation overlaps the previous operation in the sequence. For example, a 20% overlap means that the step can begin when the previous step is 80% complete.

override. The process of entering a code or parameter other than the one provided by the system. Many JDE systems offer screens that provide default field values when they appear. By typing a new value over the default code, you can *override* the default. See *default*.

parameter. A number, code, or character string you specify in association with a command or program. The computer uses parameters as additional input or to control the actions of the command or program.

part. Generally, a material item that is used as a component and is not an assembly, subassembly blend, intermediate, and so forth.

password. A unique group of characters that you enter when you sign on to the system that the computer uses to identify you as a valid user.

pegging. In MRP, the capability to identify for a given item the sources of its gross requirements and/or allocations. Pegging can be thought of as "live where-used" information.

picking. The process of withdrawing from stock the components to make the products or the finished goods to be shipped to a customer.

pick list. A document that lists the material to be picked for manufacturing or shipping orders.

planned order. A suggested order quantity, release date, and due date created by MRP processing when it encounters net requirements. Planned orders are created by the computer, exist only within the computer, and may be changed or deleted by the computer during subsequent MRP processing if conditions change. Planned orders at one level will be exploded into gross requirements for components at the next lower level. Planned orders, along with released orders, serve as input to capacity requirements planning to show the total capacity requirements by work center in future time periods.

planning bill of material. An artificial grouping of items and/or events in bill of material format, used to facilitate master scheduling and/or material planning. Sometimes called a pseudo bill of material.

planning family. A group of end items whose similarity of design and manufacture facilitates being planned in aggregate.

planning horizon. The amount of time the master schedule extends into the future. This is normally set to cover a minimum of

cumulative leadtime plus time for lot sizing low-level components and for capacity changes of primary work centers.

primary location. The designation of a certain storage location as the standard, preferred location for an item.

printout. A presentation of computer information printed on paper. Synonymous with *hard copy*.

print queue. An online list (screen) of written files that you have told the computer to print. Once the computer prints the file, the system removes the file's identifier from the online list. See *output queue*.

priority. The relative importance of jobs. The sequence in which jobs should be worked on.

process manufacturing. Production that adds value by mixing, separating, forming, and/or performing chemical reactions. It may be done in either batch or continuous mode.

processing options. A feature of the JDE DREAM Writer that allows you to supply parameters to direct the functions of a program. For example, processing options allow you to specify defaults for certain screen displays, control the format in which information gets printed on reports, change the way a screen displays information, and enter "as of" dates.

program. A collection of computer statements that tells the computer to perform a specific task or group of tasks.

program specific help text. Glossary text that describes the function of a field within the context of the program.

prompt. (1) A reminder or request for information displayed by the system. When a prompt appears, you must respond in order to proceed. (2) A list of codes or parameters or a request for information provided by the system as a reminder of the type of information you should enter or action you should take.

PTF. Program Temporary Fix. A representation of changes to JDE software, which your organization receives on magnetic tapes or diskettes.

purchased part. An item sourced from a supplier.

purge. The process of removing records or data from a system file.

record. A collection of related, consecutive fields of data the system treats as a single unit of information. For example, a vendor record consists of information such as the vendor's name, address, and telephone number.

reporting code. See *category code*.

reverse image. Screen text that displays in the opposite color combination of characters and background from what the screen typically displays (for example, black on green instead of green on black).

quantity per. The quantity of a component to be used in the production of its parent. This value is stored in the bill of material and is used to calculate the gross requirements for components during the explosion process of MRP.

queue. 1) In computers: See job queue, output queue, and print queue.
2) In manufacturing: A waiting line. The jobs at a given work center waiting to be processed. As queues increase, so do average queue time and work-in-process inventory.

rated capacity. The demonstrated capability of a system. Traditionally, capacity is calculated from such data as planned hours, efficiency, and utilization. The rated capacity is equal to hours available x efficiency x utilization.

rate-based scheduling. A method for scheduling and producing based on a periodic rate, for example, daily, weekly or monthly. Traditionally, this method has been applied to high-volume and process industries. The concept can be applied within job shops using cellular layouts and

mixed-model level schedules where the production rate is matched to the selling rate.

raw material. Purchased items or extracted materials that are converted via the manufacturing process into components and/or products. receipt. 1) The physical acceptance of an item into a stocking location. 2) The transaction reporting of this activity.

record. A collection of related, consecutive fields of data the system treats as a single unit of information. For example, a vendor record consists of information such as the vendor's name, address, and telephone number.

release. The authorization to produce or ship material that has already been ordered.

repetitive manufacturing. A form of manufacturing where various items with similar routings are made across the same process whenever production occurs. Products may be made in separate batches or continuously. Production in a repetitive environment is not a function of speed or volume.

replacement parts. Parts that can be used as substitutes that differ from completely interchangeable service parts in that they require some physical modification, such as cutting, drilling, and so forth, before they can replace the original part.

revision level. A number or letter representing the number of times a document has been changed.

rework order. A manufacturing order to rework and salvage defective parts or products.

resource requirements planning (RRP). The process of converting the production plan and/or the master production schedule into capacity needs for key resources: work force, machinery, warehouse space,

suppliers' capabilities, and in some cases, money. Comparison of capacity required of items in the MPS to available capacity is usually done for each key resource. Synonymous with *rough cut capacity planning*.

routing. A set of information detailing the method of manufacture of a particular item. It includes the operations to be performed, their sequence, the various work centers to be involved, and the standards for setup and run. In some companies, the routing also includes information on tooling, operator skill levels, inspection operations, testing requirements, and so forth.

run. To cause the computer to perform a routine, process a batch of transactions, or carry out computer program instructions.

run size. See standard batch quantity.

safety stock. 1) In general, a quantity of stock planned to be in inventory to protect against fluctuations in demand and/or supply. 2) In the context of master production scheduling, the additional inventory and/or capacity planned as protection against forecast errors and/or short-term changes in the backlog. Overplanning can be used to create safety stock.

scrap. Unusable material that results from the production process. It is material outside of specifications and of such characteristics that rework is impractical.

scrap factor. A percentage factor in the product structure used to increase gross requirements to account for anticipated loss within the manufacture of a particular product. Synonymous with *scrap rate*.

scroll. To use the roll keys to move screen information up or down a screen at a time. When you press the Rollup key, for instance, the system replaces the currently displayed text with the next screen of text if more text is available.

selection. Found on JDE menus, selections represent functions that you can access from a given menu. To make a selection, you type its associated number in the Selection field and press Enter.

setup. 1) The work required to change a specific machine, resource, work center, or line from making the last good piece of unit A to the first good piece of unit B; 2) Teardown of the just completed production and preparation of the equipment for production of the next scheduled item.

setup cost. The costs such as scrap costs, calibration costs, downtime costs, and lost sales associated with preparing the resource for the next product.

setup leadtime. The time needed to prepare a manufacturing process to start. Setup leadtime may include run and inspection time for the first piece.

shelf life. The amount of time an item may be held in inventory before it becomes unusable.

shop calendar. See work day calendar.

shop floor control (SFC). A system for utilizing data from the shop floor to maintain and communicate status information on shop orders (manufacturing orders) and on work centers. The major subfunctions of shop floor control are: 1) assigning priority of each shop order, 2) maintaining work-in-process quantity information, 3) conveying shop order status information to the office, 4) providing actual output data for capacity control purposes, 5) providing quantity by location by shop order for work-in-process inventory and accounting purposes, and 6) providing measurement of efficiency, utilization, and productivity of the work force and machines.

shrinkage. Reductions of actual quantities of items in stock, in process, or in transit. The loss may be caused by scrap, theft, deterioration, evaporation, and so forth.

shrinkage factor. A percentage factor in the item master record that compensates for expected loss during the manufacturing cycle either by increasing the gross requirements or by reducing the expected completion quantity of planned and open orders. The shrinkage factor differs from the scrap factor in that the former affects all uses of the part and its components and the scrap factor relates to only one usage. Synonymous with *shrinkage rate*.

significant part numbers. Part numbers that are intended to convey certain information, such as the source of the part, the material in the part, the shape of the part, and so forth. These usually make part numbers longer. Contrast with *nonsignificant part numbers*.

simulation. 1) The technique of using representative or artificial data to reproduce in a model various conditions that are likely to occur in the actual performance of a system. It is frequently used to test the behavior of a system under different operating policies. 2) Within MRP II, using the operational data to perform "what if" evaluations of alternative plans to answer the question, "Can we do it?" If yes, the simulation can then be run in the financial mode to help answer the question, "Do we really want to?" Synonymous with *what-if analysis*.

single level bill of material. A display of those components that are directly used in a parent item. It shows only the relationships one level down.

single-level where-used. A list of each parent in which a specific component is directly used and in what quantity. Done by imploding the bill of material.

softcoding. A JDE term that describes an entire family of features that allows you to customize and adapt JDE software to your business environment. These features lessen

the need for you to use computer programmers when your data processing needs change.

software. The operating system and application programs that tell the computer how and what tasks to perform.

special character. Representation of data in symbols that are neither letters nor numbers. Some examples are * & # /.

spool. The function by which the system puts generated output into a storage area to await printing and processing.

spooled file. A holding file for output data waiting to be printed or input data waiting to be processed.

standard batch quantity. The quantity of a parent that is used as the basis for specifying the material requirements for production. The "quantity per" is expressed as the quantity to make the standard batch quantity, not to make only one of the parent. It is often used by manufacturers that use some components in very small quantities or by process-related manufacturers. Synonymous with *run size*.

standard costs. The target costs of an operation, process, or product including direct material, direct labor, and overhead charges.

standard cost system. A cost system that uses cost units determined before production. For management control purposes, the standards are compared to actual costs and variances are computed.

standard hours. The length of time that should be required to 1) set up a given machine or operation and 2) run one part/assembly/batch/end product through that operation. This time is used in determining machine and labor requirements. It is also frequently used as a basis for incentive pay systems and as a basis of allocating overhead in cost accounting systems.

subassembly. An assembly that is used at a higher level to make up another assembly.

subfile. An area on the screen where the system displays detailed information related to the header information at the top of the screen. Subfiles might contain more information than the screen can display in the subfile area. If so, use the roll keys to display the next screen of information. See *scroll*.

submit. See *run*.

summary. The presentation of data or information in a cumulative or totaled manner in which most of the details have been removed. Many of the JDE systems offer screens and reports that are summaries of the information stored in certain files.

superflush. A technique to relieve all components down to the lowest level using the complete bill of material, based on the count of finished units produced and/or transferred to finished good inventory.

system. A collection of computer programs that allows you to perform specific business tasks. Some examples of applications are Accounts Payable, Inventory, and Order Processing. Synonymous with *application*.

throughput. 1) The total volume of production through a facility (machine, work center, department, plant, or network of plants). 2) In theory of constraints, the rate at which the system (firm) generates money through sales.

time series. A set of data that is distributed over time, such as demand data in monthly time period occurrences.

unit cost. Total labor, material, and overhead cost for one unit of production, for example, one part, one gallon, or one pound.

unit of measure. The unit in which the quantity of an item is managed, such as by weight, each, box, package, case, and so forth.

use as is. A classification for material that has been dispositioned as unacceptable per the specification, yet can be used.

user defined code. The individual codes you create and define within a user defined code type. Code types are used by programs to edit data and allow only defined codes. These codes might consist of a single character or a set of characters that represents a word, phrase, or definition. These characters can be alphabetic, alphanumeric, or numeric. For example, in the user defined code type table ST (Search Type), a few codes are C for Customers, E for Employees, and V for Vendors.

user defined code (type). The identifier for a table of codes with a meaning you define for the system (for example, ST for the Search Type codes table in Address Book). JDE systems provide a number of these tables and allow you to create and define tables of your own. User defined codes were formerly known as *descriptive titles*.

user identification (user ID). The unique name you enter when you sign on to a JDE system to identify yourself to the system. This ID can be up to 10 characters long and can consist of alphabetic, alphanumeric, and numeric characters.

valid codes. The allowed codes, amounts, or types of data that you can enter in a specific input field. The system checks, or edits, user defined code fields for accuracy against the list of valid codes.

variable. Changing, not constant or fixed. For example, variable costs are costs that change according to varying conditions.

variable overhead. All manufacturing costs that vary directly with production volume, other than direct labor and direct materials. Variable overhead is necessary to produce the product, but cannot be directly assigned to a specific product.

variance. The difference between the expected (budgeted or planned) value and the actual value.

video. The display of information on your monitor screen. Normally referred to as the *screen*.

vocabulary overrides. A JDE facility that allows you to override field, row, or column title text on a screen-by-screen or report-by-report basis.

where used list. A listing of every parent item that calls for a given component, and the respective quantity required, from a bill of material file. Synonymous with *implosion*.

window. A software feature that allows a part of your screen to function as if it were a screen in itself. Windows serve a dedicated purpose within a facility, such as searching for a specific valid code for a field.

work center. A specific production facility, consisting of one or more people and/or machines with identical capabilities, that can be considered as one unit for purposes of capacity requirements planning and detailed scheduling. Synonymous with *load center*.

work day calendar. A calendar used in inventory and production planning functions that consecutively numbers only the working days so that the component and work order scheduling may be done based on the actual number of work days available. Synonymous with *planning calendar*, *manufacturing calendar*, and *shop calendar*.

work in process (WIP). A product or products in various stages of completion throughout the plant, including all material from raw material that has been released for initial processing up to completely processed material awaiting final inspection and acceptance as finished product. Many accounting systems also include the value

of semi-finished stock and components in this category. Synonymous with *in-process inventory*.

Exercises

