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It is possible in Sales Order Entry to easily change a warning message that lets the user know that insufficient inventory is available if this is something your company would prefer. The message: "The quantity entered is greater than the quantity available. UEE0022" can be changed from the default of being a warning message to instead be a hard error message which you are then unable to bypass. This can be done in Error File Maintenance (OB0816) by changing the Error Severity flag from W (warning) to E (error). However, you will be unable to change this flag back to W unless you use a file utility such as DBU or SQL to go directly into the Order Entry Error Message File, OBEEP100 and reset the field EESEV=W. \*

## NEXGEN

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in

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## VMI - Vendor Managed Inventory Overview

by John Carvin, C.P.M.

New with PRMS Version 9.0, Vendor Managed Inventory is a process that enables your company, acting as a vendor to your customers, to track and replenish your products in a Vendor Managed Inventory (VMI) Warehouse (either logical or physical). Once the inventory is in the VMI warehouse, your customer owns it. This is different than consignment inventory, where you own the material until it has been consumed by your customer. You keep track of Vendor Managed Inventory to meet the requirements of your customer. Your customer can transmit VMI orders manually or by EDI; forecast demand, and re-play consumption information back to you.

This is not a simple bolt-on, standalone function. In addition to its own menu set of actions, the VMI function's maintenance, inquiries, and reports may (depending on your configuration and applications installed) also affect the following other modules:

- CIM Interface
- General Ledger
- Warehouse BOSS Interface Forecasting Workbench
- Inventory Control
- Quality Control
- Order Entry & Billing
- Master Production Scheduling
- Material Requirements Planning
- Multi-System Master Files
- Physical Inventory Purchasing & Receiving
- Product Structure Replenishment Orders
- Shop Floor
- System Control.

### Demand / Requirements

The demand side of VMI is composed of Forecast, Customer Orders, and Order Point logic.

Forecasts for VMI Products can be entered and maintained by:

1. **Forecast Information Maintenance (IM0007)** which sets up the parameters for the VMI forecasted item. Transfer of the resulting forecast is made through the **Forecast Transfer Program (IM0600)** and selecting VMI forecast information to transfer. This will transfer the forecast information into a file that the VMI generation will use for its calculations. Note that VMI items would generally be handled as Planner controlled items, type P1 or P2. Kits cannot be planned or forecasted as VMI since they are not inventoried items. VMI warehouses cannot be part of a structure, and are not required to be hidden warehouses.
2. **VMI Forecast Creation (VM0010)** updates the VMI forecast file with Customer sales forecasts from the customer sales forecast work file. Forecasts in the VMI forecast file are then used in the VMI generation for calculation of requirements and suggested planned orders.
3. Manual entry directly into the VMI forecast file through **VMI Forecast Maintenance (VM0100)**. The user can add, maintain, and delete forecasts.

**Customer Orders for VMI Products** are entered and maintained through traditional batch or manual orders, and now also through the added program **VMI Planned Customer Order Review**. There are three ways:

1. Batch orders for VMI products are created through **OB0090 (Batch Creation)**, **OB0092 (Batch/Edit Update)**, and **OB0094 (Batch Order Entry and Maintenance)**.
2. Manual entry can take place either through **OB0094** or **OB0020 (Order Entry and Maintenance)**.
3. Through selection from **VM0210 (VMI Planned Customer Order Review and Selection Process)**, which in turns feeds into the batch order entry process.

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**Order Point Data for VMI Products** — Order points, order quantities, and lot-sizing rules are entered into increasingly more specific programs. First of all in the **VMI section of the Product Master (MS0825, last screen)**, and then at the warehouse level in **Warehouse Inventory Maintenance (IN0801) in the VMI screen (IN0801.13)**. This criteria is then used in the program listed below:

- Batch lines for Order Point items created in **VM0210 (Planned Customer Order Review and Selection Process)**. Amount to order is calculated: Quantity to Order = Order Point Quantity - Total Available (in this VMI warehouse).

**Execution of Demand**

Once the demand side is entered or triggered through these various means, the first step in execution is the **VMI Generation (VM0060)**. VMI generation creates suggestions for VMI orders using the following logic: Suggested Customer Orders = VMI Warehouse On-Hand - Customer Sales Forecasts + VMI Customer Orders. Similar to MRP Generation, the result of this generation is to create/regenerate a summary file. From this file suggestions and exception messages are generated for extraction by reports, inquiries, and VMI order creation/maintenance. The generation can be limited to a specific VMI warehouse or Customer Number/Ship To and/or an upper date shut-off point.

**VMI Generation Report (VM0080)**

This report is similar to the MRP Generation Report. It is hard copy, and available in horizontal or vertical presentation, with demand bucketed per your selection of report format. It contains information on VMI requirements, receipts, planned orders (PCO's), inventory, customer orders, and action messages. Report order can be by Product, by VMI Planner, or by VMI Product Group. If the report was sequenced by VMI planner, this could be a tool the planner uses to act on the messages and suggestions of the report for his/her VMI items.

**VMI Inquiry/Pegging (VM0088)**

You can submit an inquiry for a product, and optionally limit it to a particular VMI warehouse or Customer/Ship To Number. The most frequent selection would be the VMI vertical format; however you could optionally select: Planned Customer Orders, Requirements Pegging, Expected Receipts, Action Messages, and Planning Factors. Additionally a Start Date can be specified for the inquiry.

**VMI Suggested Order Replenish (VM0090)**

This report lists all suggested customer orders for a specific period of time. This report can be run in Product Sequence or by release date. Picking a specific VMI warehouse or Customer/Ship To Number can filter it further. The second screen for submission of this report contains the "From" and "To" limits for the product number range or release date range. This also can be used as a tool to initiate the creation of VMI replenishment orders.

**VMI Planned Order Review/Sel (VM0210)**

This function allows for the review and conversion of planned orders for Regular VMI, and Order Point VMI into VMI orders. The first screen provides the option of VMI Planned Orders or VMI Order Point Items. The second screen allows you to further choose a single VMI warehouse or Customer/Ship To Number and also a product number and/or VMI planner number. Within the selection screen, planned orders can be marked to create order lines, and or combined with other requirements for the same item. Combined items, of course, must be for the same product and same unit of measurement. Items selected for order processing can even be targeted as releases against a "blanket order," also a new function in PRMS 9.0. Finally, upon acceptance, the lines selected are transferred to the Batch Creation.

**Batch Creation**

Once these lines are sent to Batch Work Files, then **Batch Creation (OB0090)** can be used to transfer orders from the Batch Work files to the Batch Interface files where they become accessible for further processing. The **Batch Edit/Update (OB0092)** (report) function verifies that all orders have valid data according to order entry rules. Then in **Batch Order Entry and Maintenance (OB0094)** you can access batch orders online to view batches for the current company and to add, change, or delete batch, order, and line data for any batch in the interface files.

**Order Processing**

Orders for VMI products can be allocated, picked, and ship confirmed or invoiced. One difference with VMI products is that during the ship confirm or invoice process, besides reducing inventory by issuing from the supply warehouse, the system also triggers a receipt transaction to the affected VMI warehouse.

**Vendor Managed Inventory Consumption**

The final part of this closed loop system is the feedback of consumption/inventory adjustment data. This is enacted through:

1. **VMI Transaction Adjustment (VM0600)** for EDI transactions (852, WKSBAL, WKSMOV) that notify the vendor of sales consumption, scrap, damaged materials, returns, or inventory adjustments. This program adjusts the inventory in the affected VMI warehouse, and optionally updates G/L.
2. **Inventory Transactions (IN0021)** for manual transactions. Specifically created VMI transactions use the VMI Inventory Asset Account instead of the normal inventory asset account. Warning messages will be displayed if the wrong inventory transaction code is being requested for a VMI warehouse.

**Conclusion**

VMI is a powerful, closed-loop inventory function that enables you and your customer to develop a significant business partnership. Even though setting up this function impacts multiple modules, it can be initiated with a single item, a single VMI warehouse/customer, and then expanded with experience over time. \*

**Warehousing & Distribution – Return on Investment**

In today's business environment, many investments in technology are made due to customer demands. ROI is minimized in the decision process because your customer base is at stake. There may also be certain regulations that change and require capital investments to comply. Once again, the results of ROI calculations are minimized because your total business may be in jeopardy if you do not comply. Other investments, however, are made on the basis of a favorable ROI. In this article, we will identify savings to be evaluated when calculating ROI relative to the purchase of a warehouse management system (WMS).

**Labor Cost Reductions**

Efficiency gains in receiving, putaway, restocking, order picking, shipping, stock location and cycle counting will result in lower labor costs. Many of our clients have eliminated all overtime and in some cases full shifts.

**Equipment Related Cost Reduction**

Efficiency gains can reduce the number of forklifts or other material handling equipment in use.

**Space Utilization Cost Reduction**

Since a WMS environment provides 99.9% accuracy, complete visibility to all inventory, same-day order turnaround, and inventory consolidation, inventory and facility management improves dramatically. In many cases outside temporary storage and sometimes entire warehouses can be eliminated. Transportation costs to and from outside storage can also be eliminated.

**Inventory Related Cost Reduction**

Because you will have better control over your inventory, safety stock can be reduced and shrinkage will be reduced. By monitoring shelf life expirations, inventory obsolescence can be avoided. Overall inventory on-hand and related carrying costs will drop.

**Efficiency Related Cost Reduction**

With a WMS in place, all activities that take place in the warehouse will become more efficient. Data entry will be reduced because there will be fewer back orders, fewer returns, fewer data entry errors and less paper pushing in general. Time spent looking for "lost" inventory and empty putaway locations will be eliminated. Orders will not be cancelled due to lost inventory. Picking and shipping errors will be eliminated. Additional costs for expediting late shipments will be eliminated. Costs associated with annual or semi-annual inventory taking, including downtime, can be eliminated.

**Other Benefits**

- System-directed work and task interleaving will maximize labor and equipment usage.
- Reduced order turnaround time will improve customer relations.
- Employee morale will improve as they find their jobs more fulfilling.
- New employee training is made easier with a WMS because work is system-directed.
- Throughput will increase without a corresponding

increase in cost.

- Because back-orders will be reduced, sales will increase.
- Complete time-stamping and audit trail of every transaction in the warehouse by type of transaction and by employee is at your fingertips.

**Cost Avoidance**

In addition to "hard" cost reductions, you should also take "cost-avoidance" into account. Typically, ROI calculations for a WMS provide a payback in less than nine months.

**Beyond ROI**

As mentioned earlier in this article, ROI is minimized for certain investments. WMS systems sometimes fall into this category. For instance, your customers may be demanding compliance labeling on your shipments to them or they will find another supplier or impose harsh fines. To maintain the business and avoid fines you will have to comply. In certain industries, lot control, lot recall and serial number tracking requirements must be met. In both of these cases, a state-of-the-art WMS can meet your requirements.

Lastly, e-Commerce is beginning to put competitive pressure on every company that distributes product. A WMS can help you win in a competitive environment. \*

**Answers from the Nexgen Help Desk**

by Doris Hodes

**Q: Why would there be negative available quantities on inventory (IN0008 Product Inquiry)?**

A: Having negative available inventory is usually a result of overriding an insufficient inventory warning message in one of the PRMS modules. This can be in Sales Order Allocations Maintenance (OB0070), Work Order Entry (SF0010), Replenishment Order Allocations Maintenance (RO0270) or Sales Order Entry (OB0020).

Product Inquiry (IN0008) calculates AVAILABLE inventory as: OnHand-WorkOrderAllocations-CustomerOrder-Allocations-ReplenishOrderAllocations

If there is physically product available on the floor, then the OnHand balances are incorrect to the system and need to be reset. It would be easiest to write a quick query of the part master file to list items with negative available balances by using the above formula. This listing could then be cycle counted and adjustments made through Inventory Transactions (IN0021).

Work Order Entry can also drive available inventory negative when attaching the hard or soft bill of material. No error message is given to indicate the condition exists but it can be checked from within Work Order Entry via F8=Material Availability (IN0210).

When Sales Order Allocations Maintenance is performed, there is a warning message generated if insufficient inventory is available, but you can override the message with F15. Likewise, Replenishment Order Allocations Maintenance allows for negative allocations when insufficient inventory is available, which can be overridden via F12.

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