Material Requirements Planning

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The purpose of this chapter is to demonstrate the functionality of Manufacturing Material Requirements Planning (MRP), and provide users with a reference guide.

In this chapter

MRP Overview

Definition

Using Material Requirements Planning (MRP), you define the materials needed to produce the finished goods. MRP uses bill of material data, inventory data, and the master production schedule to calculate the material requirements for the job. Time-phased MRP is accomplished by exploding the bill of material, adjusting for inventory quantities on hand or on order, and offsetting the net requirements by the appropriate lead times.

Creating the MRP

Following are the tasks used to create the MRP. Each is discussed in this chapter and all are required except where noted.

1   MRP Setup

   ▶   Standard Routing Assignment

   ▶   Warehouse Consolidation

   ▶   MRP Options (not required)

   ▶   Purchase Product Lines

   ▶   Warehouse Replenishment

   ▶   Warehouse/Item Definitions

2   MRP Implementation

   ▶   MRP Processing

   ▶   MRP Planning

   ▶   Generating and Removing Orders

MRP Setup

Overview

Before generating MRP, you must complete certain setup tasks in the Manufacturing and Inventory Management modules. Performing these setup tasks ensures that MRP operates successfully.

Setup tasks

Following is a brief description of the MRP setup tasks:

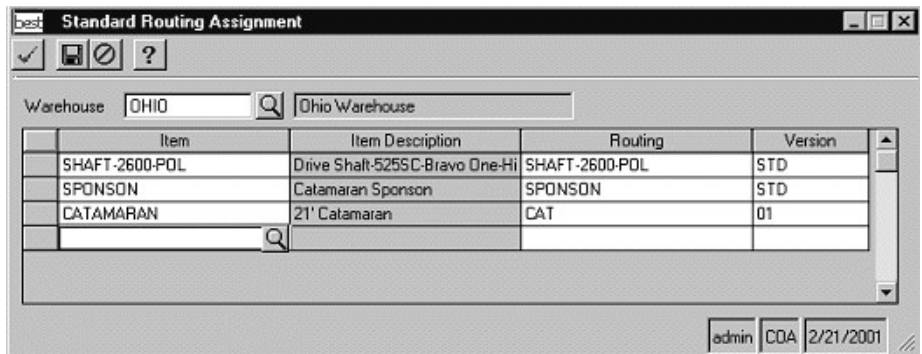| Task	Description
Standard Routing Assignment	Defines the routing and version used by the MRP for each associated warehouse. If not created, the system uses the *Standard* routing and version.
Warehouse Consolidation	Creates a consolidation warehouse that includes all the warehouses used in the MRP calculation. If you are using a single warehouse, warehouse consolidation is not required.
MRP Options	Allows you to override the original MRP setup for the routing and version you are using. This is not a required task.
Purchase Product Line	Allows you to group like items into lines or categories, which is used by warehouse replenishment.
Warehouse Replenishment	Further defines purchase product lines by warehouse and creates item/ warehouse defaults.
Warehouse/Item Definitions	Defines the reorder method and minimum and maximum stock for selected item / warehouse combinations.

Standard Routing Assignment

Purpose

Use Standard Routing Assignment to specify MRP routings and versions for specific warehouses. These routing assignments are used in the MRP creation of suggested orders and calculation of required materials. Standard routing assignments are especially useful where different warehouses produce items differently, having different production facilities, machines, and raw materials.

Standard Routing Assignment window

Use the Standard Routing Assignment window to create the standard routing assignment. In this process you associate the items in a specific warehouse with a unique routing and version. You open this window by selecting MRP Setup/ Standard Routing Assignment from the Maintenance menu.
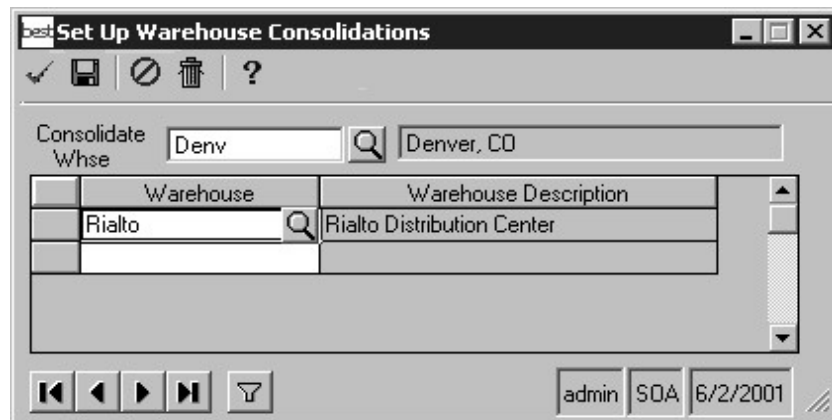

Field definitions

The following table defines the field entries on the Standard Routing Assignment window.

Field	Description
Warehouse ID	Must be a valid warehouse
Item ID	Must be a valid Inventory Management item defined for this warehouse
Routing ID	Specific routing identifier
Version ID	Routing version

Warehouse Consolidation

Purpose
Warehouse Consolidation defines what warehouses are combined during MRP processing. It is used when multiple warehouses are to be included.

Warehouse Consolidation window
Use the Warehouse Consolidation window to create a warehouse consolidation including all the warehouses to be used in the MRP calculations. You open the Warehouse consolidation window by selecting MRP Setup/Warehouse Consolidation from the Maintenance menu.

Field definitions
The following table defines the field entries on the Warehouse Consolidation window.

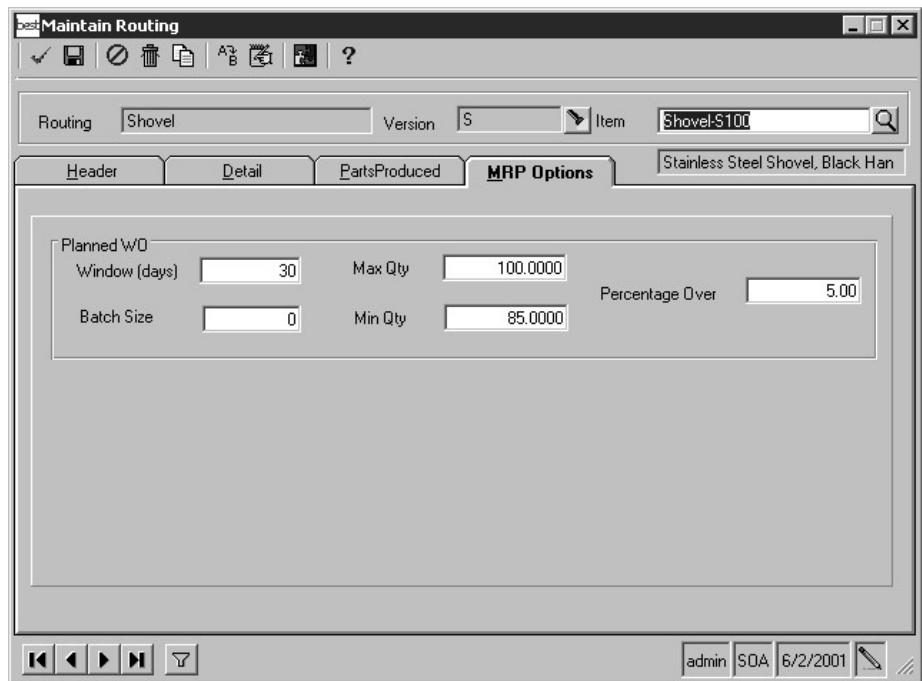| Field	Description
Consolidate Whse	Main warehouse used in MRP processing. Must be a valid warehouse.
Whse ID	Enter the warehouses to be consolidated with the MRP Warehouse

Routing MRP Options

Purpose   You can return to the Maintain Routing window to change
                     the MRP options for the routing/version you are using.

**Maintain Routing   Use the MRP Options tab in the Maintain Routing window to
window**   change the MRP options for the selected routing/version. You
                     open this window by selecting Maintain Routing from the
                     Maintenance menu.
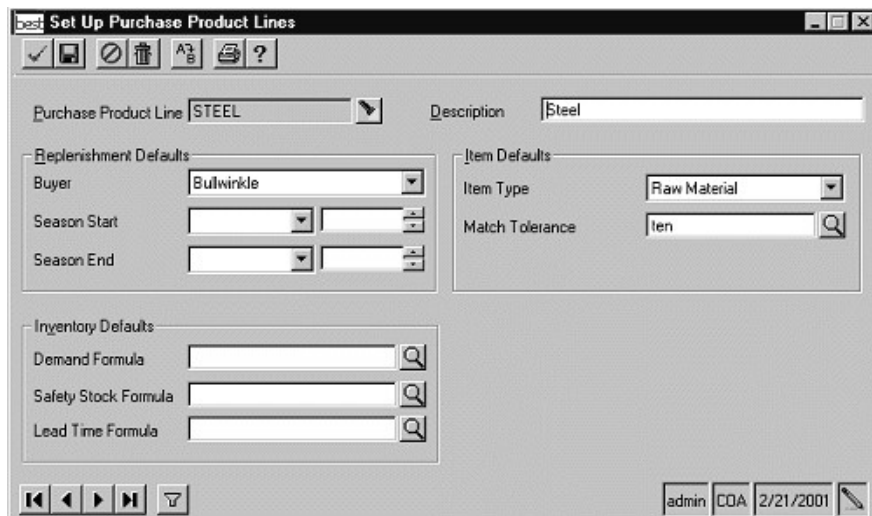
Field definitions   The following table defines the field entries on the MRP Options tab in the Maintain Routing window. For a complete discussion of Maintain Routing, refer to Chapter 2, *Advanced Manufacturing*.

Field	Description
Window (days)	Days in the MRP planning period for the items being produced in this routing.
Batch Size	Normal batch size to produce per work order. MRP uses this definition when creating suggested work orders. If batch size is not defined here, a suggested work order is created for the entire requirement or up to the Maximum Quantity defined next on this window.
Max Qty	Maximum quantity to produce per work order. MRP uses this definition when creating suggested work orders.
Min Qty	Minimum quantity to produce per work order. MRP uses this definition when creating suggested work orders.
Percentage over	Represents additional production to be added to actual requirements by MRP when creating suggested work orders.

Purchase Product Lines

Purpose

Use Purchase Product Lines to organize like items into groups or categories. This grouping of items facilitates the MRP calculations.

Set Up Purchase Product Lines window

Use the Set Up Purchase Product Lines window to organize like items into groups or categories. You open this window by selecting Replenishment/Set Up Purchase Product Lines from the Inventory Management Maintenance window.

Field definitions

The following table defines the field entries on the Set Up Purchase Product Lines window that are used in MRP processing. For a complete discussion of this window, refer to the *Inventory Management* user guide.

| Field	Description
Purchase Product Line	Enter the code that defines or names the product line you are creating.
Description	Enter the Product Line description.
Buyer	Enter the buyer assigned to this product line.

Field	Description
Item Type	Valid selections are raw material or finished good.
Match Tolerance	Select the PO Match Tolerance Code that was defined in PO Setup. Refer the the *Purchase Order* user guide for additional information.

Warehouse Replenishment

Purpose Use Warehouse Replenishment to further define purchase product lines by warehouse and create item / warehouse defaults.

Set Up Warehouse Replenishment window Use the Main tab of the Set Up Warehouse Replenishment window to define purchase product lines by warehouse. Open this window by selecting Replenishment/Set Up Warehouse Replenishment from the Inventory Management Maintenance window.
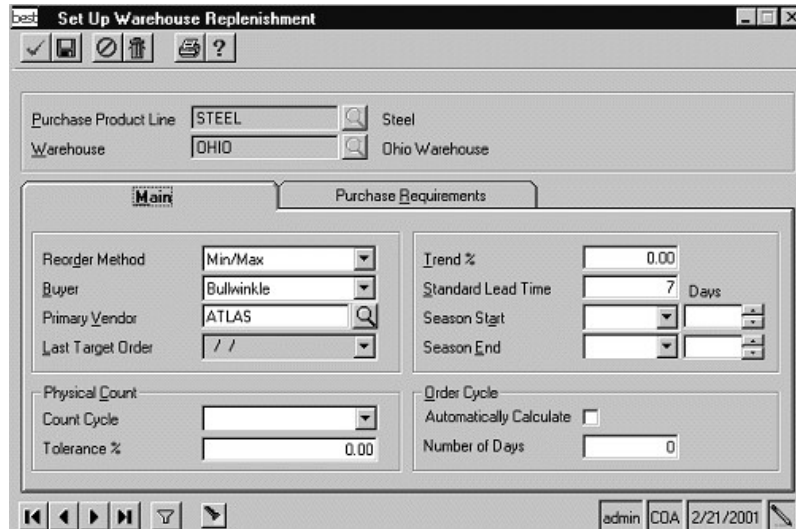
Field definitions The following table defines the field entries on the Set Up Warehouse Replenishment window that are used in MRP processing. For a complete discussion of this window, refer to the *Inventory Management* user guide.

Field	Description
Purchase Product Line	Must be a valid Purchase Product Line.
Warehouse	Must be a valid Warehouse.

Field	Description
Reorder Method	Min/Max works well with MRP to create suggested and actual purchase orders for only the required quantity. (Use 0 Min and 0 Max in the item / warehouse replenishment definition.)
Buyer	Must be a valid Buyer.
Primary Vendor	Used by MRP to create purchase orders for required materials
Standard Lead Time	Normal delivery lead time