ALERE® Manufacturing

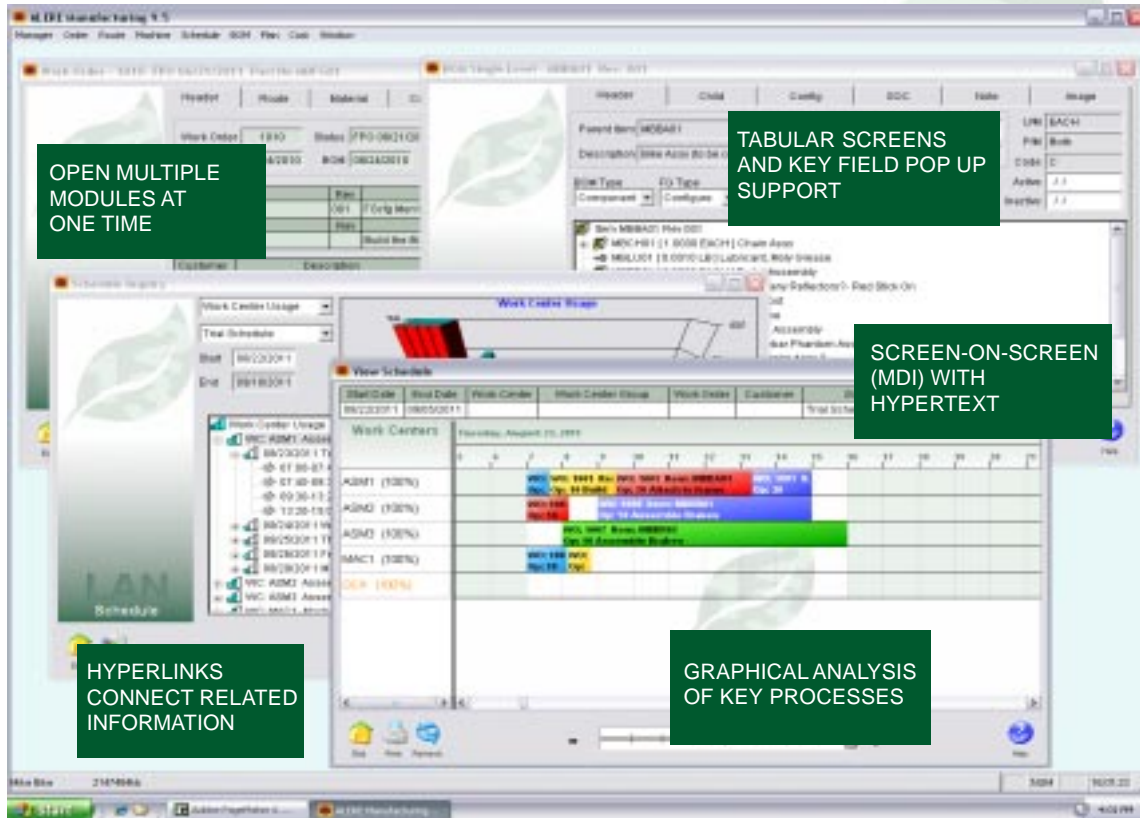REAL SOLUTIONS

Product Specifications

ALERE Manufacturing is designed specifically for order driven and make-to-stock manufacturers. It includes all the day-to-day functionality that you might expect in a sophisticated manufacturing package. What you might not expect are the carefully designed "extras" that make it work in your environment.

Modifiability – The state-of-the-art architecture of ALERE Manufacturing is written using Microsoft tools, such as SQL and VFP, uses object oriented programming (OOP), and is table driven. This means

• Most modifications are more quickly and easily done than older source code-only methods.

• Screen sizes can be preset for each user with a simple modification requiring no code changes.

MDI (Multiple Document Interface) – MDI permits you to have multiple screens open at the same time. This includes screens of the same type, for instance,

OPEN MULTIPLE MODULES AT ONE TIME

TABULAR SCREENS AND KEY FIELD POP UP SUPPORT

SCREEN-ON-SCREEN (MDI) WITH HYPERTEXT

HYPERLINKS CONNECT RELATED INFORMATION

GRAPHICAL ANALYSIS OF KEY PROCESSES

• All modification can be stored in a separate directory by company. This means that if you are operating several companies, then each company could potentially have it's own unique modifications.

• Modifications are portable from one version to another which saves a company from the expensive and risky process of rewriting code.

Dynamic Screen Sizing – Screens may be resized on demand by dragging the screen larger or smaller. Any lists, notes fields or pictures on the screen are automatically sized with the screen. The key uses are

• Long lists can be more easily viewed and searched.

• More than one screen can be opened at a time and resized, which allows easy side-by-side data comparisons to be made.

having several different work orders open. To work on any one screen, simply click on it. This helps work flow by

• Allowing you to work on multiple, different documents at the same time, in a manner similar to the way you work at your desk.

• Making it easy to work on a screen, be interrupted, and return to the screen to pick up where you left off.

• Permitting you to open screens with supporting information, which makes data entry easier.

• Eliminating the need to open and close modules constantly.

Fetch Retrieval Tool - This tool is designed to be intuitive, easy to use, and reduce the time it takes to find information. Fetch is independent of the program modules so it can left open on the screen where it can be immediately accessed. Fetch can be used even if you are in the middle of doing something else.

Using Fetch is simple. For example, a customer gives you his purchase order number and wants to know the status of a job you are doing for him. Enter the PO number and then select the "by Customer PO" link. His work order is immediately found and displayed.

Advanced Browser - Browsers help find a specific record or piece of information. ALERE Manufacturing displays a browser each time the *Get* button is selected, the mouse is double left-clicked in a key field or F2 is pressed on the keyboard in a key field.

A browser provides a spreadsheet-like view of a table of information. Each column is a field, function or a user-definable field in the table. Each row corresponds to a record in the table. A browser allows a large amount of data to be quickly viewed. The capabilities of the browser are quite extensive. You can

- Resize the browser screen to see more lines and columns.
- Rearrange and resize the columns.
- Order the file by any column in ascending or descending order.
- Jump to the first record matching the characters entered.
- Use relational logic to create powerful filters
- Display filtered records as a group or within the context of the entire table.
- Save the browser by function and user.

Global and Local Lingo – Language sets allow you to customize menus, screens and even different languages on a local (user-by-user) or on a global (all users) basis. This feature will literally enable you to have one user working in English, another user working in Spanish, and yet a third user working with menus designed to support only the area he or she works in. The benefits are obvious. When a user logs in, they can have

- Menus designed for only them.
- Screens and field names unique to their business.
- Different languages.

- Preset defaults.
- Screen sizes to fit their hardware.

USE FETCH TO REDUCE THE TIME IT TAKES TO FIND INFORMATION
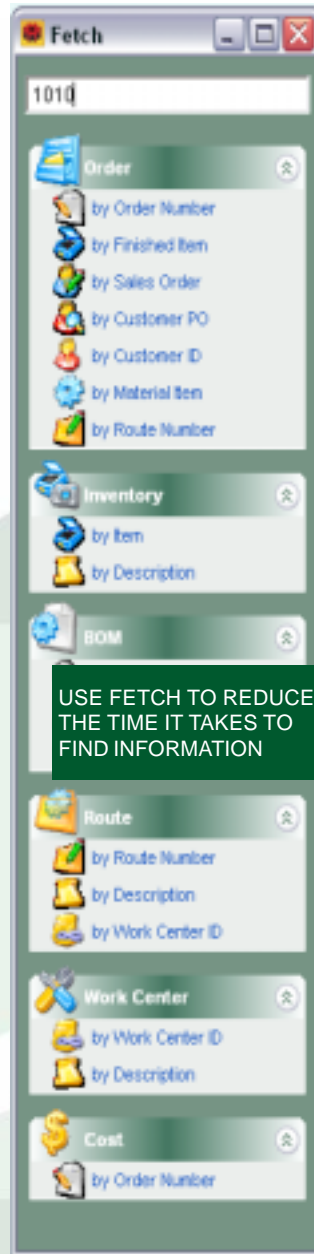
Hyperlinks – A Hyperlink is a relationship between two screens based on common information. Hyperlinks have been predefined throughout the system in ALERE Manufacturing. An example of their use would be accessing cost information for a work order by simply clicking on *Cost > Inquiry > Work Order Cost.* In this case the Hyperlink looks at the work order number and automatically gets the matching cost record. The benefits are as follows:

- Supporting information for many processes is only one or two mouse clicks away.
- Little or no training is required to use this intuitive feature.
- The way in which work flows is smoother.

External File Hyperlinks – These types of links permit external files such as drawings, pictures, documents, email, web sites, etc. to be integrated into ALERE. There are four link formats that can be used.

www.(name) - For web sites

mailto:(address) - For email

http://(location) - For specific web site files

file:///(path) - For files on your local computer/network

These external file hyperlinks can be placed in any memo field within ALERE. Multiple links can be bundled in one memo field.

Diskless Workstation Installation – During the process of installing the software on a server, a workstation installation program can be optionally included. When this program is run from a workstation, it configures the workstation to run ALERE Manufacturing without the need to use a CD for the set up process. The benefits include

- Faster workstation setup.
- Allowing workstations without a CD drive to be linked to ALERE Manufacturing.
- Adding additional workstations at a later date without the need to find the program CD.
- Easy network reconfiguration.

Manager Module

This module provides support for housekeeping and the common information that is shared among the modules. Highlights include:

Links to a compatible accounting system's inventory file which allows

- The look up of inventory information.
- The ability to add new item numbers without leaving ALERE Manufacturing.
- Access to key settings in inventory that are used by manufacturing.

EXTENSIVE USER LOGIN SUPPORT WITH ADVANCED OPTIONS

There is limited inventory functionality and customer ID support when ALERE Manufacturing is not linked to a compatible inventory system.

Access to basic customer information is provided when you are linked to a compatible accounting system.

Reports for inventory and customer information are available.

An on-line *Data Dictionary* details the structure of the tables and reports in ALERE Manufacturing.

Many separate companies can be supported by one installation of ALERE Manufacturing and the order in which they appear on the menu can be controlled.

Period closing functionality is active when you are linked to an accounting system which requires it.

Multiple date formats and time formats are supported including *Standard Engineered Minutes* to three decimal places*.*

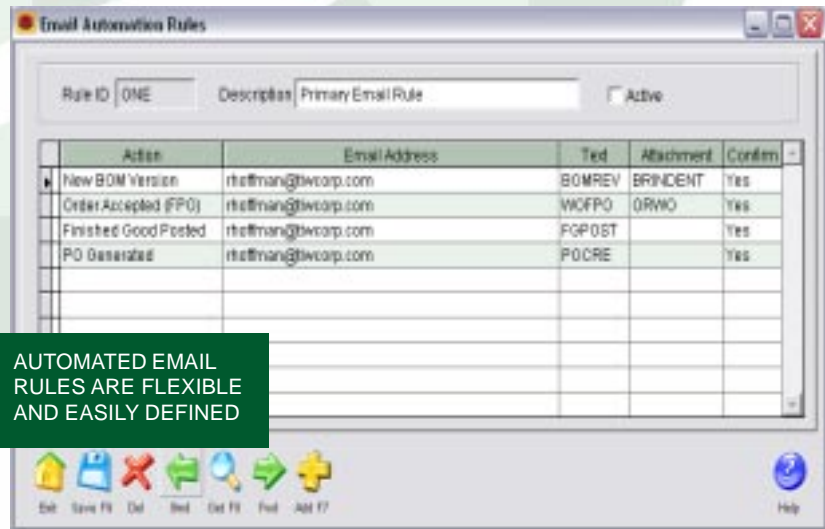The number of decimal places can be set on

- Reports.
- Bills of Material.
- Rounding quantity.

You can choose to post finished goods to inventory at their actual cost or at their standard cost.

There is support for Average, Standard, LIFO, and FIFO inventory valuation methods.

Work orders can be automatically updated with the calculated schedule completion date.

Inventory can be optionally driven negative when making material issues to jobs.
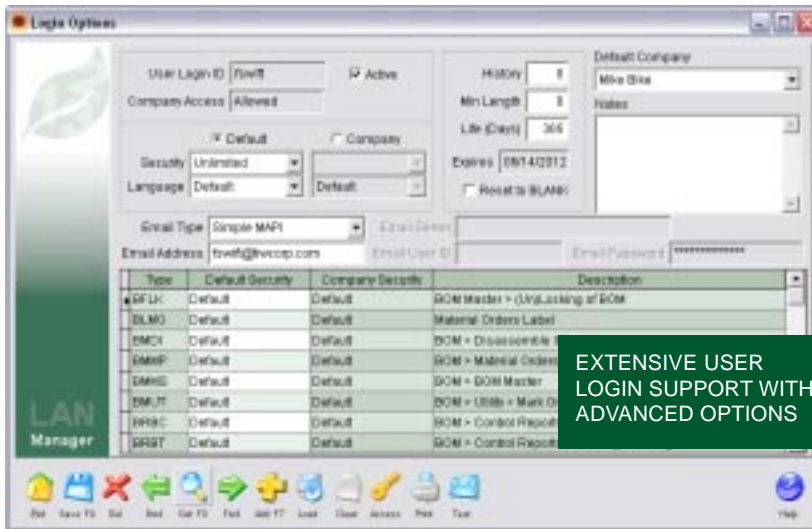
Authorization to release work orders to production can be required.

Work orders and material orders can be used at the same time in ALERE Manufacturing.

Email automation allows certain processes to be set up to automatically turn a report into a PDF file, attach that file to an email, add a message, and then send it to internal staff.

One email automation rule can encompass multiple different actions. As many different rules can be defined as necessary.

User return email addresses are defined as part of the login rights and options for each user.

AUTOMATED EMAIL RULES ARE FLEXIBLE AND EASILY DEFINED

An internal email system allows outgoing email to be created and sent by ALERE instead of using an email program such as Outlook.

Key changes may be made for customer, item number, labor grade, location, product class, route number, and work center.

Language Settings permit you to customize menus, screens, and even different languages on a user by user basis.

There are separate general ledger accounts for

- WIP (Work In Process).
- Variances.
- Labor.
- Fixed Overhead.
- Variable Overhead.

A *Reconcile Balances* function can be used to find and fix differences between on order and allocated quantities when ALERE Manufacturing is linked to an accounting system.

The ability to assign manufacturing and inventory locations to a group so that MRP (Material Requirements Planning) can be performed on more than one location.

Recovering from network related interruptions is fast and easy.

There is system wide packing and reindexing of files or you can selectively choose areas.

A built-in utility checks the integrity of indexes.

Security is company based. This means that a user's access to individual companies can be controlled. Only the companies that a user is authorized to open are shown on the company menu.

Extensive security capabilities that can

- Require passwords based on screens.
- Require passwords based on users by functions.
- Allow no access, password access, unlimited access or read only access privileges.
- Have expiration dates on rights.
- Enforce minimum password size.
- Keep a history of password use to prevent reuse.

A screen provides a list of all users logged into the system.

Labels for customer mailings, finished good information, material items for work orders, and lot/serial numbers with item information and bar codes can be printed.

A built-in modification tool enables the label, reports and even simple screen layouts to be customized.

Order Module

The **Order Module** initiates jobs in the shop, provides the instructions and material lists for building the items, tracks the progress of the orders and posts the finished goods to inventory.

A work order can be completely processed using only one screen.

Work orders can be created:

- Manually from sales orders.
- Automatically by the MRP planning process.
- Manually as required to meet demand.
- By copying an existing order.

Material lists for an order are created automatically based on the item being made, the BOM revision number and the active date of the BOM.

You can specify which route to use when creating a work order or automatically use the one associated with the item being made.

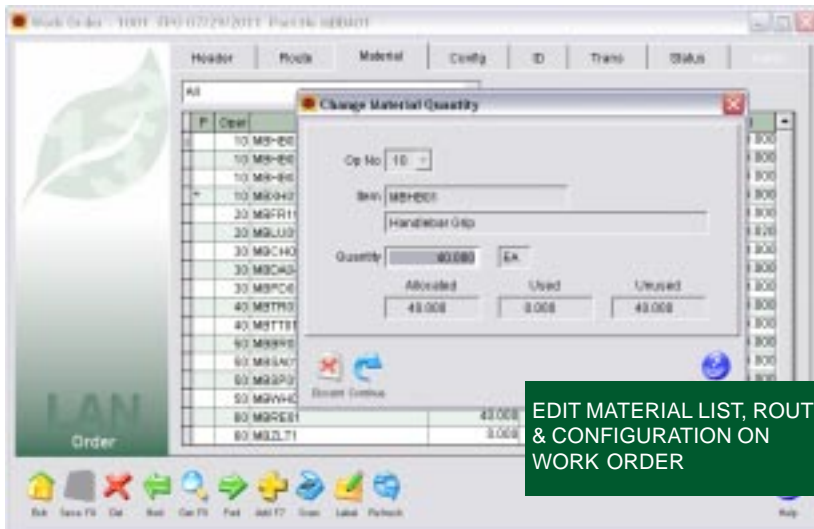CREATE, PROCESS & COMPLETE WORK ORDER ON ONE SCREEN

The projected finish quantity is automatically calculated when the starting quantity is entered or the starting quantity is automatically calculated when the finished quantity is entered based on shrinkage factors.

Entering a *Start Date* controls the earliest date an order will be scheduled to be begin when forward scheduling is used.

Entering a *Needed By* date controls the start date of an order when backwards scheduling is used.

Each order's expected completion date is automatically updated whenever a new schedule is implemented.

There are three miscellaneous fields available for work orders. Each filed can be easily named and

EDIT MATERIAL LIST, ROUTE & CONFIGURATION ON WORK ORDER

customized to enter text, date, or numeric information.

Each order can be assigned one of a number of different priority levels which will be used to set the order in which it is scheduled.

Several types of orders are supported:

- Assemble
- Build
- Maintenance
- Rework
- Work Orders

You can specify that an order is to use only the work centers specified on the route or is to use alternate work centers if they will speed up the process.

Individual orders can be set to use

- Forward scheduling techniques to complete orders as soon as possible.
- Backward scheduling techniques to start the order as late as possible and still meet the required date.
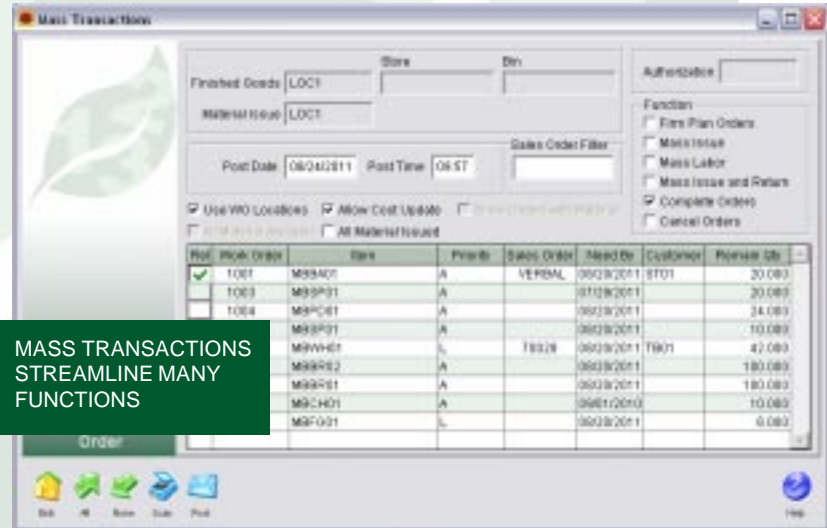
Entering an *Overlap Quantity* on an order sets the number of pieces to be completed on a route step before the next step is started. This significantly compresses the time it takes to complete a job.

Routes may be altered on work orders that are in process. This includes being able to exempt steps from scheduling that might only be for informational purposes for example or adding steps for rework or other purposes.

The list of materials for a job is automatically allocated in inventory when the job is released for production.

Changes to a bill of material that affect the materials assigned to a route generate a warning to update the route/material assignment.

Material staging allows material to be issued to a job

without releasing it for scheduling.

A separate tab on each work order screen tracks the material that has been issued to the job and the material that is remaining to be issued.

The list of material on an order may have items added, quantities edited, and items deleted in real time with allocation support.

Any inventory item may be issued to a work order regardless if it is on the material list or not.

Any item may be returned to inventory from a work order regardless if it is on the material list or not.

An item on an order can be specially designed using the configuration capabilities built into the BOM. This permits one item number to be built in a number of different configurations.

Orders are released to manufacturing by following an FPO (Firm Planned Order) process.

The FPO process permits password control over who has permission to release orders.

During the FPO process the item being manufactured

MASS TRANSACTIONS STREAMLINE MANY FUNCTIONS

is placed on order, and the materials required to make it are allocated in inventory.

Mass transaction processes are available for mass:

- Firm Plan Ordering of orders
- Issuing material to orders
- Posting labor to orders
- Issuing and returning material on orders
- Completing orders
- Cancelling orders

The FPO process permits lot/serial numbered material to be specifically allocated to a job.

Orders use transactions to

- Indicate which steps have been started and completed.
- Issue material.
- Undo material issues.
- Post labor.
- Record machine time.
- Track work in process.
- Account for scrap.
- Change the quantity being produced.
- Post finished goods to inventory.

Transactions may be posted to a job by

- Manually entering them on the work order.
- Batch entering them on a screen designed for rapid data entry.
- Using a data collection system to collect the transactions and post them through an external posting program.

ID's for lot/serial numbered material can be assigned right on the work order before being returned to inventory.

Lot/serial numbered material issued to a job can be associated with the lot/serial numbered items being manufactured that used it.

A *Lot/Serial Tracking* report will

- Show all the lot/serial numbered material that was used to make an item.
- Show where lot/serial numbered material was used.
- Show who purchased the lot/serial numbered finished goods.

Partial quantities on a work order may be posted to inventory as they are finished and without completing the order.

An inquiry screen allows you to build a list of orders and their status by specifying an item number, customer and/or a sales order number.

You may drill down to the actual order from the list of orders displayed on the inquiry screen.

Work orders can be optionally printed by operation step with the materials required.

Pick lists, including ranges of pick lists and pick lists encompassing multiple work orders, may be printed for orders.

The use of phantom components are supported and you can control how phantoms and their components are displayed on the *Pick List* report.

Completed work orders can be moved to a history file.

Orders in the history file can be viewed and used in reports.

Route Module

The **Route Module** is responsible for creating and maintaining the instructions used for manufacturing items.

Master routes are created and stored in a library file where they can be used on work orders.

An unlimited number of master routes can be maintained.

Operation steps for routes can be defined and stored in an *Operation Library*.

BUILD MASTER ROUTES TO ATTACH TO WORK ORDERS

Steps may be loaded from the *Operation Library* during the creation of a master route.

Using the *Operation Library* speeds the creation of routes and improves product quality by standardizing the operation step information.

The creation and maintenance of routes is accomplished on one screen.

Date fields track when the route was created and the date it was last updated.

Drawing numbers can be assigned to master routes.

Up to twenty (20) user-definable fields may be added to the master route layout to include information that is unique to your manufacturing processes but not to any particular operation step.

Up to five (5) user-definable fields may be added to the operation step layout to include information that is unique to your operation steps.

The user-definable fields can be:

- Characters
- Numbers

- Dates
- Logic fields

Text can be mixed with the user-definable fields.

Each route may have up to 999 separate operation steps.

Each step is assigned an operation number.

ASSIGN BOM MATERIAL TO ROUTE STEPS FOR SYNCHRONOUS MANUFACTURING

Gaps may be left between operation numbers so that additional steps may be inserted at a later time.

Operation steps may be entered in any order and are automatically sorted each time the route is saved.

Steps can be reorganized simply by changing the operation number.

Each operation step contains the following:

- The work center to be used.
- A yield factor to account for increases or decreases in the WIP quantities.
- A batch size to set how many of the item are processed per cycle time.
- The option to overlap steps by specifying whether or not partial quantities completed on a step will be immediately started on the next step.
- Unlimited space to write up the instructions for the step.
- A field to record the set up time required to prepare for the job.
- A field to record the cycle time to complete each item or batch of items.
- The labor grades required to perform the set up work and run the job.
- The ability to account for split labor when a person runs more than one machine at a time.
- More than one person can be tracked on a work center.

The advanced scheduling and planning technique, called *Synchronous Manufacturing*, is support by the *Assign Material* function.

The *Assign Material* function allows the user to take the components on a bill of material and associate them with the route steps on which they will be required.
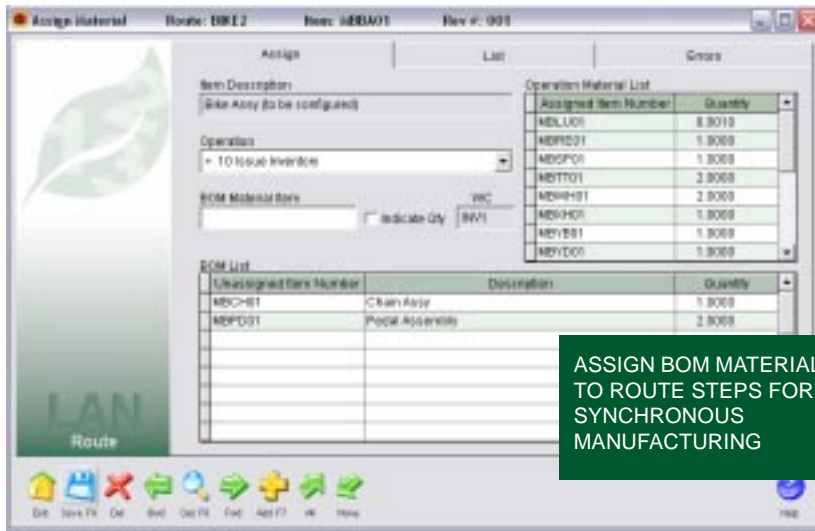
Partial quantities of a component on a bill of material can be split among different route steps.

All route steps, and the material assigned to them, may be viewed on one screen.

Assigning material to route steps permits the material to be scheduled, just as the route steps are scheduled, when the finite scheduler is run.

An item may be associated with a preferred route. More than one route may be created for an item

Work orders use the item/route association to automatically fill in the route number when an order is created for an item.

Costed bills of material use the item/route association to calculate the labor and overhead costs.

Routes may be created by selectively copying information from an existing route or from a work order.

A *Time Analysis* report allows data collected on work orders to be analyzed to find the min/max/average times for setup and cycle times for each operation step along with the duration of those steps.

CONTROL SHOP CAPACITY WITH WORK CENTERS
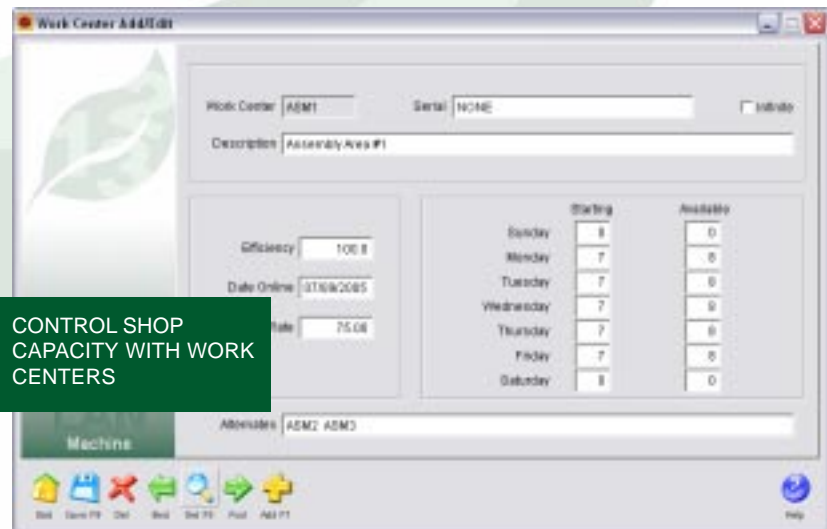
Machine Module

The **Machine Module** is used to define the capacity of your manufacturing facility, help with maintenance and keep track of machine downtime.

Work centers are a specific production area consisting of one or more people and/or machines that have identical capabilities.

Work centers are used to establish the capacity of the manufacturing plant for planning and scheduling purposes.

Each work center contains the following:

- A description.
- A serial number if applicable.
- The option to set it as either finite or infinite capacity.
- The days and times it is available for production.
- Its estimated efficiency as a percentage.
- The date it became available for production.
- An optional overhead rate to be used for costing.
- A list of up to ten (10) alternate work centers, in order of preference, that can be used in place of this one.

An unlimited number of work centers can be created and maintained.

Downtime records can be created when a work center unexpectedly becomes unavailable for production.

Downtime records

- When the work center went off-line.
- The date and time.
- The reason.
- The estimated date and time it will return to production.

RECORD EQUIPMENT FAILURE, DURATION, AND REASONS
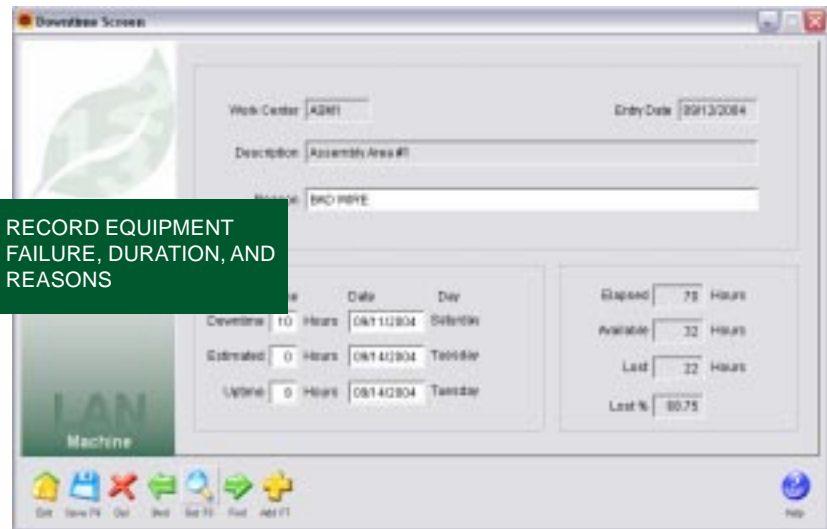
The finite scheduler takes into consideration work centers that are unavailable and will plan work for when they are expected back on-line or for alternate work centers in order to keep production on track.

A report permits the analysis of the downtime and lists the reasons for the work centers not being available and the associated dates and times.

Preventative maintenance instructions can be set up for individual work centers.

A work center can have assigned multiple different preventative maintenance records.

Preventative maintenance records include

- The number of days between service intervals.
- The route to use for service.
- The last work order to perform the service.
- The last service date.

Material can be assigned to the maintenance route to support the preventative maintenance work.

Maintenance type work orders, which include the route and material list, are used to service work centers.

The work orders may be created manually or automatically by the Machine module.

The materials requirements planning (MRP) process includes the maintenance type work orders so that components required for the service work are available for the scheduled maintenance.

PREVENTATIVE MAINTENANCE RULES CAN BE SET UP FOR EQUIPMENT
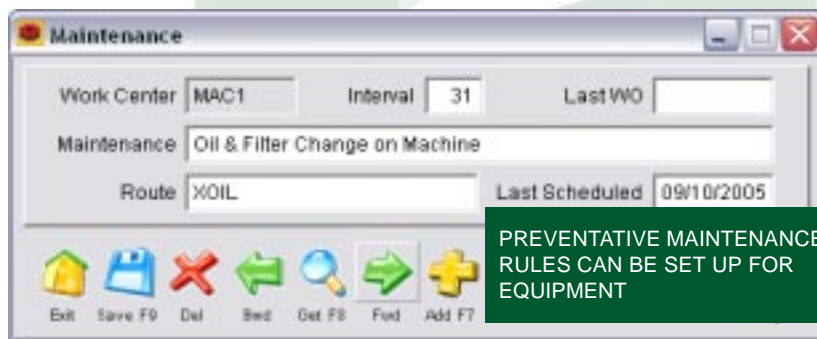
- The actual date and time it returned to production.

The time that elapsed and the hours lost are automatically calculated for a downtime record.

The Schedule module includes the maintenance type work orders in its planning so that specific times in the production plan are reserved for scheduled maintenance.

The maintenance type work orders collect labor, material and overhead costs so that the real cost of the service work is known and accounted for.

A *Group Definition* function allows a group of work centers to be created that need to share some limited common resource, such as labor or molds.

The *Group Definition* function provides a second constraint and is used by the scheduler to report when the capacity of the group is exceeded.

A schedule of the dates and times the factory is closed can be created. These closed dates and times are observed by the scheduler.

A *Change Work Centers* function provides a shortcut to making mass changes for a range of work centers. It can quickly change

• The on-line date.
• The efficiency.
• The dates and hours of operation.

Reports are provided for

• Listing work centers.
• Tracking work centers that are down.
• Dates the facility is closed.
• Listing the maintenance activities.

Schedule Module

The **Schedule Module** is responsible for developing a production plan for processing work orders through your manufacturing facility.

The scheduler is extremely fast and can process hundreds of work orders and thousands of operation steps per minute.

A *Trial Schedule* permits you to run the scheduler and fine tune it whenever needed.

The starting date and time of the day can be set each time the scheduler is run and it can handle up to 999 days in the future.

The estimated completion date for unreleased work orders can be found by optionally including them in the schedule.

Acceptable *Trial Schedules* can be quickly released for production use.

Implemented schedules can automatically update the work orders with their new estimated completion dates.

Jobs that are in process are scheduled from their last completed operation and take into consideration the number of pieces reported completed on each step.

Each work order can be set to

• Use only the work centers on the route.
• Seek an alternate work center if the one on the route is not available within a specified period of time.
• Automatically use the work center on the route or an alternate based on which will most quickly finish the job.

The *single constraint* scheduler uses work centers to define factory capacity.

Dates the factory is closed and work centers that are unavailable are automatically taken into consideration each time the schedule is run.

A technique called *finite loading* is used to schedule. Finite loading means putting no more work into a work center than the work center can be expected to handle.

Work centers can be optionally marked as *infinite* capacity. This means that the choice can be made to selectively treat work centers as if they had no capacity limits. This permits

• Orders to be concurrently processed at a work center instead of sequentially.
• Work centers that are set up for outside vendors to handle more than one order at a time.

The scheduler can be run at either *one hour* or *one minute* resolution. This means that when an operation step is scheduled to end, the next step

• Starts at the next whole hour when one hour resolution is selected.
• Starts at the next whole minute when one minute resolution is selected.

Both *forward* and *backward* scheduling are supported.

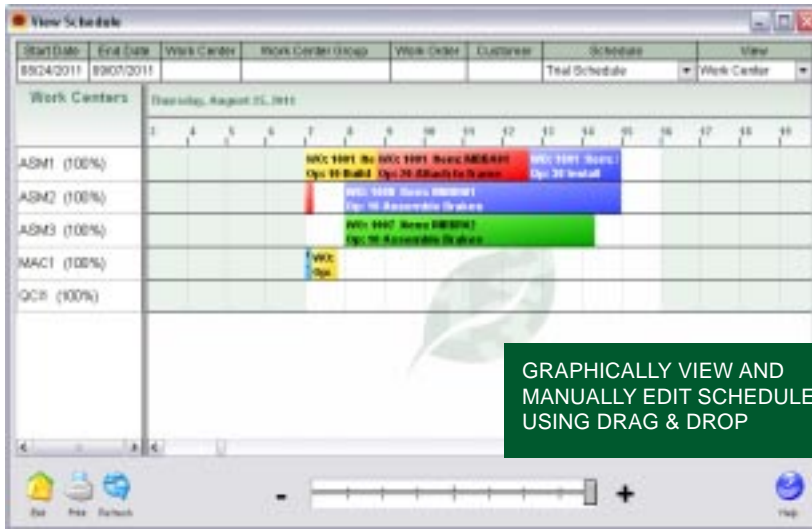Forward scheduling involves a technique whereby the schedule proceeds from a known start date for a work order and sequentially processes the operations from first to last. Dates generated this way are generally the earliest start dates for operations.

Backward scheduling will give the required start date to meet the required due date.

FINITE FORWARD/BACKWARD SCHEDULER WITH ONE MINUTE OR ONE HOUR RESOLUTION
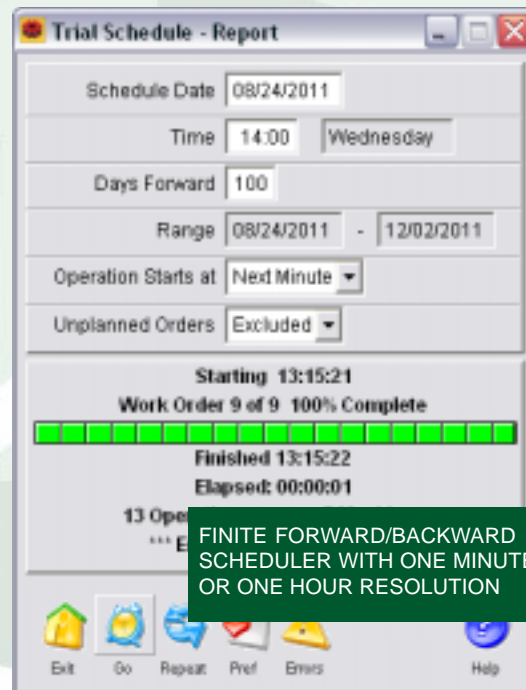
On each work order you can choose whether it is to be scheduled using forward or backward techniques.

When a work order is marked for *backward* scheduling, the *Start/Restart* date is ignored and the *Needed By* date becomes the date from which the schedule is calculated.

Work orders can be assigned different level of scheduling priorities.

Work orders can be made inactive and taken out of the schedule temporarily.

The scheduler uses the *Start/Restart* date on the work order header as the beginning point for scheduling. This accomplishes two purposes:

• Without loss of priority, a work order's production release date can be set in the future so that its scheduled completion date can be made to match the *Needed By* date.

• When a schedule is planned, it compares the next available operation start date to the *Start/Restart* date and uses the latest one. Therefore, by changing a work order's *Start/Restart* date, it is possible to pause a job, then automatically restart it at a pre-planned time without any loss of priority.

The scheduler traps problems and provides a detailed warnings and errors report.

The *Schedule Inquiry* option uses the TIW Treevision technology to provide an Explorer-like method of viewing scheduling information on four topics

• Usage by Work Center
• Usage by Part Number
• Usage by Work Order
• Usage by Customer

Each topic allows you to drill down to detailed information on the loads in your shop, the schedule of individual jobs, the number and status of customer orders, and the quantity and projected completion dates of finished goods being manufactured.

All of this information is tied to 3D charts that are dynamically updated to graphically display the information you are viewing.

Click on the bars on the chart to pop up a window with further details.

Examine either the *Trial* or *Implemented* schedule starting with any date you set.

The *Order* report shows how each work order is scheduled through the shop on a step-by-step basis.

A *Work Center* report shows the daily list of jobs for each work center and orders them in the priority in which they are to be done.
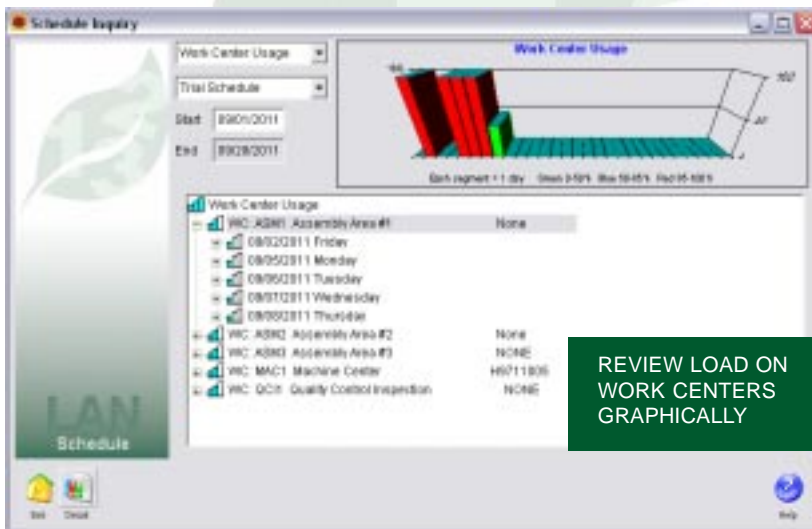
A *Completion* report lists all the work orders, the dates they are need by and their scheduled completion dates. Orders that miss their needed by dates are clearly flagged.

BOM Module

The **BOM Module** is responsible for bills of material and for the material requirements planning process.

There is support for twenty-five levels of

• Parent bills of material.
• Components (children) on each BOM.
• Indented BOM levels.

BUILD INDENTED BOM USING MODULAR AND VARIABLE COMPONENTS

Treevision® is used to graphically display bills in an Explorer-like format. With Treevision® you can

• Construct complete indented bills on one screen.
• Drill down through the indented bill structures directly to the lowest level components.
• Do an on-line "where used" and find the parent bills or even the top level item of lower level assemblies and components.
• Edit or delete items on the bill just by right clicking on them.

The children on BOM's type bills can have negative quantities which allows processing of by-products or add and replace functions.

Modular type bills contain a list of choices instead of children, which compresses the number of bills required to make a configured product.

Variable type bills allow numeric information to be entered, such as how many inches, pounds, or units are needed to make a product.

Kit type bills support kitting at the sales order level by automatically allocating the components in inventory when an order is taken for an item that is a kit.

Phantom type bills will pass the demand through to the components without creating a demand for the phantom item. You can also select to have stocking or non-stocking phantom items in inventory.

Bills of material can have revision levels with active and inactive dates.

Each bill has a revision note field to document changes made on that revision. The field can be stamped with the user, the time, and the date.

A report compares the list of components on a BOM revision to another revision to help the user identify changes.

Individual components can have active and inactive dates to facilitate the replacement of components that do not affect the form/fit/function of a bill and thus do not warrant a new revision level.

A bill can be set up to behave as a normal component type of bill or as a bill which can be configured before it is used.

BOM's can be locked so that changes can not be made without proper security rights.
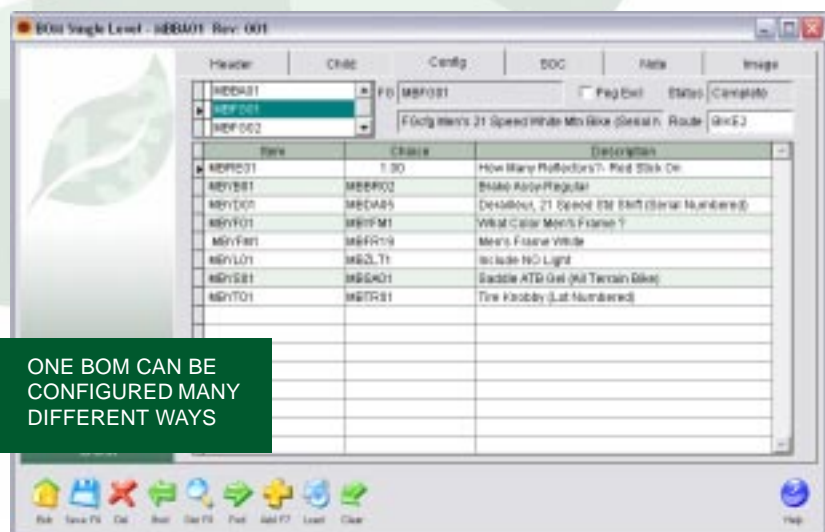
How a bill will allocate its components when it is used on a work order can be set based on:

• The starting quantity of the item being made.
• The finish quantity of the item, which may be less or more than the starting quantity.

ONE BOM CAN BE CONFIGURED MANY DIFFERENT WAYS

TWO IMAGES AND DESCRIPTIONS CAN BE ATTACHED TO EACH BOM

A bill can be set as *Peg Exclusive,* which forces any on hand inventory for the item being made by the bill to be ignored when MRP is run and forces a work order for each sales order for that item.

On the *Indented BOM Report* components on a bill can be arranged in part number order or by the find number sequence that you define.

Each component on a bill has an unlimited scratch pad area for entering notes.

Scratch pad notes are printed on the indented bill report and can be used for things such as specifying circuit board locations for the component.

Top level bills, which use modular and variable bills as part of their structure, can take the place of many bills. This approach improves bill accuracy which can reduce inventory and reduce the overhead associated with creating and maintaining bills.

Bills can have any number of predefined configurations associated with them and have unique item numbers assigned to the different configurations.

The configuration capabilities of the BOM Module are used to support

• Sales order configuration.
• Work order configuration.
• Costed bill configuration.
• Material and route associations.

Each bill can have up to two images assigned to it.

The format of the images on bills can be ICO, BMP, JPG and GIF.

Each image on a bill can include an unlimited description.

Each bill can have a note with unlimited text attached to it.

A mass replace functions allows a component part to be superseded by another component part in all or in a selected number of BOM's where it is used.

Using the "Update Work Orders" screen, material lists on work orders may be updated after a bill of material has been changed.

Work orders may be updated provided they have not been completed.

Work order updates may be based on new or past revisions of a BOM.

New items added to a bill will be added to the work order material list.

Item quantities that have been increased will be increased on the work order.

Items quantities that have been decreased will be reduced on those work orders where the unused quantity to be issued is equal to or greater than the change on the bill.

Items removed from a bill will be reduced to zero on the work order if the used quantity is greater than zero.

Work orders updated will have their allocations adjusted.

Material orders can be processed in the BOM Module.

A material order is a light duty work order that is designed to quickly process shop orders that do not require labor reporting or scheduling.

Material orders can be used concurrently with the standard work orders.

Material orders can be easily converted to work orders if the demands of the order change.

A *Disassembly* procedure permits items to be quickly disassembled/dekitted and their component parts returned to inventory.

Disassembly supports the use of inverted bills of material where there is an "explosion" of one raw material into a wide range of end-, co-, and by-products.

Materials Requirements Planning (MRP) is done within the BOM Module.

The MRP process supports both bucketed and bucketless planning and can be run for any range of dates.

The bucketed process develops time-phased data and accumulates it in either weekly or monthly time periods.

The bucketless approach develops time-phased data and displays it using dated records instead of buckets.

This method permits you to see the detail of the MRP

process such as the purchase orders, sales orders and work orders.

MRP may be run for

• Groups of locations.
• A single location.

MRP may be limited to

• A single item.
• A single order number.
• A single product class.
• Only manufactured items.
• Only purchased items.

The MRP process can be used as a material shortage report by including only records that fall below safety stock levels or zero on hand stock.

The MRP report can integrate the recommended orders from the Plan Module to show their effect on the material planing process.

Synchronous Manufacturing is supported by including the production floor schedule in the MRP report.

The *Costed BOM* report will roll up costs based on either

• Inventory costs only.
• Costs developed from route, overhead and component costs.

Plan Module

The **Plan Module** is designed to greatly extend the capabilities of the Material Requirements Planning (MRP) process.

Using the plan process, the demand from sales orders and work orders is exploded down through the levels in the bill structures to find the components necessary to make the items that the orders require.

The list of required components are time-phased to determine when they need to be ordered or manufactured to fill that demand.

The net requirements are converted into "planned" work orders and purchase orders which can be included in the *MRP* report.

The plan process accomplishes this task in **one single**

AUTOMATICALLY GENERATE RECOMMENDED WORK ORDERS & PURCHASE ORDERS

PLAN FOR REQUIRED COMPONENTS RIGHT DOWN TO RAW MATERIALS

pass and does not require the multiple passes common in most MRP packages.

The planning can be done for a single location or a group of locations.

The scheduling information can be integrated with the planning.

A *Grace Period* can be entered that tells the process how many days to wait for orders already placed to arrive before generating a recommended order. This allows the system to overlook temporary stock out situations.

A *Minimum Order Period* can be entered that controls how often orders are to be released. This permits you to group orders, thus minimizing constant reordering.

A *Cushion* can be set that adds to the lead time required for ordering items.

Order quantities can be calculated for exact quantities to reach the order criteria or for multiples of the standard reorder quantity.

On one screen you can review the complete list of recommended work orders.

The orders on the list may be automatically generated as work orders, individually or in groups.

The list of orders can be arranged by

• Ascending planned order number.
• Part number and within part number by the recommended starting date for the planned order.
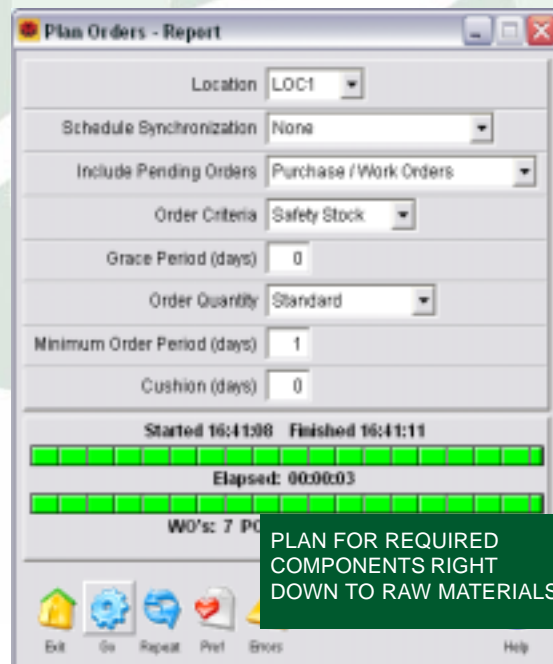
- Recommended starting date and within the start date by part number.

The list of orders can be filtered by a location, a date range and an item number.

Recommended purchase orders can be turned into pending or active purchase orders when ALERE Manufacturing is integrated with ALERE Accounting.

The *PO Requisitions* report lists the items that need to be purchased based on the planning process.

The list of items to purchase can be filtered for a specific item, a location or group of locations, and a vendor.

The date range of the list can also be set by beginning and ending order dates.

Materials Requirements Planning (MRP) is also done within the Plan Module.

The MRP process supports both bucketed and bucketless planning and can be run for any range of dates.

The bucketed process develops time-phased data and accumulates it in either weekly or monthly time periods.

The bucketless approach develops time-phased data and displays it using dated records instead of buckets. This method permits you to see the detail of the MRP process such as the purchase orders, sales orders and work orders.

MRP may be run for a group of locations or for a single location.

MRP may be limited to a single item, order number, or product class and only manufactured or purchased items.

The MRP process can be used as a material shortage report by including only records that fall below safety stock levels or zero on hand stock.

The MRP report can integrate the recommended orders from the Plan Module to show their effect on the material planning process.

Synchronous Manufacturing is supported by including the production floor schedule in the MRP report.

PUSH/PULL REPORT RECOMMENDS CHANGES TO EXISTING ORDERS
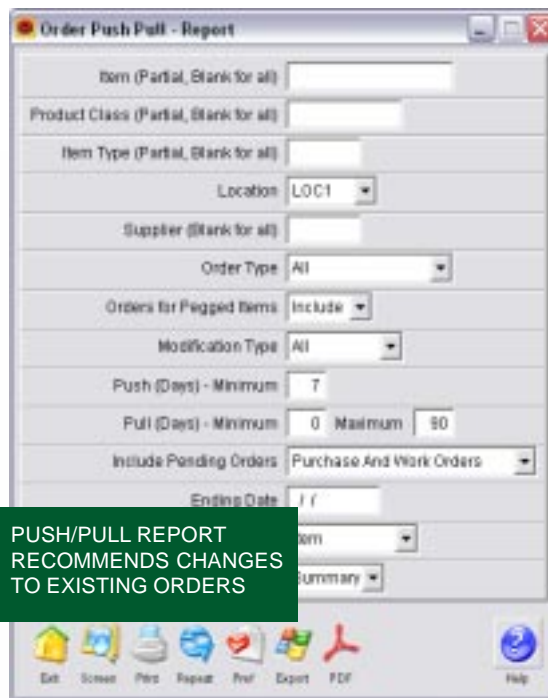
A *Push/Pull* report makes recommendations on which purchase orders and work orders to

- Pull forward to meet demand without creating new orders.
- Push out because the items won't be needed for weeks or months.
- Change quantities to match fluctuating requirements
- Cancel because they are no longer needed.

Item MRP Planning gives you rapid access to everything you need to know about time-phased supply and demand for a single item right on your screen. Drill down to the actual work orders and a summary of the sales orders and purchase orders.

Cost Module

The **Cost Module** is responsible for estimating and tracking the costs associated with the manufacturing process.

Both fixed overhead and variable overhead methods and a wide range of cost drivers that can be applied job-by-job, step-by-step to work in process are supported.

Overhead methods included as standard:

- Percentage of direct labor costs.
- Rate per man hour of direct labor.
- Rate per machine hour.
- Rate per unit of production.

DO COSTED ROLL UPS OF BILLS OF MATERIAL

TRACK MATERIAL, LABOR & OVERHEAD COSTS FOR ORDERS

- Percentage of direct material cost.
- Rate per unit of direct material.

Manual and custom overhead methods may also be used.

When linked to ALERE Accounting different WIP and Variance Accounts can be specified for each product class.

Separate fixed and variable overhead methods may be assigned.

Overhead methods may be established by product class.

A labor grade file maintains individual employee numbers and their rate per hour.

Each labor grade uses a $STANDARD employee which is the average rate for the labor grade and is used to prepare quotes or for projected costs.

An employee may be entered for each labor grade for which they qualify. This allows different rates per hour to be used according to the work an employee is performing.

Each operation step on a *Master Route* can have a labor grade assigned independently for setup and for cycle time. In this manner, ALERE Manufacturing can distinguish the cost of setup separately from the cost of production.

Cycle time has a percent field which allows ALERE Manufacturing to account for an operator running more than one work center at a time.

The *Planned Cost* process provides a way of calculating the cost of an item manufactured in various quantities across different routes.

Common uses of the *Planned Cost* process include

- Establishing economical lot sizing
- Determining optimum routes to manufacture an item.

• Establishing a way to validate an inventory standard cost using the current routes.

The *Planned Cost* function projects the material, labor and overhead costs of manufacturing an item in a specified quantity using a designated master route.

The *Work Order Cost* function provides a snapshot of job costs and allows a comparison of those costs to saved/quoted costs.

The *Work Order Cost* screen displays

- The WIP costs of completed steps.
- The projected costs to finish the job.
- The total costs for the job.
- A breakdown of how the costs are distributed.
- The cost per unit or for the total job.

The current work order costs are automatically calculated each time the screen is displayed.

A *Costed Roll Up* screen permits you to view current costs side-by-side with rolled up bills of material. Drill down and see how the numbers were computed for any BOM.

An Export button allows you to name and save the costed roll up information to an Excel spreadsheet.

You can choose which items are to have their average or standard costs updated in inventory when you are integrated with ALERE Accounting. Print a report of suggested changes when you are integrated with an accounting package other than ALERE Accounting.

Override suggested cost changes with your own. Journal entries are automatically made to account for inventory valuation adjustments.

A *Work In Process* report permits up to the minute reporting on the value of WIP.

WIP can be broken down by material, labor and overhead and by the type of order:

- Assemble
- Build
- Maintenance
- Rework
- Work Order

The detail of the WIP reporting can include showing costs by route step.

The *As of WIP* report allows looking at WIP value for a specific date.

A *Variance Analysis* report allows you to compare a job's cost performance to its quoted costs.

The variance reporting can be done on in process or completed work orders.

The variance reporting can be done for material, labor and overhead costs right down to the route steps.

An *Average Cost* report will calculate the average material, labor and overhead costs for an item over a specified period of time.

As part of the process of finding average costs for an item, parameters may be set that will exempt costs that are below a certain amount or above a certain amount. This allows out of the ordinary costs to be excluded from the average cost calculations.

The ability to find average costs has several important advantages:

- Since the costs can be calculated down to the operation route step, there is a tool to analyze the effectiveness of the manufacturing procedures.
- Trends over time can be developed.
- The average cost information can be used to set prices when negotiating with a customer.
- The information can also be used to determine cost standards.

Data Acquisition

The purpose of Data Acquisition is to allow data to be entered into ALERE by using wedge scanners or scanners running under terminal services. The key features are

The ALERE Data Acquisition product comes embedded in ALERE Manufacturing and is installed as a stand-alone product with a desktop shortcut.

Data Acquisition will help speed the entry of transactions on a work order, issue inventory to a job, post finished goods, and make inventory inquires.

REAL TIME SCANNING FROM THE PRODUCTION FLOOR

Data can be input in two ways:

- By selecting the Scan button on the work order screen to activate the scanner.

- By starting the stand-alone program.

The scanning is done in real time and is interactive with the operator through a "prompt" process. Item locations, lot numbers, serial numbers and traits are supported.

Scripts will continue to be added to DAQ to expand it's capabilities.

ALERE uses a scripting method to integrate scanners with the software. The scripting code is part of the ALERE Developers Kit and discussions of that code can be found in the Developers Kit manuals.
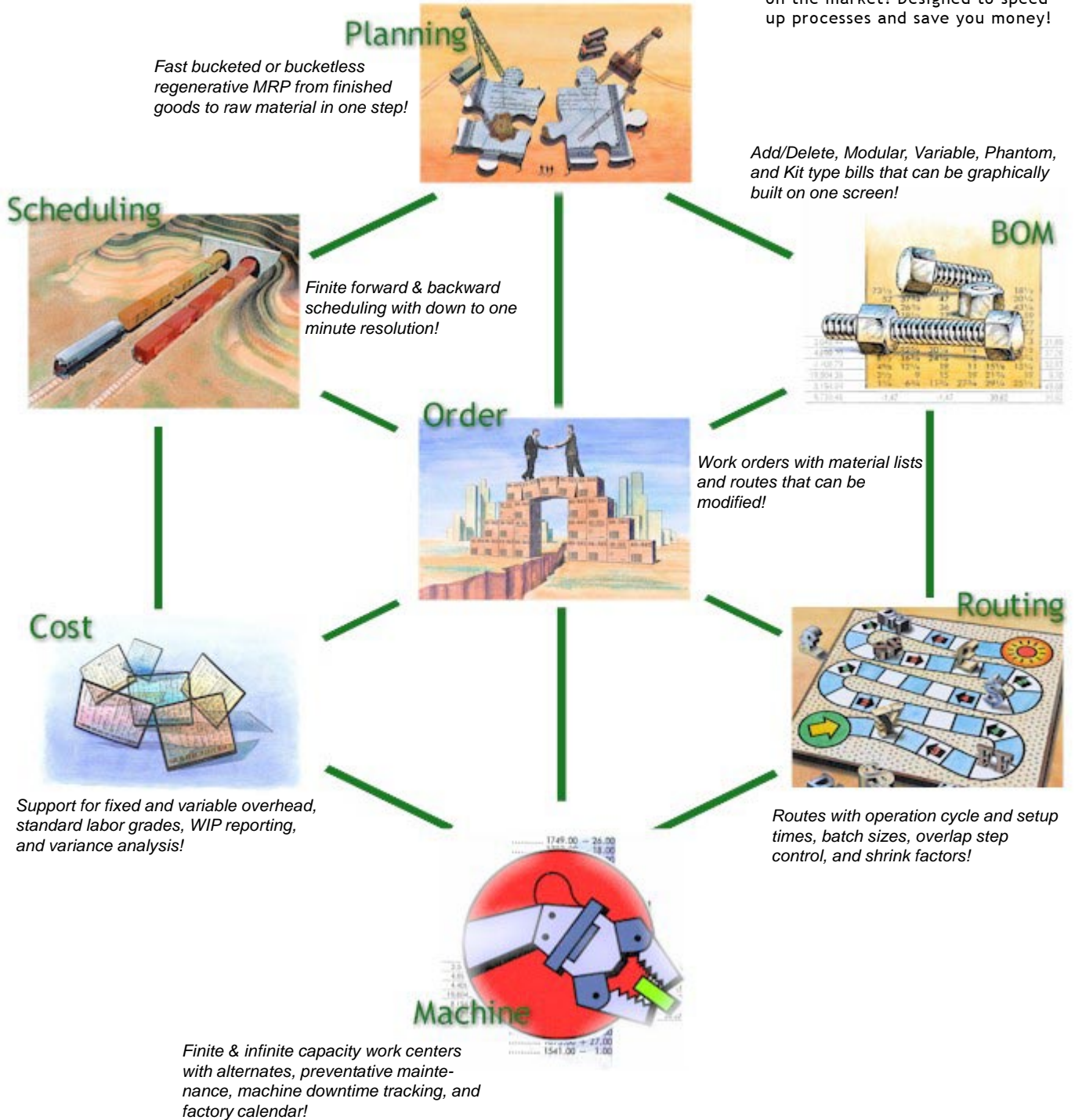
System Requirements

To use ALERE Manufacturing, you must have a computer that meets (or exceeds) the following requirements:

- IBM® compatible PC operating at 1GHz or higher (2 GHz recommended)
- 1GB or more of RAM recommended
- 100 MBPS or higher network connection (1 GHz or more recommended)
- 250 MB available disk space on the local drive for stand-alone or server installation to provide space for programs and data
- 50 MB available disk space on the workstation drive for Runtime files and temp files
- CD-ROM drive
- Microsoft® Windows® 98, NT 4.0 (or greater), 2000, XP, Vista or Windows 7 32 or 64 bit
- 1024 x 768 or higher is recommended
- Any Windows® compatible laser printer to print reports

ALERE Manufacturing Architecture

The most advanced architecture on the market! Designed to speed up processes and save you money!

Planning

Fast bucketed or bucketless regenerative MRP from finished goods to raw material in one step!

BOM

Add/Delete, Modular, Variable, Phantom, and Kit type bills that can be graphically built on one screen!

Scheduling

Finite forward & backward scheduling with down to one minute resolution!

Order

Work orders with material lists and routes that can be modified!

Routing

Routes with operation cycle and setup times, batch sizes, overlap step control, and shrink factors!

Cost

Support for fixed and variable overhead, standard labor grades, WIP reporting, and variance analysis!

Machine

Finite & infinite capacity work centers with alternates, preventative mainte-nance, machine downtime tracking, and factory calendar!

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