

Ramco Enterprise Series

Product Book

Inventory



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1. Ramco Inventory

Ramco Inventory is an integrated, on-line, inventory control system, automating the inventory activities of a multi-company, multi-location environment. Ramco Inventory facilitates receipt of stock and its storage in zones and bins within warehouses, as per the users' requirements. The user has the freedom to regulate storage of materials through warehouse allocation and control various activities like issues, receipts, returns, adjustments, inter warehouse movements, etc. The provision to take a host of reports on a daily or periodic basis is also available. Physical inventory and cycle counting process ensures accuracy of inventory data.

Ramco Inventory is tightly integrated with Ramco applications viz. Procurement, Demand Fulfillment, Production and Financials.

Ramco Inventory comprises the following functional modules:

- Item Administration
- Warehousing
- Inventory Planning and Visibility
- Distribution Management
- Physical Inventory and Cycle Count





2. Item Administration

Item administration in Ramco Inventory has width and depth in functionality, the aspects of which are summarized below.

2.1. Item Definition

Ramco application provides for a comprehensive and user-friendly way of defining items required in an organization. It can be indicated if the item is applicable for the Company or Group Company. Role-wise item creation ensures process approach to the item creation and maintenance activity. E.g. a purchase user can specify purchasing information for the item whereas a manufacturing person can specify only manufacturing information for the item.

Quick item creation has been provided for situations where there is low need for role wise item creation.



An item can have multiple statuses like - Obsolete, Active, Discontinued or Disabled. It could belong to any of the item classification types like sundry, packaging, scrap, raw material, finished goods, intermediates, spares, container, consumable, capital and service.



In addition to this, Ramco inventory supports specification of user-defined item categories. The item category specifications available are - perishables, food, beverages, pipeline, hazardous, explosives, trading goods, competitor products and user defined categories.

An Item can have multiple variants. Usage, material controller, minimum issue quantity and so on can be specified at item-variant level.

Item account group can be attached to items so that the financial account codes are defaulted in various transactions. They enhance control while also providing user friendliness. UN/SPSC information for items like segment, family, class, commodity and business function can also be specified.

The following methods of costing can be done: Standard Cost, Weighted Average Cost, First In First Out, Last In First Out and Lot for Lot costing (Actual Cost). Item and Substitute reciprocal relationship can be defined and priority assigned to substitutes.

2.2. Attribute Definition

Three attribute types, namely quantitative, qualitative and dates are available. Users can define the standard, minimum and maximum value for the attributes along with the Unit Of Measure (UOM) for each of the attribute. Attributes can be mapped to each item variant and these can then be grouped based on attributes. The attributes so defined are later used in Ramco applications like Purchase, Sales, Manufacturing, Inventory, etc.

2.3. Item Groups

There is provision for both system-defined and user-defined item group categories. The system-defined item group is further classified for Inventory, Production, Sales, Maintenance, Accounting, and Purchase usages. The user-defined item group category allows users to create additional usage and associate groups. For each of the usages, group types can be defined and groups assigned. Furthermore, the central creation of item groups for all functions is possible. There is provision to define up to four levels of groups in a structure.

The facility to attach attributes to an item group, with specific values, is available. It has the ability to reuse the group i.e. same group can be attached to another group type. The same item group can be used in both system and user-defined types. The provision to copy & save the structure for another group type and support parallel or vertical creation of structures is also available.

2.4. Stock Status Definition

At each installation, there are multiple stock statuses available and the system allows for configuration of the stock status itself. The available stock statuses are Accepted, Rejected, Held, Quarantine, In-transit, Inbound Consignment, Outbound Consignment, Bill-Hold, Allocated, Conditionally accepted and Customer Inward Consignment. Configuration of stock



status can be done through parameters, viz. stockable, nettable, valuated, physical inventory allowed, cycle count allowed, liability creation at, ownership & allocable.

This ability to change certain parameters for every stock status allows for changing of the stock status behavior. This is very useful when mapping certain unique business situations. The rules governing the stock status conversion can be specified. These rules can specify only up to five stock statuses viz., Accepted, Conditionally Accepted, Rejected, Held and Quarantine.

Ramco Inventory provides the ability to configure a status direction matrix for every implementation. This matrix determines the input and output stock statuses for transactions that result in item stock status change. There is default set-up available in the component for every stock status. This set-up needs to be changed, in any implementation, only if required.

2.5. Unit of Measure (UOM) Administration

In addition to defining UOMs and specifying conversion factors between UOMs, the user can define item-specific conversion factors and UOMs for various purposes like Purchase, Stock, Sales, Manufacturing, etc.



3. Warehousing

Ramco's objective has been to render warehouse operations simple for the end user, yet comprehensive, with in-depth functionality to support diverse business processes. Some of common features of the solution are zone and bin default methods, account code and cost center defaults based on rules. The default rules being storage allocation, minimum zone bin, maximum zone bin and lot controlled (expiry date-based). These rules are defined as part of the storage administration.



The various aspects of warehousing are mentioned below -



Warehouse location specification on different storage level



3.1. Site

Site is a physical address where multiple warehouses are located. This information is used during stock transfers. The system allows for one step as well as two step stock transfers. One step stock transfers are done in the Inventory application, if the warehouses are in the same site, and belongs to the same Tax Region. Later this information is posted to the appropriate Finance Books, if material is transferred between warehouses with different finance books.

A two step stock transfer occurs when material has to go through the Pack-slip generation route as the transfer is between two different physical addresses. The two step stock transfer process involves stock transfer order, pick order, pick sheet, pack slip, stock transfer receipt and stock transfer invoice activities. Some activities in the two step process are optional.

3.2. Storage Administration

Ramco inventory provides for comprehensive rule-based storage administration capability. The user can specify warehouse-level planning parameters. For items with independent planning, the user can specify Safety Stock and Min-Max level or Reorder Level and Reorder Quantity.

Users can specify Storage Allocation, to indicate item-warehouse-zone-bin relationship. The storage allocation rules are based on the combination of Storage Category (exclusive / shared) and Storage Rules (only at / also at).

Allocation types can be specified at item level. The seven different allocation types are minimum zone-bin, maximum zone-bin, maximum shelf life, minimum shelf life, last in first out, first in first out and manual.

User transaction capability can be restricted by mapping Warehouse to Users, to grant transaction rights.

3.3. Stock Maintenance

Ramco Inventory provides for comprehensive stock maintenance functionality. Given below is the gist of various features available for stock maintenance.

<u>Stock Status Conversion</u>: Conversion from one stock status to another can be done simultaneously, for multiple items belonging to various statuses. Similarly, stock status for relevant items in a warehouse can be done. Item details like Lot #, Serial # and Sub-lot # can be specified as well.

Stock Transfers: This is used when the stocks are to be moved within the same Site. The warehouse, items are moved from and receiving warehouse may keep different Finance Books, in which case the system posts the financial entries in the relevant books.



Opening Balance- This activity is done before "going-live" to ensure that system stocks and physical stocks conform.

<u>Stock Inquiries</u>- Ability to inquire stocks levels, statuses at 1) warehouse, 2) stocking points / locations (group of warehouses) and 3) Business Units (group of stocking points / locations).

<u>Inquire Attribute-Item Information</u>- This is required, from a production and a sales perspective, to look at the availability of items of a particular attribute. **ROL/ROQ/ Safety Stock**- Ramco Inventory also has the facility to compute Reorder Levels

and Quantities.

Inventory Analysis- Inventory analysis is done to determine the level of importance that has to be attributed towards the items in stock. Items are analyzed and classified into A class or B class or C class based on the consumption value of the items.

3.4. Material Request

Material Requests can be generated for material requirements of any department. There is provision for workflow-based multilevel authorization of material requests. The quantity in the material request can be allocated either fully or partially. The system supports two types of material requests viz., Capital and General. There is a provision for capitalization of items that are issued through Material request. Capitalization of the items can happen if the Material Request has a Proposal attached to it. If Proposal is not attached to the Material Request, then the issue raised against the MR can be fetched as "Non-Capital" document for Capitalization through "Fixed Asset Management" application

3.5. Stock Adjustments

Quantity, stock status, value or quantity & value adjustments (positive and negative) for items are allowed. Specific receipt-based adjustments can be done and Lot, Serial, Sub-lot information can be updated. Adjustments after Physical Inventory and Cycle Count can be done to ensure inventory accuracy. Thus, the solution provides the functionality to adjust physical stocks with the system stocks.

<u>Revaluation</u>- Revaluing standard cost items at the stocking point can also be done here.

3.6. Stock Issue

The system allows issues to Production, Maintenance, Inventory, Unplanned and Subcontract requirements. Sub-contract issues can be done without reference to subcontract order and reconciliation done separately. Capital items can be issued for capital material requests, after which capitalization can be done in Ramco Fixed Assets application. There is provision for Capitalization of non-Capital items either with or without a Proposal through Fixed Asset Management application.

3.7. Stock Receipt

There is provision for receipts from Production, Maintenance, Sales, Unplanned, and Purchase



3.8. Stock Return

Production, Maintenance, Sales, Material Request, Unplanned, Purchase and Sub-contract returns are supported. Return based on Material Request will have the return amount updated for the inventory issues of the Material Request in LIFO Basis

3.9. Lot Management

Attribute values at lot, lot – sublot & lot-serial number levels and retest & manufacturing date information at the lot level can be maintained.

Combining or splitting can be done at lot / lot-sublot / lot-serial number levels. The combined lots will posses the attribute value based on the combine rule logic. Lots that are pending for testing can be quarantined. There is a provision to hold expired lots so as not to issue them.

There is also a provision to improve the Expiry and retest dates.

For a given item variant lot sublot the quality control request can be generated from Lot management. Sample studies will be published by quality control and user can manually take necessary actions as given in the results from quality control.

Lots can be traced back to its origin through backward tracking (Finished goods to Raw material) and to the final product through forward tracking (Raw material to Finished goods). Lot histories of all transactions are maintained.

3.10. Serial Management

Attribute values for serial numbers can be maintained and the user can view transaction history for a particular serial number. An item that is designated as Serial Number Controlled can be tracked by both the organization's serial number and the vendor serial number. Lot controlled items can have serial numbers as well.

3.11. Container Management

Containers are stockable items that are used to store other items. The items stored inside the transportable containers can be tracked and maintained. The process of storing items inside a container is called 'Stuffing' and removing items from the container is called 'Destuffing'. Transfer of container from one warehouse to another warehouse is facilitated.

3.12 Product Conversion

An item –variant can be converted to another item – variant through product conversion. Conversion can happen for normal/Lot Controlled/Serial Controlled items. Product conversion can happen due to aging of an item or due to any change in the attribute value of the item.



After conversion, stocks are revaluated and finance books updated. A separate predefined account would be used to Credit / Debit the loss or gain of the product conversion.

3.13 Pack Size

Bulk items need to be handled in various pack sizes. Various pack id masters can be defined and the packs and bulk variants can be attached to the pack ids. Separate price lists can be defined for each pack size.

In Chemical industries, often the chemical is produced in bulk and then packaged in different pack sizes. Customer order may be expressed in either bulk quantity or in a preferred pack size. However shipment may be done for a different packsize (but ensuring the same bulk quantity) based on the availability at that point of time.



4. Inventory Planning & Visibility

Inventory policies are a key driver for supply chain efficiencies and responsiveness. Inventory policies are determined in an organization based on the value of items, movement of items across the supply chain, ABC categorization, product life cycle stage and so on. To help organizations have optimum inventory levels, support for both Dependent and Independent Planning of items is provided. Thus, there is visibility of the stocks across the supply chain which is crucial for an organization in its day to day operations.

4.1. Independent Planning

Independent Planning is of continuous review nature, where the system raises Purchase Request / Order, Sub-Contract Request / Order, Stock Transfer Order or Manufacturing Order once the physical quantity (i.e. after an issue transaction) goes below the reorder level or minimum level. Request documents are raised automatically by the system, based on a) Item source and b) Priority assigned, in case of multiple sources.

The Inventory application supports the following independent planning types:

- Min-Max with no reservation
- Min-Max with reservation
- ROL-ROQ (Reorder level Reorder quantity) with no reservation
- ROL-ROQ with reservation
- Planning type- None.

The planning parameters like minimum quantity, maximum quantity, reorder level, reorder quantity can be maintained either at the warehouse or location level. Reorder level, reorder quantity and safety stocks based on the past consumption data, ordering costs and carryover costs can be calculated. The calculated ROL-ROQ/ Safety stock updates the item master. These calculations can be done either for a particular warehouse or for all the warehouses in a stocking point. The user-specified values like ordering costs, inventory carrying costs, etc., are specified at the item group level so that the costs which vary according to item groups, are used. Providing reservation capability for min-max and ROL-ROQ item enables reserving of items to the extent of physical quantity available.

4.2. Dependent Planning

Dependent Planning is to ensure demand-supply match, based on future issue and receipt expectations from various departments / locations of the organization. This planning is normally used for MRP controlled items and finds application in manufacturing and distribution environments.



Disposition is used to enable reservation and item sourcing, based on source priority and demands placed on the item. This helps the organization to plan for procurement or production, so that the demand is met at the right time. Disposition acts as a repository of all expected future supply i.e. receipts and future demands. The system maintains a table of receipts and issues for item type defined as disposition. At any point of time disposition table maintained for an item can be accessed. Crucial inputs for order promising, ordering, production planning, maintenance planning, etc. are available as there is provision for EAD (Earliest Available Date), ATP (Available to Promise) and Free Stock Check.

Material Outflow		Material Inflow	
Sales Forecast (FG) Production Order firmed up (RM)	I N V E N	Production order firmed up (FG) Purchase Request (RM) Sub-contract Request (Output)	Plan
Sales Order Reservation (FG) Production Order Released (RM)	T O R Y S	Purchase Order (RM) Production Order Released (FG) Sub-contract Order (Output)	Firm
Shipment of Goods (FG) Issue of material from Inventory	S T E M	Movement of goods to Inventory Receipt of Goods (RM)	Actual

4.3. Supply Chain Visibility

Ramco Inventory has been built to provide visibility to stocks in the supply chain within and outside the organizations boundaries. As can be seen from the illustration below the items for which information is available are:

- Items issued to sub-contractor
- In-transit items from suppliers
- Consignment Items with Customers



Items, within an organization, in different statuses like 1) Vendor consigned, 2) Customer Bill & Hold, 3) Customer Supplied Items, 4) Rejected, 5) Held, 6) Accepted, 7) Allocated, 8) Conditionally Accepted and 9) Quarantine stocks can be viewed.





5. Distribution Management

The Distribution management functionality enables manufacturers, traders, procurement companies, wholesale distributors, retailers and international distribution departments or divisions to support transfer of stocks across warehouses, raise Purchase Orders, Stock Transfer Orders, Sub-Contract Orders and Production Work Orders depending on the settings done for each item-warehouse combination.

The Distribution Network can be modeled as local Distribution Center, Regional Distribution Center and Source, i.e. network of warehouses that are logically connected for the purpose of distribution.

Manufacturing, Central Procurement and Trading environments are supported. There is provision for definition of Bill of Distribution where shipping warehouse, in-transit time, transportation lot size, mode of transport and priority are specified. Sourcing rule for a shipping warehouse and item combination can be used to specify the source (purchase, sub-contract, manufactured, stock transfer), warehouse, allocation % and supplier code / plant.



In manufacturing environments, integrated MRP/DRP can be run or each can be run separately. In other business environments, DRP is run separately. The generation of purchase orders, stock transfer orders, sub-contract orders or production orders, based on the sourcing rule defined, ensures replenishment order management. Stock transfer orders / notes (invoices) / receipts can be done across warehouses.



The user can view the DRP plan in the application. The application provides multi-level pegging and shipment planning functionality. Transportation planning is done using information like mode of transportation, planned shipments by date and quantity to all distribution centers / warehouses.

In short, the Ramco DRP answers the following key questions:

- What is to be transported?
- What are the shipment and destination points?
- What are the above quantities?
- What is the mode of transport?
- When will it need to be transported and with what lead-time?
- If there is a shortfall, what orders are to be raised to replenish the items?



6. Physical Inventory and Cycle Count

Physical Inventory and Cycle Count techniques perform the role of minimizing the discrepancy between system quantity and actual quantity in warehouses. The Cycle Counting method used in the inventory module is a periodic activity done, to improve inventory accuracy. Physical inventory is the process of counting the actual physical items in a short span of time. It is a one-time activity, performed annually, to ensure that all discrepancies are corrected by the end of the year.

6.1. Physical Inventory





The illustration above depicts how the Physical Inventory process is supported. Each Physical Inventory plan can have validity dates. Tags can be generated at warehouse, zone, bin and item levels. Count quantity in the transaction UOM that can be different from the stock UOM.

Addition of new Lot numbers can be done at the entry stage of the count. Confirmation of plans with or without recount entry is decided only at the time of entering count results.

Thus a true picture of the supply chain status and results via easily accessible and up-to-date information is presented.

6.2. Cycle Count

The Cycle Count process is supported as depicted in the illustration below. The cycle count plan is at warehouse-zone-item level thus allowing for flexibility of counting. Stock status is considered at the plan level. Count quantity in transaction UOM could be different from Stock UOM, enabling quicker and efficient cycle counts. Automatic freezing of items in the warehouse or zone is done when the cycle count sheet is generated.

Overdue items in a single plan are considered for sheet generation. It is possible to add new lot numbers at the count entry stage. Updating serial numbers (correction of wrong entries) is possible at the 'count entry' and 'confirm count results' stages. In short, Cycle count helps achieve organizational goals of inventory accuracy.



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