

Guide  
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WORLD SOFTWARE

# Manufacturing and Distribution Planning

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JD Edwards®



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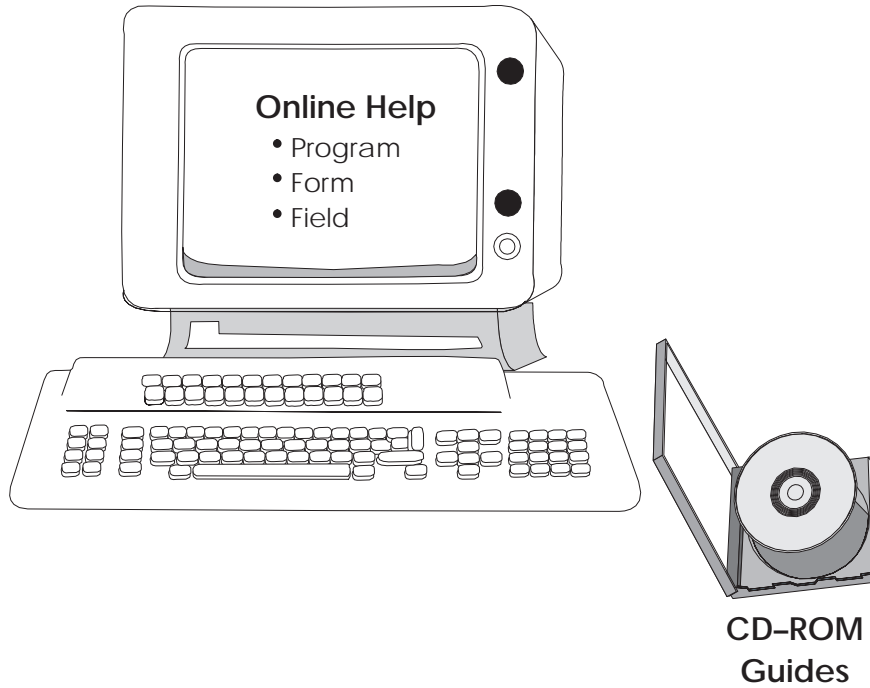
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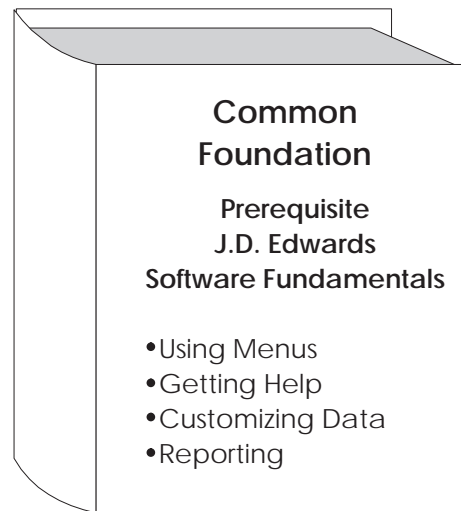
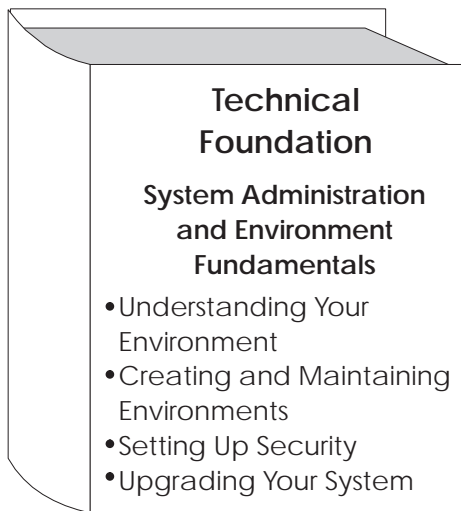
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## Where Do I Look?



## 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

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## About this Guide

This guide provides overviews, illustrations, procedures, and examples for the current release 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

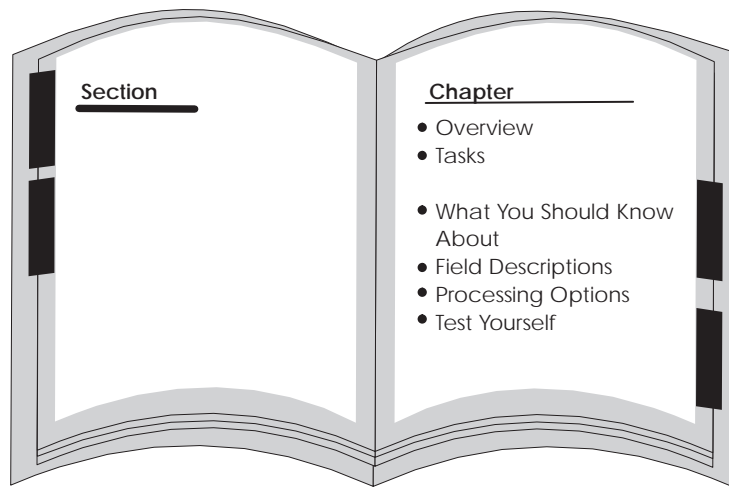
This guide is intended primarily for the following audiences:

- 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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## Glossary

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## Exercises

# Overview





# Manufacturing and Distribution Planning Overview

Manufacturing and Distribution Planning consists of the following systems, as well as the execution of those plans.

- Resource and Capacity Planning
- Material Planning Operations

The Manufacturing and Distribution Planning system is a part of Enterprise Resources Planning and Execution (ERP<sub>x</sub>). ERP<sub>x</sub> allows you to coordinate your inventory, raw materials, and labor resources to deliver products according to a managed schedule. This closed-loop manufacturing system helps manage your data and optimize resources across your entire manufacturing and distribution logistics environment. ERP<sub>x</sub> formalizes the activities of company and operations planning.

## Resource and Capacity Planning

Resource and Capacity Planning allows you to prepare a feasible production schedule that reflects your demand forecasts and production capability. Resource and Capacity Planning consists of:

<b>Resource Requirements Planning (RRP)</b>	Uses a summary forecast to estimate the time and resources that are needed to make a product family.
<b>Rough Cut Capacity Planning (RCCP)</b>	Compares the master production scheduling resource requirements to the capacity available in critical work centers.  You use RCCP to determine if you should revise the master schedule to create feasible work loads or improve utilization of limited resources.
<b>Capacity Requirements Planning (CRP)</b>	Compares the material requirements plans to the capacity available in all work centers.  You use CRP to determine if you should revise the material requirements plan to create feasible work loads or improve utilization of limited resources.



### Material Planning Operations

Material Planning Operations provides a short-range plan to cover material requirements that are needed to make a product. Material Planning Operations analyzes demand from all your operations, including:

- Central and satellite distribution centers and warehouses
- Rate-based repetitive manufactured items
- Process and discrete manufactured items
- Engineer-to-order contracted items
- Maintenance, repair, and operational items for plant and equipment maintenance
- Supplier-managed inventory

Material Planning Operations consists of:

<b>Distribution Requirements Planning (DRP)</b>	Plans and controls the distribution of finished goods based upon demand. In addition, DRP provides centralized control of distribution inventories and creates a coordinated replenishment plan.
<b>Master Production Scheduling (MPS)</b>	A schedule of items and quantities that a company expects to manufacture.
<b>Material Requirements Planning (MRP)</b>	Uses the master production schedule, open orders, the bill of materials, and inventory records to calculate time-phased net requirements for every item, and creates a plan for covering material requirements.

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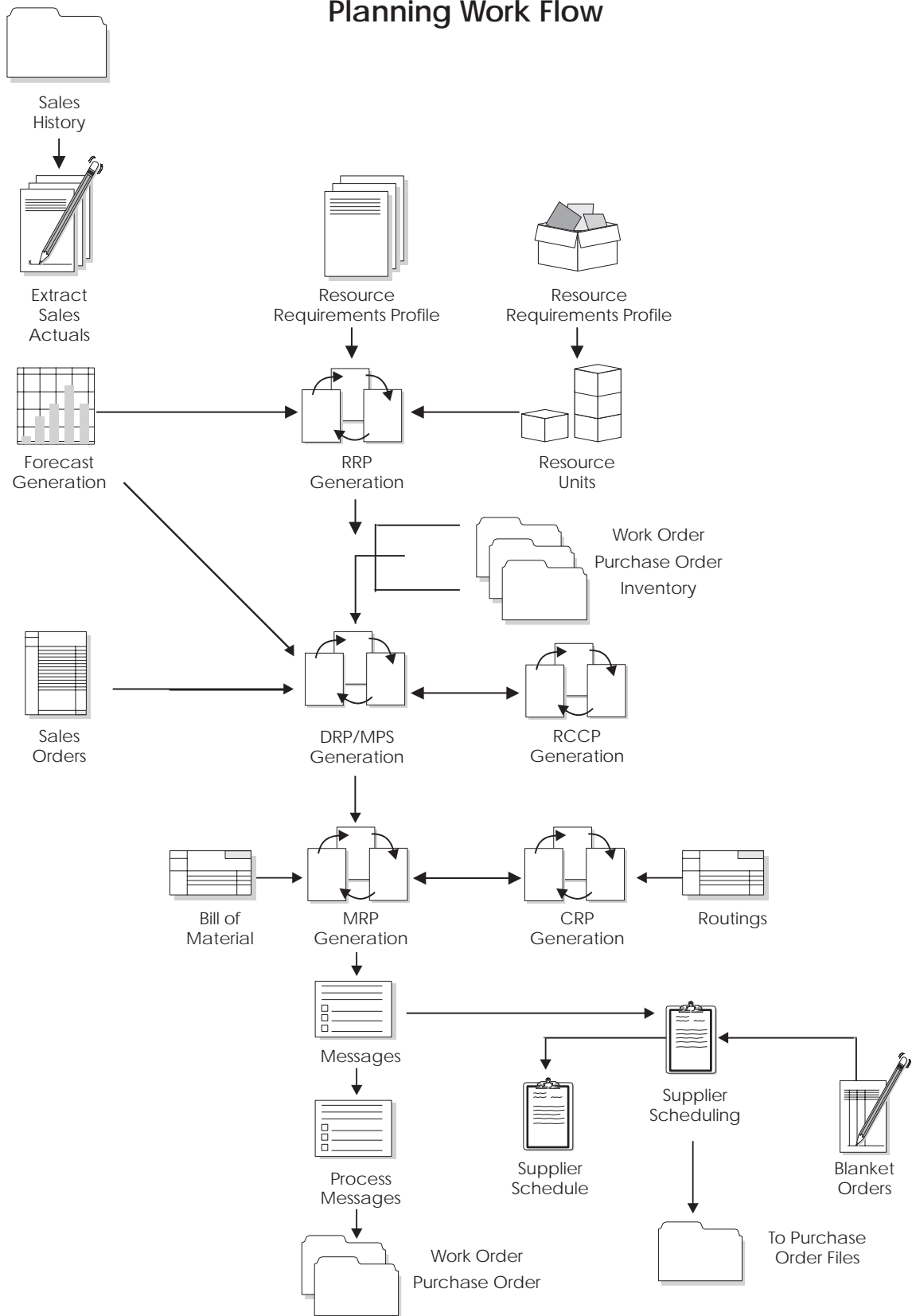
## System Integration

The Manufacturing and Distribution Planning system integrates with the following systems:

<b>Inventory Management</b>	Supplies the basic information about each item (or ingredient), such as part number, description, unit of measure, stocking type, and location.
<b>Configuration Management</b>	Supplies information for assemble-to-order and make-to-order items.
<b>Forecasting</b>	Generates sales projections that are used to develop the master production schedule.
<b>Shop Floor Control</b>	Uses bills of material and routings to schedule work activity within the plant.
<b>Product Costing</b>	Uses bill of material, routing, and work center information to calculate the standard cost of an item.
<b>Manufacturing Accounting</b>	Calculates costs for labor, overhead, and material for each primary unit of the parent using routing and work center information.
<b>Sales Order Management</b>	Uses bills of material for kit processing and acts as a source of demand for purchased or manufactured items.
<b>Purchase Management</b>	Uses expected delivery dates and recommends replenishment actions.

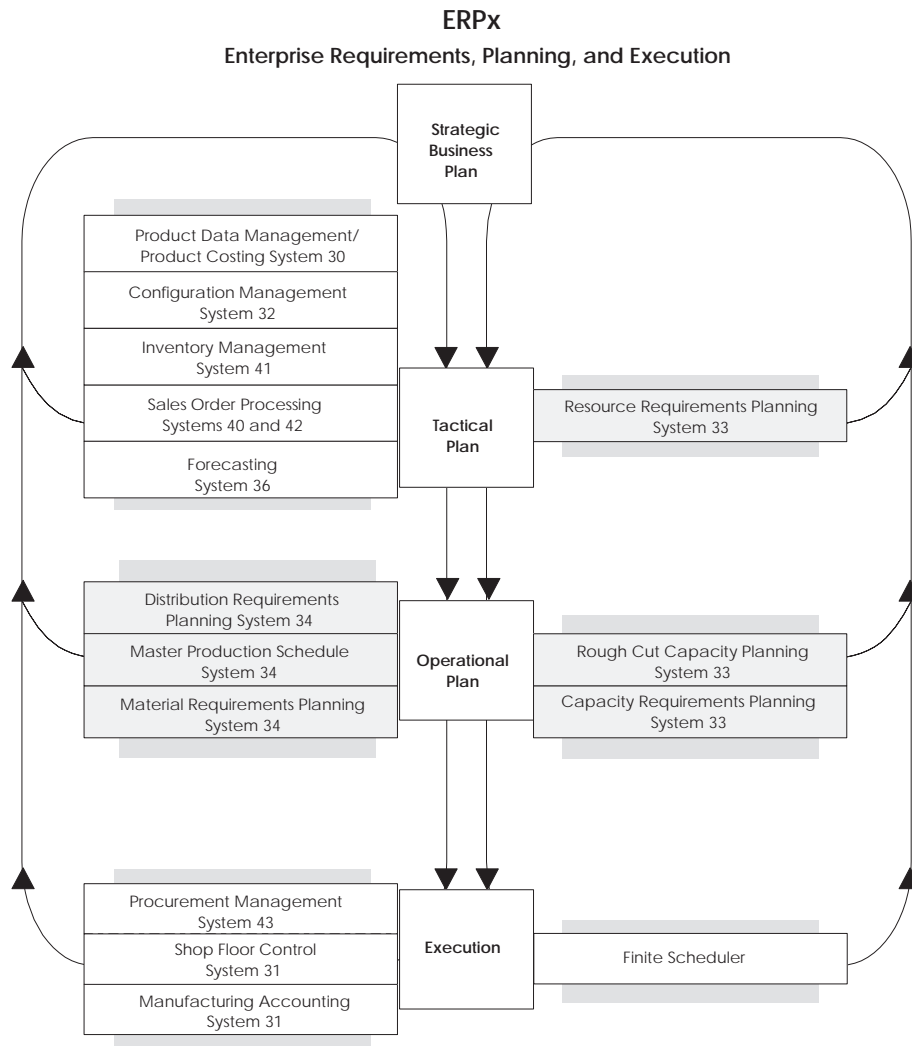
The following graphic illustrates the Manufacturing and Distribution Planning work flow.

## Manufacturing and Distribution Planning Work Flow





The following graphic illustrates how Manufacturing and Distribution Planning integrates with other J.D. Edwards systems.



### Terms and Concepts

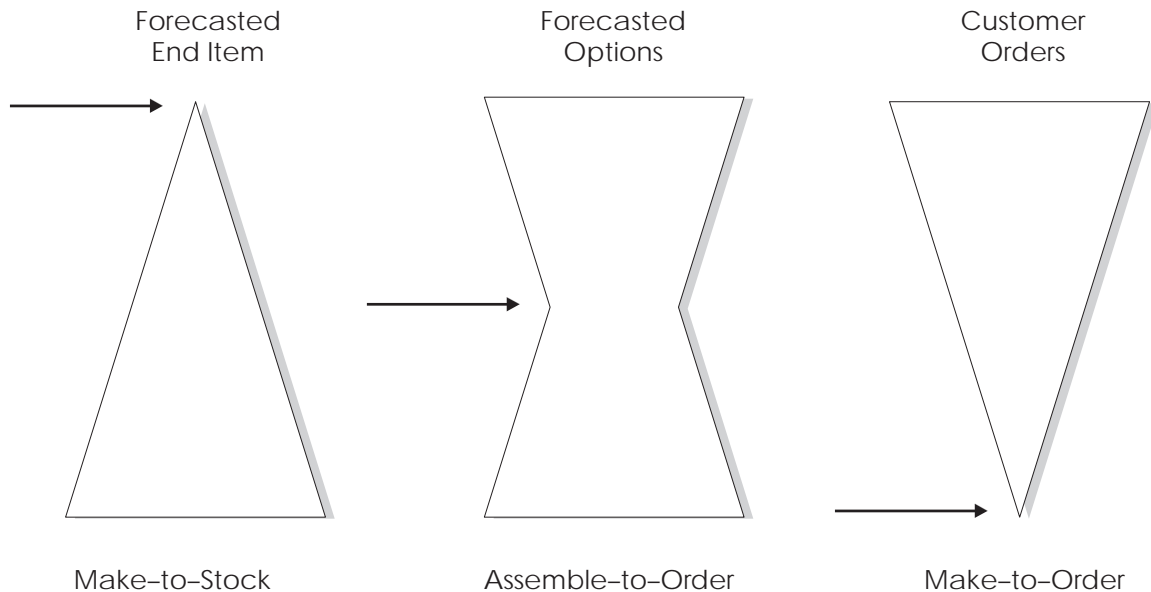
Manufacturing and Distribution Planning encompasses:

- |   |   |
|---|---|
| <b>Bills of material</b>                | <p>The components and relationships required to produce a parent item. Use bills of material to:</p> <ul style="list-style-type: none"><li>• Maintain many configurations for an item without creating additional part numbers</li><li>• Define quantities of intermediate products in any unit of measure as they progress through the manufacturing process</li><li>• Enter similar items by copying bills of material, routings, and processes</li></ul> |
| <b>Routings</b>                         | <p>The operations required to produce the parent item. Use routings to:</p> <ul style="list-style-type: none"><li>• Define each step of the manufacturing process with allowances for anticipated yield and scrap</li><li>• Add alternate operations to routings</li></ul>  |
| <b>Work centers</b>                     | <p>The facilities on the shop floor where the routing operations occur. Use work centers to:</p> <ul style="list-style-type: none"><li>• Define work center number and description</li><li>• Define the number of operators or machines</li><li>• Define setup, labor, machine, and overhead rates</li><li>• Define information for Capacity Planning</li></ul>   |
| <b>Engineering change orders (ECOs)</b> | <p>The document that you use to define and implement changes to your products structure. Use engineering change orders to:</p> <ul style="list-style-type: none"><li>• Control item changes from a single source</li><li>• Incorporate approved changes to bills of material</li></ul>  |

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## Planning and Production Environments

Successful planning leads to customer satisfaction. Depending upon when you meet your customer in the production process, the planning systems provide business solutions. As illustrated by arrows in the following graphic, customers impact the product development at different points in the various environments.



### **Make-to-stock**

You meet your customer after the product is completed. This environment generally involves retail items. Forecasting of end items is a crucial factor.

### **Assemble-to-order**

You meet your customer after options are fabricated, but before final assembly of the product. The customer specifies the options in the final end product. Some factors to consider in this environment are:

- Items are configured according to formally set rules
- Items are forecasted and master schedules are created at the option level

### **Make-to-order**

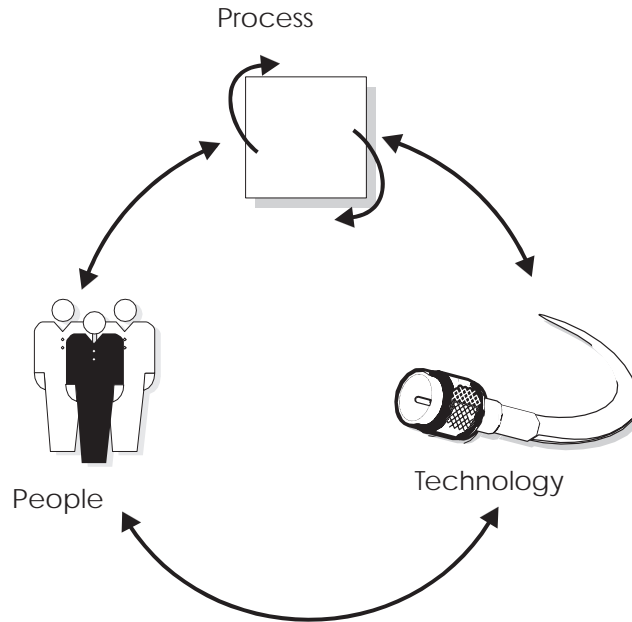
You meet your customer before you begin production at any level in the product structure. This includes the following factors:

- Products are customized for specific needs
- Capacity needs are forecasted
- Production requires longer lead times

### **Engineer-to-order**

You add engineering design time into the lead time. This might use a job cost business solution.

## Planning a Total Business Solution



A total business solution integrates three important elements:

**People**

For the most important element in your solution, you must provide education and management commitment.

**Process**

To develop the policies and practices to manage effectively, you can employ:

- Business process re-engineering
- Best manufacturing practices
- Formal documentation of the process that is approved by management

**Technology**

To acquire the best tools to do the job, you should use:

- J.D. Edwards software
- Complementary products
- AS/400 or open systems platforms

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## People

People are the keys to success. Involving and empowering people to get the job done are important steps in ensuring the success of your enterprise.

### **Management commitment**

Implementing a successful business solution requires a management involvement that includes:

- Committing the time and financial resources to do it right the first time
- Empowering the implementation team with the authority, responsibility, and accountability to do the job

### **Implementation team**

Effective and thorough work on the front-end ensures good performance in the future. To promote integrated solutions at implementation time and during use, the future owners of the process should participate in the implementation process. In addition, the team should be cross-functional.

### **Education and training**

For knowledge of the broader business issues that are associated with Manufacturing and Distribution implementation, participants in the process should be educated in the American Production and Inventory Control Society (APICS) (or an equivalent). Ideally, this education should precede training in specific J.D. Edwards training courses. Understanding Best Practices in the industry ensures quality solutions.

### **Managing change**

Implementing a broad-scale business solution entails great change in the way that people accomplish their work. To make this paradigm shift without disruption of product deliverance requires skills in helping employees cope with change in the workplace.

### **Partnership**

J.D. Edwards Response Line and consulting, provides continued support. Our relationship is ongoing for your long-term future success. Business partners broaden this relationship through additional worldwide assistance.

### Process

Costs, schedule, and quality are the direct outputs of the business process. Quality processes result in a quality product. The product meets customer specifications of design, schedule, and price.

J.D. Edwards supports your business process re-engineering through flexibility. The software can be tailored to reflect new processes as they evolve. Multiple plants can be at different stages of the re-engineering effort, depending upon their maturity or schedule for implementation. Some of the features that J.D. Edwards software provides are:

- User defined codes
- Processing options
- Branch/plant constants
- Manufacturing constants
- Customized menus

J.D. Edwards strongly supports Best Practices as documented by industry experts. As new practices are presented and recommended, J.D. Edwards has made a commitment to evolve the software functionality to support these findings.

### Technology

Seamless integration between all the J.D. Edwards systems provides a unified solution to your enterprise planning. J.D. Edwards Inventory, Sales, and Purchasing systems are fully integrated distribution systems that support the Manufacturing and Distribution Planning system.

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## Tables for Manufacturing and Distribution Planning

The following is a list of the tables that are used throughout Manufacturing and Distribution Planning.

<b>Item Master (F4101)</b>	Stores basic information about each defined inventory item, such as item numbers, description, category codes, and units of measure.
<b>Branch/Plant Master (F4102)</b>	Defines and maintains warehouse or plant level information, such as costs, quantities, physical locations, and branch level category codes.
<b>Bill of Materials Master (F3002)</b>	Contains information at the business unit level about bills of material, such as quantities of components.
<b>Capacity Messages (F3311)</b>	Contains the action messages that are generated by the Resource Requirements Planning regeneration.
<b>Detail Forecast (F3460)</b>	Contains the forecast data that RRP validates. It is also used as input to DRP/MPS/MRP.
<b>Routing (F3003)</b>	Stores routing information, including operator sequence, work center, run, setup, and machine time.
<b>Resource Units (F3007)</b>	Contains the available capacity for each work center by day, month, and year.
<b>Work Center Master (F30006)</b>	Contains detail data about all defined work centers.
<b>Resource Profile (F3303)</b>	Contains all resource profiles used in Resource Requirements Planning.

## Menu Overview

J.D. Edwards systems are menu-driven. System functions are organized according to their function and frequency of use.

Manufacturing and Distribution Planning encompasses two systems:

- Resource and Capacity Planning
- Material Planning Operations

### Resource and Capacity Planning Menus

The commonly used menus for Resource and Capacity Planning are listed below.



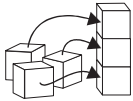
#### Daily Processes

- Resource Requirements Planning G3311
- Rough Cut Capacity Planning G3312
- Capacity Requirements Planning G3313



#### Periodic Processes

- Resource/Capacity Planning G3321



#### Setup Processes

- Resource/Capacity Planning G3341

### Fast Path Commands for Resource and Capacity Planning

The following table illustrates the fast path commands you can use to move among the Resource and Capacity Planning menus. From any menu, enter the fast path command at the command line.

Fast Path	Menu	Title
DRRP	G3311	Daily Resource Requirements Planning
RCCP	G3312	Daily Rough Cut Capacity Planning
DCRP	G3313	Daily Capacity Requirements Planning
PCAP	G3321	Periodic Resource/Capacity Planning
CAPS	G3341	Resource/Capacity Planning Setup



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## Material Planning Operations Menus

The commonly used menus for Material Planning Operations are listed below.



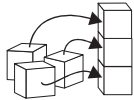
### Daily Processes

- DRP G3411
- MPS G3412
- MRP G3413
- Multi-Facility Planning G3414



### Periodic Processes

- Forecasting G3421
- Single Site Planning G3422
- Multi-Facility Planning G3423



### Setup Processes

- Forecast Setup G3441
- Requirements Setup Planning G3442
- Multi-Plant Setup G3443

## Fast Path Commands for Material Planning Operations

The following table illustrates the fast path commands you can use to move among the Material Planning Operations menus. From any menu, enter the fast path command at the command line.

Fast Path	Menu	Title
MAT	G34	Material Planning Operations
DDRP	G3411	Daily DRP
DMP	G3414	Daily Multi-Plant Planning
DMPS	G3412	Daily Master Production Schedule
DMRP	G3413	Daily MRP
DRP	G3411	Distribution Requirements Planning
MATS	G3442	Set Up Single Site Material Planning
MPS	G3412	Master Scheduling
MRP	G3413	Material Requirements Planning
MULTI	G3414	Multi-Plant Planning
PMP	G3423	Periodic Multi-Plant
PSS	G3422	Periodic Single Site Planning
SMAT	G3440	Set Up Material Planning
SMP	G3443	Set Up Multi-Plant Material Planning



# Item Master and Branch/Plant Review





# Item Master and Branch/Plant Review

## 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:

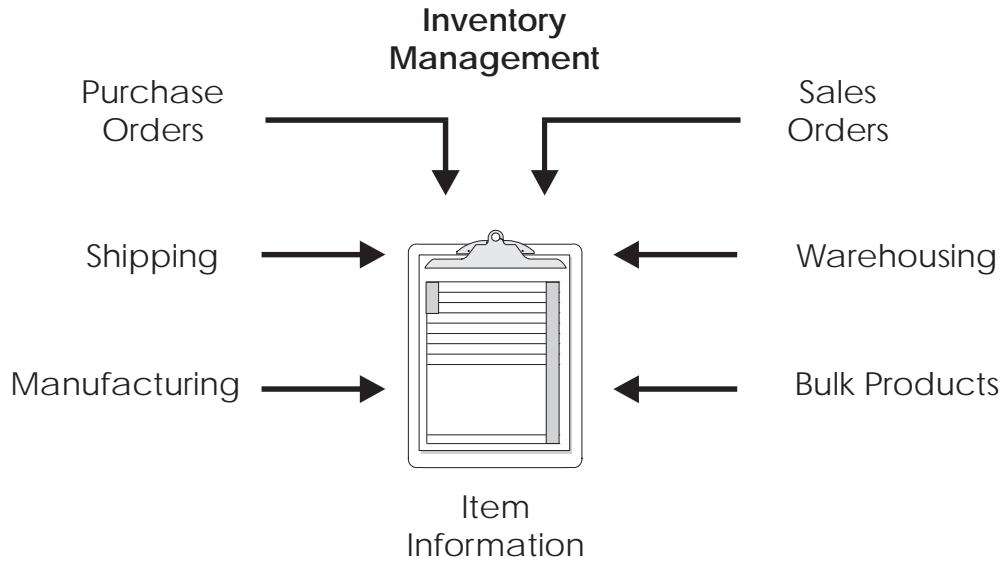
- Item identifiers
- Item descriptions (foreign and domestic)
- Item rules
- Item costs and prices
- Item weights and measures

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

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

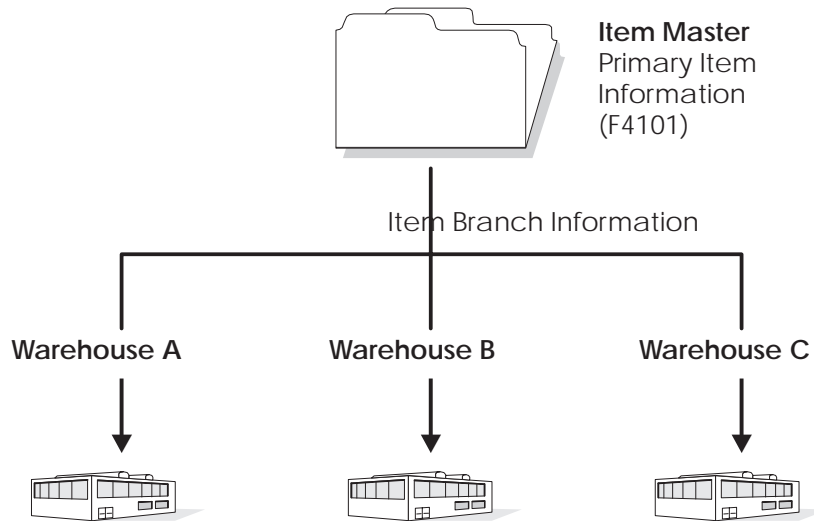
The system uses this information to help track and process each item through your distribution and manufacturing systems.





Entering an item includes two steps:

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



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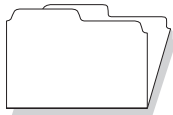
When you enter item master information, the system creates a record in the Item Master table (F4101). When you enter branch/plant information for an item, the system creates records in the Item Branch Master table (F4102) and the Item Location Information table (F41021).



### Item Branch Master

Item information that applies throughout the branch, such as:

- Category codes
- Planner/buyer numbers



### Item Location

Item information specific to certain locations. For example:

- On-hand quantities
- General Ledger class code

To enter item information, complete the following steps:

- Enter item master information
- Enter branch/plant information
- Enter item cost information
- Enter sales price information

## Before You Begin

- Read *System Setup* in the *Inventory Management Guide*
- 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

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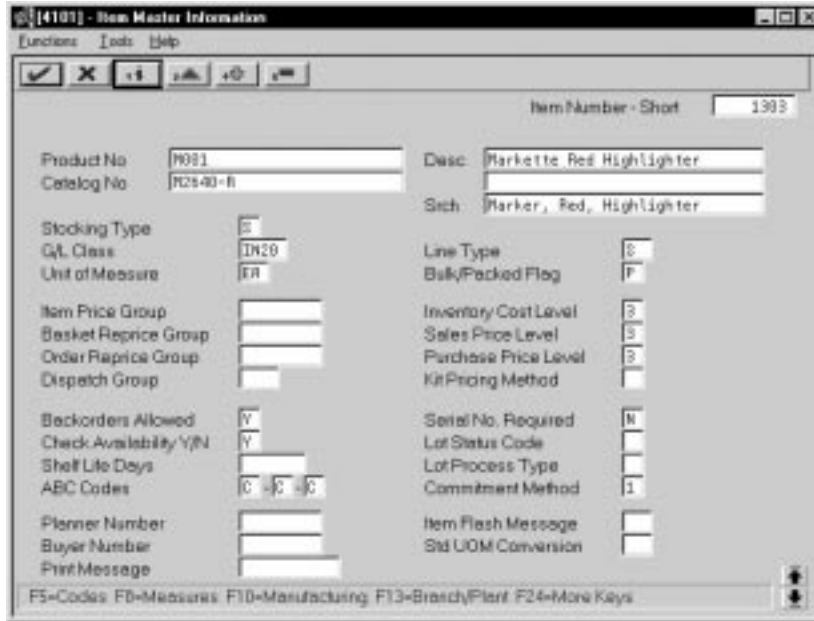
## Entering Item Master Information

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 (optional)

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



## What You Should Know About

### Setting up a template

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

### Deleting item master information

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

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

### Displaying additional item information

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

### Displaying EDI transaction information

You can either set processing options to display the Item Master Information–UCC (Uniform Code Council) form or access the Exit to Item Master Maintenance UCC128 function from Item Master Information.

For more information on UCC128 processing, see *Setting Up UCC 128 Processing* in the *Sales Order Management* guide.

## 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



From Inventory Management (G41), choose Inventory Master/Transactions

From Inventory Master/Transactions (G4111), choose Item Master 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. In the item master, you must also enter an item description and the text on which a user is most likely to search when trying to locate the item. You can also translate item descriptions and search text into multiple languages to accommodate those users who must locate items using alternate languages.

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

## What You Should Know About

### **Locating other identifiers**

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

### See Also

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

#### ► **To enter item identifiers**

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On Item Master Information

Complete the following fields:

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

#### ► **To enter item descriptions and search text**

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On Item Master Information

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



The screenshot shows a window titled "[41016W] - Item Alternative Description". It has a menu bar with "Functions", "Tools", and "Help". Below the menu bar are two buttons: a checkmark and an "X". The main area contains a form with the following fields:

Item Number	M001
Description	Markette Red Highlighter

LP	Description	Search Text
.....		

At the bottom of the window, there is a status bar with "F24=More Keys" and two arrow buttons (up and down).

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

- Description
- Search Text

**▶ To enter item processing information**

On Item Master Information

Complete the following fields:

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

<b>Field</b>	<b>Explanation</b>
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>

<b>Field</b>	<b>Explanation</b>
Description:	A brief description of an item, a remark, or an explanation.
Srch:	<p>A field that specifies how the system searches for an item. Your entry should be specific and descriptive of the item. Type the words in the order in which you are likely to enter them.</p> <p>In single-byte environments, where computer storage space can contain only Latin-based language character sets, the system inserts the first 30 characters from the item's description if you do not enter search text.</p> <p>In double-byte environments where computer storage space can contain more complex language character sets (in languages such as Japanese, Chinese, and Korean), you must complete this field. This is a single-byte field that you complete with single-byte characters to phonetically represent the item description (which can be single-byte, double-byte, or both).</p>
Stocking Type	<p>A user defined code (41/I) that indicates how you stock an item(for example, as finished goods, or as raw materials). The following stocking types are hard-coded and you should not change them:</p> <ul style="list-style-type: none"> <li>B Bulk floor stock</li> <li>C Configured item</li> <li>F Feature</li> <li>K Kit parent item</li> <li>N Non-stock</li> </ul>
G/L Class	A user defined code (system 41/type 9) that controls which general ledger accounts receive the dollar amount of inventory transactions for this item.
Line Type	<p>A code that controls how the system processes lines on a transaction. It controls the systems with which the transaction interfaces (General Ledger, Job Cost, Accounts Payable, Accounts Receivable, and Inventory Management). It also specifies the conditions under which a line prints on reports and is included in calculations. Codes include:</p> <ul style="list-style-type: none"> <li>S Stock item</li> <li>J Job cost</li> <li>N Non-stock item</li> <li>F Freight</li> <li>T Text information</li> <li>M Miscellaneous charges and credits</li> <li>W Work order</li> </ul>

Field	Explanation
Bulk/Packed Flag	<p>A code that indicates if the item is a bulk liquid product. If it is a bulk product, you must perform temperature and density/gravity conversions. To record the movement of bulk products, you must use forms designed specifically for bulk products. If you try to record movement using standard inventory forms, the system prevents the movement. Valid values are:</p> <p style="margin-left: 40px;">P     Packaged B     Bulk liquid</p> <p>If you leave this field blank, the system uses P.</p>
Backorders Allowed	<p>A code that indicates whether you allow backorders for this item. You can allow backorders by item (through Item Master or Item Branch/Plant), or by customer (through Billing Instructions).</p> <p style="margin-left: 40px;">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> <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>
Unit of Measure	<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 style="text-align: center;">..... <i>Form-specific information</i> .....</p> <p>The default for this field is the primary unit of measure you specify in processing options.</p>
Check Availability Y/N	<p>This field controls whether availability checking is performed throughout the Sales Order Management system. You might want to check availability for some items. For other items, you can assume that an adequate supply is available. Valid values are:</p> <p style="margin-left: 40px;">Y     Check availability N     Do not check availability</p>

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"><li>A Assign this item to the first (largest) amount ranking.</li><li>B Assign this item to the second (intermediate) amount ranking.</li><li>C Assign this item to the third (smallest) amount ranking.</li><li>D Do not include this item when you run ABC Analysis.</li></ul> <p>There are three types of ABC analysis, which include sales, margin, and on-hand value. Within each type of analysis, you can have three groups, including A, B, and C.</p> <p>The ABC Code fields contain a percentage that defines the A, B, and C groups for categorizing items during ABC analysis. Each group measures a total within the type of analysis.</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 arranges the values of all items from highest to lowest value and accumulates the percentages. Then, depending on the group, the system processes the information as follows:</p> <ul style="list-style-type: none"><li>A: If an item's value causes the accumulated total to exceed the A accumulated percentage, the system assigns the item to the B group.</li><li>B: When the accumulated total reaches the percentage you entered for items in the A group, it continues to add values until it reaches the percentage you entered for items in the B group. The system assigns all items whose value falls between the A and B percentages to the B group.</li><li>C: The C group consists of items whose accumulated value exceeds the B percentage. The percentage that you usually enter for the C group is .999.</li></ul>

### Entering Item Text



From Inventory Management (G41), choose Inventory Master/Transactions

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



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**

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On Item Master Information

Complete the following fields:

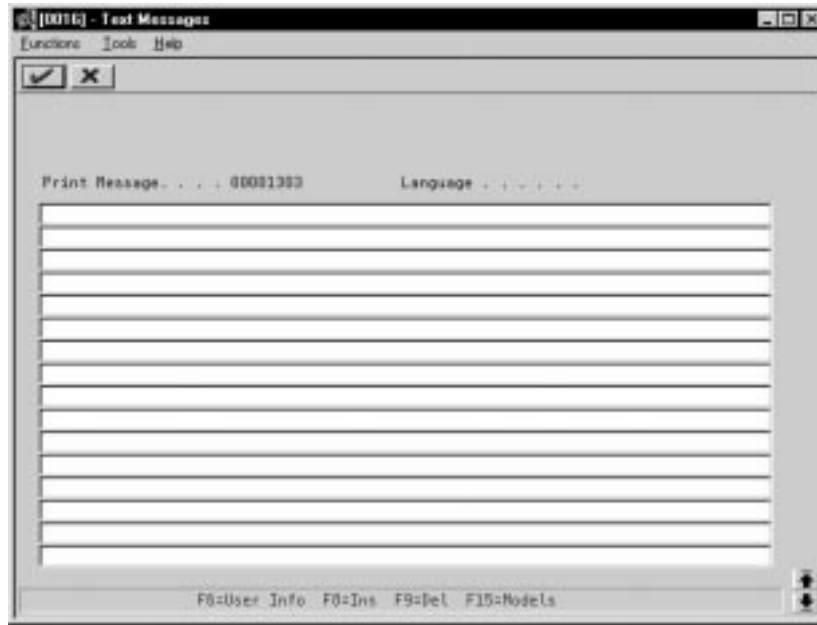
- Print Message
- Item Flash Message

#### **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 print the message on sales orders, purchase orders, and so forth.
Item Flash Message	<p>A code (table 40/FL) that directs the system to display a specific message each time someone works with the item. The message is the description for the user defined code.</p> <p>If 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 for the program.</p>

## Assigning Item Responsibility



From Inventory Management (G41), choose Inventory Master/Transactions

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

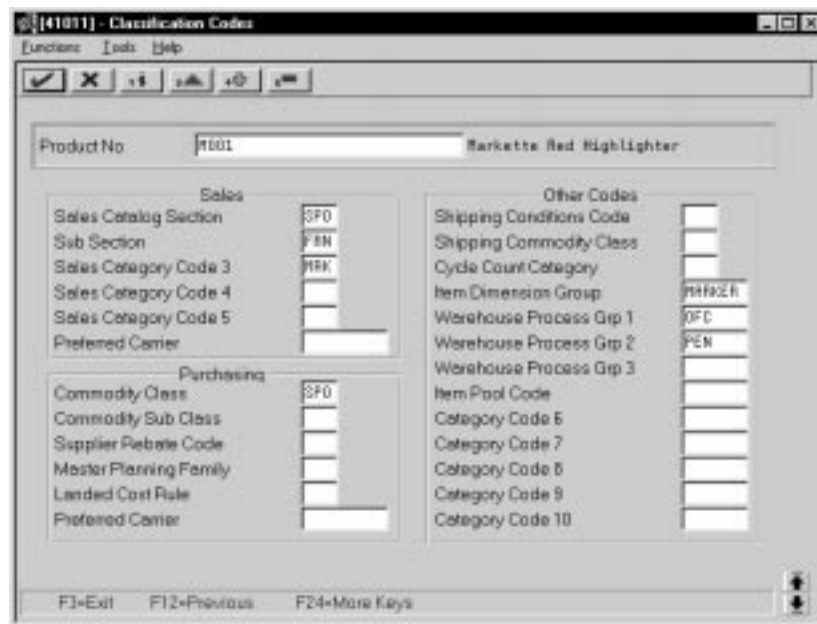
When you enter master information for an item, you can specify those persons or businesses that are responsible for the item, including the buyer, planner, and preferred carriers.

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

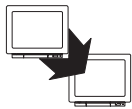
Field	Explanation
Planner Number	The address number of the material planner for this item.
Buyer Number	The address number of the person responsible for setting up and maintaining the correct stocking levels for the item.

Field	Explanation
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.

### See Also

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

## Entering Item Classification Codes



From Inventory Management (G41), choose Inventory Master/Transactions

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

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

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

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

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

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

Complete the following optional tasks:

- Enter sales classification codes
- Enter purchasing classification codes
- Enter inventory classification codes

- Enter warehouse classification codes

► **To enter sales classification codes**

On Item Master Information

1. Access Classification Codes.

2. On Classification Codes, complete the following fields:

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

### ▶ **To enter purchasing classification codes**

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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

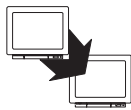
Field	Explanation
Sales Catalog Section	<p>A code (table 41/S1) that represents an item property type or classification, such as color, material content, or so forth. The system uses this code to sort and process like items.</p> <p>This field is one of ten classification categories available primarily for sales purposes.</p>
Sub Section	<p>A code (table 41/S2) that represents an item property type or classification, such as color, material content, use, or so forth. The system uses this code to sort and process like items.</p> <p>This field is one of ten classification categories available primarily for sales purposes.</p>
Sales Category Code 3	<p>A code (table 41/S3) that represents an item property type or classification, such as color, material content, use, or so forth. The system uses this code to sort and process like items.</p> <p>This field is one of ten classification categories available primarily for sales purposes.</p>
Category Code 6	<p>A code (table 41/S6) that represents an item property type or classification, such as color, material content, use, or so forth. The system uses this code to sort and process like items.</p> <p>This field is one of ten classification categories available primarily for sales purposes.</p>
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>

Field	Explanation
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>
Landed Cost Rule	<p>A user defined code (41/P5) that indicates the landed cost rule for an item. The landed cost rule determines purchasing costs that exceed the actual price of an item, such as broker fees, commissions, and so forth. You set up landed cost rules on Landed Cost Revisions.</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> <p>..... <i>Form-specific information</i> .....</p> <p>This inventory classification category is hard coded. You can use it for cycle count codes only.</p>
Item Dimension Group	<p>A code (system 41/type 01) that identifies a group of items that share the same size specifications, such as height and width. An item dimension group defines the size specifications for all items that belong to the group. After you set up an item dimension group, you can assign items to the group through Classification Codes.</p>



Field	Explanation
Warehouse Process Grp 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.</p> <p>..... <i>Form-specific information</i> .....</p> <p>You must define at least one process group for each item to have warehouse processes take place.</p> <p>You use Process Selection to define putaway, picking, and replenishment instructions for warehouse process groups.</p>

### Entering Item Unit of Measure Information

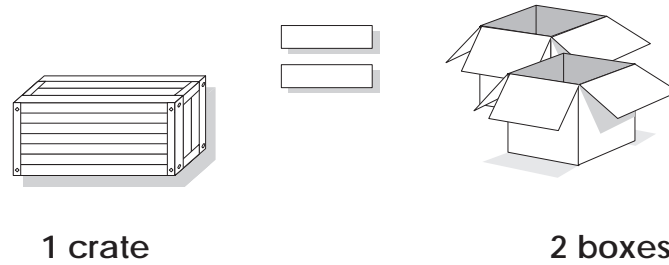
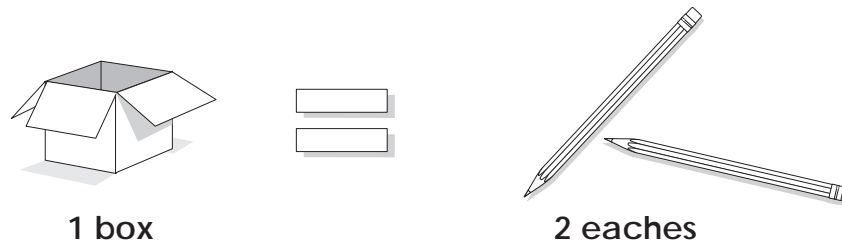


From Inventory Management (G41), choose Inventory Master/Transactions

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

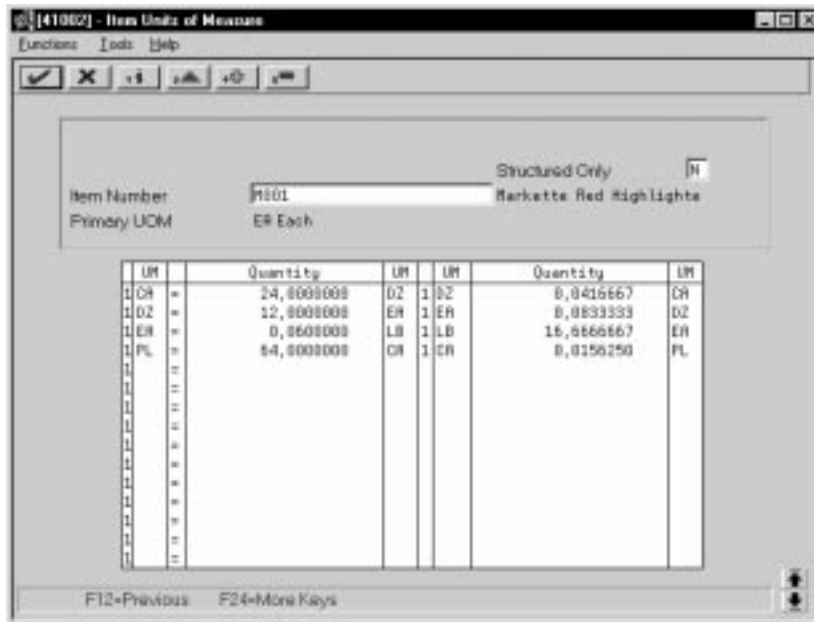


2. On Default Units of Measure, complete the following field to locate the item:
  - Item Number
3. Complete the following fields:
  - Primary
  - Secondary
  - Purchasing
  - Pricing
  - Shipping
  - Production
  - Component
  - Weight
  - Volume

► **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:
  - Structured Only
  - Item Number

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

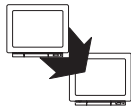
4. For each unit of measure that the system must convert for the item, complete the following fields:
  - UM (Unit of Measure To)
  - Quantity
  - UM (Unit of Measure From)

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 that you specify for the item on Item Master Information.</p>
Secondary	<p>A code that indicates an alternate unit of measure for the item. See the User Defined Code table for system 00, record type UM.</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 user defined code (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"> <li>• The order quantity when you create a work order</li> <li>• The batch quantity when you create a new bill of material or routing</li> <li>• The rate schedule quantity in Rate Schedule Revision</li> </ul>
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 the processing options for Item Master Information.</p> <p>This code serves as the default value for:</p> <ul style="list-style-type: none"> <li>• The quantity per parent when you add the component item to a bill of material or work order parts list</li> <li>• The quantity in the assembly inclusion rules in Configuration Management</li> </ul>
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 unit of measure by metric conversion for ambient volume. For example, the unit of measure code for a gallon might be GL, or for a liter might be LT.</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 that have been 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> <ul style="list-style-type: none"> <li>• 1 Pallet (24 Cases ) – Structure Code 1</li> <li>• 1 Case (36 Boxes ) – Structure Code 2</li> <li>• 1 Box (6 Eaches) – Structure Code 3</li> </ul> <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 must equal the unit of measure to which you are converting.</p>

## Entering Item Manufacturing Information



From Inventory Management (G41), choose Inventory Master/Transactions

From Inventory Master/Transactions (G4111), choose Item Master 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". The window contains a grid of input fields for configuring manufacturing values. The fields are organized into two columns. The left column includes fields for Item Number (M001), Order Policy Code (1), Value Order Policy, MFG Leadtime Quantity, Accounting Cost Qty (1), Planning Fence, Freeze Fence, Message Display Fence, Drawing Size, Drawing Rev. Level, Drawing Number, Grade/Potency Pricing, Potency Control, Standard Potency, and From - Thru Potency. The right column includes fields for Issue Type Code (I), Planning Code (P), Planning Fence Rule, Fixed/Variable (F), Round to Whole Number (R), Material Status, Issue and Receipt (R), Level Leadtime, Manufacturing Leadtime, Cumulative Leadtime, Leadtime Per Unit, Replenishment Leadtime, Grade Control (N), Standard Grade, and From - Thru Grade. The status bar at the bottom of the window displays "F12=Previous" and "F24=More Keys".

### ► To enter requirements planning information

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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**

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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
  - Drawing Rev. Level (Drawing Revision Level)
  - Drawing Number

<b>Field</b>	<b>Explanation</b>
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"><li>• The value of the fixed order quantity when you select order policy code 2 (fixed order quantity).</li><li>• The number of additional days of supply after demand is encountered when you select order policy code 4 (periods of supply).</li><li>• The desired inventory level when you select order policy code 5 (rate scheduled item). If the ending available quantity does not meet or exceed the desired inventory level, then MPS/MRP/DRP generation issues an “increase rate to” or a “decrease rate to” message.</li></ul>
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"><li>0 Not Planned by MPS, MRP, or DRP</li><li>1 Planned by MPS or DRP</li><li>2 Planned by MRP</li><li>3 Planned by MRP with additional independent forecast</li><li>4 Planned by MPS, Parent in Planning Bill</li><li>5 Planned by MPS, Component in Planning Bill</li></ul> <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"> <li>S Use customer demand before the time fence and forecast after the time fence</li> <li>F Use forecast before the time fence and forecast plus customer demand after the time fence</li> </ul> <p>For example, if you enter 5 in the Planning Time Fence Days field and S in this field, then the system uses only customer demand for the regeneration for the first 5 days. After 5 days, the system uses the forecast for the regeneration.</p> <p>Valid codes are:</p> <ul style="list-style-type: none"> <li>C Customer demand before, greater of forecast or customer demand after</li> <li>F Forecast before, forecast plus customer demand after</li> <li>G Greater of forecast or customer demand before, forecast after</li> <li>S Customer demand before, forecast after</li> <li>1 Zero before, forecast after</li> <li>3 Zero before, forecast plus customer demand after</li> </ul>
Accounting Cost Qty	<p>An amount that the system uses in the cost rollup program to determine the allocation of setup costs. The system totals the setup costs and divides the sum by this quantity to determine a unit setup cost. The default is 1.</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"> <li>R Round to the closest whole number.</li> <li>Blank Do not round.</li> </ul> <p>For example, if the calculated requirements for an item are 4.6 and this field contains a Round to Whole Number code of R, the system rounds the quantity required to 5. If the calculated requirements are 4.4, the system rounds the quantity required to 4.</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>F Fixed leadtime – The system calculates work order start dates using the value from the Leadtime Level field.</li> <li>V Variable leadtime – The system calculates work order start dates using the value from the Leadtime Per Unit field.</li> </ul>

Field	Explanation
Level Leadtime	<p>A value that represents 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>You can enter level leadtime manually on Manufacturing Values Entry, or you can use 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 Leadtime	<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 Leadtime	<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>
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>

Field	Explanation
Issue Type Code	<p>A code that defines how the system issues each component in the bill of material from stock. In shop floor control, it indicates how the system issues a part to a work order. Valid codes are:</p> <ul style="list-style-type: none"> <li>I Manual issue (default)</li> <li>F Floor stock (no issue)</li> <li>B Backflush (when part is reported as complete)</li> <li>P Preflush (when parts list is generated)</li> <li>U Super backflush (at pay-point operation)</li> <li>S Sub-contract item (send to supplier)</li> <li>Blank Shippable end item</li> </ul> <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"> <li>A A-size drawing</li> <li>D D-size drawing</li> </ul>
Drawing Rev. Level	<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



From Inventory Management (G41), choose Inventory Master/Transactions

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

## Entering Item Grade/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.

**See Also**

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

**▶ To enter item grade and potency information**

On Item Master Information

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

Field	Explanation
Grade/Potency Pricing	A code that indicates whether you price the item by grade or potency range. You must control the item by grade to price it by grade, just as you must control the item by potency to price it by potency. Valid values are: Blank No potency or grade pricing 1 Potency pricing 2 Grade pricing
Potency Control	A code that indicates whether you control the item by potency.
Standard Potency	The percentage of active ingredients normally found in an item.

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

**See Also**

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

**Processing Options 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 . . . . . \_\_\_\_\_
- UCC Codes & UOM's . . . . . \_\_\_\_\_

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) \_\_\_\_\_

### DRAWING INFORMATION:

10. Enter a '1' to protect item drawing  
information from update. \_\_\_\_\_

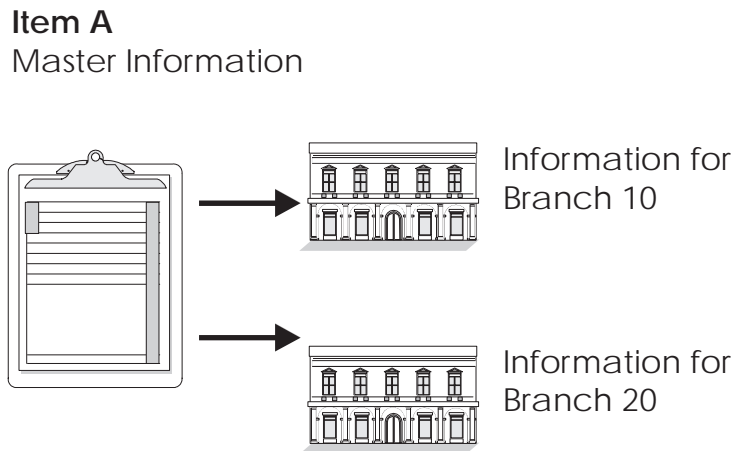
# Enter Branch/Plant Information

---

## Entering Branch/Plant Information

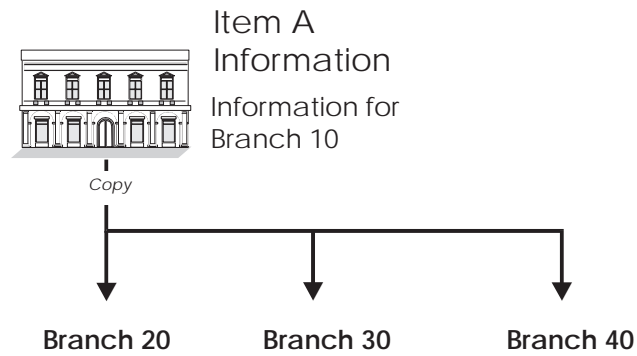
Information about an item might differ from warehouse to warehouse. For example, taxes might be applicable to an item in one warehouse, but not in another. You might also have different quantity requirements for each item based on the warehouse.

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 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 tax information (optional)
- Locate item sources (optional)
- Enter item reorder quantities (optional)
- Enter item branch/plant manufacturing information (optional)
- Duplicate item information for multiple branch/plants (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 (%)
- Mix Lots/Serial Numbers

### 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



From Inventory Management (G41), choose Inventory Master/Transactions

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

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.

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▶ **To assign an item to a branch/plant**

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On Item Branch/Plant Information

Complete the following fields:

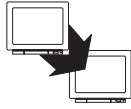
- Branch/Plant
- Item Number

---

<b>Field</b>	<b>Explanation</b>
Branch/Plant	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.  ..... <i>Form-specific information</i> .....  This is the branch/plant or warehouse to which this item information is applicable.

---

## Working with Item Locations



From Inventory Management (G41), choose Inventory Master/Transactions

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

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.

You can prevent the assignment of an item that belongs to multiple lots and has multiple statuses within a lot to a single location. For example, assume that a pharmaceutical company receives a portion of a lot, approves the received portion, and stores it in a warehouse. The remainder of the lot arrives but needs to be approved. The pharmaceutical company stores the unapproved portion of the lot in a staging location, rather than storing the unapproved portion with the approved portion.

Complete the following tasks:

- Assign a primary location to an item
- Assign a secondary location to an item
- Change the primary location for an item

## What You Should Know About

### Creating a lot

When you assign locations, you might be able to create a lot if you have set the branch/plant constants appropriately.

For more information, see *Setting Up Constants (P41204)*.

## See Also

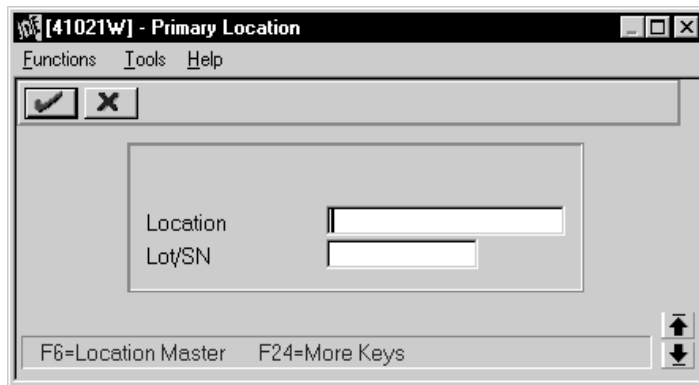
- *Entering Information for Lots (P4108)* for information about defining lot details
- *Working with Lot Statuses (P00051)* for information about putting lots and locations on hold

### ► To assign a primary location to an item

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On Item Branch/Plant Information

3. Assign a branch/plant to an item.



4. On Primary Location, complete the following fields:
  - Location
  - Lot/SN (Lot/Serial Number)



► **To assign a secondary location to an item**

On Item Branch/Plant Information

1. Access Item/Location Information.

P	Location	Lot	Cla Code	Next Count	Exp Date	Lot Status	Item
P	R031		IN30			Approved	

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

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

On Item Branch/Plant Information

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

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

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

Field	Explanation
Location	<p>A code that identifies inventory locations in a branch/plant. You define the format of the location identifier by branch/plant.</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/SN	<p>A number that identifies a lot or a serial number. A lot is a group of items with similar characteristics.</p>
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="margin-left: 40px;">P     Primary storage location</p> <p style="margin-left: 40px;">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 you leave this field 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> <p>..... <i>Form-specific information</i> .....</p> <p>The default for this field comes from the lot status code (including a blank value) that you assign to the item on Item Master Information or Item Branch/Plant Information.</p> <p>The code that you enter here serves as the lot status default when you assign an item to a secondary location.</p>

## What You Should Know About

### Effects on quantities

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

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

### Deleting a primary location

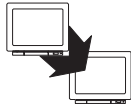
To delete a primary location, you must first change it to a secondary location. No quantities can exist in the locations that you delete.

### Reviewing lot information

To display more specific information about the lot, access the Lot Information form. This form displays the item that belongs to the lot, the branch/plant to which the lot is assigned, the lot expiration date, the lot status, and so on.

For more information, see *Viewing Lot Availability (P41280)*.

## Entering Item Tax Information



From Inventory Management (G41), choose Inventory Master/Transactions

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

You can specify whether an item is subject to tax when you enter branch/plant information. The system uses the values that you enter as default information in the Sales Order Management and Procurement systems.

- *Working With Detail Information (P42114)* in the *Sales Order Management Guide* and *Entering Tax Information for a Purchase Order Detail Line (P4311)* in the *Procurement Guide*

### ► To enter tax information

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On Item Branch/Plant Information

Complete the following fields:

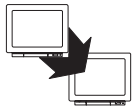
- Sales Taxable
- Purchasing Taxable

---

<b>Field</b>	<b>Explanation</b>
Sales Taxable	A code that indicates whether the item is subject to sales tax when you sell it. The system calculates tax on the item only if the customer is also taxable.
Purchasing Taxable	A code that indicates whether the item is subject to sales tax when you purchase it. The system calculates tax on the item only if the supplier is also taxable.

---

## Locating Item Sources



From Inventory Management (G41), choose Inventory Master/Transactions

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

You can locate the country in which an item originates and the preferred supplier for an item. Locating these sources allows you to distinguish items based on a country or supplier. You specify this information when you enter branch/plant information for an item.

### ► To locate item sources

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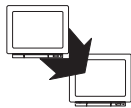
On Item Branch/Plant Information

Complete the following fields:

- Country of Origin
- Supplier

Field	Explanation
Country of Origin	A code (system 00/type CN) that identifies the country in which the item originates. This is useful for organizations who must periodically separate their inventory by source.
Supplier	The address book number of the preferred provider of this item.  You can enter the number for the supplier or you can have the system enter it each time that you receive the item from a supplier. You specify whether the system enters the supplier using processing options for Enter Receipts.

## Entering Item Reorder Quantities



From Inventory Management (G41), choose Inventory Master/Transactions

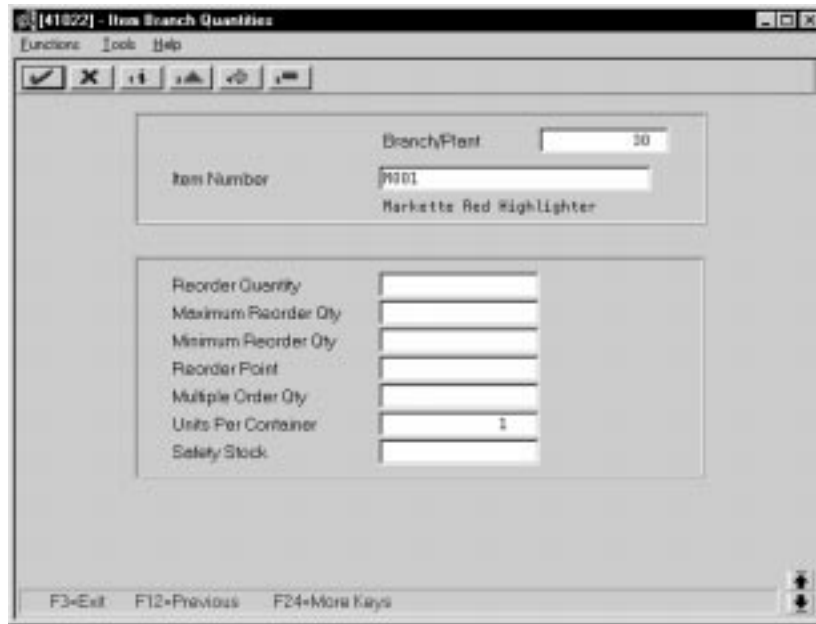
From Inventory Master/Transactions (G4111), choose Item Branch/Plant Information

You can specify the minimum, maximum, and normal reorder quantities for an item during your entry of branch/plant information. You can also specify the level of stock at which reordering takes place. The system uses these values for the Enterprise Requirements Planning and Execution system.

### ▶ To enter item reorder quantities

On Item Branch/Plant Information

1. Access Item Branch Quantities.



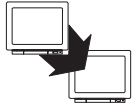
2. On Item Branch Quantities, complete the following fields:

- Reorder Quantity
- Maximum Reorder Qty
- Minimum Reorder Qty
- Reorder Point
- Multiple Order Qty
- Units Per Container
- Safety Stock

Field	Explanation
Reorder Quantity	The estimated reorder quantity for an item. You can enter this quantity if there is not enough sales history available for the system to accurately calculate a reorder quantity.
Maximum Reorder Qty	The maximum order quantity for an item. You can base the quantity on factors other than usage, such as perishability, storage capacity, and so forth.
Minimum Reorder Qty	The minimum order quantity for an item. You can base the quantity on factors other than usage, such as perishability, storage capacity, and so forth.

Field	Explanation
Reorder Point	<p>A quantity for an item that specifies when replenishment occurs. Typically, this occurs when the total quantity on-hand plus the quantity on order equal or do not meet a specified quantity. You can enter this quantity or the system can calculate it if there is sufficient sales history.</p> <p>If there is no safety stock quantity defined, the system first calculates the safety stock by multiplying the square root of the average leadtime quantity. Then, the system adds the calculated safety stock quantity to the average leadtime quantity to determine the reorder point.</p> <p>..... <i>Form-specific information</i> .....</p> <p>Define the quantity that specifies when replenishment occurs. If you leave this field blank, the system calculates the replenishment quantity by adding the safety stock quantity (defined in the Item Location table (F41021)) to the average leadtime quantity.</p>
Multiple Order Qty	<p>A multiple for rounding up planned order quantities in MPS/MRP. The system rounds up the planned order quantity to the nearest multiple that you enter in this field.</p>
Units Per Container	<p>The standard quantity of containers that you use in the manufacturing process (typically, in a repetitive manufacturing environment). The quantity that you enter determines the number of bar code labels that you will need for shipping. It also modifies order release quantities.</p>
Safety Stock	<p>The quantity of stock kept on hand to cover high-side variations in demand.</p>

### Entering Item Branch/Plant Manufacturing Information



From Inventory Management (G41), choose Inventory Master/Transactions

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



The screenshot shows a window titled "[41827] - Plant Manufacturing Data" with a menu bar (Functions, Tools, Help) and a toolbar. The main area contains a form with the following fields:

Item Number	0001	Branch/Plant	99
Order Policy Code	1	Issue Type Code	1
Value Order policy		Planning Code	2
MFG Leadtime Quantity		Planning Fence Rule	
Accounting Cost Qty	1	Fixed/Variable	
Planning Fence		Level Leadtime	
Freeze Fence		Manufacturing Leadtime	
Message Display Fence		Cumulative Leadtime	
Time Basis	4	Leadtime Per Unit	
Total Queue/Move Hours		Replenishment Leadtime	
Setup Labor		Shrink Factor	
Issue and Receipt	0	Shrink Factor Method	1
ECO Reason		Drawing Rev. Level	
ECO Number		Item Revision Level	
ECO Date		Grade Control	1
Potency Control	1	Standard Grade	
Standard Potency		From - Thru Grade	
From - Thru Potency			

At the bottom, there are function key instructions: F3=Exit, F12=Previous, F24=More Keys.

► **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**

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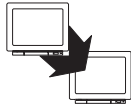
On Item Branch/Plant Information

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	<p>A user defined code (system 30, type TB) that identifies the time basis or rate for machine or labor hours entered for any routing step. You can set rates per unit, per 10, per 1000, and so on.</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 is what the code represents, but is not used in calculations.</p>				
Total Queue/Move Hours	<p>The total time (in hours) that an order is expected to be in queue at work centers and moving between work centers.</p> <p>The system stores this value in the Item Branch table (F4102). You can calculate this value using the Leadtime Rollup program or you can enter it manually. When you run the Leadtime Rollup program, the system overrides manual entries with calculated values.</p>				
Setup Labor	<p>The standard setup hours you expect to incur in the normal completion of this item.</p>				

Field	Explanation
ECO Reason	A code (table 40/CR) that identifies the reason for the engineering change order.
ECO Number	The number assigned to an engineering change order.
ECO Date	The date of the engineering change order.
Item Revision Level	The revision level for an item. If you enter a revision level, verify that the revision level of the routing for an item matches the revision level on the bill of material for the item.

## Duplicating Item Information for Multiple Branch/Plants



From Inventory Management (G41), enter 27

From Inventory Advanced and Technical Operations menu (G4131), choose Item/Branch Duplication

You might have items for which the same information applies across multiple branch/plants. You can enter item information for one branch/plant and then duplicate that information for up to ten other branch/plants by doing the following:

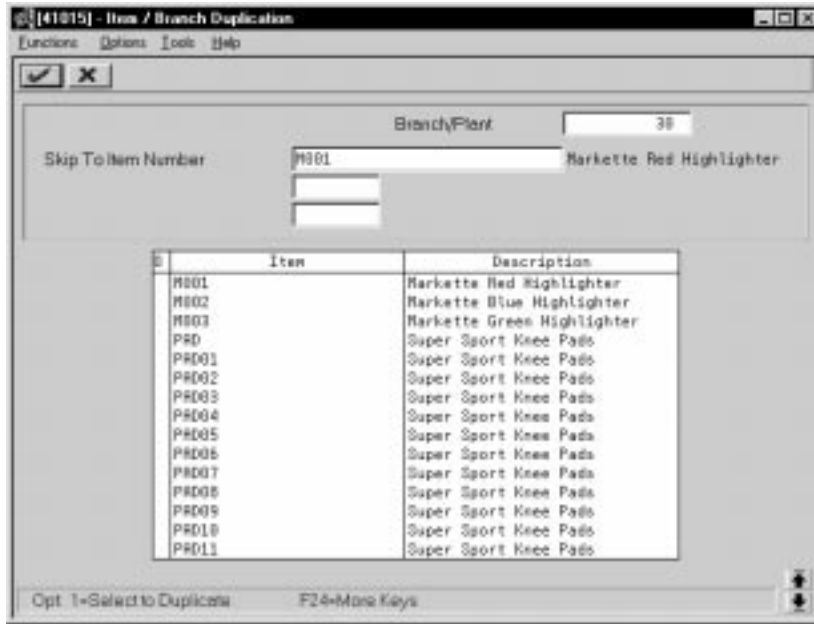
- Use Item Branch Duplication to select individual items for duplication
- Use the Item Branch Duplication batch program to define criteria for items that you want to duplicate

For both procedures, you use processing options to specify the branches for which you are duplicating information. You can also specify additional information to duplicate, such as costs, prices, units of measure, and so on.

If you use Item Branch Duplication to select individual items for duplication, you can set processing options to display up to four search fields that allow you to locate items for a particular branch/plant.

► **To duplicate item information for multiple branch/plants**

On Item/Branch Duplication



1. To specify the branch/plant from which you are duplicating information, complete the following field:
  - Branch Plant
2. To locate the appropriate items, enter search criteria.
3. Select the appropriate items to duplicate.
4. To activate the batch job, exit the form.

**What You Should Know About**

**Primary locations**

The system does not duplicate the primary location for an item. The system uses the blank location that you have set up for the branch/plant to which you are duplicating information.

For information about blank locations for branch/plants, see *Setting Up Warehouse Locations (P4100)*.

**Processing Options for Item Branch Information – Revisions**

PROCESS CONTROL:

1. Enter a '1' to select the Item

Location information screens to automatically call when performing an add or a change. If left blank, screen will not display.

- Classification Codes. . . . . \_\_\_\_\_
- Cost Revisions (conditional). . \_\_\_\_\_
- Price Revisions (conditional) . \_\_\_\_\_
- Unit of Measure . . . . . \_\_\_\_\_
- Quantities. . . . . \_\_\_\_\_
- Manufacturing Values. . . . . \_\_\_\_\_
- Item Profile. . . . . \_\_\_\_\_
- Bulk Product Information. . . . \_\_\_\_\_

2. Enter '1' to use the window version of the screens selected above. If left blank, the full screens will display.

DREAM WRITER VERSIONS:

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

REVISION LEVEL CONTROL:

- 6. Enter '1' to protect ECO revision information from update. \_\_\_\_\_

Processing Options for Item / Branch Duplication

DEFAULT VALUES:

- 1. Enter the branch/plants to which you want to duplicate the items:
  - 1) \_\_\_\_\_
  - 2) \_\_\_\_\_
  - 3) \_\_\_\_\_
  - 4) \_\_\_\_\_
  - 5) \_\_\_\_\_
  - 6) \_\_\_\_\_
  - 7) \_\_\_\_\_
  - 8) \_\_\_\_\_
  - 9) \_\_\_\_\_
  - 10) \_\_\_\_\_

SCREEN DEFAULTS:

2. Enter the data selection fields you want displayed on the video (Enter the data dictionary field name.):

- Data Item One \_\_\_\_\_
- Data Item Two \_\_\_\_\_
- Data Item Three \_\_\_\_\_
- Data Item Four \_\_\_\_\_

3. Enter a '1' to pre-load all selection options with a '1' to duplicate those lines.

FILE UPDATES:

4. Enter a '1' next to each file to duplicate. If left blank, the file will not be duplicated:

Cost Ledger File	(F4105)	_____
Base Price File	(F4106)	_____
UOM Conversion Factors	(F41002)	_____
Bulk Depot/Product Info.	(F41022)	_____
Warehouse Item Profile	(F46010)	_____
Warehouse Item UOM/Profile	(F46011)	_____

**Processing Options for Item / Branch Duplication – Batch Selection**

UPDATE OPTIONS:

1. Enter the branch/plants to which you want to duplicate the items:

1)	_____
2)	_____
3)	_____
4)	_____
5)	_____
6)	_____
7)	_____
8)	_____
9)	_____
10)	_____

2. Enter a '1' next to each file to duplicate. If left blank, the file will not be duplicated.

Cost Ledger File	(F4105)	_____
Base Price File	(F4106)	_____
UOM Conversion Factors	(F41002)	_____
Bulk Depot/Product Info.	(F41022)	_____
Warehouse Item Profile	(F46010)	_____
Warehouse Item/UOM Profile	(F46011)	_____

# Forecasting Review







# Forecasting Review

Effective management of distribution and manufacturing activities begins with understanding and anticipating the needs of the market. Implementing a forecasting system allows you to quickly assess current market trends and sales so that you can make informed decisions about your company.

Forecasting is the process of projecting past sales demand into the future. An accurate forecast helps you make operations decisions. For this reason, forecasting should be a central activity in your operations. You can use forecasts to make planning decisions about:

- Customer orders
- Inventory
- Delivery of goods
- Work load
- Capacity requirements
  - Warehouse space
  - Labor
  - Equipment
- Budgets
- Development of new products
- Workforce requirements

The Forecasting system can generate the following types of forecasts:

<b>Detail forecasts</b>	Detail forecasts are based on individual items.
<b>Summary forecasts</b>	Summary (or aggregated) forecasts are based on larger groups, such as a product line.
<b>Planning bill forecasts</b>	Planning bill forecasts are based on groups of items in a bill of material format that reflect how an item is sold, not how it is built.

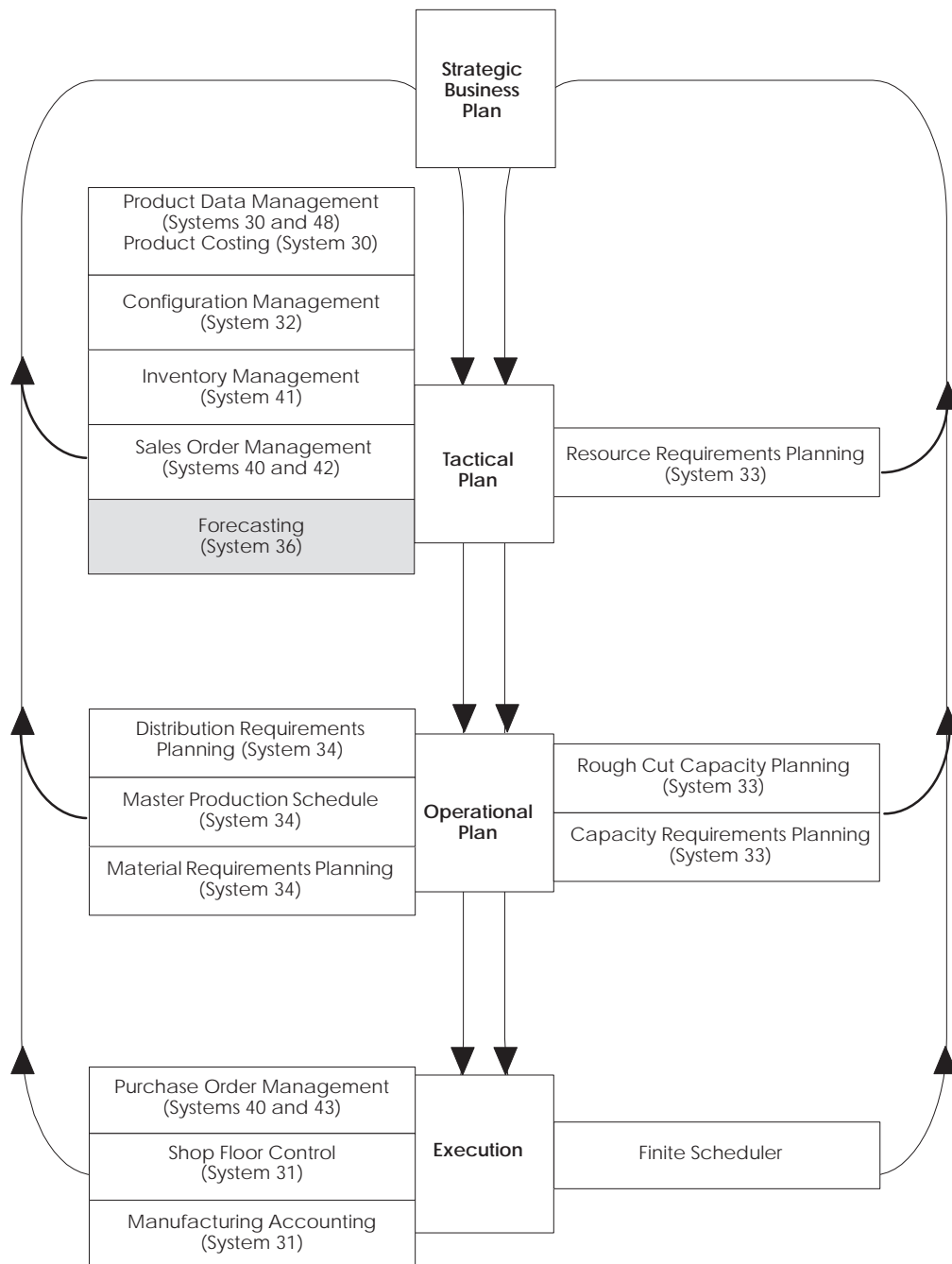


### System Integration

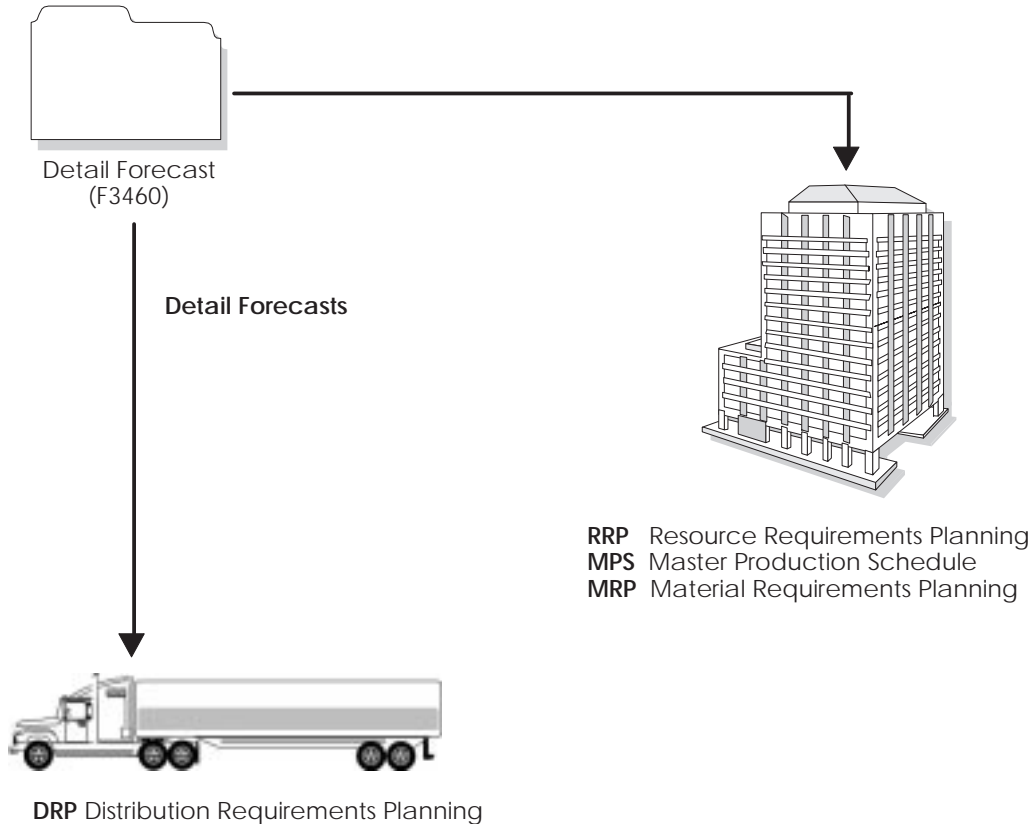
Forecasting is one of many systems that make up the Enterprise Requirements Planning and Execution (ERP<sub>x</sub>) system. Use the ERP<sub>x</sub> system to coordinate your inventory, raw material, and labor resources to deliver products according to a managed schedule. ERP<sub>x</sub> is fully integrated and ensures that information is current and accurate across your business operations. It is a closed-loop manufacturing system that formalizes the activities of company and operations planning, as well as the execution of those plans.

The following systems make up the J.D. Edwards ERP<sub>x</sub> product group.

Enterprise Requirements Planning and Execution



The Forecasting system generates demand projections that you use as input for J.D. Edwards planning and scheduling systems. These systems calculate material requirements for all component levels, from raw materials to complex subassemblies.



The Resource Requirements Planning (RRP) system uses a forecast of future demand to estimate the time and resources needed to make a product.

The Master Production Schedule (MPS) system plans and schedules what a company expects to manufacture. Data from the Forecasting system is one MPS input that helps determine demand before you execute production plans.

Material Requirements Planning (MRP) is an ordering and scheduling system that explodes the requirements of all MPS parent items to the components. You can also use forecast data as demand input for lower-level MRP components that are service parts with independent demand (demand not directly or exclusively tied to production of a particular product at a particular branch or plant).

Distribution Requirements Planning (DRP) is a management system that plans and controls the distribution of finished goods. You can use forecasting data as input for DRP so you can more accurately plan the demand that you supply through distribution.

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## Features

You can use the Forecasting system to:

- Generate forecasts
- Enter forecasts manually
- Maintain both manually entered forecasts and forecasts generated by the system
- Summarize the sales order history data in weekly or monthly time periods
- Generate forecasts based on any or all of 12 different formulas that address a variety of forecast situations you might encounter
- Calculate which of the 12 formulas provides the best fit forecast
- Define the hierarchy that the system uses to summarize sales order histories and detail forecasts
- Create multiple hierarchies of address book category codes and item category codes, which you can use to sort and view records in the detail forecast table
- Review and adjust both forecasts and sales order actuals at any level of the hierarchy
- Integrate the detail forecast records into DRP, MPS, and MRP generations
- Force changes made at any component level to both higher levels and lower levels
- Set a bypass flag to prevent changes generated by the force program being made to a level
- Store and display both original and adjusted quantities and amounts
- Attach descriptive text to a forecast at the detail and summary levels

Flexibility is a key feature of the J.D. Edwards Forecasting system. The most accurate forecasts take into account quantitative information, such as sales trends and past sales order history, as well as qualitative information, such as changes in trade laws, competition, and government. The system processes quantitative information and allows you to adjust it with qualitative information. When you aggregate, or summarize, forecasts, the system uses changes that you make at any level of the forecast to automatically update all other levels.

You can perform simulations based on the initial forecast, which allows you to compare different situations. After you accept a forecast, the system updates your manufacturing and distribution plan with any changes you have made.

### Forecasting Levels and Methods

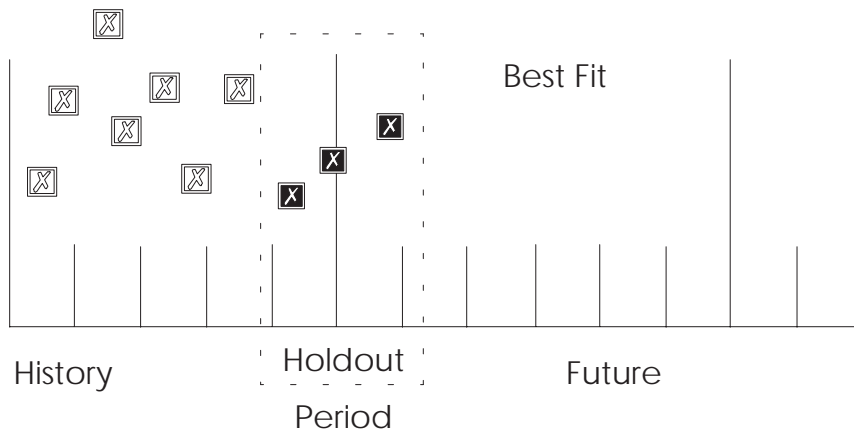
You can generate both single-item (detail) forecasts and product line (summary) forecasts that reflect product demand patterns. Select from 12 forecasting

methods, and the system analyzes past sales to calculate the forecast. The forecast includes detail information at the item level and higher-level information about a branch or the company as a whole.

### Best Fit

The system recommends the best fit forecast by applying the selected forecasting methods to past sales order history and comparing the forecast simulation to the actual history. When you generate a forecast, the system compares actual sales order histories to forecasts for the months or weeks you indicate in the processing option and computes how accurately each of the selected forecasting methods would have predicted sales. Then, the system recommends the most accurate forecast as the best fit.

### Demand



The system determines the best fit in the following sequence:

1. Uses each of the methods that you selected in processing options to simulate a forecast for the holdout period.
2. Compares actual sales to the simulated forecasts for the holdout period.
3. Calculates the percent of accuracy or the mean absolute deviation to determine which forecasting method closest matched the past actual sales. The system uses the percent of accuracy or the mean absolute deviation based on the processing options that you select.
4. Recommends a best fit forecast by the percent of accuracy that is closest to 100% (over or under) or the mean absolute deviation closest to zero.

---

## Forecasting Methods

The Forecasting system uses 12 methods for quantitative forecasting. The system also indicates which of the methods provides the best fit for your forecasting situation.

**Method 1 –  
Percent Over Last Year**

This method uses the Percent Over Last Year formula to multiply each forecast period by a percentage increase or decrease that you specify in a processing option. This method requires the periods for the best fit plus one year of sales history. It is useful for seasonal items with growth or decline.

**Method 2 –  
Calculated Percent Over  
Last Year**

This method uses the Calculated Percent Over Last Year formula to compare the periods specified of past sales to the same periods of past sales of the previous year. The system determines a percentage increase or decrease, then, multiplies each period by the percentage to determine the forecast.

This method requires the periods of sales order history indicated in the processing option plus one year of sales history. It is useful for short-term demand forecasts of seasonal items with growth or decline.

**Method 3 –  
Last Year to This Year**

This method uses last year's sales for the following year's forecast. This method requires the periods best fit plus one year of sales order history. It is useful for mature products with level demand or seasonal demand without a trend.

**Method 4 –  
Moving Average**

This method uses the Moving Average formula to average the months that you indicate in the processing option to project the next period. This method requires periods best fit from the processing option plus the number of periods of sales order history from the processing option. You should have the system recalculate it monthly or at least quarterly to reflect changing demand level. It is useful for mature products without a trend.

**Method 5 –  
Linear Approximation**

This method uses the Linear Approximation formula to compute a trend from the periods of sales order history indicated in the processing options and projects this trend to the forecast. You should have the system recalculate the trend monthly to detect changes in trends.

This method requires periods best fit plus the number of periods that you indicate in the processing option of sales order history. It is useful for new products or products with consistent positive or negative trends that are not due to seasonal fluctuations.

**Method 6 –  
Least Square Regression (LSR)**

This method derives an equation describing a straight line relationship between the historical sales data and the passage of time. LSR fits a line to the selected range of data such that the sum of the squares of the differences between the actual sales data points and the regression line are minimized. The forecast is a projection of this straight line into the future.

This method is useful when there is a linear trend in the data. It requires sales data history for the period represented by the number of periods best fit plus the number of historical data periods specified in the processing options. The minimum requirement is two historical data points.

**Method 7 –  
Second Degree Approximation**

This method uses the Second Degree Approximation formula to plot a curve based on the number of periods of sales history indicated in the processing options to project the forecast. This method requires periods best fit plus the number of periods indicated in the processing option of sales order history times three. It is not useful for long-term forecasts.

**Method 8 –  
Flexible Method (Percent Over n Months Prior)**

This method allows you to select the periods best fit block of sales order history starting  $n$  months prior and a percentage increase or decrease with which to modify it. This method is similar to Method 1, Percent Over Last Year, except that you can specify the number of periods that you use as the base.

Depending on what you select as  $n$ , this method requires months best fit plus the number of periods indicated in the processing options of sales data. It is useful for a planned trend.



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**Method 9 –  
Weighted Moving  
Average**

The Weighted Moving Average formula is similar to the Method 4, Moving Average formula, because it averages the previous number of months of sales history indicated in the processing options to project the next month's sales history. However, with this formula you can assign weights for each of the prior periods in a processing option.

This method requires the number of weighted periods selected plus months best fit data. Similar to Moving Average, this method lags demand trends, so it is not recommended for products with strong trends or seasonality. This method is useful for mature products with demand that is relatively level.

**Method 10 –  
Linear Smoothing**

This method calculates a weighted average of past sales data. You can specify the number of periods of sales order history to use in the calculation (from 1 to 12) in a processing option. The system uses a mathematical progression to weigh data in the range from the first (least weight) to the final (most weight). Then, the system projects this information to each period in the forecast.

This method requires the months best fit plus the number of periods of sales order history from the processing option.

**Method 11 –  
Exponential Smoothing**

This method uses one equation to calculate a smoothed average. This becomes an estimate representing the general level of sales over the selected historical range.

This method is useful when there is no linear trend in the data. It requires sales data history for the time period represented by the number of months best fit plus the number of historical data periods specified in the processing options. The minimum requirement is two historical data periods.

**Method 12 –  
Exponential Smoothing  
with Trend and  
Seasonality**

The Exponential Smoothing with Trend and Seasonality method calculates a trend, a seasonal index, and an exponentially smoothed average from the sales order history. The system then applies a projection of the trend to the forecast and adjusts for the seasonal index. This method requires months best fit plus two years of sales data and is useful for items that have both trend and seasonality in the forecast. Use the processing options to enter the alpha and beta factor rather than have the system calculate them.

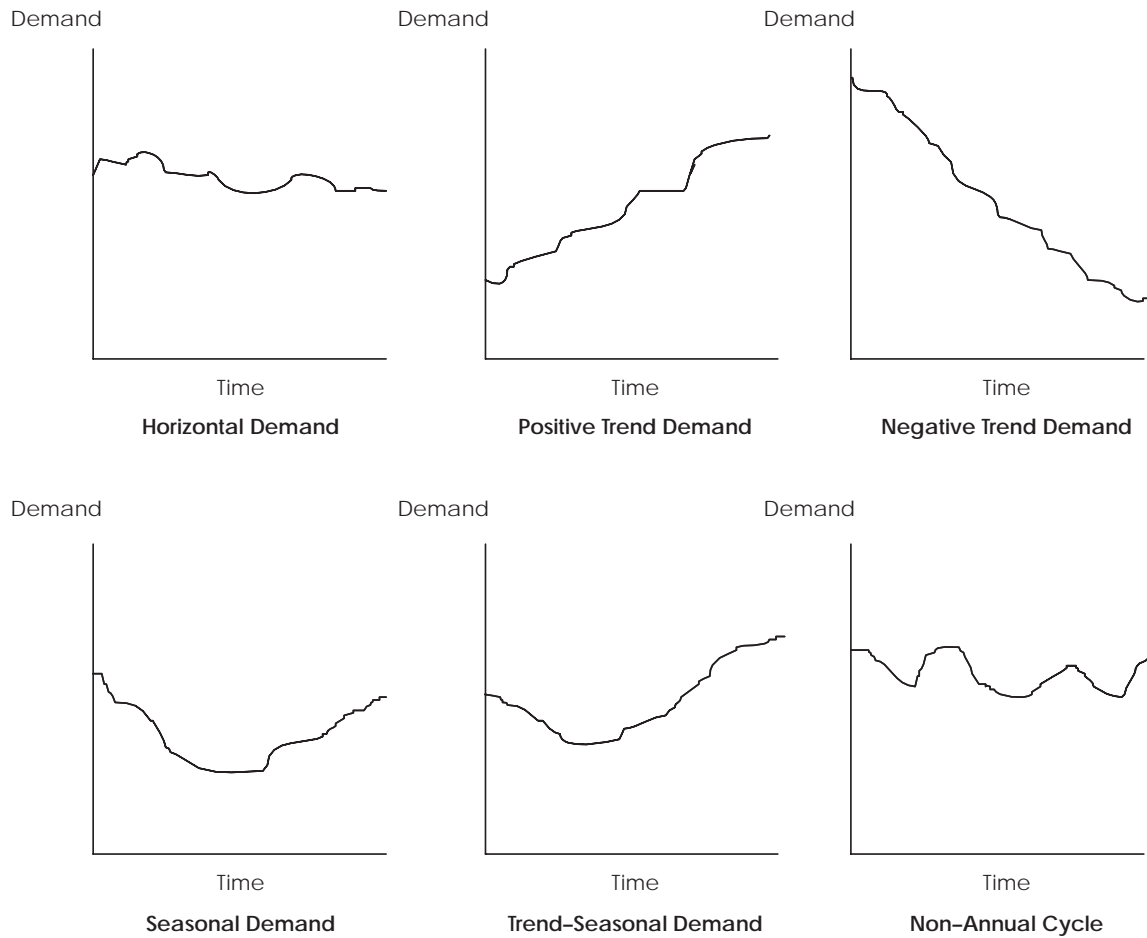
**See Also**

- *Forecast Calculation Examples* in Appendix B of the *Forecasting Guide*

**Demand Patterns**

The Forecasting system uses sales order history to predict future demand. Different examples of demand follow. Forecast methods available in the J.D. Edwards Forecasting system are tailored for these demand patterns.

**Six Typical Demand Patterns**



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You can forecast the independent demand of the following items for which you have past data:

- Samples
- Promotional items
- Customer orders
- Service parts
- Inter-plant demands

You can also forecast demand for the following item types determined by the manufacturing environments in which they are produced:

<b>Make-to-stock</b>	End items to meet customers' demand that occurs after the product is completed
<b>Assemble-to-order</b>	Subassemblies to meet customers' option selections
<b>Make-to-order</b>	Raw materials and components stocked in order to reduce lead time

## Forecast Accuracy

The following statistical laws govern the accuracy of a forecast:

- A short-term forecast is more accurate than a long-term forecast, because the farther into the future you project the forecast, the more variables can impact the forecast.
- A forecast for a product family tends to be more accurate than a forecast for individual members of the product family. Some errors cancel as the forecasts for individual items summarize into the group.

### Forecast Considerations

You should not rely exclusively on past data to forecast future demands. The following circumstances might affect your business and require you to review and modify your forecast:

- New products that have no past data
- Plans for future sales promotion
- Changes in national and international politics
- New laws and government regulations
- Weather changes and natural disasters
- Innovations from competition
- Economic changes

You might use any of the following kinds of long-term trend analysis to influence the design of your forecasts:

- Market surveys
- Leading economic indicators
- Delphi panels

#### See Also

- *Forecast Calculation Examples* in Appendix B of the *Forecasting Guide*



















### Forecasting Process

You use Extract Sales Order History to copy data from the Sales History table (F42119) into either the Detail Forecast table (F3460) or possibly the Summary Forecast (F3400) table, depending on the kind of forecast you plan to generate.

You can generate detail forecasts or summaries of detail forecasts based on data in the Detail Forecast table. Data from your forecasts can then be revised. The process is illustrated in the following graphic.

The following graphic illustrates the sequences you follow when you use the detail forecasting programs.

## Detail Forecasts

<p><b>Sales History</b> F42119</p>  <p><b>Extract Sales Order History</b> P3465</p>  <p><b>Enter/Change Actuals</b> P3460</p>  <p><b>Generate Detail Forecast</b> P34650</p>  <p><b>Review Forecast</b> P34201</p>  <p><b>Enter/Change Forecast</b> P3460</p>  <p><b>Summarize Detail Forecasts</b> P34600</p>  <p><b>Enter/Change Summaries</b> P34200</p>  <p><b>Force Changes</b> P34610</p>	<p>Detail History AA</p>  <p>Detail History Changes △ AA</p>  <p>Detail Forecast BF</p>  <p>Detail Forecast Changes △ BF</p>  <p>Summary Forecast Changes</p>  <p>Summary Forecast Changes</p>  <p>Summary Forecast</p>  <p>Summary Forecast</p> 	<p><b>Detail Forecast Table</b> F3460</p> <p><b>Detail Forecast Table</b> F3460</p> <p><b>Detail Forecast Table</b> F3460</p> <p><b>Detail Forecast Table</b> F3460</p> <p><b>Detail Forecast Table</b> F3460</p> <p><b>Detail Forecast Table</b> F3460</p> <p><b>Summary Forecast</b> F3400</p> <p><b>Summary Forecast</b> F3400</p> <p><b>Summary Forecast</b> F3400</p> <p><b>Summary Forecast</b> F3400</p> <p><b>Detail Forecast Table</b> F3460</p>	 <p><b>DRP/MPS/MRP Generation</b> P3482</p>  <p><b>Multi-Facility DRP/MPS/MRP Generation</b> P3483</p>
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### Major Tables

<b>Summary Forecast (F3400)</b>	Contains the summary forecasts generated by the system and the summarized sales order history created by the Extract Sales Order History program.
<b>Detail Forecast (F3460)</b>	Contains the detail forecasts generated by the system and the sales order history created by the Extract Sales Actuals program.
<b>Summary Constants (F4091)</b>	Stores the summary constants that you have set up for each product hierarchy.
<b>Sales History (F42119)</b>	Contains past sales data, which provides the basis for the forecast calculations.
<b>Sales Order Detail (F4211)</b>	Provides sales order demand by the requested date. The system uses this table to update the Sales History table for forecast calculations.

### Supporting Tables

<b>Item Master (F4101)</b>	Stores basic information about each defined inventory item, such as item numbers, description, category codes, and units of measure.
<b>Branch/Plant Master (F4102)</b>	Defines and maintains warehouse or plant level information, such as costs, quantities, physical locations, and branch level category codes.
<b>Business Unit Master (F0006)</b>	Identifies branch, plant, warehouse, or business unit information, such as company, description, and assigned category codes.
<b>Address Book (F0101)</b>	Stores all address information pertaining to customers, vendors, employees, prospects, and other information.
<b>Forecast Summary Work (F34006)</b>	Ties the summary records (F3400) to the detail records (F3460).

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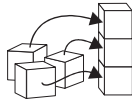
## Menu Overview

J.D. Edwards classifies the Forecasting system's menus according to frequency of use.



### Periodic Processes

- Periodic Forecasting Operations G3421



### Setup Processes

- Forecasting Setup G3441

## Fast Path Commands

The following chart illustrates the fast path commands that you can use to move among the Forecasting menus. From any menu, enter the fast path command at the command line.

<b>Fast Path Command</b>	<b>Menu</b>	<b>Title</b>
PFOR	G3421	Periodic Forecasting Operations
SFOR	G3441	Forecasting Setup

# Work with Detail Forecasts

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## Working with Detail Forecasts

After you set up the actual sales history on which you plan to base your forecast, you generate the detail forecast. You can then revise the forecast to account for any market trends or strategies that might make future demand deviate significantly from the actual sales history.

Working with detail forecasts includes the following tasks:

- Creating detail forecasts
- Reviewing detail forecasts
- Revising detail forecasts

## Creating Detail Forecasts



From Material Planning Operations (G34), choose Forecasting

From Periodic Forecasting Operations (G3421), choose Create Detail Forecast

Create Detail Forecast applies multiple forecasting methods to past sales histories and generates a forecast based on the method that is calculated to provide the most accurate prediction of future demand. The program can also calculate a forecast based on a selected method.



When you run Create Detail Forecast, the system:

- Extracts sales order history information from the Detail Forecast table (F3460)
- Calculates the forecasts using methods that you select
- Calculates the percent of accuracy or the mean absolute deviation for each selected forecast method
- Creates a simulated forecast for the months indicated in the processing option
- Recommends the best fit forecast method
- Creates the detail forecast in either dollars or units from the best fit forecast

The system designates the extracted actual records as type AA and the best fit model as BF. Unlike forecast types 01 through 12, these forecast type codes are not hard-coded, so you can specify your own codes. The system stores both types of records in the Detail Forecast table. The system does not automatically save the other forecast types 01 through 12 unless you set the processing options to do so.

This program allows you to:

- Specify the number of months of actual data to use to create the best fit
- Forecast for individual large customers for all methods
- Run the forecast in proof or final mode
- Create zero or negative forecasts, or both
- Run the forecast simulation interactively

### Processing Options for Forecast Generation

```

FORECASTING METHODS:
Enter a '1' by the method(s) desired:
1. Percent Over Last Year _____
   a. Enter the percentage of change _____
      over last year. For example, use _____
      1.10 for a 10% increase, or 0.97 _____
      for a 3% decrease.
2. Calculated Percent Over Last Year _____
   a. Enter the number of periods to _____
      include in the percentage.
3. Last Year to This Year _____
4. Moving Average _____
   a. Enter the number of periods to _____
      include in the average.
5. Linear Approximation _____
   a. Enter the number of periods to _____
  
```

include in the ratio.

6. Least Squares Regression \_\_\_\_\_
    - a. Enter the number of periods to include in regression. \_\_\_\_\_
  
  7. Second Degree Approximation \_\_\_\_\_
    - a. Enter the number of periods to include. \_\_\_\_\_
  
  8. Flexible Method (Percent over N periods prior.) \_\_\_\_\_
    - a. Enter the number of periods prior. \_\_\_\_\_
    - b. Enter the percent over the prior period. \_\_\_\_\_
  
  9. Weighted Moving Average \_\_\_\_\_
    - a. Enter the number of periods \_\_\_\_\_
    - b. Weight for one period prior \_\_\_\_\_
    - c. Weight for two periods prior \_\_\_\_\_
    - d. Weight for three periods prior \_\_\_\_\_
    - e. Weight for four periods prior \_\_\_\_\_
    - f. Weight for five periods prior \_\_\_\_\_
    - g. Weight for six periods prior \_\_\_\_\_
    - h. Weight for seven periods prior \_\_\_\_\_
    - i. Weight for eight periods prior \_\_\_\_\_
    - j. Weight for nine periods prior \_\_\_\_\_
    - k. Weight for ten periods prior \_\_\_\_\_
    - l. Weight for eleven periods prior \_\_\_\_\_
    - m. Weight for twelve periods prior \_\_\_\_\_
- NOTE: Weights must add up to 1.  
If weights are entered for periods greater than the number of periods to include, they will not be used.  
If no weight is entered for a period within the number of periods to include, a zero weight will be used for that period.
10. Linear Smoothing \_\_\_\_\_
    - a. Enter the number of periods to include in smoothing average. \_\_\_\_\_
  
  11. Exponential Smoothing \_\_\_\_\_
    - a. Enter the number of periods to include in smoothing average. \_\_\_\_\_
    - b. Enter the alpha factor. \_\_\_\_\_  
If left blank, the alpha will be calculated.
  
  12. Exponential Smoothing with Trend and Seasonality Factors \_\_\_\_\_
    - a. Enter the alpha factor. \_\_\_\_\_  
If left blank, alpha will be calculated.
    - b. Enter the beta factor. \_\_\_\_\_  
If left blank, beta will be calculated.
    - c. Enter a '1' to include seasonality in the calculation. \_\_\_\_\_  
If left blank, seasonality will not be included.

RECORD TYPES TO USE:

- 13. Enter the 'Actual Type' in which the actual information is stored. \_\_\_\_\_
- 14. Enter the Forecast Type to use when creating forecasts. \_\_\_\_\_

SUMMARY RECORDS:

- 15. Enter a '1' to create summary records for large customers. (ABC type = 'A'.) \_\_\_\_\_

FORECAST TYPE AND RANGE:

- 16. Enter a '1' to specify weekly forecasts. If left blank, monthly forecasts will be generated. \_\_\_\_\_
- 17. Enter the date to start forecasts. If left blank, today's date will be used. \_\_\_\_\_
- 18. Enter the number of periods to forecast. If left blank, three periods will be used. \_\_\_\_\_
- 19. Enter the number of periods of actual data to be used to calculate the Best Fit forecast. If left blank, three periods of data will be used. \_\_\_\_\_
- 20. Enter a '1' to calculate best fit using Mean Absolute Deviation. If left blank, Percent of Accuracy will be used. \_\_\_\_\_
- 21. Enter a '1' to run the report in final mode. If left blank, the report will run in proof mode. \_\_\_\_\_

FISCAL DATE PATTERN:

- 22. Enter the Fiscal Date Pattern Type to use for forecast dating. If left blank, the type specified for company '00000' will be used. (See Company Names-Fiscal Patterns 'P00105' for more information). \_\_\_\_\_

FORECAST AMOUNTS/QUANTITIES:

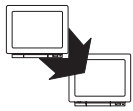
- 23. Enter a '1' to forecast using amounts. If left blank, quantities will be used to forecast. \_\_\_\_\_

### What You Should Know About Processing Options

**Saving records for forecast types 01 to 12 to the Detail Forecast table (F3460)**

To save records for any of the forecast types to the Detail Forecast table (F3460), enter the corresponding number in the processing options (01 for type 01, 04 for type 04, and so on). To include any forecast types in a best fit calculation without saving the records, enter 1 (without the 0 preceding it) in the processing options for each type that you want to include.

### Reviewing Detail Forecasts



From Material Planning Operations (G34), choose Forecasting

From Periodic Forecasting Operations (G3421), choose Review Forecast

You can display information by planner, master planning family, or both. You can then change the forecast type to compare different forecasts to the actual demand. You can also:

- Display the data in summary or detail mode. Detail mode lists all item numbers. Summary mode consolidates data by master planning family.
- Display all information stored in the Detail Forecast table.
- Choose between quantities and amounts to review.

**▶ To review detail forecasts**

---

On Review Forecast

Item	Description	Quantities		%
		Forecast	Actual	
DRP DRP1	Napa Valley Cassette B	6795		
DRP DRP2	Napa Valley CD Box	16885		
DRP DRP3	Napa Valley VCR Box	1880		

5. Complete the following fields:
  - Year
  - Forecast Type
  - Branch/Plant
6. Complete one of the following fields:
  - Master Planning Family
  - Planner Number
7. Review the following fields:
  - Quantities Forecast
  - Quantities Sales Order History
  - Percent (%)
8. To access the amounts fields, choose Amounts/Quantities.
9. Review the following fields:
  - Amounts Forecast
  - Amounts Sales Order History
10. To display data in detail mode, choose the Detail selection on an item line.

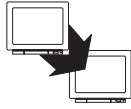
Field	Explanation
Year	The calendar year.

Field	Explanation
Forecast Type	<p>A code from the user defined code table 34/DF that indicates either:</p> <ul style="list-style-type: none"> <li>• The forecasting method used to calculate the numbers displayed about the item</li> <li>• The actual historical information about the item</li> </ul>
Bch/Plt	<p>Identifies a branch or plant.</p> <p>NOTE: You can enter numbers and characters in this field. The system right-justifies them (for example, C0123 appears as _ _ _ C0123). You cannot locate business units for which you have no authority.</p> <p>..... <i>Form-specific information</i> .....</p> <p>On this form, this is the branch/plant for which you review and revise a forecast.</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>
Planner Number	<p>The address number of the material planner for this item.</p> <p>..... <i>Form-specific information</i> .....</p> <p>You can use this field, along with the Master Planning Family and Year fields, to display specific forecast items. For example, you can show items within a planning family that were forecasted by a specific planner for a specific year.</p>
Quantities Forecast	<p>The quantity of units affected by this transaction.</p> <p>..... <i>Form-specific information</i> .....</p> <p>The quantity of units in the sales order history on which a forecast is based.</p>

### Processing Options for Forecast Review

1. Forecasts are driven by quantities.  
    Enter a 1 if you would prefer to see amounts as the primary forecast. \_\_\_\_\_
2. You may have multiple concurrent forecasts. Enter the default forecast type \_\_\_\_\_
3. Enter the forecast type for displaying the actual quantities and amounts. \_\_\_\_\_

## Revising Detail Forecasts



From Material Planning Operations (G34), choose Forecasting

From Periodic Forecasting Operations (G3421), choose Enter/Change Forecast

After you generate and review a forecast, you can revise the forecast to account for changes in consumer trends, market conditions, competitors' activities, your own marketing strategies, and so on. When you revise a forecast, you can:

- Change information in an existing forecast manually
- Add a forecast
- Delete a forecast

You can access forecasts that you want to revise by item number, branch plant, forecast type, or any combination of these elements. If your forecast is extensive, you can specify a beginning request date to limit the display.

As you revise the forecast, be aware that the following combination must be unique for each item number and branch record:

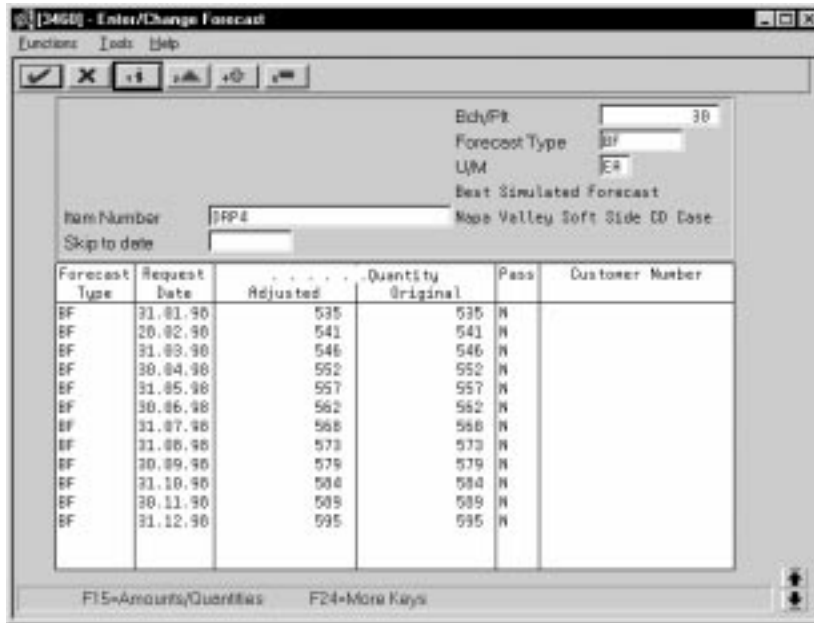
- Forecast type
- Request date
- Customer number

For example, if two records have the same request date and customer number, they must have different forecast types.

### Example: Revising a Detail Forecast

You expect increased sales for a specific month. On Enter/Change Forecast, you manually increase the forecast for that month, and add a qualitative forecast for new items with no sales history.

In the following example, the forecast for the CD boxes has been increased for the week of 2/13/98 from 330 to 500 to accommodate the increased sales.



► **To revise detail forecasts**

On Enter/Change Forecast

1. To choose the forecast you want to revise, review the following fields:
  - Branch/Plant
  - Forecast Type
  - U/M (Unit of Measure) (Optional)
  - Item Number
2. Complete the following field:
  - Quantity Adjusted
3. To access amounts, choose Amounts/Quantities.
4. Revise the following field:
  - Amount Adjusted (F15)
5. To enter descriptive text, access Forecast Text.





6. On Forecast Text, enter any descriptive text for the forecast.

Field	Explanation
Bch/Plt	<p>Identifies a branch or plant.</p> <p>NOTE: You can enter numbers and characters in this field. The system right-justifies them (for example, C0123 appears as ___ C0123). You cannot locate business units for which you have no authority.</p> <p>..... <i>Form-specific information</i> .....</p> <p>On this form, this is the branch/plant for which you are reviewing and revising a sales order history or forecast.</p>
Forecast Type	<p>A code from the user defined code table 34/DF that indicates either:</p> <ul style="list-style-type: none"> <li>• The forecasting method used to calculate the numbers displayed about the item</li> <li>• The actual historical information about the item</li> </ul>
U/M	<p>A user defined code (00/UM) that indicates the quantity in which to express an inventory item, for example, CS (case) or BX (box).</p> <p>..... <i>Form-specific information</i> .....</p> <p>The Material Requirements Planning system converts this to the primary unit of measure for planning purposes.</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>
Original Adjusted	<p>The quantity of units affected by this transaction.</p> <p>..... <i>Form-specific information</i> .....</p> <p>The original quantity of units forecasted for production during a planning period.</p>

Field	Explanation
Amount Adjusted	The current amount of the forecasted units for a planning period.

### Processing Options for Detail Forecast Maintenance

DEFAULT VALUES:

1. You may have multiple concurrent forecasts. Enter the default forecast type. \_\_\_\_\_
2. Enter a '1' to default the forecast type from the heading into the detail records on an add. \_\_\_\_\_

DISPLAY MODE:

3. The forecast is driven by quantities. Enter a '1' if you would prefer to see amounts as the primary forecast. \_\_\_\_\_



### Exercises

See the exercises for this chapter.

# Resource Requirements Planning

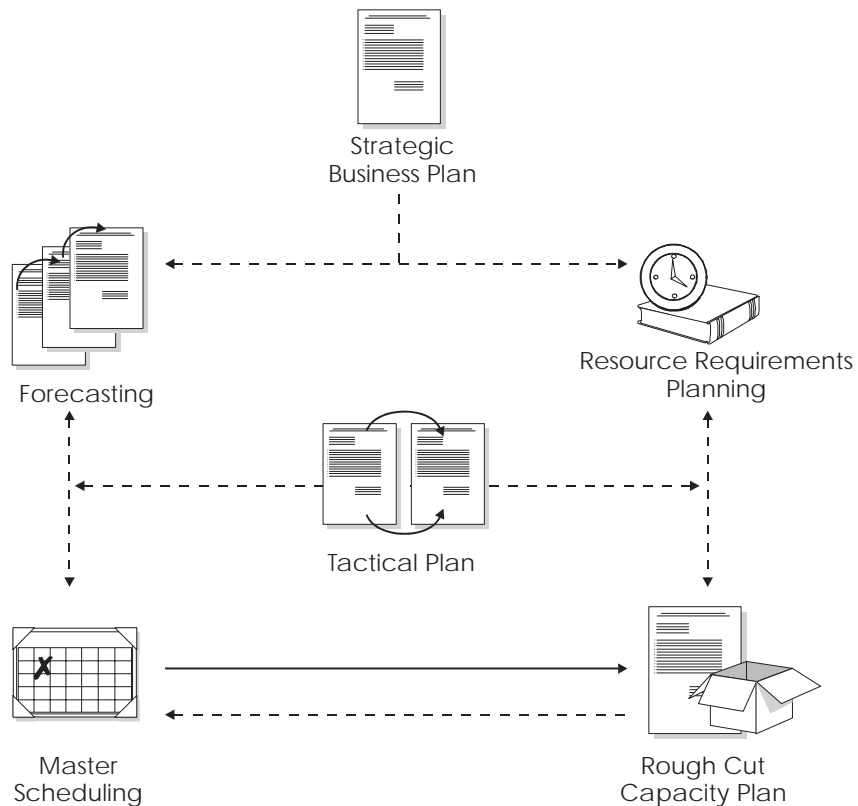


# Resource Requirements Planning

## Objectives

- To create a profile of a work center's load that the system uses to validate a forecast
- To determine available capacity
- To determine long-range requirements for a work center
- To review the actual and planned load on work centers, either together (as a dispatch group) or individually
- To understand the different ways you can view actual and planned load information
- To set up Resource Requirements Planning (RRP)

## About Resource Requirements Planning



You generate a resource requirements plan after you generate your long-term forecast, but before you run the Master Scheduling program. Resource Requirements Planning uses data from a forecast of future sales to estimate the time and resources that are required to make a product.

RRP can help you resolve long-range planning issues, such as:

- Expanding existing facilities
- Acquiring new facilities
- Staffing loads
- Determining capital expenditures for equipment

RRP enables you to support your company's strategic business plan with a realistic tactical plan that:

- Is shorter in range than the strategic plan and has a planning horizon of 12 months to 3 years
- Allows planning at the product family level and is in greater detail than the strategic plan
- Validates the monetary amounts allotted to the business plan as closely as possible

### How Do You Use Demand Forecasting?

Demand forecasting is the logical starting point for developing a resource requirements plan. However, it is important to remember that the demand forecast is not the actual plan, but that you use it only as an input to the plan. Because you use the forecast in place of work orders, RRP provides an estimate of the time and resources that you will need to produce a product.

Manufacturing must determine whether the production plan is supportable as is or if additional future resource requirements are needed, such as:

- Additional skilled labor
- New machinery
- New facilities or additional real estate

---

## What Factors Should You Consider?

You must consider the following factors when you generate the resource requirement plan:

- Include allowances for forecast error
- Use inventory to absorb fluctuations in demand and to level the work center load
- Weigh the cost of carrying inventory versus the cost of lost revenues if you are out of stock

## How Do You Determine Long-Range Capacity Plans?

The Resource Requirements Planning program generates a capacity plan by critical work center. In order to answer long-range planning questions, you need to know your current capacity and the requirements to support the planned work load.

Complete the following tasks:

- Enter work centers
- Determine available capacity
- Determine long-range load
- Generate resource requirements plans
- Review resource requirements plans
- Set up resource requirements plans

Entering work centers defines the work center as machine or labor-paced and whether it is a critical work center. You also specify other values, such as the percent efficiency and utilization of the work center and the crew.

After you estimate how much capacity you will need to produce a product, you must determine how much capacity you actually have. You determine a work center's available capacity on a given day by entering resource units.

Long-range load is an estimate of how many load hours are required to meet sales projections. To determine long-range load, the system uses resource profiles. The resource profile is a list of all work centers and their load requirements for a master scheduled item.

After you have entered resource units and resource profiles, you generate the resource requirements plan to obtain long-range estimates of the capacity needs at your work centers.

After you generate the resource requirements plan, the system creates a load profile that shows the load during each planning period for critical work centers. You can view this as a spreadsheet or as a graphical display. You can also review summaries of each period.

The system records resource requirements planning information in the following tables:

<b>Resource Units (F3007)</b>	The Resource units table contains the available capacity for each work center by day, month, and year.
<b>Work Center Master (F3006)</b>	The Work Center Master table contains detail data about all defined work centers.
<b>Resource Profile (F3303)</b>	The Resource Profile contains all resource profiles that are used in RRP.
<b>Forecast (F3460)</b>	The forecast table contains the forecast data that the resource requirements plan validates. It is also used as input for distribution requirements planning, material requirements planning, or the master production schedule.



# Enter Work Centers

---

## Entering Work Centers for Resource Requirements Planning



From Resource & Capacity Planning (G33), choose Periodic Resource Planning

From Periodic Resource/Capacity Planning (G3321), choose Enter/Change Work Centers

Enter work center information that corresponds to the facilities on your shop floor. Entering work centers for RRP defines the work center as machine or labor-paced and whether it is a critical work center. You also specify other values, such as the percent efficiency and utilization of the work center and the crew.

You can also maintain general information about a work center, including:

- Pay points
- Prime load codes
- Number of machines and workers
- Crew size
- Backflush locations

### Before You Begin

- Set up your work centers and dispatch groups as valid business units on the Single Business Unit Revisions form. See *Setting Up Business Units* in the *General Accounting I Guide*.

### **▶ To enter work centers for Resource Requirements Planning**

---

On Enter/Change Work Centers

[2000] - Enter/Change Work Centers

Functions Tools Help

Branch/Plant R10

Work Center 290-200 Blister Pack

Dispatch Group 200-200 Assembly Department

Work Center

Calendar Name

Pay Point Code 0 Location - Issue

Prime Load Code 0 Location Branch R10

Critical Work Center 3

Crew Size 1,0 Capacity Std

Number of Machines 10 Capacity UOM

Number of Employees 60 Capacity Min

Capacity Max

Queue Hours Hours Shift Code / Description

Move Hours

Replenishment Hours

Resource Offset 1

Efficiency 75,00

Utilization 100,00

F3=Work Center Rates F10=Business Unit Revisions F24=More Keys

1. Complete the following field:
  - Work Center
2. Complete the following optional fields:
  - Dispatch Group
  - Work Center Type
  - Calendar Name
  - Prime Load Code
  - Critical Work Center
  - Branch
  - Resource Offset
  - Efficiency
  - Utilization

Field	Explanation
Work Center	<p>An alphanumeric field that identifies a separate entity within a business for which you want to track costs. For example, a business unit might be a warehouse location, job, project, work center, or branch/plant.</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 accounts payable and accounts receivable by business units to track equipment by responsible department.</p> <p>Security for this field 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 you do not enter a value in the AAI table.</p>
Dispatch Group	<p>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>
Work Center Type	<p>Defines the type of work center. Possible values are :</p> <ul style="list-style-type: none"> <li>Blank Stand alone work center</li> <li>1 Production line in a repetitive environment</li> <li>2 Reporting work station within a production line</li> </ul> <p>..... <i>Form-specific information</i> .....</p> <p>For repetitive manufacturing, the system verifies the value is not valid as a work center for an operation from the routing.</p>
Calendar Name	<p>Enter the value of the calendar which corresponds to the calendar type. For example, if the calendar type is ROUTE, enter a valid route code to display the calendar for a particular route.</p>
Critical Work Center	<p>A code that identifies the work center as critical or not critical when the system calculates capacity. Valid values are:</p> <ul style="list-style-type: none"> <li>N Not a critical work center</li> <li>1 A critical work center in calculating resource requirement planning only</li> <li>2 A critical work center in calculating capacity requirements planning only</li> <li>3 A critical work center in calculating resource requirements planning and capacity requirements planning</li> <li>4 Not a capacity work center (will not be generated in capacity planning)</li> </ul> <p>NOTE: The system displays Type 3 work centers whenever type 1 or type 2 is selected in this field.</p>

<b>Field</b>	<b>Explanation</b>
Branch/Plant	<p>A code that represents a high-level business unit. It can be used to reference a branch or plant that might have departments or jobs, which represent lower-level business units (data item MCU), subordinate to it. For example:</p> <ul style="list-style-type: none"><li>• Branch/Plant (MMCU)</li><li>• Dept A (MCU)</li><li>• Dept B (MCU)</li><li>• Job 123 (MCU)</li></ul> <p>Business unit security is based on the higher-level business unit.</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>
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>
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>

# Determine Available Capacity

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## Determining Available Capacity

After estimating how much capacity you need to produce a product, you must determine how much capacity you actually have. You determine a work center's available capacity on a given day by entering resource units. The system uses this information to backschedule work orders in the Shop Floor Control system and to determine available hours for capacity planning.

You can either enter resource units manually or have the system generate the resource units. Enter units manually if you need to make adjustments. Use the Generate Resource Units program to automatically recalculate the work center hours. The system generates resource units based on hours (HR) unit of measure.

Complete the following tasks:

- Enter resource units manually (optional)
- Generate resource units

### Before You Begin

- Verify that work centers exist for all resource units that you enter. See *Entering Work Centers for Resource Requirements Planning*.
- Set a default unit of measure in the processing options.

### What You Should Know About

**Using different units of measure**

You can assign resource units for different units of measure in different work centers. For example, you might want to estimate the square footage you need for storage of items as well as the hours needed to produce an item.

## Entering Resource Units Manually



From Resource & Capacity Planning (G33), choose Periodic Resource Planning

From Periodic Resource/Capacity Planning (G3321), choose Enter/Change Resource Units

Enter resource units manually if you need to make adjustments to them. For example, you might need to make adjustments to account for machine downtime or employee vacations.

### ► To enter resource units manually

On Enter/Change Resource Units

1. Complete the following required field:
  - Work Center
2. Complete the following optional fields:
  - Unit of Measure
  - Shift Code
  - Efficiency
  - Utilization
  - Daily Resource Units

3. Review the following field:
  - Total Resource Units

Field	Explanation
Unit of Measure	A user defined code (system 00/type UM) that identifies the unit of measurement for an amount or quantity. For example, it can represent a barrel, box, cubic yard, gallon, an hour, and so on.
Shift Code	<p>A user defined code (00/SH) that identifies daily work shifts. In payroll systems, you can use a shift code to add a percent or amount to the hourly rate on a timecard.</p> <p>For payroll and time entry:</p> <p>If an employee always works a shift for which a shift rate differential is applicable, enter that shift code on the employee's master record. When you enter the shift on the employee's master record, you do not need to enter the code on the timecard when you enter time.</p> <p>If an employee occasionally works a different shift, you enter the shift code on each applicable timecard to override the default.</p> <p>..... <i>Form-specific information</i> .....</p> <p>You can view the total resources available for a given day by entering an asterisk (*) in this field.</p> <p>For repetitive manufacturing, enter a 1-6 to allow the system to display a specific shift's units, or enter a * to view the total resource availability for the specified time period. While this program displays the total units for the shift/day for work centers defined with a standard capacity and unit of measure in those units, the system stores the data in hours.</p>
Total Resource Units	The total resource units for the month.

### What You Should Know About

**Changing resource unit information** You can change the values on the Enter/Change Resource Units form to account for scheduled or unscheduled downtime, additional shifts, or vacation time. However, each time you run Refresh Resource Units, the program recalculates the form values and overwrites your manual changes based on information in the Work Center Master table (F3006), the Shop Floor Calendar program, and the Manufacturing Constants table (F3009).

### Processing Options for Work Center Resource Units Revisions

Enter the value to be defaulted into the following fields:

1. Unit of Measure: \_\_\_\_\_

### Generating Resource Units



From Resource & Capacity Planning (G33), choose Periodic Resource Planning

From Periodic Resource/Capacity Planning (G3321), choose Refresh Resource Units

Run this program to automatically recalculate the work center hours. You can view the results on Enter/Change Resource Units.

You should run this program whenever you revise the hours per day on the Manufacturing Constants, the number of machines, or the number of employees assigned to work centers. You can also run the program to define resource units for specific time periods.

The system recalculates the resource units for a work center based on the following information:

- Hours per day in the Work Center Master table (F3006)
- Shop Floor Calendar
- Manufacturing Constants table



Any manual changes that you have made to the units on Enter/Change Resource Units will be overwritten when you run Refresh Resource Units.

#### Before You Begin

- Set up manufacturing constants. See Setting up DRP, MPS, and RCCP.
- Determine the branch/plants for which you want to generate resource units.
- Verify that a current shop calendar for the time period you specify is set up.



## What You Should Know About

### **Resource unit calculations**

The program uses the following resource unit calculation for machine-related hours:

- Prime load code = C or M  
Number of machines x work hours per day

The program uses the following resource unit calculation for labor-related hours:

- Prime load code = L or B  
Number of employees x work hours per day

## Processing Options for Work Center Resource Units Generation

Enter the "Start" date for the Resource Units generation process. \_\_\_\_\_

Enter the "End" date for the Resource Units generation process. \_\_\_\_\_

Enter the Branch/Plant to be processed. \_\_\_\_\_



# Determine Long-Range Load

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## Determining Long-Range Load

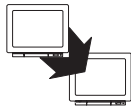
Long-range load is an estimate of how many load hours are required to meet sales projections. To determine long-range load, the system uses resource profiles. The resource profile is a list of all work centers and their load requirements for a master scheduled item. It is the sum of all labor, machine, and setup hours required for all work centers and is for all parts in the master schedule items' multi-level bill of material.

You can manually enter a resource profile or have the system generate the profile. You manually enter the profile if you have not defined bills of material (BOMs) and routings for an end item. You can also use the manual method for prototype items and new products. You can have the system generate the profile if the BOMs and routings are available.

Complete the following tasks:

- Define resource profiles manually
- Generate resource profiles

## Defining Resource Profiles Manually



From Resource & Capacity Planning (G33), choose Periodic Resource Planning

From Periodic Resource/Capacity Planning (G3321), choose Enter/Change Resource Profile

You manually enter the profile if you have not defined bills of material (BOMs) and routings for an end item. You can also use the manual method for prototype items and new products. If BOMs and routings are available, the system can generate the profile.

### Before You Begin

- Enter item branch/plant information. See *Setting Up Branch/Plant Information* in the *Inventory Management Guide*.

► To define a resource profile manually

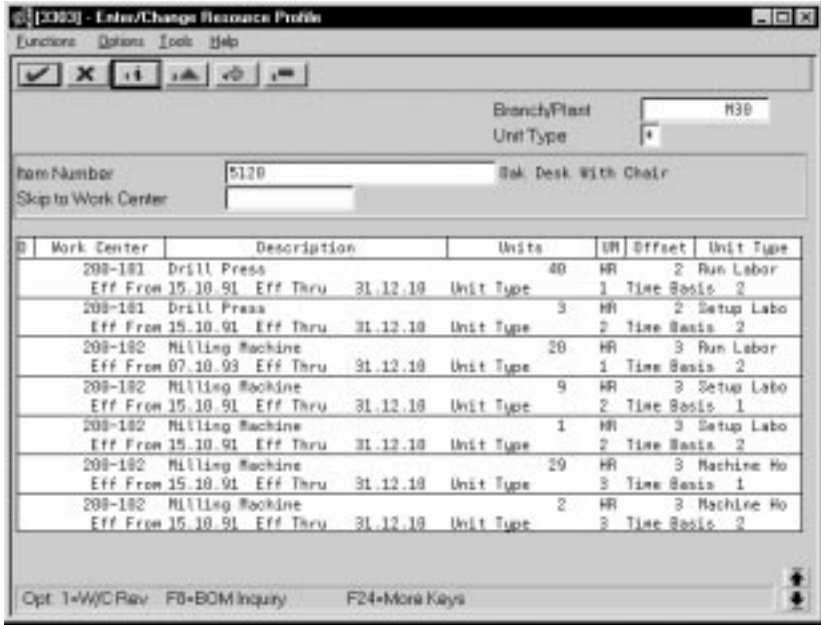
On Enter/Change Resource Profile

The screenshot shows a software window titled "[3000] - Enter/Change Resource Profile". It contains a menu bar with "Functions", "Options", "Tools", and "Help". Below the menu bar are several icons. The window has two input fields: "Branch/Plant" with the value "R30" and "Unit Type" with a dropdown arrow. Below these are two more input fields: "Item Number" with the value "5120" and "Skip to Work Center" with a dropdown arrow. The main area of the window is a table with the following data:

Work Center	Description	Units	UR	Offset	Unit Type
200-101	Drill Press	40	HR	2	Run Labor
200-101	Drill Press	3	HR	2	Setup Labo
200-102	Milling Machine	20	HR	3	Run Labor
200-102	Milling Machine	9	HR	3	Setup Labo
200-102	Milling Machine	1	HR	3	Setup Labo
200-102	Milling Machine	20	HR	3	Machine Ho
200-102	Milling Machine	2	HR	3	Machine Ho
200-103	Screw Machine	16	HR	3	Run Labor
200-103	Screw Machine	10	HR	3	Machine Ho
200-202	Molding	1	HR	1	Run Labor
200-202	Molding	1	HR	1	Setup Labo
200-202	Molding	5	HR	1	Machine Ho
200-203	Blister Pack	84	HR	1	Run Labor
200-203	Blister Pack	3	HR	1	Setup Labo

At the bottom of the window, there are keyboard shortcuts: "Opt 1=W/C Rev", "F0=BOM Inquiry", and "F24=More Keys".

1. Complete the following field:
  - Item Number
2. Complete the following optional fields:
  - Work Center
  - Units
  - Unit of Measure
  - Offset
3. Access the detail area.

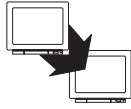


4. Complete the following optional fields or allow the system to enter a default:
- Effective From
  - Effective Thru
  - Unit Type
  - Time Basis

Field	Explanation
Units	The quantity of units affected by this transaction.
Offset	A value used in the Resource Profile table (F3303) to determine the number of days that the actual use of a work center resource should be offset from the forecasted need date.

Field	Explanation
Eff From	<p>A date that indicates one of the following:</p> <ul style="list-style-type: none"> <li>• When a component part goes into effect on a bill of material</li> <li>• When a routing step goes into effect as a sequence on the routing for an item</li> <li>• When a rate schedule is in effect</li> </ul> <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>
Eff Thru	<p>A date that indicates one of the following:</p> <ul style="list-style-type: none"> <li>• When a component part is no longer in effect on a bill of material</li> <li>• When a routing step is no longer in effect as a sequence on the routing for an item</li> <li>• When a rate schedule is no longer active</li> </ul> <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>
Unit Type	<p>A code that indicates the type of resource unit associated with this work center. Possible types are:</p> <ul style="list-style-type: none"> <li>1 Run Labor Hours</li> <li>2 Setup Labor Hours</li> <li>3 Machine Hours</li> <li>9 Miscellaneous (Storage Space, and so on)</li> </ul>
Time Basis	<p>A user defined code (system 30, type TB) that identifies the time basis or rate for machine or labor hours entered for any routing step. You can set rates per unit, per 10, per 1000, and so on.</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 is what the code represents, but is not used in calculations.</p>

## Generating Resource Profiles



From Resource & Capacity Planning (G33), choose Periodic Resource Planning

From Periodic Resource/Capacity Planning (G3321), choose Generate Resource Profile

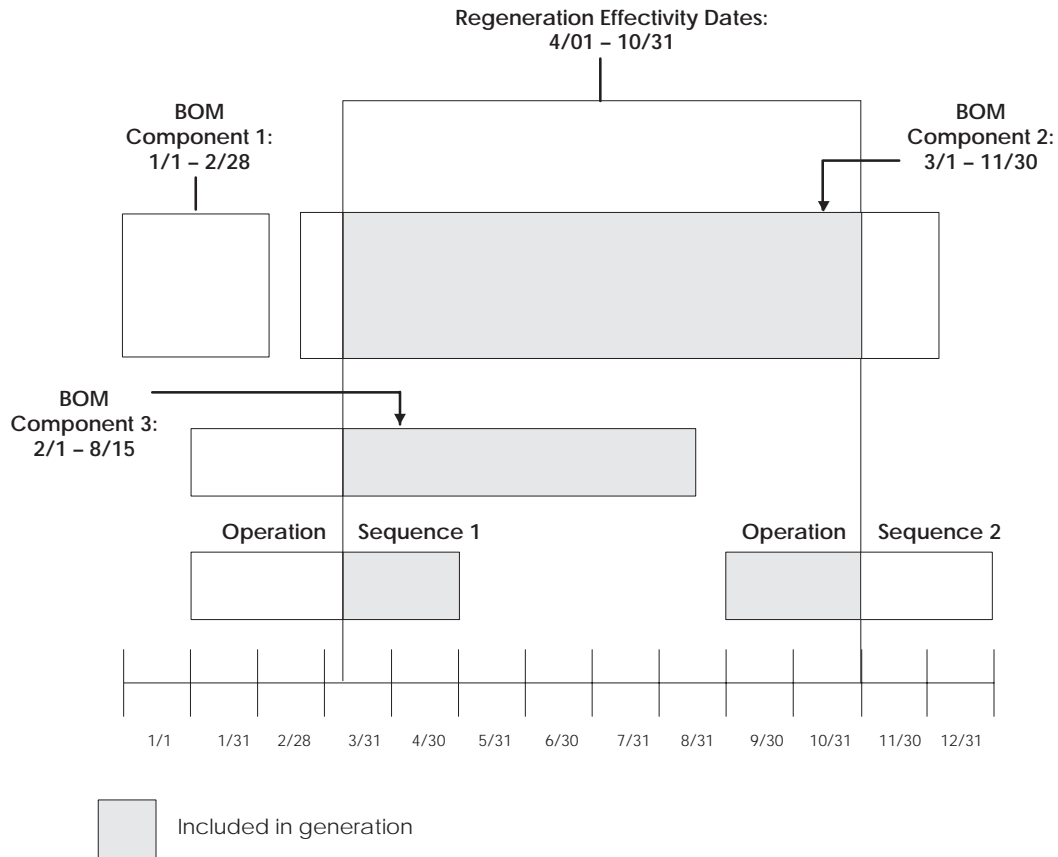
If you have defined bills of material (BOMs) and routings for an end item and all its subassemblies, you can run Generate Resource Profile to automatically generate the resource profile. The program calculates the load on a work center by extending the hours in the routing by the forecasted quantities for the master scheduled items.

Resource Profile Generation creates units of measure only in hours (HR). Enter the resource profile manually if you want to use other units of measure.

Generate Resource Profile changes or updates the resource profile using components with effectivity dates within the period that you specify. The specific items affected by the program are determined by the following factors:

- The system retrieves routings only for BOM components that are effective within the range of effectivity dates in the processing options for the regeneration.
- The system creates resource profiles only from BOM components with effectivity dates that are within the effectivity dates assigned to the item and the processing options.
- The Effective From date in the resource profile is the latest of the dates in the processing option, the BOM, or the routing Effective From dates.
- The resource profile Effective Through date is the earliest of the dates in the processing option, the BOM, or the routing Effective From dates.

The following graphic illustrates all the BOMs and routings with effectivity dates that are within the Effective From and Effective Through dates.



## Before You Begin

- Enter all applicable bills of materials, work centers, and routings. See *Entering Work Centers in the Product Data Management Discrete Manufacturing Guide*.

## Processing Options for Resource Profile Regeneration

1. Enter the effectivity dates for the regeneration:  
     Effective From: \_\_\_\_\_  
     Effective Thru: \_\_\_\_\_



# Generate Resource Requirements Plans

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## Generating Resource Requirements Plans



From Resource & Capacity Planning (G33), choose Periodic Resource Planning

From Periodic Resource/Capacity Planning (G3321), choose Resource Requirements Plan

After you have entered resource units and resource profiles, you run the program that generates the resource requirements plan to obtain long-range estimates of the capacity needs at your work centers, such as:

- The number of production staff that you need to hire now to meet future production needs
- The number of additional machines you will need for a new product line
- What real estate you will need to buy for additional facilities

Because you use the forecast in place of work orders for long-range planning, the data that this program creates is an estimate of capacity needs based on the forecast. The resource profile offsets required dates for capacity.

The types of data you can create include:

- Over- or under-capacity messages
- New load profile information based on the type of work center load:
  - Rated profile is the available units from the Resource Units table (F3007).
  - Loaded profile is the forecasted load derived from the master planned items' forecasts and their resource profiles.
  - Percent resource used is the loaded profile divided by the rated profile.
  - Resource available is the rated profile minus the loaded profile
  - Accumulated resources available is a running total of the resources available
- Period summaries about work centers

### Before You Begin

- Verify that resource units exist for all work centers in your facility. See *Determining Available Capacity*.
- Verify that resource profiles exist for all master schedule items. See *Determining Long-Range Load*.
- Verify that the resource profile is set up for the appropriate units of measure. You can use a maximum of five units of measure. See *Determining Long-Range Load*.
- Create a detail forecast for the master scheduled items using Enter/Change Forecasts. See *Working with Detail Forecasts* in the *Forecasting Guide*.
- Determine which forecast types you want to use in the generation. You can use a maximum of five. See *Setting Up Summary Forecasts* in the *Forecasting Guide*.
- Set up the shop calendar for all summary time periods for which you want to generate RRP. See *Setting Up the Shop Floor Calendar* in the *Shop Floor Control Discrete Manufacturing Guide*.

### See Also

- *Reviewing Resource Requirements Plans (P3313)*

## Processing Options for Resource Requirements Planning Regeneration

1. Enter the Start Date for Resource Requirements Planning Regeneration. \_\_\_\_\_
2. Enter the Planning Periods:  
(Maximum of 52 Periods.)  
Weeks (e.g. 12 weeks) \_\_\_\_\_  
and Months (e.g. 24 months) \_\_\_\_\_
3. Past Due Information:  
Enter the number of periods:  
(0, 1, or 2 periods are allowed  
and 0 is the default) \_\_\_\_\_
4. Enter the percent under rated capacity  
to generate a Under Capacity Message. \_\_\_\_\_
5. Enter the percent over rated capacity  
to generate a Over Capacity Message. \_\_\_\_\_
6. Enter the Forecast Type to be Read. \_\_\_\_\_
7. Enter the Branch to be processed. \_\_\_\_\_
8. Enter the Unit of Measure to Process. \_\_\_\_\_
9. Enter a '1' to Roll the Work Centers  
into their Dispatch Group. \_\_\_\_\_

## Data Selection for Critical Work Centers

The options you have for data selection determine whether to process only critical work centers or to process all work centers. The choices in the Critical Work Center data selection option are:

- N** Process only non-critical work centers
- 1** Process critical work centers in calculating Resource Requirements Planning only
- 2** Process critical work centers in calculating Resource Requirements Planning and Capacity Requirements Planning
- 4** Not a Capacity Work Center (will not be generated in the Capacity Planning System)

The system also displays Type 3 work centers whenever you select Type 1 or Type 2.

### Data Selection for Branch/Plant and Dispatch Group

You can select the following data for planning facilities and dispatch groups:

- A specific planning facility and/or the dispatch groups
- A group of planning facilities and/or the dispatch groups using the \*RANGE or \*VALUE

# Review Resource Requirements Plans

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## Reviewing Resource Requirements Plans

When you generate a resource requirements plan, the system creates a time series that shows the load during each planning period for a work center. You can view the time series as a spreadsheet or as a graphical display. If you have organized several work centers as a dispatch group according to common functions, similar operations, or steps in routing, you can view the group to see how the production plan affects capacity of the work centers as a group.

Complete the following tasks:

- Review dispatch groups for Resource Requirements Planning
- Review work center load for Resource Requirements Planning
- Review period summaries
- Review message detail
- Validate resource requirements plans

You can review summaries of each period to determine the load that is placed on a work center by each item or order. You can also review messages for each work center and delete, clear, or hold messages.

If the system encounters over- or under-capacity conditions, you can review the plan and identify the periods or work centers in which the conditions occur. It might be necessary to adjust the forecast or capacity and generate the RRP again.

## Reviewing Dispatch Groups for Resource Requirements Planning



From Resource & Capacity Planning (G33), choose Daily Resource Planning

From Daily Resource Requirements Planning (G3311), choose Review Dispatch Group

If you have several work centers that are organized as a dispatch group, you can view the group to determine how capacity affects all of the work centers in the group. Dispatch groups enable you to organize work centers according to common functions, similar operations, or steps in routing.

When you review dispatch groups, you can also review messages about all the work centers in the group and use that information to redistribute the load within the group.

### ► To review dispatch groups for Resource Requirements Planning

On Review Dispatch Group

Work Center	UN	C	Description	Outstanding Messages
208-100	HR	3	Machine Shop	U U U U U U U U U U U U U U U U
208-101	HR	3	Drill Press	U U U U U U U U U U U U U U U U
208-102	HR	3	Milling Machine	U U U U U U U U U U U U U U U U
208-103	HR	3	Screw Machine	U U U U U U U U U U U U U U U U
208-109	HR	3	Projector Assembly	U U U U U U U U U U U U U U U U
208-110	HR	3	Head Thread Assembly	U U U U U U U U U U U U U U U U

1. Complete the following field:
  - Dispatch Group

2. Complete the following optional fields:
  - Critical Work Center
  - Message Type
  - Unit of Measure
  - Work Center Branch
3. Review the following field:
  - Outstanding Messages

Field	Explanation
Message Type	A code that distinguishes different messages generated in the Distribution Requirements Planning/Master Production Schedule/Material Requirements Planning system. Valid codes are: <ul style="list-style-type: none"> <li>A Warning messages (user controlled)</li> <li>B Order and expedite</li> <li>C Cancel</li> <li>D Defer</li> <li>E Expedite</li> <li>F Frozen order (user controlled)</li> <li>G Increase order quantity to (user controlled)</li> <li>H Decrease rate quantity to</li> <li>I Increase rate quantity to</li> <li>L Decrease order quantity to (user controlled)</li> <li>M Manual reminder</li> <li>N Create rate</li> <li>O Order</li> <li>P Firm order</li> <li>S FPO adjustment suggestion</li> <li>T Past due order</li> </ul>
Workcenter Branch	This is the branch/plant to which the work center belongs and must exist in the business unit master (F0006) and branch plant constants file (F41001).

### Processing Options for Review Dispatch Group

1. Enter the Critical Work Center Code to displayed be or a "\*" for all Work Centers. \_\_\_\_\_
2. Enter the Capacity Mode \_\_\_\_\_
  - "1" = Resource Requirements Planning
  - "2" = Rough Cut Capacity Planning
  - "3" = Capacity Requirements Planning
3. Enter the Default Unit of Measure \_\_\_\_\_

### Reviewing Work Center Load for Resource Requirements Planning



From Resource & Capacity Planning (G33), choose Daily Resource Planning

From Daily Resource Requirements Planning (G3311), choose Review Work Center Load

You can review the capacity load at each work center. Use this information to determine whether to adjust capacity or the forecast.

You can view the time series as a spreadsheet or as a graphical display. The spreadsheet provides a numerical breakdown, by planning period, of the load placed on a work center. The bar graph provides the same information as the Review Work Center Load form. The graph uses time series information from Resource Requirements Load to generate the comparison. The capacity load at the work center displays for each planning period based on several calculations.

Complete the following tasks:

- Review the work center load as a spreadsheet
- Review the work center load as a graph

#### Before You Begin

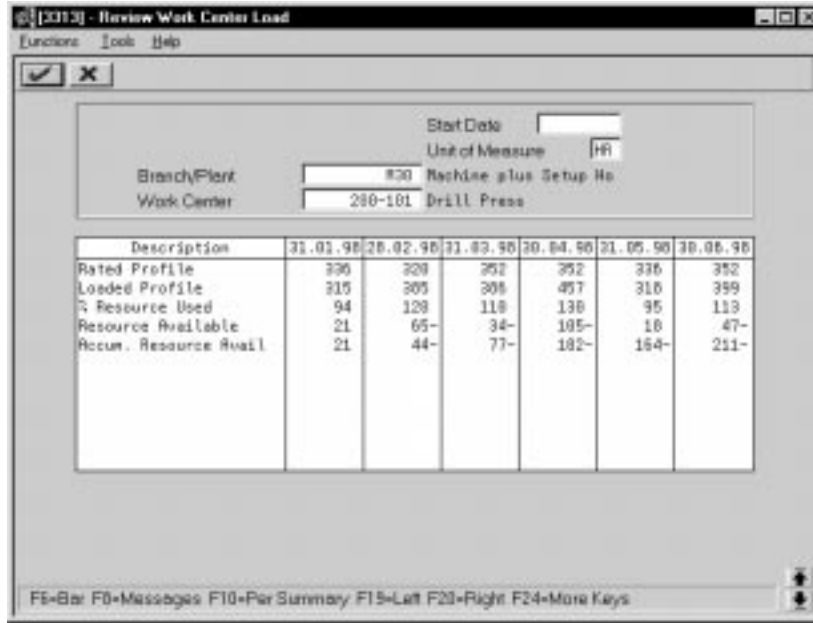
- Verify that your resource units and resource requirements plan are current

#### **▶ To review the work center load as a spreadsheet**

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On Review Work Center Load





1. Complete the following field:
  - Work Center
2. Review the following fields:
  - Unit of Measure
  - Description

Field	Explanation
Work Center	<p>An alphanumeric field that identifies a separate entity within a business for which you want to track costs. For example, a business unit might be a warehouse location, job, project, work center, or branch/plant.</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 accounts payable and accounts receivable by business units to track equipment by responsible department.</p> <p>Security for this field 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 you do not enter a value in the AAI table.</p> <p>..... <i>Form-specific information</i> .....</p> <p>You enter the work center for which you want to display the capacity load.</p>

## What You Should Know About

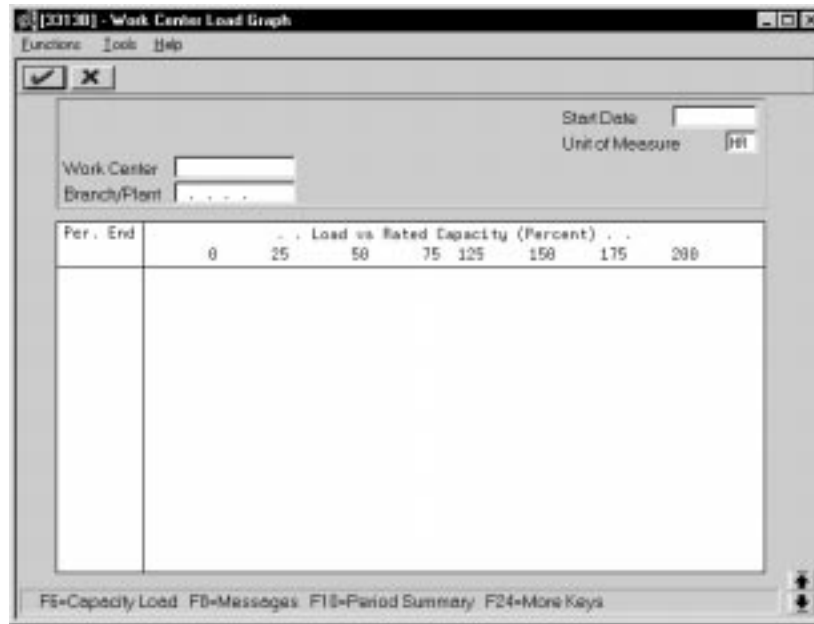
<b>Prime load code</b>	The entry in the Prime Load Code field on Enter/Change Work Center determines the type of load. For example, if you have entered machine and setup hours as the prime load code, the numbers that appear will be different than if you entered machine hours only.
<b>Resource offset</b>	The demand is offset by the number of days set on the Resource Profile form.
<b>Type of load</b>	<p>The type of load is determined by the prime load code. Calculations for the types of load are:</p> <ul style="list-style-type: none"><li>• Rated profile – The amount of capacity available for a work center.</li><li>• Loaded profile – The capacity that is required to meet the forecast. Loaded profile = (Forecast quantity x labor or machine hours) / (efficiency x utilization) x Time Basis Code</li><li>• Percent resource used – The loaded profile divided by rated profile.</li><li>• Resource available – The rated profile minus the loaded profile.</li><li>• Accumulated resource available – A running total of resource available.</li></ul>

## Processing Options for Work Center Load

1. Enter the Capacity Mode: \_\_\_\_\_  
    "1" = Resource Requirements Planning  
    "2" = Rough Cut Capacity Planning  
    "3" = Capacity Requirements Planning
2. Enter the User Defined Code for the list of row descriptions to appear: \_\_\_\_\_
3. Enter the default Unit of Measure: \_\_\_\_\_
4. Enter the version of the Dispatch List program to call. \_\_\_\_\_  
    Default is ZJDE0001.

► **To review the work center load as a graph**

On Work Center Load Graph



1. Complete the following field:
  - Work Center
2. Review the following field:
  - Unit of Measure
3. On Capacity Load Percent, review the amount of load.

### What You Should Know About

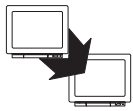
**Over-capacity work centers**

The system displays the portion of the bar graph that is over 100% in a color different from the portions less than 100%.

### Processing Options for Work Center Load Bar Graph

1. Enter the Capacity Mode: \_\_\_\_\_  
    "1" = Resource Requirements Planning  
    "2" = Rough Cut Capacity Planning  
    "3" = Capacity Requirements Planning
2. Enter the default Unit of Measure: \_\_\_\_\_
3. Enter the version of the Dispatch List to call. Default is ZJDE0001. \_\_\_\_\_

### Reviewing Period Summaries



From Resource & Capacity Planning (G33), choose Daily Resource Planning

From Daily Resource Requirements Planning (G3311), choose Review Period Summary

In addition to reviewing the capacity load of a work center, you can also evaluate the load that is placed on a work center by period and by item. You can review period summaries either online or on a printed report. You can review:

- The items that are scheduled for a work center.
- The number of units of an item that make up the load.
- The percent of the total load on the work center that is for a specific item's forecast. This is the percent of the total load planned for the work center that the item consumes. The system summarizes the load by the period using the unit of measure that you specify.

You use this information to determine whether to adjust the forecast or the capacity at the work center.

#### ► **To review period summaries**

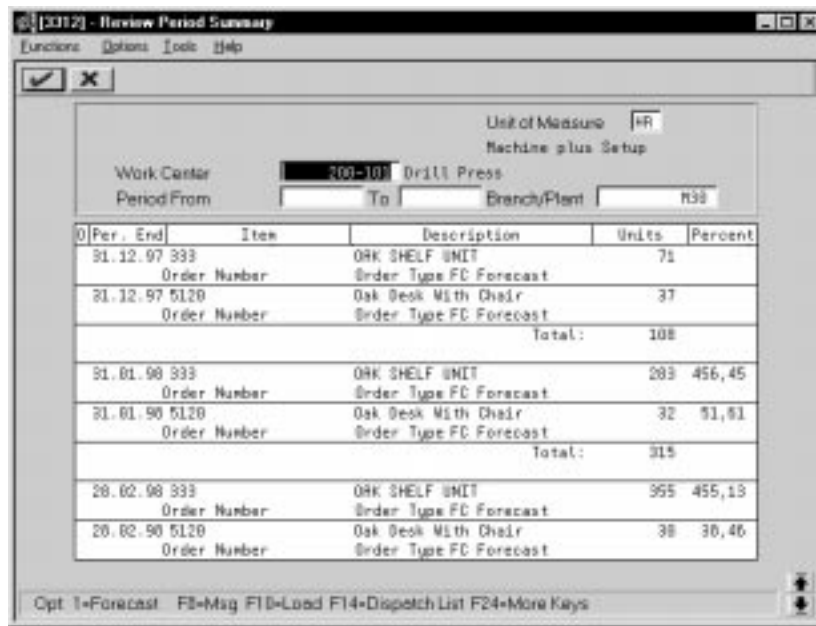
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On Review Period Summary

The screenshot shows a software window titled "[2012] - Review Period Summary". It contains a table with columns: Per. End, Item, Description, Units, and Percent. The table lists requirements for '200-101 Drill Press' across various periods, with items '333' (ORAK SHELF UNIT) and '5120' (Oak Desk With Chair). The 'Units' column shows values like 71, 37, 108, 283, 32, 315, 395, 38, 305, 395, 31, 386, 424, 33, 457, and 202. The 'Percent' column shows values like 456.45, 51.81, 455.13, 30.46, 455.13, 39.74, 451.86, 35.11, and 454.94. The window also has a menu bar (Functions, Options, Tools, Help) and a status bar (Opt 1=Forecast, F3=Msg, F10=Load, F14=Dispatch List, F24=More Keys).

Per. End	Item	Description	Units	Percent
31.12.97	333	ORAK SHELF UNIT	71	
31.12.97	5120	Oak Desk With Chair	37	
		Total:	108	
31.01.98	333	ORAK SHELF UNIT	283	456.45
31.01.98	5120	Oak Desk With Chair	32	51.81
		Total:	315	
20.02.98	333	ORAK SHELF UNIT	395	455.13
20.02.98	5120	Oak Desk With Chair	38	30.46
		Total:	305	
31.03.98	333	ORAK SHELF UNIT	395	455.13
31.03.98	5120	Oak Desk With Chair	31	39.74
		Total:	386	
30.04.98	333	ORAK SHELF UNIT	424	451.86
30.04.98	5120	Oak Desk With Chair	33	35.11
		Total:	457	
21.05.98	333	ORAK SHELF UNIT	202	454.94

1. Complete the following field:
  - Work Center
2. Complete the following optional fields:
  - Unit of Measure
  - Period From – To
3. Review the following fields:
  - Period End
  - Item
  - Units
  - Percent Completed
  - Total
4. Access the detail area.



5. Review the following field:

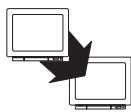
- Order Number

Field	Explanation
Period From	A number that identifies either a fiscal period (numbers from 1 to 14) or a beginning date. The information displayed begins with this date or period. If you leave this field blank, the system displays all transactions up to the Thru Date. Totals are for the transactions displayed.
To	A number that either identifies the period number or date for which you want to review information. If you leave this field blank, the system uses the end date of the current period for the company that contains the business unit. Valid period numbers are from 1 through 14.  ..... <i>Form-specific information</i> .....  If you leave this field blank, the system displays all orders since the From date.
Per. End	The date that an item is to arrive or that an action is to be complete.
Units	The quantity of units affected by this transaction.
Percent	The percentage of the planned amount that has been completed.

## Processing Options for Period Summary

1. Enter the Capacity Mode: \_\_\_\_\_  
    "1" = Resource Requirements Planning  
    "2" = Rough Cut Capacity Planning  
    "3" = Capacity Requirements Planning
2. Enter the default Unit of Measure: \_\_\_\_\_
3. Enter the version of the Dispatch List to call. Default is ZJDE0001. \_\_\_\_\_

## Reviewing Message Detail



From Resource & Capacity Planning (G33), choose Daily Resource Planning

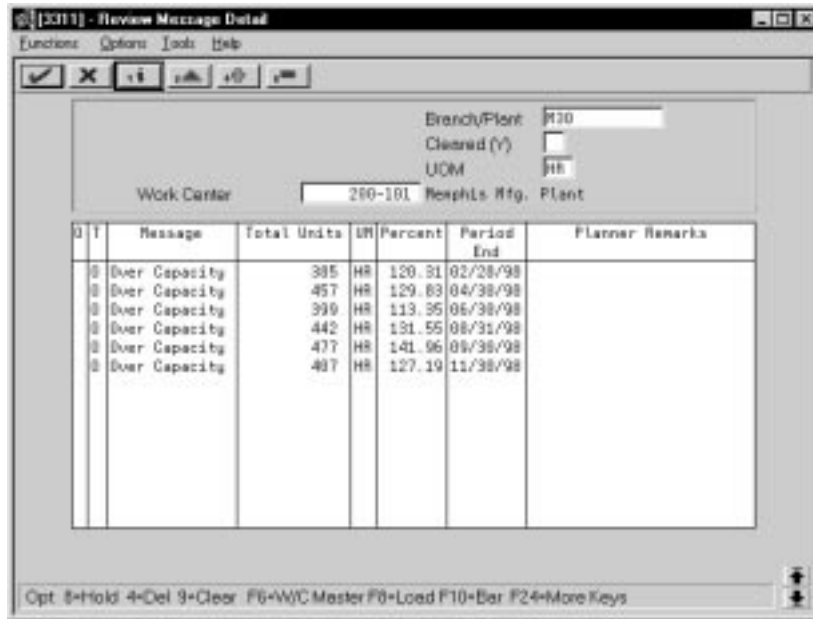
From Daily Resource Requirements Planning (G3311), choose Review Message Detail

Each time you generate a resource requirements plan, the system creates messages to identify work centers whose loads are in conflict with planned capacity. Review Message Detail indicates whether you have over-load or under-load conditions. It displays messages for each work center alphabetically by message type.

Use Review Message Detail to delete, clear, or hold messages. You can add remarks for each message as a record for the actions you take. In addition, you can access related forms to confirm or change dates, amounts, and key plant manufacturing data for the work center.

► **To review message detail**

On Review Message Detail



1. Complete the following field:
  - Work Center
2. Review the following fields:
  - Message Type
  - Message
  - Total Units
  - Unit of Measure
  - Percentage
  - Period End
  - Planner Remarks

Field	Explanation
Total Units	This field displays the unit quantities making up the load and resources used for each period shown in the time series for DRP/MPS/MRP and CRP.



Field	Explanation
Planner Remarks	<p>A brief description of an item, a remark, or an explanation.</p> <p>..... <i>Form-specific information</i> .....</p> <p>You can use this field to enter a brief note or comment about each message.</p>

## What You Should Know About

<b>Retrieving cleared messages</b>	When you clear or delete messages, the system no longer displays them on the Review Message Detail form. Enter a Y in the Cleared (Y) field to retrieve cleared messages.
<b>Held messages</b>	The system retains held messages until you manually clear or delete them. When you generate the Rough Cut Capacity Plan or Capacity Requirements Plan programs, the system deletes all current non-held messages.
<b>Deleted messages</b>	<p>You can generate a plan more than once. When you regenerate a resource requirements plan, the system will not delete the following messages:</p> <ul style="list-style-type: none"> <li>• Manually entered messages</li> <li>• Messages that you have placed on hold</li> </ul>

## Processing Options for Message Revisions

1. Enter the Capacity Mode \_\_\_\_\_  
"1" = Resource Requirements Planning  
"2" = Rough Cut Capacity Planning  
"3" = Capacity Requirements Planning
2. Enter the Default Unit of Measure \_\_\_\_\_

### Validating Resource Requirements Plans

Validating the resource requirements plan consists of identifying the overloaded work centers, making adjustments in forecast or resources, and generating the plan again to see if your adjustments distributed the loads among the work centers.

▶ **To validate a resource requirements plan**

---

1. Complete the steps for reviewing the requirements plan.  
See *Reviewing Resource Requirements Plans*.
2. Revise the forecast.  
See *Revising Summaries of Forecasts* in the *Forecasting Guide*.
3. Complete the steps for generating the requirements plan.  
See *Generating Resource Requirements Plans*.
4. Complete the steps for reviewing the revised requirements plan.  
See *Reviewing Resource Requirements Plans*.
5. Repeat the steps until all loads at each work center are appropriate.

# Set Up Resource Requirements Plans

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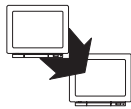
## Setting Up Resource Requirements Plans

Before you generate a resource requirements plan, you must define information for processing. The system uses setup information to determine how to select and display data.

Complete the following tasks:

- Set up resource requirements display
- Set up unit types

## Setting Up Resource Requirements Display



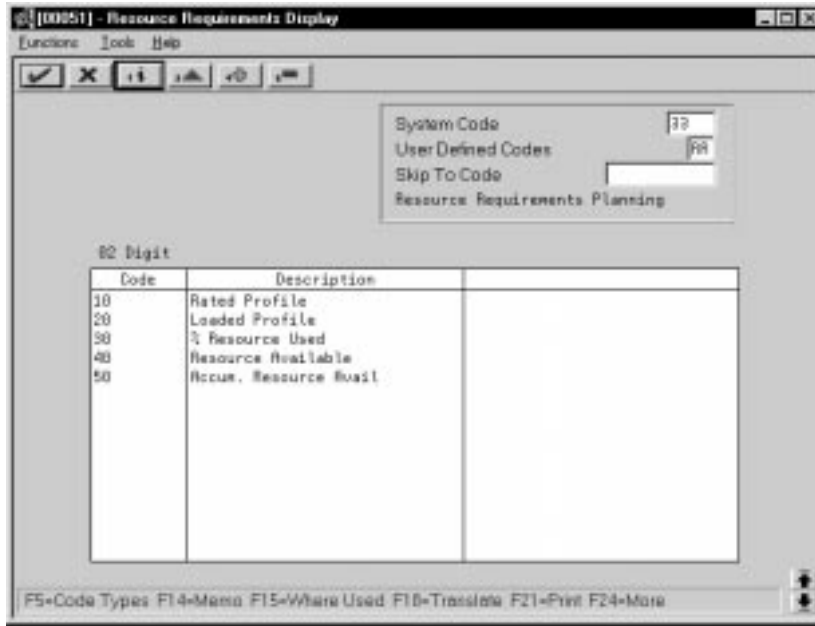
From Resource & Capacity Planning (G33), enter 29

From Resource/Capacity Planning Setup (G3341), choose Resource Requirements Display

The Resource Requirements Display identifies the types of loads on a work center. You can review these on the Review Work Center Load form. See *Reviewing Work Center Load for Resource Requirements Planning* for more information on the calculations for the types of load.

► **To set up resource requirements display**

On User Defined Code Revisions/Resource Requirements Planning

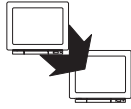


Complete the following fields:

- Code
- Description

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

## Setting Up Unit Types



From Resource & Capacity Planning (G33), enter 29

From Resource/Capacity Planning Setup (G3341), choose Unit Types

You need to identify all the different types of resource units that can be associated with any work center. Unit types are system 33, type UT UDCs.

### ► To set up unit types

On User Defined Code Revisions/Unit Types

Complete the following fields:

- Code
- Description



# Single Level Master Scheduling







# Single Level Master Scheduling

## Objectives

- To create Distribution Requirements Plans (DRP) or Master Production Schedules (MPS)
- To understand the Net Change program
- To read and use time series displays
- To understand time fence rules
- To interpret Ending Available (EA), Available to Promise (ATP), Cumulative Available to Promise (CATP), and Forecast Consumption (FCP) calculations
- To review and process action messages
- To process purchase orders with or without blanket order check
- To consolidate messages and purchase orders
- To add a freeze code on purchase orders and work orders
- To use Rough Cut Capacity Planning (RCCP) to validate the master schedule
- To set up master planning and rough cut capacity displays
- To process work orders



### About Single Level Master Scheduling

A single level master schedule is a statement of what the company expects to produce based on the tactical plan and budget constraints.

A master scheduled item is critical in its impact on lower-level components or resources, such as skilled labor, key machines, or revenues. Single level implies master scheduling at the end deliverable item level.

The master scheduling process consists of:

- Determining what you need (forecast, customer orders, and interplant demands)
- Subtracting what you have (inventory, purchase orders, and work orders)
- Calculating net requirements and when you need them

You can generate master planning for all items or for a net change generation, which includes only items that have been affected by transactions since the last generation. After you generate DRP/MPS output, you can review and respond to messages.

Master scheduling consists of the following:

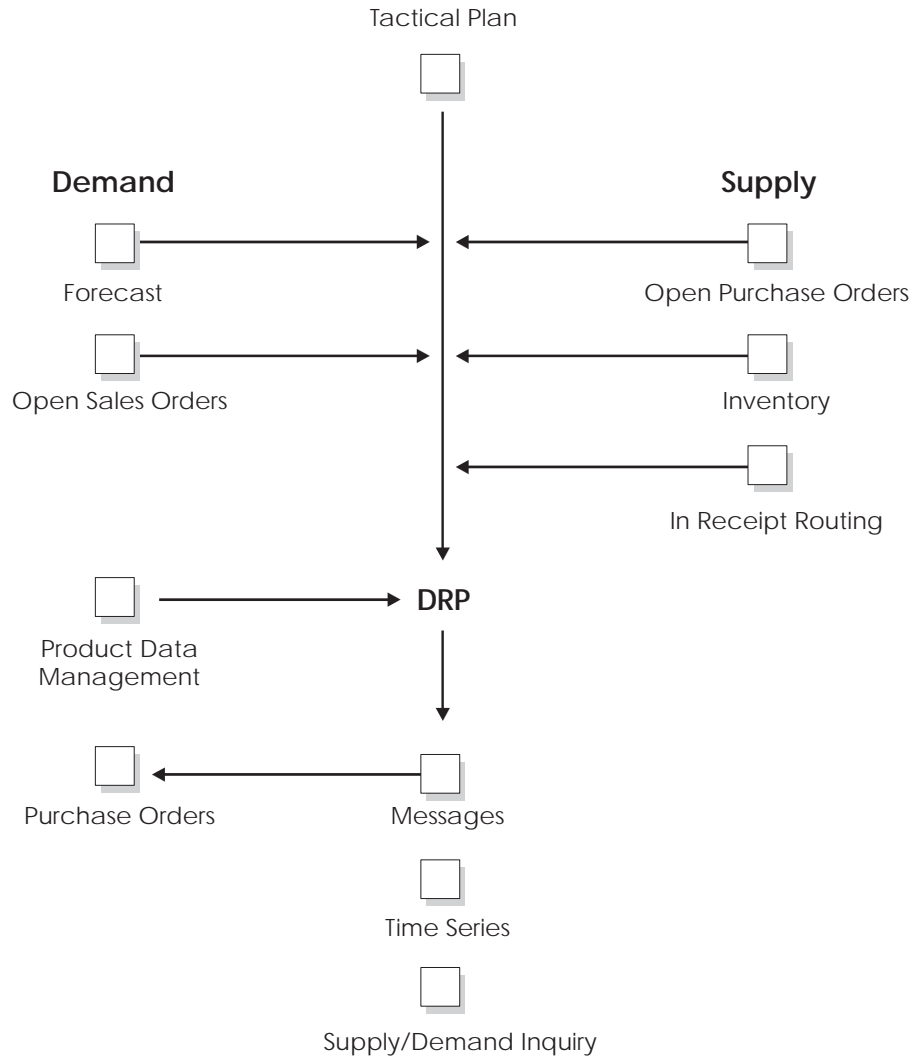
- Understanding time fences and system messages
- Generating single level master schedules
- Understanding forecast consumption
- Working with master schedules
- Validating master schedules
- Setting up DRP, MPS, and RCCP
- Processing orders

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## Master Scheduling Applications

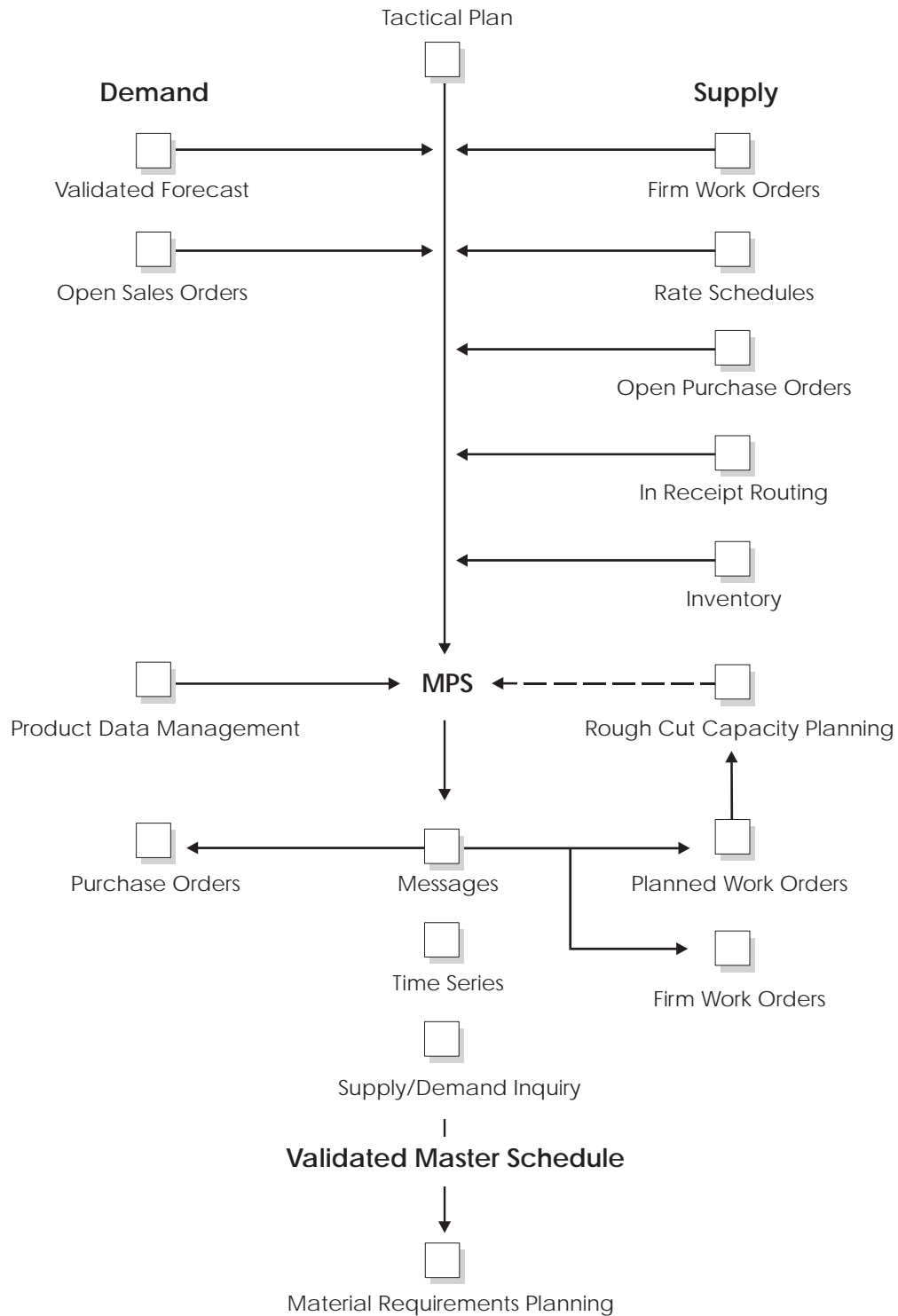
### DRP and Purchased Items

For distribution businesses, DRP provides centralized control of distribution inventories and creates a coordinated replenishment plan.



**MPS and Manufactured Items**

You use MPS to generate the master schedule for manufactured items. J.D. Edwards systems plan replenishment for both purchased items and manufactured items in the same generation program. Processing options control how the system runs the generation.

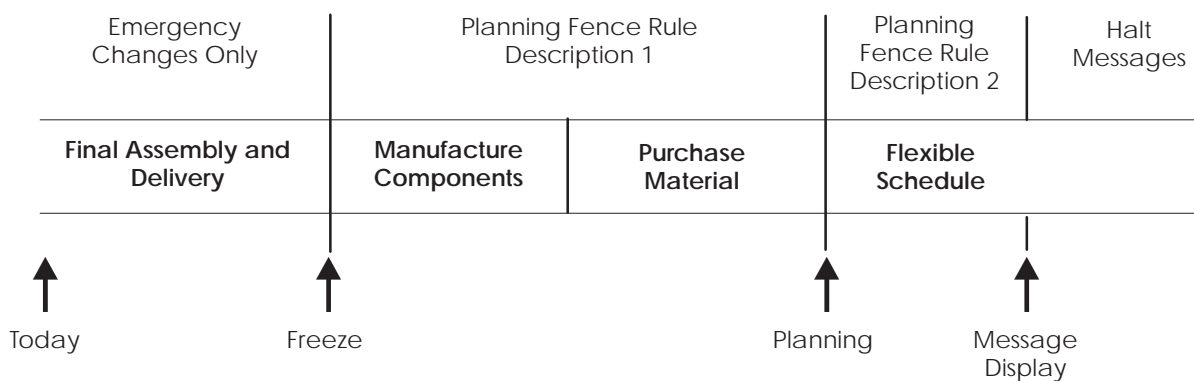


# Understand Time Fences and System Messages

## About Time Fences

Time fences are points in time in which you can make changes to either policy or operating procedures. J.D. Edwards software includes three fences:

- Freeze
- Planning
- Message Display



### Freeze Fence (F)

A freeze fence holds, or freezes, the master schedule. In doing so, the system does not generate any planned orders from the current date to the number of days set in the field. This enables the master scheduler to review the schedule and make adjustments manually if required. The system allows the schedule to be “frozen.”

In addition, the system does not generate any messages that require action on existing work orders (such as an expedite message) within the frozen period of time. It displays warning action messages.

J.D. Edwards recommends that you set this fence at a point in time in which you need to freeze the MPS, depending on the nature of your product and the nature of the business environment.

### **Planning Fence (P)**

A planning fence controls how the system uses the demand from forecast and customer orders in the ending available (EA) calculation. This fence also indicates where the method used to calculate ending available inventory changes from the demand rule in “Description 1” to “Description 2.”

For planning purposes, J.D. Edwards recommends that you set the planning fence at a point from the current date that equals at least 1-1/2 times the cumulative leadtime. This will depend upon the business environment and the nature of the product. Once inside the planning fence, you have committed resources to the product line.

### **Message Display Fence (D)**

A message display fence suppresses action messages beyond the number of days that you selected from the current date. When you set this fence, calculations are not affected.

J.D. Edwards recommends that you set the message display fence at the point in which you do not need to act on action messages, depending on the cumulative leadtime of the product and the business environment.

## What Are Time Fence Rules?

When you use a planning time fence rule that calculates an ending available that is based on the greater of forecast or customer demand, the forecast is “consumed.” For rules C and G, this means that the forecast is reduced by the amount of the customer demand on that same time bucket. The system displays all adjusted and unadjusted values. In the previous table, this applies to rules C, G, and H.

J.D. Edwards software uses the following planning time fence rules:

### **Rule C**

Description 1

Customer demand

Description 2

Whichever is greater, forecast or customer demand

### **Rule F**

Description 1

Forecast

Description 2

Forecast plus customer demand

<b>Rule G</b>	Description 1 Whichever is greater, forecast or customer demand Description 2 Forecast
<b>Rule H</b>	Description 1 Whichever is greater, forecast or customer demand  When you use planning fence rule H, J.D. Edwards recommends that you set the Planning Fence field on the Plant Manufacturing Data form to the end of the planning horizon.
<b>Rule S</b>	Description 1 Customer Demand Description 2 Forecast
<b>Rule 1</b>	Description 1 Zero Description 2 Forecast
<b>Rule 3</b>	Description 1 Zero Description 2 Forecast plus customer demand

### What Are the Time Series Calculations?

The Manufacturing and Distribution Planning systems provide four different time series calculations. These are:

- Ending Available
- Available to Promise
- Cumulative Available to Promise
- Forecast Consumption

**Example: Ending Available Calculation**

Ending Available (EA) is the amount of product available at the end of a time bucket after the system calculates the effect of all supplies and all demands for the time bucket.

The system uses the planning time fence rule and the following formula to calculate the ending available amount:

- Add within the time bucket:
  - Beginning Available (+BA)  
 For the first weekly time period, +BA = quantity on hand – safety stock  
 For remaining time periods, +BA = Ending Available from the previous time period (=EA)
- Subtract according to the planning time fence rule:
  - Forecast (-FCST)
  - Customer Demand (sales orders and interplant demand)
- The remainder is the ending available (EA)

The following table shows how the system calculates the amount of product available at the end of a time period. Assume that the Lot Size = Lot for Lot, Safety Stock = 20, Planning Time Fence Rule = C, and L/T = 1.

	<b>Periods</b>							
On Hand = 80	1	2	3	4	5	6	7	8
+BA	80	60	45	45	20	20	20	20
-FCST	20	20	20	20	20	20	20	20
-SO	20	15		40			45	
-PO								
=EA	60	45	45	20	20	20	20	20
+DRP				15	20	20	45	20
(Order Start)			15	20	20	45	20	



### Example: Available to Promise Calculation

Available to Promise (ATP) is the uncommitted portion of a company's inventory or planned acquisitions. You use this amount to accurately promise customer orders.

As long as manufacturing produces according to the MPS and sales makes commitments according to the ATP information, this method increases customer service and reduces inventory carrying cost.

Available to Promise uses actual customer orders to identify inventory that might be promised to a customer. The planning time fence rule has no effect on ATP. Forecast is never included in ATP calculations.

The system uses the following formula to calculate the ATP quantity:

- First period ATP = on-hand balance – safety stock + work orders + purchase orders + planned orders – sales orders – work order parts list demand – interplant demand – unconsumed expired lot quantities.
- After the first period, ATP = work orders + purchase orders + planned orders – sales orders – work order parts list demand – interplant demand – unconsumed expired lot quantities.

The system does not display negative ATP for following periods. However, the system reduces the Cumulative Available to Promise (CATP) by the negative amount.

### Example: Cumulative Available To Promise Calculation

Cumulative Available to Promise (CATP) is a running total of the ATP.

For new products or seasonal products, building inventory might be part of the management strategy. In these cases, sales and marketing might not be expected to sell within the replenishment buckets. The bulk of sales might not be in the near future.

The system calculates CATP as follows:

- First period CATP = beginning available + replenishment – sum of customer orders and parent demand before the next replenishment.
- After the first period, CATP = CATP from last period + replenishment – sum of customer orders and parent demand before the next replenishment.

CATP does not assume complete depletion. Rather, the system continues to add inventory.

The following table shows how the system calculates CATP. Assume that the Lot Size = Fixed, 60 Safety Stock = 0, Planning Time Fence Rule = C, and L/T = 1.

Periods								
On Hand = 80	1	2	3	4	5	6	7	8
+BA	80	50	25	55	45	25	50	30
-FCST	20	20	20	20	20	20	20	20
-SO	30	25	30	10		35		
+PO								
=EA	50	25	-5	45	25	-10	30	10
+DRP			60			60		
ATP	25		20			25		

## About System Messages

After you generate DRP/MPS output, the system creates action messages that:

- Alert the master scheduler of possible adverse conditions
- Display action recommendations that the master scheduler can process

The system displays messages by type. You can identify which items require attention based on the following message types:

- A** Warning Message
- B** Order and Expedite
- C** Cancel
- D** Defer
- E** Expedite
- F** Frozen
- G** Increase Order Quantity To
- H** Decrease Rate Quantity To
- I** Increase Rate Quantity To
- L** Decrease Order Quantity To

<b>M</b>	Manual Reminder
<b>N</b>	Create Rate
<b>O</b>	Order
<b>P</b>	Firm Order
<b>S</b>	FPO Adjustment Suggestion
<b>T</b>	Past Due Order



# Generate Single Level Master Schedules

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## Generating Single Level Master Schedules

You can regenerate a master schedule for a single item or all items. When you generate a master schedule, the system evaluates selected information, performs calculations, and recommends a time-phased planning schedule for all selected items. You should run MPS weekly, at a minimum, to keep the plan current.

You can use net change processing to include only items that have changed since the last generation. Use Net Change Review to determine which items to include in the net change generation.

Complete the following tasks:

- Generate a master schedule for all items
- Review items for master schedule selection
- Generate a master schedule for selected items

### Before You Begin

- Generate a forecast for independent demand items. See *Generating Detail Forecasts* in the *Forecasting Guide*.

### Net Change Flag Update

The net change flag in the Item Branch table (F4102) is activated by any transaction that causes a change in supply or demand during the next MRP run. Examples include:

- You have taken action on an order message, and the quantity, start date, or requested date changes.
- You have taken action on an Expedite or Defer message, and the recommended start date or recommended requested date is processed.
- You cancel an order.

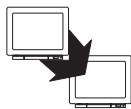
### Net Change Flag Control

The following is a list of programs that automatically activate the net change flag:

<b>Parts List Revisions</b>	Any addition, change, or deletion activates the flag for that item. If a branch is changed for an item, the system updates both old and new locations.
<b>Parts List Substitutes</b>	Any selection activates the flag for both the selected item and the item being substituted.
<b>Work Order Entry</b>	Any addition or deletion activates the flag for the item. If you change an item request date or quantity, the system activates the flag for the item. If an item status changes to 99, and the quantity ordered is not equal to the quantity completed, the system activates the flag for that item. If a branch is changed for an item, both the old and new locations are updated.
<b>Work Order Inventory Issues</b>	The flag is activated only on overissues.
<b>Work Order Inventory Completions</b>	If an item status changes to 99, and the quantity ordered is not equal to the quantity completed, the system activates the flag for that item.
<b>Inventory Adjustments</b>	The system activates the flag for any item whose inventory has been adjusted.
<b>Inventory Transfers</b>	When inventory is transferred from one branch to another, the system activates the flag for the affected items in both locations.
<b>Bill of Materials Master</b>	Any addition or deletion of a component item activates the flag for the parent of the changed component. If the item, quantity per, scrap, or effectivity dates change for any component item, the system activates the flag for the parent of that component.
<b>Message Where Used Update</b>	Any change to a component item activates the flag for the parent of the changed component.

<b>Detail Message Review</b>	If you take action on an order message and the quantity, start date, or request date changes, the system activates the flag for the item. If you take action on an expedite or defer message and the recommended start date or recommended request date changes, the system activates the flag for the item.
<b>Forecast Revisions</b>	Any addition, change, or deletion activates the flag for the affected item.
<b>Manufacturing Data Revisions</b>	Any addition, change, or deletion activates the flag for the affected item.
<b>Repost Open Quantities</b>	A repost cancels the commit component inventory on work orders that have a status equal to the status indicated in the processing option (usually status 99).
<b>Leadtime Rollup</b>	This program can change critical manufacturing data in the Item Branch table.
<b>Sales Order Entry</b>	Any addition, change, or deletion activates the flag for the affected item.
<b>Purchase Order Entry</b>	Any addition, change, or deletion activates the flag for the affected item.
<b>Net Change Review</b>	Any manual update to the Net Change field activates the flag for the affected item.

## Generating a Master Schedule for All Items



From Material Planning Operations (G34), choose Single Site Planning

From Single Site Periodic Planning (G3422), choose DRP or MPS Regeneration

DRP and MPS regenerations use the same report writer to produce a single level DRP or MPS schedule for all items that meet the data selection criteria. The program:

- Reads the selected forecast or sales orders
- Uses data from the DRP/MPS/MRP inclusion rules to calculate requirements for master planned items
- Does not explode planned orders to the bill of material components

You can also generate a master schedule for items using forecast consumption planning rule H. Forecast consumption occurs when forecasted demand is reduced by actual sales orders received or shipped up to the forecasted quantity. By consuming the forecast, you can revise your production schedules to reflect the most up-to-date information.

Before the program generates a schedule, it deletes the message and time series tables for the selected items.

### See Also

- *Understand Forecast Consumption*

### Data Selection

Base your selection on branch/plant, category codes (usually Master Planning Family), and planning code. Any selection from based-on table fields can be processed.

### Data Sequence



Copy the data sequence from the DREAM Writer example. Do not change this sequence or unpredictable results might occur.

### Processing Options for Master Planning Schedule

#### BUCKET INFORMATION:

1. Enter the Generation Start Date. \_\_\_\_\_  
(Default is current date)
2. Enter the number of past due periods, (0, 1 or 2). \_\_\_\_\_  
(Default is 0)
3. Enter the planning horizon periods. \_\_\_\_\_  
(maximum of 52 periods):
  - a. Days (e.g. 5 ) \_\_\_\_\_
  - b. Weeks (e.g. 25) \_\_\_\_\_
  - c. Months (e.g. 6 ) \_\_\_\_\_

#### GENERATION DEFINITION:

4. Enter the Generation Mode: \_\_\_\_\_
  - 1 - Net Change
  - 2 - Gross Regeneration
5. Enter the Generation Type: \_\_\_\_\_
  - 1 - Single Level MPS/DRP
  - 2 - Planning Bill
  - 3 - Multi Level MPS Items
  - 4 - MRP with/without MPS
  - 5 - MRP with Frozen MPS

#### PHANTOM ITEMS:



6. Enter a '1' to generate messages and time series records for phantoms. \_\_\_\_\_

ON HAND ADJUSTMENTS:

7. Enter a '1' to decrease beginning available by safety stock quantity. \_\_\_\_\_

8. Enter the lot hold codes (up to 5) to be considered on hand, or enter an '\*' to consider all held lots as on hand. If left blank, held lots will not be considered on hand. \_\_\_\_\_

9. Enter a '1' by the following Receipt Routing quantities to be considered on hand.

- a. Quantity in Transit \_\_\_\_\_
- b. Quantity in Inspection \_\_\_\_\_
- c. User Defined Quantity 1 \_\_\_\_\_
- d. User Defined Quantity 2 \_\_\_\_\_

NOTE: Any quantity not included will be placed in the On Receipt bucket.

DAMPER DAYS:

10. Enter the Defer Damper days, (no defer message if less than 'X' number of days). \_\_\_\_\_

11. Enter the Expedite Damper days, (no expedite message if less than 'X' number of days). \_\_\_\_\_

SAFETY LEADTIME:

12. Enter the purchased item leadtime days. \_\_\_\_\_

13. Enter the manufactured item leadtime days. \_\_\_\_\_

FORECASTING INFORMATION:

14. Enter the Forecast Types to include. Up to 5 types can be included.

- a. Forecast Type \_\_\_\_\_
- b. Forecast Type \_\_\_\_\_
- c. Forecast Type \_\_\_\_\_
- d. Forecast Type \_\_\_\_\_
- e. Forecast Type \_\_\_\_\_

15. Enter the Forecast Type for MPS to create when using Planning Bills. \_\_\_\_\_

RATE BASED SCHEDULING INFORMATION:

16. Enter the Schedule Type for rate based items. (Default is 'AC') \_\_\_\_\_

17. Enter a '1' to extend rate based adjustments to lower level items. \_\_\_\_\_

18. Enter status code used to denote closed rates. (Default is 99) \_\_\_\_\_

PURCHASE ORDER INFORMATION:

19. Enter the Document Type for purchase orders. (Default is 'OP') \_\_\_\_\_

### WORK ORDER INFORMATION:

20. Enter the Document Type for work orders. (Default is 'WO')

---

21. Enter the Work Order Status at which messages will no longer be exploded to lower level items. If left blank, all messages will be exploded to lower level items.

---

### INCLUSION RULES:

22. Enter the Version of Supply/Demand Inclusion Rules to be used.

---

### PERFORMANCE ISSUES:

23. Enter a '1' to initialize the MPS/MRP Print Code. This code is used for selecting records during the MPS/MRP print.

---

(See glossary for MRPD.)

NOTE: If left blank, the run time of the generation will be reduced.

24. Enter the User Defined Code Type that contains the list of quantity types to be calculated & written to the Time Series file (F3413). User Defined Code 34/QT contains a master list of quantity types that can be written and will be used as the default.

---

25. Enter '1' to clear the DRP/MPS/MRP files before a Regeneration. This option should be used with EXTREME CAUTION. It will totally clear the following files:

---

F3411 - Message Detail File

F3412 - Pegging File

F3413 - Time Series File

NOTE: If a '1' is entered, it will improve performance and clean up any bad data in the files.

### PROCESS PLANNING:

26. Enter a '1' to generate planning in Process Mode.

---

NOTE: If left blank, the run time of the generation will be reduced.

### LOT EXPIRATION:

27. Enter a '1' to consider lot expiration dates in calculations.

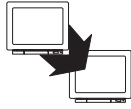
---

### FORECAST CONSUMPTION PROCESSING:

28. Enter a '1' to use Forecast Consumption logic.

---

## Reviewing Items for Master Schedule Selection



From Material Planning Operations (G34), choose Single Site Planning

From Single Site Periodic Planning (G3422), choose Net Change Review

Use the Net Change Review program to review items that have changed, either through certain planned or unplanned activities, throughout the Manufacturing and Distribution Planning systems. You can locate a selected group of items by planner number, planning family, branch/plant, and specific planning codes. You can access related time series, inventory, and scheduling information forms for any of the items.



This program allows you to set the net change flag. Secure the program so that only a few people, such as master scheduling supervisors, have access.

### ► To review items for master schedule selection

On Net Change Review

Spt	Chg	Item	Description
Y	DRP1		Napa Valley Cassette Box
Y	DRP2		Napa Valley CD Box
Y	DRP3		Napa Valley VCR Box

To locate the items for net change generation, complete the following fields:

- Branch/Plant
- Master Planning Family

Field	Explanation
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>

### Processing Options for Net Change Summary

Enter the default Planning Code to display or "\*" equals all.

---

### Generating a Master Schedule for Selected Items



From Material Planning Operations (G34), choose Single Site Planning

From Single Site Periodic Planning (G3422), choose DRP or MPS Net Change

DRP and MPS net change use the same batch program as the DRP and MPS regenerations. You can further define the data selection to include only specific items on the Net Change Review form. When you run DRP Net Change or MPS Net Change, the system:

- Evaluates selected information
- Performs calculations
- Generates a time series and messages for the selected items

The system bases item selection from Net Change Review on the following types of activities:

- Bill of material changes
- Inventory transactions
- Forecast adjustments
- Work order changes
- Purchase order changes
- Leadtime rollup that results in new leadtime values
- Sales order changes
- Changes in parent order requirements

You should run Net Change on a regular basis to continually update your schedule. The program writes to the Action Message, Pegging, and Time Series tables. You can view the information that is generated by this program online by using the time series and message review programs.

### See Also

- *Generating Master Schedules for All Items (P3482)* for the processing options for this program

### Data Selection Values

The data selections are similar to the DRP/MPS generation, except for the net change flag. Set this flag to '1' to select items that have changed since the last generation of the program.



# Understand Forecast Consumption

---

## About Forecast Consumption

Forecast consumption is based on the assumption that actual sales orders reduce, or “consume,” the forecasted quantities. The plan begins with an estimate (forecast). Actual orders are placed that consume the estimate. Forecast consumption compares and uses the greater of forecast or sales orders in the calculation.

Forecast consumption periods (FCPs) are user defined and are stored in the Forecast Consumption Periods table (F3405). Within a FCP, the system processes sales orders against the consumed forecast (quantity type of -FCSU) on a first-in, first-out (FIFO) basis. The system creates additional time periods if the forecast consumption periods end dates do not coincide with the time series period end dates.

The additional forecast consumption time periods are incremental to the number of time periods identified in the Distribution Requirements Planning, Master Production Schedule, and Material Requirements Planning generation program. The total for all time periods cannot exceed 52.

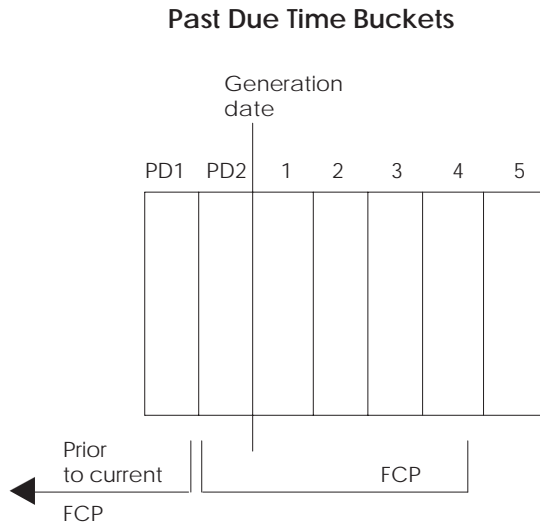
The system only applies the forecast consumption calculations if you set the appropriate processing option.

To use a master schedule with forecast consumption, you must understand the following:

- Past due time buckets
- Planning horizon time periods
- Forecast consumption calculation

## Past Due Time Buckets

You can set the number of past due buckets to 1 or 2.



- The first past due bucket (PD2) includes all activity that is scheduled to occur before the current generation date but within the current forecast consumption period.
- The second past due bucket (PD1) includes all activity that is scheduled to occur before the beginning of the current forecast consumption period.

If you use at least one past due period, the system calculates unconsumed quantity for the first time bucket as follows:

- Past due forecasts (-FCST prior to the generation date, but after the forecast consumption beginning date) are consumed by:
  - Past due sales orders (sales orders that have not shipped), but are within the forecast consumption period.
  - Sales orders that have been shipped within the forecast consumption period, but prior to the generation date.
- Any remaining -FCST is added to the -FCST in the first bucket that is not past due.



## Planning Horizon Time Periods

You can specify both forecast consumption and time series period end dates on the Forecast Consumption Periods form. You specify the number of daily, weekly, and FCP periods included in the planning horizon in the processing option for the DRP/MPS regeneration program. The system does not allow more than 52 total time series and forecast consumption period buckets.

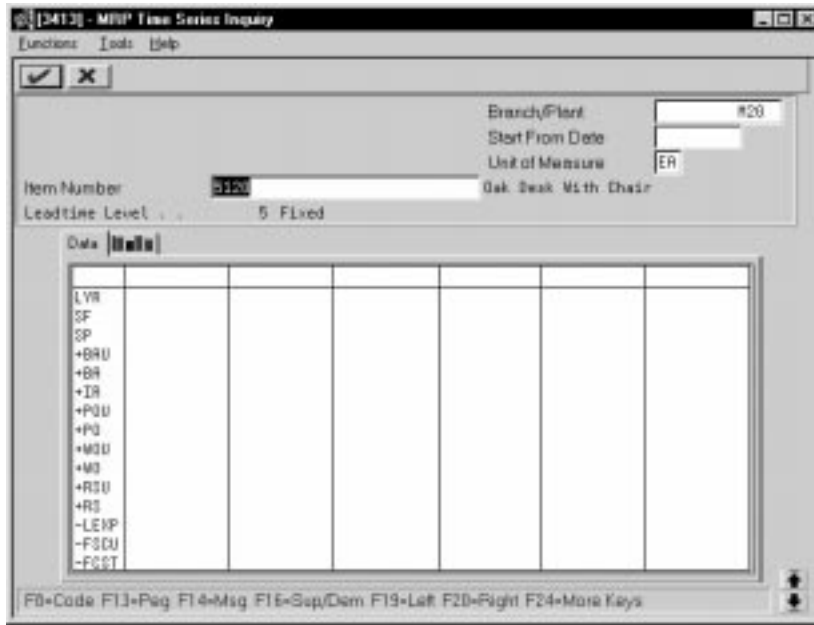
If you specify a number of planning horizon weeks in the processing options and the time series end does not coincide with a forecast consumption period end, the system creates another time series bucket to reflect the forecast consumption period.

If you define the forecast consumption periods by month and the forecast consumption period end does not coincide with the month end date in the Shop Floor Calendar, the system displays the forecast consumption date (not the month end date) as a time series bucket.

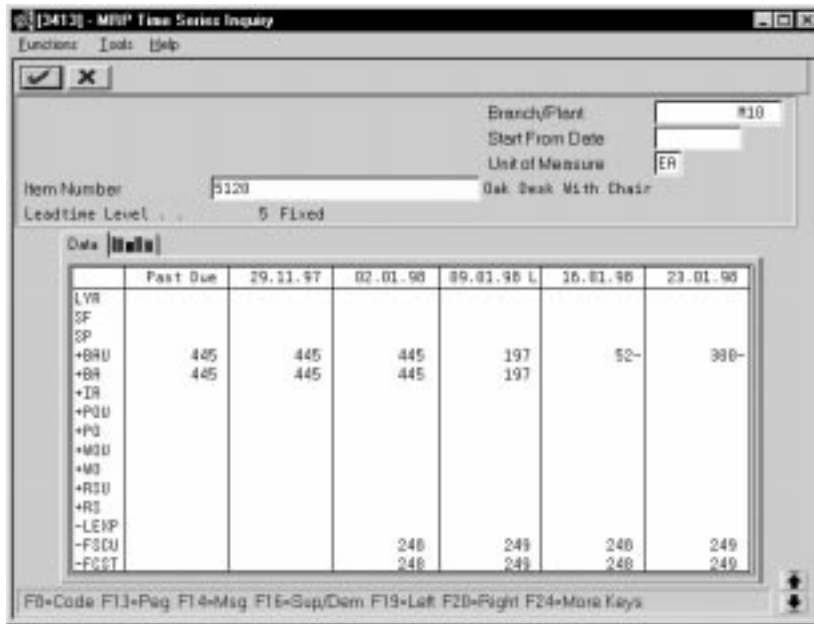
You can set a processing option so that the system highlights all the forecast consumption periods on Time Series Inquiry. This helps you differentiate between the time series and the forecast consumption periods.

The following example illustrates the forecast at the end of the forecast consumption period. Note that:

- The 1/23/98 sales orders consume the forecast that is placed at the end of the forecast consumption period.
- The system subtracts quantity type -SO from quantity type -FSCU to calculate the quantity type -FCST ( $1242 - 290 = 952$ ).
- The beginning available (+BA) for 1/30/98 is 155, so a planned order of 797 is suggested ( $952 - 155 = 797$ ).



The following example illustrates a weekly forecast spread over a monthly consumption period. The sales order (290) is greater than the forecast for the time series period ending 01/23/98 (249). However, the planned order is for 249. Sales are subtracted from the forecast within the FCP, not within the time series period.



## Forecast Consumption Calculation

You define forecast consumption periods to represent a period in which selected forecasts are partially, fully, or over-consumed by sales orders. This allows you to include more than one time series bucket in calculating the forecast consumption. That is, you can designate a longer period of time (the forecast consumption period) for the system to compare the gross forecasts to the combined gross sales and shipments.

Forecast consumption uses the Planning Fence Rule H. With forecast consumption processing, the system uses the following quantity types:

<b>-FCSU</b>	Forecast for a specific item from the detail forecast table
<b>-SOU</b>	Actual sales orders from the sales order detail table
<b>-SO</b>	Sales orders that exceed the forecast displays only when -SO is greater than -FCST
<b>-SHIP</b>	Shipments that occur within the forecast consumption period
<b>-FCST</b>	Unconsumed forecast
<b>+WO, +PLO</b>	Replenishment orders that cover the greater of forecast or actual orders over the FCP.

In the following example, work orders for 50 and 150 units are open. The forecast is positioned at the beginning of the forecast consumption period, and the shipped quantity (140) consumes some of the forecast ( $1242 - 140 = 1102$ ). Work order messages suggest expediting and increasing the existing work order from 50 on 01/16/98 to 657 on 01/02/98. This balances supply with demand on 01/02/98.

The sales order positioned after the forecast does not consume the forecast. A separate supply (the work order on 01/23/98) covers the sales order.

The screenshot shows the SAP MRP Time Series Inquiry window for Item Number 5120. The window title is '5120 - MRP Time Series Inquiry'. The 'Branch/Plant' is #30, 'Start From Date' is blank, and 'Unit of Measure' is EA. The 'Leadtime Level' is 5 Fixed. The item description is 'Oak Desk With Chair'. The data table below shows consumption values for various categories over time.

	Past Due	02.01.98	09.01.98 L	16.01.98	23.01.98 H	30.01.98
LVR						
SF						
SP						
+BRU	445	445	657-	657-	687-	457-
+BR	445	445				
+IR						
+POU						
+PO						
+MOU				58	150	
+MO		657				
+RSU						
+RS						
-LEXP						
-FSDU		1242				
-FCST		1192				

Building planned orders to the forecast at the beginning of the forecast consumption period minimizes expediting.

**See Also**

- *Setting Up Forecast Consumption Periods (P3405)*
- *Understand Time Fence Rules and System Messages*

# Work with Master Schedules

---

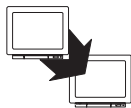
## Working with Master Schedules

DRP/MPS output consists of information in the time series and action messages. Use the time series information to decide whether to accept the planning that is suggested by the system or to override it. You should review the action messages for individual item numbers to determine which action, if any, to take.

Working with the master schedule consists of the following tasks:

- Reviewing DRP/MPS time series
- Reviewing planning families
- Working with messages
- Adding a freeze code to a purchase order
- Adding a freeze code to a work order

## Reviewing DRP/MPS Time Series



From Material Planning Operations (G34), choose DRP

From DRP Daily Operations (G3411), choose DRP Time Series

Alternatively, to review information for Master Production Schedule, choose Daily MPS from the Material Planning Operations menu. Then, choose MPS Time Series from the MPS Daily Operations menu.

Use the DRP or MPS time series inquiry programs to review the master schedule. This is a record of time-phased supply and demand netting for selected items. This data is derived from the most recent generation or net change run. Use processing options in the DRP/MPS generation program to set up daily, weekly, or monthly time periods (buckets).

When you review a time series, you can:

- Review the following information for an item:
  - MPS adjusted and unadjusted quantities
  - Time-phased inventory activity in any unit of measure
  - Available to promise quantities in any valid unit of measure
- Identify the following information:
  - Time fences and item level leadtime
  - Cumulative leadtime occurrences
  - Manufacturing leadtime occurrences
- Choose rows of information to select, suppress, or both
- Toggle between two different quantity type displays that you specify in user defined code quantity lists
- Run an online single item DRP or MPS generation
- Summarize the following:
  - All demand lines into one DEM line
  - All supply lines into one SUP line
- Choose the following:
  - Supply/Demand Inquiry, to view all actions that affect the item's quantities
  - Pegging Inquiry, to determine from where higher level demands are being generated
  - Message File Revisions, to review message detail and take any appropriate actions
  - Manufacturing Data Revisions, to verify item setup details
  - Detail Forecast Revisions, to review item forecasts and sales history
  - Rate Schedule Revisions, to review item rate schedules

To review the time series, complete one of the following tasks:

- Review DRP time series
- Review MPS time series

## Quantity Types for DRP and MPS

Use the DRP or MPS Time Series Inquiry form to review the quantity types that the system has generated for the master schedule.

When you access DRP or MPS Time Series/ATP Inquiry, you can display different quantity types for the master schedule by creating a new user defined code table and changing the processing option to display this new table. You can also display two different tables, such as adjusted and unadjusted quantities, by changing the processing options.

Each table displays only those items that are pertinent to its application. For example, table 34/DR displays only those data items applicable to DRP items. If the code is not defined in table 34/DR, it will not appear on the DRP Time Series/ATP Inquiry form or report. DRP and MPS calculations are not affected by the appearance of this code.

If you do not specify a particular user defined code list, all quantity types display. However, the time series calculation is not affected by the quantity types that are not pertinent to the application.

### Valid Quantity Types for DRP

The following lists the valid quantity types and descriptions that are defined for DRP in user defined code table 34/DR:

<b>+BA</b>	+ Beginning Available
<b>+IR</b>	+ In Receipt Routing
<b>+PO</b>	+ Purchase Orders
<b>-LEXP</b>	- Lot Expired
<b>-FCST</b>	- MPS/Forecast
<b>-SHIP</b>	- Shipped Quantity
<b>-SO</b>	- Sales Orders
<b>-ID</b>	- Interplant Demand
<b>=EA</b>	= Ending Available
<b>+DRP</b>	+ Distribution Requirements Plan
<b>ATP</b>	Available to Promise
<b>CATP</b>	Cumulative Available to Promise

### Valid Quantity Types for MPS

The following lists the valid quantity types and descriptions that are defined for MPS in user defined code table 34/MS:

<b>+BAU</b>	+ Beginning Available (Unadjusted)
<b>+BA</b>	+ Beginning Available
<b>+IR</b>	+ In Receipt Routing
<b>+POU</b>	+ Purchase Orders (Unadjusted)
<b>+PO</b>	+ Purchase Orders
<b>+WOU</b>	+ Work Orders (Unadjusted)
<b>+WO</b>	+ Work Orders
<b>+RSU</b>	+ Rate Schedule (Unadjusted)
<b>+RS</b>	+ Rate Schedule
<b>-LEXP</b>	- Lot Expired
<b>-FCSU</b>	- MPS/Forecast (Unadjusted)
<b>-FCST</b>	- MPS/Forecast
<b>-SHIP</b>	- Shipped Quantity
<b>-SOU</b>	- Sales Orders (Unadjusted)

### What You Should Know About

<b>Period quantities</b>	Period quantities are either: <ul style="list-style-type: none"><li>• Adjusted — assumes that the user will process the messages.</li><li>• Unadjusted — assumes that the action messages will not be processed. The U at the end of quantity types indicates that period quantities are unadjusted.</li></ul>
<b>Time series calculation</b>	When you use a planning time fence rule that calculates the ending available that is based on the greater of forecast or customer demand, such as G, C, or H, the forecast is consumed. This means that the forecast is reduced by the amount of the customer demand in that same period.
<b>ATP unadjusted calculation (ATPU)</b>	Unadjusted ATP assumes that no action messages have been processed.
<b>Negative ATP/ATPU</b>	After you run the MPS generation, ATP/ATPU that have a negative value appear blank on the Time Series/ATP Inquiry form, except for the first period.



**Cumulative available to promise unadjusted (CATPU) calculation**

The following calculation assumes the user has not acted on the messages:

- CATPU = running total of ATPU

If ATPU is negative inside the planning time fence, then the system displays the resulting CATPU, whether it is positive or negative, in all previous time periods.

**Suppressing blank lines**

You can use a function key to suppress the quantity types that have no data in them.

**Graphic display**

You can choose to display the time series in a graph format.

► **To review DRP time series**

On DRP Time Series/ATP Inquiry

To locate the time series for your item, complete the following fields:

- Branch/Plant
- Item Number

▶ **To review MPS time series**

---

On MPS Time Series Inquiry

The screenshot shows a window titled 'MPS Time Series Inquiry'. It contains a form with the following fields: Branch/Plant (value: #30), Start From Date (empty), Unit of Measure (value: EA), Item Number (value: 5120), and Leadtime Level (value: 5 Fixed). Below the form is a data table with the following structure:

	Past Due	02.01.98	09.01.98 L	16.01.98	23.01.98 H	30.01.98
LVR						
SF						
SP						
+BRU	445	445	657-	657-	687-	457-
+BR	445	445				
+IR						
+POU						
+PO						
+MOU				58	150	
+MO		657				
+RSU						
+RS						
-LEXP						
-FDCU		1242				
-FCST		1182				

At the bottom of the window, there is a legend: F0=Code F13=Page F14=Msg F15=Sup/Dem F19=Left F20=Right F24=More Keys.

To locate the time series for your item, complete the following fields:

- Branch/Plant
- Item Number

## Processing Options for Time Series

ITEM RECALCULATION:

1. Enter the Dream Writer version to use when submitting single item MPS/MRP/DRP recalculation. If left blank, version ZJDE0001 will be used. \_\_\_\_\_

PAST DUE PERIODS:

2. Enter the number of past due periods. (0, 1, or 2 are allowed values. 0 is the default.) \_\_\_\_\_

VALUES TO DISPLAY:

3. Enter the User Defined Code for the list of row descriptions to appear. (Required) \_\_\_\_\_
4. Enter the User Defined Code for the list of alternate rows to appear when using the row toggle function key. (Optional) \_\_\_\_\_

SUPPLY/DEMAND SUMMARY:

5. Enter a '1' to summarize the supply lines into one line and the demand lines into one line. \_\_\_\_\_

VERSIONS TO EXECUTE:

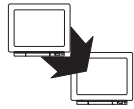
Enter the Dream Writer version to use for each program listed. If left blank, version ZJDE0001 will be used.

6. MPS/MRP/DRP Message Inq. (P3411) \_\_\_\_\_
7. Supply/Demand Inquiry (P4021) \_\_\_\_\_
8. Detail Forecast Revisions (P3460) \_\_\_\_\_
9. MPS/MRP/DRP Pegging Inq. (P3412) \_\_\_\_\_
10. Rate Schedule Revisions (P3104) \_\_\_\_\_

FORECAST CONSUMPTION PROCESSING

11. Enter '1' to process using Forecast Consumption Period logic \_\_\_\_\_

## Reviewing Planning Families



From Material Planning Operations (G34), choose DRP

From DRP Daily Operations (G3411), choose DRP Planning Family Review

After you generate DRP/MPS, you can review all item numbers that have messages. You can display the list of items that have messages using the following filters:

- Branch/Plant
- Thru Date
- Planning Code
- Message Type
- Stocking Type
- Planner Number
- Buyer Number
- Master Planning Family

▶ **To review planning families**

On Planning Family Review

Opt	Item	Description	Outstanding
	DRP1	Napa Valley Cassette Box	00000000000000+
	DRP2	Napa Valley CD Box	00000000000000+
	DRP3	Napa Valley VCR Box	00000
	NPDRP	Napa Valley Soft Side CD Case	
	NPDRPST01	Napa Valley Soft Side CD Case	
	NPDRPST02	Napa Valley Soft Side CD Case	
	NPDRPST03	Napa Valley Soft Side CD Case	
	NPDRPST04	Napa Valley Soft Side CD Case	
	NPDRPST05	Napa Valley Soft Side CD Case	
	NPDRPST05	Napa Valley Soft Side CD Case	

Opt: 1=Msg 2=Mfg Dta 3=Aut 4=TS 5=Cost F10=Del F24=More Keys

To locate your planning family, complete the following fields:

- Branch/Plant
- Master Planning Family

### Processing Options for Planning Family Review

MPS TYPE CODES:

1. Enter the MPS Type Code to be displayed or a '\*' for all MPS Types. \_\_\_\_\_

MANUFACTURING SCHEDULING WORKBENCH:

2. Enter the version of Manufacturing Scheduling Workbench to be used. Default is ZJDE0001. \_\_\_\_\_

MESSAGE FILE REVISIONS:

3. Enter the version of Message File Revisions to be used. Default is ZJDE0001. \_\_\_\_\_

ITEM AVAILABILITY:

4. Enter the version of Item Availability to be used. Default is ZJDE0001. \_\_\_\_\_

TIME SERIES:

5. Enter the version of Time Series to be used. Default is ZJDE0001. \_\_\_\_\_

DETAIL FORECAST MAINTENANCE:

6. Enter the version of Detail Forecast Maintenance to be used. Default is ZJDE0001. \_\_\_\_\_

SUPPLIER SCHEDULING REVISIONS:

7. Enter the version of Supplier Schedule Revisions to be used. Default is ZJDE0001. \_\_\_\_\_

SUPPLIER MASTER:

8. Enter the version of Supplier Master to be used. Default is ZJDE0001. \_\_\_\_\_

PURCHASE ORDER ENTRY:

9. Enter the version of Purchase Order Entry to be used. Default is ZJDE0001. \_\_\_\_\_

PURCHASE ORDER GENERATION:

10. Enter a '1' to default the tax area from the "Ship-To" address book number. If left blank, the tax area will be defaulted from the "Supplier" address number. \_\_\_\_\_

### Working with Messages

As an alternative to processing messages using Planning Family Review, you can access the messages directly using the Detail Message Review program.

Working with messages consists of the following tasks:

- Reviewing detail messages
- Processing work order messages
- Processing purchase order messages

Work order messages on Detail Message Review have an order type of WO. Purchase order messages on Detail Message Review have an order type of OP.

The action messages for DRP/MPS/MRP are defined in user defined code list 34/MT. The character codes are hard-coded. Do not change the character codes in this list.



Depending on the organization of your company, the person working with the DRP/MPS/MRP action messages should coordinate with Shop Floor or Purchasing personnel before taking action on messages affecting these departments.

### What You Should Know About

#### **Placing messages on hold**

You can place a message on hold so that the system does not change the message during the next generation (for example, to preserve a manual reminder). Because the system does not indicate that a message is on hold, J.D. Edwards recommends that you add a planner remark that indicates the message is on hold.

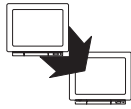
#### **Clearing messages**

You can remove a message from Detail Message Review if you do not choose to process it. To view the message again after it has been removed, enter a Y in the Cleared field.

#### **Deleting messages**

You can delete any message that you have reviewed but did not process.

## Reviewing Detail Messages



From Material Planning Operations (G34), choose Daily DRP

From Daily DRP Operations (G3411), choose DRP Detail Message Review

After you generate DRP/MPS, you review the action messages for the individual item numbers. After you review the message, you can place the message on hold, or clear, delete, or process the message.

### ► To review detail messages

On DRP Detail Message Review

DT	Message	Order	TY	Quantity	Required	Planner Remarks
	Order		OP	477	01/02/98	
	Order		OP	520	02/02/98	
	Order		OP	520	03/02/98	
	Order		OP	520	04/01/98	
	Order		OP	520	05/01/98	
	Order		OP	520	06/01/98	
	Order		OP	520	07/01/98	

Complete the following fields to locate the messages for the item:

- Branch/Plant
- Item Number

## Processing Work Order Messages



From Material Planning Operations (G34), choose Daily DRP

From Daily DRP Operations (G3411), choose DRP Detail Message Review

After you review the messages, you can process them. When you process a message, the system creates work order headers in the Work Order Master table (F4801) and assigns work order numbers. No parts list or routing is attached at this time.

After you process the work order messages, the master schedule is firm through the date that the orders were processed. These firm orders will not be automatically replanned in subsequent MPS generations.

### ► To process work order messages

On DRP Detail Message Review

D	Message	Order	Ty	Quantity	Required	Planner Remarks
R	Warning Mess				01/02/98	Shop Calendar not Setup
R	Warning Mess	2452	MO	150	01/23/98	W.O. is Missing Parts List
R	Warning Mess	2541	MO	20	06/01/98	W.O. is Missing Parts List
D	Defer	2452	MO	150	01/23/98	
E	Expedite	2420	MO	50	01/16/98	Req'd Start before Beginning
E	Expedite	133920	MO	40	07/01/98	
F	Frozen Ord	2541	MO	20	06/01/98	Frozen Order
G	Increase Ord	2420	MO	657	01/16/98	Manual Adjustment Necessary
G	Increase Ord	133920	MO	902	07/01/98	Manual Adjustment Necessary
O	Order		MO	1882	03/02/98	
O	Order		MO	1827	04/01/98	
O	Order		MO	1853	05/01/98	

1. To locate the message for the item, complete the following fields:
  - Branch/Plant
  - Item Number
2. To process the message, choose the appropriate selection option.





Based on the message type, the system processes the work order as follows:

- Released
- Canceled
- Deferred
- Expedited
- Increased

## What You Should Know About

### **Processing messages**

When you process a message, the system removes it from the Detail Message Review form. To view the message again, enter a Y in the Cleared field and scroll to the end of the message list.

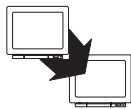
### **Fixed order quantity (FOQ)**

When you use FOQ, MPS/DRP does not generate an Increase message for an existing order to cover demand. Instead, the system generates Order messages in multiples of FOQ as needed to cover the demand.

### **Order status**

When you create or update an order, you can modify the status to indicate the stage of production. To do so, enter a new status in the Status field in the fold area. The system displays this field only for those messages that are related to order processing.

## Processing Purchase Order Messages



From Material Planning Operations (G34), choose Daily DRP

From Daily DRP Operations (G3411), choose DRP Detail Message Review

You can process a purchase order message using one of following methods:

- Process a single action message without blanket order checking or consolidation
- Process one or more action messages with blanket order checking
- Process messages using purchase order consolidation to place more than one item on a purchase order
- Process purchase order messages using a planning family
- Process messages using the Supplier Scheduling system

J.D. Edwards recommends that you set up different versions of the previous methods to expedite processing messages. That is, set up one version to process a single action message without blanket order checking or consolidation, another version to process one or more action messages with blanket order checking, and so on.

Complete the following tasks:

- Process a single action message
- Process messages using consolidation
- Cancel items on a purchase order

Depending on how you set the processing option for the DRP/MPS generation program, the program creates either a purchase requisition (OR) or a purchase order (OP). The program places a user ID on the purchase order and uses the system date as the date that the purchase order was created.

In addition, the program creates the purchase order in the purchasing unit of measure, even though the action message displays the primary unit of measure. The program makes the proper unit of measure conversions. After the next DRP/MPS regeneration, the quantities associated with processed messages appear in the time series display on the +PO quantity type row.

Processing messages will firm that portion of the DRP/MPS replenishment plan. Subsequent DRP/MPS regeneration will not change the timing or quantities associated with previously processed messages. However, if the new regeneration finds a mismatch between the supply and demand quantities or dates, the program issues a message recommending realignment of the existing +POs.

### What You Should Know About

**Processing messages using blanket order checking**

A processing option controls whether the system verifies the existence of a blanket order for the item you are processing. If the part has any open blanket orders, the system displays the Blanket Order Release form in the Purchasing system. The system releases the amount that you are processing against the blanket order.

**Consolidating multiple item numbers**

You can consolidate several order lines for the same supplier into one purchase order. Do this by setting a processing option for DRP Detail Message Review.

**Process messages using a planning family**

You can process messages by family using DRP Planning Family Review. After you select all the items that you want to process, DRP Detail Message Review appears for each item that you selected. Process the messages for each item in the same way you process messages using consolidation.

**Freezing purchase orders**

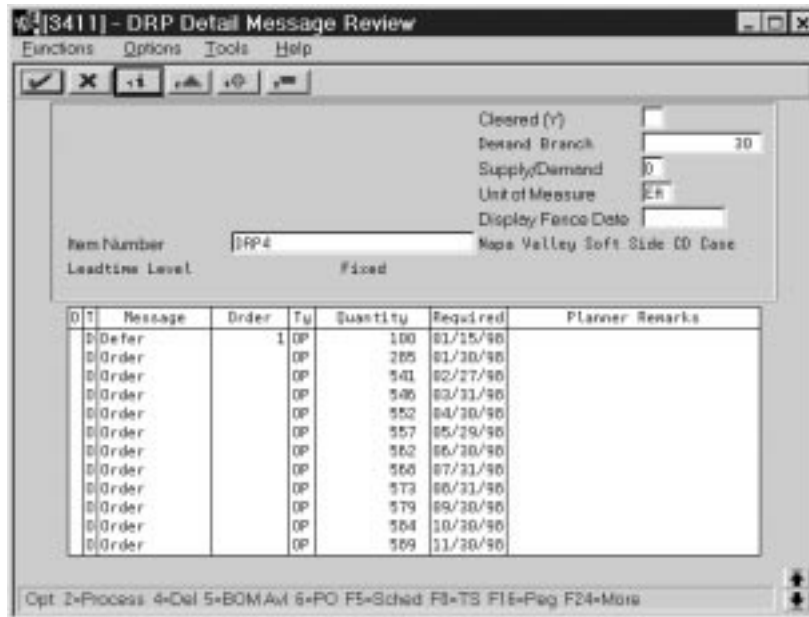
When you sign a purchasing contract with a supplier, you can freeze purchase orders in time and quantity so that DRP/MPS does not generate any action messages to change orders.

**See Also**

- *Processing Orders (P31410)*
- *Generating Supplier Schedules (P3482)* for information on processing messages using this system
- *Reviewing Planning Families (P3401)*

**► To process a single action message**

On Detail Message Review



1. Complete the following required fields:
  - Demand Branch
  - Item Number
2. Enter the selection option next to the message that you want to process.
3. To process the message, accept the record.
4. Exit the program.

The system displays Suppliers Selected For Order.



Supplier	Supplier Name		Branch	Type
4343	Vector Manufacturing C	8,310.80	38	SP

5. On Suppliers Selected For Order, choose the selection option to create the order.

The system assigns a purchase order number and displays it in the Order field.

6. To close the window, choose the appropriate selection option.
7. To display the message you processed, complete the following field:
  - Cleared

### ► To process messages using consolidation

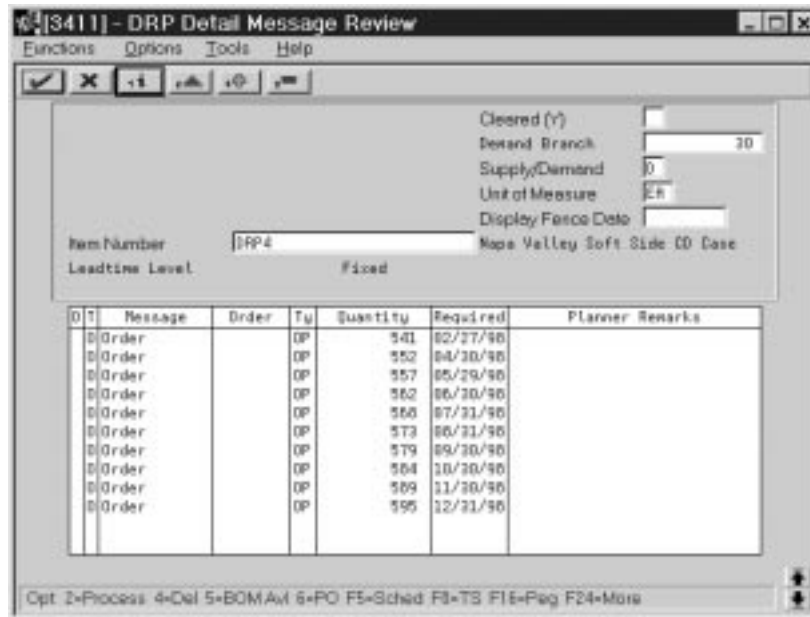
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The system creates one purchase order header with as many detail line items as necessary. Dates correspond to the messages. If a part has more than one supplier, you can change the supplier number in the message detail area. The system produces a purchase order for each supplier.

On DRP Daily Operations

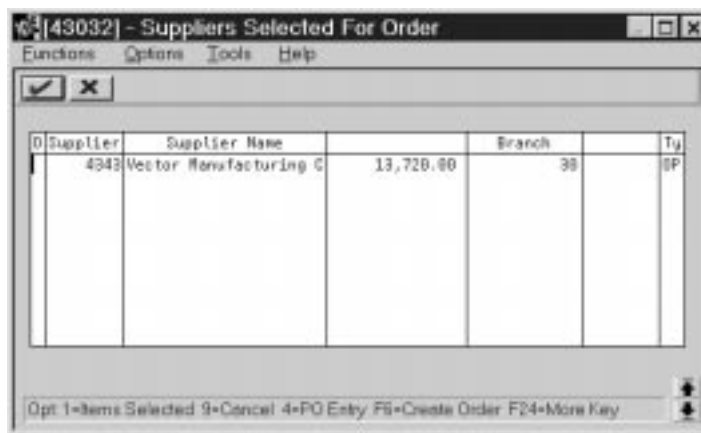
1. Access the processing options for DRP Detail Message Review.
2. To consolidate all messages for the same supplier into one purchase order, set the appropriate processing option.

3. Choose DRP Detail Message Review.



4. On DRP Detail Message Review, complete the following required fields to locate the messages for the item:
  - Demand Branch
  - Item Number
5. Enter the selection option next to the messages that you want to process.
6. To process the messages, accept the record.
7. Exit the program.

The system displays Suppliers Selected For Order.



8. On Suppliers Selected For Order, choose the selection option next to the suppliers for whom you want a purchase order created.

9. To create the purchase order, choose the appropriate selection option.

The system assigns a purchase order number and displays it in the Order field.

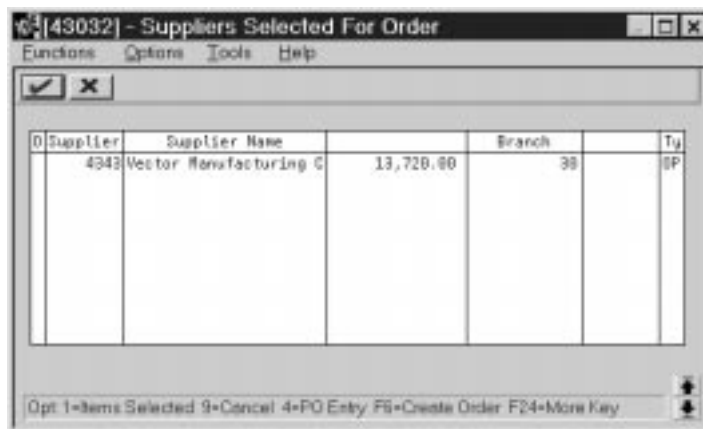
10. To close Suppliers Selected For Order, choose the appropriate selection option.
11. To display the messages you processed, complete the following field:
  - Cleared

### ► To cancel items on a purchase order

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If there are items that you do not want to include, you can delete them from the purchase order.

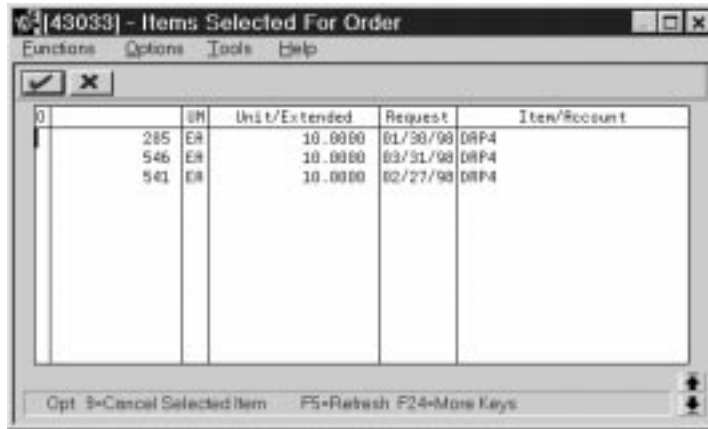
On Suppliers Selected For Order



Supplier	Supplier Name	Amount	Branch	Ty
4343	Vector Manufacturing C	13,728.00	39	SP

1. Enter the selection option next to the supplier for whom you want items to be canceled.

The system displays Item Selected For Order.



The screenshot shows a window titled "[43033] - Items Selected For Order". It has a menu bar with "Functions", "Options", "Tools", and "Help". Below the menu bar is a toolbar with a checkmark icon and an "X" icon. The main area contains a table with the following data:

Item	Unit/Extended	Request	Item/Account
285	EA 10.0000	01/30/98	DRP4
546	EA 10.0000	03/31/98	DRP4
541	EA 10.0000	02/27/98	DRP4

At the bottom of the window, there is a status bar with the text "Opt 9=Cancel Selected Item F5=Refresh F24=More Keys" and a scroll bar.

2. On Items Selected For Order, enter the selection option next to the items that you want to cancel.

The corresponding message reappears as an unprocessed message on DRP Detail Message Review.

3. Accept the record.
4. To close Items Selected For Order, choose the appropriate selection option.

## Processing Options for Message File Revisions

### PURCHASE ORDER INFORMATION:

1. Enter a '1' to consolidate all messages for a supplier on one purchase order. \_\_\_\_\_
2. Enter the version of Purchase Order Entry (P4311) to be called. (Default is ZJDE0001) \_\_\_\_\_
3. Enter the version of Open Purchase Orders (P430301) to be called. (Default is ZJDE0001) \_\_\_\_\_
4. Enter the version of the Supplier Master to be called. (Default is ZJDE0001) \_\_\_\_\_

### WORK ORDER INFORMATION:

5. Enter the status for Cancelled Orders. \_\_\_\_\_
6. Enter the version of Work Order Entry (P48013) to be called. (Default is ZJDE0001) \_\_\_\_\_
7. Enter the version of Open Work Orders (P31225) to be called. (Default is ZJDE0001) \_\_\_\_\_

### BLANKET ORDER INFORMATION:

8. Enter the Document Type associated with Blanket Orders. If left blank open blanket orders will not be used. \_\_\_\_\_
9. Enter the version of Blanket Order Release (P43060) to be called. (Default is ZJDE0001) \_\_\_\_\_

### PEGGING INQUIRY:

10. Enter the version of Pegging Inquiry (P3412) to be called. (Default is ZJDE0001) \_\_\_\_\_

### SUPPLY AND DEMAND INQUIRY:

11. Enter the version of Supply and Demand Inquiry (P4021) to be called. (Default is ZJDE0001) \_\_\_\_\_

### RATE SCHEDULE REVISIONS:

12. Enter the version of Rate Schedule Revisions (P3104) to be called. (Default is ZJDE0001) \_\_\_\_\_

### TIME SERIES:

13. Enter the version of Time Series (P3413) to be called. (Default is ZJDE0001) \_\_\_\_\_

### BILL AVAILABILITY:

14. Enter the version of Bill Availability (P30205) to be called. \_\_\_\_\_



(Default is ZJDE0001)

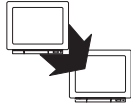
TRANSFER ORDERS:

- 15. Enter the version of Transfer Order Entry (P4242) to be called.  
(Default is ZJDE0001)

SUPPLY/DEMAND DEFAULT:

- 16. Enter the default mode for viewing Supply/Demand Branch Messages:  
 D - Demand Branch in header  
 S - Supply Branch in header  
 If left blank, the data dictionary default is used.

## Adding a Freeze Code to a Purchase Order



From Stock Based Purchasing (G43A), choose Purchase Order Processing

From Purchase Order Processing (G43A11), choose Enter Purchase Orders

You can freeze the time and quantity values in the purchase order so that DRP/MPS does not generate any action messages to change the order. You freeze purchase orders before negotiations are final or when a purchasing contract has been signed with a supplier.

### ► To add a freeze code to a purchase order

On Enter Purchase Orders

The screenshot shows the 'Enter Purchase Orders' window with the following details:

- Mode (F):  Base Co
- Currency Code: USD
- Branch/Plant: 30
- Order Date: 05.05.98
- Exchange Rate: [Blank]
- Cancel Date: [Blank]
- Q/L Date: 05.05.98
- Order Number: 2004
- Supplier: 8283 Vector Manufacturing Co
- Ship To: 1862 Memphis Warehouse #38
- Requested: 05.05.98
- Promised: 05.05.98
- Amount: \$17.80
- Cost P/In: [Blank]
- Skip To Line #: [Blank]

Item Number	Quantity	Unit Cost	Extended Cost	LT	U
8FF001	5	11,3200	56,60		
SSN005	36	0,9900	35,64		
SF001	3	63,7900	191,25		
PD04	10	8,3500	83,50		
EN001	1	61,9500	61,95		
E002	5	17,7900	88,95		

Footer: F6=Summary F15=PO Header F24=More Keys Opt 1=Detail 3=Text 5=Del

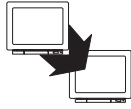
1. To locate your purchase order, complete the following fields:
  - Branch/Plant
  - Order Number
2. On the item line, enter the option to access Purchasing Information.



3. On Purchasing Information, complete the following field to identify the purchase order as frozen:
  - Freeze Code

Field	Explanation
Order Number	The number that identifies an original document. This can be a voucher, an order number, an invoice, unapplied cash, a journal entry number, and so on.
Freeze Code	A code that indicates if the order is frozen. MPS/MRP will not plan for frozen orders.  Valid codes are: Y Yes, freeze the order N No, do not freeze the order (Default)

## Adding a Freeze Code to a Work Order



From Shop Floor Control (G31), choose Discrete – Daily Order Preparation

From Daily Order Preparation – Discrete (G3111), choose Enter/Change Order

You can freeze the time and quantity values in the work order so that DRP/MPS does not generate any action messages to change the order. You freeze work orders when the order is within the freeze time fence.

### ► To add a freeze code to a work order

On Enter/Change Order

Item Number	5120	Order Number	133928 WO
Description	M.B. - Schenkling Dyk Desk With Chair	Requested	31.07.98
Status Comment		Qty Ordered	40 EA
Line/Cell		Qty Completed	
Bill Type	M Standard Manufacturing Bt	Qty Scrapped	
Routing Type	M Standard Manufacturing R	Shit	
Type		Branch/Plant	M30
Status	10 New Order	Lot/SH	
Priority		Charge to CC	M30
Category Code 1		Cost Code	
Category Code 2		Start Date	24.06.98
Category Code 3		W.O. Date	28.03.98
Reference		Completed	
Planner	9200 Bobson, Jane	Parent W.O. No	
Supervisor		Revision Level	
Customer		Freeze Code	
Description	Dyk Desk With Chair	Associated SO	

- To locate the work order, complete the following field:
  - Work Order Number
- To identify the work order as frozen, complete the following field:
  - Freeze Code



### Exercises

See the exercises for this chapter.



# Validate Master Schedules

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## Validating Master Schedules

After you create the master schedule, validate it to ensure that you have sufficient work center capacity. Use the Rough Cut Capacity Planning (RCCP) batch program to generate capacity planning information.

In the J.D. Edwards software, the same batch program generates capacity planning information for both RCCP and Capacity Requirements Planning (CRP). The only difference is in the work centers that you identified in the data selection.

The system uses the following inputs to RCCP:

- Firm MPS work orders and routing instructions
- Planned MPS work orders and routing instructions

If critical work centers appear in the routings of component work orders that are generated by Material Requirements Planning (MRP), then the system can also include MRP orders in RCCP, because both RCCP and CRP use the same batch program.

The system generates the following outputs from RCCP:

- Over-capacity and under-capacity messages
- Work center load
- Work center load graph
- Period summary

Rough Cut Capacity Planning consists of:

- Identifying critical work centers
- Identifying the pacing resource for critical work centers
- Calculating the rated capacity for critical work centers
- Calculating the MPS load for critical work centers

The pacing resource for critical work centers is either labor or machine, depending on which one would increase the work centers' capacity. A work center is paced by labor if adding additional employees to the work center increases capacity. A work center is paced by machine if adding machines adds capacity.

Validating the master schedule consists of the following tasks:

- Generating Rough Cut Capacity Plans
- Reviewing work schedules on Production Status
- Reviewing rate schedule and work center loads

### What You Should Know About

**Revising resource units** The resource units indicate the hours that are associated with a work center for each workday on the Work Day Calendar. The system uses this information to backschedule work orders in the Shop Floor Control system and to calculate available hours for capacity planning. You can manually enter or revise resource unit information for each work center and for each workday using the Enter/Change Resource Units program.

**Recalculating work center hours** Use the Refresh Resource Units program to recalculate the work center hours. You can use this program only for processing data. It does not produce a printed report. However, you can view the results of the most recent refresh operation on Work Center Resource Units.

## Generating Rough Cut Capacity Plans



From Resource & Capacity Planning (G33), choose Periodic Rough Cut Capacity

From Periodic Resource/Capacity Planning (G3321), choose Rough Cut Capacity Planning

Use the Rough Cut Capacity Plan (RCCP) to compare prospective MPS resource requirements to the capacity available in critical work centers. RCCP indicates if you should revise the master schedule to create feasible work loads or improve use of limited resources.

## Before You Begin

- Report hours and quantities for operations that are complete or partially complete to ensure that the figures for Released Load remaining for existing work orders are correct. See *Working with Hours and Quantities* in the *Shop Floor Control Discrete Manufacturing Guide*.
- Verify that resource units exist for all critical work centers in your generation. See *Setting Up Resource Units* in the *Shop Floor Control Discrete Manufacturing Guide*.
- Set up supply and demand inclusion rules for RCCP. See *Setting Up Supply and Demand Inclusion Rules*.
- Run Master Production Schedule. See *Generating Supplier Schedules*.

## What You Should Know About

### Reviewing RCCP

After you generate RCCP, you can review the capacity load to determine if you need to change capacity or the scheduled load.

### Reviewing work center load

Use Review Work Center Load to display the loads and capacity information for the work center that you select. The information is dependent on the Prime Load code that you entered for the work center on Work Center Revisions.

Use the Work Center Load Graph program to view the load versus rated capacity (percent) bar chart for a work center. The numbers across the top are the percent of the rated capacity consumed by load during that period. The information is dependent on the Prime Load code that you entered for the work center on Work Center Revisions.

### Reviewing period summary

Use Review Period Summary to review specific items that make up the capacity load for a defined period for a work center. You can view the detail of all current and future orders that have been scheduled to enter a work center.

The system summarizes the load by period using the unit of measure that you select. The system also displays the percent of total load planned for that period for an item on an order.

### **Calculating rated capacity**

To calculate rated capacity for critical work centers, the system uses the following standard formula:

- Number of employees (or machines) x hours per day x efficiency factor x utilization factor

You can manually calculate efficiency by dividing standard hours by actual hours. For example, if it takes a crew 10 hours to complete a job that has standard hours established at 8 hours, the crew is working at 80% efficiency ( $8 / 10 = .80$ ).

For reference, the inverse (actual hours / standard hours) is called realization. The goal is to approach 1.0 realization.

Utilization is calculated by finding the number of hours in a day that the work center is actually available for working load to standards. Therefore, 100% use is an unrealistic goal because preventative maintenance, employee breaks, and other typical needs affect utilization.

### **Calculating MPS load**

You calculate the MPS load for critical work centers by using either the routing table for planned work orders (+PLO) or the routing instruction table for firm work orders (+WO) with a routing attached. If the work order is firm (header created) but does not have a routing instruction attached, the system uses the routing table. The formulas for calculating MPS load are:

- Planned orders x pacing hours from the routing table
- Firm orders x pacing hours from the routing instruction table

The entry in the Prime Load Code field in the Work Center Master table determines the type of pacing at the work center.

Operations are backscheduled using the same logic in the Shop Floor Control system. This operation schedule places load into the proper time frame. You must enter the time basis code and order quantity into the equation for load calculation.

The system uses the following formula to calculate the load for an operation:

- Work order quantity x number of packing hours on routing/time basis code

The system generates messages that indicate if your load is either over- or under-capacity.



**See Also**

- *Entering Resource Units Manually (P3007)*
- *Reviewing Dispatch Groups for Resource Requirements Planning (P3301)*
- *Reviewing Period Summaries (P3312)*
- *Reviewing Message Detail (P3311)*
- *Reviewing Work Schedules (P31220)*
- *Reviewing Work Center Loads (P3313)*
- *Reviewing Rate Schedule and Work Center Loads (P31224)*

**Processing Options for CRP/RCCP Regeneration**

1. Enter the percent under rated capacity to generate a Under Capacity Message. \_\_\_\_\_
2. Enter the percent over rated capacity to generate a Over Capacity Message. \_\_\_\_\_
3. Enter the Branch to be processed. \_\_\_\_\_
4. Enter the Version of Supply/Demand Inclusion Rules to use. \_\_\_\_\_
5. Enter the Capacity Mode  
 "2" = Rough Cut Capacity Planning  
 "3" = Capacity Requirements Planning \_\_\_\_\_
6. Back-Scheduling Information:  
 - Enter the Unit of Measure Code \_\_\_\_\_
7. Enter a '1' to Roll the Work Centers into their Dispatch Group. \_\_\_\_\_
8. Enter a '1' to modify the released order quantity and dates using MRP messages. \_\_\_\_\_

## Reviewing Work Schedules on Production Status



From Resource & Capacity Planning (G33), choose Daily Rough Cut Capacity

From Daily Rough Cut Capacity Planning (G3312), choose Production Status

Use Production Status to locate and update work center scheduling information. This workbench environment serves as a starting point for work center scheduling and the release of work to the floor. Use this program to:

- Access work order information, including the header, the parts list, and the routing instructions
- Display work order information, such as work center, remaining labor, and machine and setup hours
- Sort work orders by start date, requested date, or operations status codes
- Change the work order status code, start date, or requested date

### ► To review work schedules on production status

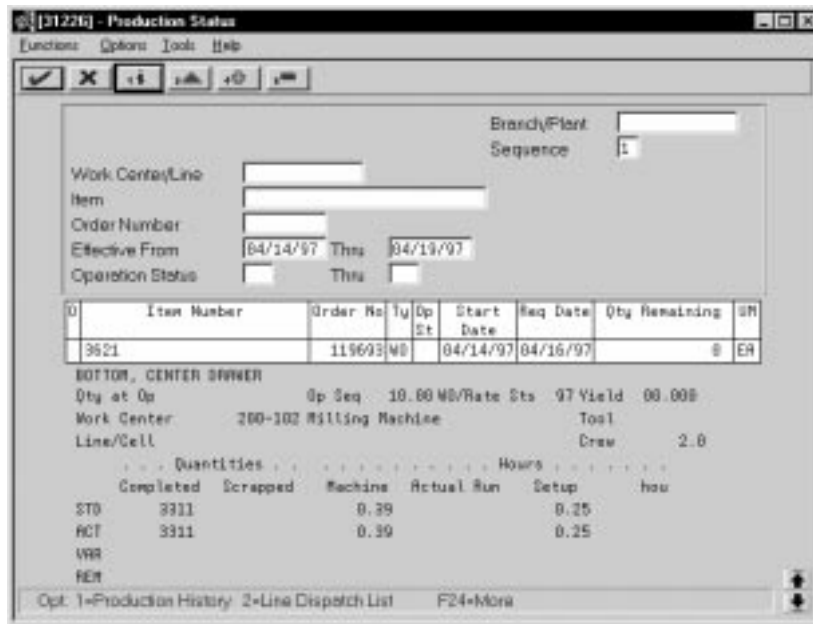
On Production Status

Item Number	Order No	Uo St	Start Date	Req Date	Qty Remaining	UN
3621	119693	MO	04/14/97	04/16/97	0	EA
3621	119693	MO	04/14/97	04/16/97	0	EA
3623	119773	MO	04/14/97	04/16/97	0	EA
3624	119811	MO	04/14/97	04/16/97	0	EA
3992	119992	MO	04/14/97	04/16/97	0	EA
3813	128133	MO	04/14/97	04/16/97	0	EA
3814	128178	MO	04/14/97	04/16/97	0	EA
2434	118709	MO	04/15/97	04/25/97	0	EA
3386	119562	MO	04/15/97	04/17/97	0	EA
3981	119053	MO	04/15/97	04/23/97	0	EA
3988	119651	MO	04/16/97	04/23/97	0	EA
3982	128053	MO	04/16/97	04/23/97	0	EA

1. Complete the following fields:

- Work Center
- Operation Status

2. Complete the following optional field:
  - Sequence
3. For additional information for a work order, access the detail area.



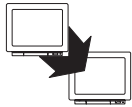
Field	Explanation
Thru Operation Status	A user defined code (system 31, type OS) used as an end point to select work order information to display.
Sequence	A code that determines the sequence in which transactions are displayed. You use the From and Thru Date ranges to select transactions according to the sequence. Valid codes are: <ol style="list-style-type: none"> <li>1 Display work orders in start date order.</li> <li>2 Display work orders in requested date order.</li> </ol>
Machine	This is the actual machine time in hours recorded against the work order.
Setup	The standard setup hours you expect to incur in the normal completion of this item.
Qty Remaining	This is the remaining quantity for an operation. The remaining quantity is calculated by subtracting the quantity completed from the standard quantity.

### Processing Options for Production Status

SCREEN DEFAULTS:

1. Enter defaults for the following:
  - a. From Status \_\_\_\_\_
  - b. Thru Status \_\_\_\_\_
  - c. The number of days prior to  
today's date for the From Date. \_\_\_\_\_
  - d. The number of days after  
today's date for the Thru Date. \_\_\_\_\_

### Reviewing Rate Schedule and Work Center Loads



From Resource & Capacity Planning (G33), choose Daily Rough Cut Capacity

From Daily Rough Cut Capacity Planning (G3312), choose Line Balancing Review

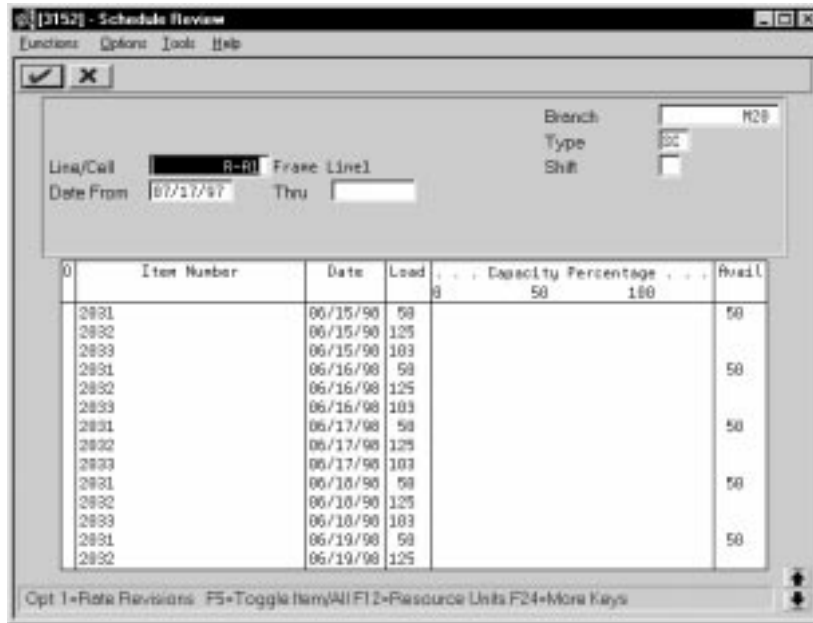
Use Line Balancing Review to review the work scheduled at either a work center or line for a day, week, or month. You can also select a specific date range for which to view the load for the work center. If you need to adjust the scheduled load at the work center, you can access several different forms to make adjustments.

You can use Line Balancing Review for rate scheduled items and as an alternative for viewing load on a work center. A processing option allows you to include work order-generated loads before or after rate loads.

► **To review rate schedule and work center loads**

---

On Line Balancing Review



To locate your work center schedule, complete the following fields:

- Branch/Plant
- Line/Cell
- Date From
- Thru

### Processing Options for Line Balancing Review

SCREEN DEFAULTS:

1. Enter defaults for the following:
  - a. Document Type (Default is 'AC')
  - b. Shift

\_\_\_\_\_

\_\_\_\_\_

DREAM WRITER VERSIONS:

2. Enter the version of Rate Revisions (P3109) to call. If left blank, version 'ZJDE0001' will be used.



### Exercises

See the exercises for this chapter.



# Set Up DRP, MPS, and RCCP

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## Setting Up DRP, MPS, and RCCP

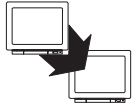
Before you can successfully generate DRP, MPS, and RCCP output, you must define the information to use during processing. The system uses setup information to determine how to select and display data.

You must set up some of this information in other systems, such as Shop Floor Control and Inventory Management.

Complete the following tasks:

- Set up supply and demand inclusion rules
- Set up message types for DRP, MPS, and RCCP
- Set up time fence rules for DRP, MPS, and RCCP
- Set up forecast consumption periods
- Set up a rough cut capacity display

### Setting Up Supply and Demand Inclusion Rules



From Material Planning Operations (G34), enter 29

From Material Planning Setup (G3440), choose Requirements Planning Setup

From Material Planning Setup (G3442), choose Supply/Demand Inclusion Rules

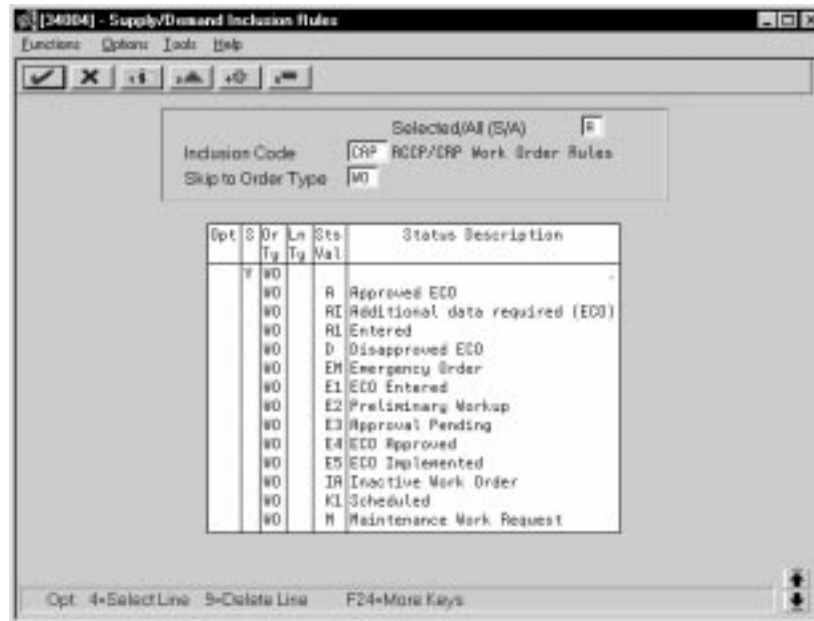
You set up supply and demand inclusion rules to display the supply, demand, and available quantities for an item. The source of these quantities in supply and demand equations are as follows:

<b>On-hand inventory</b>	Quantity on hand - Hard commits - Quantity on sales orders - Quantity on work orders
<b>Purchase orders</b>	+ Open quantity on purchase orders
<b>Manufacturing work orders</b>	+ Quantity entered on work order - Quantity shipped
<b>Safety stock</b>	+ Safety stock
<b>Sales orders</b>	+ Quantity entered on sales order - Quantity shipped - Quantity canceled
<b>Work order requirements</b>	+ Quantity required + Quantity issued
<b>Co-/by-products supply from work orders</b>	+ Quantity ordered - Quantity completed
<b>Co-/by-products supply from rates</b>	+ Quantity Ordered - Quantity completed



► **To set up supply and demand inclusion rules**

On Supply/Demand Inclusion Rules



- To locate the status values for your inclusion code, complete the following fields:
  - Inclusion Code
  - Skip to Order Type
- Choose the work order statuses to include in supply and demand calculations.

Field	Explanation
Inclusion Code	For World, identifies a group of items that the system can process together, such as reports, business units, or subledgers.  For OneWorld, the name of the version. It is created when the version is added.

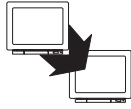
Field	Explanation
Skip to Order Type	<p>A user defined code (00/DT) that identifies the type of document. This code also indicates the origin of the transaction. J.D. Edwards has reserved document type codes for vouchers, invoices, receipts, and time sheets, which create automatic offset entries during 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"> <li>P Accounts Payable documents</li> <li>R Accounts Receivable documents</li> <li>T Payroll documents</li> <li>I Inventory documents</li> <li>O Purchase Order Processing documents</li> <li>J General Accounting/Joint Interest Billing documents</li> <li>S Sales Order Processing documents</li> </ul> <p>..... <i>Form-specific information</i> .....</p> <p>If you are using the Skip to Order Type field, you can enter an order type code and press Enter to display only rules about that order type. To see the whole set of order types included in the resource rules, leave this field blank and use the Roll keys.</p>

### Processing Options for Supply/Demand Inclusion Rules

WORK ORDER DOCUMENT TYPES:

1. Enter the Document Types for Work Order and Rate you want to setup Inclusion Rules for. The document types can be stacked one after the other for multiple document types. If left blank, 'WOAC' will be used.

## Setting Up Message Types for DRP, MPS, and RCCP



From Material Planning Operations (G34), enter 29

From Material Planning Setup (G3440), choose Requirements Planning Setup

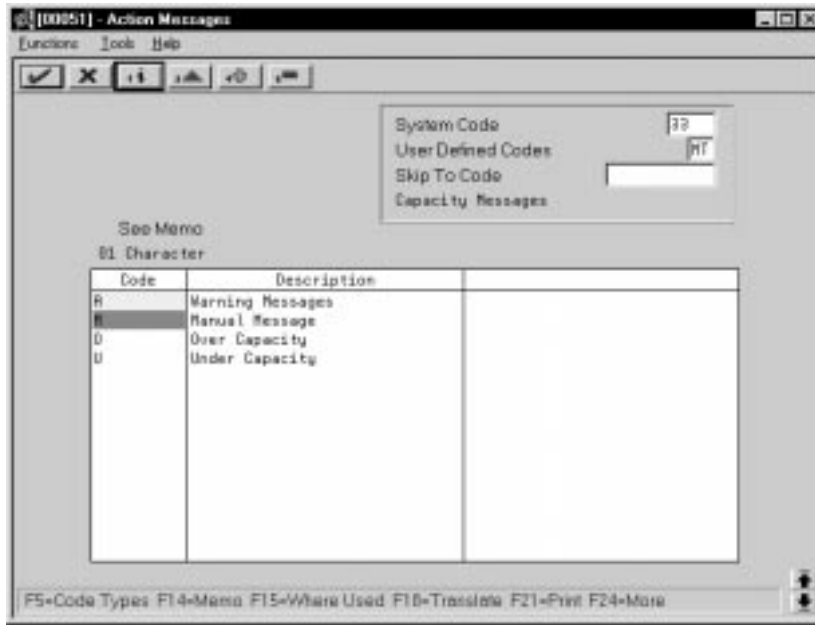
From Material Planning Setup (G3442), choose Action Messages

Message types are already defined for all the messages that the system can create when you generate DRP, MPS, and so on. Because the character code is hard coded, you can change the description, but not the function of the message type.

### ► To set up message types for DRP, MPS, and RCCP

On Action Messages

- To set up an action message, complete the following fields:
  - Code
  - Description
- To locate the action messages for RCCP, enter 33 in the following field:
  - System Code



Field	Explanation
System Code	A user defined code (98/SY) that identifies a J.D. Edwards system.

## Setting Up Time Fence Rules for DRP, MPS, and RCCP



From Material Planning Operations (G34), enter 29

From Material Planning Setup (G3440), choose Requirements Planning Setup

From Material Planning Setup (G3442), choose Time Fence Rules

Time fences are points of time at which you can make changes to either policy or operating procedures. The system supports three time fences:

- Freeze Fence (F)**                      Within this time period, orders are neither created nor replanned.
  
- Planning Fence (P)**                    Within this time period, the system uses demand from the forecast and customer orders to calculate ending available product.
  
- Message Display Fence (D)**            After this time period, messages are neither created nor displayed.

► **To set up time fence rules for DRP, MPS, and RCCP**

On User Defined Code Revisions/Time Fence Rules

Complete the following fields:

- Code
- Description
- Description-2

## Setting Up Forecast Consumption Periods



From Material Planning Operations (G34), enter 29

From Material Planning Setup (G3440), choose Requirements Planning Setup

From Material Planning Setup (G3442), choose Forecast Consumption Periods

You define the end date for each forecast consumption period on Forecast Consumption Periods. The system stores this information in the Forecast Consumption Periods table. The periods apply system-wide. You cannot have different forecast consumption periods for different locations or branch/plants.

The system adds the forecast consumption time periods to the number of time series periods that you specified in the processing options for the DRP/MPS generation program. The total for all time periods cannot exceed 52.

### Before You Begin

- Verify that the following information has been set up:
  - Planning fence rule H in user defined code table 34/TF
  - The order types in user defined code list 40/CF, to include in shipped order calculations
  - The -SHIP quantity type in user defined code list 34/QT, to calculate shipped orders quantity
  - The order types in user defined code list 40/IU, to update inventory (includes order type SO)
  - The Planning Fence Rule field on Plant Manufacturing Data, with a value of H
  - The Planning Fence field on Plant Manufacturing Data, with a value beyond the end of the planning horizon
  - The appropriate processing options in the DRP/MPS generation program

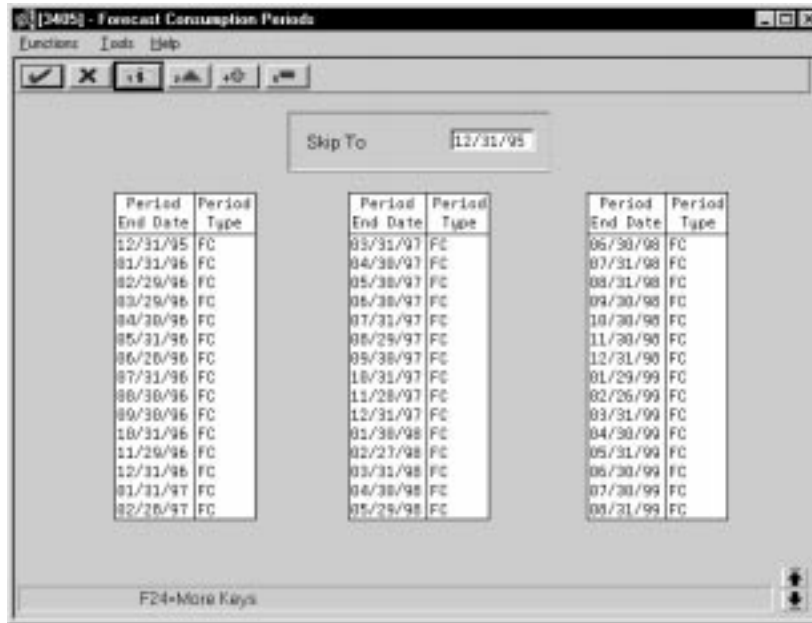


You must set up the planning fence field on Plant Manufacturing Data with a value beyond the end of the planning horizon. (J.D. Edwards recommends a planning fence of 999). If you do not set the planning fence beyond the planning horizon, the batch programs (DRP/MPS/MRP Regeneration and Net Change) will not work properly.

### ▶ **To set up forecast consumption periods**

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On Forecast Consumption Periods

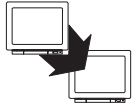


Complete the following fields:

- Period End Date
- Period Type

Field	Explanation
End Date	A date on which the defined period ends.
Period Type	A type of record to be used in conjunction with Forecast Consumption. Valid values are: FC Forecast consumption period TS Time series bucket

## Setting Up a Rough Cut Capacity Display



From Resource & Capacity Planning (G33), enter 29

From Resource/Capacity Planning Setup (G3341), choose Rough Cut Capacity Display

Use Rough Cut Capacity Display to specify row descriptions for RCCP displays and reports. The digit code is hard-coded.

### ► To set up a rough cut capacity display

On Rough Cut Capacity Display

RC Digit	
Code	Description
05	LOAD-INCLUDES SETUP
10	Released Load
20	Planned Load
30	Total Load
35	
40	LOAD VS CAPACITY
50	Gross Capacity
60	Rated Capacity
70	% of Capacity Used
80	Available Capacity
90	Accum. Available Cap.

Complete the following fields:

- Code
- Description



# Process Orders

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## Processing Orders



From Shop Floor Control (G31), choose Daily Order Preparation

From Daily Order Preparation – Discrete (G3111), choose Order Processing

After you run MPS Regeneration or MPS Net Change, use Order Processing to process multiple work orders. The program:

- Attaches the parts list
- Attaches the routing instructions
- Sets an initial order status
- Generates the shop packet, including:
  - Parts list
  - Routing instructions
  - Shop packet summary
  - Component shortages

### Before You Begin

- Verify that work orders have been entered manually or have been processed using the MPS Planning Messages program. See *Generating Supplier Schedules*.

### See Also

- *Processing Work Orders (P31410)* in the *Shop Floor Control Discrete Manufacturing Guide*

### Processing Options for Work Order Generation – Print and Automatic Issue

#### GENERATION INFORMATION:

1. Enter one of the following:
  - 1 - Parts List only
  - 2 - Routing only
  - 3 - Both Parts List and Routing

If left blank, neither Parts List nor Routing will be generated.

2. Enter a '1' to use the W.O. Date for Effectivity checking. (Default is the W.O. Start Date.) \_\_\_\_\_

#### UPDATE INFORMATION:

3. Enter the new Status Code for the Work Order Header. If left blank, status will not be changed. \_\_\_\_\_

#### WORK ORDER PRINT INFORMATION:

4. Enter a '1' to print Work Orders. If printing Work Orders: \_\_\_\_\_

#### PARTS LIST PRINT INFORMATION:

5. Enter a '1' to print Parts List \_\_\_\_\_
6. Enter a '1' to print the 2nd line of information, which is scrap and related work center. \_\_\_\_\_
7. Enter a '1' to print Parts List on a new page. \_\_\_\_\_
8. Enter the DREAM Writer Version of the Parts List to print. If left blank, XJDE0001 is used. (See Form ID P31415.) \_\_\_\_\_
9. Enter a '1' to print a consolidated Parts List. \_\_\_\_\_

#### ROUTING INSTRUCTIONS PRINT INFO:

10. Enter a '1' to print Routing \_\_\_\_\_
11. Enter a '1' to print Routing on a new page. \_\_\_\_\_
12. Enter the DREAM Writer Version to be executed for the desired sequencing of the Routing. If left blank, the operation sequence is used. (See Form ID P314151.) \_\_\_\_\_

#### BACKSCHEDULING INFORMATION:

13. Enter the Unit of Measure for backscheduling. \_\_\_\_\_

#### SHOP PACKET SUMMARY INFORMATION:

14. Enter a '1' to print the Shop Packet Summary. \_\_\_\_\_

#### SHORTAGE REPORT INFORMATION:

15. Enter the DREAM Writer Version of the Shortage Report to execute. If left blank, no shortage report will be printed. (See Form ID P31418.) \_\_\_\_\_

#### BAR CODE INFORMATION:

16. Enter the DREAM Writer Version to be executed for the desired print overrides for Bar Coding. (See Form ID P31413.) \_\_\_\_\_

#### INVENTORY ISSUE INFORMATION:

17. Enter the DREAM Writer Version of Batch Inventory Issues to execute. If left blank, the Inventory Issues program will not be called. (See Form ID P31420) \_\_\_\_\_

PURCHASE ORDER INFORMATION:

(Used for Sub-Contract Routings)

- 18. Enter the Document Type \_\_\_\_\_
- 19. Enter the Line Type \_\_\_\_\_
- 20. Enter the Beginning Status \_\_\_\_\_
- 21. Enter a '1' to default the tax area from the 'Ship-To' address book number. If left blank, the tax area will default from the Supplier address book number. \_\_\_\_\_

SALES ORDER INFORMATION:

- 22. Enter the new Line Type for kit and configured components. This is used to avoid issuing inventory from Sales Order processing. The Line Type used should be inventory interface 'N'. If left blank, Line Type will not be changed. \_\_\_\_\_
- 23. Enter the Next Status for Sales Order kit and configured component lines. (This is used to bypass the normal flow of the order, i.e., Pick Slip.) If left blank, status will not be changed. \_\_\_\_\_
- 24. Enter a '1' to print Sales Order Text lines. \_\_\_\_\_

CONFIGURED ITEM COSTS:

- 25. Enter one of the following options for calculating the standard cost for configured items in the WO Variance file (F3102). \_\_\_\_\_
  - 1 - Always calculate the standard cost.
  - 2 - Only calculate the standard cost if it has not already been done (no variance records exist.)
 If left blank, standard cost will not be calculated.

BOM SUBSTITUTES:

- 26. Enter '1' to allow the use of Bill of Material substitutes in case of a shortage. \_\_\_\_\_

PURCHASING JOURNAL ENTRIES:

- 27. Enter a '1' to load the Work Order Number into the Subledger field of the purchasing J/E's. \_\_\_\_\_

BLANKET/QUOTE PROCESSING:

- 28. Enter a '1' for automatic blanket order release processing. \_\_\_\_\_

BUILD AGAINST PRIOR REVISIONS:

- 29. Enter a '1' to permit building work orders against prior revision levels. The revision level in the work order header (F4801) will be used to select the parts list to attach to the work order. If left \_\_\_\_\_

blank, prior revision level bills  
will not be selected.

### WAREHOUSE PROCESSING:

30. Enter the request processing mode: \_\_\_\_\_  
    1 - Generate requests only  
    2 - Generate requests and process  
        using the subsystem.  
If left blank, requests will not be  
generated.
31. If processing pick requests using \_\_\_\_\_  
the subsystem, enter the DREAM  
Writer version to use. If left  
blank, XJDE0002 will be used.  
(see Form ID P46171)
32. Enter the default staging location \_\_\_\_\_  
for moving goods out of the  
warehouse. The parts picked from  
the warehouse are staged at this  
location prior to use within  
manufacturing. (F1=Location Window)
33. Enter a '1' if the default staging \_\_\_\_\_  
location should be checked for  
availability. If the part is  
available at the staging location  
a request will NOT be generated.  
This option only applies to parts  
without work center locations.
- ### GENERIC TEXT PRINT OPTIONS:
35. Enter a '1' to print component \_\_\_\_\_  
generic text on the Parts List.
36. Enter a '1' to print operation \_\_\_\_\_  
generic text on the Routing.
37. Enter a '1' to update parts list \_\_\_\_\_  
and routing if order quantity or  
dates have changed
38. Enter which symbology to use when \_\_\_\_\_  
using bar codes.  
'1'= Code 3 of 9 (Code 39)  
'2'= Code 128  
' '= Not print bar codes
39. Enter a '1' to prevent commitments \_\_\_\_\_  
for rates.



### Exercises

See the exercises for this chapter.

# Multi-Level Master Scheduling





# Multi-Level Master Scheduling

## Objectives

- To understand planning bills
- To set up order policy rules for reordering inventory
- To classify the types of items that you stock
- To define the percentage of demand for a specified feature based on projected sales
- To generate a multi-level master schedule

## About Multi-Level Master Scheduling

You set up and generate multi-level master schedules to:

- Define demand information on a family basis and make changes as needed
- Define planning bills to acquire the options and features you expect to sell
- Update a product plan with a change in customer demand or design specifications
- Customize your schedule generation to include only the information you require
- Explode planned orders down to component items

Multi-level master schedules support assemble-to-order production and delivery.

When several different material purchasing options are available, your planners can make informed decisions within the available time frame. The system uses planning bills to notify planners when special attention is needed.



Multi-level master scheduling consists of the following tasks:

- Setting up multi-level master schedules
- Generating multi-level master schedules

The system records multi-level master schedule information in the following tables:

<b>Bill of Materials Master (F3002)</b>	Contains warehouse or plant level information about bills of materials, such as costs and quantities of components, features and options, and levels of detail for each bill.
<b>Item Master (F4101)</b>	Contains basic information about each item defined to inventory, such as item numbers, description, alpha description, category codes, and units of measure.
<b>Item Branch (F4102)</b>	Contains warehouse or plant level information, such as costs, quantities, physical location, and branch level category codes.

### What Are Planning Bills?

Planning bills are groups of items in a bill of material format that reflect how an item is sold. Planning bills help you manage the acquisition of a variety of options and features that might be included in a saleable end item.

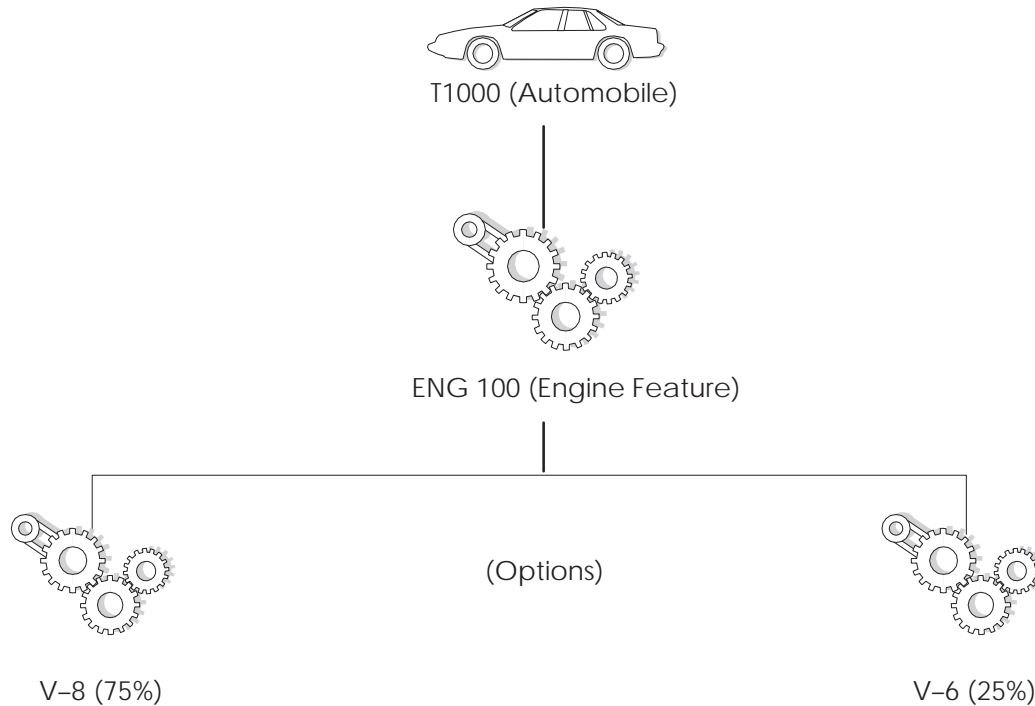
Planning bills allow you to configure a “pseudo” end item. With a pseudo item you don’t have to assign a unique part number or maintain a bill of materials for every combination of options and features that might be included in the end product.

You define planning bills to acquire the options and features in the proportion that you expect to sell. A final assembly schedule coordinates the material selection and assembly after you order the product options.



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An example of this is an automobile with engine options:



A part number can be assigned to the engine feature for planning purposes. Obviously, the two engine options cannot be assembled together, so the engine feature never actually exists in inventory. It is a pseudo item.

The planner does not know which automobile will ship with which engine next month, but the ratio of engines consumed is fairly constant. The above planning bill of material identifies the percentages of each type of engine that you expect to ship.

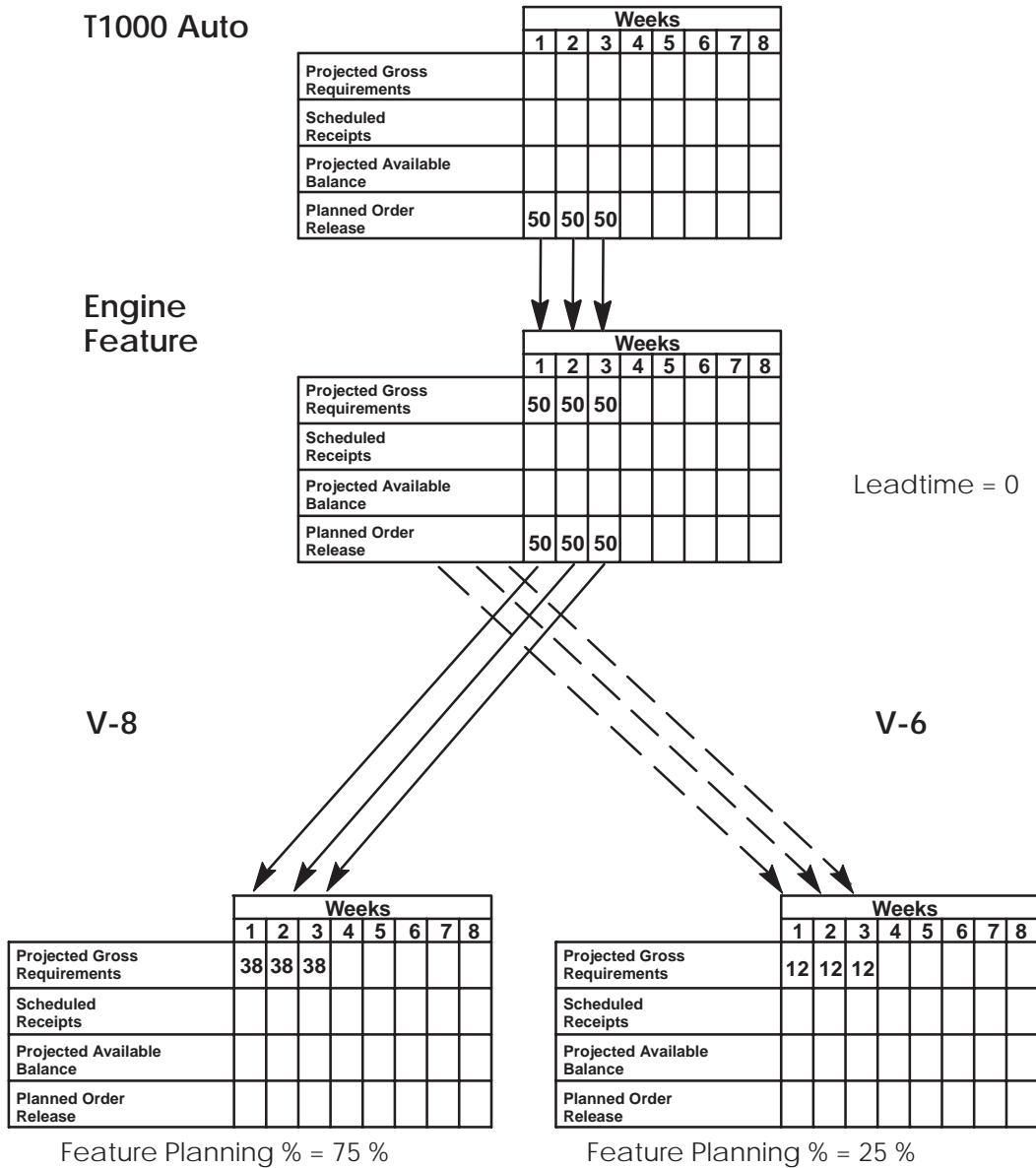
By exploding this bill against the master schedule for the T1000 family of automobiles, the system can calculate the total requirements for each type of engine.

### Example: Exploding Planned Orders

You use a planning bill to configure a pseudo parent item that represents the engine feature. The engine feature includes both V-8 and V-6 engines, and can never actually exist in inventory. It is a pseudo item. The stocking type, however, identifies the engine feature in the planning bill of material as a phantom. Phantoms call for a special type of processing where the leadtime is zero and the order policy is lot-for-lot.

In this example, the system uses phantom processing to pass planned order releases from the parent (T1000 automobile) directly through to the planned order releases of the engine feature. The system uses the feature planning percentages to explode the planned order releases for the engine feature down

to the gross requirements for V-8 and V-6 engines.



MRP acquires the required engine components, such as pistons, blocks, and so on, in order to build these engines. When you receive an order for a T1000 automobile with a specific combination of options, the desired engine is committed to the saleable end item after you attach the parts list to the final assembly work order.

**See Also**

- *Single Level Master Scheduling* for an overview of master scheduling concepts and terms
- *Setting Up Planning Bills (P3002)* in the *Forecasting Guide*

# Set Up Multi-Level Master Schedules

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## Setting Up Multi-Level Master Schedules

You must set up planning data for a multi-level master schedule to:

- Develop rules and procedures for ordering
- Classify the types of items that you stock
- Identify the features that you expect to sell

The system uses the planning data to generate and maintain a multi-level master schedule for the hypothetical parent item. It explodes the parent item to the component level.

Setting up multi-level master scheduling consists of the following tasks:

- Setting up order policy rules
- Setting up stocking types
- Setting up feature planned percents

### Before You Begin

- Verify that DRP, MPS, or RCCP has been set up
- Understand the concepts and terms described in *Single Level Master Scheduling*.

### See Also

- *Setting Up DRP, MPS, and RCCP (P34004)* for information on how to define distribution or production and rough cut capacity data that you want the system to use during processing
- *Single Level Master Scheduling* for more information on the master scheduling process

### Setting Up Order Policy Rules



From Inventory Management (G41), choose Inventory Master/Transactions

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

You must set up order policy rules to control how multi-level master scheduling calculates dates and quantities. The order policy rules that you set up are:

- Planning code – Include the item in the DRP, MRP, or MPS planning runs.
- Order policy code – Designate several different rules for reordering inventories, including fixed order quantity, lot for lot, or number of days supplied. For example, purchasing a 90-day supply of V-8 engines.
- Leadtime level for phantom items – Indicate the transfer or purchase leadtime for an item to ensure that you have it in stock on time.

### What You Should Know About

#### **Assigning a planning code**

The system uses planning codes to process the item. Use planning codes 1, 2, or 3 for multi-level master scheduling. Use planning codes 4 and 5 for forecasting with a planning bill.

#### **Assigning leadtime level for a phantom item**

You must set the leadtime of the phantom to zero so that the parent planned orders are recorded directly to the options as a gross requirement without being offset by the leadtime. The system multiplies the planned orders by the feature planning percentage before placing the planned orders as component gross requirements.

► **To set up order policy rules**

On Item/Branch Plant Information

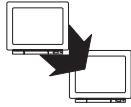
1. Choose Plant Manufacturing Data.

Field	Value	Field	Value
Item Number	2100	Branch/Plant	R30
Order Policy Code	1	Issue Type Code	I
Value Order policy		Planning Code	I
MFG Leadtime Quantity		Planning Fence Rule	H
Accounting Cost Ctr		Fixed/Variable	F
Planning Fence	999	Level Leadtime	5
Freeze Fence		Manufacturing Leadtime	5
Message Display Fence	25	Cumulative Leadtime	10
Time Basis	4	Leadtime Per Unit	
Total Queue/Move Hours		Replenishment Leadtime	
Setup Labor		Shrink Factor	
Issue and Receipt	0	Shrink Factor Method	I
ECC Reason		Drawing Rev. Level	
ECC Number		Item Revision Level	
ECC Date		Grade Control	H
Potency Control	H	Standard Grade	
Standard Potency		From - Thru Grade	
From - Thru Potency			

2. To locate the item for which you want to plan orders, complete the following fields:
  - Branch/Plant
  - Item Number
3. To control how multi-level master scheduling calculates dates and quantities, complete the following fields:
  - Order Policy Code
  - Planning Code
  - Level Leadtime

<b>Field</b>	<b>Explanation</b>
Order Policy Code	<p>A code that designates the rules for inventory reordering in the MPS/MRP/DRP systems. Valid codes are:</p> <ul style="list-style-type: none"><li>0 Reorder point (not planned by MPS/MRP/DRP)</li><li>1 Lot-for-lot or as required</li><li>2 Fixed order quantity</li><li>3 Economic order quantity (EOQ)</li><li>4 Periods of supply</li><li>5 Rate scheduled item</li></ul> <p>The codes above are hard coded.</p>
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"><li>0 Not Planned by MPS, MRP, or DRP</li><li>1 Planned by MPS or DRP</li><li>2 Planned by MRP</li><li>3 Planned by MRP with additional independent forecast</li><li>4 Planned by MPS, Parent in Planning Bill</li><li>5 Planned by MPS, Component in Planning Bill</li></ul> <p>These codes are hard-coded.</p>
Level Leadtime	<p>A value that represents 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>You can enter level leadtime manually on Manufacturing Values Entry, or you can use 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>

## Setting Up Stocking Types



From Inventory Management (G41), choose Inventory Master/Transactions

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

Set up a stocking type to identify how you stock an item (for example, as finished goods or raw materials).

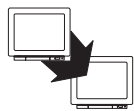
### ► To set up a stocking type

On Item Master Information

1. To locate the item for which you want to plan orders, complete the following field:
  - Item Number
2. To indicate how you stock the item for which you want to plan orders, complete the following field:
  - Stocking Type

Field	Explanation
Stocking Type	A user defined code (41/I) that indicates how you stock an item(for example, as finished goods, or as raw materials). The following stocking types are hard-coded and you should not change them: B Bulk floor stock C Configured item F Feature K Kit parent item N Non-stock

## Setting Up Feature Planned Percents



From Product Data Management (G30), choose Daily PDM Discrete

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

Set up a feature planned percent to define the percentage of demand for a specified feature based on projected sales.

When you set up a feature planned percent, you can change the percentages on which the hypothetical parent item is based. This allows you to account for any planning variations on which you might base planned orders.

### ► To set up a feature planned percent

On Enter/Change Bill

Component Item	Description	Quantity Per	BR	EV	I
Z200	Engine	1	ER	V	I
Z300	Transmission	1	ER	V	I
Z400	Radial Tire	5	ER	V	I



1. To locate the item for which you want to plan orders, complete the following fields:
  - Branch/Plant
  - Parent Item
2. Access the detail area.



3. Complete the following field:
  - Feature Planned Percent

Field	Explanation
Parent Item	<p>A number that the system assigns to an item. It can be in short, long, or 3rd item number format.</p> <p>..... <i>Form-specific information</i> .....</p> <p>Header: The Parent field contains the item number of the parent item.</p> <p>Detail: The Component Item field contains the item number of the component item.</p>

<b>Field</b>	<b>Explanation</b>
Feature Planned %	<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>

# Generate Multi-Level Master Schedules

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## Generating Multi-Level Master Schedules



From Material Planning Operations (G34), choose Single Site Planning

From Single Site Periodic Planning Operations (G3422), choose MPS Regeneration

When you run the MPS Regeneration program, the system compiles a master schedule. Choose the MPS Net Change program when you want to include only those items that have changed since the last generation. You can create a version of the MPS Net Change program specifically for multi-level master scheduling.

When you generate a multi-level master schedule, the system explodes planned orders to the bill of material components. This generation program identifies the percentages of all component items. By exploding the bill of material against the total number of expected sales of a parent item, you can obtain the total requirements for each item at each level in the bill of material.

When you generate a master schedule, the system evaluates selected information, performs calculations, and recommends a time-phased planning schedule for all selected items.

### Before You Begin

- Set up multi-level master scheduling.

### See Also

- *Setting Up Multi-Level Master Schedules (P3482)*
- *Generating Single Level Master Schedules (P3482)* for more information on generating master schedules and to review the processing options
- *Working with Master Schedules (P3482)* for information on how to review time series and action messages that are an output of generating a multi-level master schedule
- *Validating Master Schedules (P3482)* for information on how to validate the master schedule, to ensure that you have sufficient work center capacity

### What You Should Know About Processing Options

**Generation definition** You must set the processing option to specify the type of schedule you want to generate. You must use generation type 3 to process multi-level MPS items. If there is a forecast for the product family, you must also define this forecast in the appropriate processing option.

**Phantom items** Set the appropriate processing option to generate messages and time series records for phantom items.



#### Exercises

See the exercises for this chapter.

# Manufacturing and Distribution Environments



# Manufacturing and Distribution Environments

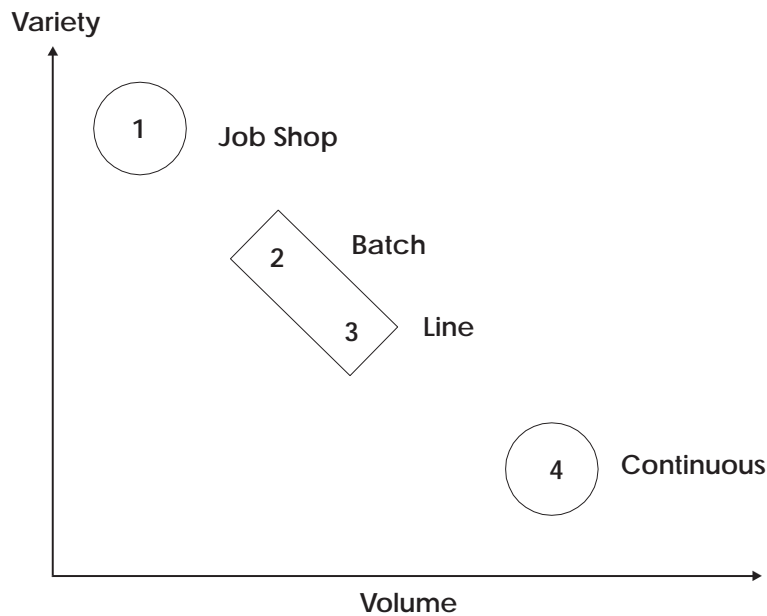
## Objectives

- To use the Manufacturing and Distribution Planning (MDP) system to manage a variety of manufacturing and distribution environments

## About Manufacturing and Distribution Environments

Today's customer-driven manufacturing strategies require flexible manufacturing and distribution systems.

The following graphic shows manufacturing and distribution environments that vary along a continuum from discrete, low-volume production of customized designs to process, high-volume production of commodities.



Depending on the products manufactured, companies tend to create manufacturing and distribution environments along the diagonal of the graph. Competitive advantages occur when a company can move upward and to the right (that is, manufacture more volume along with more variety).



Sometimes a firm can gain a competitive advantage by creating a mixed-mode manufacturing environment. In mixed mode, some high-volume products and some high-variety products are made within the same company, but in different manufacturing and distribution environments.

The Manufacturing and Distribution Planning system's shared database provides mixed-mode capability. Manufacturing and Distribution Planning can simultaneously manage discrete items for a job shop, rate based items for a flow shop, and continuous items for a process industry.

Working with manufacturing and distribution environments includes the following tasks:

- Working with batch manufacturing
- Working with rate based manufacturing
- Working with process manufacturing

### Discrete Manufacturing

Discrete manufacturing uses bills of material and routings. The bill of material contains individual parts or components, such as a nut, bolt, wire, or a plastic or metal part of a fixed or variable quantity. Products are further divided into subassemblies that are used in various larger assemblies.

Typical examples of products of discrete manufacturing are:

- Cars
- Furniture
- Electronics
- Airplanes

Discrete manufacturing is usually further characterized by the strategy used, such as:

- Make-to-stock, using either a highly repetitive or process order based system
- Any of the "to-orders," such as make-to-order, assemble-to-order, or engineer-to-order
- The "one-off" or job shop environment

### Batch Manufacturing

With batch manufacturing, you produce products from formulas or recipes in a standard run or lot size that is determined by vessel size or standard run length.



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## Rate Based Manufacturing

Use rate based manufacturing for highly repetitive production for which you do not need to account for each work order's labor and inventory in detail.

## Process Manufacturing

Process manufacturing uses recipes or formulas and resources or ingredients. The manufacturing process either consumes or produces these resources. Many processes create co-products and by-products. In a process or discrete formula, the quantity of a component can vary according to its grade or potency.

Unique features of process manufacturing are:

- Pacing co-products
- Planned co-products (by-products are unplanned)
- Additional processing options in MPS/MRP

## Distribution

Distribution systems work together with manufacturing systems to ensure that the right item is in the right place at the right time to meet customer demand. Supply and demand components must balance to ensure that this can occur. For example, the Inventory Management system does the following:

- Stores item information for the manufacturing systems
- Stores sales and purchasing costs and quantities available by location
- Tracks holds for locations from which you should not sell
- Updates the inventory account balances in the general ledger with any change in inventory valuation, count variances, or movement

## What You Should Know About

### **MRP**

MRP does not recognize configured (string) differences for a given configured item.



# Work with Batch Manufacturing

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## Working with Batch Manufacturing

With batch manufacturing, a product is made from a formula or recipe in a standard run or lot size determined by vessel size or standard run length.

Typical products for batch manufacturing include:

- Pharmaceuticals
- Foods
- Glues
- Fermented beverages
- Paints

The objective for batch manufacturing is to process work orders with a batch quantity that corresponds to a batch bill of material and to use these orders for MRP processing. Just as the bill type uniquely defines a bill of material, you can use the batch quantity with bill type to further define a unique bill.

With this manufacturing method, some restrictions on capacity determine the size of the batch produced. For example, you might need to fill the vats to a certain level for the process to perform properly.

In addition, the system specifically defines the component quantities for the batch. For example, a 50-gallon vat requires a given quantity of one component, but the system does not necessarily double the component for a 100-gallon vat. Such components are often enzymes or catalysts.

Vats are often physically located close to a more repetitive downstream process. For example, in the making of bread, the process mixes the dough in a batch and leaves it to rise before forming individual loaves and sending it for baking and packaging.

You often express units of measure for batches in terms of volume or weight, such as:

- Liters or gallons
- Kilograms or pounds

After you create a batch bill of material and batch routing for the work order header, process the batch work order to attach the parts list and routing instructions to the work order header. Then, generate a master schedule of batch work orders and review the output.

Working with batch manufacturing consists of the following tasks:

- Creating batch bills of material
- Creating batch routings
- Processing batch work orders
- Generating MPS for batch bills
- Reviewing batch output from the MPS generation (optional)

### Creating Batch Bills of Material



From Product Data Management (G30), choose Daily PDM Discrete

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

You use batch bills of material to accommodate physical constraints. For example, some industries, such as the pharmaceutical or food industries, use ovens or vats to make products in fixed quantities or batches. You can enter many combinations of batch sizes and bill types.

#### Before You Begin

- Set the appropriate processing option to display the Batch Quantity field.

► **To create a batch bill of material**

On Enter/Change Bill

Item	Component Item	Description	Quantity Per	UN	FV	I
12786		Vitamin A	250	GM	F	I
12731		Vitamin B1	500	GM	F	I
12749		Vitamin B2	500	GM	F	I
12757		Vitamin B6	6000	GM	F	I
12765		Vitamin B12	1320	GM	F	I
12773		Vitamin C	3000	GM	F	I
12781		Minerals, complex	60	GM	F	I
12845		Buffer, inert	13100	GM	F	I
12844		Magnesium Stearate	500	GM	F	I
12741		Microcrystalline Cellulose	500	GM	F	I

1. To locate the bill of material for the parent item, complete the following fields:

- Parent Item
- Branch/Plant
- Bill Type

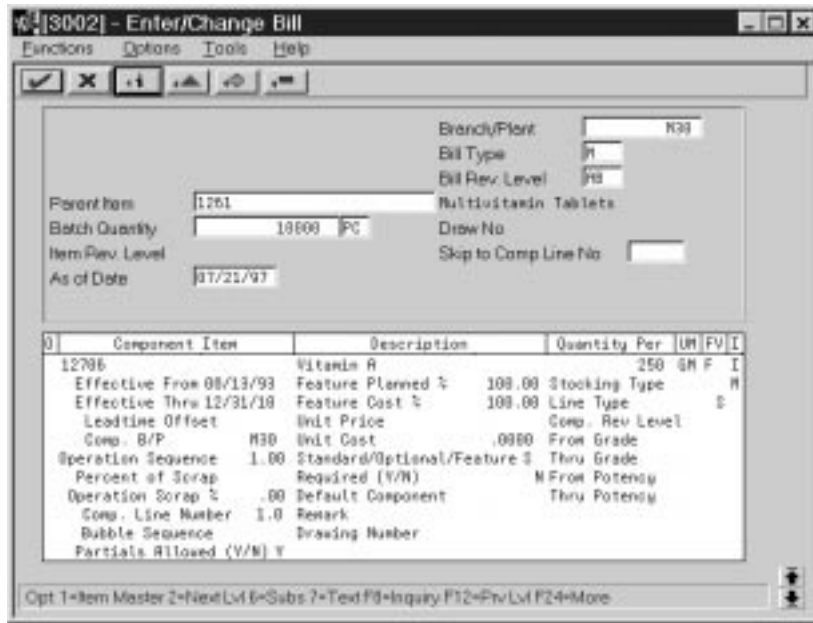
If more than one type of batch bill exists, the system prompts you to make the proper selection from the following:

- Bill type
- Batch quantity
- Unit of measure

2. To create a new batch bill of material for the parent item, complete the following fields:

- Batch Quantity
- Batch Unit of Measure

3. To view additional information, access the detail area.



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

**See Also**

- *Working with Bills of Material* in the *Product Data Management Process Manufacturing Guide* for more information about batch bills of material

## Processing Options for Bill of Material Revisions

INVENTORY VALIDATION:

1. Enter a '1' to validate for an existing Branch/Item record. \_\_\_\_\_

VERSIONS TO EXECUTE:

Enter the DREAM Writer version to use for each program listed. If left blank, version '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) \_\_\_\_\_
4. Component Maintenance (P3015) \_\_\_\_\_

VERSION TO EXECUTE FROM REVISIONS

WINDOW:

5. Enter the version of the ECO header to call from the Revisions Window (P30BREV). If left blank version ZJDE0001 will be used. \_\_\_\_\_

COMPONENT BRANCH:

6. Enter a '1' to change the Component Branch (ADDITIONS ONLY) to that which is displayed at the top of the screen. \_\_\_\_\_

FIELD DISPLAY:

7. Enter a '1' by the following fields to activate them:
  - a. Bill Type \_\_\_\_\_
  - b. Batch Quantity \_\_\_\_\_

SCREEN DEFAULTS:

8. Enter the default Bill Type: \_\_\_\_\_
- 8b. Enter a '1' to default the as of date to the current date. If left blank, all dates will be shown. \_\_\_\_\_

COMPONENT SEQUENCING:

9. 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)

REVISION LEVEL CONTROL:

10. Enter a '1' to protect Component Revision Level from update. \_\_\_\_\_

## Creating Batch Routings



From Product Data Management (G30), choose Daily PDM Discrete

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

Batch routings are useful in industries, such as pharmaceuticals or foods, where products are manufactured in fixed quantities or batches. Each batch bill, as defined by the batch quantity, has its own routing.

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

### Before You Begin

- Set the appropriate processing option to activate routing batch and type functions.

### ▶ To create batch routings

---

On Enter/Change Routing

Work Center	Oper Seq No	Description	Run Mach	Hours Labor	Setup Hours	Cons Prod
280-204	10.00	Blend vitamins R through C	0.75	2.50	1.50	Cons
280-204	20.00	Chelate minerals	3.50		1.25	
280-204	30.00	Blend vitamins and minerals	6.00	0.75	2.00	
280-204	40.00	Blend with inert buffer	3.00	1.00	0.50	
280-204	50.00	Form Tablets	16.00	2.50	1.25	

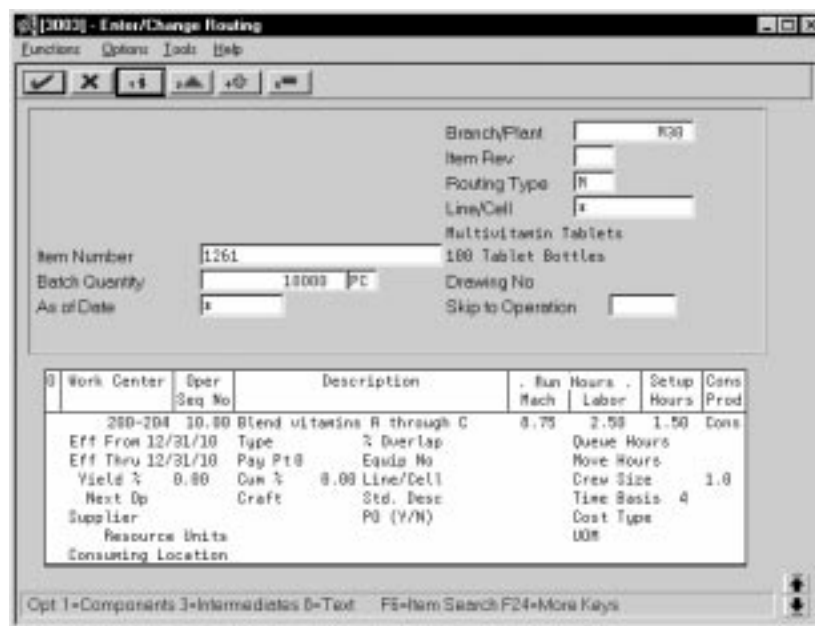
1. To locate the routing for the item, complete the following fields:
  - Item Number
  - Batch Quantity



- Branch/Plant
  - Routing Type
2. To create a new batch routing for the item, complete the following fields:
- Batch Quantity
  - Batch Unit of Measure

If the bill type and quantity on the work order do not match a batch bill, the system generates an error and creates the work order header for the amount specified.

3. To view additional information, access the detail area.



4. Complete the following optional fields:
- Resource Units Consumed
  - Replenishment Location
  - UOM

**See Also**

- *Working with Routings* in the *Product Data Management Process Manufacturing Guide* for more information about batch routings

### Processing Options for Routing Master Revisions

#### FIELD DISPLAY:

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

#### DEFAULT PROCESSING:

2. Enter the values to preload to the screen at initial inquiry. If left blank, no value will be preloaded.
  - a. 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 to that of Parent Branch when copying a routing. \_\_\_\_\_

### Processing Batch Work Orders



From Shop Floor Control (G31), choose Process – Daily Order Preparation

From Daily Order Preparation – Process (G3113), choose Enter/Change Order or Order Processing

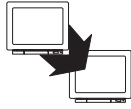
Use either Enter/Change Order or Order Processing to attach a parts list or routing instructions to the work order header. Because the bill or routing must exist for the associated type on the work order header, the attachment process will fail if the system cannot validate the bill or routing types.

If a batch quantity exists on the bill or routing, the quantity on the work order header and the type must match the bill or routing. Otherwise, the copy function will fail for the bill, routing, or both.

#### See Also

- *Creating Work Orders (P48013)* in the *Shop Floor Control Process Manufacturing Guide* for information about attaching parts lists and routing instructions interactively
- *Processing Work Orders (P31410)* in the *Shop Floor Control Process Manufacturing Guide* for information about attaching parts lists and routing instructions using the batch program

## Generating MPS for Batch Bills



From Material Planning Operations (G34), choose Single Site Planning  
 From Single Site Periodic Planning Operations (G3422), choose MPS  
 Regeneration

Use MPS Regeneration to generate a master schedule for all items or for selected items. These programs function differently depending on whether more than one batch bill exists.

If only one batch bill exists, MPS uses the batch quantity as follows:

- As a multiple, if the net requirements are greater than the batch quantity
- As a minimum, if the net requirements are less than the batch quantity

In either case, the program generates a separate planned order for each batch quantity. For example:

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

If one batch bill is greater than all of the batch quantities, the program uses the largest batch quantity in combination with any of the other quantities to most accurately satisfy the requirement. For example:

Batch Quantity	MPS Requirement	Resulting MPS Planned Order
400	1500	1000
600		600
800		
1000		
400	3000	1000
600		1000
800		1000
1000		

If multiple batch bills exist and the net requirement is less than the largest batch quantity, the program uses the next highest batch quantity to satisfy the requirement. For example:

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

### See Also

- *Generating Single Level Master Schedules (P3482)* for the processing options for this program

## Reviewing Batch Output from the MPS Generation



From Material Planning Operations (G34), choose MPS

From MPS Daily Operations (G3412), choose MPS Time Series Inquiry or MPS Detail Message Review

After you generate a master schedule, use MPS Time Series Inquiry and MPS Detail Message Review to review the time series and messages from the MPS generation.

The time series is a record of time-phased supply and demand netting for selected items. The messages reflect how the system used batches to generate order quantities for net requirements for each time period.

Reviewing batch output consists of the following:

- Reviewing the time series for batch output
- Reviewing action messages for batch output

### See Also

- *Reviewing DRP/MPS Time Series (P3413)* for more information on MPS Time Series Inquiry, and for the processing options
- *Working with Messages (P3411)* for the processing options for MPS Detail Message Review

► **To review the time series for batch output**

On MPS Time Series Inquiry

	Past Due	01/02/98	01/09/98	01/16/98	01/23/98	01/30/98
LVR						
SF						
SP						
+BRU	89000	89080	26667	35666	57999	180332
+BR	89000	89080	26667	14334	12081	9668
+IR						
+PDU						
+PD						
+MDU						
+MD			20000			
+RDU						
+RS						
-LEMP						
-FSDU		62333	62333	62333	62333	62333
-FSET		62333	62333	62333	62333	62333

To locate the time series for your item, complete the following fields:

- Branch/Plant
- Item Number

### Example: Reviewing the Time Series for Batch Output

Review the net quantities for planned orders (+PLO) for the item during the 01/09/98 and 01/16/98 time periods. Planned orders (+PLO) are based on batch sizes of:

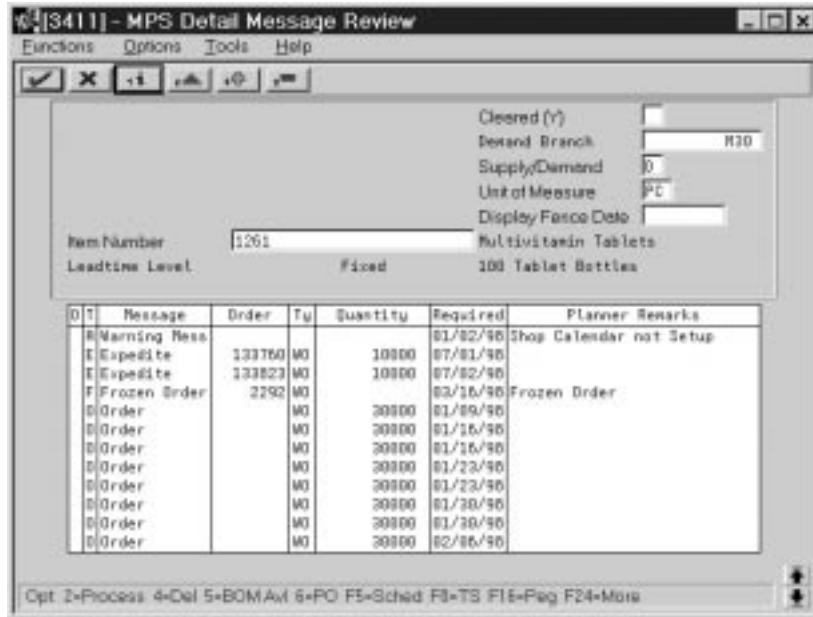
- 1/9/98: 3000 and 1000 = 4000
- 1/16/98: 3000 and 3000 = 6000

### What You Should Know About

**Suppressing blank lines** You can use a function key to suppress the quantity types that have no quantity in the time series.

► **To review action messages for batch output**

On MPS Detail Message Review



To locate the message for your item, complete the following fields:

- Demand Branch
- Item Number

**Example: Reviewing Action Messages for Batch Output**

Review the messages that reflect how batches were used to generate order quantities for net requirements for each time period.

# Work with Repetitive Manufacturing

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## Working with Repetitive Manufacturing

Use repetitive manufacturing for highly repetitive production that relies on a production “rate.” Repetitive manufacturing enables you to specify a rate schedule by effective date in daily, weekly, or monthly quantities.

Repetitive manufacturing reflects the following characteristics:

- Production volume is stable and predictable.
- Leadtime is short.
- Factory layout is product oriented and often characterized as cellular manufacturing: Dissimilar operations are physically grouped so that the product flows rapidly from one operation to the next.
- Setups are short, so that switching between products does not impact the time available for production.
- Group technology is often incorporated into the design engineering and manufacturing engineering to accommodate some variety with low impact on cost or production speed.
- Unit of measure is often “each.” However, it can also be volume- or weight-related when it is used in an environment that is similar to process manufacturing as opposed to discrete.

Some examples of repetitive products are:

- Electronic goods
- Automobiles
- Durable consumer goods (washing machines, refrigerators, and so on)

To plan for repetitive items, you:

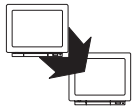
- Identify the item as a rate scheduled item for a specific branch/plant
- Create a routing for the item
- Attach the rate scheduled item to a line

After you process the repetitive items, generate a master schedule and output that you can review. This output consists of time series and messages. You can then validate the load on lines or cells by viewing the effects of a rate schedule on a given work center and adjusting the priorities of the schedule.

Working with repetitive manufacturing consists of the following tasks:

- Defining order policy for repetitive items
- Creating repetitive routings
- Creating line/item relationships
- Creating rate schedules
- Generating MPS for repetitive items
- Reviewing repetitive rate based output from MPS generation
- Validating load on lines or cells (optional)

### Defining Order Policy for Repetitive Items



From Inventory Management (G41), choose Inventory Master/Transactions

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

You must identify the item as a repetitive item for a specific branch/plant for the MPS/MRP/DRP system to process the item as repetitive.

#### **▶ To define order policy for repetitive items**

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On Item Branch/Plant Information



1. To locate the item record, complete the following fields:
  - Branch/Plant
  - Item Number
2. Choose Manufacturing.

3. On Plant Manufacturing Data, identify the item as a rate scheduled item in the following field:
  - Order Policy Code

## Creating Repetitive Routings



From Product Data Management (G30), choose Daily PDM Discrete

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

A routing is a list of the operations and resources that are required to complete a process. The repetitive routing includes line and cell information in the header as well for each operation.

### ► To create repetitive routings

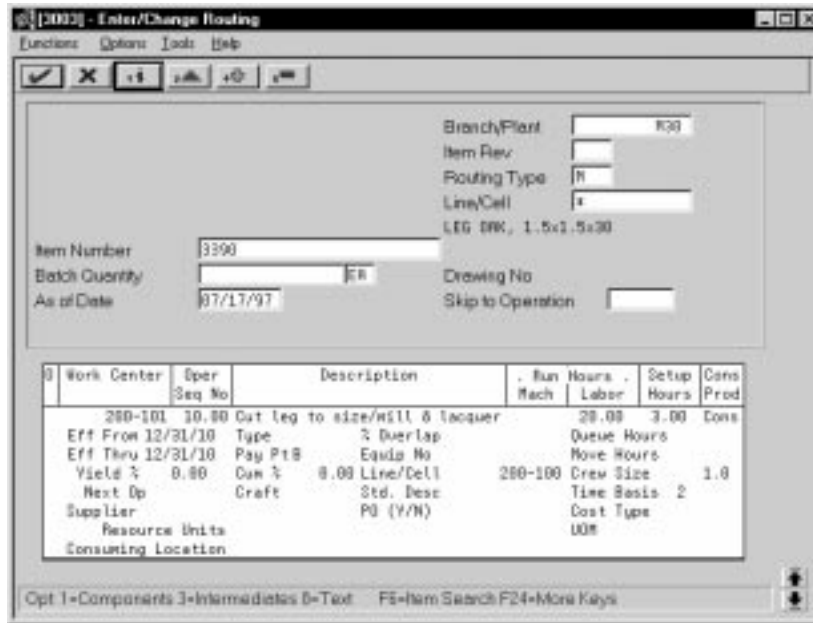
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On Enter/Change Routing

Branch/Plant: R30  
 Item Rev:   
 Routing Type: R  
 Line/Cell: 1  
 LEG DW, 1.5x1.5x30  
 Item Number: 3300  
 Batch Quantity: 1  
 As of Date: 07/17/97  
 Drawing No:   
 Skip to Operation:   
 Opt 1=Components 3=Intermediates 6=Tool F5=Item Search F24=More Keys

Work Center	Seq No	Description	Run /Rach	Hours Labor	Setup Hours	Cons Prod
280-101	10.00	Cut leg to size/Hill & lacquer		20.00	3.00	Cons
280-102	20.00	Attach leg cap		10.00		Cons
280-103	30.00	Inspect	5.00	0.00		

1. To locate the routing for your item, complete the following fields:
  - Branch/Plant
  - Line/Cell
  - Item Number
2. Access the detail area.



3. Review the information for each operation sequence:

- Line/Cell
- Resource Units Consumed
- Replenishment Location

Field	Explanation
Line/Cell	Defines a production line or cell. Detailed work center operations can be defined inside the line or cell. For rate based manufacturing to use this value for reporting, this value must match the line cell in the header.
Resource Units Consumed	Indicates how many of the line's resource units are needed to produce one item.
Replenishment Location	A code that identifies inventory locations in a branch/plant. You define the format of the location identifier by branch/plant.

## Creating Line/Item Relationships



From Shop Floor Control (G31), Choose Shop Floor Control Setup (G3141)

From Shop Floor Control Setup (G3141), choose Line/Item Relationships

To define the schedule data for the rate, choose Line/Item Relationships. Line/Item Relationships defines on which production line the product will be assembled. It also defines shift and period information for that line.

On Line/Item Relationships

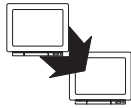
Complete the following fields:

- Branch/Plant
- Item Number
- Line/Cell
- Capacity Units
- Shift
- Period

Field	Explanation
Capacity Units	Indicates how many of the line's resource units are needed to produce one item.

Field	Explanation								
Shift	<p>A user defined code (07/SH) that identifies daily work shifts. In payroll systems, you can use a shift code to add a percent or amount to the hourly rate on a timecard.</p> <p>For payroll and time entry:</p> <p>If an employee always works a shift for which a shift rate differential is applicable, enter that shift code on the employee's master record. When you enter the shift on the employee's master record, you do not need to enter the code on the timecard when you enter time.</p> <p>If an employee occasionally works a different shift, you enter the shift code on each applicable timecard to override the default.</p>								
Period	<p>A code that determines the frequency of the schedule.</p> <p>Valid codes are:</p> <table> <tr> <td>1</td> <td>Monthly</td> </tr> <tr> <td>2</td> <td>Weekly</td> </tr> <tr> <td>3</td> <td>Daily</td> </tr> <tr> <td>4</td> <td>Per Shift</td> </tr> </table>	1	Monthly	2	Weekly	3	Daily	4	Per Shift
1	Monthly								
2	Weekly								
3	Daily								
4	Per Shift								

## Creating Rate Schedules



From Shop Floor Control (G31), choose Repetitive

From Repetitive Daily Processing (G3141), choose Enter/Change Rate Schedule

A rate schedule is a request to produce a certain quantity of items on a specified periodic basis for a given length of time. Rate schedules eliminate the need to create multiple work orders for items you want to produce monthly, weekly, or daily in regular quantities. You generally use rate schedules in repetitive manufacturing.

To create a rate schedule, you:

- Specify engineering information, such as schedule types and effective dates.
- Specify production information, such as as the item and quantities on which the rate is based.

You can use processing options to define a default schedule type, schedule period, and spread value. You can also choose to display only active schedules. In addition, you can access associated forms by indicating the version of these forms in the processing options. You can use these forms to view and modify information for routing, work center, MPS/MRP/DRP time series, rate generation, and scheduling.

## Before You Begin

- Set up your work centers. See *Setting Up Work Centers* in the *Shop Floor Control Discrete Manufacturing Guide*.
- Set up your routing instructions. See *Creating Work Orders* in the *Shop Floor Control Discrete Manufacturing Guide*.
- Set up your line/item relationships. See *Creating Line Item Relationships*.

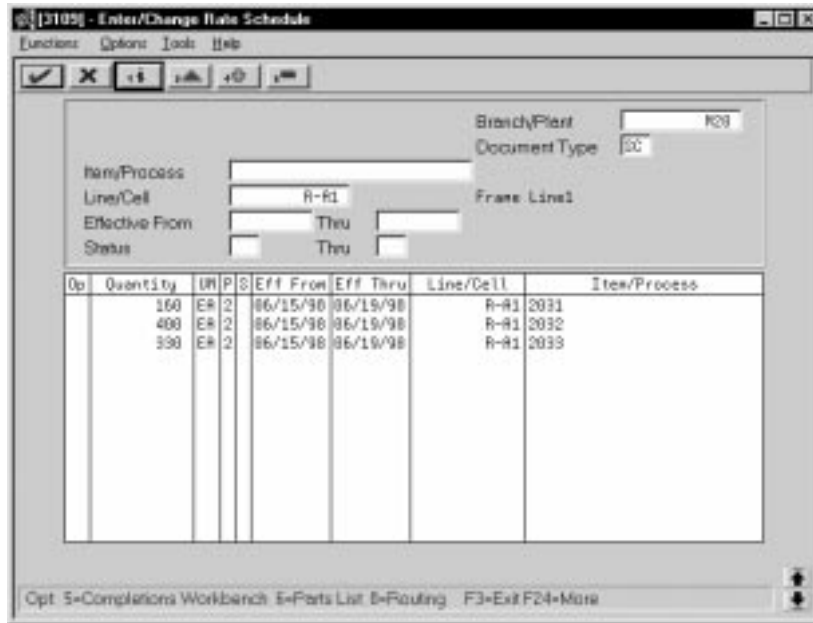
## ► To create rate schedules

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On Enter/Change Rate Schedule

Op	Quantity	UN/P/S	Eff From	Eff Thru	Line/Cell	Item/Process
100	ER 2		06/15/98	06/19/98	R-R1 2031	Steel Frame, Touring

1. Complete the following fields:
  - Branch/Plant
  - Schedule Type
  - Item Number
  - Line/Cell
  - Effective From
  - Effective To
  - Quantity
  - Unit of Measure
2. Access the detail area.



3. Review the following default information:

- Period
- Shift
- Category 1
- Category 2
- Category 3
- Quantity Completed
- Quantity Scrapped

Field	Explanation
Schedule Type	A user defined code (system 31, type ST) that identifies the type of schedule, for example, AC for actual schedule and PL for planned schedule.
Quantity	The quantity of units affected by this transaction.
Category 1	A user defined code (00/W1) that indicates the current stage or phase of development for a work order. You can assign a work order to only one phase code at a time.  NOTE: Certain forms contain a processing option that allows you to enter a default value for this field. If you enter a default value on a form for which you have set this processing option, the system displays the value in the appropriate fields on any work orders that you create. The system also displays the value on the Project Setup form. You can either accept or override the default value.

<b>Field</b>	<b>Explanation</b>
Category 2	<p>User defined code system 00, type W2, which indicates the type or category of a work order.</p> <p>Note: 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 orders you create on those forms and on the Project Setup form. (You can either accept or override the default value.)</p>
Category 3	<p>User defined code system 00, type W3, which indicates the type or category of a work order.</p> <p>Note: 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 orders you create on those forms and on the Project Setup form. (You can either accept or override the default value.)</p>
Qty Scrapped	<p>The number of units canceled in Sales Order or Work Order Processing, using either the entered or the primary unit of measure defined for this item.</p> <p>In manufacturing, this can also be the number of units scrapped to date.</p>
Qty Completed	<p>The number of units committed for shipment in Sales Order Entry, using either the entered or the primary unit of measure defined for this item.</p> <p>In the Manufacturing system and Work Order Time Entry, this field can indicate completed or scrapped quantities. The quantity type is determined by the type code entered.</p>

### What You Should Know About

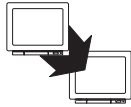
- Deleting a rate schedule** You can only delete a rate schedule if it has never been used. Active rate schedules cannot be deleted. You must close out the schedule.
- Duplicating schedules** You can enter duplicate rate schedules.
- Creating rates automatically** You automatically create a rate when you process a Create Rate message in Detail Message Review.



## See Also

- *Creating Rate Schedules* in the *Shop Floor Control Process Manufacturing Guide* for more information on processing options

## Generating MPS for Repetitive Items



From Material Planning Operations (G34), choose Single Site Planning

From Single Site Periodic Planning Operations (G3422), choose MPS Regeneration

When you run the MPS Net Change or Regeneration program, the system:

- Evaluates selected information
- Performs calculations
- Generates a time series and messages for the selected items

## What You Should Know About

### **Rate Scheduling Information**

You must set the processing options to generate the master production schedule.

Enter the type of rate schedule that you want to use for processing.

You can also set a processing option to extend rate adjustments to lower-level items.

## See Also

- *Generating Master Schedules for All Items (P3482)* for the processing options for this program
- *Generating Master Schedules for Selected Items (P3482)*

## Reviewing Repetitive Rate Scheduled Output from MPS Generation



From Material Planning Operations (G34), choose MPS

From MPS Daily Operations (G3412), choose MPS Time Series Inquiry or MPS Detail Message Review

After you generate a master production schedule, use MPS Time Series Inquiry and MPS Detail Message Review to review the time series and messages that the system has generated.

The time series is a record of time-phased supply and demand netting for selected items. The system links the planned order releases for the parent item to the gross requirements of component items.

If a component does not have its own rate schedule, the system applies the demand from the parent item. The demand from the rate scheduled parent follows the same logic as regular work orders. When a rate schedule is added for a component of a rate based parent, the calculation includes the information for the component in both the rate schedule (+RS) and unadjusted rate schedule (-RS) lines of data. The component is processed as supply, and regular MRP logic applies.

The messages reflect how the system used rate scheduled items to generate quantities for net requirements for each time period. The MPS/MRP program produces three main action messages that pertain to repetitive items:

<b>I = Increase rate to</b>	Updates an existing rate to the increased quantity.
<b>H = Decrease rate to</b>	Updates an existing rate to the decreased quantity.
<b>N = Create rate</b>	Treats messages as a group from the MPS/MRP Detail Message Review form. You may answer more than one message at a time. The system creates one rate that averages the total of all Create Rate messages processed.

When the system processes messages to create and update rates, it does not check the validity of the dates received. The MPS/MRP regeneration produces messages with valid dates. However, you can change these dates before processing the message. To avoid creating invalid rates, ensure the validity of the dates you enter whenever you change message dates before processing.

Reviewing repetitive rate scheduled output consists of the following tasks:

- Reviewing the time series for rate scheduled output
- Reviewing action messages for rate scheduled output

► To review the time series for rate scheduled output

On MPS Time Series Inquiry

	Past Due	01/02/90	01/09/90	01/16/90	01/23/90	01/30/90
LVR						
SF						
SP						
+BRU	5788	5188	388	3628	6828	17936
+BR	5788	2124	1876	5876		
+IR						
+PBU						
+PB						
+MBU						
+MB						
+RSU				888	888	888
+RS				10676	11616	4888
-LEXP						
-FSCU		4888	4888	4888	4888	4888
-FCST		4888	4888	4888	4888	4888

To locate the time series for your item, complete the following fields:

- Branch/Plant
- Item Number

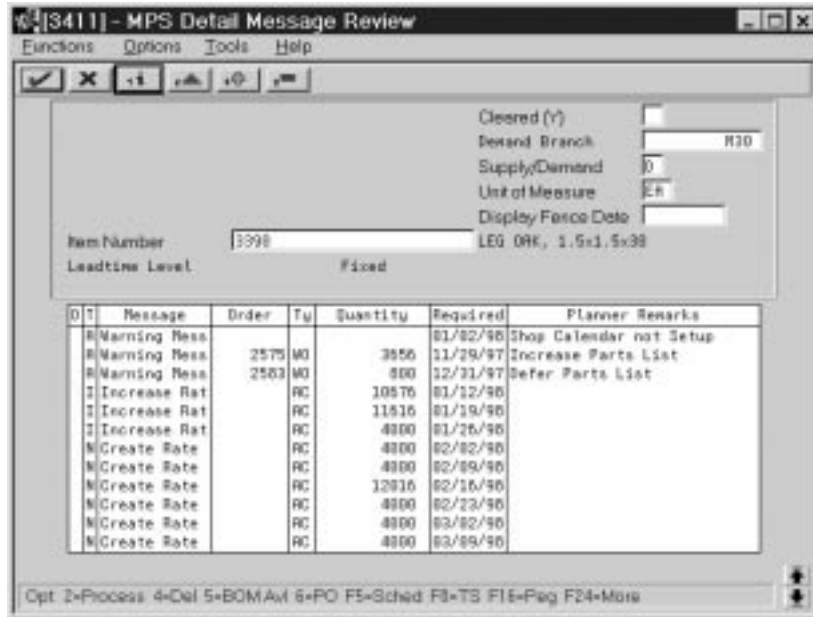
## What You Should Know About

**Suppressing blank lines** You can use a function key to suppress the quantity types that have no data in the time series.

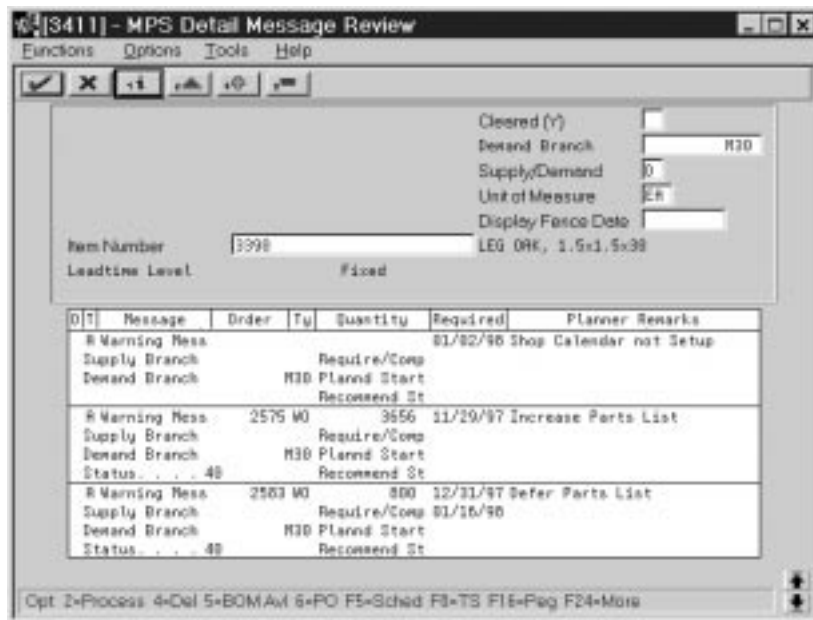
**Creating Rates** Instead of creating a single rate for a given schedule period type over a date range, the system creates a series of rates to cover the entire period. For instance, instead of having one weekly rate in effect for four weeks, the system creates four weekly rates, each in effect for a week.

► To review action messages for rate scheduled output

On MPS Detail Message Review



- To locate the messages for your item, complete the following fields:
  - Demand Branch
  - Item Number
- To view additional message information, access the detail area.



## What You Should Know About

### Creating Rates

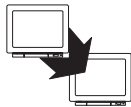
Instead of creating a single rate for a given schedule period type over a date range, the system creates a series of rates to cover the entire period. For instance, instead of having one weekly rate in effect for four weeks, the system creates four weekly rates, each in effect for a week.

When you process a Create Rate message, the system can attach the parts list and routing automatically.

### See Also

- *Working with Messages (P3411)* for the processing options for this program

## Validating Load on Lines or Cells



From Shop Floor Control (G31), choose Repetitive

From Repetitive Daily Processing (G3115), choose Schedule Review

Use Schedule Review to validate the load on lines or cells. You can view the effects of a rate schedule on a given work center and adjust the priorities of the schedule.

You can also:

- View rate schedule load for:
  - A specific work center by day, week, or month
  - A specific date range
- Revise rate schedules
- Revise resource units
- Review rate based load only, or rate based load and work order load together

### ▶ **To validate load on lines or cells**

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On Schedule Review

Item Number	Date	Lead	Capacity Percentage	Avail
2831	06/15/98	50	50	50
2832	06/15/98	125	100	
2833	06/15/98	103	100	
2831	06/16/98	50	50	50
2832	06/16/98	125	100	
2833	06/16/98	103	100	
2831	06/17/98	50	50	50
2832	06/17/98	125	100	
2833	06/17/98	103	100	
2831	06/18/98	50	50	50
2832	06/18/98	125	100	
2833	06/18/98	103	100	
2831	06/19/98	50	50	50
2832	06/19/98	125	100	

To locate the schedule, complete the following fields:

- Branch/Plant
- Line/Cell or Work Center
- Effective From
- Effective To

**See Also**

- *Reviewing Rate Schedule and Work Center Loads* for the processing options for this program

# Work with Process Manufacturing

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## Working with Process Manufacturing

Process manufacturing produces products such as liquids, fibers, powders, or gasses. Pharmaceuticals, foodstuffs, and beverages are typical examples of process products and represent a significant share of the manufacturing market. Products such as these are usually manufactured by a two-step process:

- Mixing or blending
- Filling or packaging

There might also be intermediate steps, such as curing, baking, or preparation.

Process manufacturing uses recipes or formulas and resources or ingredients. These resources can be either consumed or produced during the manufacturing process. In a process recipe or formula, the quantity of a component can vary according to its grade or potency.

The process produces co-products and by-products. A co-product is a saleable end item that results from a process. A by-product is a material that is produced incidental to or as a residual of the process.

The different types of processing in process manufacturing are:

- Batch
- Continuous

In batch processing, you usually produce a product in a standard run or lot size determined by vessel size, line rates, or standard run length. Because of the life cycle of the product after its completion, you typically schedule items made this way in short production runs. Co-products and by-products can be generated during batch processing. Typical items produced with batch processing include:

- Pharmaceuticals
- Foods
- Inks and paints
- Glues
- Oil or chemical products

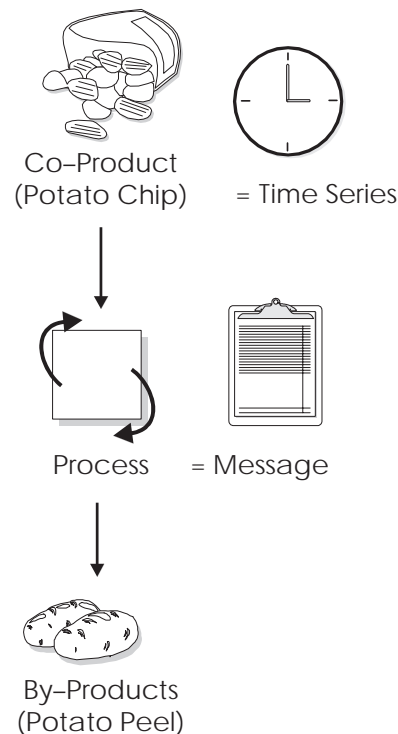
In the continuous flow environment, production runs typically continue for an extended duration. Equipment is dedicated to one product or product line. This method of manufacturing is characterized by difficulty in matching output volume with demand and varying yield from process operations. Examples are petroleum-based products and water purification. Co-products and by-products are generally more prevalent in continuous processing than in batch processing.

Usually, both batch and continuous processing methods require extensive record keeping, recording of quality and tolerance values during the process, and strict adherence to lot tracing and tracking.

Working with process manufacturing consists of the following tasks:

- Defining stocking types for processes
- Defining co- and by-products
- Generating MPS for the process industry
- Reviewing process output from MPS generation

The following illustration shows that MPS calculates the time series for co-products. Demand for the co-product generates MPS order messages to drive the production process. Co-products that are 100% planned by the process do not receive order messages. The figure shows that the process also makes a by-product. This by-product might have some value, but it is not the central purpose of the process. For example, potatoes would not be processed primarily to obtain potato peels.





To identify items for process manufacturing, you must define the item's stocking type to distinguish process items from co-products or discrete items. You must then specify both the percentage of the demand for co-products that is satisfied from process work orders and the percentage that is satisfied from work orders for the co-products. You can then generate and review a master schedule of all process work orders and output. This output consists of time series and messages for the co- and by-products.

## Defining the Stocking Types for Processes



From Inventory Management (G41), choose Inventory Master/Transactions

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

You define the stocking type to distinguish the process from its co-products or discrete items.

### ► To define the stocking type for the process

On Item Master Information

Item Number - Start		85781	
Product No	777	Desc	Potato Chip Process
Catalog No	777	Stck	Process, Chlp
Stocking Type	P	Line Type	P
GL Class	1M40	Bulk/Packed Flag	P
Unit of Measure	LB	Inventory Cost Level	2
Item Price Group		Sales Price Level	2
Basket Reprice Group		Purchase Price Level	3
Order Reprice Group		Kit Pricing Method	
Dispatch Group		Serial No. Required	P
Backorders Allowed	P	Lot Status Code	
Check Availability Y/N	P	Lot Process Type	L
Shelf Life Days		Commitment Method	L
ABC Codes	- -	Item Flash Message	
Planner Number	5002	Std UOM Conversion	
Buyer Number	5001		
Print Message			

F5=Codes F8=Measures F10=Manufacturing F13=Branch/Plant F24=More Keys

1. To locate your item record, complete the following field:
  - Product Number
2. Complete the following field:
  - Stocking Type

## Defining Co- and By-Products



From Product Data Management (G30), enter 29

From Product Data Management (G3041), choose Product Costing Setup

From Product Costing Setup (G3042), choose Co/By-Products Planning Table

Use the Co/By-Products Planning Table to set up co- and by-product processes for MPS and MRP. This table specifies the percentage of the demand for co-products that is satisfied from process work orders and the percentage that is satisfied from the work orders for the co-products.

You can also specify special circumstances. For example, by entering 75% in the table, you specify that 75% of demand is satisfied from process work orders and 25% from co-product work orders. The system automatically satisfies the remainder by planning co-product work orders.

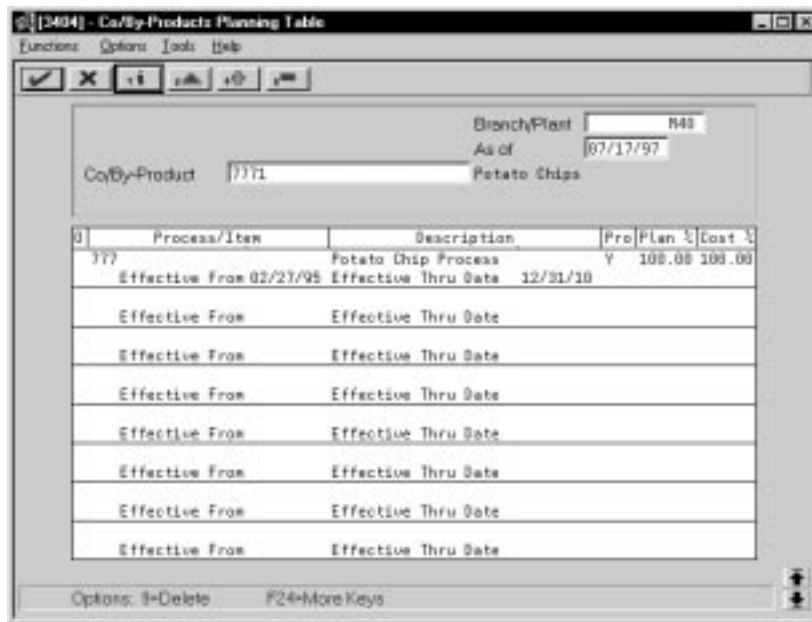
If a co-product can be produced by more than one process, both processes appear in the table when you locate the co-product. For example, a 75% – 25% relationship can exist between the two processes.

### ► To define co- and by-products

On Co-/By-Products Planning Table

Process/Item	Description	Pro	Plan %	Cost %
777	Potato Chip Process	Y	100.00	100.00

1. To locate the co-/by-product table, complete the following fields:
  - Co-/By-Product
  - Branch/Plant
2. Complete the following fields:
  - Process/Item
  - Process
  - Plan Percentage
  - Cost Percentage
3. Access the detail area.



4. Complete the following fields:
  - Effective From
  - Effective Thru Date

Field	Explanation
Co/By-Product	A number that the system assigns to an item. It can be in short, long, or 3rd item number format.

### Generating MPS for the Process Industry



From Material Planning Operations (G34), choose Single Site Planning

From Single Site Periodic Planning Operations (G3422), choose MPS Regeneration

When you choose MPS Regeneration, the system:

- Evaluates selected information
- Performs calculations
- Generates a time series and messages for the selected items

#### See Also

- *Generating Master Schedules for Selected Items (P3482)* for the processing options for this program

#### What You Should Know About

##### **Process Planning**

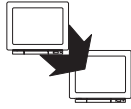
Set the process planning processing option for the net change versions you use for MRP and MPS planning.

Set this option to create the resource list records for co-/by-products when the system creates the process work order. If you leave this field blank, the system creates the resource list records for the co-/by-products when it creates the ingredients list.

##### **Forecast Consumption**

Forecast consumption does not apply to process manufacturing. Leave this processing option blank for the net change versions for MRP and MPS and when you run the regeneration programs.

## Reviewing Process Output from MPS Generation



From Material Planning Operations (G34), choose MPS

From MPS Daily Operations (G3412), choose Time Series Inquiry or MPS Detail Message Review

After you generate a master schedule, use MPS Time Series Inquiry and MPS Detail Message Review to review the time series and messages that the system has generated.

Many processes produce multiple co-products. In these cases, one co-product might have a higher demand than other co-products. This is the pacing co-product. For example, a process might produce both plastic and ethylene-glycol (anti-freeze). Producing to meet demand for plastic might result in excess anti-freeze production, forcing a decrease in the price of anti-freeze in order to sell it. The pacing co-product requires the greater amount of the process to be produced in a given time period (based on demand) to obtain the co-product quantity required.

The time series is a record of time-phased supply and demand netting for selected co- and by-products. Co-products that are 100% planned by the process do not receive order messages. Instead, the system creates warning messages for co-products that are planned by a process.

Reviewing process output from the MPS generation includes the following tasks:

- Reviewing time series for co- and by-products
- Reviewing messages for processes

► To review time series for co- and by-products

On MPS Time Series Inquiry

	Past Due	01/02/90	01/09/90	01/16/90	01/23/90	01/30/90
LVR						
SF						
SP						
+BRU	49252	49252	49252	49252	17948-	17948-
+BR	49252	49252	49252	49252		
+IR						
+POU						
+PO						
+WU						
+W				17948		
+RSU						
+RS						
-LEOP						
-FSCU		13604	13604	13604	13604	13604
-FCST						

To locate the time series for your co- or by-product, complete the following fields:

- Branch/Plant
- Item Number

### What You Should Know About

**Process item numbers** Process item numbers do not have a time series.

**Suppressing blank lines** You can use a function key to suppress the quantity types that have no data in the time series.

### Example: Reviewing Time Series for Peeling Co-Products

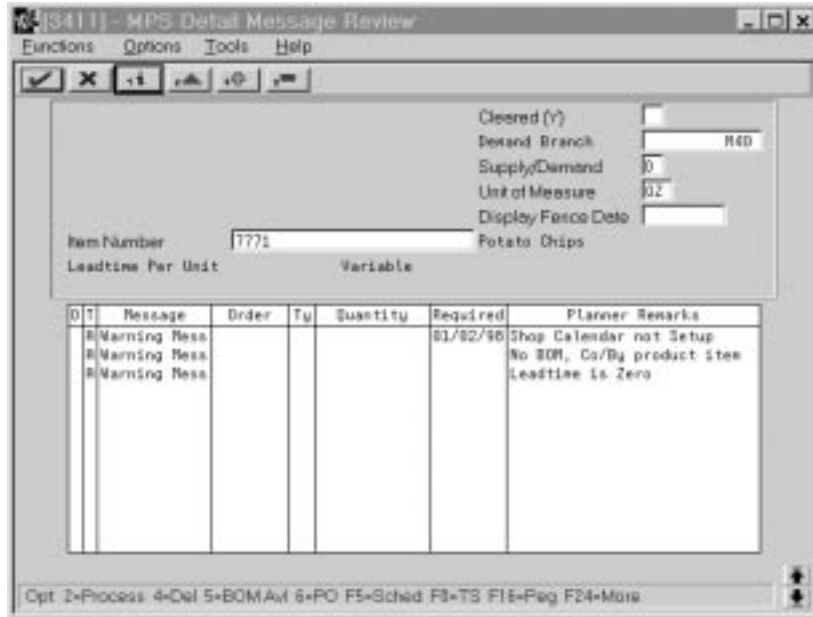
In the potato chip example, there is a peeling process (888). This process produces the following co-products:

- Potato slices
- Peelings



► **To review messages for processes**

On MPS Detail Message Review



- To locate the messages for your item, complete the following fields:
  - Demand Branch
  - Item Number

Review the detail messages for the co-product 7771. Co-products that are 100% planned by the process do not receive order messages. Warning messages are typical for co-products planned by a process.

- To locate the messages for process 777, complete the following field:
  - Item Number

The net requirement for the co-products act as requirements for the process. The +PLO for potato chips is ordered on the potato chip process.



DT	Message	Order	TY	Quantity	Required	Planner Remarks
	Warning Mess				01/02/90	Shop Calendar not Setup
	Warning Mess				01/02/90	Shop Calendar not Setup
	Defer	121419	MO	5792	02/27/90	
	Defer	12613	MO	5792	04/06/90	
	Expedite	12611	MO	5792	04/06/90	
	Expedite	12612	MO	5792	04/06/90	
	Increase Ord	121355	MO	42816	01/12/90	Manual Adjustment Necessary
	Increase Ord	121390	MO	92192	02/13/90	Manual Adjustment Necessary
	Increase Ord	12611	MO	90200	04/06/90	Manual Adjustment Necessary
	Increase Ord	12612	MO	86400	04/06/90	Manual Adjustment Necessary
	Order			109400	05/20/90	
	Order			96000	06/15/90	

## What You Should Know About

### Co-product messages

Co-products that are 100% planned by the process do not receive order messages.

## See Also

- *Working with Master Schedules (P3413)* for the processing options for MPS Time Message Inquiry
- *Working with Messages (P3411)* for the processing options for Detail Message Review



# DRP/MPS Multi-Facility Scheduling





# DRP/MPS Multi-Facility Scheduling

## Objectives

- To understand multi-facility scheduling concepts
- To define supply and demand relationships between your branch/plants
- To use the branch relationships chart to review your supply and demand relationships in a graphical hierarchical format
- To generate a multi-facility schedule
- To review the time series for the multi-facility schedule
- To review and process transfer messages for the multi-facility schedule

## About DRP/MPS Multi-Facility Scheduling

In a multi-facility operation, planned orders at the demand facility are the source of demand at the supply facility. You set up and maintain multi-facility schedules to:

- Manage the movement of material through distribution networks and multiple production facilities
- Formalize the process of transferring items among your facilities
- Create internal transfer orders to help ensure traceability of material and their costs between facilities
- Ensure that the branch from which you are ordering has enough inventory in stock to fill the order
- Schedule production according to realistic time frames

Multi-facility schedules allow greater control of your enterprise. You can define facility relationships at any level of detail for an entire facility, a product group, master planning family, or an individual item number. In addition, you can incorporate all your facilities into a single planning schedule.

DRP/MPS multi-facility scheduling consists of the following tasks:

- Setting up multi-facility schedules
- Generating multi-facility schedules
- Working with multi-facility planning output



The system records multi-facility information in the following tables:

<b>Bill of Materials Master (F3002)</b>	Contains warehouse or facility level information about bills of material, such as: <ul style="list-style-type: none"><li>• Costs and quantities of components</li><li>• Features and options</li><li>• Levels of detail for each bill</li></ul>
<b>Branch Relationships Master (F3403)</b>	Contains the supply/demand relationship among the branches.
<b>MPS/MRP/DRP Lower Level Requirements (F3412)</b>	Contains the source of gross requirements that are posted to items from parent items.
<b>MPS/MRP/DRP Detail Message Review (F3411)</b>	Contains the action messages generated by an MPS or MRP scheduling run.
<b>MPS/MRP/DRP Summary (F3413)</b>	Contains the time series data for forms and reports.
<b>Item Master (F4101)</b>	Contains basic information about each item that has been defined in inventory, such as: <ul style="list-style-type: none"><li>• Item numbers and descriptions</li><li>• Category codes</li><li>• Units of measure</li></ul>
<b>Item Branch (F4102)</b>	Contains warehouse or plant level information, such as: <ul style="list-style-type: none"><li>• Costs</li><li>• Quantities</li><li>• Location</li><li>• Branch level category codes</li></ul>

### What Are the Different Types of Multi-Facility Scheduling?

Two types of multi-facility scheduling are available:

- Consolidation
- Branch relationships

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Consolidation multi-facility scheduling allows you to:

- Combine all planning activity under one specific facility
- View total requirements throughout your network for an overall corporate projection
- View individual facilities' contribution to supply and demand, item availability, and sales
- Select processing options that generate planning for non-consolidated branches
- Consolidate all planning requirements at a selected branch
- Create schedules for each of your individual facilities as well as an overall plan for the parent company

Branch relationships multi-facility scheduling allows you to:

- Use the branch/plant relationships to explode demand through the supply network
- Provide a manufacturing or transfer facility code for a component item within a bill of material
- Pick or manufacture a part at another nearby facility without creating an inter-facility transfer order
- Specify any number of different supply facilities for each component
- Pass all or part of the demand from the demand plant to the supply plant





# Set Up Multi-Facility Schedules

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## Setting Up Multi-Facility Schedules

You set up multi-facility schedules to track supply, demand, and movement of material among the individual facilities of your enterprise. Multi-facility scheduling provides a flexible method for planning supply and resupply activities.

In multi-facility scheduling you must set up a table of supply and demand relationships among your facilities. The system uses these relationships to generate and maintain multi-facility schedules.

Setting up multi-facility schedules consists of the following tasks:

- Setting up supply and demand relationships
- Reviewing branch relationships on the relationships chart
- Reviewing the branch relationships report

The following describes how to set up multi-facility schedules using bill of material components.

### Before You Begin

- Verify that DRP, MPS, or RCCP has been set up
- Understand the concepts and terms described in *Single Level Master Scheduling*

### See Also

- *Setting Up DRP, MPS, and RCCP (P00051)* for information on how to define DRP, MPS, or RCCP data to use during processing
- *Single Level Master Scheduling* for more information on the master scheduling process

### Setting Up Supply and Demand Relationships



From Material Planning Operations (G34), choose Multi-Facility Planning

From Multi-Facility Periodic Planning Operations (G3423), enter 29

From Multi-Facility Setup (G3443), choose Branch Relationships Revisions

Use Branch Relationships Revisions to set up supply and demand relationships for any level of detail you choose, including:

- Branch/plant
- Product group
- Master planning family
- Individual item number

This approach allows you to maintain your supply and demand relationships in one central location and reduce inventory errors caused by complex facility relationships. In addition, when you set up your supply and demand relationships, you can include the following optional features:

#### **Mark up**

You can have the system automatically mark up the cost of an item when you create a transfer order. The system can adjust the cost by a fixed amount or percentage.

#### **Availability Checking**

You can ensure that the branch from which you are ordering has enough inventory in stock to fill the order. If the required quantity is not available, the system checks subsequent facilities in the sequence that you define.

NOTE: To allow the system to generate transfer order messages, you must activate availability checking.

#### **Effective dates**

Use effectivity dates to control the demands that are placed on your supply branches. If an effective date that was assigned to a supply branch has expired, the system checks for another facility.

► **To set up supply and demand relationships**

On Branch Relationship Revisions

Demand Plant/Fam	Item	Trans	Description
20	CO-SINGLE LDRD	10	Valley Forge Distribution Ctr
20	CO-S DISK TRAY	10	Valley Forge Distribution Ctr
10 DRP			Modesto Distribution Center/D
20 DRP			Valley Forge Distribution Ctr
10 DR2			Modesto Distribution Center/D
20 DR2			Valley Forge Distribution Ctr
40 QFS		10	Ft. Worth Distribution Ctr/04

1. Complete the following field:
  - Supply Plant
2. Complete the following optional fields:
  - Supply/Demand
  - Family
  - Item
  - Transit Leadtime
3. Access the detail area.



4. Complete the following optional fields:
  - Branch Level
  - Branch Priority
  - Availability Check
5. Allow the system to enter defaults or complete the following fields:
  - Effective From
  - Effective Thru
  - Source Percent
  - Percent to Fill
  - Markup Percent
  - Fixed
  - Include/Exclude
  - Unit Extended

Field	Explanation
Supply/Demand	<p>This field allows you to view messages from the viewpoint of either the supply or demand branch. Changing this field from S to D also changes the Supply Plant field immediately below the Action Code field to Demand Plant.</p> <p>S      Supply branch/plant D      Demand branch/plant</p> <p>..... <i>Form-specific information</i> .....</p> <p>If you are viewing messages for the supply branch/plant, the fold area shows branch/plants generating demand for each resupply order.</p> <p>If you are viewing messages for the demand branch/plant, the fold area shows branch/plants to which each resupply order is directed.</p>
Fmy	<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>
Trans	<p>A value that represents 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>You can enter level leadtime manually on Manufacturing Values Entry, or you can use 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>
Branch Level	<p>Determines the level at which a component branch should be processed in multi-plant processing. The lowest level branches (which are assigned a higher numerical value) are processed first, followed by the higher level branches (which are assigned a lower numerical value).</p> <p>NOTE: Assign branch levels carefully so that the planning system generates all demand before allocating supply.</p>
Branch Priority	<p>Determines the sequence within a level that the branches are processed in multi-plant DRP/MPS/MRP. Use this field along with the Branch Level field to check inventory availability first in one branch, and then another.</p>

Field	Explanation
Avl Chk	<p>Indicates if the planning system will check availability of the item or family at the supply branch/plant. If you enable availability checking on the item or family being demanded, the available inventory at the branch/plant will be committed until there is a zero balance. If you disable availability checking, the inventory balance in the supplying branch/plant can be negative.</p>
Source Percent	<p>The system uses source percent to determine what percent of the planned order should be supplied by the source branch.</p> <p>For example:            Demand Branch — ATL            Supply Branch — DEN source percent = 40%,            CHI source percent = 60%            If ATL needs 100 parts, the system generates a message to transfer 40 parts from DEN and 60 parts from CHI.</p> <p>A source percent of 100 transfers the entire supply from that Branch/Plant.</p>
Percent to Fill	<p>A field used during multi-plant processing to determine what percent of an order should be filled to place a transfer order message. For example:</p> <ul style="list-style-type: none"> <li>• Percent to Fill – 75%</li> <li>• Demand – 200</li> <li>• If the supply branch has 150 (75 percent of 200) or more available, then the planning system places the transfer order message.</li> </ul> <p>The system generates the transfer order message when the percent to fill is zero.</p> <p>NOTE: In order to allow the system to generate transfer order messages, you must activate availability checking.</p>
Markup Percent	<p>The percent markup is the percent of the cost that the system uses as mark up when the item is transferred from one branch to another.</p>
Fixed	<p>The amount to use to mark up the cost when the item is transferred from one branch to another.</p>
Inc/Exclude	<p>A code that indicates whether the system includes or excludes the item/category code in the Branch Relationships Master table (F3403) when generating a multi-plant schedule. If an item/category code is excluded, then that item/category code will be purchased or manufactured at the demand branch.</p>

Field	Explanation
Unt/Ext	This code determines if the fixed cost markup is to be added to the unit cost or the extended cost. Valid values are: U     Add markup to the unit cost E     Add markup to the extended cost

## What You Should Know About

### Deleting supply and demand relationships

When you delete a supply and demand relationship, the system deletes the entire record.

### Locating existing supply and demand relationships

When locating a relationship, you can narrow your search by entering either an item number or planning family. Enter an item number to display all plants that either supply or demand a certain part. Enter the planning family to display all plants that either supply or demand parts that belong to a specific master planning family.

### Defining the branch level

You must set the appropriate processing option to determine the level of the component branch to be one level higher than the header for the source branch.

The branch level, along with the branch priority, determines the sequence in which the the system processes supply and demand plants. The system processes the branches with the highest numerical branch level first.

## Processing Options for Branch Relationships Revisions

### SUPPLY OR DEMAND MODE:

1. Enter the default mode for entry of Branch Relationships. \_\_\_\_\_  
     'D' = Demand branch in header.  
     'S' = Supply branch in header.

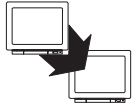
### DISPLAY FORMAT:

2. Enter a '1' to display the sales transfer format. The default is to display the branch relationship format. \_\_\_\_\_

### LEVEL UPDATE:

3. Enter a '1' to automatically update the Branch Level field. \_\_\_\_\_

## Reviewing Branch Relationships on the Relationships Chart



From Material Planning Operations (G34), choose Multi-Facility Planning

From Multi-Facility Periodic Planning Operations (G3423), enter 29

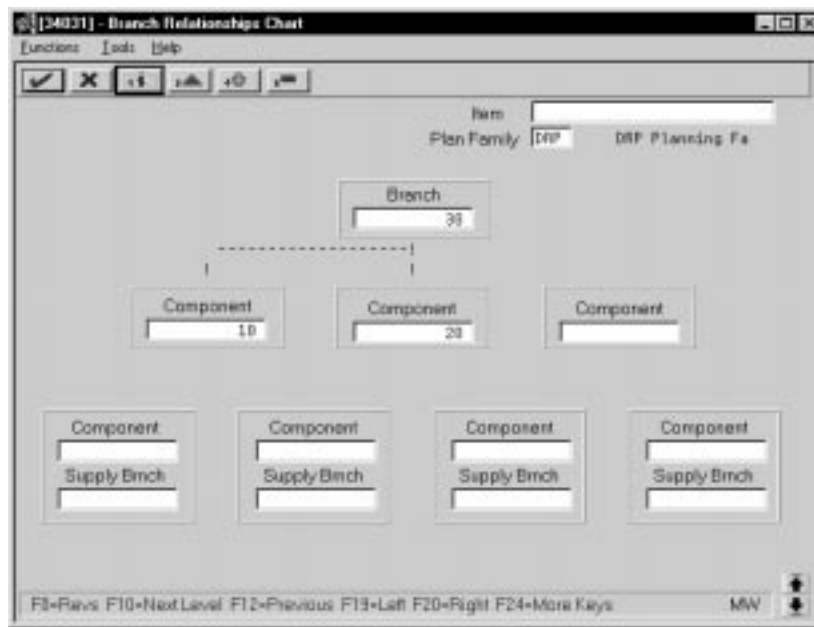
From Multi-Facility Setup (G3443), choose Branch Relationships Chart

Use the Branch Relationships Chart to review your supply and demand relationships in a graphical, hierarchical format. The Branch Relationships Chart displays the:

- Branch
- Level of the branch
- Supply branches for the corresponding demand branch

### ► To review branch relationships on the relationships chart

On Branch Relationships Chart



1. To locate the branch/plant for which you want to display supply and demand relationships, complete the following field:
  - Branch



2. To narrow your search to a specific level of detail, complete one of the following optional fields:
- Item
  - Plan Family

Field	Explanation
Branch	<p>A code that represents a high-level business unit. It can be used to reference a branch or plant that might have departments or jobs, which represent lower-level business units (data item MCU), subordinate to it. For example:</p> <ul style="list-style-type: none"> <li>• Branch/Plant (MMCU)</li> <li>• Dept A (MCU)</li> <li>• Dept B (MCU)</li> <li>• Job 123 (MCU)</li> </ul> <p>Business unit security is based on the higher-level business unit.</p> <p>..... <i>Form-specific information</i> .....</p> <p>On this form, the business units are arranged with the lowest level supply branch/plants at the top, and each successive demand branch/plant below.</p>
Plan Family	<p>A user defined code (system 41, type P4) under which you can organize logically related items.</p> <p>You can simplify the master planning process by concentrating on only the top 10% of the inventory value. This is similar to using the ABC Analysis, except that you can use this code to allow exceptions to ABC rules.</p> <p>Generally, you should only include items with high inventory investment in Master Planning. Excess stock can be carried for inventory items with little financial impact.</p>

### Processing Options for Branch Relationships Chart

BRANCH RELATIONSHIP REVISIONS:

1. Enter the DREAM Writer Version of Branch Relationship Revisions to call. Default is ZJDE0001.



# Generate Multi-Facility Schedules

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## Generating Multi-Facility Schedules



From Material Planning Operations (G34), choose Periodic Multi-Facility Planning

From Multi-Facility Periodic Planning Operations (G3423), choose MPS Regeneration

After you have set up the supply and demand relationships among your branch/plants, you can use MPS Regeneration to generate a multi-facility schedule. Alternatively, you can use MPS Net Change to generate a multi-facility schedule.

When you generate a multi-facility schedule, the system evaluates selected information, performs calculations, and recommends a time-phased planning schedule for all selected items.

### Before You Begin

- Set up DRP/MPS multi-facility scheduling. See *Setting Up Multi-Facility Schedules*.

### Processing Options for Master Planning Schedule – Multiple Plant

#### BUCKET INFORMATION:

1. Enter the Generation Start Date. \_\_\_\_\_  
(Default is current date)
2. Enter the number of past due periods, (0, 1 or 2). \_\_\_\_\_  
(Default is 0)
3. Enter the planning horizon periods, (maximum of 52 periods):
  - a. Days (e.g. 5 ) \_\_\_\_\_
  - b. Weeks (e.g. 25) \_\_\_\_\_
  - c. Months (e.g. 6 ) \_\_\_\_\_

#### GENERATION DEFINITION:

4. Enter the Generation Mode: \_\_\_\_\_
  - 1 - Net Change
  - 2 - Gross Regeneration
5. Enter the Generation Type: \_\_\_\_\_
  - 1 - Single Level MPS/DRP

- 3 - Multi Level MPS Items
- 4 - MRP with/without MPS
- 5 - MRP with Frozen MPS

PHANTOM ITEMS:

6. Enter a '1' to generate messages and time series records for phantoms. \_\_\_\_\_

ON HAND ADJUSTMENTS:

7. Enter a '1' to decrease beginning available by safety stock quantity. \_\_\_\_\_

8. Enter the lot hold codes (up to 5) to be considered on hand, or enter a '\*' to consider all held lots as on hand. If left blank, held lots will not be considered on hand. \_\_\_\_\_

9. Enter a '1' by the following Receipt Routing quantities to be considered on hand.

- a. Quantity in Transit \_\_\_\_\_
- b. Quantity in Inspection \_\_\_\_\_
- c. User Defined Quantity 1 \_\_\_\_\_
- d. User Defined Quantity 2 \_\_\_\_\_

NOTE: Any quantity not included will be placed in the On Receipt bucket.

DAMPER DAYS:

10. Enter the Defer Damper days, (no defer message if less than 'X' number of days). \_\_\_\_\_

11. Enter the Expedite Damper days, (no expedite message if less than 'X' number of days). \_\_\_\_\_

SAFETY LEADTIME:

12. Enter the purchased item leadtime days. \_\_\_\_\_

13. Enter the manufactured item leadtime days. \_\_\_\_\_

FORECASTING INFORMATION:

14. Enter the Forecast Types to include. Up to 5 types can be included.

- a. Forecast Type \_\_\_\_\_
- b. Forecast Type \_\_\_\_\_
- c. Forecast Type \_\_\_\_\_
- d. Forecast Type \_\_\_\_\_
- e. Forecast Type \_\_\_\_\_

RATE BASED SCHEDULING INFORMATION:

15. Enter the Schedule Type for rate based items. (Default is 'AC') \_\_\_\_\_

16. Enter a '1' to extend rate based adjustments to lower level items. \_\_\_\_\_

17. Enter status code used to denote closed rates. (Default is 99) \_\_\_\_\_

PURCHASE ORDER INFORMATION:

18. Enter the Document Type for purchase orders. (Default is 'OP') \_\_\_\_\_

WORK ORDER INFORMATION:

19. Enter the Document Type for work orders. (Default is 'WO') \_\_\_\_\_

20. Enter the Work Order Status at which messages will no longer be exploded to lower level items. If left blank, all messages will be exploded to lower level items. \_\_\_\_\_

INCLUSION RULES:

21. Enter the Version of Supply/Demand Inclusion Rules to be used. \_\_\_\_\_

PERFORMANCE ISSUES:

22. Enter a '1' to initialize the MPS/MRP Print Code. This code is used for selecting records during the MPS/MRP print. (See glossary for MRPD.) \_\_\_\_\_

NOTE: If left blank, the run time of the generation will be reduced.

23. Enter the User Defined Code Type that contains the list of quantity types to be calculated & written to the Time Series file (F3413). User Defined Code 34/QT contains a master list of quantity types that can be written and will be used as the default. \_\_\_\_\_

24. Enter a '1' clear the DRP/MPS/MRP files before a Regeneration. This option should be used with EXTREME CAUTION. It will totally clear the following files: \_\_\_\_\_

- F3411 - Message Detail
- F3412 - Pegging
- F3413 - Time Series

NOTE: If a '1' is entered, it will improve performance and clean up any bad data in the files.

25. Enter a '1' to process each branch from the Branch Relationship table at each level that branch occurs: This is only used when the Branch Relationships are used for Multi-Facility and will increase the generation time. \_\_\_\_\_

26. Enter the default branch for retrieving the Shop Floor Calendar to reduce processing time. If left blank, the calendar for each branch will be used. \_\_\_\_\_

MULTI-FACILITY INFORMATION:

27. Enter one of the following methods of Multi-Facility processing: \_\_\_\_\_

- 1 - Simple Consolidation
    - a. Enter a '1' to also run a regular generation on the non-consolidated branches. \_\_\_\_\_
    - b. Enter the Branch to consolidate to. \_\_\_\_\_
  - 2 - Use Branch Relationships
    - a. Enter the Category Code (1-5) to be used. \_\_\_\_\_
    - b. Enter a '1' to make all manufactured items in the originating branch. \_\_\_\_\_
  - 28. Enter the Document Type for transfer orders. (Default is 'OT') \_\_\_\_\_
- PROCESS PLANNING:
- 29. Enter a '1' to generate planning in Process mode. \_\_\_\_\_  
NOTE: If left blank, the run time of the generation will be reduced.
- LOT EXPIRATION:
- 30. Enter a '1' to consider lot expiration dates in calculations. \_\_\_\_\_
- FORECAST CONSUMPTION PROCESSING:
- 31. Enter a '1' to use Forecast Consumption logic. \_\_\_\_\_

### What You Should Know About Processing Options

- |  |   |
|--|---|
| <b>Generation definition (5)</b>               | You must specify in the processing option the type of plan to generate the multi-facility DRP or MPS items. Depending upon the type of master schedule you need, you can use any of the generation types listed in the processing option.   |
| <b>Interplant Relationships (Tab: Option:)</b> | Transfer orders are not supported for configured items. Issues of stocked configured items are not costed correctly. These incorrectly costed items cause problems for manufacturers who want to build a configured subassembly in a different branch/plant than the configured parent. |

### **Multi-facility information (26)**

You must set the appropriate processing option to control whether to run a consolidated or a full multi-facility DRP or MPS Regeneration.

Consolidation adds the item's time series data in the same time buckets for selected branch/plants and includes the combined totals into a consolidation branch/plant.

The system combines the supply and demand data for selected branch/plants and includes the combined totals into a consolidation branch/plant. The system generates a new time series only for the consolidation branch and not the individual branches.

### **Transfer orders (27)**

Transfer order messages are an output of multi-facility scheduling. You must set the appropriate processing option to identify the document type to use for transfer orders.

When the system processes a transfer order, it creates a sales order at the supply plant and a purchase order at the demand plant.





# Work with Multi-Facility Planning Output

---

## Working with Multi-Facility Planning Output

Multi-facility planning output consists of information in the time series and transfer order messages. Use the time series information to either accept the planning that is suggested by the system or to override it. You should review the transfer order messages for individual item numbers to determine which action, if any, you need to take.

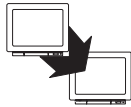
Working with multi-facility planning output consists of the following tasks:

- Reviewing the multi-facility time series
- Processing multi-facility transfer order messages
- Reviewing transfer messages

### Before You Begin

- Generate a current multi-facility schedule. See *Generating Multi-Facility Schedules*.

## Reviewing Multi-Facility Time Series



From Material Planning Operations (G34), choose Daily Multi-Facility Planning

From Multi-Facility Planning Daily Operations, (G3414), choose Time Series Inquiry

Use Time Series Inquiry to review the times series for the multi-facility schedule. The multi-facility schedule is a record of time-phased supply and demand for selected items.

This data is derived from the most recent regeneration or net change run. Processing options in the DRP/MPS regeneration program enable you to set up daily, weekly, or monthly time periods (buckets).

The time series for multi-facility items uses quantity type ID (inter-plant demand) to indicate the net demand that the system transfers to the supply branch/plant for all demand branch/plants.

► **To review the multi-facility time series**

On Time Series Inquiry

The screenshot shows the SAP Time Series Inquiry window for item 0104. The window title is "[3413] - Time Series Inquiry". The menu bar includes Functions, Tools, and Help. The input fields are: Branch/Plant (30), Start From Date (empty), Unit of Measure (ER), Item Number (0104), and Leadtime Level (7 Fixed). The description is "Rapa Valley Soft Side CD Case". The data table below shows the time series for various components.

	Past Due	01/30/98 L	02/27/98	03/31/98	04/30/98	05/29/98
LVR						
SF						
SP						
+BRU	150	150	285-	626-	1372-	1924-
+BR	150	150				
+DR						
+POU		180				
+PO		180				
+MOU						
+MO						
+RSU						
+RS						
-LEMP						
-FSDU		535	541	546	552	557
-FSGT		485	541	546	552	557

To locate the time series for your item, complete the following fields:

- Branch/Plant
- Item Number

**See Also**

- *Reviewing DRP/MPS Time Series (P3413)*

**Processing Multi-Facility Transfer Order Messages**



From Material Planning Operations (G34), choose Daily Multi-Facility Planning

From Multi-Facility Planning Daily Operations, (G3414), choose Detail Message Review

Use Detail Message Review to review the transfer order messages for the multi-facility schedule. Multi-facility scheduling creates messages that are appropriate to the demand and supply facilities. If you choose to process the messages, the system automatically creates transfer orders. You can transfer items between facilities either at cost or at a fixed or percent markup.

► **To process multi-facility transfer order messages**

On Detail Message Review

The screenshot shows a window titled "[3411] - Detail Message Review" with a menu bar (Functions, Options, Tools, Help) and a toolbar. Below the toolbar are several input fields: "Cleared (Y)" (checkbox), "Demand Branch" (text box with "10"), "Supply/Demand" (text box with "0"), "Unit of Measure" (text box with "EA"), "Display Forecast" (checkbox), "Item Number" (text box with "PP4"), and "Leadtime Level" (text box with "Fixed"). Below these fields is a table with the following data:

Message	Order	Ty	Quantity	Required	Planner Remarks
0 Order		OP	477	01/02/98	
Supply Branch				Require/Comp 01/02/98	Supplier Number
Demand Branch	10			Planned Start 11/29/97	4343
Last Status	220			Recommend St 11/29/97	Vector Manufacturing Co
0 Order		OP	520	02/02/98	
Supply Branch				Require/Comp 02/02/98	Supplier Number
Demand Branch	10			Planned Start 01/26/98	4343
Last Status	220			Recommend St 01/26/98	Vector Manufacturing Co
0 Order		OP	520	02/02/98	
Supply Branch				Require/Comp 02/02/98	Supplier Number
Demand Branch	10			Planned Start 02/23/98	4343
Last Status	220			Recommend St 02/23/98	Vector Manufacturing Co

At the bottom of the window, there is a status bar with the text: "Opt 2=Process 4=Del 5=BOM Avl 6=PO F5=Sched F8=TS F16=Reg F24=More".

- To locate the transfer order messages for your item, complete the following fields:
  - Demand Branch
  - Item Number
- Choose Process Message for those transfer order messages that you want to process.

The screenshot shows a 'Transfer Order' window with the following fields and data:

- Mode (F):  SO Exchg Rate:  PO Exchg Rate:
- Order Date:  Cancel Date:  Req. Date: 01/02/98
- Ship From Bn:  38 S/O No:  21
- Ship To Bn:  19 P/O No:  21
- Landed Cost:  Skip To Line:

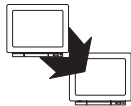
Item Number	Quantity	UoM	Price	Extended	Typ	D
0FP4	477					00

Footer: Opt: 3=Delete F4=Detail F5=Add/Req F13>S/O Info F14>P/O Info F24=More

3. On Transfer Order, accept the order to create the following:
  - Transfer order for the item
  - Purchase order number for the demand plant
  - Sales order number for the supply plant
4. Review the information for the new orders in the following fields:
  - Order Date
  - Cancel Date
  - Requested Date
  - Promised Date
  - Sales Order Number
  - Purchase Order Number
  - Ship From Branch
  - Ship To Branch
  - Landed Cost
  - Quantity
  - Item
  - Unit of Measure
  - Price
  - Extended Cost
  - Line Type

Field	Explanation
Order Date	The date that an order was entered into the system. This date determines which effective level that the system uses for inventory pricing.
Cancel Date	The date that the order should be canceled if the goods have not been sent to the customer or the goods have not been received from the supplier. This is a memo-only field and does not cause the system to perform any type of automatic processing.
Req. Date	The requested date for a Purchase Order created thru Direct Ship or Transfer Order entry. If you leave this field blank, the system uses today's date, which can be overridden at any time.
Ship To Brn	A code that identifies a business unit in the company.
Landed Cost	A user defined code (41/P5) that indicates the landed cost rule for an item. The landed cost rule determines purchasing costs that exceed the actual price of an item, such as broker fees, commissions, and so forth. You set up landed cost rules on Landed Cost Revisions.
Price	The list or base price to be charged for one unit of this item. In sales order entry, all prices must be set up in the Base Price table (F4106).
Extended Price	The number of units multiplied by the unit price.

## Reviewing Transfer Messages



From Manufacturing Planning Operations (G34), choose Multi-Facility Planning

From Multi-Facility Planning (G3414), choose Transfers

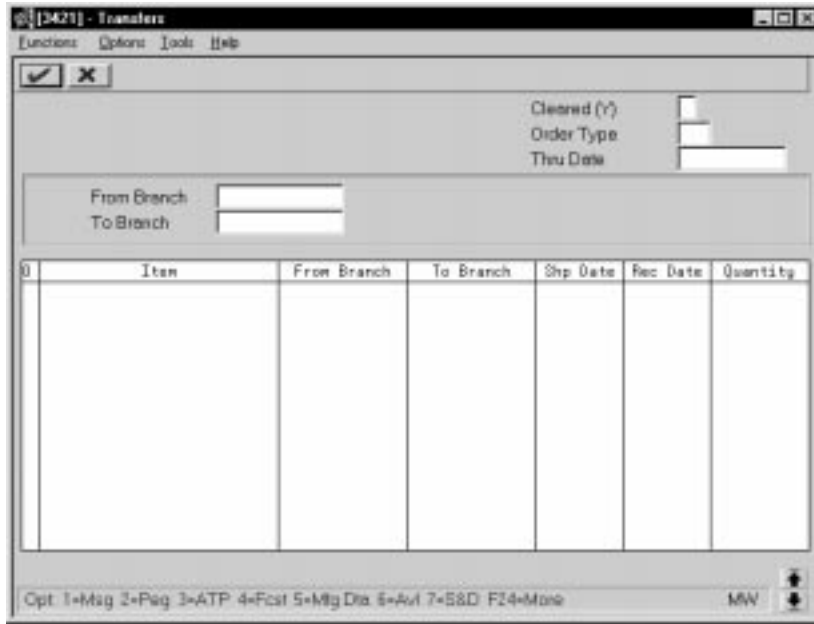
Use Transfers as a convenient utility to analyze planned transfer orders created during a multi-plant DRP/MPS/MRP generation. You can also use Transfers to view other activity associated with branches or plants, such as:

- Pegging
- ATP
- Forecast
- Manufacturing data
- Available capacity
- Supply and demand

► **To review transfer messages**

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On Transfers



1. Complete the following fields:
  - From Branch
  - To Branch

The system displays the planned transfer orders created during the multi-plant generation.

2. To review the messages for a transfer order, enter a 1 in the following field:
  - Option

**See Also**

- *Working with Messages (P3411)*



**Exercises**

See the exercises for this chapter.

# Single Facility Material Requirements Planning







# Single Facility Material Requirements Planning

## Objectives

- To generate Material Requirements Planning (MRP)
- To validate the material requirements plan
- To review MRP action messages
- To set up Capacity Requirements Planning (CRP)
- To set up MRP and capacity requirements display
- To generate and process work orders

## About Single Facility MRP

Material Requirements Planning (MRP) uses information from the bill of material and inventory records to calculate the time-phased net material requirements for every component item and subassembly. MRP suggests a replenishment plan to support the production of the quantities that are specified in the Master Production Schedule.

A single facility requirements plan critically impacts lower-level components or resources, such as skilled labor or revenues. Single facility implies material requirements planning at the component level.

The MRP process consists of:

- Determining what you need (forecast, customer orders, and interplant demands)
- Subtracting what you have (inventory, purchase orders, and work orders)
- Calculating what you need and when you need it

You can process a material requirements plan in one of two ways:

- Freeze the MPS and generate MRP
- Validate the MPS and then generate a combination of MPS and MRP

When you process a material requirements plan, the system summarizes gross material requirements for each assembly, component, and raw material part number. The requirements plan supports the MPS for each time period in the planning horizon.



You can generate a material requirements plan for all items or for a net change generation, which includes only the items that have changed since the last generation. After you generate MRP output, you can review and respond to messages.

The system uses the following inputs to MRP:

- Demand
  - Service part's forecast and sales orders
  - Parent's planned and firm work order demand
- Supply
  - Firm work orders
  - Rate schedules
  - Purchase orders
  - Inventory
  - In-receipt routing
- Product data
  - Item Branch (F4102)
  - Bill of Materials Master (F3002)

The system generates the following outputs from MRP:

- Messages
  - Action
  - Warning
- Time series with calculated quantities for:
  - Ending Available (EA)
  - Available to Promise (ATP)
  - Cumulative Available To Promise (CATP)
  - Planned orders

Material requirements planning consists of the following tasks:

- Generating material requirements plans
- Working with material requirements plans
- Validating material requirements plans
- Setting up material and capacity requirements planning
- Processing orders for MRP

---

The system records material planning information in the following tables:

<b>Bill of Materials Master (F3002)</b>	Contains warehouse or facility level information about bills of material, such as: <ul style="list-style-type: none"><li>• Costs and quantities of components</li><li>• Features and options</li><li>• Levels of detail for each bill</li></ul>
<b>Work Order Master (F4801)</b>	Contains supply rate information and work orders.
<b>Branch Relationships Master (F3403)</b>	Contains the supply and demand relationship among the branches.
<b>Forecast Consumption Periods (F3405)</b>	Contains the forecast consumption periods that you defined on Forecast Consumption Periods.
<b>MPS/MRP/DRP Detail Message Review (F3411)</b>	Contains the action messages that were generated by an MPS or MRP scheduling run.
<b>MPS/MRP/DRP Lower Level Requirements (F3412)</b>	Contains the source of gross requirements that are posted to items from parent items.
<b>MPS/MRP/DRP Summary (F3413)</b>	Contains the time series data for forms and reports.
<b>Forecast (F3460)</b>	Contains the forecast data that MRP uses for calculations.
<b>Item Master (F4101)</b>	Contains basic information about each item that has been defined in inventory, such as: <ul style="list-style-type: none"><li>• Item numbers and descriptions</li><li>• Category codes</li><li>• Units of measure</li></ul>
<b>Item Branch (F4102)</b>	Contains warehouse or plant-level information, such as: <ul style="list-style-type: none"><li>• Costs</li><li>• Quantities</li><li>• Location</li><li>• Branch level category codes</li></ul>

### How Do You Use Bills of Material in MRP?

The bill of material provides product structure information that MRP uses to explode the master production schedule to all component items. If a parts list does not exist for a work order, MRP generation uses the standard bill of material to explode demand.

The following features determine which components explode, how to modify the quantity, and how the system calculates schedule dates:

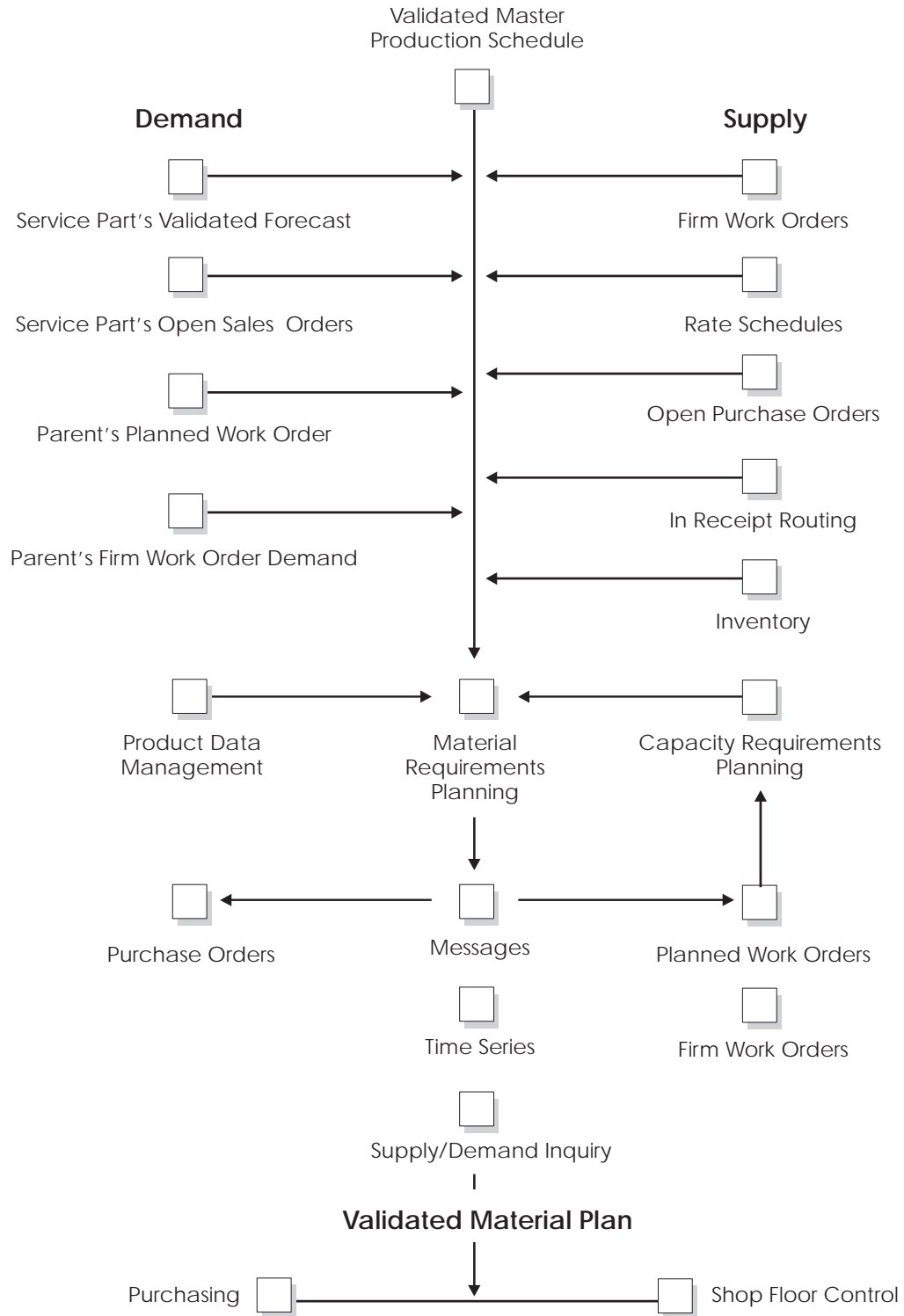
- Effectivity checking
- Feature planning percentage
- Quantity per
- Bill of material scrap factor
- Leadtime offset
- Operation scrap
- Fixed or variable quantity per assembly

### What Are the Differences Between MRP and MPS?

MPS generally has independent demand, while MRP has dependent demand. Independent demand is demand for an item that is unrelated to the demand for other items, such as demand for finished goods. Dependent demand is demand that is directly related to or derived from the bill of material structure for other items or end products. MRP might also include forecast and sales orders if items are sold as service (spare) parts. The majority of demand, however, is demand from parent orders. The demands on MRP include:

- Parent's firm work orders
- Parent's planned work orders
- Interplant demands
- Service part forecast
- Service part sales orders

The following illustration compares the flow of MRP to that of MPS.



### How Do You Run MRP Effectively?

MRP runs most effectively when you ensure the accuracy and validity of the following items:

- |                         |  |
|-------------------------|--|
| <b>Master schedule</b>  | Ensure that the master schedule is at least 95% accurate. Accuracy is measured by comparing the creation of an end product to the performance of the schedule.   |
| <b>Bill of material</b> | <p>Ensure that the bill of material is at least 98% accurate and contains the correct components and quantities. Accuracy is measured by comparing how the item is built in the factory to the correct components and quantities contained in the bill of material.</p> <p>If you find a discrepancy between the parts list and the bill of material, you cannot count the bill of material as accurate.</p> |
| <b>Inventory</b>        | Ensure that your inventory count is at least 95% accurate. You can achieve this accuracy through the cycle count process.  |
| <b>Leadtimes</b>        | <p>Ensure that your leadtimes are valid.</p> <p>Note that the system gives you planned leadtimes. In execution, the actual time it takes to complete an order can vary.</p>  |

### See Also

- *About Time Fences and System Messages (P3413)*

# Generate Material Requirements Plans

---

## Generating Material Requirements Plans



From Material Planning Operations (G34), choose Single Site Planning

From Single Site Periodic Planning Operations (G3422), choose MRP Regeneration

Use MRP Regeneration to produce a single facility MRP planning schedule for the items that you select. Alternatively, you can use MRP Net Change to produce a single facility MRP planning schedule. You can generate a material requirements plan for:

- A single item
- All items
- Only items that are affected by transactions since the last generation

When you generate a material requirements plan, the system evaluates selected information, performs calculations, and recommends a time-phased replenishment plan for all selected items.

MRP regeneration uses the same programs as DRP/MPS regeneration. The following summarizes these programs:

### **MRP Regeneration**

MRP Regeneration is a batch program that produces an MRP schedule for all items that are selected in the data selection criteria. When you run MRP Regeneration, the system:

- Reads the selected forecast
- Uses data from the MRP inclusion rules to calculate requirements for master planned items
- Generates a time series and messages for the selected items and components of selected items

### **MRP Net Change**

MRP Net Change is the same batch program as MRP Regeneration. The data selection is further defined to include only the items that you selected on Net Change Review. When you run MRP Net Change, the system:

- Evaluates selected information
- Performs calculations
- Generates a time series and messages for the selected items and components of selected items

### **Before You Begin**

- Verify that MRP/CRP has been set up.
- Understand the concepts and terms described in *Single Level Master Scheduling*. See *Single Level Master Scheduling*.
- Generate a forecast for independent demand items. See *Generating Detail Forecasts* in the *Forecasting Guide*.

### **What You Should Know About**

#### **Bill of material**

MRP uses the bill of material to explode demand to all component items. If a parts list does not exist for a work order, MRP generation uses the standard bill of material to explode demand.

You should define a bill of material type M (standard manufacturing bill) for work order headers without a parts lists and for parent planned orders. The MRP generation uses bill type M to sequence items according to how the product is built.

#### **Low level code**

The system uses the low level code to determine when to generate a time series for an item. MRP generation explodes lower level demand only for manufactured items. The system does not explode demand to levels below a purchased item, even if that item has a bill of material.

#### **Generation type**

You must use generation types 4 and 5 to generate a master planning schedule for MRP items. If the status of MPS is frozen, generation type 5 explodes only the component items of the master scheduled item. Select generation type 4 to explode MPS items and component items.



**Frozen orders**

If you identify work orders or purchase orders for an item as frozen, the program does not replan any orders for the item. Instead, you receive a frozen order message for that item.

**Data selection**

To run an MRP regeneration, base your selection on branch/plant, category codes, and planning code. The system can process any selection from based-on table fields.

To run a net change generation, set the net change flag to 1 to select items that have changed since the last generation of the program.

**See Also**

- *Setting Up MRP and Capacity Planning (P0005A)* for information on how to define MRP/CRP data to use during processing
- *Reviewing Items for Master Schedule Selection (P3402)* for information on how to use the Net Change Review program to review items that have changed, either through planned or unplanned activities
- Processing Options for *Master Planning Schedule*



# Work with Material Requirements Plans

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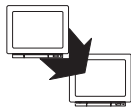
## Working with Material Requirements Plans

MRP output consists of information in the time series and action messages. Use the time series information to decide whether to accept the planning suggested by the system or to override it. You should review the action messages for individual item numbers to determine which action, if any, that you need to take.

Working with the material requirements plan consists of the following tasks:

- Reviewing MRP time series
- Reviewing planning families for MRP
- Working with messages for MRP
- Working with scheduling information

## Reviewing MRP Time Series



From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose Time Series Inquiry

Use the MRP Time Series Inquiry program to review the item series for the material requirements plan. The time series is a record of time-phased supply and demand netting for selected items. The system retrieves this data from the most recent generation or net change run. Use processing options to set up daily, weekly, or monthly time periods (buckets).

MRP Time Series Inquiry uses the same program as DRP/MPS Time Series/ATP Inquiry. You can vary the settings in the processing options to accommodate the different requirements for MRP.

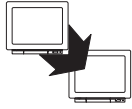
### Before You Begin

- Generate a current material requirements plan that includes the start and end dates for the planning periods that you want to review. See *Generating Material Requirements Plans*.

### See Also

- *Reviewing DRP/MPS Time Series (P3413)*

## Reviewing Planning Families for MRP



From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose MRP Planning Family Review

After you generate MRP, you can review all item numbers that have messages. You can display the list of items with messages by using the following filters:

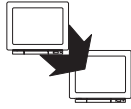
- Branch/Plant
- Thru Date
- Planning Code
- Message and Stocking Type
- Planner Number
- Buyer Number
- Master Planning Family

MRP Planning Family Review uses the same program as DRP/MPS Planning Family Review. You can vary the settings in the processing options to accommodate the different requirements for MRP.

### See Also

- *Reviewing Planning Families (P3401)*

## Working with Messages for MRP



From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose Detail Message Review

Access the messages directly using the Detail Message Review program.  
Complete the following tasks:

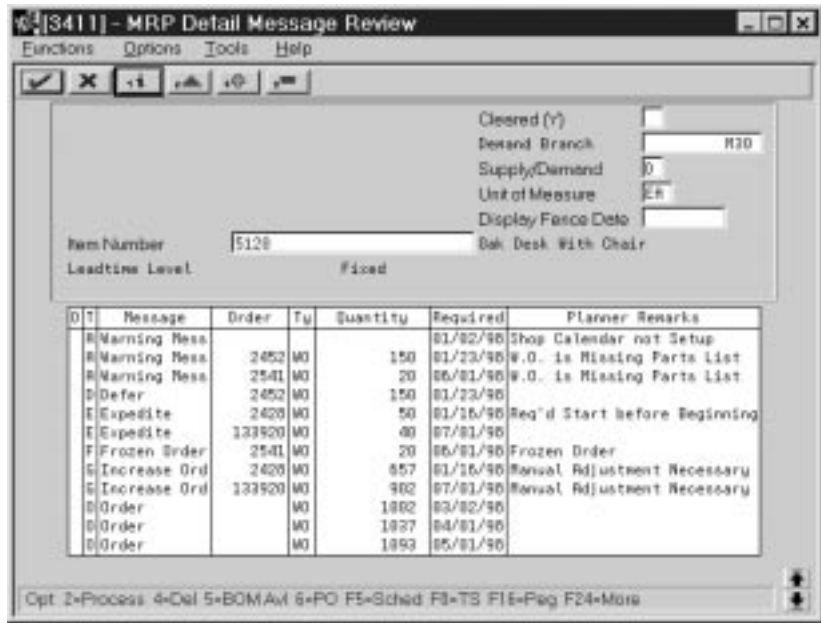
- Review MRP detail messages
- Review quantity types for MRP
- Process work order messages for MRP
- Process purchase order messages for MRP

Each time that you run a generation for MRP, the system produces action messages to identify situations in which demand requires one of the following:

- Changing the existing supply orders
- Placing new orders

Use MRP Detail Message Review to review exception messages from the latest planning generation. These messages might help you evaluate planned and existing orders. You can review the most critical messages first and review other items in the order that you will process them.

MRP Detail Message Review uses the same program as DRP Detail Message Review. You can vary the settings in the processing options to accommodate the different requirements for MRP.



See Also

- *Working with Messages (P3411)* for information on the Detail Message Review processing options

Reviewing MRP Detail Messages

Detail messages include all of the messages on Detail Message Review. After you generate MRP, you review the action messages for the individual item numbers. After you review the message, you can place the message on hold, or clear, delete, or process the message.

What You Should Know About

**Component warning messages**

Based on the messages for the parent item, the direct components also receive warning messages.

At the component level, there are special S messages that are similar to warning messages (A). Both types of messages originate from the parent. The S messages, however, indicate that the parent demand is firm planned.

See Also

- *Working with Messages (P3411)*

## Reviewing Quantity Types for MRP

Use MRP Detail Message Review to review the quantity types that are generated for the material requirements plan. These quantity types include:

<b>Planned order (+PLO)</b>	Represents recommended replenishment orders for an item.
<b>Planned work order (-PWO)</b>	Represents demand for components that will be consumed when you manufacture the parent's planned work order.
<b>Work order (+WO)</b>	Represents a manufacturing order that is currently in process or that has been authorized to be worked on.
<b>Firm work order (-FWO)</b>	Represents demand for components that will be consumed while manufacturing the parent's released work order.
<b>Firm planned order (+FPO)</b>	Processed similarly to planned orders, but allows the planner to firm up requirements at the next level. The system does not allow the component items to assume the action messages from the parent level. A status code of 41 for document type WO indicates a firm planned order.

The following describes how the system uses document types, quantity types, and work order codes during the MRP generation process. Status codes are user defined.

<b>Planned orders (+PLO)</b>	MRP automatically changes schedule dates and quantity for each planning generation.
	The status code for document type +PLO is P.
	The component demand is -PWO.

### **Firm orders (WO)**

MRP creates messages that require the planner to balance supply and demand.

+WO does not always equal +WOU in schedule dates or quantities.

A status code for document type WO of 10 indicates that the system has released the work order.

The component demand is -FWO and -FWOU. Message type A warns of parent supply and demand imbalances. A firm work order does not always equal a firm work order unadjusted in schedule dates or quantity.

### **Firm orders (WO)**

These orders contain parts lists and routing instructions. MRP creates messages that require the planner to balance supply and demand.

+WO does not always equal +WOU in schedule dates or quantities.

A status code for document type WO of 40 indicates that the system has committed inventory to the order and has attached a parts list and routing instructions.

The component demand is -FWO and -FWOU. Message type A warns of parent supply and demand imbalances. A firm work order does not always equal a firm work order unadjusted in schedule dates or quantity.

### **Firm orders (WO)**

The system plans these orders when you run the MRP planning generation. MRP creates messages that require the planner to balance supply and demand. The messages contain FPO planner remarks.

+WO does not always equal +WOU in schedule dates or quantities.

The component demand is -FWO and -FWOU. Message type S warns of firm planned order parent supply and demand imbalances. A firm work order always equals a firm work order unadjusted in schedule dates or quantity.



### **Work orders (WO)**

The system creates the work order based on the requested date and the date set by the freeze fence on Plant Manufacturing Data. MRP does not create action message types inside the freeze fence. Supply and demand imbalance inside the freeze fence is satisfied by order message type O immediately outside the freeze fence.

+WO does not always equal +WOU in schedule dates or quantities.

Any status code for document type WO inside the freeze fence.

The component demand is -FWO and -FWOU. The system does not create any messages from the parent demand.

### **Work orders (WO)**

Frozen orders. MRP does not create action messages for this work order. It creates warning message types (A) and frozen order message types (F). New order message type O is created to satisfy additional demand.

Any status code for document type WO indicates a freeze code on the work order header.

The component demand is -FWO and -FWOU. The system does not create any messages from the parent demand.

## **Processing Work Order Messages for MRP**

Work order messages appear on Detail Message Review with an order type of WO. When you process work order messages, the master schedule becomes firm through the date of the processed orders. These firm orders will not be automatically replanned in subsequent MPS generations.

### Processing Purchase Order Messages for MRP

Purchase order messages appear on Detail Message Review with an order type of OP. When you process a purchase order message, you can:

- Process a single action message without blanket order checking or consolidation.
- Process one or more action messages with blanket order checking.
- Process messages using purchase order consolidation to place more than one item on a purchase order.
- Process purchase order messages using a planning family.
- Process messages using the Supplier Scheduling system.

#### See Also

- *Processing Work Order Messages (P3411)*
- *Processing Purchase Order Messages (P3411)*
- *Reviewing Planning Families (P3401)*

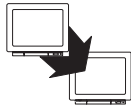
### Working with Scheduling Information

In daily operations, you might need to identify detail information about items, work centers, or planning families. Use the MRP inquiry programs to determine the status of items or work centers.

Complete the following tasks:

- Review MRP pegging demand
- Review MRP supply and demand
- Review shop floor workbench for MRP
- Review leadtime for MRP

## Reviewing MRP Pegging Demand



From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose Pegging Inquiry

Use Pegging Inquiry to determine the source of demand for dependent requirements. Pegging Inquiry displays only those parents that contain planned or open orders. Pegging Inquiry allows you to:

- Display the work orders for a particular item
- Trace the source of demand for each item
- Display the different levels in a bill of material, so that you can peg demand from the beginning level through the parent item

You can trace the path of dependent requirements up through parent items to the final assembled item and even to the sales order or forecast. You can use this information to determine if you need to reschedule or change orders.

### ► To review MRP pegging demand

On Pegging Inquiry

Request	Quantity	Parent	Description
01/01/98	50	5128	FO Firm Work Order w/Parts List
01/16/98	150	5128	MO Real (firm) Work Orders
02/23/98	1002	5128	MP Planning Work Orders
03/25/98	1037	5128	MP Planning Work Orders
04/24/98	1093	5128	MP Planning Work Orders
05/25/98	20	5128	MO Real (firm) Work Orders
05/25/98	1161	5128	MP Planning Work Orders
06/24/98	40	5128	FO Firm Work Order w/Parts List
06/24/98	1504	5128	MP Planning Work Orders

1. To locate the item for which you want to review pegging demand, complete the following fields:
  - Item Number
  - Branch/Plant

2. To narrow your search to a specific date, complete the following optional field:
  - Requested

Field	Explanation
Requested	The date that an item is to arrive or that an action is to be complete.  ..... <i>Form-specific information</i> .....  As of date for pegging.
Parent	The system provides for three separate item numbers. <ol style="list-style-type: none"> <li>1. Item Number (short) – An eight-digit, computer assigned, completely non-significant item number.</li> <li>2. 2nd Item Number – The 25-digit, free form, user defined alphanumeric item number.</li> <li>3. 3rd Item Number – Another 25-digit, free form, user defined alphanumeric item number.</li> </ol> ..... <i>Form-specific information</i> .....  On this form, you see the item number for the parent of this component part.

### Processing Options for Pegging

MESSAGE FILE REVISIONS:

1. Enter the version of Message File Revisions to be used. Default is ZJDE0001. \_\_\_\_\_

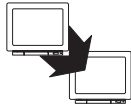
TIME SERIES:

2. Enter the version of Time Series to be used. Default is ZJDE0001. \_\_\_\_\_

SUPPLY/DEMAND INQUIRY:

3. Enter the version of Supply/Demand Inquiry to be used. Default is ZJDE0001. \_\_\_\_\_

## Reviewing MRP Supply and Demand



From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose Supply/Demand Inquiry

Use Supply and Demand Inquiry to review the current demand for a selected item. Supply and Demand Inquiry allows you to:

- Display the current inventory position, including all scheduled supply and demand.
- Review item quantity supply, demand, and order availability in date order.

### ▶ To review MRP supply and demand

On Supply/Demand Inquiry

Demand	Supply	Available	Promise Date	Order No	Ty	Customer/Supplier Name
	445	445	07/18/97			On Hand Balance
		445	07/18/97			Available to Promise
	100	545	02/09/98	126207	MO	
			02/09/98			Available to Promise
2014		1489	11/21/97	4662	SO	Edwards, J.D. & Company
	50	1419	01/16/98	2428	MO	
		50	01/16/98			Available to Promise
	150	1269	01/23/98	2452	MO	
			01/23/98			Available to Promise
150		1410	01/23/98	18902	SO	Corporate Office Systems
140		1550	01/23/98	8678	SO	Corporate Office Systems
45		1684	02/04/98	18005	SO	Corporate Office Systems
110		1714	02/11/98	18913	SO	Corporate Office Systems
50		1764	02/11/98	18913	SO	Corporate Office Systems
	1802	782	03/02/98		MO	

1. To locate the item for which you want to review supply and demand, complete the following fields:
  - Item Number
  - Branch/Plant
2. To narrow your search to a specific order date, complete the following optional field:
  - Thru Date

Field	Explanation
Demand	The quantity subtracted from the available balance as a result of the record processed. Typically, the sources of demand are safety stock, sales orders, or work order parts lists. When using system forecasting, you can set up a processing option to include quantities used for forecast demands.
Supply	The quantity added to the available balance as a result of the record processed on each line. Sources of supply are typically on-hand inventory, purchase order receipts, or manufacturing work orders. A processing option allows for the inclusion of planned order receipts when using MPS/MRP/DRP.
Available	The quantity available can be the on-hand balance minus commitments, reservations, and backorders. Availability is user defined and can be set up in branch/plant constants.

### Processing Options for Supply/Demand Inquiry

DISPLAY OPTIONS:

1. Enter a '1' to deduct Safety Stock from Availability. \_\_\_\_\_
  2. Enter a '1' by the following Routing Quantities to be considered on hand. Any quantity not included will be displayed on the appropriate date.
    - 1 - Quantity in Transit \_\_\_\_\_
    - 2 - Quantity in Inspection \_\_\_\_\_
    - 3 - User Defined Quantity 1 \_\_\_\_\_
    - 4 - User Defined Quantity 2 \_\_\_\_\_
  3. Enter a '1' to summarize all In Receipt Routing steps into one line. \_\_\_\_\_
- DISPLAY OPTIONS (cont.):
4. Enter a '1' to summarize Item Location records. \_\_\_\_\_
  5. Enter one of the following:
    - ' ' = No Available to Promise Line \_\_\_\_\_
    - '1' = Available to Promise Line \_\_\_\_\_
    - '2' = Cumulative ATP Line \_\_\_\_\_
  6. Enter the version of Supply/Demand Inclusion Rules to be used. \_\_\_\_\_
  7. Enter a '1' to display the window format if called from another program. \_\_\_\_\_

DREAM WRITER VERSIONS:

- Enter the Dream Writer version to use for each program listed. If left blank, version ZJDE0001 will be used.
8. Purchase Order Entry (P4311) \_\_\_\_\_
  9. Purchase Order Inquiry (P430301) \_\_\_\_\_

- 10. Sales Order Entry (P4211) \_\_\_\_\_
- 11. Sales Order Inquiry (P42045) \_\_\_\_\_
- 12. Scheduling Workbench (P31225) \_\_\_\_\_
- 13. MPS/MRP/DRP Pegging Inq. (P3412) \_\_\_\_\_
- 14. MPS/MRP/DRP Time Series (P3413) \_\_\_\_\_
- 15. MPS/MRP/DRP Message Detail (P3411) \_\_\_\_\_

OPTIONAL RECORDS:

- 16. Enter a '1' to include Planned Orders from MPS/MRP/DRP generations. If left blank, Planned Orders will not be displayed. \_\_\_\_\_
- 17. Enter the Forecast Type to include
  - a. Forecast Type \_\_\_\_\_
  - b. Forecast Type \_\_\_\_\_
  - c. Forecast Type \_\_\_\_\_
  - d. Forecast Type \_\_\_\_\_
  - e. Forecast Type \_\_\_\_\_

OPTIONAL RECORDS (cont.):

- 18. Enter the number of days (+/-) from today's date that you wish to begin including Forecast records. A blank will use today's date to begin including Forecast records. \_\_\_\_\_
- 19. Enter a '1' to omit 'Bulk' Stocking Type records from screen. If left blank, 'Bulk' items will be included. \_\_\_\_\_

OPTIONAL RECORDS (cont.):

- 20. Enter the rate based Schedule Type to use. If left blank, no rate based schedules will be displayed. \_\_\_\_\_

POTENCY:

- 21. Enter '1' to convert Quantities to Standard Potency. \_\_\_\_\_

LOT EXPIRATION:

- 22. Enter '1' to reduce Quantity available due to lot expiration. (Note: This option will not work with ATP. If you use this option, option 5 must be set to blank or 2.) \_\_\_\_\_

### Reviewing Shop Floor Workbench for MRP



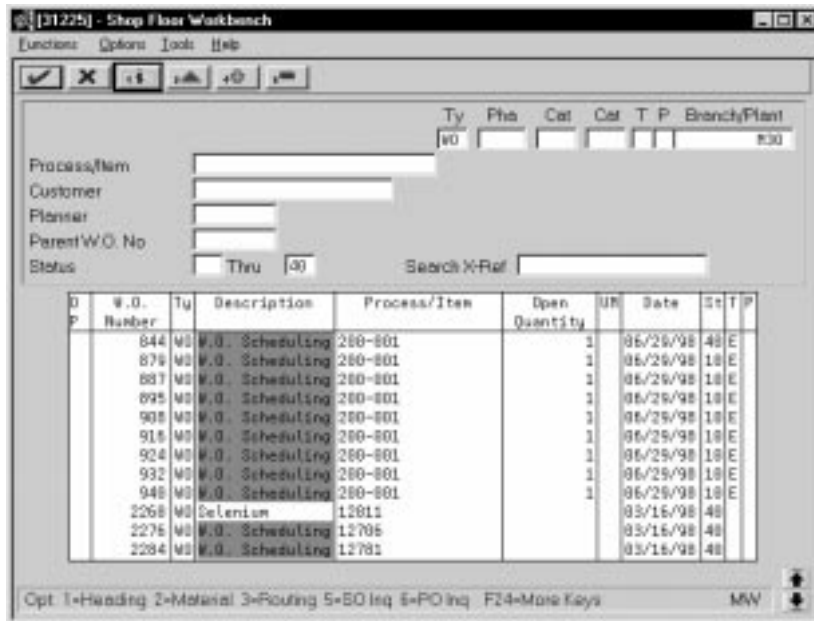
From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose Shop Floor Workbench

After a work order is on the shop floor, you must review the order and check capacity at the planned production line. You might need to change a schedule to keep the Material Requirements Planning schedule valid.

► To review shop floor workbench for MRP

On Shop Floor Workbench



1. To locate the branch/plant for which you want to display the shop floor workbench, complete the following field:
  - Branch/Plant
2. To narrow your search to a specific work order, complete the following fields:
  - Process/Item
  - Customer
  - Planner
  - Parent Work Order Number
  - Status
  - Search Cross-Reference



Field	Explanation
Process/Item	<p>A number that the system assigns to an item. It can be in short, long, or 3rd item number format.</p> <p>..... <i>Form-specific information</i> .....</p> <p>Header: Enter an item number in the header to see all work orders for the item entered. You can further define and restrict your search by entering values in any of the other header fields. Leave the header Item Number field blank to see work order information about all items.</p> <p>Detail: The Item Number field in the detail section of the form indicates what item the work order on that line is for.</p>
Customer	<p>A number that identifies an entry in the Address Book system. Use this number to identify employees, applicants, participants, customers, suppliers, tenants, and any other Address Book members.</p> <p>..... <i>Form-specific information</i> .....</p> <p>Header: Enter a customer number in this field to see all work orders for that customer. You can use this field with other fields in the header to define more specific search criteria.</p> <p>Fold Area: The Customer field in the fold area contains the Address Book number of the customer who ordered the items on the work order listed. The system automatically enters the customer number if you create a work order was created from a sales order.</p>
Planner	<p>The address book number of a manager or planner.</p> <p>NOTE: A processing option for some forms lets you enter a default value for this field based on values for Category Codes 1 (Phase), 2, and 3. Set up the default values on the Default Managers and Supervisors form. After you set up the default values and the processing option, the information displays automatically on any work orders you create if the category code criterion is met. (You can either accept or override the default value.)</p> <p>..... <i>Form-specific information</i> .....</p> <p>HEADER: Enter a planner number in this field to see all work orders scheduled by that planner. You can use this field with other fields in the header to define more specific search criteria.</p> <p>FOLD AREA: The Planner field in the fold area contains the planner number for the planner who scheduled the work order listed.</p>

Field	Explanation
Parent W.O. No	<p>This is the parent work order number. You can use this number to:</p> <ol style="list-style-type: none"> <li>1. Enter default values for newly added work orders, for example, Type, Priority, Status, or Manager.</li> <li>2. Group work orders for project setup and reporting</li> </ol> <p>..... <i>Form-specific information</i> .....</p> <p>Enter the number of a parent work order in this field to see all work orders organized under that parent order. You can use this field with other fields in the header to define more specific search criteria.</p>
Status	<p>A user defined code (00/SS) that describes the status of a work order or engineering change order. Any status change from 90 thru 99 automatically updates the date completed.</p> <p>..... <i>Form-specific information</i> .....</p> <p>You can update the status for the work order on this screen without accessing the work order header.</p>
Search X-Ref	<p>An alphanumeric value used as a cross-reference or secondary reference number. Typically, this is the customer number, supplier number, or job number.</p> <p>..... <i>Form-specific information</i> .....</p> <p>Header: Enter a reference number in this field to see all work orders with that reference number. You can use this field with other fields in the header to define more specific search criteria.</p> <p>Fold Area: The Refer (Reference) field in the fold area contains a reference number for the work order listed. The system automatically enters the sales order number here if the work order was created from a sales order.</p>

### What You Should Know About

**Rate scheduled items** You can review rate scheduled items on the Line Scheduling Workbench.

See *Repetitive Manufacturing* in the *Shop Floor Control Guide*.

## Processing Options for Shop Floor Workbench

### DREAM WRITER VERSIONS

Enter the Dream Writer version to use when calling each program listed. If left blank, version 'ZJDE0001' will be used.

- |                           |           |       |
|---------------------------|-----------|-------|
| 1. Sales Order Inquiry    | (P42045)  | _____ |
| 2. Purchase Order Inquiry | (P430301) | _____ |
| 3. Work Order Completions | (P31114)  | _____ |
| 4. Work Order Entry       | (P48013)  | _____ |
| 5. Sales Order Entry      | (P4211)   | _____ |
| 6. Purchase Order Entry   | (P43111)  | _____ |

### DISPLAY OPTIONS:

7. Enter a '1' to display Requested Date or enter a '2' to display Start Date. (Default is '1'). \_\_\_\_\_
8. Enter a '1' to sequence the records by Requested date. Enter a '2' to sequence the records by Start date. If left blank, the sequence will be based on values for the Customer, Parent Work Order Number, Cross Reference, Item or Planner fields. \_\_\_\_\_

### SCREEN DEFAULTS:

9. Enter defaults for the following:
- |                           |       |
|---------------------------|-------|
| a. Category Code 1        | _____ |
| b. Category Code 2        | _____ |
| c. Category Code 3        | _____ |
| d. Type                   | _____ |
| e. Priority               | _____ |
| f. Planner Number         | _____ |
| g. From Status            | _____ |
| h. Thru Status            | _____ |
| i. Item Number            | _____ |
| j. Customer Number        | _____ |
| k. Search Cross Reference | _____ |
| l. Document Type          | _____ |

### PROCESS MANUFACTURING PROCESSING:

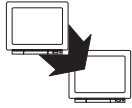
10. Enter a '1' to automatically create the WO Routing Instructions when creating the WO Parts List on-line. \_\_\_\_\_
11. Enter a '1' to automatically create the WO Parts List when creating the WO Routing Instructions on-line. \_\_\_\_\_

### COMMITMENT AND SUBSTITUTE PROCESSING:

12. Enter commitment option for creating the WO Parts List on-line. \_\_\_\_\_
- Blank = Commit to Primary location
- '1' = Commit per Commitment Control in Mfg Constants (P3009)
- '2' = Same as '1', but use substitutes for shortages
- '3' = Same as '1', but only use substitutes if their quantity available can cover shortages
- '4' = Same as '1' but display substitute availability

window when substitute qty available can cover shortage

## Reviewing Leadtime for MRP



From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose Leadtime Inquiry

Use Leadtime Inquiry to review leadtimes for a component or ingredient.

### ► To review leadtime for MRP

On Leadtime Inquiry

1. To locate the item for which you want to display leadtimes, complete the following fields:
  - Branch/Plant
  - Parent Item
2. To display specific types of bills of material, complete the following optional field:
  - Mode
3. Review the information in the following fields:
  - Parent Leadtime Level
  - Level

- Manufacturing
- Cumulative

Field	Explanation
Mode	<p>Indicates the display mode for the bill of material.</p> <ol style="list-style-type: none"> <li>1 Single Level Bill of Material. Shows level one (direct) components only.</li> <li>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.</li> <li>3 Indented Bill of Material. The multi-level bill of material with each level indented for differentiation.</li> </ol>
	<p>You can also set this value in the processing options.</p>
Level	<p>A value that represents 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>You can enter level leadtime manually on Manufacturing Values Entry, or you can use 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>

<b>Field</b>	<b>Explanation</b>
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>

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### 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.
-

# Validate Material Requirements Plans

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## Validating Material Requirements Plans

After you generate the material requirements plan, you must validate it to ensure that you have sufficient work center capacity. Use Capacity Requirements Planning (CRP) to determine whether the material plan can be executed with the resources that are available.

You also use CRP to:

- Analyze all active work centers
- Identify the pacing resource for work centers, which is either labor or machine, depending on which one would increase the work centers' capacity
- Calculate the rated capacity for work centers
- Calculate the MRP load for work centers

In the J.D. Edwards software, the same batch program generates capacity planning information for both CRP and Rough Cut Capacity Planning (RCCP). You can vary the settings in the processing options to accommodate the different requirements for CRP.

The primary differences between CRP and RCCP are:

- CRP analyzes all active work centers instead of only the critical work centers.
- CRP offers more alternatives to level an overloaded time frame.

The system uses the following inputs to CRP:

- Firm MRP work orders and routing instructions
- Planned MRP work orders and routings
- Service parts' forecast
- Service parts' sales orders
- Inter-plant demands

The system generates the following outputs from CRP:

- Over-capacity and under-capacity messages
- Work center load
- Work center load graph
- Period summary

Validating the material requirements plan consists of the following tasks:

- Generating Capacity Requirements Plans
- Reviewing Capacity Requirements Plans

The programs that you use to validate the material planning schedule are the same programs that you use to validate the master schedule for DRP, MPS, and RCCP.

### What You Should Know About

#### **Synchronizing the MRP and CRP systems**

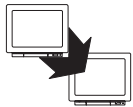
CRP follows the same level of operational planning as MRP. You should synchronize the following items for both MRP and CRP:

- The planning horizon
- The work order document types and statuses in the supply/demand inclusion rules

### See Also

- *Validating Master Schedules (P3382)* for detailed information on these programs

## Generating Capacity Requirements Plans



From Resource & Capacity Planning (G33), choose Periodic Capacity Requirement

From Periodic Resource/Capacity Planning (G3321), choose Capacity Requirements Plan

Use the Capacity Requirements Plan program to compare prospective MRP resource requirements to the capacity available in work centers. CRP indicates if you should revise the material requirements plan to create feasible work loads or improve use of limited resources.



## Before You Begin

- Report hours and quantities for operations that are complete or partially complete to ensure that the figures for Released Load are correct. See *Working with Hours and Quantities* in the *Shop Floor Control Discrete Manufacturing Guide*.
- Verify that resource units exist for all work centers in your generation. See *Setting Up Resource Units* in the *Shop Floor Control Discrete Manufacturing Guide*.
- Set up supply and demand inclusion rules. See *Setting Up Supply and Demand Inclusion Rules for MRP*.
- Run MRP generation. See *Generating a Material Requirements Plan*.

## See Also

- *Generating Rough Cut Capacity Plans (P3382)* for information on the processing options
- *Entering Resource Units Manually (P3007)*

## Reviewing Capacity Requirements Plans

When you generate a capacity requirements plan, the system creates a time series that shows the load during each planning period for a work center. You can view the time series as a spreadsheet or as a graphical display. If you have organized several work centers as a dispatch group according to common functions, similar operations, or steps in routing, you can view the group to see how capacity affects all of the work centers in the group.

You can review summaries of each period to determine the load that is placed on a work center by each item or order. You can also review messages for each work center and delete, clear, or hold messages. If the system encounters over- or under-capacity conditions, you can review the plan and identify the periods or work centers in which the conditions occur. It might be necessary to adjust the forecast or capacity and generate CRP again.

Reviewing the capacity requirements plan includes the same programs used to review the resource requirements plan.

Complete the following tasks:

- Review dispatch groups for capacity requirements planning
- Review work center load for capacity requirements planning
- Review period summaries for capacity requirements planning

- Review MRP work schedules on the dispatch list
- Review MRP rate schedule and work order loads
- Validate capacity requirements plan

### Reviewing Dispatch Groups for Capacity Requirements Planning



From Resource & Capacity Planning (G33), choose Daily Capacity Requirements

From Daily Capacity Requirements Planning (G3313), choose Review Dispatch Group

If you have several work centers that are organized as a dispatch group, you can view the group to determine how capacity affects all of the work centers in the group. Dispatch groups enable you to organize work centers according to common functions, similar operations, or routing steps.

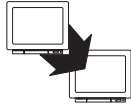
When you review dispatch groups, you can also review messages about all the work centers in the group and use that information to redistribute the load within the group.

When you review dispatch groups for CRP you use the same program as when you review dispatch groups for Resource Requirements Planning. You can vary the settings in the processing options to accommodate the different requirements for CRP.

#### See Also

- *Reviewing Dispatch Groups for Resource Requirements Planning (P3301)* for information on the processing options

## Reviewing Work Center Load for Capacity Requirements Planning



From Resource & Capacity Planning (G33), choose Daily Capacity Requirements

From Daily Capacity Requirements Planning (G3313), choose Review Work Center Load

You can review the capacity load at each work center. Use this information to determine whether to adjust capacity or the forecast. You can view the time series as a spreadsheet or as a graphical display. The spreadsheet provides a numerical breakdown, by planning period, of the load placed on a work center.

The bar graph provides the same information as Review Work Center Load. The graph uses time series information from Resource Requirements Load to generate the comparison. The system displays the capacity load at the work center for each planning period based on several calculations.

Review Work Center Load for CRP uses the same program as Review Work Center Load for Resource Requirements Planning. You can vary the settings in the processing options to accommodate the different requirements for CRP.

### Before You Begin

- Verify that your resource units and capacity requirements plan are current.

### See Also

- *Reviewing Work Center Load for Resource Requirements Planning (P3313)* for information on the processing options

## Reviewing Period Summaries for Capacity Requirements Planning



From Resource & Capacity Planning (G33), choose Periodic Capacity Requirements

From Periodic Resource and Capacity Planning (G3321), choose Period Summary Report

In addition to reviewing the capacity load of a work center, you can also evaluate the load placed on a work center by item. You can review period summaries either online or through a printed report. You can review:

- The items that are scheduled for a work center
- The number of units of an item that make up the load
- The percent of the total load on the work center that is for a specific item's forecast

# Manufacturing and Distribution Planning

You use this information to determine whether to adjust the forecast or the capacity at the work center.

When you review period summaries for CRP you use the same program as when you review period summaries for Resource Requirements Planning. You can vary the settings in the processing options to accommodate the different requirements for CRP.

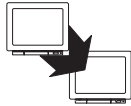
To evaluate the load placed on a work center by item, you can review the Period Summary Report.

3352		J.D. Edwards & Company				Page - 2	
Business Unit . . . . . 200-204 Final Assembly/Inspection		Efficiency . . . . . 80.00		Date - 5/31/98		Prime Load Code. B	
Dispatch Group . . . . . 200-200 Assembly Department		Utilization. . . . . 100.00		Machine plus Setup H			
Unit of Measure. . . . . HR Hour							
Item Number	Item Description	Per. End	Units	UM	Perccn	Order Number	Ty Requirement Type
5120	Oak Desk With Chair	01/02/98	443	HR	97.15	2399	FO Firm Work Order W/Parts List
1261	Multivitamin Tablets	01/02/98	7	HR	1.54	133760	FO Firm Work Order W/Parts List
1261	Multivitamin Tablets	01/02/98	7	HR	1.54	133823	FO Firm Work Order W/Parts List
Total for Period Ending		01/02/98	457	HR			
5120	Oak Desk With Chair	01/09/98	654	HR	55.05	2428	FO Firm Work Order W/Parts List
5120	Oak Desk With Chair	01/09/98	531	HR	44.70	2410	FO Firm Work Order W/Parts List
5120	Oak Desk With Chair	01/09/98	3	HR	.25	2444	WO Real (firm) Work Orders
333	OAK SHELF UNIT	01/09/98	1	HR	.08	2372	WO Real (firm) Work Orders
Total for Period Ending		01/09/98	1189	HR			
5120	Oak Desk With Chair	01/16/98	4205	HR	94.79	2428	FO Firm Work Order W/Parts List
5120	Oak Desk With Chair	01/16/98	223	HR	5.03	2452	WO Real (firm) Work Orders
12706	Vitamin A	01/16/98	3	HR	.07		WP Planning Work Orders
12706	Vitamin A	01/16/98	3	HR	.07		WP Planning Work Orders
12706	Vitamin A	01/16/98	2	HR	.05		WP Planning Work Orders
12706	Vitamin A	01/16/98	1	HR	.02		WP Planning Work Orders
5120	Oak Desk With Chair	01/16/98		HR		2444	WO Real (firm) Work Orders
Total for Period Ending		01/16/98	4437	HR			
5120	Oak Desk With Chair	01/23/98	1059	HR	65.65	2479	FO Firm Work Order W/Parts List
5120	Oak Desk With Chair	01/23/98	555	HR	34.41	2452	WO Real (firm) Work Orders
Total for Period Ending		01/23/98	1614	HR			
5120	Oak Desk With Chair	01/30/98	531	HR	93.82	2495	FO Firm Work Order W/Parts List
5120	Oak Desk With Chair	01/30/98	9	HR	1.59	123545	WO Real (firm) Work Orders
FORKLIFT	Forklift	01/30/98	6	HR	1.06	3615	FO Firm Work Order W/Parts List
5120	Oak Desk With Chair	01/30/98	3	HR	.53	133920	FO Firm Work Order W/Parts List
12706	Vitamin A	01/30/98	3	HR	.53		WP Planning Work Orders
12706	Vitamin A	01/30/98	3	HR	.53		WP Planning Work Orders
12781	Minerals, complex	01/30/98	3	HR	.53		WP Planning Work Orders
5120	Oak Desk With Chair	01/30/98	3	HR	.53	2508	WO Real (firm) Work Orders
12706	Vitamin A	01/30/98	2	HR	.35		WP Planning Work Orders
12781	Minerals, complex	01/30/98	2	HR	.35		WP Planning Work Orders
12706	Vitamin A	01/30/98	1	HR	.18		WP Planning Work Orders
12781	Minerals, complex	01/30/98	1	HR	.18		WP Planning Work Orders
12781	Minerals, complex	01/30/98	1	HR	.18		WP Planning Work Orders
Total for Period Ending		01/30/98	568	HR			
5120	Oak Desk With Chair	02/06/98	487	HR	60.65	2516	FO Firm Work Order W/Parts List
5120	Oak Desk With Chair	02/06/98	310	HR	38.61	123537	WO Real (firm) Work Orders
5120	Oak Desk With Chair	02/06/98	3	HR	.37	2524	WO Real (firm) Work Orders
5120	Oak Desk With Chair	02/06/98	2	HR	.25	123545	WO Real (firm) Work Orders
333	OAK SHELF UNIT	02/06/98	1	HR	.12	141719	FO Firm Work Order W/Parts List
333	OAK SHELF UNIT	02/06/98	1	HR	.12	141735	FO Firm Work Order W/Parts List

## Processing Options for Print Period Summary

1. Enter the Capacity Mode: \_\_\_\_\_  
     "1" = Resource Requirements Planning  
     "2" = Rough Cut Capacity Planning  
     "3" = Capacity Requirements Planning
2. Enter Unit of Measure: \_\_\_\_\_
3. Enter the Starting Period Date: \_\_\_\_\_  
     Blanks will default to today's date.
4. Enter the Ending Period Date: \_\_\_\_\_  
     Blanks will show all data after start date.

## Reviewing MRP Work Schedules on the Dispatch List



From Resource & Capacity Planning (G33), choose Daily Capacity Requirements

From Daily Capacity Requirements Planning (G3313), choose Dispatch List

Use the Dispatch List to locate and update work center scheduling information. This workbench environment serves as a starting point for work center scheduling and the release of work to the floor. Use this program to:

- Access work order information, such as the header and parts list
- Display work order information, such as work center, remaining labor, machine hours, and setup hours
- Sort work orders by start date, requested date, or status code operation
- Change the work order status code, start date, or requested date

The Dispatch List for MRP uses the same program as the Dispatch List for DRP/MPS. You can vary the settings in the processing options to accommodate the different requirements for MRP.

### What You Should Know About

#### **Leveling an overloaded time frame**

If a work center is overloaded, you might consider the following alternatives to distribute material and labor requirements to make the work center load as even as possible:

- Offering Overtime
- Changing higher-level demand level by level
- Alternating routings
- Adding shifts
- Bringing in resources from other work centers
- Outsourcing

#### **See Also**

- *Reviewing Work Schedules on the Dispatch List (P31220)* for the processing options for this program

### Reviewing MRP Rate Schedule and Work Order Loads



From Resource & Capacity Planning (G33), choose Daily Capacity Requirements

From Daily Capacity Requirements Planning (G3313), choose Schedule Review

Use Schedule Review to review the rate schedule load and the work order load for a work center for a day, week, or month. You can also select a specific date range to view the load for the work center. If you need to adjust the scheduled load at the work center, you can access several different forms to make adjustments.

Schedule Review is used primarily for rate based items and is an alternative for viewing load on a work center. A processing option allows you to include work order generated loads before or after rate loads.

When you review schedules for MRP you use the same program as when you review schedules for DRP and MPS. You can vary the settings in the processing options to accommodate the different requirements for MRP.

#### **See Also**

- *Reviewing Rate Schedule and Work Center Loads (P31224)* for the processing options for this program

## Validating Capacity Requirements Plans

Validating the capacity requirements plan consists of identifying the overloaded work centers, making adjustments in forecast or resources, and generating the plan again to see if the adjustments you have made have evenly distributed the loads on the work centers.

### ▶ **To validate a capacity requirements plan**

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1. Complete the steps for reviewing the requirements plan.  
*See Reviewing CRP.*
2. Revise the forecast.  
*See Revising Summaries of Forecasts in the Forecasting Guide.*
3. Complete the steps for generating the requirements plan.  
*See Generating Capacity Requirements Planning.*
4. Complete the steps for reviewing the revised requirements plan.  
*See Reviewing Capacity Requirements Planning.*
5. Repeat the steps until all loads at each work center are appropriate.





# Set Up Material & Capacity Requirements Planning

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## Setting Up Material and Capacity Requirements Planning

Before you can run a successful Material Requirements Planning (MRP) regeneration, you must define the information to use during processing. The system uses setup information to determine how to select and display data.

If you use other J.D. Edwards software, you must set up some of this information in other systems, such as Shop Floor Control and Inventory Management.

Complete the following tasks:

- Set up MRP supply and demand inclusion rules
- Set up message types for MRP
- Set up time fence rules for MRP
- Set up forecast consumption periods for MRP
- Set up capacity requirements displays

The programs that you use to set up MRP and CRP are the same programs that you use to set up Distribution Requirements Planning, Master Production Schedule, and Rough Cut Capacity Planning.

### See Also

- *Setting Up DRP, MPS, and RCCP (P3482)* for detailed information on these programs

## Setting Up MRP Supply and Demand Inclusion Rules



From Material Planning Operations (G34), enter 29

From Material Planning Setup (G3442), choose Supply/Demand Inclusion Rules

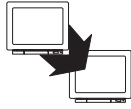
You set up supply and demand inclusion rules to display the supply, demand, and available quantities for an item. These quantities and their formulas are as follows:

<b>On-hand inventory</b>	Quantity on hand – hard commits – quantity on sales orders – quantity on work orders
<b>Purchase orders</b>	Open quantity on purchase orders
<b>Manufacturing work orders</b>	Quantity entered on work order – quantity shipped
<b>Safety stock</b>	Safety stock
<b>Sales Orders</b>	Quantity entered on sales order – quantity shipped – quantity canceled
<b>Work order requirements</b>	Quantity required – quantity issued
<b>Co-/by-products supply from work orders</b>	Quantity ordered – quantity completed
<b>Co-/by-products supply from rates</b>	Quantity ordered – quantity completed

### See Also

- *Setting Up Supply/Demand Inclusion Rules (P34004)*

## Setting Up Message Types for MRP



From Material Planning Operations (G34), enter 29

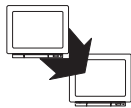
From Material Planning Setup (G3442), choose Action Messages

Message type character codes are already defined for all the messages that the system can create when you generate a material requirements plan. Because the character code is hard coded, you can change the description, but not the function of the message type. You can change the description for clarity in your environment.

### See Also

- *Setting Up Message Types for DRP, MPS, and RCCP (P00051)* for information on how to change the message type descriptions

## Setting Up Time Fence Rules for MRP



From Material Planning Operations (G34), enter 29

From Material Planning Setup (G3442), choose Time Fence Rules

Time fences are points in time at which you can make changes to either policy or operating procedures. The Manufacturing and Distribution Planning system supports three time fences:

<b>F (Freeze Fence)</b>	Within this time period, orders are neither created nor replanned.
<b>P (Planning Fence)</b>	Within this time period, the system uses the demand from the forecast and customer orders to calculate the ending available product.
<b>D (Message Display Fence)</b>	After this time period, messages are neither created nor displayed.

### See Also

- *Setting Up Time Fence Rules for DRP, MPS, and RCCP (P00051)* for information on how to specify time fence rules

### Setting Up Forecast Consumption Periods for MRP



From Material Planning Operations (G34), enter 29

From Material Planning Setup (G3442), choose Forecast Consumption Periods

You define forecast consumption periods to identify a period of time in which forecasts are consumed by sales orders. The system stores this information in the Forecast Consumption Periods table (F3405).

#### Before You Begin

- Verify that the following information has been set up:
  - Planning fence rule H in user defined code table 34/TF
  - The order types in user defined code table 40/CF, to include in shipped order calculations
  - The -SHIP quantity type in user defined code table 34/QT, to calculate shipped orders quantity
  - The Planning Fence Rule field on the Plant Manufacturing Data form, with a value of H
  - The order types in user defined code list 40/IU, to update inventory (includes order type SO)
  - The Planning Fence field on Plant Manufacturing Data, with a value beyond the end of the planning horizon
  - The appropriate processing options in the DRP/MPS generation program

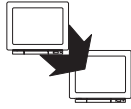


You must set up the planning fence field on Plant Manufacturing Data with a value beyond the end of the planning horizon (J.D. Edwards recommends a planning fence of 999). If you do not set the planning fence beyond the planning horizon, the batch programs (DRP/MPS/MRP Regeneration and Net Change) will not work properly.

#### See Also

- *Setting Up Forecast Consumption Periods* for more detailed information on this program

## Setting Up the Capacity Requirements Display



From Resource and Capacity Planning (G33), enter 29

From Resource/Capacity Planning Setup (G3341), choose Capacity Requirements Display

Use Capacity Requirements Display to specify row descriptions for CRP on all forms and reports. The digit code is hard coded.

### ► To set up the capacity requirements display

On Capacity Requirements Display

82 Digit	
Code	Description
05	LOAD-INCLUDES SETUP
10	Released Load
20	Planned Load
30	Total Load
35	
40	LOAD VS CAPACITY
50	Gross Capacity
60	Rated Capacity
70	% of Capacity Used
80	Available Capacity
90	Accum. Available Cap.

Complete the following fields:

- Code
- Description



# Process Orders for MRP

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## Processing Orders for MRP



From Shop Floor Control (G31), choose Discrete Daily Order Preparation

From Daily Order Preparation – Discrete (G3111), choose Order Processing

After you run MRP Regeneration or MRP Net Change, use the Order Processing batch program to process multiple work orders. The system:

- Attaches the parts list
- Attaches the routing instructions
- Sets an initial order status
- Generates the shop packet, including:
  - Parts list
  - Routing instructions
  - Shop packet summary
  - Component shortages

The program that you use to process orders for MRP is the same program that you use to process orders for Distribution Requirements Planning, Master Production Schedule, and Rough Cut Capacity Display.

### See Also

- *Processing Work Orders (P31410)* in the *Shop Floor Control Discrete Manufacturing Guide*



### Exercises

See the exercises for this chapter.





# MRP Multi-Facility Scheduling





# MRP Multi-Facility Scheduling

## Objectives

- To understand key MRP multi-facility scheduling concepts
- To define supply and demand relationships among your branch/plants
- To use the branch relationships chart to review your supply and demand relationships in a graphical hierarchical format
- To generate a multi-facility requirements plan
- To review the time series for the multi-facility requirements plan
- To review and process transfer messages for the multi-facility requirements plan

## About MRP Multi-Facility Scheduling

In an MRP multi-facility operation, planned orders at the demand facility are the source of demand at the supply facility. You set up and maintain multi-facility schedules to:

- Manage the movement of component material through multiple production facilities
- Use assembly lines at one plant to begin the assembly of a product and a different plant for final assembly
- Handle all resupply movements throughout the manufacturing network
- Formalize the processing of transfer items among your manufacturing plants
- Create internal transfer orders to help ensure traceability of material and their costs between facilities
- Ensure that the branch from which you are ordering has enough inventory in stock to fill the order, or schedule the supply plant to produce it
- Schedule production according to realistic time frames

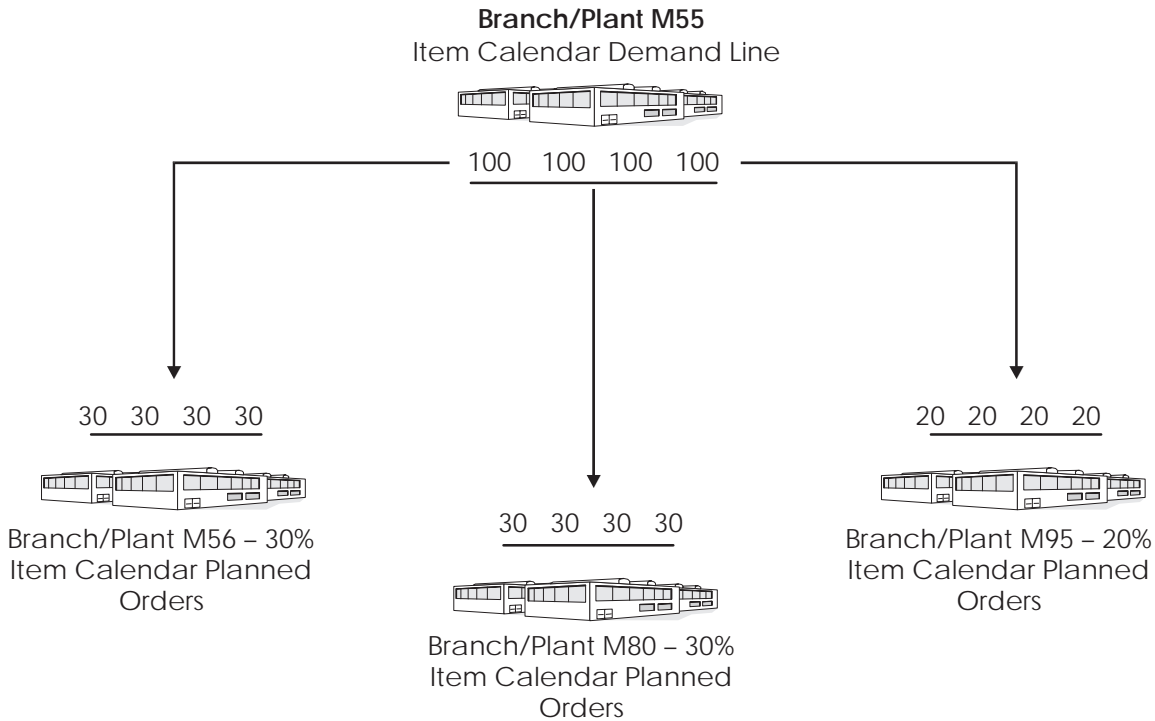
You can define facility relationships at any level of detail for an entire facility, a product group, master planning family, or an individual item number. In addition, you can incorporate all your facilities into a single planning schedule.



In MRP, the system transfers items among your manufacturing plants at the component level. The system transfers component items by:

- Generating a purchase order at the demand plant for the supply plant
- Generating a sales order from the demand plant at the supply plant

In the following example, the demand plant (M55) receives components from three different supply plants. Supply plants can also manufacture the end deliverable item.



A breakdown of the percent received from each supply branch/plant indicates that M55 satisfies 80 percent of its required demands from the three supply branch/plants. In this case, the demand plant assembly also supplies the remaining 20 percent of the end item.

MRP multi-facility scheduling consists of the following tasks:

- Setting up multi-facility requirements plans
- Generating multi-facility requirements plans
- Working with MRP multi-facility planning output

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The system records MRP multi-facility information in the following tables:

<b>Bill of Materials Master (F3002)</b>	Contains warehouse or plant level information about bills of material, such as costs and quantities of components, features and options, and levels of detail for each bill.
<b>Branch Relationships Master (F3403)</b>	Contains the supply and demand relationships among the branches.
<b>Forecast Consumption Periods (F3405)</b>	Contains the periods that you defined on the Forecast Consumption Periods form.
<b>MPS/MRP/DRP Lower Level Requirements (F3412)</b>	Contains the source of gross requirements that are required to build parent items.
<b>Item Master (F4101)</b>	Contains basic information about each item that has been defined in inventory, such as item numbers, description, alpha description, category codes, and units of measure.
<b>Item Branch (F4102)</b>	Contains warehouse or plant level information, such as costs, quantities, physical location, and branch level category codes.
<b>MPS/MRP/DRP Detail Message Review (F3411)</b>	Contains the action messages generated when you run a Master Production Schedule, Material Requirements Plan or Distribution Requirements Plan.



# Set Up Multi-Facility Requirements Plans

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## Setting Up Multi-Facility Requirements Plans

You set up a multi-facility material requirements plan to track supply, demand, and movement of material among the individual facilities in your company. MRP multi-facility scheduling provides a flexible method for planning supply and resupply activities.

You must set up a table of the supply and demand relationships among your facilities. The system uses these relationships to generate and maintain multi-facility requirements planning schedules.

Setting up MRP multi-facility scheduling consists of the following tasks:

- Setting up MRP supply and demand relationships
- Reviewing MRP branch relationships on the relationships chart

MRP multi-facility scheduling uses the same programs as DRP/MPS multi-facility scheduling. The programs are summarized here.

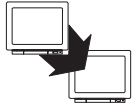
### Before You Begin

- Verify that MRP and CRP have been set up.
- Understand the concepts and terms described in *Single Facility Material Requirements Planning*. See *Generating Material Requirements Plans*.

### See Also

- *Setting Up MRP and Capacity Planning (P00051)* for information on how to define MRP and CRP data to use during processing
- *Setting Up Multi-Facility Schedules (P3403)* for additional information on multi-facility scheduling

### Setting Up MRP Supply and Demand Relationships



From Material Planning Operations (G34), enter 29

From Material Planning Setup (G3440), choose Multi-Plant Setup

From Multi-Plant Setup (G3443), choose Branch Relationships Revisions

Use Branch Relationships Revisions to set up MRP supply and demand relationships for any level of detail you choose, including:

- Branch/plant
- Product group
- Master planning family
- Individual item number

The MRP Branch Relationship Revisions program and the DRP/MPS Branch Relationship Revisions program use the same processing options. You can vary the settings in the processing options to accommodate the different requirements for a material requirements plan.

#### See Also

- *Setting Up Supply and Demand Relationships (P3403)* for the processing options for this program

### Reviewing MRP Branch Relationships on the Relationships Chart



From Material Planning Operations (G34), enter 29

From Material Planning Setup (G3440), choose Multi-Plant Setup

From Multi-Plant Setup (G3443), choose Branch Relationships Chart

Use the Branch Relationships Chart to review your MRP supply and demand relationships in a graphical, hierarchical format. The Branch Relationships Chart displays the:

- Branch
- Level of the branch
- Supply branches for the corresponding demand branch



The MRP Branch Relationships Chart program and the DRP/MPS Branch Relationships Chart program use the same processing options. You can vary the settings in the processing options to accommodate the different requirements for a material requirements plan.

### See Also

- *Reviewing Branch Relationships on the Relationships Chart (P34031)* for detailed information on this program



# Generate Multi-Facility Requirements Plans

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## Generating Multi-Facility Requirements Plans



From Material Planning Operations (G34), choose Periodic Multi-Facility Planning  
From Multi-Facility Periodic Planning Operations (G3423), choose MRP Regeneration

After you have set up the MRP supply and demand relationships among your branch/plants, you can use MRP regeneration to generate a multi-facility requirements planning schedule.

When you generate a multi-facility requirements planning schedule, the system evaluates selected information, performs calculations, and recommends a time-phased planning schedule for all selected items.

The Multi-facility MRP Regeneration program uses the same set of processing options as multi-facility DRP regeneration. You can vary the settings in the processing options to accommodate the different requirements for a material requirements plan.

### Before You Begin

- Set up MRP multi-facility scheduling. See *Setting Up Multi-Facility Schedules*.

### See Also

- *Generating Multi-Facility Schedules (P3483)* for detailed information on the regeneration program

### What You Should Know About

**Generation definition** You must specify in the processing option the type of generation to use to process multi-facility MRP items. Depending on the type of requirements plan you need, you can use generation type 4 or 5.

### **Multi-plant consolidation**

You must set the appropriate processing option to control whether you run a consolidated or a full multi-facility MRP Regeneration.

Consolidation is the process of adding the item's time series data in the same time buckets for selected branch/plants and consolidating it into a Consolidation Branch/Plant.

The system combines the supply and demand data for selected branches and consolidates it to a consolidation branch. The system generates a new time series only for the consolidation branch and not the branches that were combined.

### **Transfer orders**

Transfer order messages are an output of multi-facility scheduling. You must set the appropriate processing option to identify the document type to use for transfer orders.

When the system processes a transfer order, it creates a sales order at the supply plant and a purchase order at the demand plant.

# Work with MRP Multi-Facility Planning Output

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## Working with MRP Multi-Facility Planning Output

MRP multi-facility planning output consists of information in the time series and transfer order messages. Use the time series information to accept the planning that is suggested by the system or to override it. You should review the transfer order messages for individual item numbers to determine which action, if any, you need to take.

Reviewing MRP multi-facility planning output consists of the following tasks:

- Reviewing the time series for MRP multi-facility
- Processing MRP transfer order messages

### Before You Begin

- Generate a current multi-facility material planning schedule. See *Generating Multi-Facility Requirements Plans*.

## Reviewing the Time Series for MRP Multi-Facility



From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose Time Series Inquiry

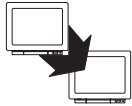
Use the MRP Time Series/ATP Inquiry program to review the item series for the multi-facility requirements plan. The time series is a record of time-phased supply and demand netting for selected items. The system retrieves this data from the most recent generation or net change run. Use the processing options to set up daily, weekly, or monthly time periods (buckets).

The MRP Time Series/ATP Inquiry program uses the same set of processing options as the DRP/MPS Time Series/ATP Inquiry program. You can vary the settings in the processing options to accommodate the different requirements for a material requirements plan.

### See Also

- *Reviewing the Time Series (P3413)* for the processing options for this program
- *Reviewing MRP Time Series (P3413)*
- *Reviewing DRP/MPS Time Series (P3413)*

## Processing MRP Transfer Order Messages



From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose Detail Message Review

Use Detail Message Review to review the transfer order messages for the multi-facility material planning schedule. MRP multi-facility scheduling creates messages that relate to the demand and supply plants. If you choose to process the messages, the system automatically creates transfer orders. You can transfer items between plants at cost or at a fixed or percent markup.

The MRP Detail Message Review program uses the same set of processing options as the DRP/MPS Detail Message Review program. You can vary the settings in the processing options to accommodate the different requirements for a material requirements plan.

### See Also

- *Reviewing MRP Detail Messages (P3411)* for additional information on messages generated for MRP
- *Processing Multi-Facility Transfer Order Messages (P3411)* for information on processing transfer order messages
- *Working with Messages (P3411)* for the processing options for this program



### Exercises

See the exercises for this chapter.

# Supplier Scheduling







# Supplier Scheduling

## Objectives

- To understand the key supplier scheduling concepts
- To identify the steps you use to create a supplier schedule
- To enter supplier information that is related to anticipated shipment quantities and the dates that you expect the supplier to meet
- To generate a supplier schedule and create a purchase order
- To update planned ship quantities in the supplier schedule
- To review and release the current supplier schedule

## About Supplier Scheduling

You set up and maintain supplier schedules to:

- Support item-specific relationships for scheduled shipments at the supplier's site
- Set up blanket purchase orders and material shipping arrangements with each supplier
- Generate a shipping schedule for all supplier scheduled demand within your release horizon
- Generate multiple supplier schedules for a single item
- Adjust the shipping schedule for unplanned events and create blanket purchase order releases

Working with supplier schedules consists of the following tasks:

- Defining supplier contracts
- Generating supplier schedules
- Revising supplier schedules
- Releasing supplier schedules
- Printing supplier schedules (optional)



Setting up supplier schedules provides your suppliers with consistent shipping information and advanced demand profiles to support your goal of just-in-time production and delivery. Using supplier schedules enables you to convert your DRP/MPS/MRP plans into a realistic shipping schedule.

Your buyers maintain timely information to monitor contract terms against your current needs. The supplier schedule identifies both short- and long-term needs for purchased items at your facility. Suppliers can then use your supplier schedule to plan their production and shipping schedules.

The system records supplier schedule information in the following tables:

**Supplier Schedule  
Master (F4321)**

Contains most of the data that controls scheduling arrangements with the supplier. This table also contains information required for creating and maintaining the schedule, including:

- Ship leadtime
- Schedule days
- Ship pattern
- Shipment quantity
- Delivery location

The system uses information from the Supplier Schedule Master table for each line item on a blanket order that you use in the supplier scheduling process.

**Supplier Split  
Percentages (F43211)**

Contains the data that identifies predetermined split percentages between suppliers, by item.

### What Is the Effective Date Range?

The effective date range for a blanket purchase order is specified by the beginning order entry date and the expiration requested date.

### What Is a Blanket Purchase Order?

A blanket purchase order is a standing order that you issue to a supplier for a large quantity of goods with no specific delivery date.

The process of scheduling supplier items begins in J.D. Edwards Purchase Management system with the creation of a blanket purchase order. You must create a blanket purchase order for every item that you want to schedule for supplier delivery.

Use Enter Blanket Order in the Purchasing Management system to enter blanket orders for items. You can review all blanket orders for a single item when you set up a supplier schedule.

---

Supplier release scheduling allows you to set up multiple blanket orders for the same supplier. The system uses a technique similar to effectivity dates to determine the active order. The system uses the blanket order date as the start date and the requested date as the end date.

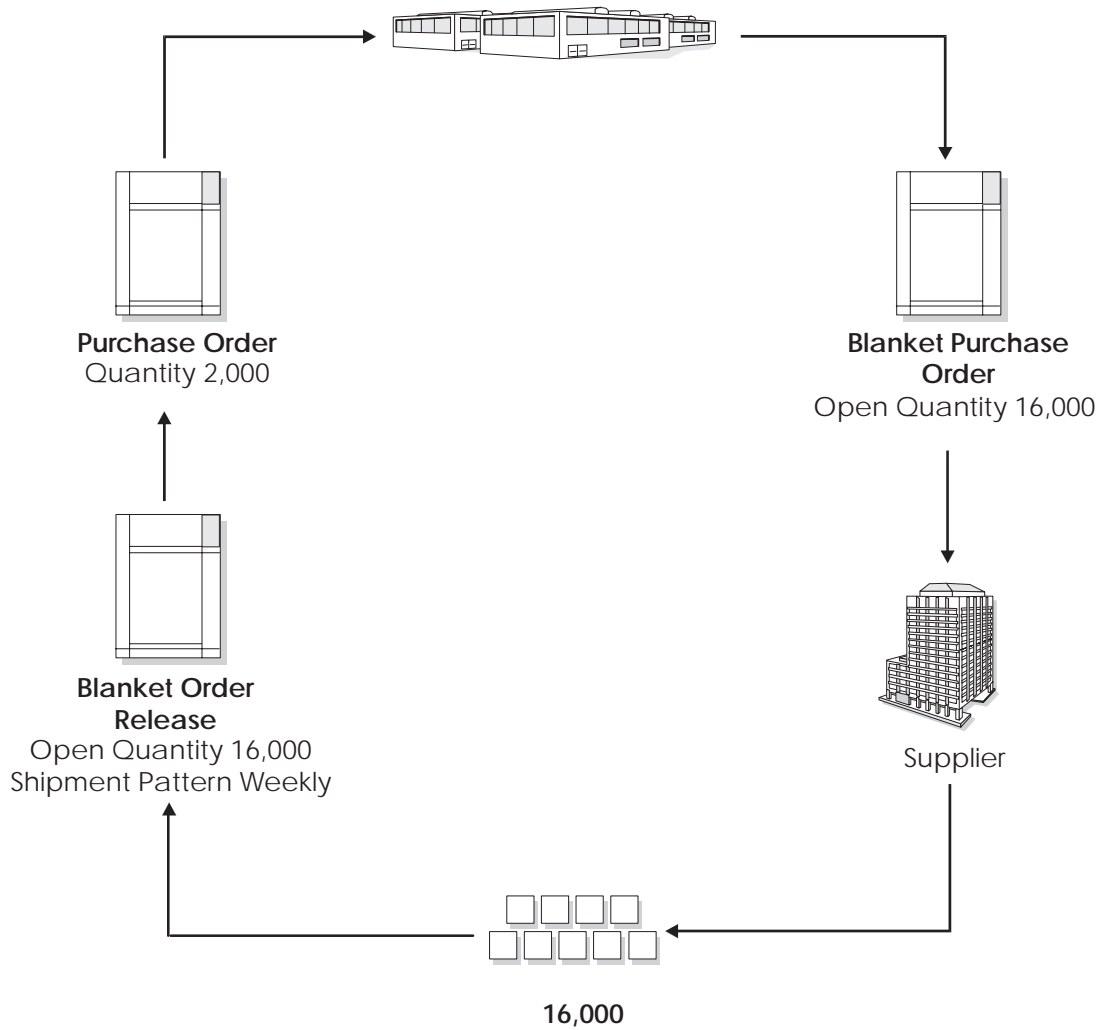
### **What Is a Blanket Order Release?**

You use a blanket order release for suppliers to whom you periodically release orders for delivery of some, but not all, of the goods on a purchase order.

For example, you might issue a blanket order release for 16,000 items from a supplier. In addition, you might have an agreement to take delivery of up to 2,000 units of the item each month until the order is filled.

When Supplier Scheduling processes the order suggestions, the system creates a purchase order against the blanket order. Receipts for the generated orders reduce the total quantity open on the blanket purchase order.

The following illustrates how the system uses blanket purchase orders and blanket order releases.

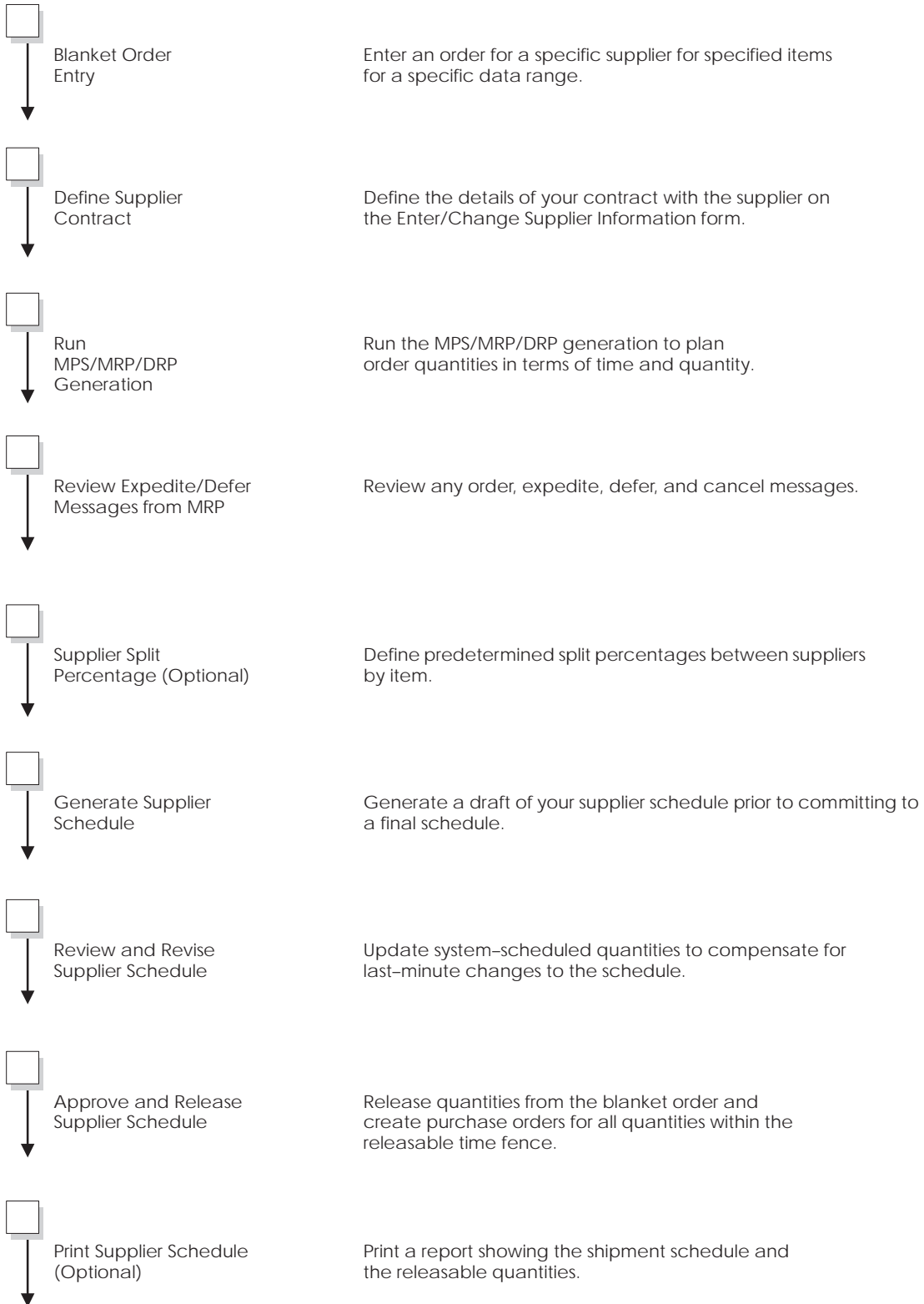


## See Also

- *Entering Blanket Orders in the Procurement Guide*

## What Are the Steps for Creating a Supplier Schedule?

The following graphic illustrates the steps you follow to create a supplier schedule.





# Define Supplier Contracts

---

## Defining Supplier Contracts

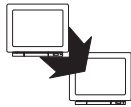
You must enter the terms of your contract with each of your suppliers. The system uses these contract terms to generate and maintain supplier schedules.

In addition, if you want to generate multiple supplier schedules for a single item, you must define predetermined split percentages between the suppliers, by item.

Complete the following tasks:

- Define supplier contract information
- Define supplier split percentages

## Defining Supplier Contract Information



From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose Enter/Change Supplier Info

When you define a supplier contract, you can also define time fence periods for freezing delivery quantities, releasable schedule days, and future requirements. The rules for defining time fences are described below:

### **Frozen days**

Specify the time frame from the generation start date within which deliveries are frozen.

### **Release days**

Determine the period of time from the generation start date that purchase orders will be created for orders. Any quantities that are scheduled outside this period are still considered in planning status and do not produce actual purchase orders.

## Fabrication days

Determine the time period from the generation start date, within which the customer guarantees fabrication costs for the quantities they ordered on the schedule, even if the order is canceled. This rule is optional.

## Raw material days

Determine the time period from the generation start date, within which raw material costs are guaranteed by the customer, even if the order is canceled. This rule is optional.

## Before You Begin

- Create a blanket purchase order for every item that you want to schedule through supplier scheduling. See *Entering Blanket Orders* in the *Procurement Guide*.
- Define the pattern of shipments that you want to receive from the supplier in the user defined code list (40/SP).

## ▶ To define supplier contract information

---

On Enter/Change Supplier Info

Order Number	106 08	Branch/Plant	H38
Line Number	1.000	Status	18 Planning
Item Number	111	Expiration Date	04/01/90
Supplier	4343 Vector Manufacturing Co	First Release	
Ship To	5995 Manufacturing Plant, Memphis	Last Release	
Deliver to Loc	200-204 Final Assembly/Inspection	Last Release PO	
Shipment Quant	2000		
Ship Units/Cont	10	Unit of Measure	EA
Ship Leadtime	3	Blanket Order	15000
Frozen Days	10 <i>Currently Overridden</i>	Cum Received	
Releaseable Days	20	Cum Frozen	4990
Fabrication Days	25	Cum Fabricated	25070
Raw Material Days	40	Cum Raw Material	40590
Schedule D/W/M	45 / 10 / 5	Past Due	
Ship Pattern	M Weekly - Monday thru Friday	Early Receipt	

F13=Open Orders F14=PO Detail F15= Purchasing Issr F17=Percent F24=More MW



1. To set up schedule information for each line on the blanket order, complete the following fields:
  - Order Number
  - Line Number
  - Releasable Days
  - Shipment Pattern
2. Complete the following optional fields:
  - Deliver to Location
  - Shipment Quantity
  - Shipping Units/Container
  - Shipment Leadtime
  - Frozen Days
  - Fabrication Days
  - Raw Material Days

Field	Explanation
Order Number	The number that identifies an original document. This can be a voucher, an order number, an invoice, unapplied cash, a journal entry number, and so on.
Line Number	A number that identifies multiple occurrences, such as line numbers on a purchase order or other document. Generally, the system assigns this number, but in some cases, you can override it.
Releasable Days	A time fence that indicates the number of workdays from the generation start date to use when identifying the cutoff date for actual blanket order releases. The system uses the time fence when the supplier schedule release generation program is run.
Schedule D/W/M	The number of workdays, weeks and months that will be displayed on the supplier schedule.
Ship Pattern	User defined codes (system 40/type SP) that identify the shipping and delivery arrangement you have established with the supplier for this item. It can be specific Workday Calendar days on which the supplier agrees to make shipments, a range of days, such as a specific week during the month, or some other arrangement unique to your business. You can add new codes to suit your needs.  NOTE: A date followed by an asterisk (*) indicates an invalid ship date.

<b>Field</b>	<b>Explanation</b>
Deliver to Loc	The location a shipment should be delivered to, such as a particular receiving dock or work center.
Shipment Quantity	This is the quantity the supplier is willing to ship as a minimum.
Ship Units/Cont	The standard quantity of containers that you use in the manufacturing process (typically, in a repetitive manufacturing environment). The quantity that you enter determines the number of bar code labels that you will need for shipping. It also modifies order release quantities.
Ship Leadtime	The time it takes a shipment to move from the supplier's dock to the customer's dock. The system uses this value to offset the required date to determine the actual date that the shipment should take place. Also known as Transit Time.
Frozen Days	The number of workdays from the generation start date that the quantity buckets will be frozen with no changes and releases possible. This value is also used to calculate the cumulative frozen quantity (see CFRO).
Fabrication Days	The number of workdays, from the generation start date, that the customer guarantees the fabrication costs for the quantity ordered.
Raw Mater'l Days	The number of workdays, from the generation start date, that the customer guarantees the raw material costs for the quantity ordered.

### What You Should Know About

<b>Deleting supplier information</b>	When you delete supplier information, the system deletes the entire record, including the history.
<b>Shipment leadtime</b>	<p>Shipment leadtime determines the number of days that are required for the items on the scheduled blanket order release to leave the supplier's dock and arrive at your delivery location.</p> <p>Depending on where the supplier is located, the shipment leadtime might be zero, or as many days as it takes for the supplier to transport the released shipment to your facility.</p>
<b>Level leadtime</b>	The level leadtime for a purchased item should include the shipment leadtime.

**Shipping units per container**

The Shipping Units Per Container field identifies the container requirements of the supplier. When the system generates the supplier schedule, it calculates the shipping units per container as a multiple and adjusts the planned quantities as needed.

**Shipment quantity**

The Shipment Quantity field identifies the minimum shipment quantity that the supplier is willing to accept.

**Defining shipment patterns for supplier deliveries**

You define shipment patterns in the user defined code table (40/SP).

The first character of the 2-character code specifies the weeks for which you want to define a shipment pattern. The second specifies the days of the week. For example, WA indicates weekly deliveries, Monday through Friday.

The first through fifth week of the month are interpreted as the first through the fifth occurrence of the day in the month. For example, 4D would be considered the fourth Monday of the month.

**Processing early and past due receipts**

When you generate a schedule, the system sorts outstanding blanket order releases into appropriate time periods. The system accumulates past due quantities and quantities that you received prior to the requested date.

When you regenerate the schedule, the system displays the quantities in the Past Due and Early Receipt fields on Enter/Change Supplier Information.

The system expresses past due amounts as positive numbers in the Past Due field and adds the amounts to the cumulative received quantity. The system expresses early receipt amounts in the Early Receipt field.

**Processing Options for Supplier Schedule Master Revisions**

DREAM WRITER VERSIONS:

Enter the version of each program.  
If left blank, ZJDE0001 will be used.

- 1. Purchase Order Entry (P4311) \_\_\_\_\_
- 2. Open Order Inquiry (P430301) \_\_\_\_\_
- 3. Supplier Schedule (P34301) \_\_\_\_\_
- 4. Supplier Split Percentage (P43211) \_\_\_\_\_

DEFAULT SCREEN VALUES:

- 5. Enter the Document Type to display. \_\_\_\_\_

## Defining Supplier Split Percentages



From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose Supplier Split Percentages

Buyers often order from multiple suppliers for the same item to avoid relying on a single supplier. Supplier scheduling allows multiple suppliers to supply a single item based on a predetermined split percentage. Use Supplier Split Percentages to define the predetermined split percentages among the suppliers, by item.

### ► To define supplier split percentages

On Supplier Split Percentages

Address Number	Description	Split Percent	Effective From	Effective Thru
4343	Vector Manufacturing Co	70.00	01/01/98	12/31/98
4344	Venus Universal Supply	30.00	01/01/98	12/31/98
Total		100.00		

1. To define split percentages among suppliers, complete the following fields:
  - Item Number
  - Branch/Plant
  - Split Percent
  - Effective From
  - Effective Thru
2. Complete the following optional field:
  - As of Date

<b>Field</b>	<b>Explanation</b>
Split Percent	The percentage applied.  For Supplier Release Scheduling: The percentage of the planned quantity that the system applies to the corresponding supplier.

### Processing Options for Supplier Split Percentages Revisions

DREAM WRITER VERSIONS:

1. Enter the version of the purchase order inquiry program. If left blank ZJDE0001 will be used.



# Generate Supplier Schedules

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## Generating Supplier Schedules



From Material Planning Operations (G34), choose Single Site Planning

From Single Site Planning Operations (G3422), choose Generate Supplier Schedule

Use Generate Supplier Schedule to generate a draft of your supplier schedule prior to committing to a final schedule. You can review the draft of your supplier schedule using Enter/Change Schedule.

When you generate the supplier schedule, the system uses the messages from the most recent MRP generation, blanket orders, and the information defined in the Supplier Schedule Master table to create a supplier schedule. The system determines demand from the MRP messages.

In addition, the system creates multiple supplier schedules for a single item. It does this by splitting the MRP messages by the predetermined percentages that you defined in the Supplier Split Percentages table.

### Before You Begin

- Verify that the following information has been set up:
  - The DRP or MPS system
  - An active blanket order for the item
  - Associated supplier information for the order
  - The blanket order, order type, line type, and status in the version of supply/demand inclusion rules that are used during supplier schedule generation
- Run the MPS/MRP/DRP generation so that the system can:
  - Create order messages for supplier scheduled items
  - Produce a time-series material plan so you can analyze the impact of choosing to accept or reject planning suggestions
- Review and act on any messages on the Message Detail Review form

### What You Should Know About

#### **MRP messages**

Supplier scheduling uses the messages generated from the most recent MRP generation to determine schedules. Use Detail Message Review to review these messages and change them as you see fit.

In addition, you can set the appropriate processing option to clear these messages after schedule generation. The system clears only those messages inside the releasable time fence.

After you clear the MRP messages, supplier scheduling creates a purchase order for every message that is included in the releasable time fence.

#### **Multiple supplier scheduling**

Supplier Scheduling uses the information in the Supplier Split Percentages table (F43211) to create quantity records for multiple suppliers. The system calculates these quantities by multiplying the MRP message quantity by the percentage defined in the Supplier Split Percentages table.

### See Also

- *Setting Up DRP, MPS, and RCCP (P00051)*
- *Generating Single Level Master Schedules (P3482)*
- *Working with Messages (P3411)*
- *Reviewing MRP Time Series (P3413)*
- *Revising Supplier Schedules (P34301)*



When you run Generate Supplier Schedule, the system prints a Schedule Generation Exception report that details any possible discrepancies that might make your supplier schedule ineffective.

34400	J.D. Edwards & Company	Page - 3
		Date - 5/31/98
The Following Report Distributions were Entered:		
** None Selected **		
Item	Item Description	T Branch/Plant Exception Description
111	1x10x6' OAK S4S	0 M30 *Messages exist that were not processed. No Supplier Schedule Master was found.

### Processing Options for Supplier Schedule Generation

PROCESSING:

1. Enter the beginning date for the generation. (Default is Today) \_\_\_\_\_
2. Enter the document type to look for when retrieving an item's blanket order. If left blank, 'OB' will be used. \_\_\_\_\_
3. Enter the version of Supply/Demand Inclusion rules to use for active blanket order selection. (Required) \_\_\_\_\_

SUPPLIER STATUS UPDATE:

4. Enter the status to use for updates to the Supplier Schedule. If left blank, no status update will occur. \_\_\_\_\_

MPS/MRP/DRP MESSAGES:

5. Enter a '1' to change MPS/MRP/DRP Messages to a cleared status after processing. If left blank, all messages will remain uncleared after schedule generation. \_\_\_\_\_

INITIALIZATION & REGENERATION:

6. Enter a '1' to rerun the generation using previously cleared MPS/MRP/DRP messages. If left blank, only uncleared MPS/MRP/DRP messages will be used. \_\_\_\_\_
7. Enter a '1' to ignore frozen time fence days and allow operations inside the normal frozen time fence (All frozen days = '0'). If left blank, no quantities will be placed inside the frozen time fence date. \_\_\_\_\_



# Revise Supplier Schedules

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## Revising Supplier Schedules



From Material Planning Operations (G34), choose MRP

From MRP Daily Operations (G3413), choose Enter/Change Schedule

Use Enter/Change Schedule to review and revise the supplier schedule that you generated. You might need to override system-scheduled quantities to compensate for last-minute changes to the schedule.

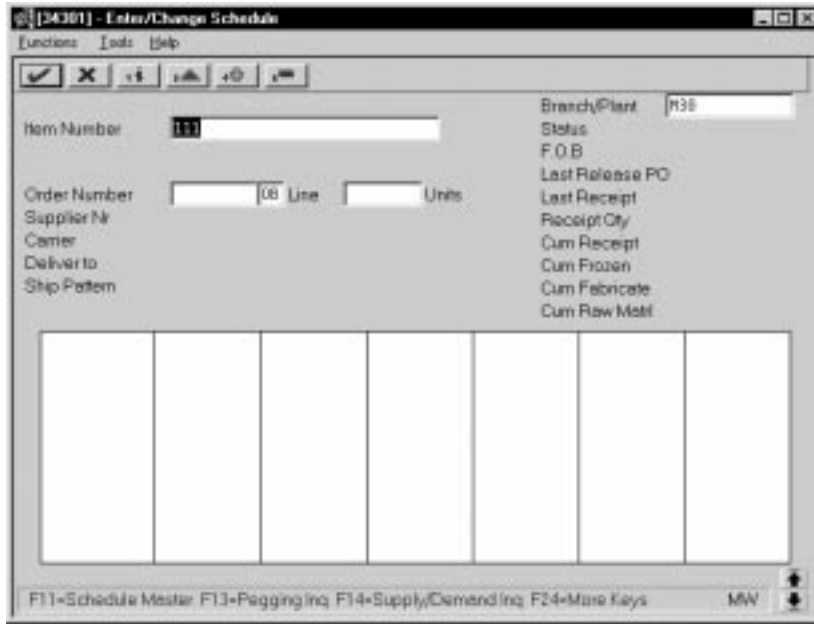
After you review the schedule and make any necessary revisions, you must accept the information on Enter/Change Schedule to commit to a final schedule.

Enter/Change Schedule allows you to:

- Review planned, released, and historical quantity information
- Display the current supplier schedule
- Review cumulative quantity information
- Update planned quantities in the schedule before you release them
- Finalize the supplier schedule

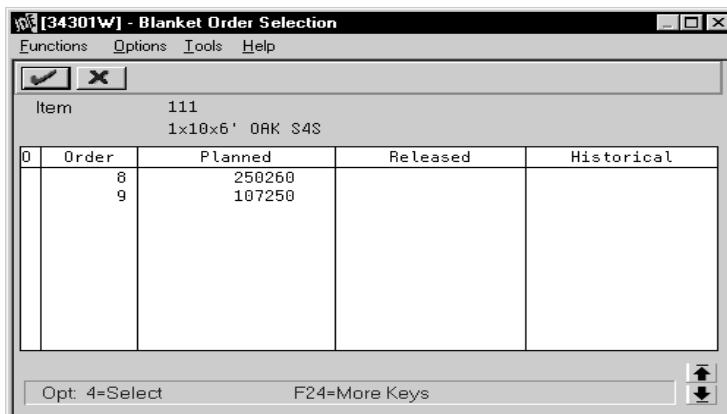
► **To revise a supplier schedule for a single item**

On Enter/Change Schedule



1. To display one or more blanket orders that exist for the selected item, complete the following fields:
  - Item Number
  - Branch/Plant

The system displays Blanket Order Selection.



2. On Blanket Order Selection, choose the blanket order with the supplier information that you want to display.

The system closes Blanket Order Selection and populates the Enter/Change Schedule form with supplier scheduling information.

3. On Enter/Change Schedule, review the following information:
  - Status
  - Last Release Purchase Order
  - Last Receipt
  - Receipt Quantity
  - Cumulative Receipt
  - Cumulative Frozen
  - Cumulative Fabricated
  - Cumulative Raw Material
  - Past Due
  
4. Accept the record or complete the following field to update planned quantities in the schedule:
  - Planned

Field	Explanation
Status	The current status of the supplier schedule. This is updated as the schedule moves through the system.  ..... <i>Form-specific information</i> .....  This field is display only.
Last Receipt	The date that the last shipment of the item was received.
Receipt Qty	The quantity received on the most recent shipment.
Cum Receipt	The quantity received to date against a blanket purchase order.
Cum Frozen	The quantity inside the Frozen Time Fence that the customer is planning to release or has already released to the supplier.
Cum Fabricate	The running total of the item for which you could be exposed to fabrication costs by the supplier. This is calculated as the quantity planned for release up to the fabrication time fence.
Cum Raw Matrl	The quantity for which you could be exposed to raw material costs by the supplier. This is calculated as the quantity planned for release up to the raw material time fence.
Planned	A description of the information contained on the supplier schedule row.

## What You Should Know About

### **Changing supplier information**

The Planned field is the only field that you can change on the Enter/Change Schedule form. The system recalculates the quantities in the Cumulative Frozen, Fabricate, and Raw Material fields when a change is made.

Any changes that you make to the schedule will not affect the most recent MPS, MRP, or DRP generation. After you release the supplier schedule and create purchase orders for the blanket order releases, the next MPS, MRP, or DRP generation treats the purchase orders as available supply items.

## Processing Options for Supplier Schedule Revisions

### DREAM WRITER VERSIONS:

Enter the version of each program:  
If left blank, ZJDE0001 is used.

- |                               |           |       |
|-------------------------------|-----------|-------|
| 1. Open Order Inquiry.        | (P430301) | _____ |
| 2. Supply/Demand Inquiry.     | (P4021)   | _____ |
| 3. Purchase Order Entry.      | (P4311)   | _____ |
| 4. Vendor/Blanket Information | (P4321)   | _____ |
| 5. Pegging Inquiry            | (P3412)   | _____ |
| 6. Single Item Release        | (P34410)  | _____ |

### SUPPLY/DEMAND INCLUSION RULES:

- |   |       |
|---|-------|
| 7. Enter the version of Supply/Demand Inclusion Rules to use for active blanket order selection. (Required) | _____ |
|---|-------|

### DEFAULT VALUES:

- |   |       |
|---|-------|
| 8. Enter the Document Type to default to the screen. If left blank, no default will be moved to screen. | _____ |
|---|-------|

### SCHEDULE STATUS UPDATE:

- |  |       |
|--|-------|
| 9. Enter the status to use for updates to the Vendor Schedule. If left blank, schedule status unchanged.                           | _____ |
| 10. Enter the status beyond which changes cannot be made to the Vendor Schedule. If left blank, schedule is always open to change. | _____ |

# Release Supplier Schedules

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## Releasing Supplier Schedules



From Material Planning Operations (G34), choose Single Site Planning

From Single Site Periodic Planning Operations (G3422), choose Release Supplier Schedule

After you finalize a schedule using Enter/Change Schedule, you can release the current supplier schedule. After the schedule is processed, the system updates the planned quantities inside the time fence.

Release Supplier Schedule uses the following:

- Outstanding purchase orders
- Existing blanket purchase orders
- Supplier release information that is specific to each blanket order

The program uses this information to create:

- Purchase orders for all quantities that are needed inside the time fence
- Blanket orders that are scheduled for a specific item within a branch/plant
- A shipping schedule based on when you need the items, the shipping leadtime, and other defined variables
- A single purchase order with multiple lines for each different release date and multiple lines for each item released for the supplier

### Before You Begin

- Generate a current supplier schedule. See *Generating Supplier Schedules*.

## What You Should Know About

**Clearing MRP messages** Supplier scheduling uses the messages from the most recent MRP generation to determine demand.

You can set the appropriate processing option to clear these messages after you release the supplier schedule. The system clears only those messages inside the releasable time fence.

## Processing Options for Supplier Schedule Release Generation

### PURCHASE ORDER OPTIONS:

1. Enter the Line Type to create. \_\_\_\_\_
2. Enter the Beginning Line Status. \_\_\_\_\_
3. Enter the Document Type to create. \_\_\_\_\_  
(Above values are required)
4. Enter a '1' to default the tax area from the "Ship-To" address book number. If left blank, the tax area will be defaulted from the "Supplier" address number. \_\_\_\_\_

### STATUS UPDATES:

5. Enter the status to use for updates to the Supplier Schedule. If left blank, no change will be made to the schedule's current status. \_\_\_\_\_
6. Enter a '1' to clear MPS/MRP/DRP messages inside the releasable time fence. If left blank, no action. \_\_\_\_\_

### BLANKET/QUOTE PROCESSING:

7. Enter a '1' for automatic blanket order release processing. If left blank, automatic blanket release will not be performed. \_\_\_\_\_

### PRICE CONTROL:

8. Enter a '1' to use the price based on the Purchase Price Level flag in the Item Master. If left blank, the price from the Blanket Order will be used. \_\_\_\_\_



# Print Supplier Schedules

---

## Printing Supplier Schedules



From Material Planning Operations (G34), choose Single Site Planning

From Single Site Planning Periodic Operations (G3422), choose Print Supplier Release

You can use Print Supplier Release to print the supplier schedule. This report shows the shipment schedule, releasable quantities, and all blanket orders that are scheduled for a specific item within a branch/plant.

The system uses the information that you have entered on the other forms along with the version of supply/demand inclusion rules that you select to create the report.

### Before You Begin

- Run the Release Supplier Schedule batch process. See *Releasing Supplier Schedules*.

34450	J.D. Edwards & Company Supplier Schedule Print		Page . . . . . 1 Date . . . . . 10/28/98 Branch/Plt . . . . . CHI
Item No. 111 Desc . 1x10x6' Oak 84S	Vendor . Mr.Raymond Allen 410 17th Avenue Fairfax VA 22040	Buyer. . . . . Teague and Associates F.O.B. . . . . Pickup with our Truck Carrier . . . . . Deliver to . . . . .CHI Chicago Warehouse	Blanket Order 104 OB Purchase Order OP Release Number . . . 92102701 LastReceipt Date. 09/21/98 LastReceived Qt 11 Cum Receipt. 10 Cum Frozen . 2000 Cum Fabricat 2000 Cum Raw Matl 2000 Units. . . . . EA Each

	Past Due	09/14/98	F 09/15/98	R 09/16/98	L 09/17/98	M 09/18/98	9/21/98	09/22/98
Released . . . . .	500							
Planned . . . . .								
Cum Receipt. . . . .	510	510	510	510	510	510	510	510
Net Change . . . . .								4600-

	09/23/98	09/24/98	09/25/98	09/28/98	09/29/98	09/30/98	10/01/98	10/02/98
Released . . . . .								
Planned . . . . .								
Cum Receipt. . . . .	510	510	510	510	510	510	510	510
Net Change . . . . .								

## Processing Options for Supplier Schedule Print

### PROCESSING:

1. Enter the document type to use when retrieving an item's blanket order. If left blank, 'OB' will be used. \_\_\_\_\_
2. Enter the version of Supply/Demand Inclusion rules to use for active blanket order selection. (Required) \_\_\_\_\_

### SCHEDULE STATUS UPDATE:

3. Enter the status to use for updates to the supplier schedule. If left blank, no change will be made to the schedule's current status. \_\_\_\_\_

### ASSOCIATED TEXT:

4. Enter a '1' to print associated blanket order text. If left blank, no associated text will be printed. \_\_\_\_\_



## Exercises

See the exercises for this chapter.

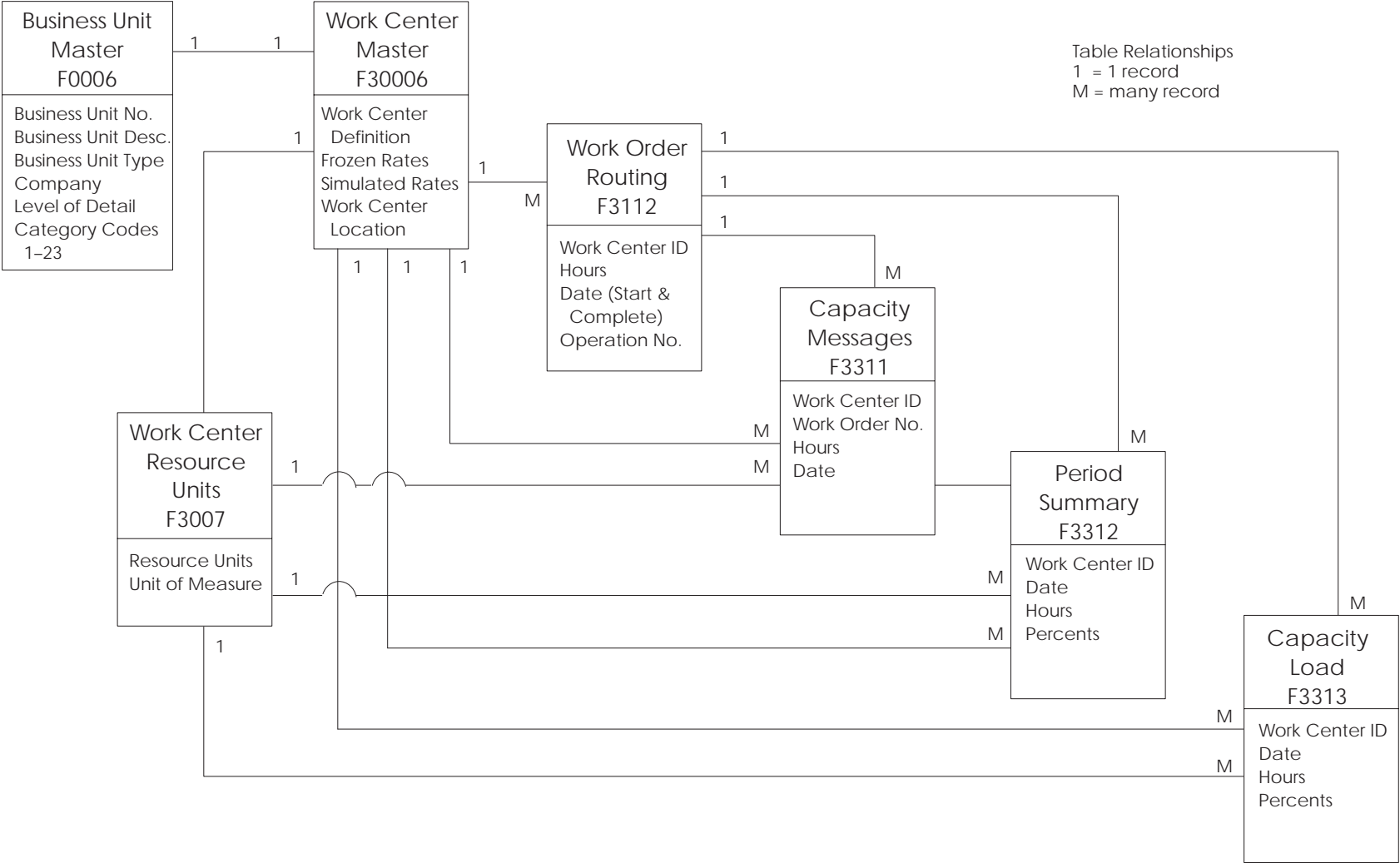
# Appendices



# Appendix A — Data Models

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# Capacity Management



# Supply Side

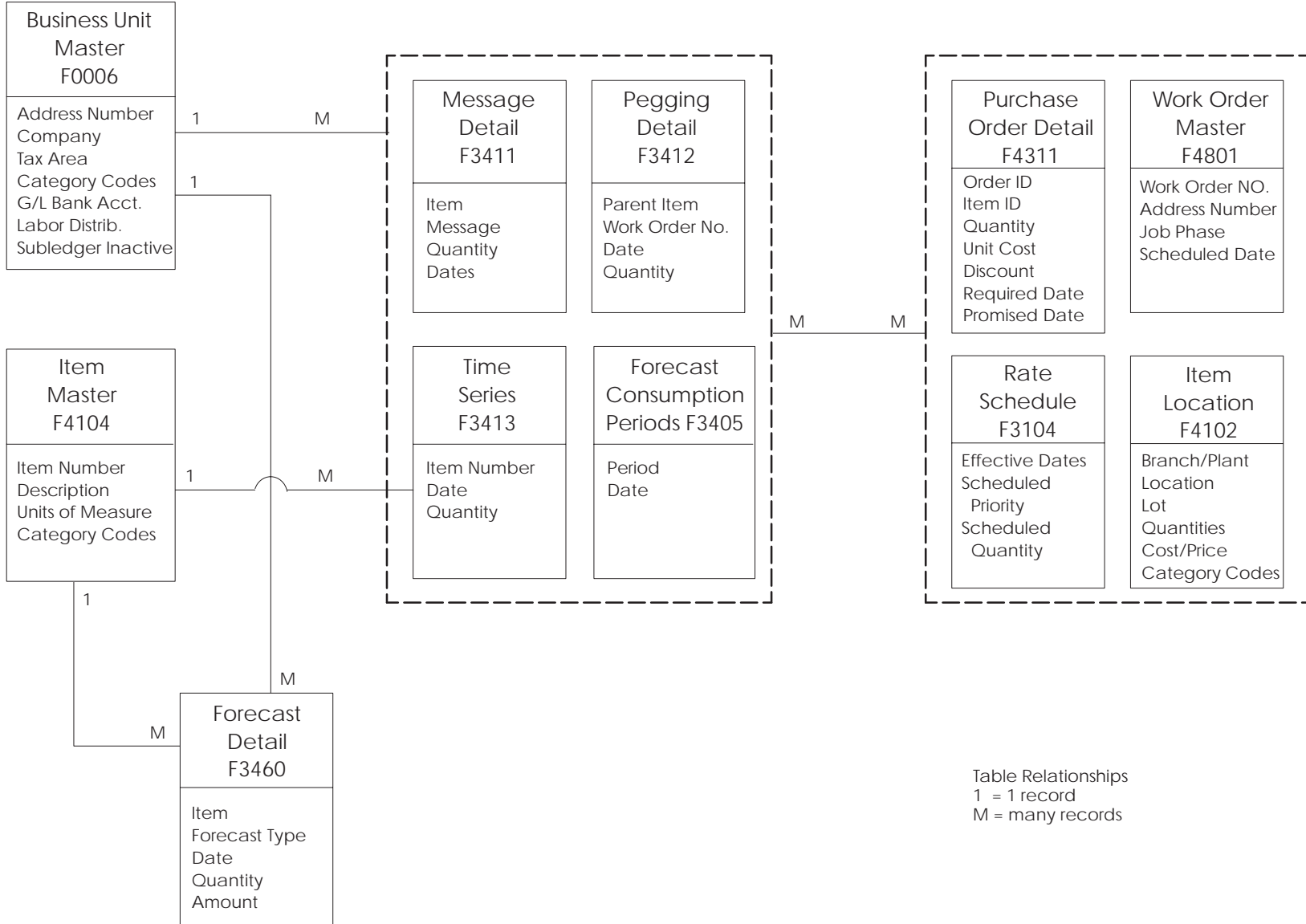
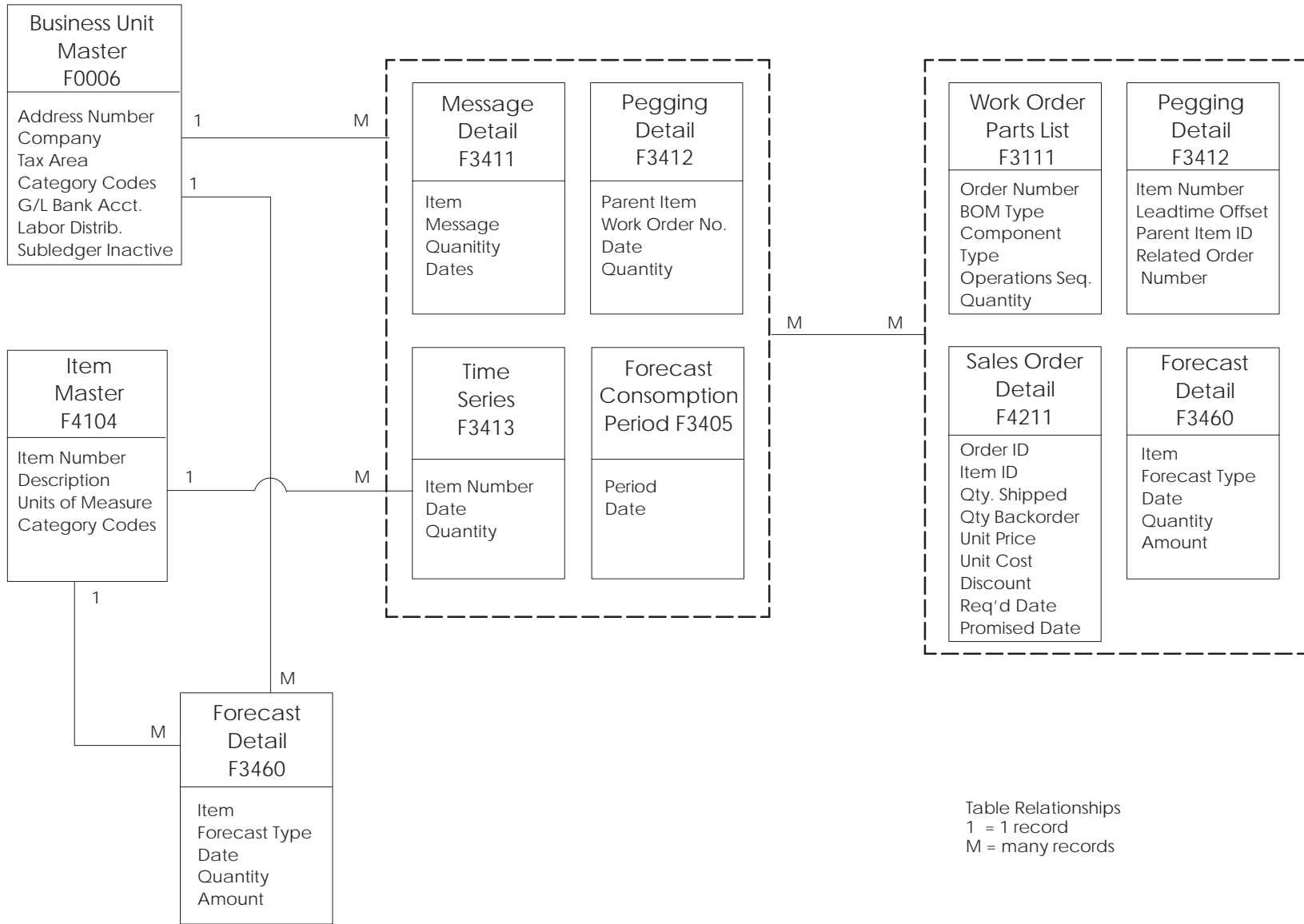


Table Relationships  
 1 = 1 record  
 M = many records

# Demand Side





## Appendix B — Action Messages

The action messages for DRP/MPS/MRP are defined in user defined code table 34/MT. The character codes are hard-coded. Do not change the character codes in this table.

<b>Action Messages in DRP/MPS/MRP</b>				
<b>Type</b>	<b>Description</b>	<b>Planner Remarks</b>	<b>Action Taken When Message Processed</b>	
			<b>Work Orders</b>	<b>Purchase Orders</b>
A	Warning message	WO missing part list	Displays work order. You can copy the bill of material to create a parts list.	N/A
A	Warning message	BOM does not exist for item	Error message, record invalid.	N/A
A	Warning message	Cancel parts list	Error message, record invalid. You must clear or delete message.	N/A
A	Warning message	Defer parts list	Error message, record invalid. You must clear or delete message.	N/A
A	Warning message	Leadtime is zero	Clears message. Displays work order.	N/A
B	Order & Expedite	Blank	Clears message and creates a firm order message. Creates work order.	Clears message and creates a firm order message. Creates purchase order.
C	Cancel	Blank	Clears message. The system deletes work order parts list if there are no outstanding issues. Changes status to 99.	Clears closed message on purchase order line item. Changes status to 999.
D	Defer	Blank	Clears message and changes work order item required date. If a D message is generated, an L (Decrease Rate) message will not be generated.	Clears message and changes purchase order line item required date.
E	Expedite	Blank	Clears message and changes work order start date.	Clears message and changes purchase order line item start date.

<b>Action Messages in DRP/MPS/MRP</b>				
<b>Type</b>	<b>Description</b>	<b>Planner Remarks</b>	<b>Action Taken When Message Processed</b>	
			<b>Work Orders</b>	<b>Purchase Orders</b>
F	Frozen order	Frozen order	No action required. The message remains until deleted or cleared.	No action required. The message remains until deleted or cleared.
G	Increase order quantity	Manual adjustment necessary	Displays work order. You must manually change the ordered quantity. The system recalculates and changes the number of required components.	Displays purchase order. You must manually change the ordered quantity.
H	Decrease rate quantity	Blank	Displays the rate schedule. You must manually change the rate quantity for the suggested date.	N/A
I	Increase rate quantity	Blank	Displays the rate schedule. You must manually change the rate quantity for the suggested date.	N/A
L	Decrease order quantity	Manual adjustment necessary	Displays work order. You must manually change the ordered quantity. The system recalculates and changes the number of required components.	Displays purchase order. You must manually change the ordered quantity.
M	Manual reminder	User entered text	No action required. The message remains until deleted or cleared.	No action required. The message remains until deleted or cleared.
N	Create rate	Blank	Clears message and creates the rate schedule. Displays rate schedule revisions.	N/A
O	Order	Blank	Clears message and creates a firm order message. Creates work order.	Clears message and creates a firm order message. Creates purchase order.
P	Firm order	Firm order	No action required. The message remains until deleted or cleared.	No action required. The message remains until deleted or cleared.

<b>Action Messages in DRP/MPS/MRP</b>				
<b>Type</b>	<b>Description</b>	<b>Planner Remarks</b>	<b>Action Taken When Message Processed</b>	
			<b>Work Orders</b>	<b>Purchase Orders</b>
S	FPO adjustment suggestion	<ul style="list-style-type: none"> <li>• Increase Parts List</li> <li>• Decrease Parts List</li> <li>• Expedite Parts List</li> <li>• Defer Parts List</li> </ul>	No action required. The message remains until deleted or cleared. Action is taken on the parent item's message.	No action required. The message remains until deleted or cleared. Action is taken on the parent item's message.
T	Past due order	Blank	No action required. The message remains until deleted or cleared.	No action required. The message remains until deleted or cleared.



## Appendix C — Functional Servers

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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 form 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.

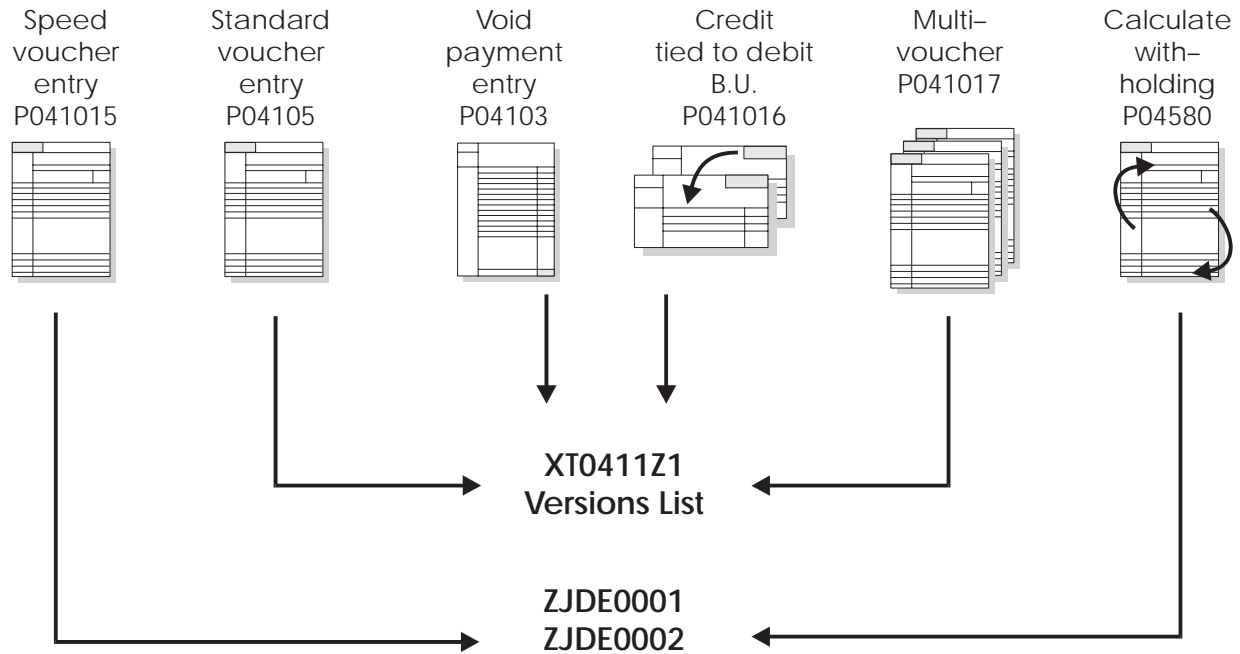
You can have all your entry programs use the same DREAM Writer version (and thus, use the same rules) or you can set up different DREAM Writer versions. J.D. Edwards provides DREAM Writer version ZJDE0001 as the default functional server version for your entry programs.



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.



# Glossary





# Glossary

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This glossary defines terms in the context of your use of J.D. Edwards systems and the accompanying documentation.

**AAI.** See *automatic accounting instruction*.

**access.** To locate the information or functions provided by the system through menus, forms, and reports.

**aggregate leadtime.** See *cumulative leadtime*.

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

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

**alternate operation.** Replacement for a normal operation 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 product for which key components (bulk, semi-finished, intermediate, subassembly, fabricated, purchased, packaging, and so on) 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. Contrast with *make-to-order*.

**assembly.** A group of items or subassemblies that are put together and constitute an end item.

**assembly inclusion rule.** A logic statement that specifies under which conditions to use a part, adjust the price or cost, perform a calculation, or use a routing operation for configured items.

**associated service type.** See *linked service type*.

**audit trail.** The detailed, verifiable history of a processed transaction. The history typically shows all additions, changes, and deletions of records.

**automatic accounting instruction (AAI).** A code that refers 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, 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 General Journal program to post a debit to a specific expense account and an automatic credit to a specific accounts payable account.

**backflush.** The deduction from inventory records of the components or ingredients as a result of the production process. See also *super backflush*.

**backscheduling.** 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 due dates for each operation.

**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 recipe or formula in which the statement of quantity per is based on the standard batch quantity of the parent.

**batch header.** Information the system 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 system performs these tasks with little or no user interaction.

**batch processing.** A method by which the system selects jobs from the job queue, processes them, and sends output to the outqueue.

**batch type.** A code that designates to which J.D. Edwards system the associated transactions pertain, thus controlling which records are selected for processing. For example, the Post General Journal program selects for posting only unposted transaction batches with a batch type of 0.

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

**Boolean logic operand.** In J.D. Edwards' reporting program, 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

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

**bulk issue.** Items issued from stores to work-in-process inventory, but not based on a job order, such as miscellaneous fasteners. 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.

**business unit.** See *facility*.

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

**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. Syn: *reporting code*.

**certificate of analysis.** A document which includes all of the tests performed and resulting test data for an item lot sold to a customer.

**character.** Any letter, number, or other symbol that a computer can read, write, and store. See also *alphabetic character*, *alphanumeric character*, *numeric character*.

**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). After 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 are 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.

**committed material.** Material on hand or on order that is assigned to specific future production or customer orders. Syn: *reserved material*.

**co-product.** An end item produced as the result of a process. There are usually two or more co-products. See also *end item*.

**component.** Raw material, ingredient or subassembly that goes into a higher level assembly, process, 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.

**component changeout.** See *component swap*.

**component swap.** In Equipment/Plant Management, the substitution of an operable component for one that requires maintenance. Typically, you swap components to minimize equipment downtime while servicing one of the components. When you perform a component swap, you can update the parent and component relationship for each component, as well as the status of each component.

**composite leadtime.** See *cumulative leadtime*.

**configuration management.** A rules-based method of ordering assemble-to-order or make-to-order products. Characteristics of the product are defined as part of the Sales Order Entry process. Characteristics are edited using Boolean logic and then translated into the required components and routing steps. The resulting configuration is also priced and costed based on characteristics defined.

**configured item segment.** A conceptual characteristic of a configured item defined during sales order entry. For example, when ordering a configured personal computer, the customer may specify what type of hard drive is required by simply stating the number of megabytes of capacity, rather than a part number for the hard drive.

**constants.** Parameters or codes that rarely change. The system uses constants to standardize information processing by an associated system. Some examples of constants are: validating bills of material online and including fixed labor overhead in costing.

**consuming location.** The point on the production line where a component or subassembly is used in the production process. Used in kanban processing.

**corrective maintenance.** Any maintenance work that falls outside the scope of preventive or predictive maintenance. Corrective maintenance can be planned, unplanned, or emergency. Examples of corrective maintenance include emergency repairs and maintenance performed to respond to equipment failure. Contrast with *preventive maintenance* and *predictive maintenance*.

**corrective work order.** In Equipment/Plant Management, a work order that is used to formally request and schedule corrective maintenance and other unscheduled maintenance, such as emergency repairs. Corrective work orders are not generated by the preventive maintenance system. You use corrective work orders to record and communicate all details pertaining to the corrective maintenance task.

**cost component.** An element of an item's cost, for example, material, labor, or overhead.

**costed bill of material.** A type of bill of material that extends the quantity per of every component in the bill by the cost of the components. See also *bill of material*.

**cost rollup.** A simulated scenario in which work center rates, material and labor costs are used to determine the total cost of an item.

**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.

**critical path leadtime.** See *cumulative leadtime*.

**cross segment edit.** A logic statement that establishes the relationship between configured item segments. These edits are used to prevent ordering of configurations which cannot be produced.

**CRP.** See *capacity requirements planning*.

**cumulative leadtime.** The longest planned length of time involved to accomplish the activity in question. For any item planned through MRP, cumulative leadtime 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. Syn: *aggregate leadtime*, *composite leadtime*, and *critical path leadtime*.

**current cost.** The cost associated with an item at the time a parts list and routing are attached to a work order or rate. Cost is based on the latest bill of material and routing for the item.

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

**date pattern.** A period of time set for each period in standard and 52-period accounting.

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

**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 should not be forecast. A given inventory item may have both dependent and independent demand at any given time. For example, an item may simultaneously be the component of an assembly and also sold as a service item.

**direct labor.** Labor that is specifically applied to the product being manufactured.

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

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

**dispatch list.** A list of sequenced manufacturing orders or rates. The dispatch list contains detailed information on location, quantity, and capacity requirements. Dispatch lists are usually generated daily and are oriented by work center or line.

**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.

**effective date.** See *effectivity date*.

**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. Effectivity dates are used in the explosion process to create demands for the correct items. Normally, bills of material and routings provide for an effectivity “start date” (from) and “stop date” (through), signifying the beginning and end of a particular relationship. Syn: *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 commerce.** See *electronic data interchange (EDI)*.

**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. Syn: *electronic commerce*.

**end item.** A product sold as a completed item or repair item. Any item subject to a customer order or sales forecast. Syn: *parent item, finished good, and co-product*.

**engineering change order (ECO).** A work order used to implement and track a change in a manufactured product. This can be a change in design, quantity of items 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 item numbers, bills of material, and routings.

**enterprise resource planning (ERP).** A closed-loop, integrated system that enables manufactures and distributors to coordinate all of the activities necessary to ultimately fulfill customer demand. This includes activities associated with suppliers, customer, inventory, shop floor, product costing and accounting, forecasting, and planning and scheduling.

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

**explosion.** The process of calculating the demand for the components of a parent item by multiplying the parent item requirements by the quantity per specified in the bill of material. Syn: *requirements explosion*. Contrast with *implosion*.

**explosion level.** See *low-level code*.



**exponential smoothing.** A type of weighted moving average forecasting technique in which past observations are geometrically discounted according to their age. The heaviest weight is assigned to the most recent data. The smoothing is termed “exponential” because data points are weighted in accordance with an exponential function of their age.

**facility.** Identifies a separate entity within a business for which you want to track costs. For example, a facility might be a warehouse location, job, project, work center, or branch/plant. Syn: *business unit*.

**family.** See *master planning family*.

**feature.** A characteristic of a product or service, such as an option, accessory, or attachment.

**FIFO.** See *first in, first out*.

**finished good.** See *end item*.

**firm planned order (FPO).** A planned order that can be frozen in quantity and time. The system is not allowed to automatically change it; this is the responsibility of the planner in charge of the item that is being planned. This technique can help planners respond to material and capacity problems by firming up selected planned orders. Additionally, firm planned orders are the normal method of stating the master production schedule.

**first in, first out (FIFO).** A method of inventory valuation for accounting purposes, based on the assumption that oldest inventory (first in) is the first to be used (first out). There is no relationship with the actual physical movement of specific items.

**fixed cost.** An expense that does not vary with the production volume, for example, setup cost.

**fixed order quantity.** A lot-sizing technique in MRP or inventory management that always causes 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 quantity.** Indicates that the amount of a component or ingredient used in the manufacturing process of an end item remains the same, regardless of the quantity of the end item produced. Contrast with *variable quantity*.

**fixed overhead.** 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.

**forecast.** An estimate of future demand. A forecast can be determined by 1) mathematical means using historical data, 2) subjective estimates from informal sources, or 3) a combination of both techniques.

**forecast consumption.** In Manufacturing and Distribution Planning, forecast consumption occurs when forecast demand is reduced by actual sales orders received or shipped, up to the forecast quantity.

**FPO.** See *firm planned order*.

**frozen cost.** After a frozen update, the cost of an item, operation, or process, as used by the Manufacturing Accounting system.

**frozen update.** A program that freezes the current simulated costs, thereby finalizing them for use by the Manufacturing Accounting system.

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

**grade.** Identifies a rating for an item which is based on how well the item meets required specifications.

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

**hidden selections.** Menu selections you cannot see until you enter HS in a menu's Selection field. They include items such 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.

**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 multi-level (showing the ultimate top-level parent). Syn: *where-used*. Contrast with *explosion*.

**indented bill of material.** A form of multi-level 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 under every subassembly in which it is used.

**indented where-used.** A type of bill of material listing for one component every parent item and subassembly, and the respective quantities required. Each of these parent items calls for the given component item in a bill of material table. The component item is shown closest to the left margin of the listing in the bill, 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, administrative work.

**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 use of which cannot effectively be determined. Examples of indirect materials include masking tape, rags, and oils. These components might or might not be included in the bill of material.

**ingredient.** In process manufacturing industries, the raw material or component of a recipe or formula.

**in-process inventory.** See *work-in-process (WIP)*.

**intermediate.** Material processed beyond raw material and used in higher level items. Intermediates are not stocked in inventory, sold to customers, or planned by MRP.

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

**item.** Any unique manufactured or purchased part, material, intermediate, subassembly, or product, based on form, fit, or function.

**item master.** A record for an item. This record contains descriptive data and control values (leadtimes, lot sizes, and so on), and might contain data on inventory status, requirements, planned orders, and costs. Item records are linked together by product structure records that define the bill of material for an item.

**Just-in-Time (JIT).** A type of manufacturing based on planned elimination of all waste and continuous improvement of productivity. The primary elements of Just-in-Time manufacturing 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 revise incrementally the operations themselves; and to keep costs to a minimum.

**kanban.** Information cards attached to a group or bin of items that travel in and out of a work center. Kanbans indicate to producing work centers what has been consumed and what needs to be produced next. Some companies use various shapes, sizes, and colors of cards for each recognition and to indicate an item's priority.

**kit.** The components of a parent item that have been pulled from stock and readied for movement to a production area.

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

**last in, first out (LIFO).** Method of inventory valuation for accounting purposes, based on the assumption that the most recently received (last in) is the first to be used or sold (first out). There is no relationship with the actual physical movement of specific items.

**leadtime.** 1) A span of time required to perform a process (or series of operations). 2) In a distribution 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 requires the release of that order in an earlier time period based on the leadtime for the item.

**ledger type.** A ledger used by the system for a particular purpose. For example, all transactions are recorded in the AA (actual amounts) ledger type in their domestic currency. The same transactions may also be stored in the CA (foreign currency) ledger type.

**level.** Every item or assembly in a product structure is assigned a code signifying the relative level in which that item or assembly is used within the product structure.

Normally the end items are assigned to level 0 with the components and subassemblies of the item assigned to level 1 and so forth. The MRP explosion process starts from level 0 and proceeds downward one level at a time.

**LIFO.** See *last in, first out*.

**linked service type.** A service type that is associated with a primary service type. Linked service types are cancelled and the maintenance tasks are performed when the primary service type to which they are linked comes due. You can specify whether the system generates work orders for linked service types, as well as the status the system assigns to work orders that have already been generated. Syn: *associated service type*. See also *primary service type, service type*.

**load.** The amount of planned work scheduled and actual work released for a 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.

**load center.** See *work center*.

**lot.** A control quantity produced together that shares the same production components. Lots are uniquely identified to allow for traceability.

**lot number control.** Assignment of unique numbers to each instance of receipt. This number carries forth into subsequent manufacturing processes. Thus, in review of an end item lot, each lot consumed can be identified as having been used for the manufacture of this specific end item lot.

**low-level code.** A number that identifies the lowest level in any bill of material at which a particular component appears. 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 calculated and maintained automatically. Syn: *explosion level*.

**machine hours.** The amount of time, in hours, that a machine is required to produce a product. Machine hours, rather than labor hours, may be used for planning capacity and scheduling, and for allocating costs.

**maintenance loop.** See *maintenance route*.

**maintenance route.** A method of performing PMs for multiple pieces of equipment from a single preventive maintenance work order. A maintenance route includes pieces of equipment that share one or more identical maintenance tasks that can be performed at the same time for each piece of equipment. Maintenance routes eliminate the need to create separate maintenance work orders for each piece of equipment, yet still accommodate all of the features of the preventive maintenance cycle. Syn: *maintenance loop*.

**maintenance work order.** A term used to distinguish work orders created for the performance of equipment and plant maintenance from other work orders within J.D. Edwards systems, such as manufacturing work orders, utility work orders, engineering change orders, and so on.

**make-to-order.** A product that is produced after receipt of a customer's order. The final product is usually a combination of standard purchased items and items custom-designed to meet the special needs of the customer. Frequently, long leadtime components are planned prior to the order arriving to reduce the delivery time to the customer. Contrast with *assemble-to-order*.

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

**manufacturing calendar.** See *work day calendar*.

**manufacturing and distribution planning.** Consists of Resource and Capacity Planning and Material Planning Operations. Resource and Capacity Planning allow you to prepare a feasible production schedule that reflects your demand forecasts and production capability. Material Planning Operations provides a short-range plan to cover material requirements that are needed to make a product.

**manufacturing leadtime.** The total time required to manufacture an item, exclusive of lower level purchasing leadtime. It includes the time for queue, setup, run, and move.

**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 planning family.** A group of products used in material planning that have similar characteristics.

**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. See also *material requirements planning*.

**material requirements planning (MRP).** A set of techniques that uses bill of material, inventory data, and the master production

schedule to calculate the time-phased net material requirements for every component item and subassembly. MRP suggests a replenishment plan to support the production of the quantities that are specified in the Master Production Schedule. See also *master production schedule*.

**model work order.** In Equipment and Plant Maintenance, a work order that functions as a template for the creation of other work orders. You can assign model work orders to service types. When the service type comes due, the system automatically generates a work order based on information from the model work order.

**MPS.** See *master production schedule*.

**MRP.** See *material requirements planning*.

**net added cost.** The net added cost represents the cost to manufacture an item at the current level in the bill of material. Thus for manufactured parts, the net added cost includes labor, outside operations, and cost extras applicable to this level in the bill of material, but not materials (lower-level items). For purchased parts, the net added cost also includes the cost of materials.

**next number facility.** A facility used to control the automatic numbering of such items as new purchase orders, sales orders, and work orders. The next number facility provides a method to increment numbers to reduce transposition and typing errors.

**nonconforming product.** Items which do not meet the requirements of a relevant specification, contract, regulation, or quality test.

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

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

**operand.** See *Boolean logic operand*.

**operation sequence.** The sequential steps for an item to follow in its flow through the plant. For instance, operation 10: cut bar stock; operation 20: grind bar stock; operation 30: shape; operation 40: polish; operation 50: inspect and send to stock. This information is maintained in the routing table.

**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 into department overhead, factory overhead, and general overhead. They are distributed to units of product or service by some standard allocation method.

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

**parent/child relationship.** See *parent/component relationship*.

**parent/component relationship.** 1) In Equipment/Plant Management, a hierarchical relationship of the components of a piece of equipment to the parent equipment. For example, a manufacturing line could be a parent and the machinery on the line could be components of the line. In addition, each piece of machinery could be a parent of still more components. 2) In Product Data Management, a hierarchical relationship of the components and subassemblies of a parent item to that parent item. For example, an automobile is a parent item and its components and subassemblies include: engine, frame, seats, and windows. Syn: *parent/child relationship*.

**parent item.** See *end item*.

**pay on consumption.** The concept of not incurring a liability for items received from a supplier until the material is used in the production process.

**pegging.** In MRP, the ability to identify for a given item the sources of its gross requirements, allocations, or both. Pegging can be thought of as “live where-used” information.

**phantom bill of material.** A bill of material used primarily for nonstocked items. A phantom bill of material represents an item that is physically built, but rarely stocked. It is instead used in the next step or level of manufacturing. MRP uses the bill to drive the requirements through the phantom item to its components.

**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.

**planning calendar.** See *work day calendar*.

**planned order.** A suggested order quantity, release date, and due date created by MRP processing when it encounters net requirements. Planned orders at one level are 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. See also *firm planned order*.

**planning bill of material.** An artificial grouping of items or events in bill of material format, used to facilitate master scheduling or material planning, and forecasting. Syn: *pseudo bill of material*.

**planning family.** A means of grouping 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.

**PM.** Refers to one or more service types that are due to be performed for a piece of equipment, based on the service intervals for each service type. When you complete a PM, a new PM cycle begins for the service types included in the PM.

**potency.** Identifies the percent of a process item in solution. For example, 80% solution could be used in a process which called for 100%, but would require 25% more in terms of quantity to meet the requirement ( $100 / 80 = 1.25$ ).

**predictive maintenance.** A maintenance strategy that uses computerized data collection and analysis of equipment operating parameters to predict the point at which equipment is expected to fail and then schedules the appropriate procedures just before the expected equipment failure. Predictive maintenance can significantly reduce costs and equipment downtime by eliminating unnecessary preventive maintenance procedures. In addition, by predicting and averting catastrophic equipment failure, predictive maintenance reduces overall maintenance costs and allows for equipment to be operated for its full service life. Contrast with *corrective maintenance* and *preventive maintenance*.

**preference profile.** The ability to define default values for specified fields for a user defined hierarchy of items, item groups, customers, and customer groups.

**preflush.** An automatic deduction by the system of materials from inventory when the parts list and routing are attached.

**preventive maintenance.** Maintenance tasks and procedures that are routine and repetitive, such as periodic lubrications and filter replacements. Preventive maintenance procedures are designed to eliminate breakdowns and the need for corrective maintenance. Contrast with *corrective maintenance* and *predictive maintenance*.

**preventive maintenance cycle.** Refers to the sequence of events that make up a preventive maintenance task, from its definition to its completion. Because most preventive maintenance tasks are commonly performed at scheduled intervals, parts of the preventive maintenance cycle repeat, based on those intervals.

**preventive maintenance schedule.**

Defines the service types that apply to a specific piece of equipment, as well as the intervals at which each service type is scheduled to be performed.

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

**primary service type.** A service type to which you can link related service types. For example, for a particular piece of equipment, you might set up a primary service type for a 1000-hour inspection and a linked service type for a 500-hour inspection. The 1000-hour inspection includes all tasks performed at 500 hours. When a primary service type is scheduled to be performed, the system schedules the linked service type. See also *linked service type*.

**priority.** 1) The relative importance of jobs in a queue. 2) The sequence in which jobs should be completed.

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

**product data management (PDM).** The Product Data Management (PDM) system enables a business to organize and maintain information about each item it manufactures. Features of this system, such as bills of material, work centers, and routings, define the relationships between components and how they can be combined to manufacture an item. PDM also provides data for other manufacturing

systems including Manufacturing Accounting, Shop Floor Control, and Manufacturing and Distribution Planning.

**product family.** See master planning family.

**production line.** A series of work centers or machines allocated to the production of a limited number of items with similar routings.

**pseudo bill of material.** See *planning bill of material*.

**purchased part.** An item bought from a supplier.

**quality control.** The process of measuring quality conformance by comparing the actual with a standard for the characteristic and acting on the difference.

**quality management.** A system that allows testing of products based on user defined tests and acceptable result values. Test results can be entered in a consistent fashion at any time in the sales, purchasing, production, or shipping process.

**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, and to calculate the quantity on the parts list for a work order.

**queue.** The jobs waiting to be processed at a given work center. As queues increase, so do average queue time and work-in-process inventory.

**rated capacity.** The demonstrated capability of a system. Capacity is calculated from such data as planned hours, efficiency, and utilization. The rated capacity = available hours x efficiency x utilization.

**raw material.** Purchased items or extracted materials that are converted through the manufacturing process into components 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 supplier record consists of information such as the supplier's name, address, and telephone number.

**release.** Authorization to produce or ship material that has already been ordered.

**repetitive manufacturing.** Producing items in high-volume concentration, often with entire production lines dedicated to a family of products.

**replacement parts.** Parts that can be used as substitutes. They 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.

**replenishment point.** The location on or near a production line where requests for additional components or subassemblies are to be delivered.

**reporting code.** See *category code*.

**requirements explosion.** See *explosion*.

**reserved material.** See *committed material*.

**resource requirements planning (RRP).** The process of converting the production plan into capacity needs for key resources: workforce, 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.

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

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

**rollup.** See *cost rollup*.

**rough cut capacity planning (RCCP).** The process of converting the master production schedule into capacity needs for key resources: workforce, 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.

**routing.** Information detailing the method of manufacture or maintenance of a particular item. It includes the operations to be performed, their sequence, the various work centers 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 on.

**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 or supply. 2) In the context of master production scheduling, the additional inventory or capacity planned as protection against forecast errors or short-term changes in the backlog. Overplanning can be used to create safety stock.

**scheduling workbench.** A multiple-function program which allows the sequencing of work orders and/or rates on a production line. Sequencing can be automatic based on user defined category code definition or manual. Sequencing includes forward, finite scheduling, including the option to cross shifts or days.

**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. Syn: *scrap rate*.

**scrap rate.** See *scrap factor*.

**selection.** Found on J.D. Edwards 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.

**sequencing.** Determining the order in which a facility processes different jobs.

**serial number.** A unique number assigned to identify a specific item with a lot size of one.

**service interval.** Refers to the frequency at which a service type is to be performed. Service intervals can be based on dates, periods, or statistical units that are user defined. Examples of statistical units are hours, miles, and fuel consumption.

**service type.** An individual preventive maintenance task or procedure, such as an inspection, lubrication, or overhaul. Service types can apply to a specific piece of equipment or to a class of equipment. You can specify that service types come due based on a predetermined service interval, or whenever the task represented by the service type becomes necessary.

**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 labor costs associated with setting up an operation for the next product.

**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 calendar.** See *work day calendar*.

**shop floor control.** A system that uses data from Product Data Management, Master Production Schedule, and Material Requirements Planning to create, maintain,

and communicate status on shop orders (work orders.). 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 machines and labor resources.

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

**shrink 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 shrink 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 a single component. Syn: *shrinkage rate*.

**shrinkage rate.** See *shrink factor*.

**significant item numbers.** Item 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. Contrast with *nonsignificant item numbers*.

**simulated cost.** After a cost rollup, the cost of an item, operation, or process according to the current cost scenario. This cost can be finalized, by performing a frozen update. You can create simulated costs for a number of cost methods, for example, standard, future, and simulated current costs. See also *cost rollup*.

**simulation.** 1) The technique of using representative or artificial data to reproduce a model of 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, using the operational data to perform “what if” evaluations of alternative plans to determine the feasibility of the model.

**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 type of bill of material listing each parent in which a specific component is directly used and in what quantity.

**specification.** A statement of the technical requirements of an application or item and the process involved to ensure the requirements are met.

**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 needed 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. Syn: *run size*.

**standard cost.** The expected, or target cost of an item, operation, or process. Standard costs represent only one cost method in the Product Costing system. You can also calculate, for example, future costs or current costs. However, the Manufacturing Accounting system uses only standard frozen costs.

**standard costing.** A cost system that uses cost units determined before production. For management control purposes, the system compares standards to actual costs and computes variances.

**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, or 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 for allocating overhead in cost accounting systems.

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

**substitution.** Using alternate components in production when the primary item is not available.

**super backflush.** Creates backflush transactions against a work order at pay points defined in the routing. This allows you to relieve inventory at strategic points throughout the manufacturing process. See also *backflush*.

**supplier scheduling.** Provides suppliers with consistent shipping information and advanced demand profiles to support just-in-time production and delivery. The supplier scheduling system includes a business agreement and delivery schedule for each supplier. Supplier scheduling includes a formal priority planning system and EDI functionality to provide the supplier with valid due dates.

**supply chain.** The link from the initial raw materials to the consumption of the finished product.

**supplying location.** The location from which inventory is transferred once quantities of the item on the production line have been depleted. Used in kanban processing.

**threshold percentage.** In Equipment/Plant Management, the percentage of a service interval that you define as the trigger for maintenance to be scheduled. For example, you might set up a service type to be scheduled every 100 hours with a threshold percentage of 90 percent. When the equipment accumulates 90 hours, the system schedules the maintenance.

**throughput.** The total volume of production through a facility (machine, work center, department, plant, or network of plants).

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

**traceability.** The ability to trace the production history of a product for quality or warranty purposes. This is usually done through the use of lot or serial numbers to link raw materials from the supplier to the end product. Lot/SN traceability can be a government requirement in certain regulated industries, such as the pharmaceutical or automotive industries. See also *lot*.

**unit cost.** Total labor, material, and overhead cost for one unit of production.

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

**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.

**variable quantity.** In manufacturing, a variable quantity of a component or ingredient indicates that the amount required varies based on the quantity of the end product produced. Contrast with *fixed quantity*.

**variance.** 1) In Product Costing and Manufacturing Accounting, the difference between two methods of costing the same item. For example, the difference between the frozen standard cost and the current cost is an engineering variance. Frozen standard costs come from the Cost Components table, and the current costs are calculated using the current bill of material, routing, and overhead rates. 2) In Equipment/Plant Management, the difference between revenue generated by a piece of equipment and costs incurred by the equipment.

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

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

**work day calendar.** A calendar used in planning functions that consecutively lists only the working days so that component and work order scheduling can be done based on the actual number of work days available. Syn: *planning calendar*, *manufacturing calendar*, and *shop floor 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. Syn: *in-process inventory*.

**work order life cycle.** In Equipment/Plant Management, refers to the sequence of events through which a work order must pass to accurately communicate the progress of the maintenance tasks it represents.



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