

Article # 1307

Technical Note: Understanding Multi-Step MI Work Order Processing

Difficulty Level: Beginner Level AccountMate User

Version(s) Affected: AccountMate 8 for SQL and Express

Module(s) Affected: MI

Posting Date: 01/18/2012

DESCRIPTION

Manufacturing a complex product may require a series of processing phases. To meet this requirement, AccountMate 8 is enhanced to provide users with the option to set up bills of material in multiple steps. It also enables users to post into work-in-process all the steps in a work order at one time or post the manufacturing components only up to a certain step. This allows users to track a work order or a job as it goes through the different phases of the work-in-process cycle.

Users might also want to know whether there are enough resources to manufacture a product prior to the actual production. This is to determine if they would need to purchase additional materials or appropriate labor or machine resources to process a particular work order. The AccountMate 7 version updates an inventory item component Allocated Quantity at the time a work-in-process is posted. In the older version the information would not be available unless users post the work-in-process. In AccountMate 8, however, the timing of the Allocated Quantity update is changed. AccountMate allocates the quantity of inventory item components required to manufacture a parent item at the time the work order is exploded. This enhancement provides the Allocated Quantity information even before the start of the actual manufacturing process; thereby, providing the relevant information in a timely manner.

The Technical Note discusses the enhancement in the MI work order processing including its effect on inventory quantities.

SOLUTION

The following sections discuss the manufacturing process. The discussions highlight the enhancement for AccountMate 8; starting with the step assignments during bill of material set up until the finished job posting.

- **Setting Up Bill of Materials**

In the **Set Up Bill of Materials** function, you can assign the step for each component. If, for example, the master item#, MASTER_ITEM, will need to go through three (3) manufacturing phases you can designate a step for each phase; such that there will be a total of 3 steps. For each component added in the bill of materials, you can assign the step that corresponds to the manufacturing phase in which the component will be worked. Figure 1 shows the Bill of Materials Report for the master item# MASTER_ITEM. For illustration, we will use the information for this master item in the succeeding discussions.

There are two subassembly items required to manufacture the master item; namely, SUBASSEMBLY_A and SUBASSEMBLY_B. Each subassembly item requires only one manufacturing process so that all its components are assigned step 1.

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Printed By: Supervisor		Bill of Materials Report						
Step	Component #	Description	Setup Time	Teardown Time	Qty / Hour	Quantity	U of M	Est Cost
Parent Item #: MASTER_ITEM(Master Item)								
1	MACHINE_A	Machine A	5:00	5:00	40.00			0.17
1	SUBASSEMBLY_A	Subassembly A				1	Each	0.00
2	ITEM_C	Item C				1	Each	300.00
2	SUBASSEMBLY_B	Subassembly B				1	Each	0.00
3	LABOR_B	Labor to complete the produ	5:00	5:00	1.00			12.25
3	MACHINE_C	Machine C	10:00	20:00	20.00			0.28
Total for MASTER_ITEM:								312.70
Parent Item #: SUBASSEMBLY_A(Subassembly A)								
1	ITEM_A	Item A				1	Each	125.00
1	LABOR_A	Labor for subassembly A	10:00	10:00	6.00			2.63
Total for SUBASSEMBLY_A:								127.63
Parent Item #: SUBASSEMBLY_B(Subassembly B)								
1	ITEM_B	Item B				1	Each	150.00
1	MACHINE_B	Machine B	15:00	5:00	10.00			1.45
Total for SUBASSEMBLY_B:								151.45
Report: 10 Record(s)								

Figure 1 – Bill of Materials Report

- **Creating Work Order**

When creating a work order, you can view the step that has been assigned to a parent item's component in the **Create Work Order Component Line Items** tab (refer to Figure 2). You may amend the assigned step, if necessary. If, for example, to process a particular work order the component inventory item# ITEM_C will be added in phase 3 instead of the original phase 2. In this case, you can amend the step from 2 to 3. For this Technical Note discussion, however, we will keep the original assigned step for component item# ITEM_C which is 2.

The screenshot shows the 'Create Work Order' application window. The 'Component Line Items' tab is active. On the left, a table lists components: Step 1 MACHINE_A, Step 2 ITEM_C (selected), Step 3 LABOR_B, and Step 3 MACHINE_C. On the right, fields for the selected component 'ITEM_C' are displayed: Step 2, Type Inventory, Component # ITEM_C, Component Desc Item C, Work Shift, Setup Time 0:00:00, Teardown Time 0:00:00, Mfg Qty 1, Allocated Qty 1, Used Qty 0, Master Item # MASTER_ITEM, Master Item Desc Master Item, Parent Item # ITEM_C, Parent Item Desc Item C, and Class BOOKCASE. At the bottom are 'Add' and 'Delete' buttons.

Figure 2 – Create Work Order Component Line Items tab

- **Exploding Work Order**

When a work order is exploded, AccountMate will allocate the quantities of the inventory item components required to manufacture the parent items. To illustrate, let us use the information shown in Figure 2. The **Explode this Work Order** checkbox is marked in the **Create Work Order Information** tab; thus, AccountMate updates the **Allocated Qty** field in the **Component Line Items** tab. For component item# ITEM_C the field displays a value of 1 because to manufacture 1 quantity of master item# MASTER_ITEM requires only 1 unit of the component item# ITEM_C only.

When you save the work order, AccountMate updates the inventory quantities in the components' item record. The following table shows the running balance of component item# ITEM_C; since it already has an Allocated Quantity value of 1, saving the work order increases the Allocated Quantity to 2. Note that the Available Quantity is further decreased by one more unit as well.

Component item#: ITEM_C	On-hand Qty	Allocated Qty	Available Qty
Beg. balance (<i>before work order</i>)	25	1	24
Explode work order# 100010	25	2	23

In the generated **Projected Material Requirement Report** (refer to Figure 3) the **Qty Req** column displays the allocated quantity for each job number in a work order.

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Projected Material Requirement Report

<u>WO#</u>	<u>Job#</u>	<u>OrdDate</u>	<u>ReqDate</u>	<u>Mfg Qty</u>	<u>Comp WIP Qty</u>	<u>Qty Used</u>	<u>Qty Req</u>	<u>Net Qty</u>
Item#: ITEM_A (Item A)						Available:	20	
100009	1000000011	02/18/2011	02/18/2011	1	0	0	1	19.00
100010	1000000014	02/15/2011	02/15/2011	1	0	0	1	18.00
ITEM_A: 2 Record(s)				Total for ITEM_A:	2	0	0	2
Item#: ITEM_B (Item B)						Available:	18	
100009	1000000012	02/18/2011	02/18/2011	1	0	0	1	17.00
100010	1000000015	02/15/2011	02/15/2011	1	0	0	1	16.00
ITEM_B: 2 Record(s)				Total for ITEM_B:	2	0	0	2
Item#: ITEM_C (Item C)						Available:	25	
100009	1000000010	02/18/2011	02/18/2011	1	0	0	1	24.00
100010	1000000013	02/15/2011	02/15/2011	1	0	0	1	23.00
ITEM_C: 2 Record(s)				Total for ITEM_C:	2	0	0	2
Report: 6 Record(s)								

Figure 3 – Projected Material Requirement Report after Creating and Exploding Work Order

- **Posting Work-In-Process**

When posting work-in-process (WIP) you have the option to select up to which step to post WIP. To discuss this new feature, we will use the **By WO#** option when posting WIP for WO# 100010. The following screenshot (refer to Figure 4) shows that no WIP has been posted yet for the work order because the **Current Step** field displays zero (0) and you can select up to step 3 in the **Post WIP up to Step** drop down list.

Post Work-In-Process

Save Void Copy Clear Close

By WO # Work Order # 100010 Job # 1000000013

Information Line Items

Current Step 0 Parent Item # MASTER_ITEM

Post WIP up to Step 3 Description Master Item

Level	Step	Item	Type	Bin	Used Qty	Mfg Time	Up Time	On Time	Work Shift	Description
2	1	MACHINE_C	M		0.0000	0:02	5:00	5:00		Machine A
2	1	SUBASSEMBLY_A	I		1.0000	0:00	0:00	0:00		Subassembly A
2	2	ITEM_C	I	MASTER	1.0000	0:00	0:00	0:00		Item C
2	2	SUBASSEMBLY_B	I		1.0000	0:00	0:00	0:00		Subassembly B
2	3	LABOR_B	L		0.0000	1:00	5:00	5:00		Labor to complete
2	3	MACHINE_C	M		0.0000	0:03	10:00	20:00		Machine C
3	1	ITEM_A	I	MASTER	1.0000	0:00	0:00	0:00		Item A
3	1	LABOR_A	L		0.0000	0:10	10:00	10:00		Labor for subasse
3	1	ITEM_B	I	MASTER	1.0000	0:00	0:00	0:00		Item B
3	1	MACHINE_B	M		0.0000	0:06	15:00	5:00		Machine B

Parent Instruction

Figure 4 – Post Work-In-Process By WO#

When you post WIP up to step 2, the next time you access the function the **Current Step** field will display 2 to indicate the latest step that has been posted to WIP and in the **Post WIP up to Step** field, the only option left is step 3 (the last phase). Note that since you posted WIP up to step 2, AccountMate also include step 1 when it posted the WIP.

Posting a work-in-process increases the parent item's In-process Quantity. It will, however, only affect the parent item for which work-in-process has been posted. In the example, since WIP is posted up to step 2 AccountMate updates the In-process Quantity for the parent item# SUBASSEMBLY_A, SUBASSEMBLY_B and MASTER_ITEM. If a parent item requires multiple steps to process, AccountMate will update its In-process Quantity as long as at least one step is posted to WIP.

It also updates the component item inventory quantities. Using component item# ITEM_C again as an example, AccountMate reduces the On-Hand Qty and Allocated Quantity by the number of units posted to WIP (refer to the following table).

Component item #: ITEM_C	On-hand Qty	Allocated Qty	Available Qty
Beg. balance (before work order)	25	1	24
Explode work order# 100010	25	2	23
Post work-in-process (WO#100010)	24	1	23

If you post WIP by **Entire WO#**, AccountMate will post the work-in-process at one time for the entered work order (i.e., the WIP will be posted up to step 3).

The **By Job#** option, on the other hand, allows you to post the work-in-process for the entered job order number up to a certain step. Using the example, if you post WIP for job# 1000000011 (parent item# SUBASSEMBLY_A) you only have the option to post WIP for step 1; that is, because the subassembly only requires one phase to manufacture.

- **Posting Finished Job**

There are no interface changes for the **Post Finished Job** function. In addition, if in the **MI Module Setup General (1)** tab the **Require WIP for Finished Jobs** checkbox is unmarked, there is no change in the existing behavior (i.e., posting a finished job will post all the assigned steps for the specified parent or master item at one time). This is also the behavior in the AccountMate 7 version.

If, however, the **Require WIP for Finished Jobs** checkbox is marked, AccountMate will not allow posting of a finished job unless the work-in-process for the specified parent or master item has been posted up to the last assigned step. Otherwise, it will display the message in Figure 5 or 6.

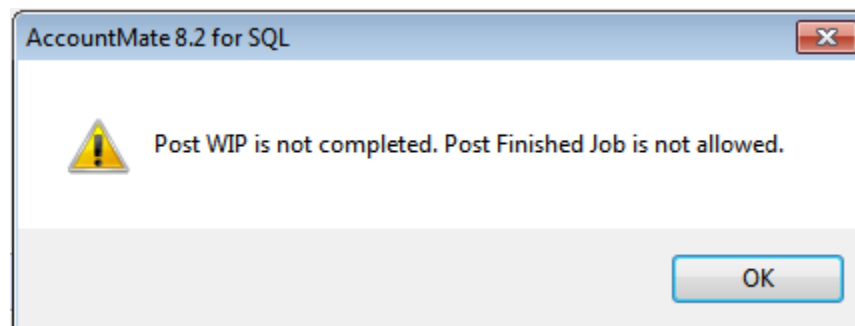


Figure 5 - Message shown if Post Finished Job is By WO#

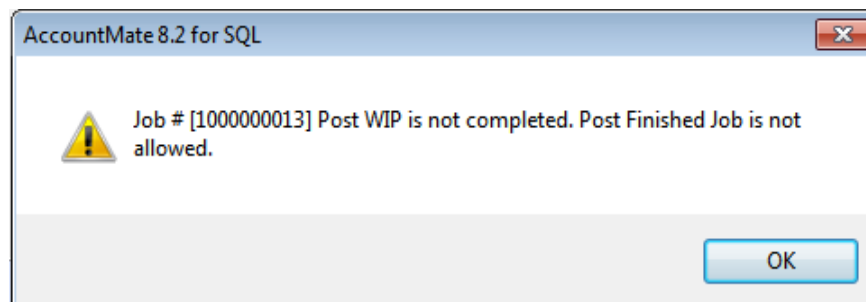


Figure 6 – Message shown if Post Finished Job is By Job#

The information in the Technical Note provides users with useful information about the multi-step work order processing. Having a better understanding of the feature helps users fully utilize the benefits of posting work-in-process by step. In addition, the Technical Note also discusses the changes in how AccountMate updates the parent and component item inventory quantities.

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