

**Version 5.4
Advanced Training**

MISys Manufacturing System

Course Workbook

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Agenda

Note: All times are EASTERN

Session 1	Monday 1:00pm	Creating Manufacturing Orders
Session 2	Monday 3:00pm	Performing MO Transfers
Session 3	Tuesday 1:00pm	Theory of MPS/MRP
Session 4	Tuesday 3:00pm	Creating an MPS
Session 5	Wednesday 1:00pm	Creating an MRP (Part I)
Session 6	Wednesday 3:00pm	Creating an MRP (Part II)
Session 7	Thursday 1:00pm	Shop Floor Control Setup
Session 8	Thursday 3:00pm	Maintaining BOM Routings
Session 9	Friday 1:00pm	Recording Shop Operations
Session 10	Friday 3:00pm	Using Shop Operation Batches

How to Contact MISys

Sales: 802/457-4600
 Fax: 802/457-4602
 Email: sales@misysinc.com
 dave@misysinc.com

Standard Support: www.misysinc.com

Priority Support: 802/457-4700

Have your Priority Support contract number ready!

M-F 9am - 5pm Eastern Time, holidays excepted

Session 1

Creating Manufacturing Orders

What is a Manufacturing Order?

- Like POs you issue to your manufacturing department
- Carries start date and completion date
- Guide to your progress
- Records quantity started and completed at any time
- Allows you to make changes as required
- Tracks Standard, Projected, and Actual costs

Creating Manufacturing Orders

- Enter new manufacturing order
- Program predicts next MO number - accept or override

MO Header

The screenshot displays the 'MO Header' window in the MISys Manufacturing System. The window title is 'SAMPLE - (L2) Manufacturing Orders'. The interface includes a menu bar with 'File' and 'Help'. The main area contains several input fields and buttons:

- Order No.:** M01
- Status:** Released, Recorded
- Description:** Manufacturing Order #1
- Priority:** Normal
- Item No.:** 140
- Revision:** Original release
- Created By:** ADMIN
- Job No.:** JOB01
- Location:** LOC01
- Unit Order:** 10.0 EA
- Order Date:** 01/10/2010
- Start Date:** 01/10/2010
- Completion Date:** 01/11/2010
- Quote Markup:** 1.000000

At the bottom of the window, there is a row of buttons: Save, Delete, Copy Order, Release, Start Assembly, Complete, Close Order, Sales Transfer, and Close.

Figure 1 – A Manufacturing Order is the primary structure for controlling production. It provides the basis for comprehensive tracking of stock status, routing status, and production costing.

- One assembled item per MO – only one!
- Priority – “Hold” prevents transactions against MO
- May associate a job with any manufacturing order
- Must specify location (if multiple locations enabled)
- Enter Start date – predicts Completion date – may be edited
- Enter Completion date – predicts Start date – may be edited
- Print sales quotation worksheet
- Allow Auto-build Checkbox determines whether or not this MO can be auto-built when it’s referenced by another MO as a Child Order.

MO Notes

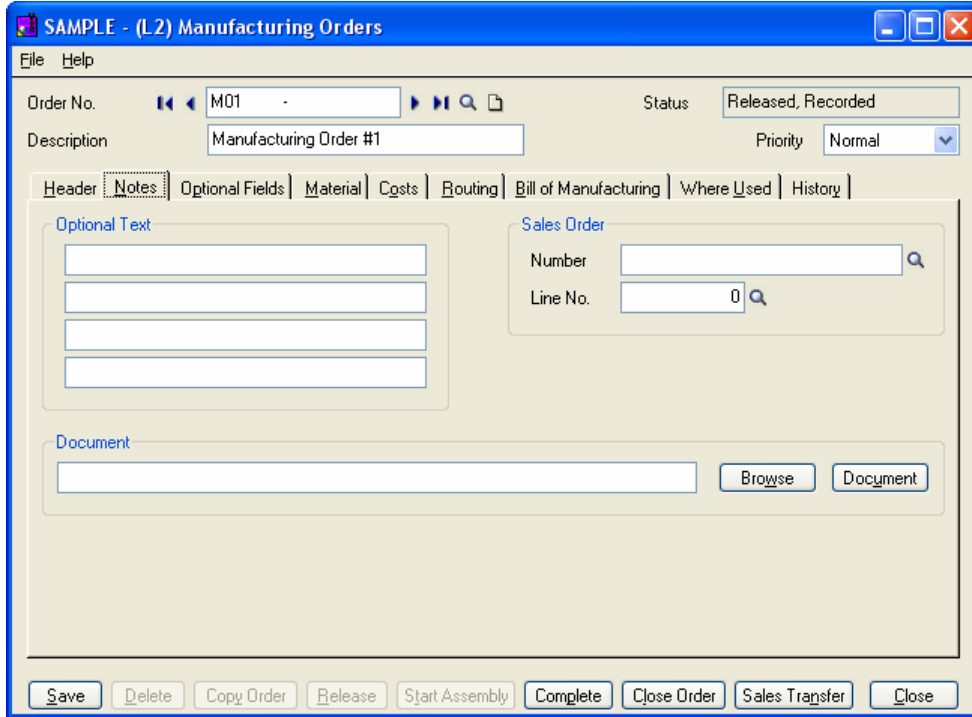


Figure 2 – Four 30-character fields are provided for additional production information. If this is not sufficient, a word processing document may be attached to the MO. Optionally, any Manufacturing Order can be “pegged” to a Sales Order created in the Accpac Order Entry System.

- Optional header text - up to 4 lines print anywhere
- Corresponding Sales Order/Line no.
- Finder to Accpac O/E if feed is enabled.
- Attached document
- Uses Windows associations for WP documents, drawings, CAD, etc.

MO Optional Fields Tab

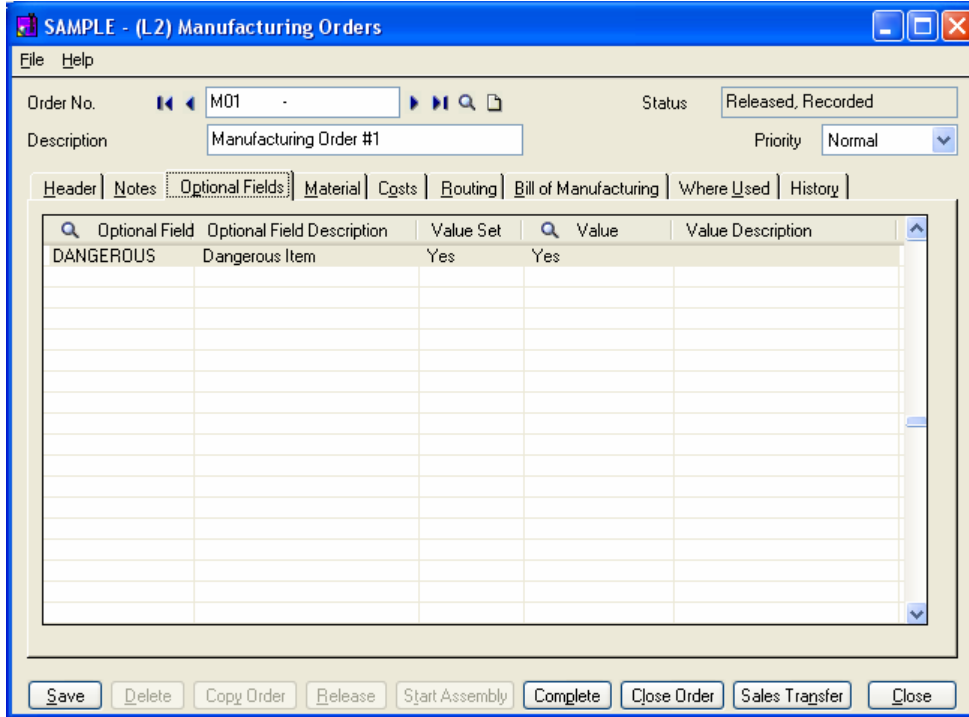


Figure 3 – The Optional fields tab allows you to reference Optional Fields you created for Manufacturing Orders, in the MISys Setup function.

MO Material Details

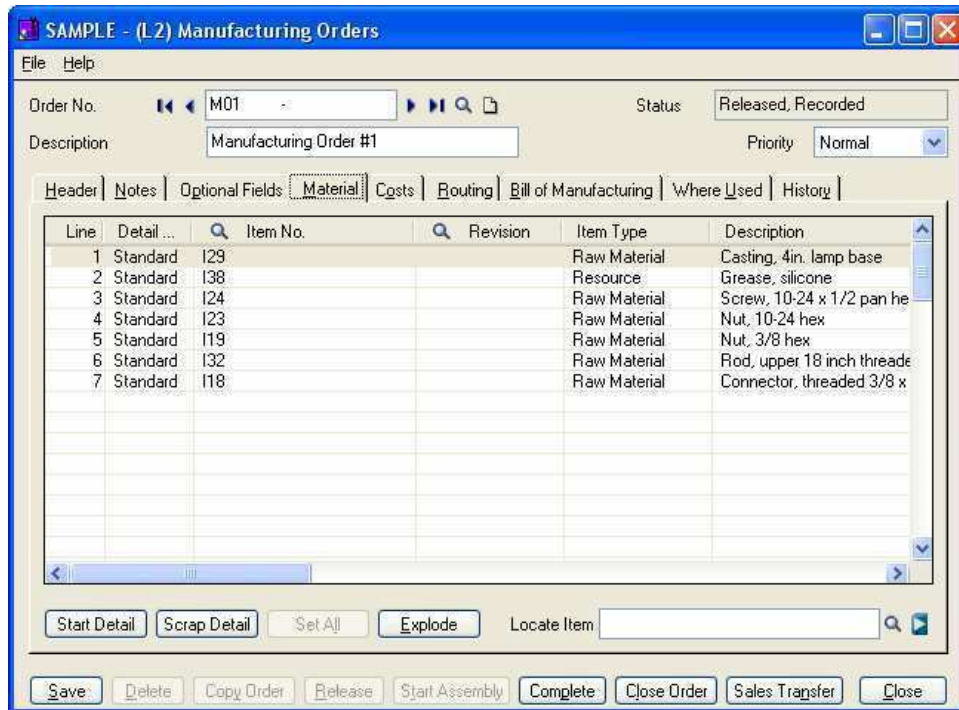


Figure 4 – The Material details of a Manufacturing Order define the components required to build the product. Originally, these details are populated based on the corresponding BOM. Material details of an MO may be modified as desired to accommodate custom job shops.

- Copied from BOM of assembly
- Add, modify, delete details
- Does not change original BOM
- Detail Types
 - Standard: normal component item from BOM
 - Comment: text message only
 - Setup: item used only once (e.g. mold cleaner)
 - Consumed: item used regardless of yield (e.g. milk for yogurt)

MO Costs

Costs Tab Data:

BOM	Projected	Used	Actual
Material	52.79	52.79	31.67
Labor	126.79	130.86	80.16
Overhead	10.00	10.33	6.33
Assembled	189.58	193.98	118.17
- Item Cost	199.06	X Markup 1.0	+ Scrap 0.00
Variance	-9.48	Quote 193.98	Total 118.17

Cost Variances Table:

	Item Cost	Projected	Used	Actual	Quote
Item Cost	0.00	5.08	80.90	80.90	5.08
Projected	-5.08	0.00	75.82	75.82	0.00
Used	-80.90	-75.82	0.00	0.00	-75.82
Actual	-80.90	-75.82	0.00	0.00	-75.82
Quote	-5.08	0.00	75.82	75.82	0.00

Figure 5 – Analyzing production cost variances is easy using this tab where Item, Projected, Used, and Actual costs are displayed.

BOM

- What the BOM indicated
- This column reflects the total costs of the BOM Revision being built on the MO.

Projected

- What this MO should cost (considering modifications)
- Frozen once MO is released

Used

- What this MO has cost (based on material used, scrap, etc.)
- Frozen once MO is closed

Actual

- What this MO actually cost (based on shop operation transactions, time, material, scrap, etc.)
- Frozen once MO is closed

Quote

- Projected cost X Markup factor

Cost variances

- Compare any cost basis to any other.

MO Routing Details

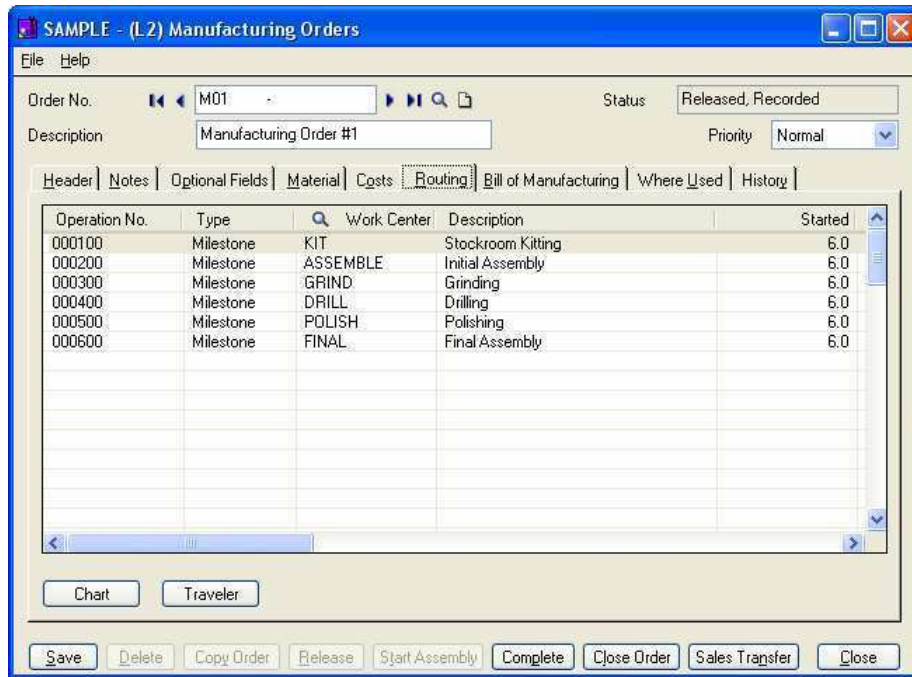


Figure 6 – The Routing details of a Manufacturing Order are initially populated based on the corresponding Bill of Materials. These details may be modified as need to meet specific customer requests. Changes to the MO details do not affect the BOM in any way.

- Used for Level 3!

MO Bill of Manufacturing

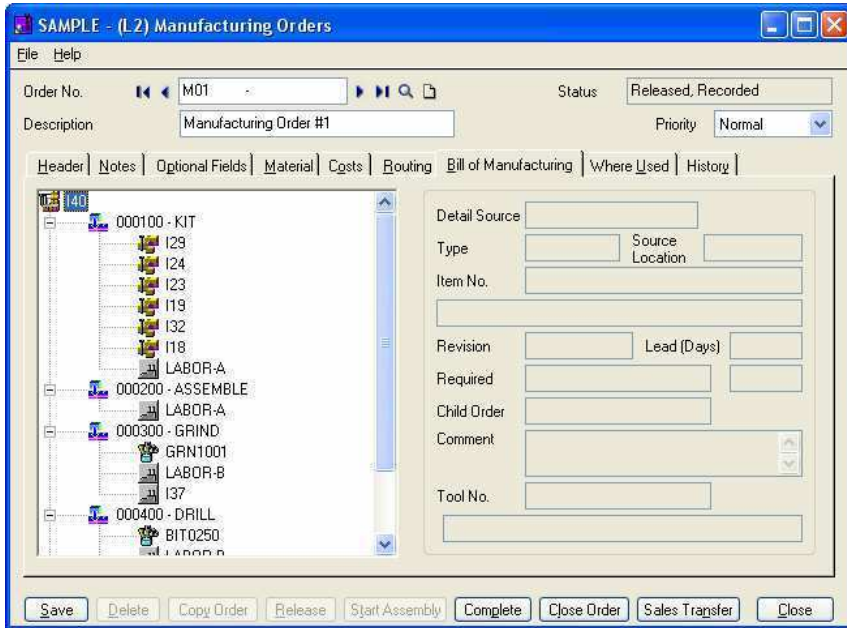


Figure 7 – The MO's Bill of Manufacturing is a hierarchical view of the assembly process where material, labor, and overhead components are displayed for any Operation.

- Used for Level 3!

Where Used

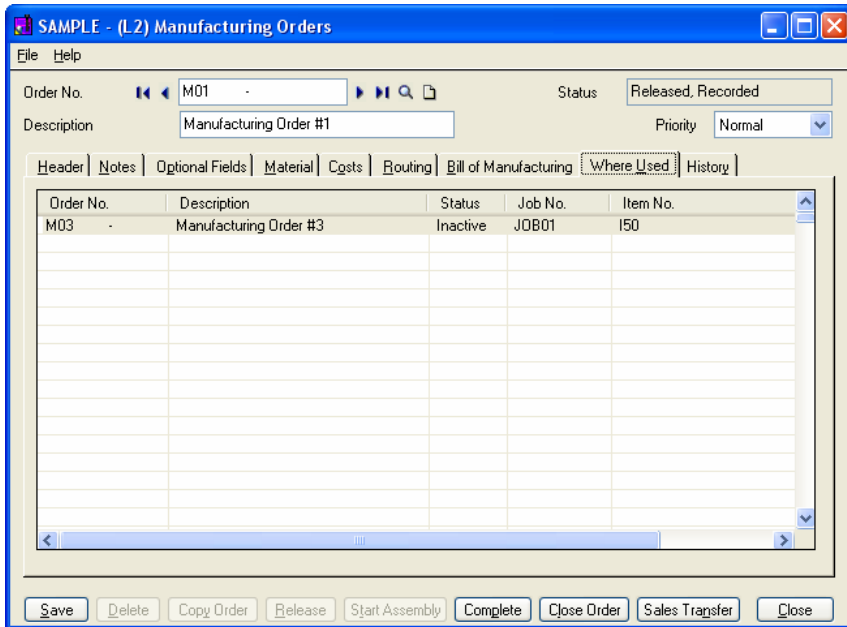


Figure 8 – Displays the child orders associated with the selected Manufacturing Order.

- Allows a quick look at high level assemblies.

History

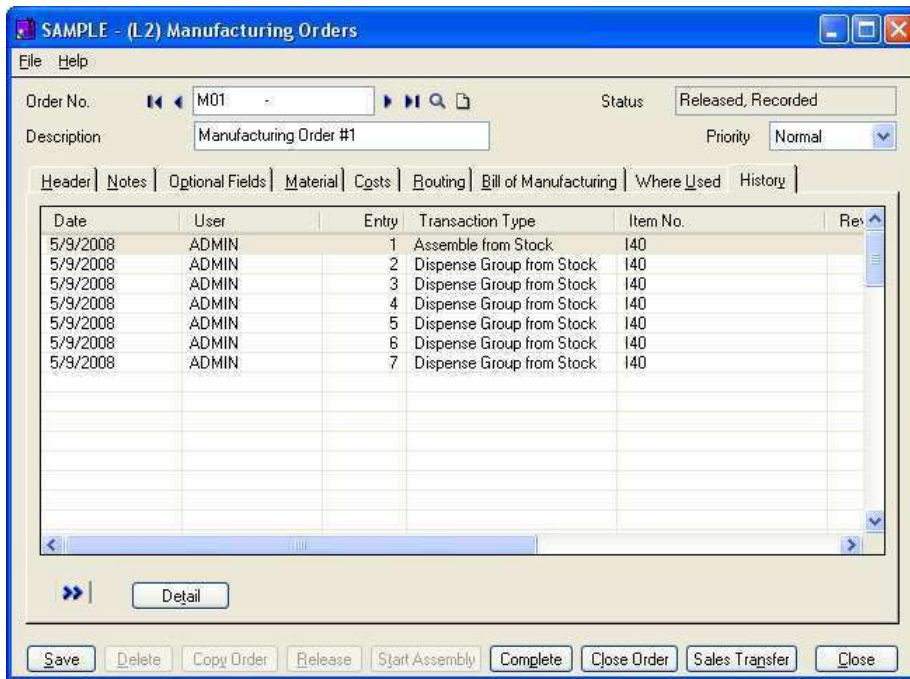


Figure 9 – As work progresses on the selected MO, MISys logs every transaction and displays it on the MO History tab.

- View details of Master Transaction Log related to this MO.

Print Manufacturing Order Approvals

- Worksheet on which to secure management approval
- Modify manufacturing orders
 - Inactive orders - modify at will
 - Released orders - OK to modify, but MISys will put MO back in print queue as a “Revised” order

Delete Manufacturing Orders

- Inactive or Closed orders - delete at will
- Released orders - not allowed - close then delete or purge

Copy Manufacturing Orders

- An easy way to clone any manufacturing order

Release Manufacturing Orders

The screenshot shows a window titled "SAMPLE - (L2) Release Manufacturing Order". It has a menu bar with "File" and "Help". The main area contains several input fields: "Order No." with value "M02", "Description" with value "Manufacturing Order #2", "Assembly No." with value "I45" and a "Revision" field, "Order Date" with value "01/10/2010", "Ordered" with value "10.0" and unit "EA", and "Release Date" with value "05/12/2008". A text area below "Assembly No." contains "Head assembly, fluorescent". At the bottom, there are three buttons: "Queue", "Save", and "Close".

Figure 10 – When a Manufacturing Order goes into production it is first released. Doing so places a copy of the MO in the print queue. Clicking the **Record** button releases the order without requiring the printing of a hard copy.

- Queue to place MO in print queue, or just Save.

Print/Send Manufacturing Orders

The screenshot shows a window titled "SAMPLE - (L2) Print/Send Manufacturing Orders". It has a menu bar with "File" and "Help". The main area is divided into several sections: "Print" with radio buttons for "User Queued", "MO Range" (selected), and "All Queued"; "User" with a text field containing "ADMIN"; "Manufacturing Order Range" with "From" and "To" fields both containing "M02"; "Manufacturing Order Definition File" with a text field containing "MI510001.RPT"; and "Manufacturing Order Status" with checkboxes for "Not Ready", "Ready to Print" (checked), "Revised", "Failed Print", "Already Printed", and "Recorded". At the bottom, there are three buttons: "Print", "Preview", and "Close".

Figure 11 – Recently released Manufacturing Orders wait in the print queue. A user-specified report definition file determines what the Manufacturing Order looks like. Orders may be printed for one specific user, or a range of orders may be printed.

Select File, Print Setup...

- Printer
- Fax
- Generic Windows faxing (Delrina WinFax Pro, etc.)

Print

User Queued

- All MOs queued by selected User (default to current user)

MO Range

- MO range selected in Finder fields

All Queued

- All MOs queued (regardless of User)

Email

- Set Print Destination

Select desired MO Status

Ready to print

- Open, not previously printed

Revised

- Open, modified since last printed

Failed print

- Open, last print not completed

Already printed

- Printed, allows for reprint

Preview

- Opens Finder-like view of print queue

Retrieve Sales Orders

Figure 12 – In an environment where there is a 1-to-1 correspondence between Sales Orders and Manufacturing Orders, the Retrieve Sales Orders function can be employed to create any number of MOs pegged to SOs. Clicking the **Preview** button provides a preview of the orders that will be created.

- Creates MOs from Sales Orders on a 1-to-1 basis.
- Allows “pegging” of MOs to SOs.
- Retrieve Criteria is retained from session to session.
- Preset date range for Days, Weeks or Months from NOW (Session Date)
- Must specify MISys Location and first MO number.

Preview

- Click Preview to display Sales Orders that can be retrieved.

Special Uses for Manufacturing Orders

Sales Quotations

- For variation of previously produced item:
- Create manufacturing order for item previously produced
- Modify MO details as required
- Enter markup factor, Save

- Print sales quotation

For new item:

- Create item in Item Master, or use generic “special” item
- Do not create BOM for this item
- Create manufacturing order for item – no details result
- Enter MO details using standard components (raw materials and sub-assemblies)
- Enter markup factor, Save
- Print sales quotation

Rudimentary Shop Floor Control

- Use manufacturing orders to keep track of routing through shop

Setup

- Create items in Item Master for each routing step

Use

- Add routing steps (items) as Setup Items to manufacturing order details.
- Use start/complete assembly function to indicate when each step is completed.

Better yet, buy MISys Level 3!

Session 2

Performing MO Transfers

Start Assembly

(L2) Start Assembly

Order No. M02

Description Manufacturing Order #2

Assembly No. 145 Revision

Head assembly, fluorescent

Order Date 01/10/2010 Release Date 05/12/2008

Ordered	10.0	Reserve	0.0
Completed	0.0	WIP	0.0
Balance	10.0		

Date 05/12/2008 Auto-build Override Never

Quantity 0.0 EA

Comment

Direction
 Normal Inverse

Stock->WIP Reserve->WIP Stock->Reserve Close

Figure 13 – Once a Manufacturing Order is released, production may begin by using the Start Assembly function. This uses the MO to drive the appropriate stock transfers that move the component parts from Stock to Reserve and WIP.

- Moves Stock to WIP for all items
- Reserves all items
- Moves Reserve to WIP for all items
- Partial Start OK!

Start Assembly Detail

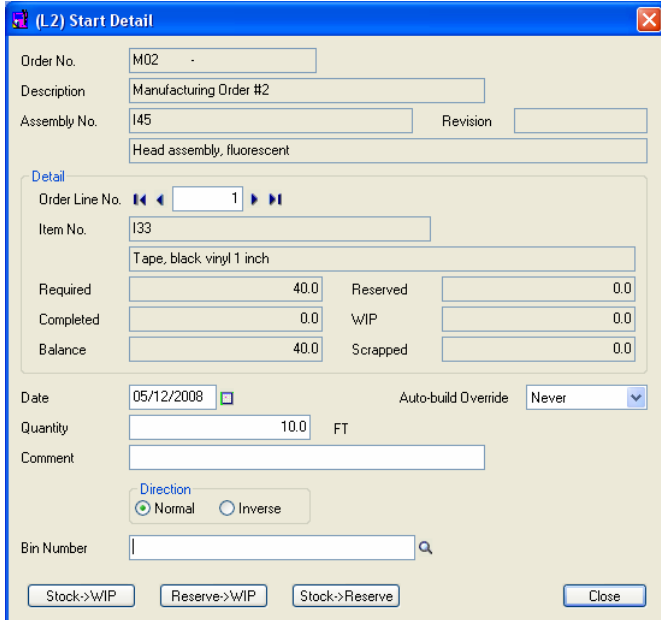


Figure 14 – Using the optional Start Assembly Detail function, you can move selected component parts from Stock to Reserve and WIP.

- Moves selected item from Stock to WIP
- Allows “piecemeal production”

Scrap Assembly Detail

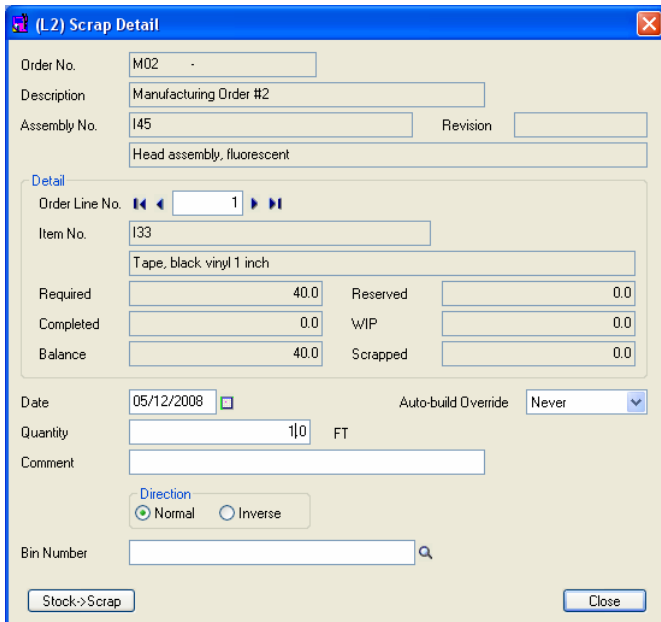


Figure 15 – Any component found to be defective, can be written off and replaced.

- Writes off selected item from Stock
- Affects Actual cost of MO

Complete Assembly

(L2) Complete Assembly

Order No. M02 -

Description Manufacturing Order #2

Assembly No. 145 Revision

Head assembly, fluorescent

Order Date 01/10/2010 Release Date 05/12/2008

Ordered	10.0	Reserve	0.0
Completed	0.0	WIP	0.0
Balance	10.0		

Date 05/12/2008 Auto-build Override Never

Quantity 0.0 EA

Comment

Direction
 Normal Inverse

Bin Number

Complete Close

Figure 16 – Completing assembly is a signal to MISys that the required production has been completed and that allocated material is now consumed. MISys does not require that the work be completed all at the same time. It handles partial starts and partial completions with ease.

- Components removed from WIP, if any, otherwise Components removed from Stock
- Finished good moved to Stock

Expediting Manufacturing Orders

- Modify start and completion dates on MO header
- Very important if scheduling is to be accurate

Close Manufacturing Orders

Figure 17 – When all work on a Manufacturing Order is complete, the MO is closed. MISys makes the required adjustments to make sure there is no residual WIP, that scrap is fully accounted for, and that the actual MO costs are calculated.

- Close MO details when manufacturing is complete
- Puts residual WIP back in Stock

Transfer to Sales

Figure 18 – Finished goods that have been produced can be transferred to the Accpac sales inventory by clicking the **Transfer to Sales** button. MISys knows to corresponding Accpac Item number and instantly updates the On Hand quantities at the specified location.

- Sales No. fills in automatically, many be changed
- Sales Transfers may be performed for both Released and Closed MOs.

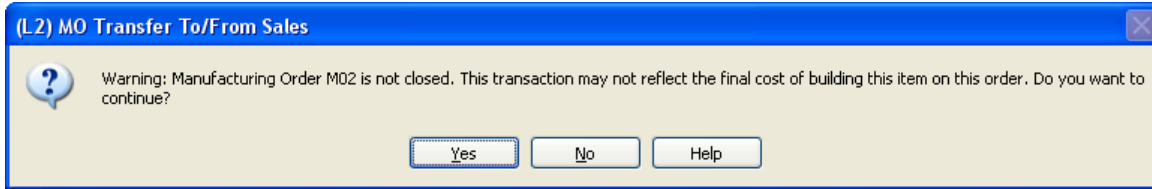


Figure 19 – Finished goods that are being Transferred to Sales **before** the Close of the MO will be prompted to indicate that the pricing sent to ACCPAC may not reflect the Final Cost of the MO (since this is captured at MO Close).

Purge Closed Orders

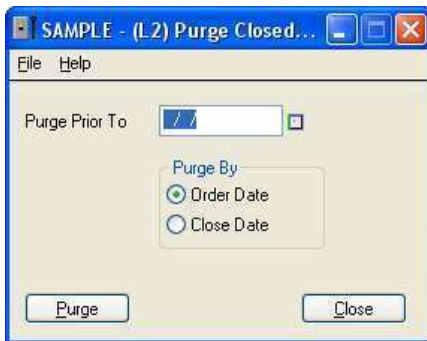


Figure 20 – Closed Manufacturing Orders may be deleted individually, but the Purge Close Orders function provides a quick and easy way to delete a range of orders that you no longer need.

- Remove range of closed manufacturing orders so their MO numbers can be re-used

Session 3

Theory of MPS/MRP

Manufacturing Scheduling

The Paradox of Inventory Management

- ◆ If you cannot match inputs to and outputs from an inventory, you will never control it.
- ◆ The better you can match inputs and outputs, the less need there is for any inventory.

Historical Perspective

- ◆ In this age, you cannot be without effective inventory planning and control

Traditional Approaches to MRP

- ◆ Expensive to purchase (\$50K to \$20M+)
- ◆ Requires mini or mainframe computer
- ◆ Difficult to implement
- ◆ Complex to operate
- ◆ Dismal success rate - 5 to 10% (90%+ failure rate)

MISys' approach to MRP

- ◆ Inexpensive (~\$6000)
- ◆ Runs well on state-of-the-art, inexpensive personal computers
- ◆ Easy to implement - virtually no setup!
- ◆ Logical operation
- ◆ Very high success rate

More Paradox

- ◆ MISys Level 1 helps you maintain an inventory.
- ◆ MISys Level 2 helps you maintain **NO** inventory.

Basic Definitions

MRP I

Material Requirements Planning

MRP II

Manufacturing Resource Planning

MRP

Material Requirements Plan

MPS

Master Production Schedule

Working Definitions

Current Activity

Inventory activity resulting from orders already in place

Scheduled Activity

Inventory activity resulting from orders scheduled but not actually placed

Planned Activity

Inventory activity resulting from a combination of Current and Scheduled activity.

Basics of MRP I

The Overall Form

Reorder Point = 0	Period					
Order Qty. = 100	1	2	3	4	5	6
Current requirements	10				10	
Current receipts						
Scheduled requirements						
Scheduled receipts						
Actual on hand inventory (100)	90	90	90	90	80	80
Projected on hand	90	90	90	90	80	80
Planned order receipt						
Planned order release						

Introducing Current Demand

Reorder Point = 0	Period					
Order Qty. = 100	1	2	3	4	5	6
Current requirements	10		100		10	
Current receipts						
Scheduled requirements						
Scheduled receipts						
Actual on hand inventory (100)	90	90	-10	-10	-20	-20
Planned order receipt			100			
Planned order release		100				
Planned on hand inventory	90	90	90	90	80	80

Introducing Current Supply

Reorder Point = 0	Period					
Order Qty. = 100	1	2	3	4	5	6
Current requirements	10		100		10	
Current receipts		100				
Scheduled requirements						
Scheduled receipts						
Actual on hand inventory (100)	90	190	90	90	80	80
Planned order receipt						
Planned order release						
Planned on hand inventory	90	190	90	90	80	80

Introducing Scheduled Demand

Reorder Point = 0	Period					
Order Qty. = 100	1	2	3	4	5	6
Current requirements	10		100		10	
Current receipts		100				
Scheduled requirements						100
Scheduled receipts						
Actual on hand inventory (100)	90	190	90	90	80	-20
Planned order receipt						100
Planned order release					100	
Planned on hand inventory	90	190	90	90	80	80

Introducing Scheduled Supply

Reorder Point = 0	Period					
Order Qty. = 100	1	2	3	4	5	6
Current requirements	10		100		10	
Current receipts		100				
Scheduled requirements						100
Scheduled receipts				10		
Actual on hand inventory (100)	90	190	90	100	90	-10
Planned order receipt						100
Planned order release					100	
Planned on hand inventory	90	190	90	100	100	190

MISys Master Production Scheduling

- ◆ What to buy or build - and when!

MISys Material Requirements Planning

- ◆ Semi-automatic creation of the purchase orders and manufacturing orders necessary to satisfy the Master Schedule
- ◆ Cash commitment analysis
- ◆ Supplier availability analysis

Session 4

Creating an MPS

Work Calendar

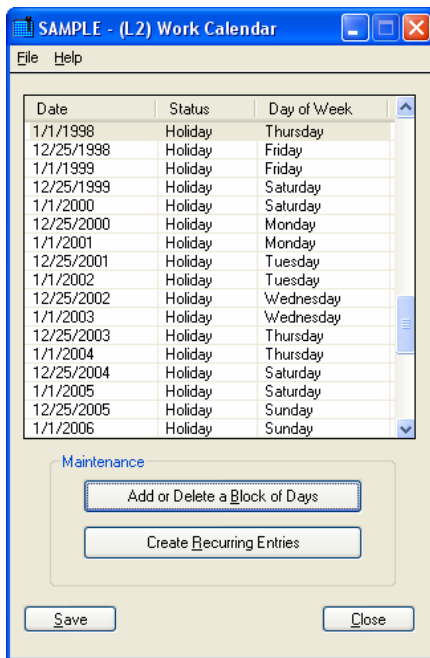


Figure 21 – The Work Calendar lists specific dates that are being observed at work days or holidays in exception to the normal work-week. MISys uses this information to schedule production dates and to predict product availability.

- ◆ Indicates specific dates as workdays and holidays
- ◆ Schedule Setup determines if calendar is used
- ◆ MISys won't schedule production for holidays
- ◆ MISys will schedule purchasing for holidays
- ◆ Supplier doesn't necessarily have same work calendar
- ◆ Supplier calendar reflected in promised delivery date

Block of Days

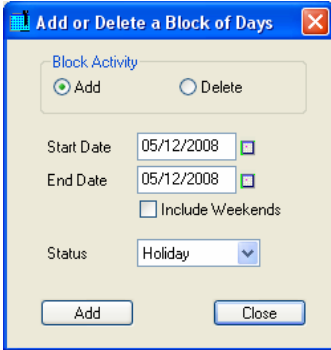


Figure 22 – Blocks of days (such as for plant shutdowns) can be entered with a single mouse-click.

- ◆ Add or delete block or holidays OR workdays
- ◆ Check to include weekends in a block

Recurring Entries

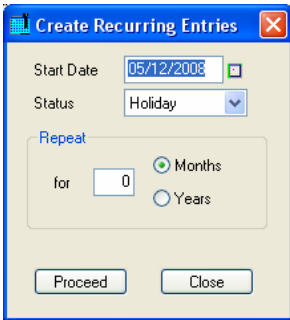


Figure 23 – A holiday or workday that repeats every month or year is a simple and quick entry.

- ◆ Great for Christmas, New Years, etc.
- ◆ Doesn't work at all well for Easter, Passover, or Thanksgiving!

Schedule Setup

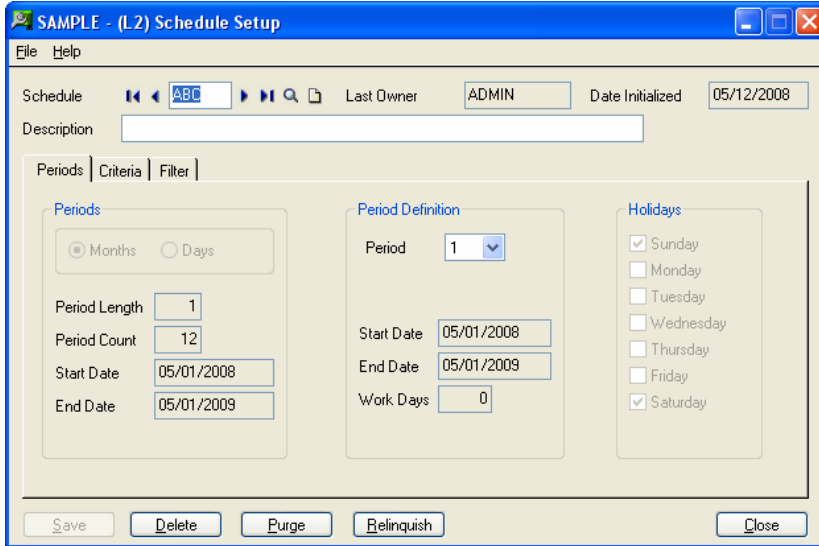


Figure 24 – The Setup function provides a means for tailoring the Master Production Schedule to your specific requirements. Schedules can be created on a daily, weekly, or monthly basis – and for any start date and length.

Periods

- ◆ Determines whether periods are days or months
- ◆ Determines number and length of each period
 - Set Period Length to 1 to schedule day-by-day
 - Set Period Length to 7 to schedule week-by-week
- ◆ Minimize these parameters to optimize performance and conserve disk space
- ◆ Determines Start Date of MPS
 - Any activity before this date is “Pre-plan”
 - Any activity after scheduling range is “Post-plan”

Period Definition

- ◆ Accommodates “lumpy” periods (irregular start dates)

Holidays

- ◆ Days of week you don’t work – MISys skips

Criteria

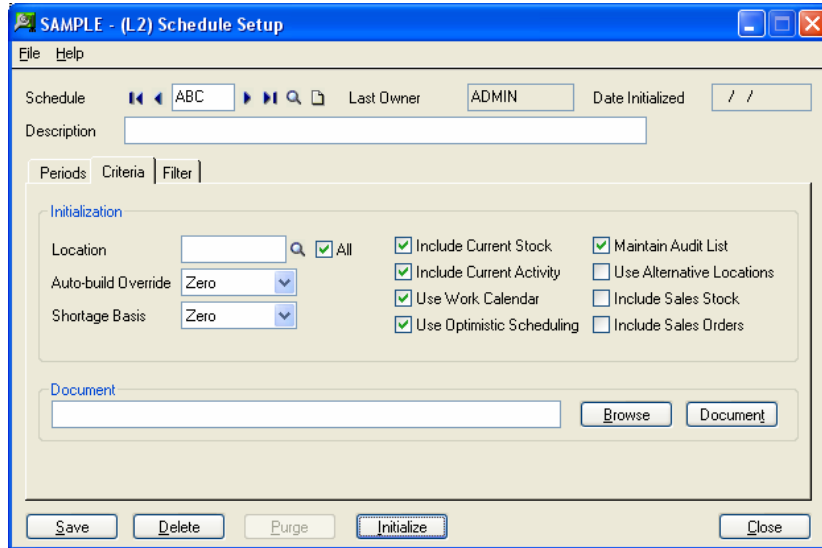


Figure 25 – The Criteria tab governs the scope of the MPS. By making the appropriate selections, current inventory, current MOs and POs can be included or ignored. At your option, the MISys MPS can include Sales Orders entered in Accpac Order Entry.

Location

- ◆ Limits MPS to specific Location
- ◆ Speeds Initialization and processing

Auto-build Override

- ◆ Invoke Auto-build action in case of insufficient stock of subassembly

Shortage Basis

- ◆ Select stock level below which is considered a shortage

Include Current Stock

- ◆ Examines current stock status of every item (MI and IC)
- ◆ Takes time to initialize large scheduling database

Include Current Activity

- ◆ Automatically schedules outstanding POs and MOs
- ◆ Takes time to initialize large scheduling database

Use Work Calendar

- ◆ Skip days identified as holidays in Work Calendar

Use Optimistic Scheduling

- ◆ Material arriving in mid-period to be available for entire period
- ◆ Material that is required in mid-period will be scheduled to arrive in the previous period

Maintain Audit List

- ◆ Creates a detailed breakdown of your material requirements.
- ◆ Slows performance somewhat and consumes additional disk space.

Use Alternative Locations

- ◆ Consult Alternate Locations if insufficient material at primary location.

Include Sales Stock

- ◆ Include stock in the I/C Location identified in the Location notebook
- ◆ Shows only if I/C feed option enabled

Include Sales Orders

- ◆ Include sales orders from OE for the I/C Location identified in the Location notebook
- ◆ Shows only if O/E feed option enabled

Document

- ◆ Attach mission statement, notes, and reminders for other users

Filter

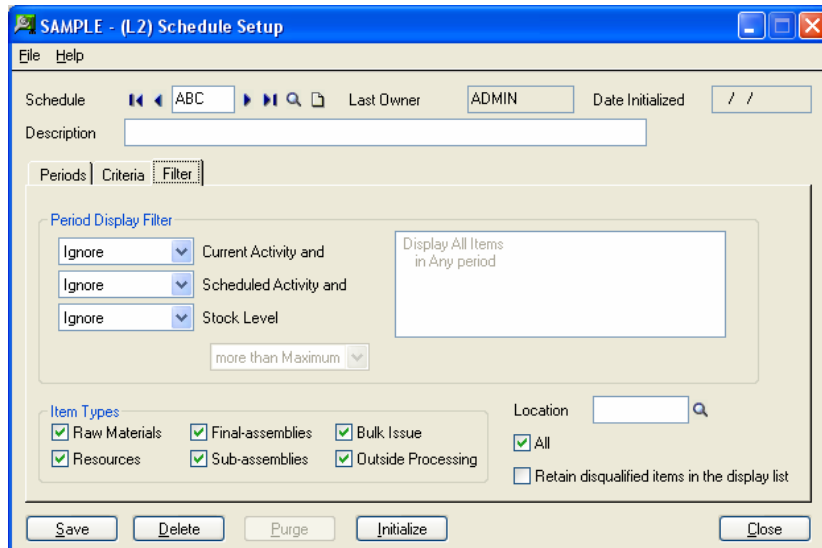


Figure 26 – Traditional MPS systems produce a flood of information. While the same information is available in MISys, the program makes it easy on the user with a comprehensive filtering facility so that only particular information is displayed.

- ◆ Sets default Display Filter during initialization.
- ◆ No impact on initialization speed/size.

Initialize

- ◆ Creates database (matrix) of status of all items for all periods
- ◆ User-specific.

During initialization MISys records:

- ◆ Current stock levels for all items (unless current stock disabled)
- ◆ Supply from open purchase orders (unless current activity disabled)
- ◆ Demand from released manufacturing orders and sales orders (unless current activity disabled)
- ◆ Supply from released manufacturing orders (unless current activity disabled)

Master Schedule

Item Summary

Item No.	Location	Description	Per +	Per -	Maximum Short...
123	L0C02	Nut, 10-24 hex	0	0	
123	L0C03	Nut, 10-24 hex	0	0	
123	L0C04	Nut, 10-24 hex	0	0	
124	L0C02	Screw, 10-24 x 1/2 pan head	0	14	14
124	L0C03	Screw, 10-24 x 1/2 pan head	0	0	
124	L0C04	Screw, 10-24 x 1/2 pan head	0	0	
125	L0C02	Screw, 8-32 x 3/8 pan head	0	11	11
125	L0C03	Screw, 8-32 x 3/8 pan head	0	0	
125	L0C04	Screw, 8-32 x 3/8 pan head	0	0	
126	L0C02	Screw, 6-32 x 1/2 round head	0	14	14
126	L0C03	Screw, 6-32 x 1/2 round head	0	0	
126	L0C04	Screw, 6-32 x 1/2 round head	0	0	
129	L0C02	Casting, 4in. lamp base	0	14	14
129	L0C02	Casting, 4in. lamp base	0	0	

Figure 27 – The Item Summary view shows one line per Item. Shortages are shown in red, excess material in green.

- ◆ Requirement (max. shortage) for each item
- ◆ Number of periods of shortage
- ◆ Number of periods of excess

- ◆ Maximum shortage

Auto-Schedule JIT

- Creates Scheduling Events sufficient to resolve shortages of ALL items.

Filter

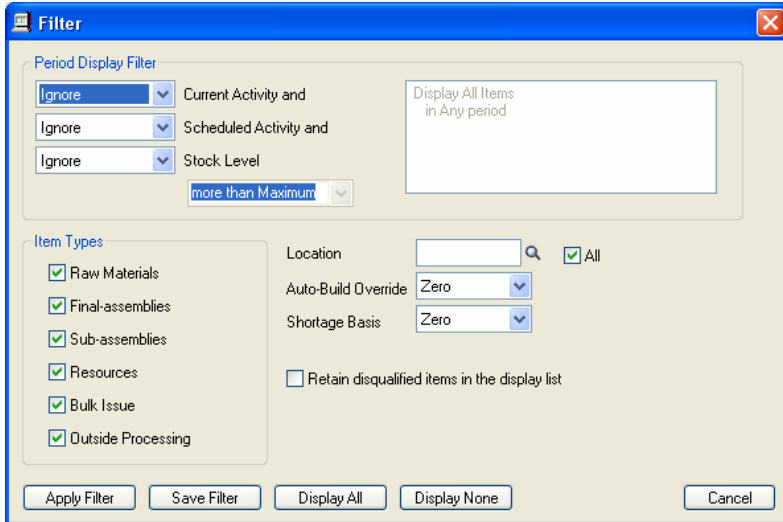


Figure 28 – The filter can be changed at any time to tailor the amount of information being displayed.

- ◆ No need to drink out of the fire hydrant!

Displayed items

- ◆ Choose types of activity you wish included in the MPS display
- ◆ Choose stock levels as qualifier for inclusion in the MPS display

Item Types

- ◆ Use to exclude item types you aren't interested in

Location

- ◆ Select Location to limit MPS accordingly
- ◆ Usually select primary Location, then Move material if required

Auto-build Override

- ◆ Permits explosion of sub-assembly shortages during scheduling (only)
- ◆ Not for beginners!

Shortage Basis

- ◆ Defines how material shortages are calculated

Retain disqualified

- ◆ Usually leave off

Display Update

- ◆ **Apply filter** – save setup and adjust display.
- ◆ **Save filter** – save setup but don't adjust display.
- ◆ **Display All** – display all items regardless of filter.
- ◆ **Display None** – display no items regardless of filter.

Item Detail

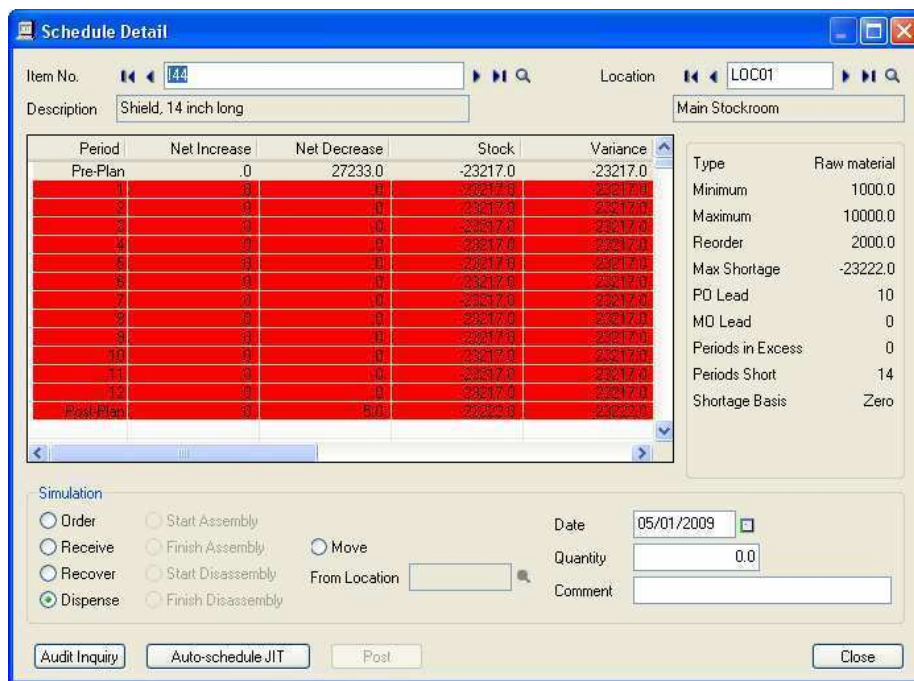


Figure 29 – Drilling down from the Item Summary screen into the Item Detail screen provides a period-by-period view of the net changes being made to the selected Item. Colorful bars make it easy to spot periods when stock status enters critical levels.

- ◆ Net change period-by-period for selected item and location
- ◆ Stock level by period
- ◆ Variance relative to selected basis
- ◆ Use this window to create production simulations

Auto-Schedule JIT

- ◆ Creates Scheduling Events sufficient to resolve shortages of selected item.

Scheduling Batches

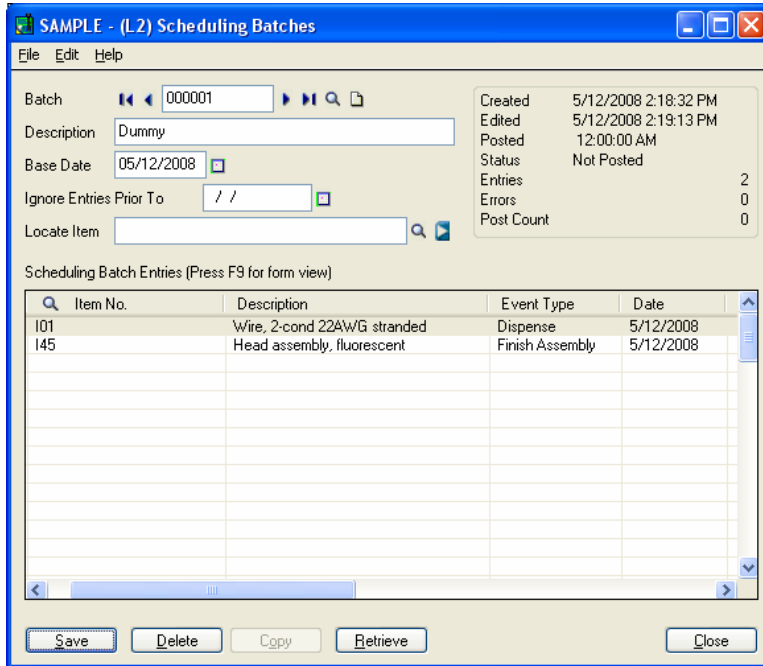


Figure 31 – The MISys Scheduling Batch function provides an easy way to create and maintain a Sales Forecast.

- Repository for all Scheduling Events.

Retrieve

- Retrieve Sales Orders if OE feed enabled.
- Ignore Entries option helpful when maintaining a Sales Forecast.

Create

- Copies Scheduling Events to a Batch

Post

- Posts Batch entries into a Schedule

Creating An MRP

- In MISys an MRP is the “bridge” between the MPS and real Purchase Orders and Manufacturing Orders.
- MRP is sensitive to Scheduling Events created in the MPS and material shortages.

Process Purchasing Requirements

Item No.	Description	Units	Location	Scheduled Qu...
101	Wire, 2-cond 22AWG stranded	FT	L0C01	.0
105	Wire nut, #22 blue	EA	L0C01	.0
111	Socket, pin w/quick connects	EA	L0C01	.0
117	Connector, threaded 3/8 x 1/2	EA	L0C01	.0
118	Connector, threaded 3/8 x 1	EA	L0C01	.0
119	Nut, 3/8 hex	EA	L0C01	.0
121	Nut, 6-32 hex	EA	L0C01	.0
122	Nut, 8-32 hex	EA	L0C01	.0
123	Nut, 10-24 hex	EA	L0C01	.0
124	Screw, 10-24 x 1/2 pan head	EA	L0C01	.0
124	Screw, 10-24 x 1/2 pan head	EA	L0C03	10000.0
125	Screw, 8-32 x 3/8 pan head	EA	L0C01	.0
126	Screw, 6-32 x 1/2 round head	EA	L0C01	.0
129	Casting, 4in. lamp base	EA	L0C01	.0
132	Rod, upper 18 inch threaded	EA	L0C01	.0
133	Tape, black vinyl 1 inch	FT	L0C01	.0
136	Lamp, 40watt fluorescent	EA	L0C01	.0
137	Lubricant, SAE #12 high speed cutting	GAL	L0C01	.0

Figure 32 – Requirements created by the MRP function are displayed on the Process Purchasing Requirements screen. Here items may be placed on a new Purchase Order, or added to an existing Purchase Order.

- MRP Source drop down menu allows access to the MRP generated from a Schedule, Stock Check, or Buyer's Advice report.
- Shows all items identified by the MPS as needing to be purchased.
- Yellow-highlighted entries have multiple requirements – click Item Detail”

Buy

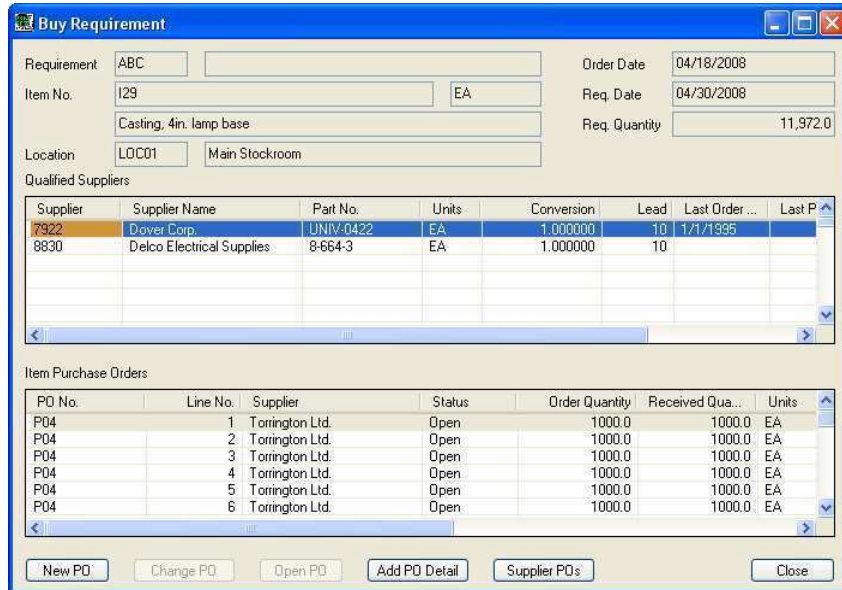


Figure 33 – By selecting an individual item, you can add it to an existing PO, or create a new PO for the item.

- Modify existing PO if item already on order.
- Add to existing PO if not already on order.
- Create new PO if not already on order.

Buy All

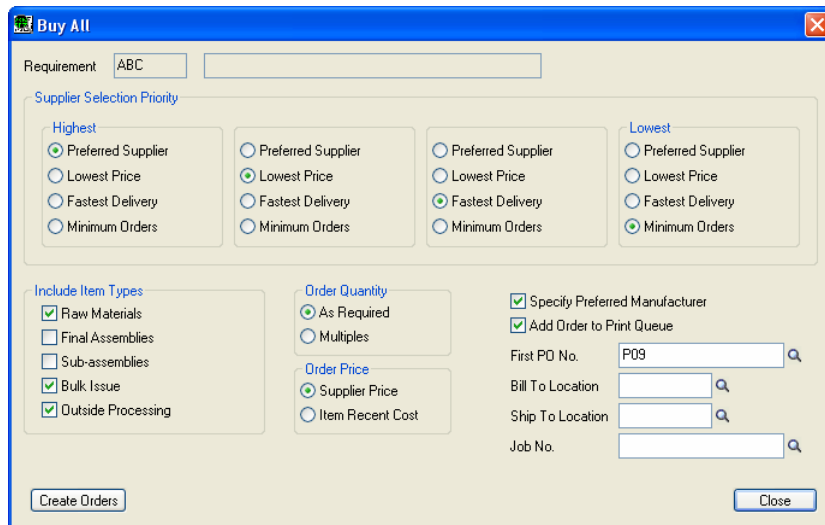


Figure 34 – The **Buy All** button hands over considerable control to the program, but allows you to create all the Purchase Orders necessary to cover existing shortages with the click of a button. First, you specify your desired criteria for selecting among multiple qualified suppliers.

- Hands “decision-making” power over to the software – are you sure you want to?
- Set up Supplier Selection Criteria
- Print optional (recommended) PO Audit List

Process Production Requirements

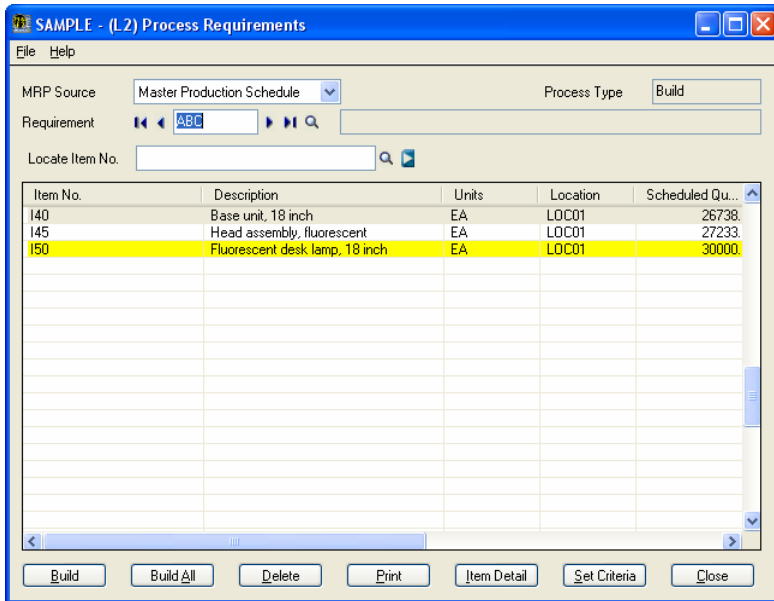


Figure 35 – Shortages of assembled Items are displayed on the Process Production Requirements screen. Selecting an Item and clicking the **Build** button creates a released Manufacturing Order for the Item.

- MRP Source drop down menu allows access to the MRP generated from a Schedule or Stock Check.
- Shows all items identified by the MPS as needing to be built.
- Yellow-highlighted entries have multiple requirements – click Item Detail”

Build

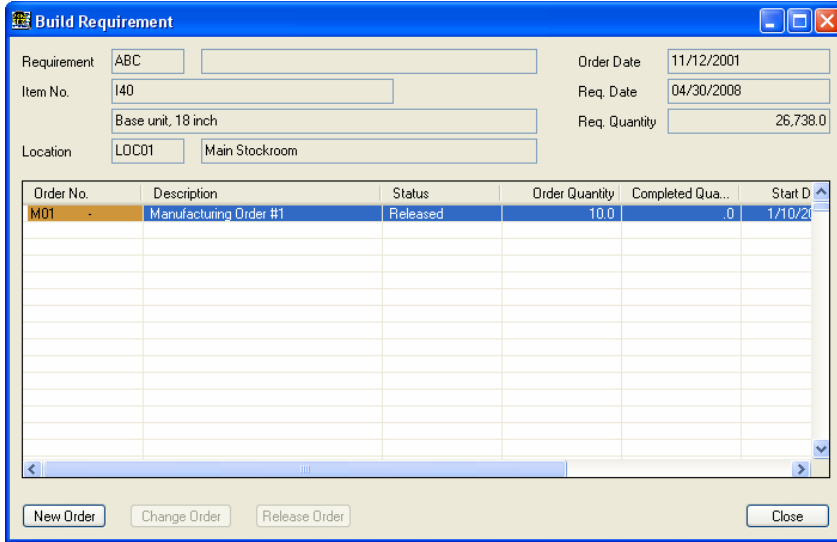


Figure 36 – Selecting an assembled Item and clicking the **Build** button reveals a list of Manufacturing Orders for the Item. You can modify an existing MO or create a new MO.

- Increase MO Order Quantity to resolve shortage
- Change Completion Date to resolve shortage

Build All

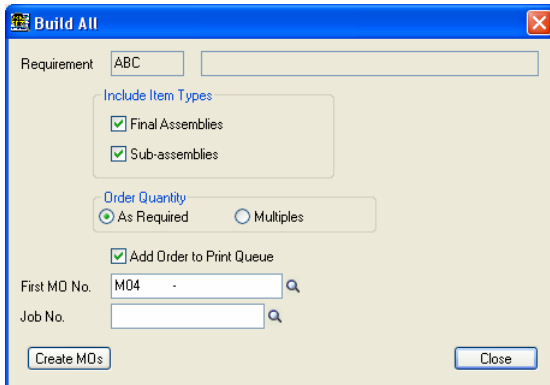


Figure 37 – The **Build All** button automatically creates a Manufacturing Order for each Item.

- As Required builds just enough.
- Multiples builds to next Item Lot Size.

Session 5

Creating an MRP (Part I)

Class Exercise #1

Problem:

The Universal Corporation's Purchasing Department has just returned from a conference on Virgin Gorda and has discovered that some raw materials are running short.

Use MISys to help place the required purchase orders ASAP.

- Setup Master Schedule
- Analyze Master Schedule
- Print Purchasing Advice Report
- Create a Material Requirements Plan
- Process Purchasing Requirements
- Print purchase order (optional)
- Open purchase orders will appear in Master Schedule when next initialized

Class Exercise #2

Scheduled MPS

Problem:

The Universal Corporation's Production Department would like to build 5000 desk lamps to get a jump on the upcoming rush when students return to campus and demand skyrockets.

Use MISys to schedule the required production and create purchase orders and manufacturing orders.

- What to do with Assigned schedule?
- Setup Master Schedule
- Analyze Master Schedule
- Print Purchasing Advice Report
- Create a Material Requirements Plan
- Process Purchasing Requirements
- Print purchase order (optional)

- Open purchase orders will appear in Master Schedule when next initialized
- Process Production Requirements
- Print manufacturing order (optional)
- Open manufacturing orders will appear in Master Schedule when next initialized

Session 6

Creating an MRP (Part II)

Class Exercise #3 - Future MPS

Problem:

The Universal Corporation's Sales Department has taken orders for various items on which the factory can begin work. This will require the cooperation of Purchasing and Production to meet the required customer ship dates.

Use MISys to schedule the required production and place the necessary purchase orders and manufacturing orders.

- What to do with Assigned schedule?
- Setup Master Schedule
- Create Scheduling Batch
- Retrieve sales orders into scheduling batch
- Analyze Master Schedule
- Print Purchasing Advice Report
- Create a Material Requirements Plan
- Process Purchasing Requirements
- Print purchase order (optional)
- Open purchase orders will appear in Master Schedule when next initialized
- Process Production Requirements
- Print manufacturing orders (optional)
- Open manufacturing orders will appear in Master Schedule when next initialized

Class Exercise #4 - Dream MPS

Problem:

The Universal Corporation's Sales Manager, in an effort to secure a juicy raise, has convinced the President that he can sell 5,000 I50 desk lamps each quarter next year. Right! The President knows he'll have to go to the bank for the cash required to support this production. How much should he ask for and when?

Use MISys to schedule the required production and produce a cash commitment plan he can have ready for the bankers.

- What to do with Assigned schedule?
- Setup Master Schedule
- Create Scheduling Batch
- Analyze Master Schedule
- Print Cash Commitment Summary

Scheduling Reports

Purchasing advice report

- Shows what to purchase - and when
- Purchase cash commitments
- Supplier availability

Production advice report

- Shows what you need to produce - and when

Master schedule - all periods

- Shows results of master scheduling for all periods

Master schedule - active periods

- Shows master scheduling for active periods only

Master schedule - summary

- Shows master scheduling with net figure per item

Audit list

- Shows how material requirements were derived for all items in range

Purging a Scheduling Database

- Use to re-initialize a master schedule
- Does not delete schedule setup
- Must have schedule assigned to purge
- Does not affect anyone's scheduling batches
- Must manually delete unwanted batches

Deleting a Scheduling Database

- Frees disk space when scheduling session is complete
- Not uncommon to use 10-50+ megabytes
- Must have schedule assigned to delete
- Does not affect anyone's scheduling batches
- Must manually delete unwanted batches

Session 7

Shop Floor Control Setup

Objectives of Level 3

- To extend the functionality of the MISys Manufacturing System for users who now need, or plan to grow into, full MRPII capabilities.

Introduction to Shop Floor Control

- The 3rd Level of MISys Manufacturing
- Important growth path for MISys users
- Introduced with version 3.1A (about October 1, 1998)
- Test Drive copy of Level 3 included with every system
- Will time out after being used for a while (several months?)
- Activated permanently by MISys Business Partner whose name etc. appears on Activation screen.
- Must be using Level 2 for Level 3 to make sense.

Tools

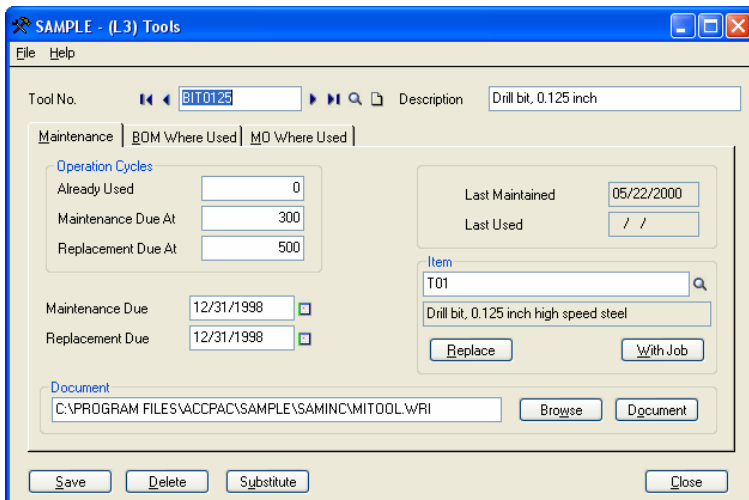


Figure 38 – Tools are an optional part of MISys Level 3. When Tools are added to the Routing details of a Bill of Material (and ultimately a Manufacturing Order) MISys keeps track of the number of times the Tool is used. A Tool Maintenance Schedule alerts you to Tools that need maintenance or replacement.

- Optional, but most companies maintain Tools
- Useful Tool usage monitoring
- Track Tool maintenance situations (by use or date)
- Track Tool replacement situations (by use or date)
- Tools get added to BOMs and Mfg. Orders
- Attached document
- Convenient place to record notes about Tool.
- Substitute changes all BOMs and MOs

BOM Where Used

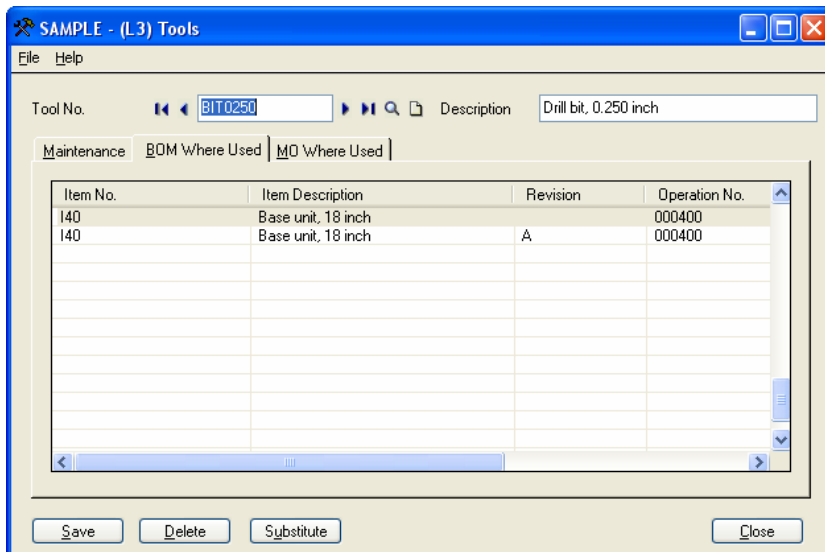


Figure 39 – The BOM Where Used tab shows all the Bills of Material on which the selected Tool appears. A **Substitute** button substitutes a Tool of your choice in all Bills of Material.

- BOM Used tab shows which BOMs use this Tool.
- Cannot Delete Tool if it in use on BOM.

MO Where Used

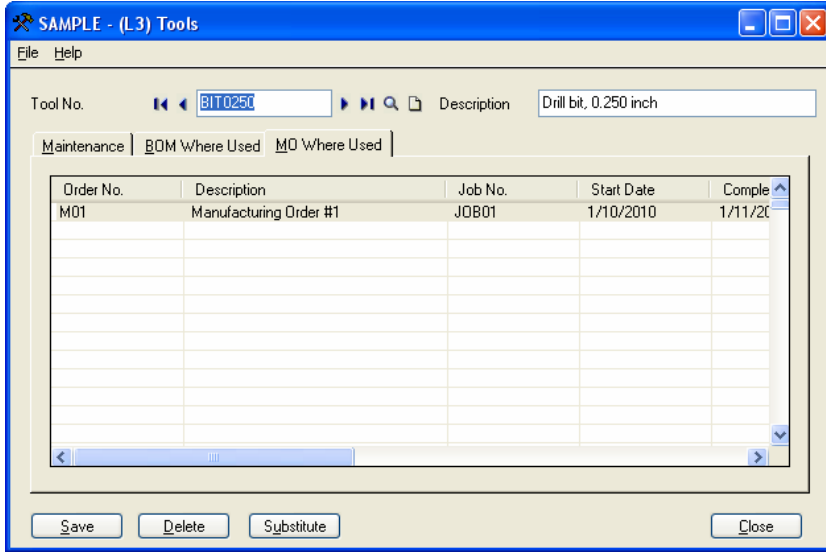


Figure 40 - The MO Where Used tab shows all the Manufacturing Orders on which the selected Tool appears. A **Substitute** button substitutes a Tool of your choice in all Manufacturing Orders.

- MO Used tab shows which MOs use this Tool.
- Cannot Delete Tool if it in use on MO.

Work Centers

- Establish areas where manufacturing process occurs together with the Resources they require.

Work Center Header

The screenshot shows the 'SAMPLE - (L3) Work Centers' application window. The 'Header' tab is selected, displaying various time and rate parameters. The 'Rates' section is a table with three rows: Labor, Material, and Overhead, each with values for /Hour and /Unit. The 'Document' field is populated with a file path. The bottom of the window contains several action buttons.

Cycle Time		Setup Time		Queue Time		Wait Time		Efficiency	
15.0000	Minutes/unit	3.0000	Minutes	1.0000	Minutes	5.0000	Minutes	100.00	%

Rates		
	/Hour	/Unit
Labor	16.500	0.000
Material	0.000	0.000
Overhead	0.000	0.000

Document: C:\PROGRAM FILES\ACCPAC\SAMPLE\SAMINC\MIWKCTR.WRI

Figure 41 – The Work Center Header tab defines the rate that the Work Center can operate. This information, combined with the Routing details in a BOM or MO, is used to calculate projected production rates.

Cycle time

- The number of minutes required to process one (1) unit. For example, 4.0 minutes to drill a hole.
- Used as the default value for BOM Routing.

Setup time

The number of minutes required to setup this Work Center before work can begin (consumes Work Center resources). For example, to lubricate the gears.

- Used as the default value for BOM Routing.

Queue time

- The number of minutes required to queue this Work Center before work can begin (DOES NOT consume Work Center resources). For example, to gather required materials, or delay time before work actually gets started.
- Used as the default value for BOM Routing.

Wait time

- The number of minutes required before Work Center can be used again. For example, to let machine cool and wipe down, glue to set, or paint to dry.

- Used as the default value for BOM Routing.

Attached document

- Convenient place to record notes about use and maintenance of this Work Center.

Labor Rate

- Calculated field: Sum of Labor type Resources (Quantity per Hour x Standard Cost)

Overhead

- Calculated field: Sum of Overhead type Resources (Quantity per Hour x Standard Cost)

Efficiency

- Saved in MISys database but no present function.

Work Shifts

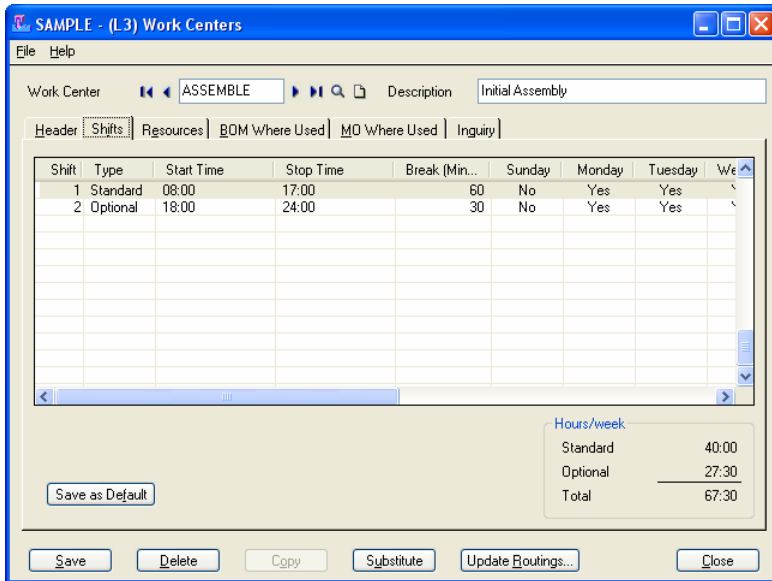


Figure 42– The Shifts tab defines the days and hours any Work Center is open for business. This information, combined with the Work Calendar, is used to calculate Manufacturing Order completion dates.

- Unlimited number of shifts per week.

Standard shifts

- Specify times when this Work Center is available.

Optional shifts

- Specify times when this Work Center may be optionally called for.

Save As Default

- Saves current Work Center Shifts as default for entering additional Work Centers.
- Great time/work saver!

Resources

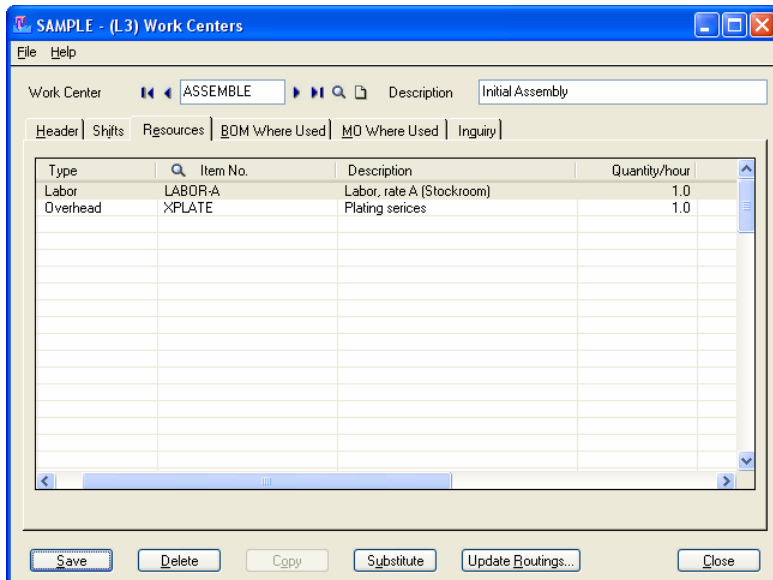


Figure 43 – The Resources tab lists an unlimited number of material, labor, and overhead components that are required to operate the Work Center. This information, combined with MO Routing details, is used to calculate projected and actual production costs.

- Facility for carrying additional costs related to a Work Center.
- In general, replaces old scheme of adding resources to the Bill of Material.
- No automatic conversion of BOMs.
- Enter either Quantity per Hour or Quantity per Unit (not both).

Material

- Additional material not on BOM but required at this Work Center.

Labor

- Additional labor not on BOM but required at this Work Center.

Overhead

- Additional overhead not on BOM but required at this Work Center.
- Accounting for Overhead done via the Overhead Item's Account Set or Segment.

BOM Where Used

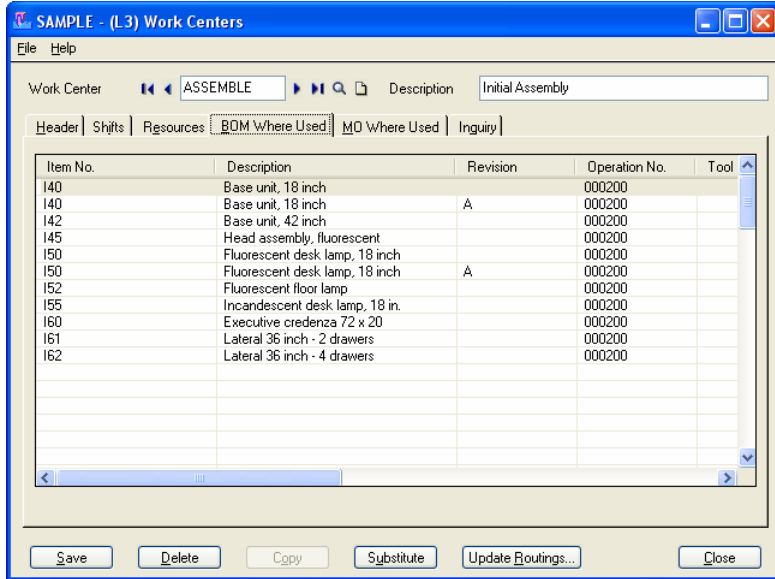


Figure 44 – A click of the BOM Where Used tab shows all the Bills of Material in which the selected Work Center appears.

- Shows Bills of Material where this Work Center is used.
- Cannot delete a Work Center that is used in any BOM.

Mo Where Used

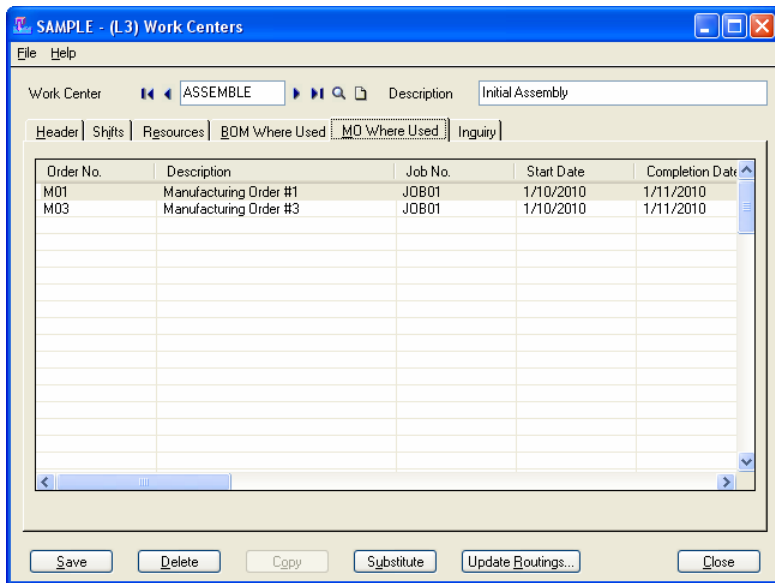


Figure 45 – The MO Where Used tab reveals all the Manufacturing Orders using the selected Work Center.

- Shows Manufacturing Orders where this Work Center is used.
- Cannot delete a Work Center that is used in any MO.

Work Center Inquiry

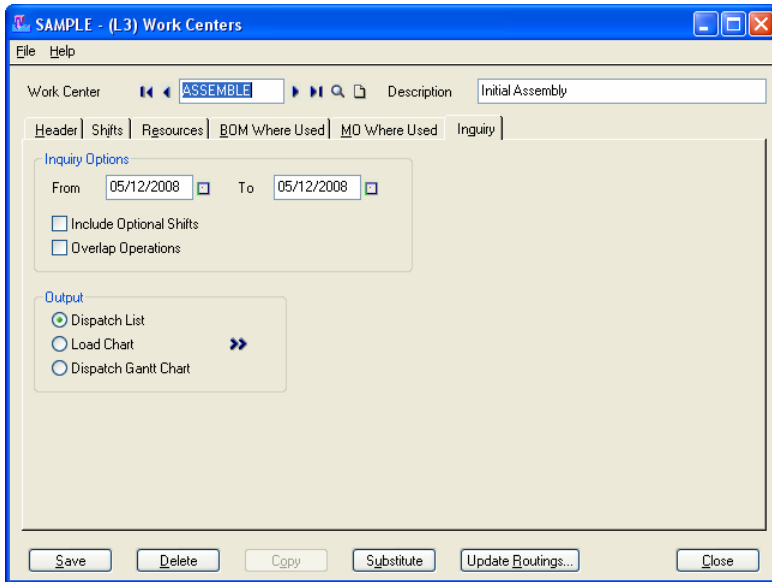


Figure 46 – The Inquiry tab produces either a Dispatch List/Gantt Chart or a Load Chart for the selected Work Center.

Load Graph

- Shows Work Center loading for selected date range,

Dispatch List

- Shows Operations that need to be performed at this Work Center, sorted by Date.
- Urgent Manufacturing Orders highlighted in red.

Dispatch Gantt Chart

- Shows when and where the selected Work Center is in use.

Session 8

Maintaining BOM Routings

Header Tab

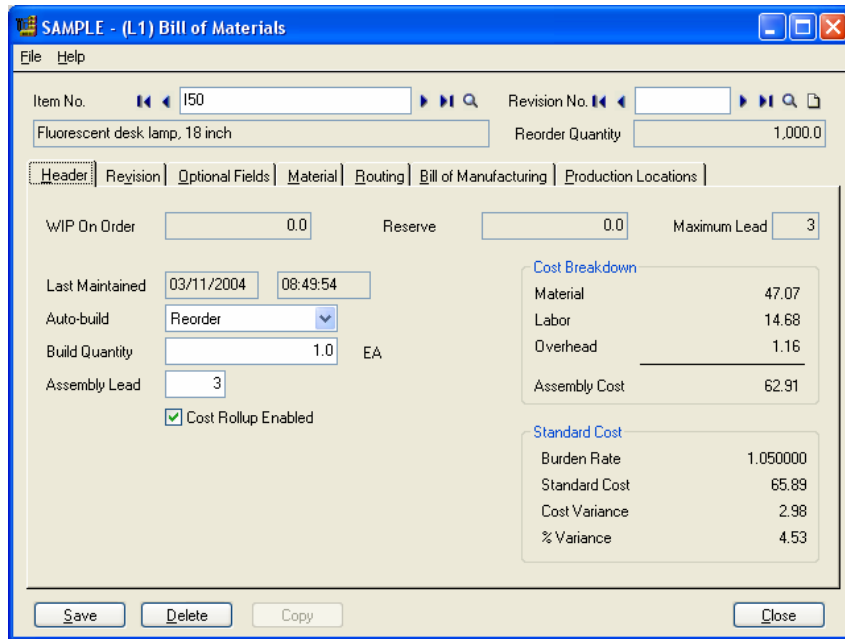


Figure 47 – BOM Routing details establish the Material, Labor, and Overhead costs of an assembled item.

- Assembly Cost broken out into Material, Labor, and Overhead components.
- Material derived from sum of BOM Materials and Material Type Work Center Resources.
- Labor derived from Labor Type Work Center Resources.
- Overhead derived from Overhead Type Work Center Resources.

Materials Tab

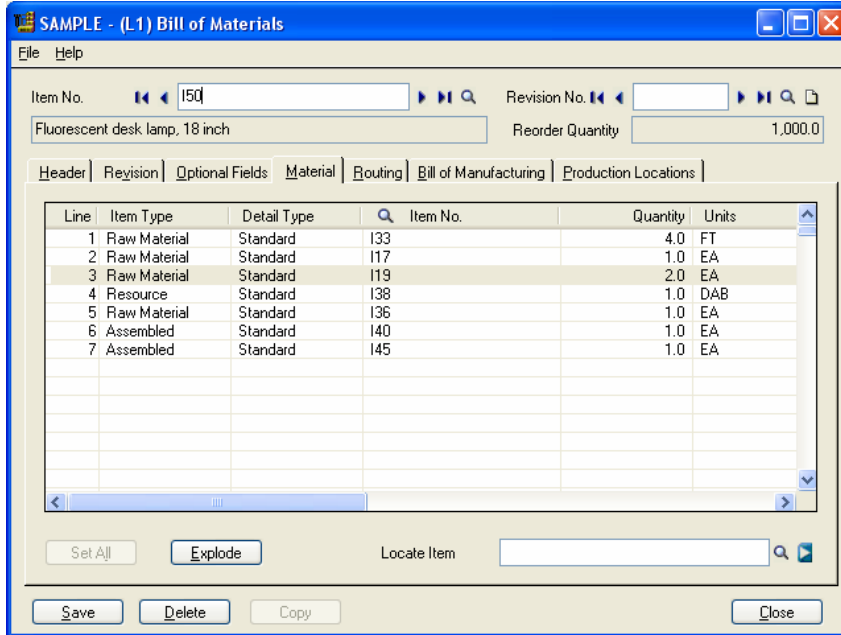


Figure 48 – BOM Routing details are linked to corresponding Material details in the Operation field.

- Operation field added to Materials container.
- Shows the Work Center Operation associated with a material detail.
- Blank Operation indicates material not required until last Operation.

Set All Button

- Sets all material details to the selected Operation.

Routing Tab

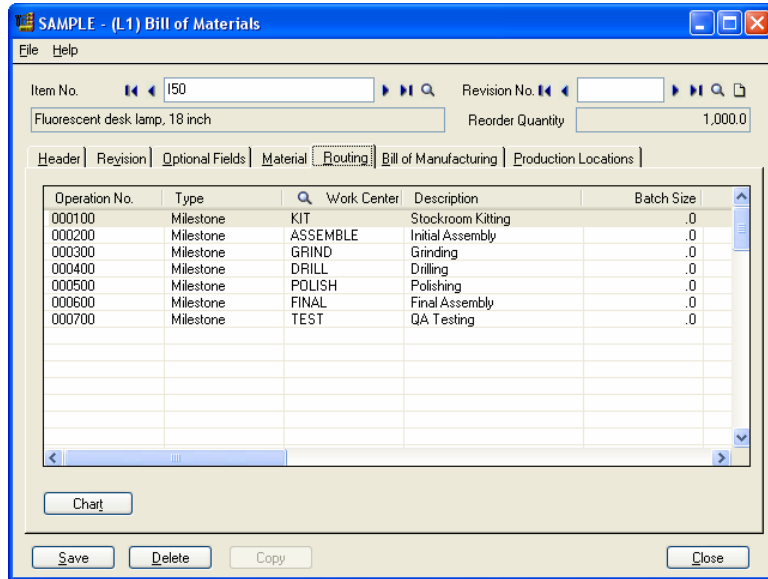


Figure 49 – BOM Routing details define production steps that are required to complete an item.

- Defines Work Centers required by this BOM and the order in which they are used.
- MISys automatically defaults Operation Number but may be over-written. Renumbering occurs automatically.

Batch Size

- The quantity of this Item normally processed by this Work Center in one (1) batch. May be set to zero (0).
- Defaults to the Re-order Quantity for the finished good Item. May be changed for this particular BOM as necessary.
- Used to determine how many times to apply Setup time and establish BOM costs.
- If Batch Size is set to 0, MISys will apply the Setup Time once regardless of the quantity that are Completed, whereas if the Batch Size were set to 1, the Setup Time would be applied once per unit Completed (regardless of the quantity Completed at a time).

Unit Run

- The number of minutes required to perform (Cycle) this operation.
- Defaults to the Unit Run time for the associated Work Center. May be changed for this particular BOM as necessary.

Extended Run

- The number of hours required to perform (Cycle) this operation for the indicated Reorder Quantity.

- Defaults to the Unit Run time for the associated Work Center times the default Reorder Quantity. May be changed for this particular BOM as necessary.

Setup

- The number of minutes required to set up this operation.
- Defaults to the Setup time for the associated Work Center. May be changed for this particular BOM as necessary.

Queue

- The number of minutes required to queue this operation.
- Defaults to the Queue time for the associated Work Center. May be changed for this particular BOM as necessary.
- No Work Center Resources are consumed.

Wait

- The number of minutes required to wait after this operation.
- Defaults to the Wait time for the associated Work Center. May be changed for this particular BOM as necessary.
- No Work Center Resources are consumed.

Total

- Calculated field: Reorder Quantity divided by Batch Size (rounded up to the nearest whole number) + Extended Run Time + Wait Time + Queue Time.
- $(\text{int}(\text{Reorder} / \text{Batch Size}) + 1)(S) + (R)(\text{Reorder}) + Q + W$

Overlap

- Indicates whether this Operation can be started before the previous Operation is completed.
- Quantity Started cannot exceed quantity Completed in the previous Operation.

Tool No.

- Tool required for this Operation.
- Must be blank or a valid Tool Number selectable from the Finder.

Milestone

- Indicates that a sufficient number of units must be Completed at this step before proceeding to the next one.

- If there is a number of Route consecutive Operations with the Type field set to Normal then they can be Completed in any order. If the Type field is set to Milestone, they must be Completed in sequence.

Bill of Manufacturing Tab

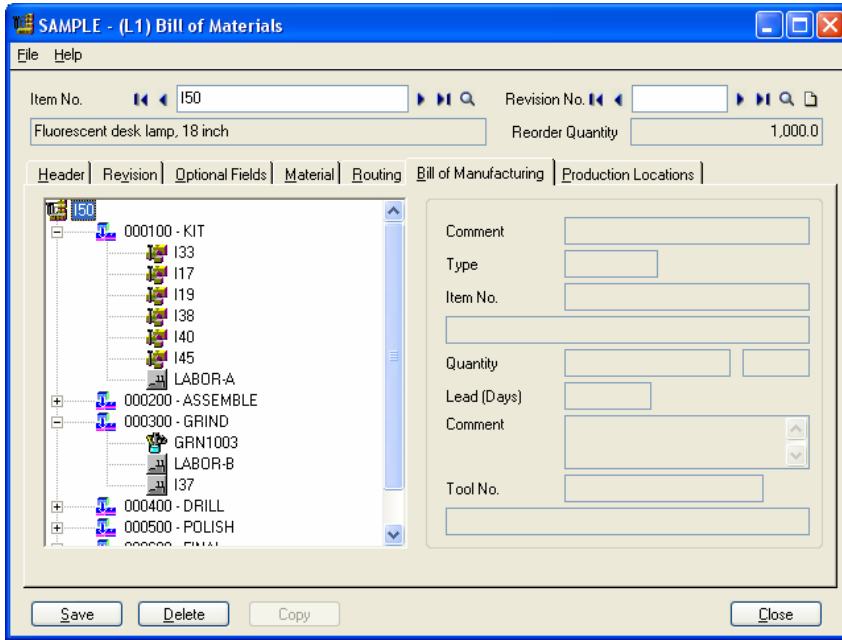


Figure 50 – Bill of Manufacturing shows the entire product structure in an exploded tree view.

- Integrates BOM Material details with Routings.
- Shows Material details by Operation.
- Material details with no associated Operation appear last.

Session 9

Recording Shop Operations

Creating Manufacturing Orders

- Clones an existing BOM with Materials and Routings.
- Extends quantities of components and times by Build Quantity.

Header Tab

The screenshot shows the 'SAMPLE - (L2) Manufacturing Orders' window. The 'Header' tab is active, displaying various fields for a Manufacturing Order. The Order No. is M03, and the Description is 'Manufacturing Order #3'. The Status is 'Inactive, Not Ready' and the Priority is 'Normal'. The Item No. is I50, and the description is 'Fluorescent desk lamp, 18 inch'. The Revision is 'Original Release'. The Created By is 'ADMIN', and the Job No. is 'JOB01'. The Location is 'LOC01'. The Unit Order is 10.0 EA. The Order Date is 01/10/2010, the Start Date is 01/10/2010, and the Completion Date is 01/11/2010. The Last Maintained Released date is 5/9/2008. The Reserved, WIP, Completed, and To Sales quantities are all .0. The Markup is 1.000000. The interface includes a menu bar (File, Help), a toolbar with navigation icons, and a bottom toolbar with buttons for Save, Delete, Copy Order, Release, Start Assembly, Complete, Close Order, Sales Transfer, and Close.

Figure 51 – The Manufacturing Order inherits the Routing details associated with the parent BOM.

Priority Button

- No present function other than reporting but required for Level 4 (Capacity Planning). Dispatch List show urgent MOs in red.

Materials Tab

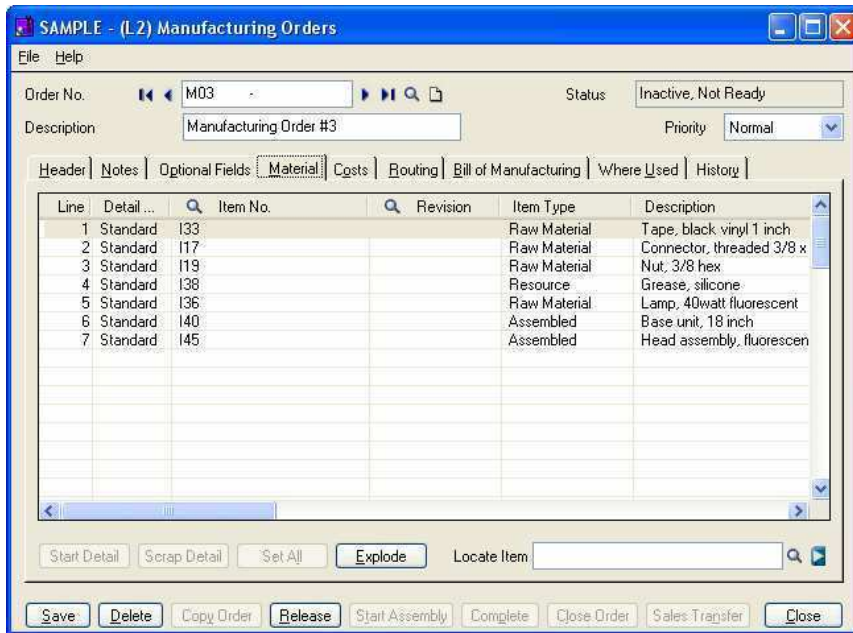


Figure 52 – Like the BOM, the Manufacturing Order’s Routing details are linked to its Material details.

- Operation field shows the Work Center Operation associated with a Material detail.

Set All button

- Sets all Material details to the selected Operation.

Costs Tab

The screenshot shows the 'SAMPLE - (L2) Manufacturing Orders' window with the 'Costs' tab selected. The window title is 'SAMPLE - (L2) Manufacturing Orders'. The menu bar includes 'File' and 'Help'. The 'Order No.' field contains 'M03' and the 'Status' is 'Released, Recorded'. The 'Description' is 'Manufacturing Order #3' and the 'Priority' is 'Normal'. The 'Costs' tab is active, showing a table with columns for 'BOM', 'Projected', 'Used', and 'Actual'. Below this is a 'Cost Variances' table with columns for 'Item Cost', 'Projected', 'Used', 'Actual', and 'Quote'. At the bottom, there are buttons for 'Save', 'Delete', 'Copy Order', 'Release', 'Start Assembly', 'Complete', 'Close Order', 'Sales Transfer', and 'Close'.

BOM	Projected	Used	Actual
Material 470.70	Material 470.70	Material 282.42	Material
Labor 146.80	Labor 151.53	Labor 92.83	Labor
Overhead 11.55	Overhead 11.91	Overhead 7.29	Overhead
Assembled 629.05	Projected 634.14	Completed 382.54	Completed
- Item Cost 658.88	X Markup 1.0	+ Scrap 0.00	+ Scrap
Variance -29.82	Quote 634.14	Total 382.54	Total

Item Cost	Projected	Used	Actual	Quote
Item Cost 0.00	24.74	276.34	276.34	24.74
Projected -24.74	0.00	251.60	251.60	0.00
Used -276.34	-251.60	0.00	0.00	-251.60
Actual -276.34	-251.60	0.00	0.00	-251.60
Quote -24.74	0.00	251.60	251.60	0.00

Figure 53 – Routing details help detail the Standard, Projected, and Actual assembly costs.

- Breaks out Material, Labor, and Overhead costs.

BOM/Item Cost

- Shows cost based on this Item's BOM (Material and Work Center Resources).

Projected

- Shows cost based on this Manufacturing Order (Material and Work Center Resources). Frozen at Release time.

Used

- Shows cost as used in production based on MO Routing details (Material and Work Center Resources)

Actual

- Shows cost based as used in production by Shop Operations (Material and Work Center Resources)

Routing Tab

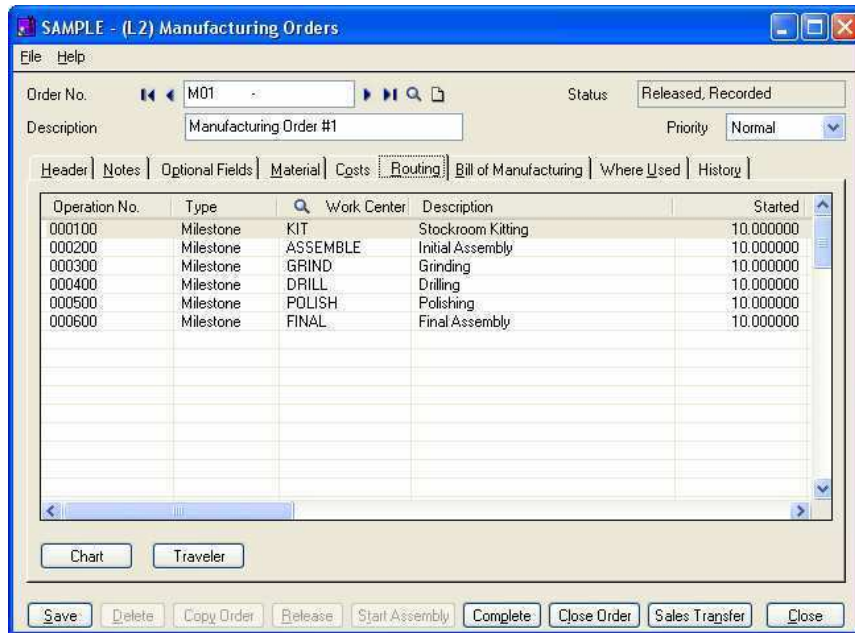


Figure 3 – MO Routing details are inherited from the parent BOM, but may be changed on an order-by-order basis.

- Defines Work Centers required by this Manufacturing Order and the order in which they are used.
- MISys automatically defines default Operation Number. User can over-ride – automatic renumbering when inserting.

Batch Size

- The quantity of this Item normally processed by this Work Center in one (1) batch.
- Determines number of times to apply Setup time.

Unit Run

- The number of minutes required to perform (Cycle) this operation.
- Defaults to the Unit Run time for the associated Work Center. May be changed for this particular Manufacturing Order as necessary.

Extended Run

- The number of hours required to perform (Cycle) this operation for the MO Order Quantity.
- Defaults to the Unit Run time for the associated Work Center times the Manufacturing Order Quantity. May be changed for this particular Manufacturing Order as necessary.

Setup

- The number of minutes required to set up this operation.

- Defaults to the Setup time for the associated Work Center. May be changed for this particular Manufacturing Order as necessary.

Queue

- The number of minutes required to queue this operation.
- Defaults to the Queue time for the associated Work Center. May be changed for this particular Manufacturing Order as necessary.

Wait

- The number of minutes required to wait for this operation.
- Defaults to the Wait time for the associated Work Center. May be changed for this particular Manufacturing Order as necessary.

Total

- Calculated field: Reorder Quantity divided by Batch Size (rounded up to the nearest whole number) + Extended Run Time + Wait Time + Queue Time.
- $(\text{int}(\text{Reorder} / \text{Batch Size}) + 1)(S) + (R)(\text{Reorder}) + Q + W$

Actual Run

- Display only. The number of hours actually spent on this Operation as recorded in Shop Operations function.

Overlap

- Indicates whether this Operation can be started before the previous Operation is completed.
- If Overlap is allowed, the next Operation can begin at the earliest point that it will not exhaust the output from the previous Operation.

Tool No.

- Tool required for this Operation.
- Must be blank or a valid Tool Number selectable from the Finder.

Milestone

- Indicates that a sufficient number of units must be Completed at this step before proceeding to the next one. If there are a number of Route consecutive Operations with the type field set to Normal then they can be Completed in any order. If they have a Type field set to Milestone, then they must be Completed in sequence.

Chart

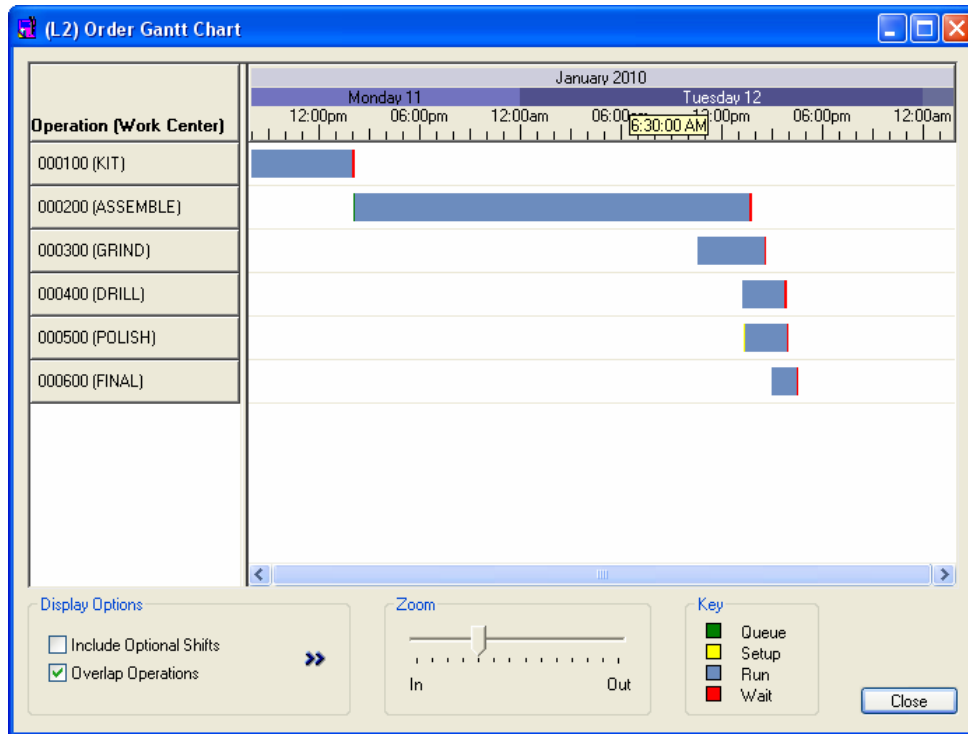


Figure 55 – A graphical view of the Routing details for the selected MO is available at the click of a button.

- Gantt Chart shows Operations for this Manufacturing Order.
- Check Optional Shifts to show effect of utilizing Work Center shifts identified as “optional”.
- Check Overlap to show effect of overlapping Operations.
- Zoom in/out to change view.

Traveler

- Prints form that can be used to guide production on shop floor and record results.

Bill of Manufacturing Tab

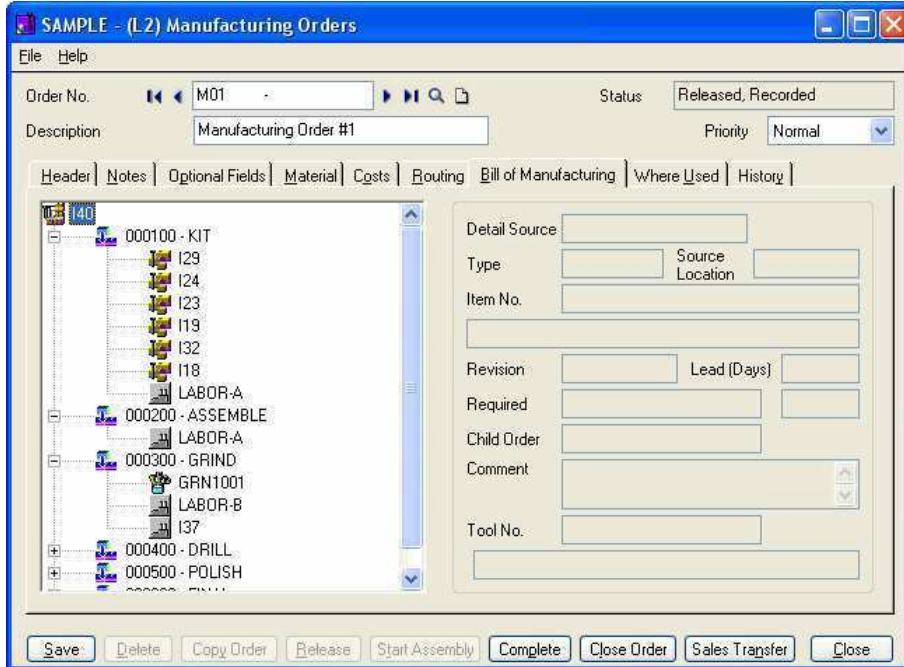


Figure 56 – Like its BOM namesake, the Bill of Manufacturing shows the entire product structure in an exploded tree view.

- Integrates Manufacturing Order Material details with Routings.
- Shows Material details by Operation.
- Material details with no associated Operation appear last.

Shop Operations

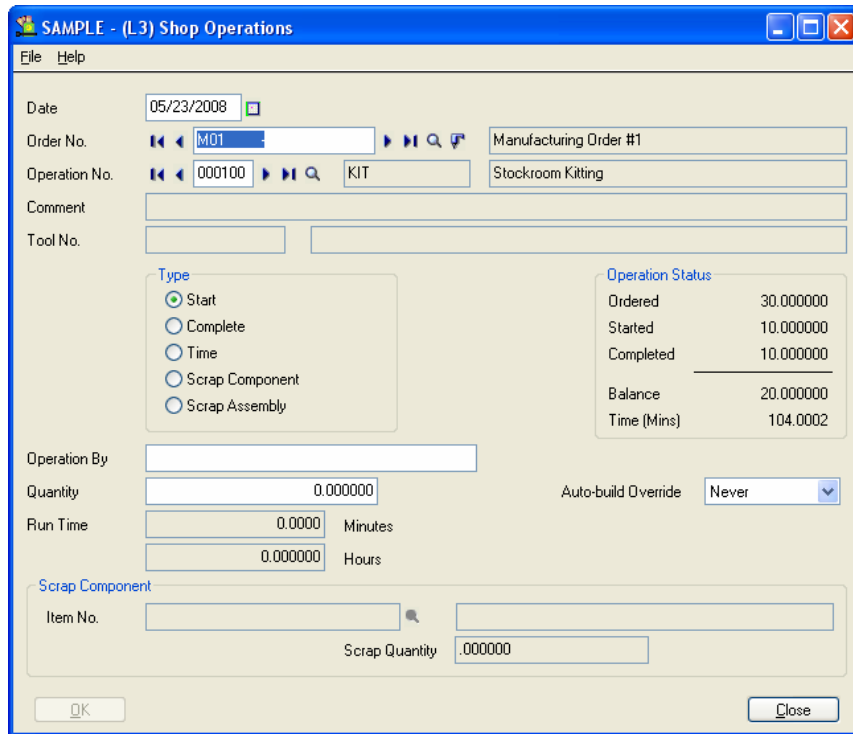


Figure 57 – When MISys Level 3 (Shop Floor Control) is implemented, the Shop Operations entry screen captures data on each Manufacturing Order Operation as they are started and completed. Actual time is used to update the Manufacturing Order and calculate actual production costs.

- Records actual work done on shop floor.
- May wish to set up Security Group of Users who can access Shop Operations only.
- Use Security Levels to create desktop with just Shop Operations icon.
- Drives stock transfers (Stock -> WIP -> Stock).
- DO NOT use Stock Transfer transaction entries with Shop Operations!
- OK to use Manufacturing Order Start/Complete entries with Shop Operations.

Order Number

- Must select a valid, open Manufacturing Order (not Inactive or Closed).

Operation

- Must select a valid Operation (not Completed).

Operation By

- Optional entry of operator’s name

- Saved in Comment field of Master Transaction Log entry.

Start

- Records the start of a selected Operation.
- Moves material associated with Operation into WIP.
- Start of final Operation forces commit of all un-assigned material.

Complete

- Records the completion of a selected Operation.
- Dispenses Resources from specified Work Center.
- Starts material associated with Operation from Stock if no previous Start Operation was entered.
- Records Run Time (minutes) to update actuals on Manufacturing Order.
- On final Operation, in addition to normal consumption of Resources, dispenses all material from WIP and places finished good in Stock.

Time

- Facility for charging additional time against an Operation.
- Use if you forget Run Time entry in Complete Operation.
- Updates Manufacturing Order “actuals”.

Scrap Component

- Facility for scrapping component parts spoiled in production.
- Use Finder to select valid Item numbers.
- Must be Item in MO Materials or Work Center Resource.
- Creates a Write-off transaction at MO Close time.
- Updates Manufacturing Order “actuals”.

Scrap Assembly

- Facility for scrapping assembled Item spoiled in production.
- Use Finder to select valid Item numbers.
- Creates a Write-off transaction at MO Close time.

Production Variance Analysis

Wait (Minutes)	Total (Hours)	Actual Time (Hours)	Overlap	Tool No.	Comment
5.0000	5.116677	5.733337	No		
5.0000	7.650000	2.600000	No		
1.0000	3.066667	5.100000	Yes	GRN1001	
4.0000	2.600000	4.900000	Yes	BIT0250	
1.0000	2.583333	2.933333	Yes	POL0002	
1.0000	1.533333	2.533333	Yes		

Figure 59 – Manufacturing Order records Projected vs. Actuals as a result of direct or batch shop floor operation entries.

BOM Cost

- What cost should be based on un-modified Manufacturing Order (as defined in BOM).

Projected

- What cost should be based on Manufacturing Order at Release time.

Used

- What cost actually was based on consumption of time and material established for the Manufacturing Order plus scrap, plus extra material, labor, and overhead Resources.

Actual

- What cost actually was based on shop floor operation entries of actual time and material posted to the Manufacturing Order plus scrap, plus extra material, labor, and overhead Resources.
- Manufacturing Order Routing tab shows actual (logged) time vs. projected run time.
- Production Profitability Report shows Quote Price vs. Total Actual Cost for a range of Manufacturing Orders.
- Production Performance Report shows Actual Run Time vs. Projected Run Time for a range of Manufacturing Orders.

- Manufacturing Order Material Status Report shows where material is located across all Operations at the current time.

Work Center Load Chart

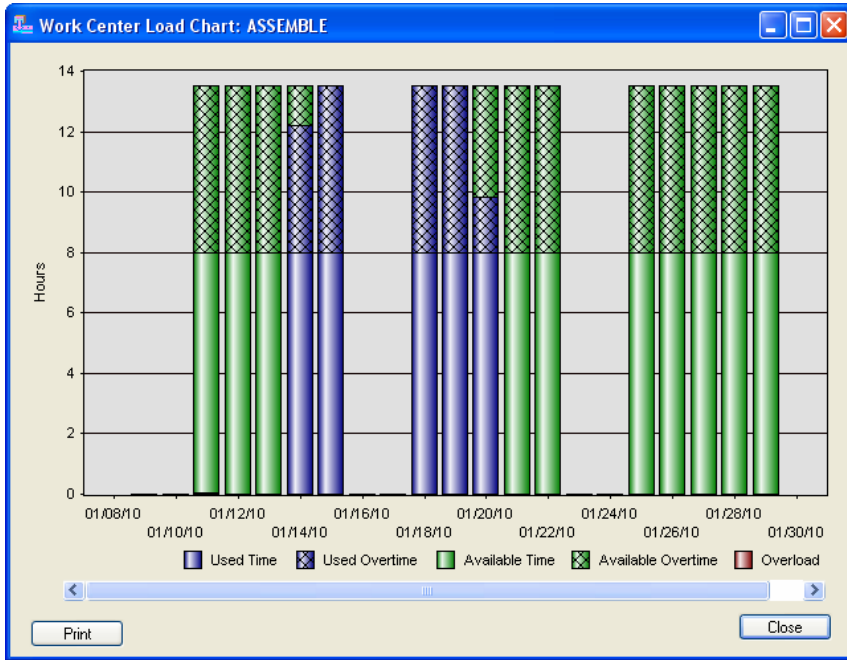


Figure 60 – The Work Center Load Chart displays the amount of available capacity used on a day-by-day basis. Overloads are displayed in red. Click on any bar to display a Load Chart for the selected day.

- Displays load on selected Work Center
- See Overloaded Work Center report for load vs. capacity for a range of Work Centers.