

Rootstock Software®

MRP Lite



Rootstock Software® provides the breadth and depth of solutions that today's discrete manufacturers need to operate and grow their business. Whether a small operation with five users, or a large organization with many sites and hundreds of users, Rootstock offers a solution for all sizes and types of discrete manufacturers and supports the manufacturing system requirements of Build to Order, Build to Stock and even Engineer to Order Manufacturers – whether standard or actual cost in both a single and multi plant environment.

Rootstock MRP Lite enables mid-sized manufacturers to quickly and easily implement a web-based material requirements planning (MRP) solution that includes out of the box integration to NetSuite. MRP Lite leverages Rootstock Software®'s industry leading planning engine that uses both sales order and forecast demands in conjunction with production bills of material and NetSuite inventory levels to generate planned supplies to meet future demand. Specifically, MRP generates what are termed planned work orders for manufactured items and planned purchase requisitions for purchase or subcontract items to meet future customer demand.

Rootstock offers flexible solutions for discrete manufacturers of all types and sizes. From distributors that need more sophisticated demand planning capabilities to more traditional

manufacturers that want to start with MRP today and build on their solution in the future, Rootstock MRP Lite provides a flexible solution with shorter implementations, lower costs and quick return on investment. Requiring dramatically less planner time, Rootstock MRP Lite recoups your investment in just a few months while delivering a robust MRP solution enabling you to be more responsive to changing customer needs.

Key Features

- Forecasting/Demand Planning
- Material Requirements Planning (MRP)
- Item Master Maintenance
- Bill of Material Maintenance
- Revision Control with Engineering Change

Key Benefits

- Improved Forecast Accuracy
- Lower Operating Costs
- Improved Customer Service
- Lower Inventory Levels
- Improved Supply Chain Visibility

Forecasting / Demand Planning

Rootstock MRP Lite uses information from the NetSuite Sales Order Management to drive the top level demands. Taking both sales order and forecasted demands, Rootstock MRP Lite delivers a robust yet cost efficient demand planning solution to discrete manufacturers of all sizes. This seamless integration between Rootstock and NetSuite results in improved forecast accuracy and improved responsiveness to ever changing customer demand.

With Rootstock MRP Lite, forecast demands can be entered for both end items and individual items. A forecast demand for an item denotes the start period date and the end period date and the quantity forecasted for that period. MRP will perform the traditional 'netting' and plan to the greater of the Sales Order Demand and Forecast demand (by period).

Material Requirements Planning Engine

The Rootstock MRP Engine uses industry proven algorithms and will proceed level by level through the Bill of Material starting with the top level (i.e. end item) of the BOM. It reviews the demands and safety stock requirements netting out the inventory and firming (or greater) supplies and first suggest reschedules for firming (or greater) supplies and then creates planned supplies as appropriate.

Description	2/1/2010-2/28/2010	3/1/2010-3/31/2010	4/1/2010-4/30/2010
On Hand Quantity	240		
Safety Stock	0		
Forecast	100	200	1000
SO Demands	10	0	0
WO/Sub Demands	0	0	0
Unrealized Forecasts	90	200	1000
Greater of FO/DMds	100	200	1000
Planned Work Orders	0	0	1852
Planned Requisitions	0	0	0
Requisitions	0	0	0
Work Orders	60	0	0
Purchase Orders	0	0	0
Ending Balance	240		

The MRP Engine will always use the 'effective' Bill of Material in its plan. It accomplishes this by reviewing the scheduled pick dates of the planned work order supplies or planned subcontract requisition supplies. It then extracts the components that are 'effective' and 'implemented' as of that date in the generation of the work order and subcontract requisition demands.

While the MRP Engine can create planned work orders, MRP Lite does not include shop floor control capabilities and cannot firm work orders. Work orders generated by MRP Lite are only used as a guide.

Item Master Maintenance

Within Item Master Maintenance, the Direct Material Item Characteristics are maintained. Key information such as Item Description, the Commodity Code, Responsible Engineer, Part Status and Part Type is recorded. Additionally Inventory attributes such as lead times and MRP policies and purchasing policies such as vendor lead time and Responsible Buyer are noted as well.

Of importance is the identification as to how the item is 'sourced'. Rootstock supports manufactured, purchased and subcontract sourcing. The assignment of the Commodity Code is of key consideration because the item can inherit many of the Commodity Code attributes thus reducing users having to enter every field on the Item Master.

Bill of Material Maintenance

The Manufacturing or Subcontract Assemblies are identified within Bill of Material Maintenance. Each Component contains a separate record and standard information associating the component to the assembly can be kept on the Rootstock Bill of Material. Required information such as the quantity per assembly and add and delete effectivity data is maintenance on each component link. Required Add and Delete effectivity information includes status and date with optional information including revision and engineering change order.

The screenshot shows the 'Eng BOM' form in NetSuite. It includes fields for Division (11), ECO Control (Active), and Rev Control (Active). The main section lists components with fields for Parent Item, Parent Desc, Commodity Code, Inventory Source, Parent UOM, Component Item, Component Desc, Component Com Code, Component Source, and Component UOM. Below this is the 'Add Control' section with fields for Add Revision (000000 Dec 30, 2009 #001), Add ECO No (DEC30-001), Add Date (12/22/2009), Add Status (Implemented), and Quantity Per (1).

Item Revision Maintenance

All items are added with a revision (zero). If Revision Control is desired, then the user can maintain status (planned, released, implemented) as well as effectivity date which can facilitate the setting of effectivity status and date information on multiple bill of material component links. Additional revisions to the part (drawing changes, and bill of material structures) can be maintained by the user and referenced to the appropriate bill of material.

Engineering Change Control

Engineering Change Control is the process that 'manages' the related items revisions that are associated with an Engineering Change Order. Revision Control denotes the change and Engineering Change Control denotes the process that manages the revisions to the bill of material. Since the management of item revisions can be accomplished by the Engineering Change Control process, Engineering Change Control therefore enforces discipline and management control over modifications to bill of materials based on revision control.

Component changes can be tracked through an authorization and approval process and are logged into an ECO history database. MRP and Work Order Bill of Material Explode will retrieve component records based on correlating the work order's scheduled pick date to the add and delete effectivity dates associated with a revision.

All Rootstock programs that use bill of materials records to "explode" components contain ECO capabilities. Material Requirements Planning explode bill of materials to create the component demands for each work order and subcontract PO requisition. These configurations are based on the scheduled pick date of the orders compared with the ECO effective dates on the bills. Note that if NetSuite assemblies are going to be used to drive work orders, Rootstock Engineering Change Control and Revision Control are no longer applicable.

About Rootstock Software®

Rootstock Software® is the leading Software as a Service (SaaS) provider of manufacturing enterprise software serving discrete manufacturers in the mid-market. Rootstock Software® was launched in 2008 in response to the growing need for a SaaS solution for mid-market manufacturers to cut costs, improve processes, and drive revenues. Rootstock is a premier partner with NetSuite Inc, a leading vendor of on-demand, integrated business management software suites for the mid-market enterprise and divisions of large companies. Rootstock and NetSuite deliver these critical manufacturing capabilities to the underserved mid-market with minimal IT infrastructure investment. For more information, please visit <http://www.rootstocksoftware.com>.