

# Bill of Materials

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# Bill of Materials

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The Bill of Materials application enables you to track inventory for manufactured items and their components and generate reports for management, such as Materials Where Used and Stock Availability Reports.

Bill of Materials stores information about manufactured items in assembly records. Assembly records link together the finished goods item master of manufactured items with the Inventory component item records. Assembly records enable you to track and update items for the manufactured item, as well as all of its components using a single Bill of Materials transaction. The verification process assures that all the assembly items and components maintain their integrity for accurate processing.

- ✓ The first step is to define both the manufactured items and components with an item master ID. Within the master, you must identify the finished good with **Yes** for the **Manufactured** field value and decide if the quantities should be controlled for the components and/or finished goods.
- ✓ The second step is to define and verify the assembly to be manufactured. An assembly associates the record of the manufactured item with the records of its components. You can also define subassemblies and include them as components of an assembly.

When products are manufactured (for stock) or when a built item is sold (customer order), an **Allocated stock** transaction is entered in the Bill of Materials application. This identifies the finished good item(s) as being manufactured and *On order*, and the component items as *Allocated*. Should there be a change in stock quantity or the order fall through, the transaction is simply marked and posted with a **Deallocate stock** status. Unlike most Down To Earth applications, the **Allocated** transaction remains in the transaction file (is not cleared) waiting for an update on the status when the built item is completed, sometime in the future. This transaction and the component information of the assembly is kept in a special holding file (*bmhold.ism*).

When the manufactured item is complete, the same transaction that was previously allocated is changed to the status of **Update stock** and posted again. Now if the components quantities are controlled, their quantities on hand and allocated are decreased.

While manufacturing the item(s), the costs of components can change. The costs of an item that is considered “in progress” (in the *bmhold.ism* file) can also be updated. At any time, change the status of the transaction to **Update costs** and post to reflect the new costs. The update (cost) process is also automatically calculated when the transaction status is changed to **Update stock**, and posted. For any Finished product, a **Update cost** transaction can be entered and posted with no other status update to insure accurate costs in the future.

The Bill of Materials application requires that you install the Down To Earth Inventory application and define Inventory item records for all items you manufacture, as well as for all components used to build those items.



# 1 Getting Started

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Select “Bill of Materials” from the Inventory Control menu column to display the Bill of Materials main menu. From this menu, perform the following functions in the order specified below:

1. Set up your company for Bill of Materials to determine whether transactions should be saved in the Bill of Materials detail and transaction history files. Refer to the section, “Setting up your company,” for more information.
2. If you have not defined each item and each component of the items you manufacture using the Inventory, Order Entry, or Purchase Order application, define them in Bill of Materials. Refer to the section, “Defining inventory items” in the Bill of Materials manual for a brief overview or “Maintaining inventory item records” in your Inventory manual for complete detailed field descriptions.
3. Define an assembly for each item you manufacture using the “Assembly” function from the Maintenance menu column. For each assembly you will define the assembly date, the labor cost to build the assembly and all of its components, if the assembly will be used to manufacture another larger item, if any other items must first be assembled, and the components required to build the assembly. For each component of the assembly, you will need to know its item ID code, the number of selling units required in the assembly, and its shrinkage factor. See the section, “Defining assemblies” for more details.
4. Verify each assembly and the components contained therein that were defined in step 3 above. Follow the instructions in the section, “Verifying assemblies.”
5. Optional. Enter all assemblies in progress as allocated following the instructions in the section “Entering transactions.” (This step is optional and is only necessary if you have counted your work in process inventory and want to show the component parts as allocated.)

## 2 The Maintenance Menu Column

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The Maintenance menu column enables you to define and maintain the records needed to process Bill of Materials transactions. It contains entries that enable you to

- Define and verify assemblies
- Replace a component item in all affected assemblies
- Copy a standard assembly to create several similar assemblies
- Define or modify inventory items
- Set up your company to determine how Bill of Materials transactions will be processed

### 2.1 Defining assemblies

---

An assembly or subassembly associates the record of a manufactured item with the records of its components. This, in turn, enables you to enter a single Bill of Materials transaction that updates a manufactured item's master record as well as the item records of its components.

Before you can enter a Bill of Materials transaction for a manufactured item, you must define and verify an assembly for that item, any subassemblies needed, and list all the components therein. A subassembly is a component of a manufactured item that must first be built.

Prior defining an assembly or subassembly, however, you must define the manufactured item master(s) and all of its components using the "Items" function from the Maintenance menu column of either Inventory, Bill of Materials or Order Entry applications. Please refer to the section, "Defining inventory items" in the Bill of Materials manual for a brief overview or "Maintaining inventory item records" in your Inventory manual for complete detailed field descriptions.



NOTE: The manufactured item and all of its components must be defined for and stored in the same inventory location within a single company.

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In addition to defining the required item records, you will also need some basic information about your assemblies before you can define them. You will need to know

- ✓ The date of the assembly's design specification
- ✓ The labor cost to build the assembly and all of its components
- ✓ Whether the assembly will be used to manufacture another larger item

- ✓ Whether any other items must first be assembled
- ✓ The components required to build the assembly

For each component of the assembly, you will need to know

- ✓ Its ID code
- ✓ The number of selling units required
- ✓ Its shrinkage factor



NOTE: You can only enter transactions for assemblies that are defined for your company. If an assembly is manufactured by more than one company for which you will be using Down To Earth, you must define that assembly for each company that manufactures it.

---

To define or modify an assembly or subassembly, select “Assembly” from the Maintenance menu column. You must be logged into the company for which you are defining the assembly. The Assembly Maintenance window is displayed.

## Assembly Maintenance window

**Item ID:** Enter the ID code assigned to the item for which you are defining an assembly or subassembly. Once you enter and accept the item ID and location code, the item description displays for visual verification. This field is case sensitive.

You can search for an item’s ID code by item search name or by the first several characters of the ID code itself using the “Find” shortcut. For more information about searching by the first several characters of the ID code, refer to the General Concepts section of your User manual, Input and Select menu columns, “Performing a field search.” If you need to define a new item, select “Items” from the Maintenance menu column.



NOTE: The item master record defined in Down To Earth, must have the value of **Yes** in its **Manufactured** field. If not, the message “Item is not manufactured” is displayed and entry is not allowed.

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**Location:** Enter the code you assigned to the inventory location where this item is stored. You can list the available codes using the “Find” shortcut. The location description automatically displays. Once you accept the item ID and location association, press <Return> to continue data entry. If a record exists for the specified item and location, the item description is displayed for visual verification.



NOTE: All inventory item masters for a given assembly/subassembly must be stored in the same location. Items from multiple location codes on the same assembly are not allowed.

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**Design date:** Enter the date of the design specification that should be used to build this assembly. If you press <Return> without entering a date, the current system date is entered by default.

**Labor cost/unit:** Enter the labor cost to build one unit of this assembly. If this assembly requires that you first build other items (subassemblies), also include the labor costs to build those items.

Down To Earth computes an assembly's total cost as the sum of its material (individual component costs) and labor costs (this field). When you post a Bill of Materials transaction as **Update stock** or **Update costs** for this assembly, the **Last cost** field in the assembly's item record is updated. In addition, the **Average cost** field in the assembly's item record is updated for an **Update stock** transaction.

If no labor costs are incurred, or if you don't want labor costs included in the calculation of the assembly's total cost, just press <Return>. Down To Earth will automatically enter **.000**. The maximum value you can enter in the **Labor cost/unit** field is **99,999.999**.

**Hours/unit:** Enter the number of labor hours required to build one unit of this assembly. The maximum value you can enter is **999,999.99**. This field is for information only; its value is not used to process any transactions. If you press <Return> without entering a value in the **Hours/unit** field, **.00** is entered by default.

**Assembly type:** If this assembly is required to build another item, choose **Subassembly** from the displayed selection window. If this assembly is not required to build another item, choose **Assembly**.



NOTE: When processing transactions for the top assembly, the item quantities and costs of subassembly types are not adjusted. Instead the item records of their components are updated. Therefore, if you want a manufactured subassembly item updated, regardless if that item is a component of another larger item, select **Assembly** from the **Assembly type** selection window, not **Subassembly**.

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**Save explosion:** If the explosion for this assembly should be saved, select **Yes**. Saving the explosion creates the explosion once then accesses the same explosion when needed. If the explosion should not be saved, select **No**. Choosing not to save the explosion requires the program to explode the assembly each time the component information is required to print or process. We recommend that you save the explosion if the assembly requires any subassemblies and your system has the necessary storage space available.

For more information about explosions, see Appendix A: Procedures, "Saving an explosion."

**Status:** If this assembly is currently in production, choose **Active** from the displayed selection window. If this assembly is not in production, choose **Inactive**. An **Inactive** status prohibits you from entering transactions for an assembly. If you are defining a subassembly and have assigned it an **Inactive** status, you must also assign an **Inactive** status to each assembly in which this subassembly is used.

**Level:** If another item (subassembly) must be built before you can build this assembly, choose **Multi** from the displayed selection window. If all items required for this assembly or subassembly are individual components, choose **Single**.

**Revision:** If you are entering a new assembly master, press <Return> to leave this field blank. If this is a redesign of an existing assembly, enter the revision number. This field is for your information only.

**ECO:** Enter the engineering change order number for this version of the assembly, if applicable. If there is none, just press <Return> to leave this field blank. This field is for information only.

**Verified:** Display only. This field contains no data until the assembly is verified. Once the assembly is verified correctly, Down To Earth displays a **Y** in this field. You must use the “Verify assemblies” function from the Maintenance menu column to verify any assembly or subassembly after it is defined.

**Revised:** Enter the date the assembly was created or revised. This field contains no data unless you are viewing an assembly that has already been defined. If this assembly has already been defined, the date on which it was defined or revised is displayed.

When you're sure the data you entered in the Assembly Maintenance window is correct, press <Return> to enter the information into the master file and display the Components window.

## Components window

**Type:** If this is an component item of the assembly, just press <Return> to accept the default value, **Item**. If this is a design document used as a reference for building this assembly, choose **Document**. Although document numbers must be assigned item IDs and be set up in the Item master file, no updating is done to the document item records as you build assemblies. Document type component lines will only be used for printing on reports. If this is a document type component, you will not be prompted for quantity or shrinkage.

**Entry:** Up to 998 component line items can be entered per assembly. Down To Earth automatically assigns each item the next available line number. If you're entering a new order, **1** is displayed. Press <Return> to enter the displayed value or enter the applicable line number.

To view previously entered line items, press the “Find” shortcut. The line item selection window will contain the type, sequence number, item ID code, and quantity. Move the cursor to the line to be displayed and press <Return>. If you don't want to select one of these items, press the “Abort entry” shortcut to return to the **Entry** prompt.



NOTE: If you are making a change to an assembly, and you want to insert a component at a specific line number, enter **0** (zero). The message “Line No to insert

at?” will be displayed. Enter the line number you want to assign to the new component. All components after that line will be shifted one line number higher.

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**Item ID:** Enter the ID code of the required component item. When you press <Return>, the selected item’s description and unit-of-measure code are displayed for visual verification.

Use the “Find” shortcut to search for an item by its search name or by the first several characters of its ID code. If you need to define a new item, press the “Field maintenance” shortcut to access the “Item” maintenance menu function.

**UOM:** Display only. This field contains the unit-of-measure code that was entered in the **Sell UOM** field in the item’s record and cannot be altered. This code represents either the units in which this item is sold to your customers or the units that are required to manufacture other items.

**Quantity:** Enter the number of units that this assembly or subassembly will contain. Use the code from the **UOM** field above to compute this value, if necessary. For example, if the **UOM** field contains the code for dozen and the assembly will contain 24 pieces of this item, for example, you’d enter **2** (the quotient of 24 divided by 12) in the **Quantity** field. The maximum number of units you can enter in the **Quantity** field is **999,999.999**.

**Shrinkage:** Enter the factor that should be multiplied by the value in the **Quantity** field to calculate the number of units that must be allocated to build this assembly. The shrinkage factor enables you to make allowances for units that are damaged or that cannot be used in the assembly for one reason or another. For more information about calculating this factor, see Appendix A: Procedures, “Computing the shrinkage factor.” The maximum value you can enter is **99.99**.

**Construct seq:** Enter this item’s sequence number in the manufacturing process of the assembly. This field is especially useful if an assembly requires multiple subassemblies; you can specify the order in which each subassembly should be built. If this item is the fifth item that will be needed, for example, enter **5**. Your construction sequence can include up to **9999** different steps.

When you’re sure the information you entered in the Components window is correct, press <Return>. The Comments window is displayed.

## Comments window

The Comments window enables you to enter a more detailed description or instructions for building this assembly. The comment screen allows entry of eight lines of 50 characters each. You can enter comments for each component item if you choose. You will have the option to print these comments on the Single-Level Assembly Report. If no comments are required for this line item, use the “Exit window” shortcut to return to the **Type** field for additional component entry.

When the window is displayed, the cursor is automatically positioned at the beginning of the **Comments** field and is set for forward movement. If no text was

previously entered in this field, Down To Earth automatically places you in overstrike mode so you can type over the existing information. Use the editing commands from the Input menu column or their shortcuts to control cursor movement.

When you're finished entering your comments, press <Return>. Then check the text you entered for accuracy. When you're satisfied with your description, press <Return> again. The Components window and Comments window are cleared and you will be prompted for the **Type** of the next component. You can enter additional components for the assembly, or you can press the "Exit window" shortcut if you're finished defining this assembly.

If you're finished defining assemblies, press the "Exit window" shortcut again to redisplay the Maintenance menu column.



NOTE: You must verify each assembly and the components contained therein whenever you enter or change an assembly or subassembly record.

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## 2.2 Verifying assemblies

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Each assembly or subassembly defined or changed must also be verified to insure that the assembly does not contain errors. The verification process checks to make sure that

- ✓ The assembly does not list itself as one of its components
- ✓ None of the required subassemblies list themselves as a component
- ✓ An item record is defined for each component of the assembly
- ✓ The location of each component and/or subassembly is the same as the main assembly
- ✓ An assembly is defined for each item that is required for the main assembly and that must be built

The verification process also

- ✓ Changes the date and field value stored in the **Verified** field in the assembly record
- ✓ Creates an explosion

An explosion is an itemized list of all items required to build an assembly. The explosion for all items defined as **Yes** in the **Save explosion** field, will be saved in a temporary file (*bmexpl.ism*).

To verify a single or sequence of assemblies or subassemblies, select, "Verify assemblies" from the Maintenance menu column. The Verify Assembly window is displayed.

## Verify Assembly window

**Starting item:** Enter the ID code of the first item whose assembly or subassembly you want to verify. To begin with the first assembly on record, just press <Return> to accept the default value, \*.

To search for an item by its search name, press the “Find” shortcut. To search for an item by the first several characters of its ID code, enter those characters and then press the “Find” shortcut. If you search by ID code and only one item ID code begins with the specified leading characters, that ID code is automatically entered in the **Starting item** field.

**Ending item:** Enter the ID code of the last item whose assembly or subassembly you want to verify. You can use the “Find” shortcut to search for an item’s ID code by search name or by the first several characters of the ID code itself.

To end with the last assembly on record, just press <Return> to enter the default value, \*. To verify all assemblies on record, enter the default value, \*, in both this field and the **Starting item** field.

**Location:** Enter the code of the location for which you want to verify assemblies. All components of an assembly must be stored at the same inventory location.

If your assembly can be built at location **001** as well as at other locations, enter **001** in the **Location** field. Down To Earth will automatically verify the assembly for all locations, as long as it can also be built in location 001. If you have assemblies in location 002 and 004 (and not 001), you must verify each location individually.

Suppose, for example, that you manufacture personal computers at several different facilities. If one of those facilities was assigned location code **001**, you’d verify the assembly only once and enter **001** in the **Location** field.

**Working on:** Display only. During the verification process, this field will display the item ID code and description of the assembly that is being verified.

To begin the verification process, press <Return>. Down To Earth verifies one assembly at a time. As each assembly is verified, its item ID code and description are displayed in the **Working on** field, and the ID code and description of each component item are displayed at the bottom of your screen as they are processed.

After each item is verified, a message instructing you how to resume processing, as well as one of the following messages, is displayed:

- ✓ Assembly has been verified with no errors
- ✓ Item does not exist in this location
- ✓ Subassembly not found in master file
- ✓ Assembly contains errors

If the assembly was verified with no errors, press <Return> to resume processing. Once all assemblies are verified, the Maintenance menu column is redisplayed.

If any of your assemblies contained errors, print a Multi-Level Assembly Report to determine where those errors occurred. See the section, “Generating a Multi-Level Assembly Report.”

## 2.3 Replacing component items

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Some items used in your assemblies will periodically be discontinued or replaced with new or better items. Therefore, we have provided a function that will globally replace an old component item with a new item in all affected assemblies.

To globally replace a component item, select “Replace component item” from the Maintenance menu column. The Component Substitution window is displayed.



NOTE: After you replace a component item, you must re-verify all affected assemblies before entering transactions for those assemblies.

---

### Component Substitution window

**Old component item:** Enter the ID code of the item you want to replace. When you press <Return>, the item’s description is displayed.

You can search for an item’s ID code by item search name or by the first several characters of the ID code itself using the “Find” shortcut.

**New component item:** Enter the ID code of the item with which you want to replace the old item. When you press <Return>, the item’s description is displayed.

You can use the “Find” shortcut to search for an item by its search name or by the first several characters of its ID code.

**Assembly item:** Display only. During processing, Down To Earth displays the item ID code and description of the assembly for which it is currently replacing the old component item.

When you’re sure the data entered in the preceding fields is correct, press <Return> to enter that information in your system. When the old component item has been replaced in all affected assemblies, the message “Substitutions are completed” is displayed. Press <Return> to redisplay the Maintenance menu column.

## 2.4 Copying an assembly

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If several of the items you manufacture are similar and contain many of the same components, you can define one assembly and then copy it to define assemblies for the similar items. You can use the “Assembly” function to make any necessary changes to the copied assemblies.

Suppose, for example, that each model of bicycle that you build is manufactured in several different colors. You might define a separate assembly for each model and then copy those assemblies for each color. You can then use the “Assembly” function to change the color of paint that should be used with each assembly.



NOTE: You must verify all copied assemblies before entering transactions for them.

---

## Copy Assembly window

**From item:** Enter the item ID code of the assembly you want to copy. You can search for an item’s ID code by item search name or by the first several characters of the ID code itself using the “Find” shortcut. When you press <Return>, the item’s description is displayed.

**To item:** Enter the ID code of the item for which you want the assembly copied. You can search for an item’s ID code by item search name or by the first several characters of the ID code itself using the “Find” shortcut. When you press <Return>, the item’s description is displayed.

Check the data you entered above for accuracy. When you’re sure it’s correct, press <Return> to copy the specified assembly. Once the assembly is copied, the Maintenance menu column is redisplayed.

## 2.5 Defining inventory items

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For the purpose of Bill of Materials, “inventory items” are goods that you manufacture or use to manufacture other goods. Before you can define an assembly for an item or use an item in an assembly, the items must be defined for your company.

Suppose, for example, that your company manufactures bicycles. You must define the bicycles you manufacture, as well as the components used to build those bicycles, such as bicycle frames, handle bars, seats, and tires.



NOTE: Please refer to the section, “Maintaining inventory item records,” of your Inventory application manual for detailed instructions and specific field descriptions of the Inventory item master maintenance windows.

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Defining an inventory item entails assigning an ID code to the item and entering such basic information as the location where the item is stored, the item’s unit weight, the units in which the item is bought and sold, if the item is serialized, and reorder information. The assigned item ID code along with the code for the item’s location will be used to identify the item within Down To Earth. Therefore, if an item is stored in more than one inventory location, you must define that item for each of those locations. You can enter the item for each location via the “Items” selection of the Maintenance menu column (Inventory or Order Entry application) or via “Copy

items from/to locations” in the Miscellaneous menu column of the Inventory application.

Suppose, for example, that you have three different warehouses (inventory locations 100, 200, and 300) and that item 1000 is stocked in each of these warehouses. You must define item 1000 three times: once for location 100, once for location 200, and once for location 300.

You will also need to define the following codes prior to entering an item master record. These codes must be defined either via the respective Maintenance menu selection within the Inventory application or by using the “Field maintenance” within the Item entry windows.

- ✓ Location
- ✓ Unit-of-measure
- ✓ Category

If desired, you can also enter codes to specify how the item should be cataloged (or sorted) on lists and reports.

The item master also carries information such as the primary vendor ID, their item number, and their cost to you as well as the quantity status, standard, average, and last costs, pricing levels, reorder information and a physical count cycle code.

To define or modify item master information for your company, select “Items” from the Maintenance menu column. (You must be logged into the company for which you are defining the inventory item.) The Item Maintenance window is displayed.

When entering transactions, you can only enter ID codes for items that were defined for your company. If an item is built by more than one company for which Down To Earth is being used, you must define that item for each of those companies. Item ID codes are used in Inventory, Purchase Order, and Order Entry, and can be defined using those applications, as well. .

## 2.6 Setting up your company

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Before using Bill of Materials for your company, you must determine whether Down To Earth should retain the Bill of Materials transaction detail. Once you have made this decision, select “Company” from the Maintenance menu column to enter this information in Down To Earth. The Company Maintenance window is displayed.



NOTE: If you will be using the Bill of Materials application for more than one company, you must enter this information for each of those companies.

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## Company Maintenance window

**Company code:** The code of the company you're processing is displayed. If your company has already been set up for the Bill of Materials application, this input window is complete.

**Keep history:** If transaction detail should be retained in the history file after transactions are posted, select **Yes**. If transaction detail should not be retained in the history file, select **No**.

We suggest that you do retain transaction history. You can delete it at any time using the "Purge history" entry from the Miscellaneous menu column. Also, a History Report cannot be printed if transaction history is not retained.

After you've entered the required information, press <Return>. The company information is entered in your system, and the Maintenance menu column is redisplayed.

## 3 The Transaction Menu Column

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The entries in the Transaction menu column should be used daily. These entries enable you to

- Enter stock allocations and deallocations
- Update stock and costs
- Enter serial and lot number information
- Proof and post stock allocations and deallocations
- Proof and post updates to stock and costs

### 3.1 Entering transactions

---

All events that affect inventory for the items you manufacture and for the components used to build those items are entered as Bill of Materials transactions. These events are listed below:

- |  |                  |
|--|------------------|
| ✓ Orders for manufactured items                  | Allocate stock   |
| ✓ Completion of manufactured items               | Update stock     |
| ✓ Cancellations of orders for manufactured items | Deallocate stock |
| ✓ Changes in the cost of a component item        | Update costs     |

**Allocate stock:** The transaction that is entered to record an order for a manufactured item is called an allocation. Within each component's item master, the **Qty allocate** field is updated by the quantity specified in the assembly master and the **Qty on order** field for the manufactured item master is updated.

**Update stock:** Once the manufactured item is complete, you change the transaction to a status of **Update stock** and post. This updates the last and average costs and quantity on hand and quantity on order fields for the *manufactured* item master. The quantity on hand and quantity allocated are also decreased in the item master of the *components*.

**Deallocate stock:** Allocation transactions remain on file, even after they are posted, until a corresponding transaction to either update or deallocate stock is entered. If a transaction was posted to allocate stock but the order is no longer being processed (built), you can change the transaction to **Deallocate stock** and post it. The component's item master **Qty allocate** field and the **Qty on order** field of the manufactured item is adjusted accordingly.

**Update costs:** Many times the costs of the components are changed in the item master after a transaction has been posted at the old costs. Changing a transaction

status to Update costs after the component item master costs are adjusted calculates a new cost of the manufactured item. The newly calculated cost updates the manufactured item's **Last cost** field only, not **Average cost**.

Once a transaction is posted with a **Deallocate stock** or **Update stock** status, the transaction is cleared from the transaction file (*bmtran.ism*). **Allocate stock** and **Update costs** transactions remain in the transaction file until the status is changed to **Deallocate** or **Update**.

To enter a Bill of Materials transaction, select "Enter transaction" from the Transaction menu column. The Transaction Entry window is displayed.

## Transaction Entry window

**Item ID:** Enter the ID code of the manufactured item for which you are entering a transaction. You can search for an item by its search name or by the first several characters of its ID code. When you press <Return>, the item's description is displayed as well as the value previously entered in the item master's **UOM** and **Serial/lot** fields.

**UOM:** Display only. This field contains the field value assigned as the unit-of-measure code field of the manufactured item master.

**Serial/lot:** Display only. **N** is displayed if this item is not serially or lot numbered. **Y** is displayed if this item is defined as a serial or lot numbered item.

**Location:** Enter the code for the location where the components and the manufactured item are stored. To list all existing location codes, press the "Find" shortcut. Remember, all components of the manufactured item must be stored in the same location.

**Date:** Enter the date this transaction occurred. If you press <Return> without entering a date, the current date is entered by default.



NOTE: The record key for the transaction file is the company code, item ID, location, and date. Therefore, you are only allowed one transaction for the same item/location, per date within the same company. If you process the same item more than once per day, you must enter multiple quantities.

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When you're sure the data entered in the preceding fields is correct, press <Return> to enter that information in your system. If no transaction for the combination of item ID, location code, and transaction date you just entered is on file, the cursor is positioned on the **Quantity built** field in the lower portion of the input window so that you can continue with the transaction entry.

If an allocation or an unposted transaction for the specified item ID, location code, and transaction date combination is on file, the information for that transaction is displayed in the fields discussed below. To change the information for a transaction before it is posted, or to enter a new status for a previous allocation transaction, use

the commands from the Input menu column (or their shortcuts) to move the cursor to the field(s) that need to be changed.

**Quantity built:** The value that you enter in this field will be used to compute the number of units either required or used of each component. The value you should enter in this field depends on the type of transaction you're entering.

- ✓ To allocate stock, enter the number of units on order.
- ✓ To update stock, enter the number of units built.
- ✓ To deallocate stock, enter the number of units previously allocated. (Never deallocate only a portion of a previous allocation; always deallocate the entire order.)
- ✓ To update an item's cost without updating stock, just press <Return> to enter **1.000**, the default value.

The maximum value allowed for a serially numbered item is **1.000**. The maximum value allowed for a lot-numbered item or an item that is neither serial- nor lot-numbered is **999,999.999**. If you don't include a decimal point in your entry, only six digits can be entered and Down To Earth will automatically insert a decimal point after the last digit entered.

**Date built:** If you're entering a transaction to update stock, enter the date the item was manufactured. If you're entering any other type of transaction, press <Return> to enter the current date.

**Total labor cost:** You can either allow Down To Earth to automatically calculate the total labor cost for all units built during posting, or you can enter the labor cost for manufacturing this item in this field.

Entering a value in this field does not update either the assembly master record nor the item master record. The value you enter will only be stored in history file (*bmhist.ism*) as part of the transaction. The maximum value you can enter is **999,999.999**.

For Down To Earth to calculate this value, or if you are entering a transaction to perform some function other than updating stock or cost, press <Return> to enter **.000**. Down To earth calculates the labor cost based on the value previously defined in the **Labor cost/unit** field of the Assembly master being built.

**Total material cost:** You can either allow Down To Earth to automatically calculate the cost of materials for the specified number of units during posting, or you can enter a manually calculated value.

If you manually calculate the total material cost, neither the assembly master record nor the item master record are updated. The value you enter will only be stored in the transaction history file (*bmhist.ism*). The maximum value you can enter is **999,999.999**.

To allow Down To Earth to calculate this value, or if you are entering a transaction to perform some function other than updating stock or cost, press <Return> to enter

**.000.** Down To Earth uses the value stored in either the **Average cost** or **Last cost** field from the manufactured item's component records to calculate the item's total material cost. The cost that Down To Earth uses depends on which flag was set in the **Cost method** field when your company was set up for the Inventory application.

**Serial/lot no:** If the item for which you are entering this transaction is lot or serially numbered, you are prompted for this field. If the item has already been built and you're updating stock, enter the serial or lot number of the built unit(s). If you're entering any other type of transaction, press <Return> without entering any data to leave this field blank.

If the item also contains components that are serially or lot numbered, just press <Return> to leave this field blank. You must enter the serial and lot information for both the manufactured item and its components using the "Enter serial/lot number" function from the Transaction menu column.



NOTE: You must enter the serial or lot information for serially or lot-numbered assemblies before you post them.

---

When you press <Return>, the cursor is positioned on the **Allocate stock** field. The **Allocate stock** field is the first of four fields that can be flagged with a **Y** to process the type of transaction specified by that field. The four fields or transaction types are

**Allocate stock**  
**Update stock**  
**Deallocate stock**  
**Update costs**

Only one of these fields can contain a **Y**. For example, if you previously entered an allocation and you now want to update stock for that transaction, you must first post the allocation.

To specify the type of transaction you want to process, choose **No** from the selection windows for all fields until the cursor is positioned on the field for the type of transaction you want to process. Choose **Yes** at that field. Down To Earth will automatically fill any remaining fields with an **N**.

When you're sure the data in the preceding fields is correct, press <Return> to process your transaction and clear the Transaction Entry window. If you're finished entering transactions, press the "Exit window" shortcut to redisplay the Transaction menu column.

**Allocating stock:** When manufactured items are built for stock or a customer order, a Bill of Materials **Allocate stock** transaction is entered and posted to allocate the components of the manufactured item. The allocate stock process

- ✓ Increments the **Qty on order** field in the manufactured item's record by the number of units ordered

- ✓ Increments the **Qty allocated** fields in the manufactured item's component records by the number of units required to build the item

**Updating stock:** After you build a manufactured item, you must update your inventory by posting an **Update stock** transaction. The update stock process affects the record of the *manufactured* item in the following ways:

- ✓ Updates the **Last cost** and **Average cost** fields
- ✓ Increments the **Qty on hand** field by the number of units built
- ✓ Decrements the **Qty on order** field by the number of units built if a stock allocation was previously entered for the assembly

The update stock process also affects the item records for the *components* of the assembly. For each component, it

- ✓ Decrements the **Qty on hand** fields by the number of units used
- ✓ Decrements the **Qty allocate** field by the number of units used if a stock allocation was previously entered for the assembly

**Deallocating stock:** If you entered an order to allocate stock and that order should no longer be processed, you must enter a transaction to deallocate that stock. The deallocate stock process

- ✓ Decrements the **Qty on order** field in the manufactured item's record by the number of units ordered
- ✓ Decrements the **Qty allocated** fields in the components' item records by the number of units required to build the assembly



NOTE: You must deallocate all units that you previously allocated with this transaction. If you allocated five units, for instance, you must deallocate all five units. If only a portion of an order is canceled, you must deallocate the entire order and then re-enter the order for the number of units still required.

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**Updating costs:** If the cost for a component of a manufactured item changes, you must update the component's cost as well as the cost of the manufactured item. As mentioned above, the cost of a manufactured item is updated when an Update stock transaction is posted. You can also update the costs without affecting the quantities. by posting an Update costs transaction.

To update a manufactured item's cost without updating its stock, follow the procedures outlined below:

1. Select "Items" from the Maintenance menu column. Enter the component's item ID and location code in the **Item ID** and **Location** fields, respectively. Enter the component's new cost in the **Last cost** field in the Price/Quantity window. Press <Return> to complete the input, exit the window and return to the menu column.

2. Select “Enter transaction” from the Transaction menu column and enter the ID code, location, and date of the manufactured item transaction.
3. Flag the **Update cost** field in the Transaction Entry window with a **Y**.
4. Post the transaction. The update cost process updates only the **Last cost** field in the assembly’s item record. It does not update the **Average cost** field.

## 3.2 Entering serial and lot number information

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Before you post a transaction to update stock for a manufactured item that was assigned a serial or lot number or that contains components that are serially or lot numbered, you must enter the serial and lot number information in Bill of Materials.

If the manufactured item is serially numbered or lot numbered but its components are not, use the “Enter transaction” function to enter the serial or lot information at the same time that you enter the transaction to update stock. This will save you time and keystrokes.

But if the components used to build an item are serially or lot numbered, you must use the “Enter serial/lot number” function to enter the serial or lot information after you’ve entered the transaction to update stock.

To enter serial or lot information, select “Enter serial/lot number” from the Transaction menu column. The Serial/Lot Entry window is displayed.

### Serial/Lot Entry window

**Item ID:** Enter the ID code of the manufactured item for which you want to enter serial or lot number information. You can search for an item by its search name or by the first several characters of its ID code. When you press <Return>, the item’s description is displayed.

**Location:** Enter the code for the location where the components of the manufactured item were stored and where the item was built. To list all existing location codes, press the “Find” shortcut. When you press <Return>, the location’s description is displayed.

**Transaction date:** Enter the date of the transaction for which you are entering serial or lot number information. If you press <Return> without entering a date, the current date is entered by default.

**Serial/Lot:** Enter the serial or lot number assigned to the manufactured item. When you press <Return>, the information for the first serially or lot-numbered component of the assembly is displayed in the **Component item** and **Quantity** fields.

**Component item:** Display only. This field contains the ID code and description for the component item.

**Quantity:** Display only. This field contains the number of selling units of this component in the manufactured item.

**Serial or Lot:** Display only. **S** is displayed in this field if the component is serially numbered. **L** is displayed if the component is lot numbered. This data is displayed for your information only.

**Serial/lot no:** Enter the serial or lot number of the component unit used to build the manufactured item.

If the serial or lot number you enter is not on file, the message “Serial/Lot number is not on file” is displayed, and you are asked to confirm that you want to enter that number. Select **Yes** to enter the displayed number or **No** to reposition the cursor on the **Serial/lot no** field.

If the serial or lot number you enter in the **Serial/lot no** field is on file, it is accepted without confirmation, and the information for the next serially or lot-numbered component is displayed.

Once you’ve entered the information for all serially or lot-numbered components of the assembly, the message “No more components with serial/lot numbers” is displayed. Press <Return> to clear the Serial/Lot Entry window. If you’re finished entering serial and lot number information, press the “Exit window” shortcut to redisplay the Transaction menu column.

### 3.3 Printing a transaction proof list

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A Bill of Materials transaction proof list includes all unposted Bill of Materials transactions, as well as all allocations (both posted and unposted) for which a corresponding stock update or stock deallocation has not been entered. Posted stock allocations are included on the proof list so you can determine which orders must still be filled.

Before you post transactions, we recommend that you print this list and check its entries for accuracy. Bill of Materials transactions can be corrected as long as they haven’t been posted, and a proof list can be printed as many times as necessary to ensure that all transactions are correct.

To generate a Bill of Materials transaction proof list, select “Proof transactions” from the Transaction menu column to pull down the Print Option menu column. From this menu column, choose where you want the transaction proof list sent.

The list that is produced is printed in item ID code order and includes the following information for all transactions:

- ✓ ID code and description of the manufactured item
- ✓ Code for the location where the item’s components are stored
- ✓ Date the transaction was processed

- ✓ Number of selling units involved in the transaction (number built, allocated, or deallocated)
- ✓ Labor and material costs for the manufactured item
- ✓ Date built (where appropriate)

The transaction proof list also includes columns labeled **Post**, **AS**, **US**, **DS**, and **UC**. In the column labeled **Post**, either **C** or **N** is displayed. **C** indicates that the transaction has been posted, while **N** indicates that the transaction has not been posted.

In the columns labeled **AS**, **US**, **DS**, and **UC**, either **Y**, **N**, or **C** is displayed. The column labels specify the transaction type, as listed below:

<b>AS</b>	Allocate stock
<b>US</b>	Update stock
<b>DS</b>	Deallocate stock
<b>UC</b>	Update cost

The codes **Y**, **N**, and **C** specify the status of each transaction type, as follows:

<b>C</b>	Complete (entered and posted)
<b>N</b>	No (not entered)
<b>Y</b>	Yes (entered but not posted)

Status code **C** will only appear in the column labeled **AS**, because allocations are the only posted transactions that are included on the Bill of Materials proof list. For all other transaction types, only unposted transactions are included.

### 3.4 Posting transactions

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After you've entered your transactions and checked them for accuracy, you must post them. Posting updates your Inventory item records and Bill of Materials history file. It also generates a posting register and Items Used Report for your records. How your Inventory item records are affected for each transaction type is explained in the previous section, "Entering transactions."

The format of the Bill of Materials posting register is the same as the format of the Bill of Materials transaction proof list as noted in the previous section.

To post Bill of Materials transactions after you've verified that they are correct, select "Post transactions" from the Transaction menu column. The Post Transactions window is displayed.

## Post Transactions window

**Starting item:** Enter the ID code of the first manufactured item for which you want transactions posted. To begin with transactions for the first manufactured item on file, press <Return> to enter the default value, \*.

To search for an item by its search name, press the “Find” shortcut. To search for an item by the first several characters of its ID code, enter those characters and then press the “Find” shortcut. If you search by ID code and only one item begins with the specified characters, its ID code is automatically entered in the **Starting item** field.

**Ending item:** Enter the ID code of the last item for which you want Bill of Materials transactions posted. To end with transactions for the last manufactured item on file, press <Return> to enter the default value, \*.

To post transactions for all items, enter the default value, \*, in both this field and the **Starting item** field.

**Location:** Enter the code for the location for which you want transactions posted. When you press <Return>, the location’s description is displayed.

To list all existing location codes, press the “Find” shortcut.

**Confirm:** To verify that you want to post the selected transactions, type **YES** and press <Return>. If the selected transactions should not be posted, press <Return> without typing any data. Down To Earth will automatically enter **NO** and the specified transactions will not be posted.

When you’re sure the information you entered in the preceding fields is correct, press <Return>. If you entered **NO** in the **Confirm** field, the selected transactions are not posted and the Transaction menu column is redisplayed.

If you entered **YES** in the **Confirm** field, the Print Option column is pulled down so you can select where you want the posting register and Items Used Report printed.

## 4 The Reports Menu Column

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The Reports menu column enables you to view information on your screen and print reports for management. It contains entries that enable you to

- Inquire on assemblies and subassemblies on your screen
- Inquire regarding an item's quantities and price status on your screen
- Generate a Single- or Multi-Level Assembly Report
- Generate Materials Where Used, Stock Availability, and Material Cost Reports
- Generate a Component or Transaction History Report
- Print a picking list for a manufactured item
- Print the reports in the print queue
- Print the customized reports that were created through Report Writer

### 4.1 Viewing an assembly

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To view the detail definition and components for an assembly or subassembly on your screen, select "Assembly inquiry" from the Reports menu column. The BOM Assembly Inquiry window is displayed.

This inquiry first displays the active/inactive status, created and design dates, verification and explosion status, multilevel, if it is an assembly or subassembly, and the costs per unit. Then, press <Return> to view the detailed component information. This inquiry is commonly used instead of viewing the master record so that the item does not require verification again. Inquiring via the Maintenance menu column, even if you don't change any data, still requires re-verification.

#### BOM Assembly Inquiry window

**Item ID:** Enter the item ID code for the assembly you want to view. You can search for an item's ID code by item search name or by the first several characters of the ID code itself.

When you press <Return>, the information for the selected assembly is displayed in the fields discussed below.



NOTE: Because both display windows together are larger than the screen size, you may have overlapping windows once the second window is displayed in WIN 95/98/NT environment. Drag the second screen down to see both window's data at once. Press <Return> to quit or drag it back to click <OK>.

**Status:** This field contains the code for the assembly's status. Assembly status codes are

<b>A</b>	Active
<b>I</b>	Inactive (Inactive status prohibits transactions for the assembly.)

**Created:** This field contains the date the assembly was created.

**Designed:** The date of the assembly's design specification is displayed.

**Verified:** **Y** is displayed in this field if the assembly was verified correctly using the "Verify assemblies" function from the Maintenance menu column. **N** is displayed if the assembly still requires verification.

**Levels:** **M** for **Multi** is displayed if a component of the manufactured item must be built. **S** for **Single** is displayed if all components of the item are purchased from a vendor (you don't build any of them).

**Type:** This field contains the code for the assembly's type. A **Subassembly** is an assembly that is required to be built for another assembly. An **Assembly** is not required to be built for any other manufactured items. Assembly type codes are

<b>S</b>	Subassembly
<b>A</b>	Assembly

**Labor per unit:** This field contains the cost in labor to build one selling unit of the manufactured item.

**Hours per unit:** This field contains the number of hours of labor required to build one selling unit of the manufactured item.

**Save explosion:** If the explosion for this assembly has been saved, **Y** is displayed. If the explosion has not been saved, **N** is displayed.

An explosion is an itemized list of all components required to build a manufactured item and the number of units that are required of each. The explosion can be saved in a temporary file to reduce the time it takes to post transactions and generate reports, especially if you're posting transactions or generating reports that include multi-level assemblies.

## Components window

The components window lists each item or subassembly required to build the item whose assembly you are viewing. The following information is displayed for each:

- ✓ Item ID code and description

- ✓ The unit-of-measure code assigned to the type of unit in which the component is used
- ✓ The number of units used to manufacture the item (for example, if the unit-of-measure code for each is displayed in the **UOM** column and **1.000** is displayed in the **Quantity** column, one piece is required to build the manufactured item)
- ✓ The shrinkage factor used to compute the number of units that should be allocated

To view the next page of component items, choose **Continue** from the Option selection window. If no more pages exist, a status message will tell you. Press <Return> to clear the BOM Assembly Inquiry window and move the cursor to the **Item ID** field in that window. If you're finished viewing assemblies on your screen, press the "Exit window" shortcut to redisplay the Reports menu column.

## 4.2 Viewing item status

---

To view an item's status on the screen, select "Item status inquiry" from the Reports menu column. Enter the item ID to display the first location's master category code and description, buy and sell unit-of-measure, average and last cost, pricing levels 1-5, and quantities. You can change the item default location code to display the same information from another location and also choose to view more detail.

At the **Option** prompt, choose to view a single detail line of all open purchase orders (from the Down To Earth Purchase Order application) or all open customer orders created for the selected item (through Order Entry). You can also choose to view the detail for each lot or serial-numbered unit of an item.

- ✓ The detail purchase order window displays the order number, line number, location code, buyer code, vendor ID, order date, date required, and ordered and received quantities to date.
- ✓ The detail customer order window displays the order number, line number, location code, salesman code, customer ID, ordered date, required date, and ordered, shipped, and back-ordered quantities to date.
- ✓ The detail serial/lot number window displays the serial/lot number, status (**A** for **Available** or **S** for **Sold**), Type (**N** for **New**, **U** for **Used**, or **R** for **Rebuilt**), date received in, quantity on hand, quantity available, and price from the serial/lot file (*insnlt.ism*).

When you select "Item status inquiry," the Item Inquiry window is displayed.

### Item Inquiry window

**Item ID:** Enter the ID code assigned to the item whose status you want to view. If you don't remember the ID code, you can use the "Find" shortcut to search for it according to the item's search name or by a portion of the code itself. Or you can enter the UPC number for the item, and Down To Earth will search for the item by

that number if the **UPC lookup** field in the Inventory “Company” function is set to **Yes**.

After you enter the item’s ID code or UPC number, its description and basic master statistics is displayed for the default location.

**Location:** The code and description of the default location in which the item is stored are automatically displayed. If the item you selected is stored in more than one location, the location with the lowest code is displayed. Either press <Return> to view the status for the displayed item and location or enter the code for a different location. When you press <Return>, the cursor moves to the **Option** field.

**Option:** From the displayed selection window, choose whether you want to view the transactions (orders) created through Down To Earth’s Purchase Order application, the transactions (orders) created through Order Entry, or the serial/lot information from the item’s master record.

- ✓ If you selected **Purchase order** and open orders exist for the specified item record, the detail for each open order is displayed.
- ✓ If you selected **Order entry** and open orders exist for the specified item record, the detail for each order is displayed.
- ✓ If you selected **Serial/lot numbers** and lots or serial-numbered units exist for the item whose status you are viewing, the detail for each lot or serial-numbered unit is displayed

### 4.3 Generating a Single-Level Assembly Report

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A Single-Level Assembly Report lists the assemblies and subassemblies defined for a specified range of item ID codes and the components that are required to build them.

If any of the components are subassemblies (they must be built, too), the components required to build those subassemblies are not listed unless you choose to **Include detail** when defining the report criteria. Subassemblies are listed, but their components are optional. To print a list that also includes the components of any subassemblies, you must print a Multi-Level Assembly Report. (See the next section, “Generating a Multi-Level Assembly Report” for more information.)

Included on this report is the assembly or subassembly and component ID and description, the master record details of each and the quantity of each component required to manufacture the assembly. Optionally you can include the comments or exclude the master record detail mentioned above.

To generate a Single-Level Assembly Report, select “Single-Level Assembly” from the Reports menu column. The Single-Level Assembly Report window is displayed.

#### Single-Level Assembly Report window

**Starting item:** Enter the item ID code for the first assembly you want included on the Single-Level Assembly Report. If you want to begin the report with the assembly

that has the lowest item ID code on file, press <Return> to enter the default value, \*. You can also use the “Find” shortcut to search for an item’s ID code by search name or by the first several characters of the ID code itself.

**Ending item:** Enter the item ID code for the last assembly in the sequence of assemblies you want included on the Single-Level Assembly Report. To end the report with the assembly that has the highest item ID code on file, press <Return> to enter the default value, \*. You can also use the “Find” shortcut to search for an item’s ID code by search name or by the first several characters of the ID code itself.

To include all assemblies on file, enter the default value, \*, in both this field and the **Starting item** field.

**Type:** From the displayed selection window, choose whether you want to include **Both** assemblies and subassemblies, only those assemblies whose assembly type is **Assembly**, or only those assemblies whose assembly type is **Subassembly**.

**New page each assembly:** To start a new report page for each assembly or subassembly listed, select **Yes**. Otherwise, select **No**.

**Include comments:** Choose **Yes** if you want to print the comments you entered for the components in the Assembly maintenance. Choose **No** if you do not want to print the comments.

**Include detail:** Choose **Yes** if you want to print the components of each assembly. If you only want to print the assemblies and the subassemblies, and not the components, choose **No**.

When you press <Return>, the message “Make corrections or press <Return> to complete input” is displayed. Once you’re satisfied with your entries, press <Return> again to pull down the Print Option menu column. From the Print Option menu column, choose where you want the Single-Level Assembly Report sent.

## 4.4 Generating a Multi-Level Assembly Report

---

A Multi-Level Assembly Report lists the assemblies defined for a specified range of item ID codes and the components that are required to build them. If any of the components of your assemblies are subassemblies (they must be built, too), the components required to build those subassemblies are also listed as components of the main assembly.

The report includes the item ID and description, detail master record information, and quantity of items required to build the assembly or subassembly. In addition, the different levels of each item are indicated on the far left side of the report in an outline type format. In the following example, the level 4 components are required to manufacture the level 3 subassembly item, SMHANDLE. Components listed without another level under them are individual items, not subassemblies.

```

S01          WATER SMOKER/GRILL          3/24/1998   4/06/1998   N   A
"

```

1	SMOKER	SMOKER	1.000	EA	Y
2	SMLID	DOVE LID	1.000	EA	Y
3	SMLID16"	16" DOVE LID	1.000	EA	N
3	SMHANDLE	WOOD HANDLE	1.000	EA	Y
4	SMALUMHANDLE	ALUMINUM HANDLE	1.000	EA	N
4	SMGRIPS	WOOD GRIPS	2.000	EA	N
4	SMSCREW83234	8/32" X 3/4" MACHINE SCREW	2.000	EA	N
4	SMSQNU832	8/32" SQUARE HEAD NUTS	2.000	EA	N
3	SMSCREW31638	3/16" X 3/8" MACHINE SCREW	2.000	EA	N
3	SMTHERM	THERMOMETER	1.000	EA	N
3	SMNUT316	3/16" SQUARE HEAD NUTS	2.000	EA	N

To generate a Multi-Level Assembly Report, select "Multi-Level Assembly" from the Reports menu column. The Multi-Level Assembly Report window is displayed.

## Multi-Level Assembly Report window

**Starting item:** Enter the item ID code of the first assembly you want included on the Multi-Level Assembly Report. If you want to begin the report with the assembly that has the lowest item ID code on file, press <Return> to enter the default value, \*. You can also use the "Find" shortcut to search for an item's ID code by search name or by the first several characters of the ID code itself.

**Ending item:** Enter the item ID code for the last assembly in the sequence of assemblies you want included on the Multi-Level Assembly Report. To end the report with the assembly that has the highest item ID code on file, press <Return> to enter the default value, \*. You can use also the "Find" shortcut to search for an item's ID code by search name or by the first several characters of the ID code itself.

To include all assemblies on file, enter the default value, \*, in both this field and the **Starting item** field.

**New page each assembly:** To start a new report page for each assembly or subassembly listed, select **Yes**. Otherwise, select **No**.

When you press <Return>, the message "Make corrections or press <Return> to complete input" is displayed. Once you're satisfied with your entries, press <Return> again to pull down the Print Option menu column. From this column, choose where you want the Multi-Level Assembly Report sent.

## 4.5 Generating a Materials Where Used Report

---

You can generate a Materials Where Used Report to help you determine where component items are used. This report is especially useful if the cost of a component changes or a component is replaced. You can generate this report to determine which manufactured items are affected by the change (or proposed change).

The Materials Where Used Report can be generated for a single component item or for a sequence of item ID codes. It lists the specified component(s) and the manufactured items in which each component is used. For each manufactured item, the report includes the

- ✓ Number of units required
- ✓ Code for unit type used
- ✓ Sequence number of the component in the construction of the item
- ✓ Shrinkage factor used to determine the number of units required
- ✓ Date the item was defined in Bill of Materials

To generate a Materials Where Used Report, select “Materials where used” from the Reports menu column. The Item Where Used Report window is displayed.

### Item Where Used Report window

**Starting item:** Enter the ID code of the first component item you want included in the Materials Where Used Report. If you want to begin the report with the item that has the lowest ID code on file, press <Return> to enter the default value, \*. You can also use the “Find” shortcut to search for an item’s ID code by search name or by the first several characters of the ID code itself.

**Ending item:** Enter the ID code of the last item in the sequence of items you want included in the Materials Where Used Report. To end the report with the item that has the highest ID code on file, press <Return> to enter the default value, \*. You can also use the “Find” shortcut to search for an item’s ID code by search name or by the first several characters of the ID code itself.

To include all items on file, enter the default value, \*, in both this field and the **Starting item** field.

When you press <Return>, the message “Make corrections or press <Return> to complete input” is displayed. Once you’re satisfied with your entries, press <Return> again to pull down the Print Option menu column.

## 4.6 Generating a Stock Availability Report

---

You can print a Stock Availability Report to help you determine whether your inventory contains sufficient quantities of the components required to build a manufactured item. You can also determine the number of units you must order to build the item and the number of days it will take to receive them.

You can generate the Stock Availability Report for a single item, or you can include several items on one report. For each manufactured item specified, the report lists the components required to build it. For each component, the following entries are included:

- ✓ Units required, available, and on order

- ✓ Units short or in excess of the required number
- ✓ Days required to receive the component from your supplier

To generate a Stock Availability Report, select “Stock availability” from the Reports menu column. The Stock Availability Report window is displayed.

## Stock Availability Report window

**Item ID:** Enter the ID code of the item whose components you want listed on the report. When you press <Return> to enter your selection, the item’s description is displayed. You can use the “Find” shortcut to search for an item’s ID code by search name or by the first several characters of the ID code itself.

**Location:** Enter the code for the inventory location (e.g.,the warehouse) where the manufactured item will be built. To display a list of the location codes defined in the Inventory application, press the “Find” shortcut.

**Quantity:** Enter the number of selling units you plan to build. The maximum value you can enter is **999,999,999**.

**Exclude documents:** Choose **No** if you want **Document** type components to print on this report. Choose **Yes** if you want to exclude document components from printing on the report.

When you’re sure the data in the preceding fields is correct, press <Return> to enter that information in your system and place the cursor in the **Item ID** field. Continue to enter additional manufactured items you want included on the report. When you’ve entered all items you want included, press the “Exit window” shortcut to pull down the Print Option menu column. From this menu column, choose where you want the report sent.

## 4.7 Printing a picking list for an assembly

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You can generate a list of the items that must be pulled from inventory to build a specified number of units of an item. The required components are printed on the list in order according to their bin and aisle locations (defined in the item master). The number of units that must be pulled is also included.

To print a list of the items that must be pulled from inventory to build an assembly, select “Picking list” from the Reports menu column. The Item Picking List window is displayed.

### Item Picking List window

**Item ID:** Enter the item ID code of the manufactured item for which you want to print a picking list. When you press <Return> to enter your selection, the item’s description is displayed. You can search for an item’s ID code by item search name or by the first several characters of the ID code itself.

**Location:** Enter the code for the inventory location from which the components required to manufacture the item should be taken. To display a list of the location codes defined in the Inventory application, press the “Find” shortcut.

**Quantity:** Enter the number of selling units for which you want to pick component items.

**Exclude documents:** Choose **No** if you want **Document** type components to print on this report. Choose **Yes** if you want to exclude document components from printing on the report.

When you’re sure the data in the preceding fields is correct, press <Return> to enter that information in your system and place the cursor in the **Item ID** field. Continue entering the assemblies for which you want to print picking lists. When you’ve entered all assemblies for which you want to print picking lists, press the “Exit window” shortcut to pull down the Print Option menu column. From this menu column, choose where you want the lists sent.

## 4.8 Generating a Materials Cost Report

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Generating a Materials Cost Report will help you to determine the total cost to manufacture a specified number of selling units of an item. The report calculates and prints two different total cost amounts: one is calculated using the average cost for each component and the other is calculated using the last cost for each component. Both total cost amounts include the cost for labor.

In addition to each manufactured item’s total cost, the report also lists each required component. For each component, the report includes the following:

- ✓ Number of selling units required
- ✓ Last and average costs
- ✓ Selling price, if applicable

Either **A** or **S** is displayed in the column labeled **A/S**. **A** indicates that the manufactured item is a finished product, or **Assembly**. **S** indicates that the manufactured item is a **Subassembly**; in other words, it is used to manufacture another larger item or items.

To generate a Materials Cost Report, select “Material cost” from the Reports menu column. The Material Cost Report window is displayed.

### Material Cost Report window

**Item ID:** Enter the item ID code of the manufactured item for which you want to generate a Materials Cost Report. When you press <Return> to enter your selection, the item’s description is displayed. You can search for an item’s ID code by item search name or by the first several characters of the ID code itself.

**Location:** Enter the code for the inventory location for which you want to print the report. To display a list of the location codes defined in Inventory, press the “Find” shortcut.

**Quantity:** Enter the number of selling units for which you want to generate a Materials Cost Report.

**Exclude documents:** Choose **No** if you want **Document** type components to print on this report. Choose **Yes** if you want to exclude document components from printing on the report.

When you’re sure the data in the preceding fields is correct, press <Return> to enter that information in your system. The Print Option menu column is pulled down. From this menu, choose where you want to send the Materials Cost Report.

## 4.9 Generating a Component History Report

---

If you’re retaining Bill of Materials history, you can print a Component History Report to track where your serial or lot-numbered items were used. This report is especially useful if a particular component item or lot of components is recalled by the manufacturer. You can generate this report to determine in which manufactured items those components were used and which items you must, therefore, recall.

The information for a Component History Report is taken from the Bill of Materials detail history file. A Component History Report lists the detail for all Bill of Materials transactions that involve the items within the ranges of ID codes and serial and lot numbers that you specify.

The first report column contains one of the following codes to specify whether the listed item is a component (**C**) or a finished product (**F**).

If an item is a component of a finished product, the transactions in which the component was used are displayed. For each transaction, the following information is included:

- ✓ Number of units used
- ✓ Date the finished product was built
- ✓ Location where the finished product was built
- ✓ ID code and description of the item that was built
- ✓ Serial or lot number of the item that was built (if applicable)

If the item is a finished product, each transaction to update stock is listed. For each transaction, the following information is included:

- ✓ Number of units built
- ✓ Date the finished product was built
- ✓ Location where the finished product was built

To generate a Component History Report, select “Component history” from the Reports menu column. The Component History Report window is displayed.

## Component History Report window

**Starting item:** Enter the ID code of the first item you want to include on the Component History Report. If you want to begin the report with the history for the item that has the lowest ID code on file, press <Return> to enter the default value, \*. You can use the “Find” shortcut to search for an item’s ID code by search name or by the first several characters of the ID code itself.

**Ending item:** Enter the ID code of the last item in the sequence of items you want to include on the Component History Report. To end the report with the history for the item that has the highest ID code on file, press <Return> to enter the default value, \*. You can use the “Find” shortcut to search for an item’s ID code by search name or by the first several characters of the ID code itself.

To include history for all items on file, enter the default value, \*, in both this field and the **Starting item** field.

**Starting serial/lot:** Enter the first serial or lot number for which you want to include component history for the specified items. If you want to begin the report with history for the first serially numbered unit or first lot, press <Return> to enter the default value, \*.

**Ending serial/lot:** Enter the last serial or lot number for which you want to include component history for the specified items. If you want to end the report with history for the last serially numbered unit or last lot, press <Return> to enter the default value, \*.

To include component history for all serially numbered units or all lots of the specified items, enter the default value, \*, in both this field and the **Starting serial/lot** field.

When you’re sure the data in the preceding fields is correct, press <Return> to enter that information in your system and pull down the Print Option menu column. From the Print Option column, choose where you want the Component History Report sent.

## 4.10 Generating a Transaction History Report

---

If you’re retaining Bill of Materials history, you can print a Transaction History Report. The information for a Transaction History Report is taken from the Bill of Materials transaction history file. You can specify the types of transactions you want to include on the report (stock allocations, stock updates, cost updates, and stock deallocations), as well as the sequence of inventory locations and manufactured items.

Transactions are listed on the report in order according to item ID code, and the following information is included for each:

- ✓ Location where the manufactured item is built and stored
- ✓ Date built (if built)
- ✓ Quantity involved in the transaction
- ✓ Labor and material costs
- ✓ Date posted

Four columns labeled **AS**, **US**, **DS**, and **UC** are included on the report. These column labels specify the transaction type. They are

<b>AS</b>	Allocate stock
<b>US</b>	Update stock
<b>DS</b>	Deallocate stock
<b>UC</b>	Update costs

For each transaction, either **C** or **N** is displayed in each of these columns. **C** indicates that the transaction is complete, while **N** indicates that the transaction is not complete.

To generate a Bill of Materials Transaction History Report, select “Transaction History” from the Reports menu column. The Transaction History Report window is displayed.

## Transaction History Report window

**Starting location:** Enter the code of the first inventory location (e.g., the warehouse) for which you want to include transaction history on the report. To display a list of the location codes defined in Inventory, press the “Find” shortcut.

If you want to begin the report with history for the location with the lowest code on file, press <Return> to enter the default value, \*.

**Ending location:** Enter the code of the last inventory location in the sequence of locations for which you want to include transaction history on the report. To end the report with transaction history for the location with the highest code on file, press <Return> to enter the default value, \*. To display a list of the location codes defined in Inventory, press the “Find” shortcut.

To include history for all locations, enter the default value, \*, in both this field and the **Starting location** field.

**Starting item:** Enter the ID code of the first item you want to include on the transaction history report. If you want to begin the report with history for the item that has the lowest ID code on file, press <Return> to enter the default value, \*. You can use the “Find” shortcut to search for an item ID code by search name or by the first several characters of the code itself.

**Ending item:** Enter the ID code of the last item in the sequence of items you want to include on the Transaction History Report. To end the Transaction History Report

with order history for the item that has the highest ID code on file, press <Return> to enter the default value, \*. You can use the “Find” shortcut to search for an item ID code by search name or by the first several characters of the code itself.

To include the history for all items, enter the default value, \*, in both this field and the **Starting item** field.

**Starting date:** Enter the first date for which you want to include transactions. If you press <Return> without entering a date, the current date is entered by default and the report will include the information for this date.

**Ending date:** Enter the last date for which you want to include transactions. If you press <Return> without entering a date, the current date is entered by default and the information for all transactions from the specified **Starting date** through the current date will be included on the report.

**Allocate stock:** Select **Yes** to include allocations of stock in your report or **No** to exclude stock allocations.

**Update stock:** Select **Yes** to include updates to stock in your report or **No** to exclude stock updates.

**Deallocate stock:** Select **Yes** to include deallocations of stock in your report or **No** to exclude stock deallocations.

**Update costs:** Select **Yes** to include updates to cost in your report or **No** to exclude cost updates.

When you're sure that the data you entered in the preceding fields is correct, press <Return>. The Print Option menu column is pulled down from the menu bar. From this column, choose where you want the Transaction History Report sent.

## **4.11 Printing reports created through Report Writer**

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To print custom-made reports that were created using the Down To Earth Report Writer application, select “Other reports” from the Reports menu column.

Note that this function is only supported in the UNIX and VMS environments. To print Report Writer reports on DOS, select “Run” from the Report Writer Reports menu column.

### **Report name window**

**Application code:** Down To Earth automatically displays the two-character code of the application you're processing. Because you're currently processing transactions from within Bill of Materials, **BM** is displayed.

**Report name:** The names of the reports created through Report Writer and accessible through Bill of Materials are displayed in a selection window. Choose the report you want to print.

After you've made your selection, press <Return> to pull down the Print Option menu column. From the Print Option column, select where you want the report sent.

## 4.12 Printing queued reports

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To display a list of the reports in the print queue, select "Queued reports" from the Reports menu column. The display will show you report name, filename, date and time queued, company code, and the unique ID of the user who queued the report. You can print as many copies of a report as you want, delete a report from the print queue, or rename a report. We suggest that you view the queued reports in this way before you clear the print queue via the "Clear print queue" entry in the Files menu column in System Manager. The reports you can access will depend on the user security set up in System Manager.

### Print Queued Report window

**File:** From the displayed selection window, choose the report you want to print, delete, or rename.

**Copies:** Enter the number of copies you want to print. If you want just one copy, press <Return>.

**Delete:** If you want to delete the report from the print queue, press <Return> to select the default, **Yes**. If you want to leave the report in the queue, select **No**.

**Rename:** To rename the report, select **Yes**. To leave the report as it is, select **No**. If you rename the report, it is deleted from the print queue but can be accessed outside Down To Earth.

**To:** If you selected **Yes** at the **Rename** prompt, enter the new report name. The report name can be up to six characters long. The system automatically assigns the extension **.prt** to the name you enter and places the report in the directory referenced by the RPT logical.

**Select printer:** From the displayed selection window, choose the printer to which you want to send the report. When you press <Return>, the report is sent to that printer.

## 5 The Miscellaneous Menu Column

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From the Miscellaneous menu column, you can

- Purge the transaction history file
- Purge the detail history file

### 5.1 Purging transaction history

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The “Purge transaction history” function enables you to delete the information stored in the Bill of Materials transaction history file (*bmhist.ism*). If you’ve chosen to retain history (via the “Company” Maintenance definition), basic information about your transactions is saved in the Bill of Materials transaction history file when you post transactions. This information remains in the history file until it is purged. Included in the history file is

- ✓ The manufactured item’s ID code
- ✓ The code for the location where the item will be built
- ✓ The quantity built or allocated to be built
- ✓ The date posted and date built (if built)
- ✓ The total labor and total material costs
- ✓ The transaction type

Before you purge the transaction history file, we recommend that you print a Bill of Materials Transaction History Report for your records.



Use caution! Unless you choose to save the deleted records, purged records cannot be retrieved through Down To Earth.

---

To purge the Bill of Materials transaction history file, select “Purge transaction history” from the Miscellaneous menu column. The Purge History window is displayed.

#### Purge History window

**Purge-through date:** Enter the date through which you want to purge the Bill of Materials transaction history file. To purge orders through the current date, just press <Return>.

**Save deleted records:** Choose **No** if you do not want to save purged records. If you choose **Yes**, the purged records will be saved as a sequential file in the **WRK** directory. The file will be named **bmhist.pur**. If you choose to save the purged

records, it is suggested that you copy off the newly created **bmhist.pur** file into a separate directory in preparation for a future purge. For most operating systems, the next time you purge and save the deleted records, the new file will override the previous file of the same name.

**Confirm:** To verify that you want to purge the transaction history file through the specified date, type **YES** and press <Return>. If you press <Return> without typing **YES**, Down To Earth will automatically enter **NO** and the file will not be purged.

Press <Return> to either purge the transaction history file or abort the process. The Miscellaneous menu column is redisplayed.

## 5.2 Purging detail history

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The “Purge detail history” function enables you to delete the information stored in the Bill of Materials detail history file (*bmbhst.ism*).

If you’re retaining Bill of Materials history (by choosing to retain history via the “Company” Maintenance definition), basic information about your transactions is saved in the Bill of Materials detail history file when you post transactions to update stock. This information remains on file until it is purged with this function. The following information is included for each update stock transaction:

- ✓ The finished item’s ID code
- ✓ The code for the location where the item was built
- ✓ The quantity built
- ✓ The date the stock update was posted
- ✓ The serial or lot number of the finished item (if applicable)
- ✓ The item ID codes of the components used to build the manufactured item
- ✓ The serial or lot numbers of those components (if applicable)
- ✓ The number of units of each component used

Before you purge the detail history file, we recommend that you print a Bill of Materials Detail History Report for your records.



Use caution! Unless you choose to save the deleted records, purged records cannot be retrieved through Down To Earth.

---

To purge the Bill of Materials detail history file, select “Purge detail history” from the Miscellaneous menu column. The Purge Detail History window is displayed.

## Purge Detail History window

**Purge-through date:** Enter the date through which you want to purge the Bill of Materials detail history file. To purge orders through the current date, just press <Return>.

**Save deleted records:** Choose **No** if you do not want to save purged records. If you choose **Yes**, the purged records will be saved as a sequential file in the **WRK** directory. The file will be named **bmbhst.pur**. If you choose to save the purged records, it is suggested that you copy off the newly created **bmbhst.pur** file into a separate directory in preparation for a future purge. For most operating systems, the next time you purge and save the deleted records, the new file will override the previous file of the same name.

**Confirm:** To verify that you want to purge the detail history file through the specified date, type **YES** and press <Return>. If you press <Return> without typing **YES**, Down To Earth will automatically enter **NO** and the file will not be purged.

Press <Return> to either purge the detail history file or abort the process. The Miscellaneous menu column is redisplayed.

## Appendix A: Procedures

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### Defining an assembly

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Defining an assembly requires several steps that must be performed in the correct order to insure accurate processing. Please review the following procedures when creating your assemblies or subassemblies:

1. Define the item master record for the manufactured item using the “Items” function from the Maintenance menu column from either Inventory, Purchase Order, Order Entry, or Bill of Materials. Be sure that the **Manufactured** field is defined as **Yes** and if you want the quantities updated, the **Controlled** field also defined as **Yes**.
2. Define an item master record for each component of the manufactured item using the “Items” function from the Maintenance menu column in any of the above mentioned applications. For the component, unless it is a subassembly, make sure that the **Manufactured** field is defined as **No** and if you want the quantities updated, the **Controlled** field defined as **Yes**. If the component is a subassembly, be sure its item master **Manufactured** field is **Yes**.
3. Define any subassemblies, then the top assembly of a manufactured item using the “Assembly” function from the Maintenance menu column. Subassemblies are components of a manufactured item that are also manufactured by your company. Please see the section, “Defining Assemblies” for more detailed instructions.
4. Verify the assembly to insure all subassemblies and components are defined correctly and in the same location. Please see “Verifying your assemblies” for details of the verification process.

### Computing the shrinkage factor

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When you define an assembly, you can enter a factor for each component of the manufactured item to allow for units that are damaged or that cannot be used for one reason or another. Down To Earth uses this shrinkage factor to calculate the number of units that must be allocated when you enter a Bill of Materials transaction to allocate components for an order.

Suppose, for example, that a third of all hand brakes that you receive from your supplier to manufacture bicycles cannot be used to successfully complete the bicycle. This could be for a variety of reasons, defective stock, assembly breakage, or quality control failure. The shrinkage factor would be .33, and for every 100 bicycles ordered, 133 hand brakes would be allocated. If 50 percent of all hand brakes are

unusable, the shrinkage factor would be .50, and the number of brakes that would be allocated for every 100 bicycles ordered would be 150.

## Saving an explosion

---

An explosion is an itemized list of all components required to build an item, and one is created for each assembly when the assembly is verified. Explosions for each assembly can be saved in a file (*bmexpl.ism*). This does, however, require adequate storage space on your system.

We recommend that if possible, you do save the explosions, especially for multi-level assemblies. (Multi-level assemblies are assemblies that use other assemblies as components.) Saving explosions in the temporary data file reduces the amount of time it takes to post transactions and generate reports. If explosions are not saved, each time a report is generated or transactions posted, each assembly or subassembly is exploded at that time.

To save an explosion, select **Yes** at the **Save explosion** prompt when you define the assembly for which you want to save the explosion. (Assemblies are defined using the “Assembly” function from the Maintenance menu column.) then verify the assembly via “Verify assemblies” from the Maintenance menu column.

## Options for Maintaining subassembly inventory

---

**Maintaining the inventory for assembly and components:** When building multilevel assemblies, some companies choose to emphasize their inventory accuracy on both the item costs and quantities for the subassembly and for its components. If you build and stock the subassembly item so it is available when needed, you may want to maintain inventory data for the subassembly itself and for the components contained within.

To maintain inventory for the subassembly and its components, choose **Assembly** at the **Assembly type** prompt when you define the subassembly. (Assemblies and subassemblies are then both defined using the “Assembly” function from the Maintenance menu column.)

**Maintaining components only:** Some companies opt to maintain the items of the subassembly’s components but not the subassembly itself. If you manufacture the subassembly only when needed to build another item, consider maintaining inventory for the subassembly’s components but not for the subassembly itself.

To maintain inventory for the subassembly’s components only, choose **Subassembly** at the **Assembly type** prompt when you define the subassembly. (Assemblies and subassemblies are then both defined using the “Assembly” function from the Maintenance menu column.)

## Appendix B: Troubleshooting / Common Down To Earth & DBL errors

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### ↳ Verification errors

When an assembly is verified, Down To Earth checks for the following situations and displays an error message accordingly. In the case of each error, an item has been defined incorrectly or is missing from the inventory but is included in the assembly. The verification process checks to make sure that

**The assembly does not list itself as one of its components:** If an item is defined as the assembly or subassembly, it cannot also be defined as a lower level. This is also true for subassemblies. None of the required subassemblies can list themselves as a component.

**An item record is defined for each component of the assembly:** Although an item must be valid at the time of defining the assembly or subassembly, it could also be deleted at a later point in time. If that is the case, when you verify the assembly, you will get a message that the item does not exist in the assembly's location. You must trace back the item that no longer exists in that location and either add it back into inventory or remove it from the assembly.



NOTE: When an item is deleted, a message indicating the deletion could effect Bill of Materials is displayed and suggests printing the "Materials Where Used" report. If the solution is to substitute the deleted item with a new item, select "Replace Component item" from the Maintenance menu column (even if the item being replaced no longer exists).

---

**The location of each component and/or subassembly is the same as the main assembly:** The location of component items must be the same as the top assembly. If the item exists but is in a different location, the same error message appears as noted above, as if the item is not found at all.

**An assembly is defined for each item that is required for the main assembly and that must be built:** All subassemblies must also be defined via the "Assembly" selection of the Maintenance column. When defining a multi level assembly, is it suggested that you work from the last level forward to insure all subassemblies are defined.

### ↳ Error 18: File not found

The file specified was being accessed by a program but was not found in the location assigned to the logical specified. Either the file is truly not there and must be created or the Device assignment is incorrect. An incorrect device assignment indicates the file has been created but the program was looking in the wrong place.

## ➤ Duplicate key, record not added

Each isam data file is assigned a field or group of fields designated as the primary 'key' to the record. When the files are created, it is specified whether or not the file is to allow records that have the exact same data for the record key. Most files do not allow duplicate keys and therefore if you try to add a record where the record key is an exact duplicate of a record that already exists, this message displays and requires you to "Press <Return> to continue." If this message appears, it indicates that the record being written was not added, and the record that existed remains the same.

Within the Bill of Materials application, this message would not normally appear without someone manipulating a file to cause it. For example, if a transaction was entered and posted so the information is stored in the **bmhold.ism** file and somehow the transaction was cleared or deleted unconventionally. When the same information is entered and posted again and the **bmhold.ism** file already has the information, this message would appear. No problems would result, it is for your information only.

If you have more than one record that is a duplicate, it may appear that this message is continues to display, even after you press <Return>. Repeat pressing the <Return> for each duplicate until the input window or menu column is redisplayed.

## Appendix C: Record Layouts

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**Filename:** bmbhst.rec

**Record description:** Bill of Materials detail history file

**Record length:** 114

**Primary key:** 1.47 bmb\_comp, bmb\_type, bmb\_item, bmb\_snlst

record bmbhst

bmb_key	,a47		; Record key
bmb_comp	,a2	@bmb_key	; Company code
bmb_type	,a1	@bmb_key+2	; Record type
			; F - finished goods
			; C - component item
bmb_item	,a24	@bmb_key+3	; Item number
bmb_snlst	,a20	@bmb_key+27	; Serial/Lot number
bmb_date	,d8		; Date (yyyymmdd)
bmb_locn	,a3		; Location
bmb_qty	,d9		; Quantity (6.3)
bmb_uom	,a3		; Unit of measure
bmb_fitem	,a24		; Finished item no
bmb_fslst	,a20		; Finished serial/lot no

**Filename:** bmexpl.rec

**Record description:** Bill of Materials explosion file

**Record length:** 76

**Primary key:** 1.30 bmx\_comp, bmx\_item, bmx\_seqn

**Alternate 1:** 1.26 bmx\_comp, bmx\_item

31.26 bmx\_type, bmx\_citem, bmx\_post

record bmexpl

bmx_key	,a30		; Primary key
bmx_comp	,a2	@bmx_key	; Company code
bmx_item	,a24	@bmx_key+2	; Item number
bmx_seqn	,d4	@bmx_key+26	; Sequence number
bmx_type	,a1		; G or S
bmx_citem	,a24		; Component item number
bmx_post	,a1		; Post quantities flag
bmx_qty	,d9		; Quantity (6.3)
bmx_cdate	,d8	@bmx_qty	; Date created (yyyymmdd)
bmx_shrink	,d9		; Shrinkage (6.3)
bmx_slst	,a1		; Serial/Lot numbered item
bmx_rtype	,a1		; Record type (D,I)

**Filename:** **bmhist.rec**

**Record description:** Bill of Materials history file

**Record length:** 76

**Primary key:** 1.29 bmh\_comp, bmh\_item, bmh\_locn

record bmhist

bmh_key	,a29		; Primary key
bmh_comp	,a2	@bmh_key	; Company code
bmh_item	,a24	@bmh_key+2	; Item ID
bmh_locn	,a3	@bmh_key+26	; Location code
bmh_qty	,d9		; Quantity built (6.3)
bmh_pdate	,d8		; Date posted (yyyymmdd)
bmh_bdate	,d8		; Date build (yyyymmdd)
bmh_tlabc	,d9		; Total labor cost (6.3)
bmh_tmatc	,d9		; Total material cost (6.3)
bmh_aloc	,a1		; Allocate stock
bmh_updt	,a1		; Update stock
bmh_dalc	,a1		; Deallocate stock
bmh_cost	,a1		; Update inventory costs

**Filename:**           **bmhold.rec**

**Record description:** Bill of Materials posting explosion file

**Record length:**     165

**Primary key:**       1.41    bmd\_comp, bmd\_gitem, bmd\_locn, bmd\_tdate, bmd\_seqn

record bmhold

bmd_key	,a41		; Record key
bmd_comp	,a2	@bmd_key	; Company code
bmd_gitem	,a24	@bmd_key+2	; Item number
bmd_locn	,a3	@bmd_key+26	; Location
bmd_tdate	,d8	@bmd_key+29	; Transaction date (yyyymmdd)
bmd_seqn	,d4	@bmd_key+37	; Sequence number
bmd_type	,a1		; Record type
			; A - assembly
			; G - group
			; I - item
bmd_item	,a24		; Component item number
bmd_desc	,a30		; Description
bmd_uom	,a3		; Unit of measure
bmd_tqty	,d9		; Total quantity needed (6.3)
bmd_lcost	,d9		; Last cost (6.3)
bmd_acost	,d9		; Average cost (6.3)
bmd_scost	,d9		; Standard cost (6.3)
bmd_div	,a4		; Division
bmd_dept	,a4		; Department
bmd_slst	,a1		; Serial/lot numbered
			; S - serial numbered
			; L - lot numbered
			; N - none
bmd_snlst	,a20		; Serial/lot number
bmd_post	,a1		; Post flag (Y/N)

**Filename:** bmmast.rec

**Record description:** Bill of Materials assembly master file

**Record length:** 82

**Primary key:** 1.31 bmm\_comp, bmm\_item, bmm\_rtype, bmm\_seqn, lseqn

**Alternate 1:** 32.24 bmm\_status, bmm\_crdate, bmm\_dsdate, bmm\_verify, bmm\_labcpi

record bmmast

bmm_key	,a31		; Primary key
bmm_comp	,a2	@bmm_key	; Company code
bmm_item	,a24	@bmm_key+2	; Item ID
bmm_rtype	,a1	@bmm_key+26	; Sequence type ; D - document ; I - item
bmm_seqn	,d3	@bmm_key+27	; Sequence number
bmm_lseqn	,d1	@bmm_key+30	; Line sequence ; 0 - item record ; 1-9 - comment record
bmm_status	,a1		; Status
bmm_crdate	,d8		; Date created (yyyymmdd)
bmm_dsdate	,d8		; Design date (yyyymmdd)
bmm_verify	,a1		; Verified flag
bmm_labcpi	,d8		; Labor cost per item (5.3)
bmm_hrspl	,d8		; Hours per item (6.2)
bmm_type	,a1		; Type ; A - assembly ; S - subassembly
bmm_lvl	,a1		; Levels ; S - single ; M - multi
bmm_explsave	,a1		; Explosion saved
bmm_revision	,a3		; Revision number
bmm_eco	,a5		; ECO number
bmm_userid	,a3		; Unique user ID
	,a3		; unused

record ,X

	,a32		
bmm_citem	,a24		; Component item ID
bmm_qty	,d9		; Quantity (6.3)
bmm_shrink	,d4		; Shrinkage factor (2.2)
bmm_cseqn	,a4		; Construction sequence
bmm_date	,d8		; Date (yyyymmdd)
	,a1		; unused

record ,X

bmm\_comment        ,a32  
                      ,a50                        ; Line item comment

**Filename:** **bmtran.rec**

**Record description:** Bill of Materials transaction file

**Record length:** 101

**Primary key:** 1.37 bmt\_comp, bmt\_item, bmt\_locn, bmt\_edate

record bmtran

bmt_key	,a37		; Record key
bmt_comp	,a2	@bmt_key	; Company code
bmt_item	,a24	@bmt_key+2	; Item number
bmt_locn	,a3	@bmt_key+26	; Location
bmt_edate	,d8	@bmt_key+29	; Transaction date (yyyymmdd)
bmt_qty	,d9		; Quantity built (6.3)
bmt_bdate	,d8		; Date built (yyyymmdd)
bmt_post	,a1		; Posted flag
bmt_tlabcost	,d9		; Total labor cost (6.3)
bmt_tmatcost	,d9		; Total material cost (6.3)
bmt_aloc	,a1		; Allocate stock
bmt_updt	,a1		; Update stock
bmt_dalc	,a1		; Deallocate stock
bmt_cost	,a1		; Update inventory costs
bmt_slst	,a1		; Serial/Lot numbered item
bmt_snlt	,a20		; Serial/Lot number
bmt_userid	,a3		; Unique user ID

**Filename:**           **bmwork.rec**

**Record description:** Bill of Materials explosion work file

**Record length:**     183

record bmwork

bmw_gitem	,a24	; Item ID
bmw_type	,a1	; Record type
		; G - group
		; S - sub
bmw_item	,a24	; Component item ID
bmw_desc	,a30	; Description
bmw_uom	,a3	; Unit of measure
bmw_qty	,d9	; Quantity (6.3)
bmw_shrink	,d9	; Shrinkage quantity (6.3)
bmw_totqty	,d9	; Total quantity needed (6.3)
bmw_qtyavail	,d9	; Quantity available (6.3)
bmw_lcost	,d9	; Last cost (6.3)
bmw_acost	,d9	; Average cost (6.3)
bmw_scost	,d9	; Standard cost (6.3)
bmw_price	,d8	; Price
bmw_locn	,a3	; Location code
bmw_div	,a4	; Division
bmw_dept	,a4	; Department
bmw_bin	,a6	; Bin/aisle
bmw_wght	,d6	; Weight
bmw_error	,d2	; Error
bmw_lead	,d2	; Item lead time
bmw_slst	,a1	; Serial/lot numbered item
bmw_post	,a1	; Posting flag (Y/N)
bmw_rtype	,a1	; Record type (D,I)



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