Product Definition and Costing

Passport Business Solutions
Product Definition and Costing User Documentation
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If you have any comments about this guide, please send your feedback to:

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Understanding Product Definition and Costing

This chapter contains the following topics:

PRODUCT DESCRIPTION

Product Definition and Costing is used to maintain data files that define the bill of material relationships for finished products, manufactured subassemblies and parts, and purchased items; the work centers used for production; and the production processes for manufactured items. This data, with the Item Masters, may be used to build up total product costs from detail data about component materials and manufacturing operations. This information also supports other materials and production management functions within the overall Manufacturing and Distribution System.

As you define your bills of material (BOM), work centers, and routings, this data is used to determine the cost of your products through cost rollup processes, planning production, and material requirements planning. This is why it is very important the information entered here is as accurate as possible.

Major functions of Product Definition and Costing are:

- Product Structures (Bill of Material) maintenance. See a Product Structures Example.

- Work Centers maintenance.

- Routings maintenance.

- Automated product cost calculation and reporting, from standard or average cost detail.

- Various inquiry displays and printed listings of product and product cost information maintained with this module.

- Updating Item Master "low level codes", the lowest relative bill of material levels of items, which are used by product cost calculation and Material Requirements Planning programs.

KEY WORDS AND CONCEPTS

To understand how to use the Passport Business Solutions Product Definition and Costing, you should understand some key concepts and words that are used in this module.

Transactions

As used in accounting, transaction refers to a business event involving money and goods or services. For example, a transaction occurs each time you put gas in your car, since you pay money in exchange for gasoline (goods).

Because computer software deals primarily with business events that have already taken place, in the Passport Business Solutions software, transaction means the record of a completed business event involving money and goods or services.

The records of sales made and payments received are examples of transactions from the area of accounting called accounts receivable. The records of your purchases and the payments you make for such purchases are transactions from the accounting area called accounts payable. The records of quantities of goods received or sold are transactions from the area of accounting called inventory control.

In the Passport Business Solutions software, when a transaction is entered into the system (into a file), it is often referred to as an entry.

Accounting

Accounting is the function, which provides quantitative information about economic entities through the collection, categorization, and presentation of financial records.

General Ledger Account Number

General Ledger account numbers are often formatted as cost centers, main accounts, and subaccounts with each part or segment classifying transactions in different ways. The Passport Business Solutions allows General Ledger account numbers to be configured in a variety of formats to suit the varying needs of different enterprises. Most examples used in the documentation are in Dept.-Main-Sub format. Refer to the *Company Information* chapter in the *PBS Administration* documentation for more information on account number setups or a complete explanation of possible account number arrangements

Cost centers are generally used to gather transactions by lines of authority and responsibility (such as division or department). Main accounts are used for primary designations (such as separating wage expense, rent expense and tax expense). Subaccounts are used to keep separate items in the same general ledger main account (such as notes due to different banks).

The minimum format in the Passport Business Solutions is a single segment account number consisting of a four-digit account number. The maximum format is a four segment account number. When four segments are used, they are sequenced as two cost centers (such as division and department), main account and subaccount. The full account number may not exceed 17 characters, including the characters in all the segments and required separators between segments. Except for the main account, the segments may be omitted or designated in length from one to eight

characters. The main account must be from four to eight characters. Use of letters is allowed on a segment-by-segment basis.

The layout of examples in the documentation is normally Dept.-Main-Sub. The setup is xxx-xxxxx-xxx (dept. of three digits, a dash, main of five letters and subaccount of three letters).

Cost Centers

Refer to the *Cost Center/Sub Accounts* chapter in the *System* documentation for information concerning Cost Center numbers.

Accounts Receivable

Accounts Receivable pertains to sales made by your company and the amount of money it is owed.

Accounts Payable

Accounts Payable pertains to purchases and disbursements made by your company and the money your company owes.

Payroll

Payroll defines the wages you pay as an employer to your employees.

Data Organization

Most of the information you enter into your computer is stored on your disk. In order for computer programs to be able to locate specific pieces of information (within large masses of information), and to be able to process it logically, information must be organized in some predictable way. The Passport Business Solutions accounting software organizes your information for you automatically as it stores it on your disk.

There are five terms you should understand about the way the information is organized:

Character

A character is any letter, number, or other symbol you can type on your computer keyboard.

Field

A field is one or more characters representing a single piece of information. For example, a name, a date, and a dollar amount are all fields.

Record

A record is a group of one or more related fields. For example, the fields representing a customer's name, address, and account balance might be grouped together into a record called the customer record.

Entry

A record in a data file is often referred to as an entry.

Data File

A data file is a group of one or more related records. A data file is often referred to simply as a file (without the word data).

The Customer File in Accounts Receivable is an example of a data file. Such a file is made up of several records, each of which contains the name, address, etc. for one customer.

Each file is kept separately from other files on the disk.

(There are other types of files in addition to data files. For example, programs are stored on the disk as program files. However, references to *file* in this User documentation refer to data file unless specifically stated otherwise.)

Purge

When you purge a file, you permanently remove information from that file. Once the information is purged, it cannot be recovered.

Balance Forward

Balance forward means the balance in an account as of a certain date. A balance forward amount is a lump-sum dollar amount, obtained by adding together several individual dollar amounts. All these specific amounts were placed in the account on or before a specified date called the balance forward date.

Compress

Compress means to make smaller. The *compress* selection reduces the number of records in a file by adding the dollar amounts of several cleared entries together and creating a single balance forward entry with the same total amount.

Help

Help refers to descriptions of functions which appear on the screen. The help text gives you a quick reference to the highlights of functions while you are running the application.

Select <Ctrl>+<F1> to access help on the graphical mode screens. Select the <F8> key in character mode.

ODBC

(pronounced as separate letters) ODBC is short for **O**pen **D**ata**B**ase **C**onnectivity. ODBC is a "pipe" that connects data from Passport Business Solutions files to popular ODBC compliant spreadsheet and reporting applications like MS Excel, Access and Crystal reports. ODBC requires a separate purchase. XDBC™ is the product name that allows PBS to interface with your data via ODBC.

Look-ups

Look-ups refer to a list of available entries for a particular field. There are two kinds of lookups: Data Lookup and Date Lookup.

Data Lookup

Many fields allow you to press a designated key <F8> to show all available data on file. For instance, when entering an invoice you may press this key at the Account number field to bring up a list of all G/L accounts on file. Selecting an entry from this list is often easier and faster than remembering the account number or stepping through all possible entries until the right one is reached.

Date Lookup

The date lookup provides a point and click window for finding and entering date fields.

In Graphical mode the date lookup is available via the <F4> key. In Character mode (Windows only) you may access the date lookup via the <F7> key.

Note	In character mode, depending on where you press <F8>, this function will return a Look-up window or context sensitive Help. If a Look-up window is returned, pressing <F8> a second time will display Help for the field if available.

Spool

SPOOL is a computer term meaning to Save Printer Output Off-Line. Spooling is a technique that allows a report to be printed at a later time. Instead of reports going directly to a printer, they are saved as a disk file, which is usually a lot faster.

When a printer is available, all or some saved reports can be printed in one long run (for example, overnight).

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Getting Started

This chapter contains the following topics:

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PREPARING TO USE PRODUCT DEFINITION AND COSTING

Before getting started, ensure that the Product Definition and Costing software is installed on your computer. Refer to the Passport Business Solutions Vision Install and Release Guide or the SQL Install and Release Guideto install the P/D module before proceeding.

Also, you may want to familiarize yourself with the main features of this module by reading the Understanding Product Definition and Costing chapter in this documentation.

Your Accountant

You should consult with your accountant before using Passport Business Solutions software. Your accountant should be familiar with your accounting software and can advise you on converting from your existing Product Definition and Costing system.

Product Definition and Costing Control Information

The Product Definition and Costing Control information contains settings which determines how this module is used.

STARTING PRODUCT DEFINITION AND COSTING

The chapters explain, in detail, the functions available in Product Definition & Costing. The instructions describe how to select each program from a menu, what the program does, and how to enter required data.

The first Product Definition & Costing functions described are presented in the order in which you may use them when first installing the system- these are the procedures required to set up some of the files used by other programs in this application. The remaining functions are presented in the order which they appear on the Product Definition & Costing menu.

Step	Description
1	Study the PBS general features in the *System User* documentation.
2	Start P/D using the instructions in the Using Product Definition and Costing chapter in this documentation.
3	*Company information* is set up for you as part of the installation procedure. Use Company information to modify the Company settings for your company. Refer to the *Company Information* chapter in the *PBS Administration* documentation.
4	If you are using cost centers or sub accounts, enter them in *Cost centers / Sub accounts* found under the CTL menu. Enter your valid G/L accounts, using *Valid G/L accounts*. If you are also using PBS General Ledger, you can enter your Chart of Accounts first, then use *Setup valid G/L accounts* within G/L to transfer accounts to Valid G/L Accounts.
5	Set up Inventory Management. Enter all Control information, master information and items. See the Inventory Management documentation.
6	Enter control information for Product Definition and Costing. Refer to the Control Information chapter in this documentation.
7	If you will be maintaining Work Centers or Routings, enter the Labor Grade Rates. See the Labor Grade Rates chapter.
8	Read the Guide to Daily Operations chapter in this documentation, which explains how to use Product Definition and Costing to perform various daily, weekly, and periodic tasks.

More on Setting Up Product Definition & Costing

From this point, there are alternative approaches to the implementation sequence.

Most companies will want to define bills of material in Product Structures before setting up Routings. If you will use the Routing functions, you must set up Work Center records before you build Routings. If you will use the optional Work Center method of labor and burden costing for some Item Master records, you must build Work Centers before you enter Item Master costs for manufactured parts and assemblies.

If you maintain Routings, you may optionally create Standard Operations before entering Routings for manufactured items. Standard Operations are descriptions of manufacturing steps that may be used in Routings for several different Item Numbers. When creating item Routing records, you may then easily "call in" Standard Operations to build selected Routing operations.

Routings also allow you to calculate Item Master labor and burden costs at "this level" from the detail of standard times in the Routing operation records and related labor and burden dollar rates in Work Centers. Or, you may optionally enter labor and burden costs directly to Item Masters.

After you have posted "this level" costs for material, outside processing, labor, or burden to Item Masters, you may use the "Update costs" function to build up and post total item costs for manufactured parts, subassemblies, and final assemblies. Product Structures is used in this process.

You can then retrieve product structure, work center, routing, and item cost detail or summary data by using the display inquiry and print functions provided.

REGULAR USE

The remaining chapters in this documentation show you how to:

- Entering standard operations
- Enter routings

TRAINING AND SUPPORT

If you have problems with the Passport Business Solutions software, contact your PBS provider.

For the name and location of a PBS provider near you, contact Passport at 1-800-969-7900 (847-729-7900).

If you wish to receive support directly from Passport, please call our End User Support Department at 1-800-969-7900, extension 124.

You can contact your own PBS provider for training; however, if your provider does not offer training, contact Passport at 1-800-969-7900.

Passport's web site is www.pass-port.com.

Also, if you have any suggestions for improving PBS, you may email us at psi@pass-port.com.

Using Product Definition and Costing

This chapter contains the following topics:

ORGANIZATION OF THIS DOCUMENTATION

This documentation provides the information you need to use Passport Business Solutions Product Definition and Costing.

Organization

The following chapter is a guide to daily operations. It explains how to use the Passport Business Solutions Product Definition and Costing to perform various daily, weekly, and periodic tasks.

After the guide, the next few chapters provide instructions on entering basic information to set up the module according to your needs and to prepare you for daily operation.

The remainder of the guide contains chapters that you use most frequently. They describe how to use the Passport Business Solutions Product Definition and Costing on a daily basis.

The last few chapters describe selections that you might use periodically, including such selections as compressing cleared entries.

You can obtain additional information from the *System User* documentation, which contains chapters that describe features common to all Passport Business Solutions modules.

- Topics covered in the *System User* documentation include:
- General rules
- Help and Lookups
- Switching companies
- Defining menu selections
- Advanced features
- Using printers for reports and forms
- Glossary of terms

Help

Graphical Mode

Help is accessed via the <Ctrl>+<F1> key.

Character Mode

You can press the <F8> key at any time for on-line help about a task or selection you are currently using.

If a data window is displayed instead of Help, you must press <F8> a second time to retrieve Help.

Menus

A *menu* is a list of things from which something can be selected.

Selecting items from a menu on a computer is the way you tell your computer what you want to do.

The Windows version of Passport Business Solutions can have three different menu types. They are the Tree-view, Windows and Menu-bar types.

The SCO Open Server and Linux versions only use the Menu-bar.

Tree-view

The following screen is an example of the Tree-view menu.
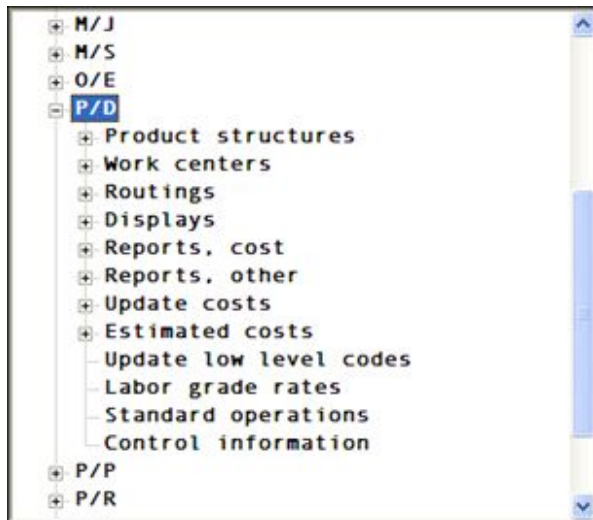
The "+" corresponds to expandable menu sections. One click will open the menu selection for the application or the sub-menu of a particular menu entry. Clicking on the "-" closes the menu item. Viewing application menus will cause a vertical slider bar to display: and sometimes depending on size and proportions of the screen and associate font, the slider bar as well. These sliders are mouse enabled.

In addition to the mouse-based menu operation, you can use the keyboard to navigate the tree-view menu. The home, end, page-up, page-down and arrow keys provide a quick and easy method of maneuvering around the menu.

To select the menu program use the Enter key or click on the menu line with the mouse.

Menu bar

The remainder of this section describes the functions of the Menu-bar. To navigate horizontally between individual modules use your keyboard's left and right arrow keys. Up to ten modules and your Passport Business Solutions System Manager may be displayed on the menu bar. If you are using more than ten modules, a **More** function is added to the menu bar. To access your additional modules, highlight **More** and press your **<Enter>** key.

To navigate vertically within a module you have two choices. You may use the up and down arrow keys on your keyboard or you may type the first letter of a displayed menu item. If more than one

menu item starts with the same letter, pressing the letter again will position your cursor over the next menu item starting with that letter.

STARTING PASSPORT PRODUCT DEFINITION AND COSTING

To start your Passport Business Solutions software, select one of the following options. If you are unsure how to proceed, please contact your supplier.

For Windows

Start->Programs->Passport Business Solutions->PBS

For UNIX/Linux

Ensure you are logged in as a user authorized to use Passport software. Refer to the *PBS Administration* documentation for more information.

Type the following:

```
cd /usr/pbs
```

or replace *"/usr/pbs"* with the name of your Passport top-level directory.

Then type the following:

```
pbs
```

Then when the master menu appears, select the module you wish to use from the master menu.

Multiple Companies

If you have set up your software to process information for more than one company (refer to *Define Multiple Companies* in the *PBS Administration* documentation), you will be prompted to enter the Company-ID.

Entering Your Initials

You are prompted to enter your initials.

Entering Passwords

You will be prompted to enter your password. For security, the characters you type will not display on the screen. A user may reset his or her password during login to PBS.

For the initial setup of users and passwords, refer to *PBS Users* chapter in the *PBS Administration* documentation.

Exiting Product Definition and Costing

To exit a Passport module, press <Esc> from the main menu. To exit a sub-menu, press <Esc> to return to a main menu. You can also exit out of the Windows menu by clicking on the Exit button.

If you exit PBS improperly, it may cause a data loss.

Never leave PBS open for a long time when not using it. Close PBS and start it again later. NEVER turn off your computer during posting.

Guide to Daily Operations

This chapter contains the following topics:

PRODUCT DEFINITION AND COSTING CHECKLISTS

The following checklists are provided as examples of how you might use Product Definition and Costing to perform various daily, weekly, and periodic tasks.

While we attempt to present the tasks in a logical order, you should adjust the checklist as necessary to meet your own needs. You may wish to consult with your PBS Manufacturing Trainer for advice on organizing your own checklists to ensure the efficiency and security of your business operations.

Daily Operations Checklist

Use the following guidelines for performing daily and periodic Product Definition and Costing tasks:

Each Day	Each Day as Needed
Enter bills of material for new products.	
Enter routings for new products.	
	Update work center costs and capacity or add new ones as needed.
Roll up costs to update item masters for new products.	
	Update product structures to reflect changes to components used to produce finished goods or sub assemblies. This may include adding or removing items, or changing quantities to reflect actual usage.
	Roll up costs for bills that have required changes.
	Update routings to reflect new production steps or adjust times on existing ones to reflect more accurate production costs.
	Update item labor and burden for goods whose routings have changed. Must be followed up with a total cost rollup to reflect overall change.
For Make To Order companies, you may wish to run the Reports, Cost, Costed Summarized Bills when quoting products to see what costs would be based on your most recent purchase of components.	

Periodic/Monthly Operations Checklist

Use the following guidelines for performing weekly and periodic Product Definition and Costing tasks:

Each Period	Each Period as Needed
	Roll up costs for all items as needed. All manufactured goods are costed at standard. If you wish to reflect your latest average costs of purchased goods in your manufactured items, you must run the Update Costs, Total Costs All Items. Talk to your accountant to determine how often this should be done.

Control Information

This chapter contains the following topics:

CONTROL INFORMATION

Control Information for Product Definition & Costing specifies what data maintenance options are used by other functions in the Product Definition & Costing package.

These options must be entered after you install PBS. You may modify them later.

Select

Select *Control information* from the P/D menu.

The following screen displays:

```
Control information,

         1. Product structure sequence # increment    [    ]

         2. Product structure scrap allowance used ?

         3. Product structure component fit lead time used ?

         4. Product structure references to
            engineering drawings used ?

         5. Product structure user code entered ?

         6. Routing sequence # increment

         7. Identify routing operation for
            components in product structure file ?

         8. Use option to define product structure
            component qty per 1000 parent units ?
```

Enter the following fields:

1. Product structure sequence # increment

When you add Product Structure (Bill of Material) records using the Product Structures entry program, you must assign a sequence number to each component item in the bill. This determines the order in which components will list when you print or display that bill. The Product Structures entry program automatically displays a "default" sequence number for each component added for a parent item, which you may accept or override when using that program.

The Sequence Number Increment entered here determines the "spacing" between automatically assigned component sequence numbers. If you specify an increment of 5, for example, the automatically assigned sequence numbers for components of the same parent item would be 5, 10, 15, 20, 25, etc. This example increment of 5 would leave some "open spaces" in the overall bill sequence into which other components could later be inserted without revising the sequence number of each component already in that bill.

The highest sequence number that may be assigned to any component within the same single level bill is 999. This limit and the maximum number of components likely to appear in any single level bill should be considered in determining this default Sequence Number Increment for your company.

You will, however, be allowed to override this default increment for specific bills when you maintain Product Structures.

Enter any non-zero value, up to 2 numeric digits.

2. Product structure scrap allowance used ?

The Product Structure entry program provides the option to specify a Scrap Allowance Percent for any component in a bill of material. This provides a percentage add-on to the net "Component Quantity Per Parent", to allow for component scrap when planning component material requirements or calculating component material costs.

Even if you expect scrap or yield loss for some components, you may elect to include the expected loss in the "Component Quantity Per" figure in Product Structure records rather than using the separately specified Scrap Allowance Percent.

A Y answer to the above question will allow you to enter a separate component Scrap Allowance Percent in the Product Structure records; a N answer will bypass entry of this factor.

3. Product structure component fit lead time used ?

Product Structures entry also provides the option to specify a Component Fit Lead Time for any component in a bill of material. Use of Component Fit Lead time allows system calculation of different due dates for different components in the same parent bill of material, when planning material requirements in Inventory Control or MRP.

This option is applicable when some components in a single level bill will not be needed for a considerable number of days or weeks after starting the parent item in which they are directly used. Component Fit Lead Time is entered in component structure records as the number of days after the parent start date that the component is required. If your single level manufacturing or assembly lead times are relatively short (e.g. 1 to 5 days at each part or assembly level in the bill of material) you may not need to specify Component Fit Times.

A Y answer to the above question will allow you to enter Component Fit Lead Times to Product Structure records; a N answer will cause your programs to bypass this entry, setting all fit times to zero. Zero fit time means a component will be planned to be available at the start of the parent manufacturing process.

4. Product structure references to engineering drawings used ?

Another Product Structures maintenance option is the entry of additional Engineering Drawing Reference data for components, or of any other extra information you need in component Product Structure records. If maintained, this extra information can optionally be printed on Single Level Bill of Material lists. Answer Y to optionally maintain these additional Engineering Drawing References when adding Product Structure records.

5. Product structure user code entered ?

A Y answer to this question will allow you to enter a User Code of up to 3 alphanumeric characters in your Product Structure records; a N answer will cause this entry to be bypassed.

6. Routing sequence # increment

When you add Routing records, you must assign a sequence number to each Routing operation record, which determines the order in which operations will list when you print or display the item Routing. The program to enter routing operations automatically displays a "default" sequence number for each operation added for an item, which you may accept or override when using that program.

The Sequence Number Increment entered here determines the "spacing" between automatically assigned operation sequence numbers. If you specify an increment of 10, for example, the automatically assigned sequence numbers for operations in the item Routing would be 10, 20, 30, etc. (or 100, 110, 120, 130, etc. if you assign 100 as the first operation sequence number). This example increment of 10 would leave some "open spaces" in the overall routing sequence into which other operations could later be inserted without revising existing sequence numbers.

The highest sequence number that may be assigned to any routing operation for the same Item Number is 999. This limit and the maximum number of operations likely to appear in any item Routing should be considered in determining this default Sequence Number Increment for your company. You will, however, be allowed to override this default increment for specific item Routings when you maintain Routing data.

Enter any non-zero value, up to 2 numeric digits.

7. Identify routing operation for components in product structure file ?

A Y answer to this question will allow you to enter in Product Structure records the sequence number of the parent Routing operation at which the component is used. This feature is usually only required if you make assemblies where components are added at different operations and you use PBS Manufacturing Shop Floor Control options to automatically disburse (backflush) component inventories based on parent item production reporting.

A N answer will cause the Enter Product Structure Records program to bypass the entry of the used at Operation Sequence Number for each component.

8. Use option to define product structure component qty per 1000 parent units ?

A Y answer will allow you to enter a code in Product Structure records indicating the number of parent units (M for 1000 or space for 1) related to the component "Quantity per parent" field. The "M" parent quantity code in a Product Structure record causes other programs to divide any exploded parent quantity by 1000 before multiplying it by that component's "Quantity per parent". A N answer to this question will cause the parent quantity code to default to space meaning all component "Qty per parent" values are for 1 parent unit.

Select <Enter> and the second screen displays:

```
Control information,

              9. Use option to define routing run hrs per unit
                 as subtask hours times repetitions ? [ ]

             10. Default routing opn Shop floor control data:
                 Report setups for this opn ?
                 Report qty for this opn ?
                 Report run time for this opn ?
                 Overlapped with preceding opn ?
                 Automatic component issues ?
                 Receive to stock at this opn ?

             11. Routing instructions used ?
             12. Std operation instructions used ?
```

9. Use option to define routing run hours per unit as subtask hours times repetitions ?

A Y answer allows you to enter a "subtask" run time standard and the number of subtask repetitions required to complete an operation, in your Routing Operation records. With this option, any run time standards defined in the Standard Operations File are assumed to be subtask standards when they are copied into Routing Operation records.

A subtask example is placement of connectors on the ends of 6 wires in a cable that is being assembled. The subtask standard is defined as the time allowance to fasten one connector, or can alternatively be defined as the number of connectors that should be completed in 1 hour. The number of repetitions (6 in this example) is separately entered. The Routing Operations entry program will multiply the subtask time standard by the defined number of repetitions to determine the total operation run time allowance for one cable.

A N answer to this question means you will enter the run time standard as the total time to perform the operation for one production unit of the Item Number.

10. Default routing opn shop floor control data:

Report setups for this opn ?

Report qty for this opn ?

Report run time for this opn ?

Overlapped with preceding opn ?

Automatic component issues ?

Receive stock at this opn ?

When you add Routing Operations records, that entry program asks you to specify these Shop Floor Control parameters for each operation. These are the default answers (Y or N) that you plan to use for most operations. See the chapter about maintaining Routing Operations for further explanation of these questions and answers.

11. Routing instructions used ?

Answer Y to optionally maintain additional Routing Instructions when adding Routing Operation records.

12. Std operation instructions used ?

Answer Y to optionally maintain additional Standard Operation Instructions when adding Standard Operation records.

Labor Grade Rates

This chapter contains the following topics:

ENTERING LABOR GRADE RATES

The Labor Grade Rate File identifies valid shop Labor Grades, with their respective descriptions and hourly rates. Labor Grades are referenced by other programs that maintain Work Center and Routing records.

Use this function to identify all Labor Grades that can be referred to in other file maintenance programs. Each time a Labor Grade is entered to another file, the code is validated to the Labor Grade Rates File. Thus a Labor Grade must first be put in the Labor Grade Rates File before it can be entered to another file.

Select

Labor grade rates from the P/D menu. The following screen appears:

```
Labor grade rates




                    * 1. Labor grade   [      ]

                      2. Description

                      3. Labor rate








<F1> = Next record, <F2> = Previous record, <F5> = Print
```

Enter the following fields:

1. Labor grade

Entry Format: Up to 2 alphanumeric characters.

If the entry matches a code on file, the remaining fields are displayed.

2. Description

Entry Format: Up to 30 alphanumeric characters.

3. Labor rate

Entry Format: Up to 3 numeric digits plus 2 decimals.

Comments: The hourly dollar rate for the Labor Grade.

Labor Grade Rates List

Press F5 to print a report of all Labor Rates on file.

Standard Operations
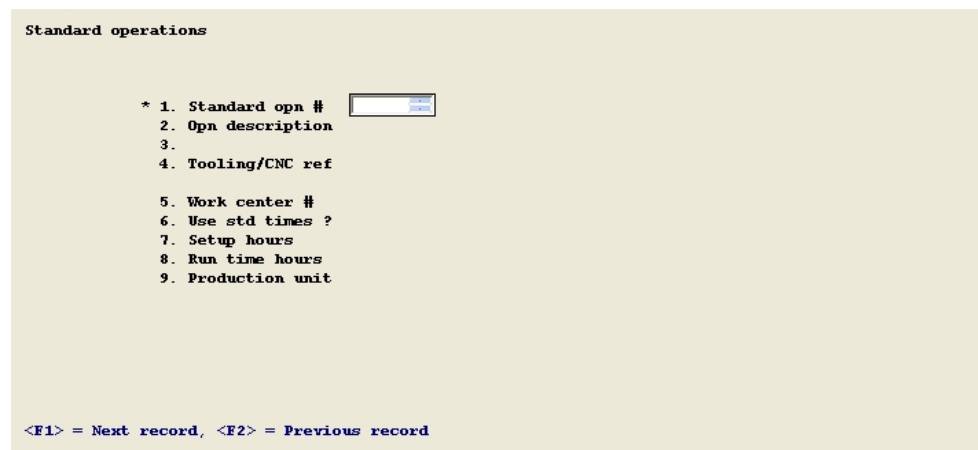
This chapter contains the following topics:

Comments: May identify required tools, or reference numbers for Computer Numeric Control tapes or programs.

5. Work center

Entry Format: Up to 6 alphanumeric characters, or <F1> for "Any work center".

Comments: If a Work Center Number is entered, it must be on the Work Center File, in which case the Work Center description and Department Number display.

6. Use std times ?

(Use standard times ?)

Entry Format: Y or N.

If you answer Y to the question about standard times, you enter:

7. Setup hours

Entry Format: Up to 2 numeric digits plus 3 decimals, or zero.

Press <F1> if you want to enter the time in minutes, after which the program will convert the value entered to hours.

Default: If you entered a Work Center Number in this record, and the Average Setup Hours for the Work Center is not zero, the Work Center record value will display as the default entry.

If you enter a non-zero value for Setup Hours, the program asks if the setup time is:

Direct labor ?

Entry Format: Y or N. (Default is Y.)

8. Run time hours

Entry Format: Up to 3 numeric digits plus 3 decimals, or zero.

Press <F1> if you want to enter the time in minutes, after which the program will convert the value entered to hours.

Comments: If the operation is machine paced, enter the machine hours standard. If this is not the same as run time labor hours, you will be able to convert machine hours to labor hours in any Routing Operation record that uses this Standard Operation Number.

If you enter a non-zero value for Run Time Hours the program asks:

per (per quantity, related to run time hours)

Entry Format: Up to 4 numeric digits.

Default: If you are adding a record, 1 is displayed.

Comments: If the run time hours is for 1 unit of production, enter 1. Otherwise enter the number of production units related to the run time.

If the P/D Control Information answer to the question about calculating run time standards from "subtask hours times repetitions" is Y, the Standard Operations run time values are considered to be subtask standards. These standards will be extended by the "Repetitions" currently in the Routing Operation record to calculate operation standard run time.

Direct labor ?

Entry Format: Y or N. (Default is Y.)

9. Production unit (related to run time)

Entry Format: Up to 4 alphanumeric characters.

Default: The last production unit entered.

Comments: Production Units may be different than inventory Stock Units produced at machine operations that make multiple inventory units per machine cycle. For example, inventory units could be EACH, but production unit related to the machine run time standard could be HIT or CYC (for Cycle).

1. - 99. Instructions

Entry Format: Up to 99 lines of 45 characters each, in groups of 10 lines per screen.

Comments: If you answer "N" to **"Std operations instructions used ?"** in P/D Control information, you will not be prompted to add instructions.

If you do use instructions, when you are adding or changing instructions, press <F1> to put spaces in an instruction field and in subsequent fields in the same group of 10. To delete all instructions for a group of 10, press <F1> when the cursor is at the top instruction field.

Product Structures

This chapter contains the following topics:

INTRODUCTION TO PRODUCT STRUCTURES

The Product Structures define each bill of material relationship between a parent item and component item (raw material, part or subassembly) used directly on that parent. It is used by many other functions in Product Definition & Costing and in other PBS Manufacturing packages. For example, Product Structure records are used together with related Item Master records by programs that print or display product bill of material lists and component where used lists. These records are also used to explode parent orders into component requirement quantities in the Inventory Management and Master Scheduling & MRP packages.

Multiple level bills of material are defined by constructing several single level bills for the final product and for its manufactured subassemblies and manufactured parts. For example, an Item Number that is a component subassembly within the single level bill of material for a parent final assembly will appear as the parent Item Number in another single level bill for that subassembly.

Product Structure records also indicate engineering change implementation Status (Current, Future, or Obsolete) of each component, and the Effective Date of that component's use or obsolescence in manufacturing the parent item. This component "effectivity" information allows the retrieval of a parent bill of material configuration as of any specific calendar date - past, current, or future. The current and pending component effectivities are used by other PBS Manufacturing systems that explode component material requirements. Past bill of material configurations for a parent item may also be retrieved if Product Structure records for previously obsolesced components have not been deleted.

Product Structures Example

Product Structures (Enter) is where you begin to link your items together to create product trees or bills of material. PBS Manufacturing supports single and multiple level product structures. Creating product structures is a very simple process. You are asked for a Parent Item. This is the item you are trying to build. Let's use a birdhouse as an example. A bird house is made up of 1 roof, 4 walls and 1 floor. This represents our bill of material. The bird house is the parent item. The items mentioned are the component items.

When you are entering a bill of material in PBS Manufacturing you will type in BIRDHOUSE as the parent item number. You will then type ROOF in the component item number field. This is the first component we will add to the bill. The system will automatically assign the sequence number. Now you enter in how many of the component is needed to build one BIRDHOUSE. 1 is the appropriate answer in this example. Depending on how you've set up P/D will determine what your asked next. In this instance, we will take the default answers for the rest of the fields as they don't really pertain in this example (see the P/D section of the manuals for information on the remaining fields). Pressing <Enter> at field number to change will return you to the top. Press <Enter> to accept the same parent item number. Now enter in another component such as WALL. When asked for the quantity per enter 4. You get the point. It's that easy to structure a single level bill.

That leads to the question "How do I enter a multiple level bill?" Let's use the birdhouse example. In the example we referenced several parts. Each of those parts had to be either purchased or manufactured. Use the walls as our example. The wall is a manufactured item. It's made out of wood. So, using the same method as above, you will enter the bill of material with WALL as the parent item. It's component would be WOOD in a quantity of 1 Sq Ft. That's it, you've just created an Indented Bill of Material! Really, all you are ever doing is building single level bills of material. However, through the product relationships, you are actually building complete product trees. The following is a graphical representation of our bill:
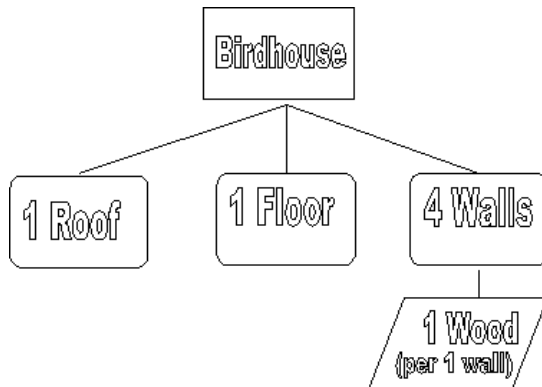
ENTERING PRODUCT STRUCTURES

Select

Enter from the *Product structures* menu.

The following screen displays:

Graphical Mode

The value set in P/D Control Information is accepted as the default automatically and will be used for data entry. Should you wish to change this default for this one routing, you may do so by selecting Options menu, and choosing Sequence Numbers. This will allow you to do a one-time override to the default sequence.

Character Mode

When you select the program, you are first prompted to enter the Component sequence # increment default value that you wish to use for the structure records to be added. In graphical mode, you

must select Sequence numbers from the options menu. A message displayed under this entry explains that:

The component sequence number will default to the last used sequence number plus the value of the above increment.

Press ENTER to accept the increment number displayed from P/D Control Information, or enter another value. If you need to modify your entry, answer OK to "Any change ?", or answer Cancel to proceed.

Enter the following fields:

Parent item

Entry Format: Up to 15 alphanumeric characters.

Default: If not the first entry, previous Parent Item Number entered displays as default for next structure record.

Validation: Must match an Item Master record.

Comment: If you enter a Parent Item Number or a Component Item Number that is not in Item Masters, the program informs you of this condition and asks **Want to add item ?** A N answer will return you to re-enter another Item Number; a Y answer will conveniently take you directly into the Item Masters entry program where you may add one or more new Item Master records. Then when you exit from Item Masters, you will be returned directly to the Product Structures entry screen.

Component item

Entry Format: Up to 15 alphanumeric characters.

Validation: Must match an Item Master record.

Comment: You may optionally press ENTER to find a record by its Component Sequence No., rather than by Component Item Number.

Component sequence

Entry Format: Up to 3 numeric digits.

Default: When adding a record, the program displays a value equal to last sequence number used in the parent bill of material plus the Component Sequence No. Increment.

Validation: Must not equal Component Sequence No. of another component in the same single level bill.

Comment: Sequence numbers determine the order in which components will be listed on bill of material displays or prints.

Quantity per parent

Entry Format: Up to 3 numeric digits plus 4 decimals.

Defaults: Press ENTER for 1.0000, or <F1> for "As reqd".

Comments: The "As reqd" (<F1> key) option actually places zero in this field and should only be used for non-controlled or non-inventoried components (e.g. engineering prints), that you wish to include on bill of material lists.

Stock unit of measure for the component and the parent are displayed to the right of this entry.

If in P/D Control Information the answer is Y to "Use option to define product structure component qty per 1000 parent units ?", you are prompted to enter a parent quantity code (M for 1000 or space for 1 parent units) just before the parent's stock unit of measure.

If the component's Unit of Measure is FT, you have the option of entering the Quantity Per Parent in FT or IN (inches); if the component's Unit of Measure is LB, you have the option of entering the Quantity Per Parent in LB or OZ (ounces). In these two situations, the program will ask you to enter your **Input unit of measure** after you enter the Quantity Per Parent.

If you are prompted to enter Input Unit Of Measure, press ENTER to accept the default Unit of Measure displayed, or enter IN or OZ. If you enter IN, the program will convert your preceding quantity entry from inches to feet. If you enter OZ, the program will convert your preceding quantity entry from ounces to pounds.

You may define a negative quantity in the BOM which allows you to create a negative allocation. This allows you to configure an order. You may add and subtract items from an existing assembly, at least from an inventory perspective.

Scrap allowance percent

Entry Format: Up to 3 numeric digits plus 1 decimals, or zero.

Comments: Enter as a percent (e.g. 5.5 for 5.5%) which will be internally converted to a decimal by other programs. Programs that use this factor to explode component requirements increase the Quantity Per Parent by this percentage.

If you answered N to 2. Product structure scrap allowance used ?in the P/D *Control Information*, the program will bypass this entry and set scrap allowance percents to zero.

Component status

Entry Format: Drop down list choices of Current, Future, or Obsolete.

Default: Current

Effective date

Entry Format: 6 numeric digits in MMDDYY format.

Default: System Date, displayed.

Comments: The effective date of the Component Status.

If a component is currently used in the parent and there are no plans to discontinue its use, enter Current in Component Status and the current date, or a past effective date, in Effective Date.

If a component is currently used in the parent but will be obsoleted for the parent as of a future date, enter Obsolete in Component Status and the future obsolescence date in Effective Date.

If a component is not currently used in the parent but will be at some future date, enter Future in Component Status and the future starting date of use in Effective Date.

User code

Entry Format: Up to 3 alphanumeric characters or space.

Comments: If you answered N to "Product structure user code entered ?" in P/D Control Information, the program will bypass this entry.

Component fit time

Entry Format: Up to 3 numeric digits, or zero.

Validation: If a non-zero value entered exceeds the Item Master Lead Time Days of the parent Item Number, you are requested to re-enter a lesser value.

Comments: If you answered N to 3. Product structure component fit lead time used ? in the P/D Control Information, the program will bypass this entry and set component fit times to zero.

Enter the estimated number of lead time days from the parent start date that the component will be added to the parent. Programs that compute component required dates will subtract this value from the parent total lead time days. The component due date will be offset from the parent due date by the resultant number of days (Parent Total Lead Time Days minus Component Fit Time Days). Zero fit time means the component is required on the day that the parent is started.

Used at operation seq

(Used at operation sequence number)

Entry Format: Up to 3 numeric digits.

Default: Blank = "First".

Validation: Any non-zero value entered must match a Routing operation sequence number for the Parent Item Number.

Comments: The program will bypass this entry if you answered N to

"Identify routing operation for components in product structure file ?"

in the P/D Control Information, or if the parent is not a manufactured item.

Engineering references

Entry Format: Up to 99 lines of 45 alphanumeric characters each, in groups of 10 lines per screen.

Comments: If you answered N to **"Product structure references to engineering drawings used ?"** in P/D Control Information, you will not be prompted to add references.

If you do use references, when you are done adding or changing references, press F1 to put spaces in a reference field and in subsequent fields in the same group of 10. To delete all references for a group of 10, press <F1> when the cursor is at the top reference field.

The program allows revision to any field except Parent Item Number. Component Item Number or Sequence Number changes cannot duplicate a value in another component structure record for the same Parent.

DELETE ENTIRE BILL

Use this program to delete all component Product Structure records for a single level bill of material with one entry.

You are requested to enter Parent Item Number for the bill to be deleted, after which the program will display that item's description. If there are no Product Structure records for the Parent Item Number you enter, the program will inform you of this. Otherwise, the program asks:

OK to delete product structure records ?

Answer Y to delete all structure records that define the single level bill of material, or answer N to leave the bill.

COPY SINGLE LEVEL BILL

This program allows you to copy the bill of material for one Parent Item Number to another Parent Item Number, provided that no Product Structure records have previously been setup for the new parent.

This function does not delete the original parent's Product Structure records from which component structure records are automatically created for the new Parent Item Number. To copy a bill, you are requested to enter:

Select

Copy single level bill from the *Product structures* menu.

The following screen displays:

Enter the following fields:

Copy from this parent item #

Entry Format: Up to 15 alphanumeric characters.

Validation: Product Structure records must be on file for this Parent Item Number.

Copy to this parent item #

Entry Format: Up to 15 alphanumeric characters.

Validation: Product Structure records must not already be on file for this Parent Item Number.

Component seq # increment

Entry Format: Up to 2 numeric digits.

Default: Product Structure Sequence No. Increment from P/D Control information.

Comment: Component structures for the new bill will have this "spacing" between each Sequence Number.

Copy components from original bill that are effective as of

Entry Format: Up to 6 numeric digits, in MMDDYY format.

Default: System Date, displayed.

Comments: All structure records for the new parent are created with a Component Status of C (Current).

Effective date of components in new bill of material

Entry Format: Up to 6 numeric digits, in MMDDYY format.

Default: System Date, displayed.

Copy engineering references

Entry Format: Check box, checked is yes and unchecked is no.

Default: Unchecked.

Copy used at operations

Entry Format: Check box, checked is yes and unchecked is no.

Default: Unchecked.

OK or Cancel

Select OK to proceed with the copy or Cancel to return to the menu without copying the product structure.

MASS REPLACE COMPONENT

You may use this program to mass replace any Component Item Number in Product Structure records with another Item Number that you designate to be the replacement component.

The original component Item Number is replaced in all Product Structure records in which it appears. There is only one exception to this replacement logic; the old Component Item Number is not replaced if this would cause the new Component Item Number to be structured directly to itself, as both the Parent and the Component Item Number in the same structure record.

The data you enter are:

1. Mass replace component item #

Entry Format: Up to 15 alphanumeric characters.

Validation: Product Structure record(s) must be on file for this Component Item Number to be replaced.

2. With this component item #

Entry Format: Up to 15 alphanumeric characters.

Validation: Must be in Item Masters or left blank.

Comment: If left blank, this will delete the component previously specified from all product structures. It's recommended you first print a where used list to see which product structures will be effected.

Work Centers

This chapter contains the following topics:

INTRODUCTION TO WORK CENTERS

The Work Center File identifies various information about a labor or machine work center, such as cost rates and capacity. Work Centers are referenced by other functions that maintain Item Master and Routing records. Work Centers are also used by other PBS Manufacturing modules.

Labor and burden rates in here are used for costing standard routing operations and shop order routing operations. Both estimated and actual hours or quantities for operations are extended by the standard rates for the operation's Work Center.

A Work Center may be defined as a single machine, a group of machines with similar capabilities, or a labor work group.

ENTERING WORK CENTERS

Use this function to identify all Work Centers that can be referred to in other programs. Any time a Work Center Number is entered to another file or is otherwise used by another function, the Work Center Number is validated against Work Centers.

Select

Enter from the *Work centers* menu.

The following screen displays:

```
Work centers (Enter)

  * 1. Work center #          [        ]
    2. Description

    3. Department #               15. Avg queue days
    4. Machine #                  16. Avg setup hours
    5. Number of machines
    6. Number of people           17. Daily capacity
                                  18. Capacity & load UM
  Labor rates:                    19. Efficiency factor
    7. Reg labor grade
    8. Reg labor rate             20. W/C usage PTD
    9. Setup labor grade          21. W/C usage YTD
   10. Setup labor rate           22. W/C usage last yr

  Burden rates:                   23. Date last regular
   11. Pct of labor                   machine maintenance
   12. Rate per labor hr
   13. Rate per machine hr
   14. Rate per unit prod
 <F1> = Next record, <F2> = Previous record
```

Enter the following fields:

1. Work center

Entry Format: Up to 6 alphanumeric characters.

If the entry matches a code on file, the remaining fields are displayed.

2. Description

Entry Format: Up to 30 alphanumeric characters.

3. Department

Entry Format: Up to 3 alphanumeric characters.

Default: Spaces (N/A displayed, for "Not applicable").

Comment: The Department Number allows you to list Work Centers by department, and to report shop labor load totals by department.

4. Machine

Entry Format: Up to 6 alphanumeric characters.

Default: Spaces (N/A displayed, for "Not applicable").

5. Number of machines

Entry Format: Up to 3 numeric digits, or zero.

6. Number of people

Entry Format: Up to 3 numeric digits plus 2 decimals, or zero.

Labor rates:

7. Reg labor grade

Entry Format: Up to 2 alphanumeric characters, or space.

Comments: If not spaces, must match a record on the Labor Grade Rates File.

8. Reg labor rate

Entry Format: Up to 3 numeric digits plus 2 decimals, or zero.

Comments: Entry of a valid Labor Grade code in the preceding field will cause this field to be automatically filled with the hourly dollar rate from the matching Labor Grade Rate record.

9. Setup labor grade

Entry Format: Up to 2 alphanumeric characters, or space.

Comments: If not space, must match a record on the Labor Grade Rates File.

10. Setup labor rate

Entry Format: Up to 3 numeric digits plus 2 decimals, or zero.

Comments: Entry of a valid Labor Grade code in the preceding field will cause this field to be automatically filled with the hourly dollar rate from the matching Labor Grade Rate record.

If a separate Setup Labor Rate is not specified, other programs will use the Regular Labor Rate to cost setup hours estimated or reported.

Burden rates:

You may specify one or more types of burden (overhead) rates for the Work Center. All burden rates entered will be applied to estimated or actual hours or quantities for related manufacturing operations, to determine total burden cost.

11. Pct of labor

Entry Format: Up to 3 numeric digits plus 2 decimals, expressed as a percent, or zero.

Comments: Enter a value used to calculate burden dollars as a percent of the direct labor dollars (that are calculated from labor hours and labor rates).

12. Rate per labor hr

Entry Format: Up to 3 numeric digits plus 2 decimals, expressed as a dollar burden rate per labor hour, or zero.

Comments: Enter a value used to calculate burden dollars by multiplying this rate by direct labor hours.

13. Rate per machine hr

Entry Format: Up to 3 numeric digits plus 2 decimals, expressed as a dollar burden rate per machine hour, or zero.

Comments: Enter a value to calculate burden dollars by multiplying this rate by machine hours.

14. Rate per unit prod

Entry Format: Up to 3 numeric digits plus 4 decimals, expressed as a dollar burden rate per unit produced, or zero.

Comments: Enter a value to calculate burden dollars by multiplying this rate by production output units.

15. Avg queue days

Entry Format: Up to 2 numeric digits plus 1 decimals, or zero.

Comments: The average waiting time, in days, that a job is expected to incur between the time of its arrival at the Work Center and the start of work on that job. Used as a default queue time value for Routing Operations performed in the Work Center.

16. Avg setup hours

Entry Format: Up to 2 numeric digits plus 3 decimals, or zero.

Comments: The average setup time, in hours, that a job is expected to incur in the Work Center. Used as a default setup time value for Routing Operations performed in the Work Center.

17. Daily capacity

Entry Format: Up to 5 numeric digits plus 2 decimals, or zero.

Comments: The total average daily capacity of the Work Center in the unit of measure designated by the subsequent entry in Field 18.

May be entered as "theoretical capacity" units to be multiplied by the Efficiency Factor in Field 19 to determine the Work Center "Planned Capacity".

18. Capacity & load UM

Entry Format: LH (Labor Hours) or MH (Machine Hours) or UP (Units of Production)

Comments: The unit of measure in which capacity and load is defined and reported for the Work Center.

19. Efficiency factor

Entry Format: Up to 1 numeric digit plus 2 decimals.

Default: 1.00.

Comments: The factor to be multiplied by the Average Daily Capacity to calculate Planned Capacity.

20. W/C usage PTD

21. W/C usage YTD

22. W/C usage last yr

Entry Format: Up to 8 numeric digits plus 3 decimals, or zero.

Comments: Work Center capacity units actually used, in the Capacity & Load Unit of Measure, for the current period, year-to-date, and last year.

Work Center usage values are automatically updated by Shop Floor Control programs. You may enter historical values when first adding a work center record, but these fields are protected from revision during subsequent inquiry.

23. Date last regular machine maintenance

Entry Format: 6 numeric digits in MMDDYY format.

Default: Spaces.

Comments: This field may be used to track and schedule preventative maintenance for machine work centers.
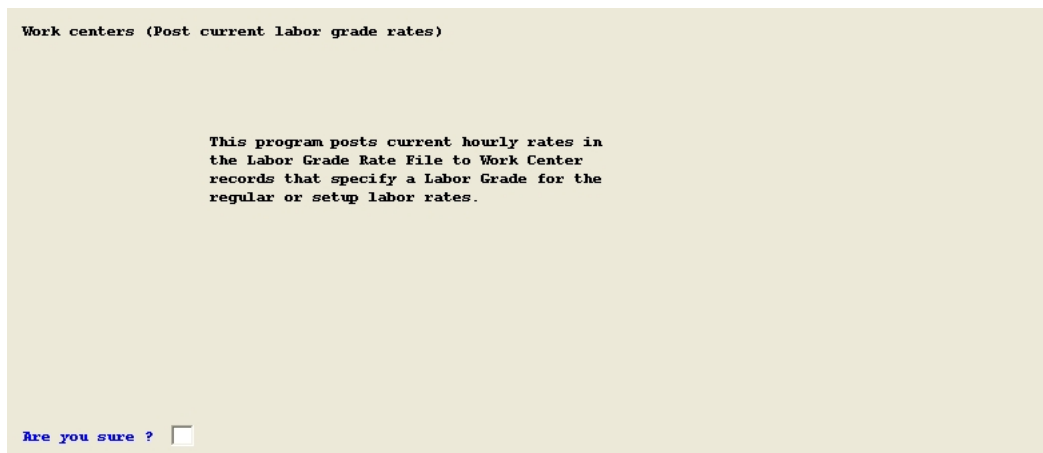
POST CURRENT LABOR GRADE RATES

After you change hourly rates in Labor Grade Rates, you may use this program to post the new labor rates to Work Center records that specify a Labor Grade for regular or setup labor.

Select

Post current labor grade rates from the *Work centers* menu.

The following screen displays:

```
Work centers (Post current labor grade rates)




                    This program posts current hourly rates in
                    the Labor Grade Rate File to Work Center
                    records that specify a Labor Grade for the
                    regular or setup labor rates.









Are you sure ?  [ ]
```

When you select this program, a message explaining the file updating process is displayed and you are asked to respond to **"Are you sure ?"**. Answer Y to post the current rates from the Labor Grade Rate File to related Work Center records.

Routings

This chapter contains the following topics:

INTRODUCTION TO ROUTINGS

Use this function to maintain and list Routing File operations that define sequential manufacturing steps required to produce specific Item Numbers. A valid manufactured Item Number and an Operation Sequence Number, with an optional Alternate Number, are required to identify a routing operation. Operation Alternate Numbers specify one or more substitute operation processes that are an alternate method of completing a "regular" operation.

Other programs on this menu allow you to delete all Routing operations for an Item Number, to copy Routing operations for an item to create a Routing for another Item Number, or to post updated information from the Standard Operations File to all Routing records with a matching Standard Operation Number. Routing lists may be displayed on the screen, or printed in a "full" format or "shop order routing" format.

ENTERING ROUTINGS

When you select the program, you are first prompted to enter the operation sequence number default increment that you wish to use for the routing records to be added.

Character Mode

A message displayed under this entry explains that:

```
The operation sequence # will default to
the last used sequence # plus the value of
the above increment.
```

Press ENTER to accept the increment number displayed from P/D Control Information, or enter another value. If you need to modify your entry, answer Y to "Any change ?", or answer N to proceed.

Graphical Mode

The value set in P/D Control Information is accepted as the default automatically and will be used for data entry. Should you wish to change this default for this one routing, you may do so by selecting Options menu, and choosing Sequence Numbers. This will allow you to do a one-time override to the default sequence.

Select

Enter from *Routings* menu. The following screen displays:

Enter these fields:

Item #

Entry Format: Up to 15 alphanumeric characters, or press ENTER to select by description to search for an Item Number by entering any portion of the first 30 characters of its description.

Default: The previous Item Number entry, if any, displays as the default

Validation: Must match a record on the Item Master File, in which case item description is displayed.

After entering the Item number you have the following button options:

Button	Button Description
New	Add a new routing.
Edit	Edit an existing routing.
Save	Save a new routing or changes to an existing routing.
Save/New	A combination of the Save and New buttons.

Button	Button Description
Delete	Delete and existing routing.
Cancel	Cancel the adding of a new routing or the editing of an existing routing.
Exit	Exit back to the menu.

Routing Data

Operations seq

Press ENTER to accept the increment number displayed from P/D Control Information, or enter another value.

Operation seq

(Operation sequence number)

Entry Format: Up to 3 numeric digits, or Blank to assign the next available sequence number, or <F1> to retrieve next record on file for the item.

If this entry and Item Number match a record on file, the remaining fields are displayed.

Default: If you leave this field blank to add an operation record, the value assigned by the program is the last sequence number used for the item Routing plus the sequence number increment specified on the previous entry screen.

If you enter a Sequence Number for which there is also an Alternate Number already on file, you will be prompted to enter:

Operation alt

Entry Format: 2 numeric digits. The first cannot be zero.

Space is allowed if this field is entered right after Operation Sequence Number. Space will cause the "regular" operation for the Sequence Number to be displayed.

The first digit of Alternate Number designates the alternate process, while the second digit designates the step number within the alternate process. You may define several alternate processes for each "regular" operation, and some alternates may have several operation steps to replace a single "regular" operation.

If this entry, Sequence Number, and Item Number match an alternate record on file, the remaining fields are displayed.

Comments: To add a new Alternate Number, you may first retrieve the "regular" operation for the Sequence Number. In graphical mode select <F5> to add an alternate. In character mode press F2 at "Field number to change ?". The cursor will then move to Alternate Number.

Standard opn

(Standard operation number)

Entry Format: Up to 6 alphanumeric characters, or space.

Validation: If not space, must match a record on the Standard Operations File.

Comments: If you enter a valid number, defaults from the Standard Operation record will display for some subsequent entries when adding an operation.

Opn description

Entry Format: 1 or 2 lines of description, up to 30 alphanumeric characters each.

Default: If you are adding an operation and you entered a Standard Operation Number, the description from the Standard Operation displays as the default.

Tooling/CNC ref

(Tooling/CNC reference)

Entry Format: Up to 20 alphanumeric characters, or space.

Default: If you are adding an operation and you entered a Standard Operation Number, the reference from the Standard Operation displays as the default.

Comments: May identify required tools or reference numbers for Computer Numeric Control tapes or programs.

Work center

Entry Format: Up to 6 alphanumeric characters. Space not allowed.

Default: If you are adding an operation and you entered a Standard Operation Number and the Standard Operation has a specific Work Center, it displays as the default.

Validation: Must match a record on the Work Center File, in which case the Work Center description displays.

Copy standard times from Standard operation ?

If you are adding an operation and you entered a Standard Operation Number and the Standard Operation has standard times, the program will next ask **Copy standard times from Standard Operation ?**. If you answer Y, Standard Setup Hours, Production Reporting Unit, and Standard Run Hours data will be automatically entered. Otherwise, you enter:

Std setup hours

Entry Format: Up to 2 numeric digits plus 3 decimals, or zero

Press <F1> if you want to enter the time in minutes, after which the program will convert the value entered to hours.

Default: If the Average Setup Hours in the Work Center record is not zero, it will display as the default entry.

If you enter a non-zero value for Setup Hours, the program asks if the setup time is:

Direct labor

Entry Format: Check box where checked is yes and unchecked is no.

Comments: Check the box if you want the time to be included in standard costs which may be calculated from the item Routing. Uncheck the box if the time is indirect labor, but specified for shop loading.

Prod reporting unit

(related to run time)

Entry Format: Up to 4 alphanumeric characters.

Default: If you are adding a record, Stock Unit of Measure from the Item Master displays.

Comments: Production Units may be different than inventory Stock Units produced at machine operations that make multiple inventory units per machine cycle. For example, Stock Unit could be EACH, but Production Unit related to the machine run time standard could be HIT or CYC (for Cycle).

If the Production Unit differs from the item's Stock Unit of Measure, you must enter:

Stock/prod ratio

Entry Format: Up to 4 numeric digits, specifying the Stock Units per Production Unit. E.g. 4 EACH/HIT.

There are two methods for entering Standard Run Hours. If in P/D Control Information the answer to the question about using "subtask hours times repetitions" is Y, you enter the following in a windowed area:

Subtask hours

Entry Format: Up to 3 numeric digits plus 3 decimals, or zero.

per

(subtask quantity per, related to subtask hours)

Entry Format: Up to 4 numeric digits. Default value is 1.

Repetitions

Entry Format: Up to 3 numeric digits. Zero not allowed.

When you answer N to "Any change ?", the program calculates Field 10 as Repetitions x Subtask hours / Subtask quantity per.

If the P/D Control Information answer to the question about using "subtask hours times repetitions" is N, you enter:

Std run hours

Entry Format: Up to 3 numeric digits plus 3 decimals, or zero.

Press <F1> if you want to enter the time in minutes, after which the program will convert the value entered to hours.

Comments: If the operation is machine paced, enter the machine hours standard. This may not be the same as run time labor hours, but you will enter the Labor Hours/Run Hours conversion ratio.

If you enter a non-zero value for Run Time Hours the program asks for:

per (per quantity, related to run time hours)

Entry Format: Up to 4 numeric digits. Default value is 1.

Default: The value of 1 displays as the default.

Comments: If the run time hours is for 1 unit of production, enter 1. Otherwise enter the number of production units related to the run time.

Direct labor

Entry Format: Check box where checked is yes and unchecked is no.

Comments: Check the box if you want the time to be included in standard costs which may be calculated from the item Routing. Uncheck the box if the time is indirect, but is specified for shop loading.

Labor hrs/run hour

Entry Format: Up to 1 numeric digits plus 2 decimals.

Default: If you are adding a record, 1.00 displays as the default entry.

Comments: If a machine is used for the operation, it may require several people (e.g. 2.00 labor hours per run hour), or may require less than a full time person (e.g. 0.50 labor hours per run hour) if one person simultaneously tends several machines.

You are next prompted to answer the following Shop Floor Control questions about the operation, or you may press <F1> at the first question to automatically enter all default answers displayed from P/D Control Information. The entry format for these fields is Y or N.

Shop floor control data

Report setups for this opn

Report qty for this opn

(Report run quantity completed)

Entry Format: Check box where checked is yes and unchecked is no.

Comments: If run quantity is not reported, it is assumed the operation will be unloaded based on production quantity reporting at a subsequent operation.

Report run time for this opn

Overlapped with preceding opn

Entry Format: Check box where checked is yes and unchecked is no.

Comments: Indicates if the operation will occur simultaneously with the preceding operation.

Automatic component issues

Entry Format: Check box where checked is yes and unchecked is no.

Comments: Indicates if components added at the operation will be automatically issued (backflushed) based on parent production quantity reported and bill of material information. Unless otherwise indicated in bill of material records, components are considered to be used at the first operation.

Receive to stock at this opn

Entry Format: Check box where checked is yes and unchecked is no.

Comments: Indicates if the quantity reported at this operation will be automatically received to stock and update Shop Order quantity received. If you answer Y, the Operation Sequence Number should be the last on the item Routing.

Instructions

Entry Format: Up to 99 lines of 45 characters each, in groups of 10 lines per screen.

Comments: If you answer "N" to **"Routing instructions used ?"** in P/D Control information, you will not be prompted to add instructions.

If you answer "Y" to **"Std operation instructions used ?"** in P/D Control information, you may optionally copy the instructions on file, if any, for the standard operation number on this routing record. You will be prompted to press F2 to copy standard operation instructions on routing instruction line 1.

If you do use instructions, when you are adding or changing instructions, press <F1> to put spaces in an instruction field and in subsequent fields in the same group of 10. To delete all instructions for a group of 10, press <F1> when the cursor is at the top instruction field.

DELETE ENTIRE ROUTING

Use this program to delete all Routing records on file for Item Numbers that you specify.

Select

Delete entire routing from *Routings* menu.

The program requests you to enter Item Number, up to 15 alphanumeric characters, or press ENTER to search for the item by entering its description or any portion thereof. If there are Routing records on file for the item, you are prompted to answer "OK to delete routing operations ?". Answer Y to delete the item's Routing, or answer N to leave the records on file.

COPY ROUTING

Use this program to copy an existing Routing for one Item Number to a Routing for a second Item Number, provided that no Routing records are already on file for the second item.

Select

Copy routing from *Routings* menu. The following screen displays:

The fields you enter are:

Copy routing for this item #

Up to 15 alphanumeric characters, matching an item Routing on file.

Copy routing to this item #

Up to 15 alphanumeric characters, matching a Manufactured item that does not already have a Routing on file.

Copy alternate operations

Check box, checked is yes and unchecked is no.

Include operation instructions

Check box, checked is yes and unchecked is no.

OK *or* Cancel

Select OK to copy the routing or Cancel to return to the menu without the copy.

POST STANDARD OPERATIONS

This program allows you to post current information from Standard Operation records to all Routing operation records containing the Standard Operation Number. This program allows you to select the range of Standard Operations, range of Routings by Item Number, range of Routing Work Centers, and type of Standard Operation data to post.

Select

Post standard operations from the *Routings* menu. The following screen displays:

```
Routings (Post standard operations)


            1.  Starting standard operation #      [        ]
            2.  Ending standard operation #

            3.  Starting item #
            4.  Ending item #

            5.  Starting routing work center #
            6.  Ending routing work center #

            7.  Post std operation description ?
            8.  Post std tooling CNC reference ?
            9.  Post std opn work center #, if any ?
           10.  Post std opn standard times, if any ?




<F1> = "All"
```

The data you enter are:

1. Starting standard operation

Up to 6 alphanumeric characters, or <F1> = "All".

2. Ending standard operation

Blank defaults to Starting.

3. Starting item

Up to 15 alphanumeric characters or <F1> = "All".

4. Ending item

Blank defaults to Starting.

5. Starting routing work center

Up to 6 alphanumeric characters, or <F1> = "All".

6. Ending routing work center

Blank defaults to Starting.

7. Post std operation description ?

Y or N.

8. Post std tooling/CNC reference ?

Y or N.

9. Post std opn work center #, if any ?

Y or N.

10. Post std opn standard times, if any ?

Y or N.

If you post standard times and the P/D Control Information answer to the question about calculating run time standards from "subtask hours times repetitions" is Y, the Standard Operations run time values are considered to be subtask standards. These standards will be extended by the "Repetitions" currently in the Routing Operation record to calculate operation standard run time.

Displays

This chapter contains the following topics:

SINGLE LEVEL BILLS

Use this program to list a single level bill of material on the screen.

Select

Single level bills from the *Displays* menu.

Character Mode

```
Displays (Single level bills)

   Parent item #: [                ]









Blank = look up by desc
```

Item number

Enter the parent item number.

The parent item description, unit of measure, and its engineering Revision level, if any, display after you enter a valid parent item number.

Effective date

Accept the current System date or enter another date for the Effective date of the bill to be displayed. Press <F1> for "All" effective dates to display any previously obsolete and future components, as well as the currently effective components in the parent bill.

Drill Buttons

Drill down *and* Drill up

The *Drill down* button is only active when a manufactured or transient item is selected in the list box. Use the *Drill down* button to display the component items.

Once you have drilled down to the component items, use the *Drill up* button to return to the manufactured or transient item.

Single Level BOM List Box

The data listed for each component includes:

Seq

Sequence number.

Comp-item

Component item number.

Description

Component item description.

P/M

This is either P for purchased, M for manufactured, T for transient or S for super bill.

Qty-per

Quantity per parent item.

UM

Inventory unit of measure.

Eff-date

Effective date.

Status

Effectivity status (C, F, or O)

More Fields

There are two additional fields below the list box:

Additional description

Component item description 2.

Scrap Allowance %

Scrap allowance percent.

INDENTED BILLS

Use this program to list a multiple level bill of material, in indented format.

Select

Indented bills from the *Displays* menu.

```
Displays (Indented bills)

   Parent item #:  [            ]

Blank = look up by desc
```

Enter the Parent Item Number and Effective Date. Accept the current System Date or enter another date for the Effective Date of the bill to be displayed. Press <F1> for "All" effective dates to display any previously obsolete and future components, as well as the currently effective components in the parent bill.

The Parent Item Description, Inventory Unit of Measure, and its Engineering Revision level, if any, are displayed after you enter a valid Parent Item Number.

Data listed for each component includes:

Relative level

Number of levels down from the parent.

Seq

Sequence Number

Item

Item Number

Description

Item description

P/M

This is either P for purchased, M for manufactured, T for transient or S for super bill

Qty-per

Quantity per parent item.

UM

Inventory unit of measure

SA%

Scrap Allowance Percent

The following component data is only displayed if the component Effectivity Status for the parent is **F** for future or **O** for obsolete.

Status
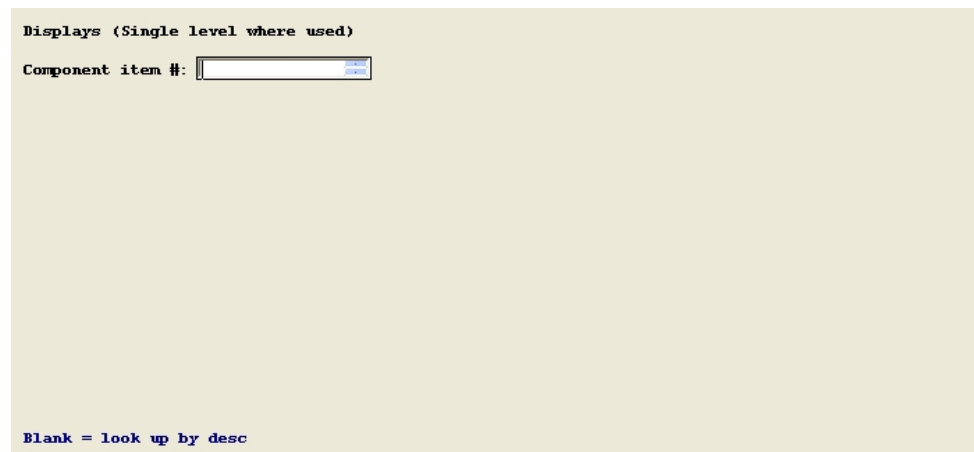
Effectivity Status (**F** or **O**.

Eff-date

Effective Date

SINGLE LEVEL WHERE USED

Use this program to display a single level where used list for a component item on the screen, in sequence of the used on Parent Item Numbers.

Select

Single level where used from the *Displays* menu.

```
Displays (Single level where used)

Component item #: [            ]

Blank = look up by desc
```

Enter Component Item Number and Effective Date. Accept the current System Date or enter another date for the Effective Date of the where used list to be displayed.

Press <F1> for "All" effective dates if you wish to display any parents on which the component was previously obsoleted and any parents on which the component will be used in the future, as well as current component usage.

The Component Item Description, Inventory Unit of Measure, and its Engineering Revision level, if any, are displayed after you enter a valid Component Item Number.

Data listed for each used on parent includes:

Seq

Component Sequence Number in the Parent Bill

Parent item

Parent Item Number

Description

P/M **P**urchased, **M**anufactured, **T**ransient, or **S**uper Bill

Qty-per

Component Quantity Per Parent

UM

Parent Inventory Unit of Measure

SA%

Component Scrap Allowance Percent

ST

Component Effectivity Status (C, F, or O)

Eff-date

Component Effective Date

INDENTED WHERE USED

Use this program to display a multiple level component where used list, in indented format, on the screen. This inquiry will trace component usage to parent end items.

Select

Indented where used from the *Displays* menu.

```
Displays (Indented where used)

Component item #: [          ]




Blank = look up by desc
```

You are prompted to enter Component Item Number and Effective Date. Accept the current System Date or enter another date for the Effective Date of the where used list to be displayed. Press <F1> for "All" effective dates if you wish to display any parents on which the component was previously obsoleted and any parents on which the component will be used in the future, as well as current component usage.

The Component Item Description and its Engineering Revision level, if any, are displayed after you enter a valid Component Item Number.

Data listed for each used on parent includes:

Relative level

Number of levels up from the component level.

Parent item

Parent Item Number

Description

P/M **P**urchased, **M**anufactured, **T**ransient, or **S**uper Bill

Qty-per

Component Quantity Per Parent

UM

Parent Inventory Unit of Measure

SA%

Component Scrap Allowance Percent

The following data is only displayed if the component Effectivity Status for the parent is **F** (Future) or **O** (Obsolete).

ST

Component Effectivity Status (**F** or **O**)

Eff-date

Component Effective Date

PENDING BILL CHANGES

Use this program to list only the pending component effectivity status changes for a single level bill of material on the screen.

Select

Pending bill changes from the *Displays* menu.

```
Displays (Pending bill changes)

  Parent item #: [              ]











Blank = look up by desc
```

You are requested to enter Parent Item Number and Pending From Date. Accept the current System Date or enter another date for the Pending From Date. Press <F1> for "Earliest" pending from date if you wish to display any previously obsoleted components in the Product Structure File as well as any future changes in the bill. Each component with a Product Structure Effective Date that is on or after the Pending From Date is then displayed.

Detail component data listed includes:

Seq

Sequence Number

Item

Item Number

Description

P/M **P**urchased, **M**anufactured, **T**ransient, or **S**uper Bill

Qty-per

Quantity Per Parent

UM

Inventory Unit of Measure

SA%

Scrap Allowance Percent

ST

Effectivity Status (**F** or **O**)

Eff-date

Effective Date

WORK CENTER LIST

This program displays on the screen a list of Work Centers on file, in Department sequence beginning with the Starting Dept. Number that you enter.

Select

Work center list from the *Displays* menu.

```
Displays (Work center list)
                            Starting dept #    [    ]




















<F1> = "All"
```

Press <F1> for "All" departments.

```
Displays (Work center list)
                          Starting dept #    1

Dept   W/C-#   Description            No-of-people  Daily-capy UM   Avg-queue
       Mach-#                         No-of-mach    Effic-fact      Avg-setup

N/A   ASY    ASSEMBLY                     4.00        32.00 LH      .0 Days
      N/A                                 0             .85         .000 Hrs

N/A   BEND   BENDING MACHINE              .00          8.00 MH      .0 Days
      N/A                                 0             .85         .000 Hrs

N/A   FRZ    Freezer                      .00         16.00 MH      .0 Days
      N/A                                 0            1.00         .000 Hrs

N/A   INSP   INSPECTION                  2.00         16.00 LH      .0 Days
      N/A                                 0             .85         .000 Hrs

N/A   MIX    MIXER                        .00         16.00 MH      .0 Days
      N/A                                 0             .85         .000 Hrs

Display more ?  [Y]
```

Data displayed for each Work Center are:

Dept

Department Number

W/C-#

Work Center Number

Mach-#

Machine Number

No-of-people

Number of People

No-of-mach

Number of Machines

Daily-capy

Daily Capacity

Effec-fact

Efficiency Factor

UM

Capacity and Load Unit of Measure

Avg-queue

Average Queue Days

Avg-setup

Average Setup Hours

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WORK CENTERS

This program displays all information in a selected Work Center record, including cost rates.

Select

Work centers from the *Displays* menu.

```
Displays (Work center list)
                          Starting dept #    |___|




<F1> = "All"
```
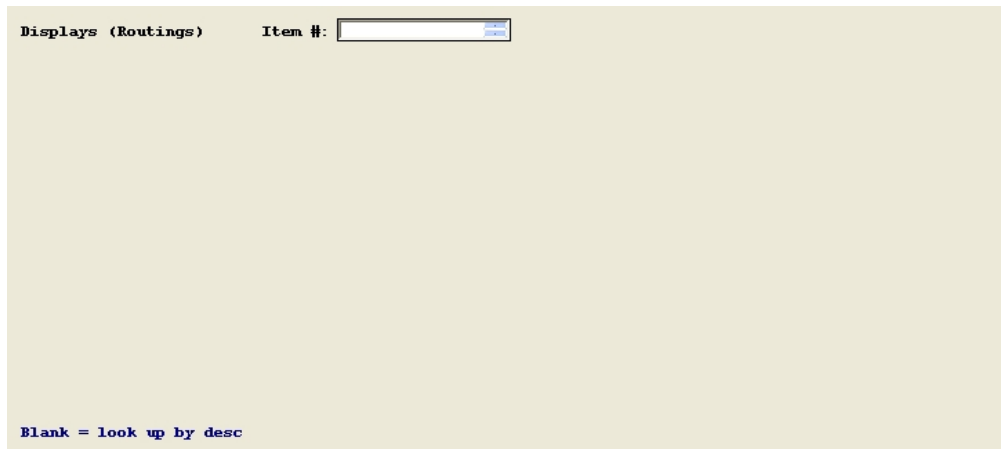
Enter a valid Work Center Number you want to inquire about after which all data in the record will then be displayed.

ROUTINGS

Use this program to display Routing information for requested Item Numbers.

Select

Routings from the *Displays* menu.

```
Displays (Routings)      Item #: [          ]











Blank = look up by desc
```

The data you enter are:

Item

Up to 15 alphanumeric characters, or enter spaces to select by description to search for an Item Number by entering any portion of the first 30 characters of its description.

If there are Routing records on file for the item, you are requested to answer:

Include alternate opns ?

Y or N.

Include instructions ?

Y or N.

Include SFC data ?

(Shop Floor Control data) Y or N.

Depending on your answers, Routing data displayed may include:

Seq

Operation Sequence Number

Alt

Operation Alternate Number, if any.

Description

Routing Operation Description

W/C-#

Work Center Number

Standard-hours

SU:

Setup Time in Hours

Run:

Run Time Hours, per Quantity, and Production Unit.

Direct ?

Y indicates direct labor operation.

Std-opn

Standard Operation Number, if any.

L/R ratio:

Labor hours/machine run hour, displayed if not 1.

Stk/prod ratio:

Stock Units/Production Unit, displayed if not 1.

Tooling/CNC:

Tooling/CNC references, displayed if not blank.

Instructions

Operation instructions, if requested and if any.

Shop Floor Control data, if requested:

Report SU?

Report setups ?

Report qty?

Report run quantity ?

Report run hrs?

Report run time hours ?

Overlap?

Operation overlapped with preceding operation ?

Comp issues?

Automatic component issues ?

Recv stock?
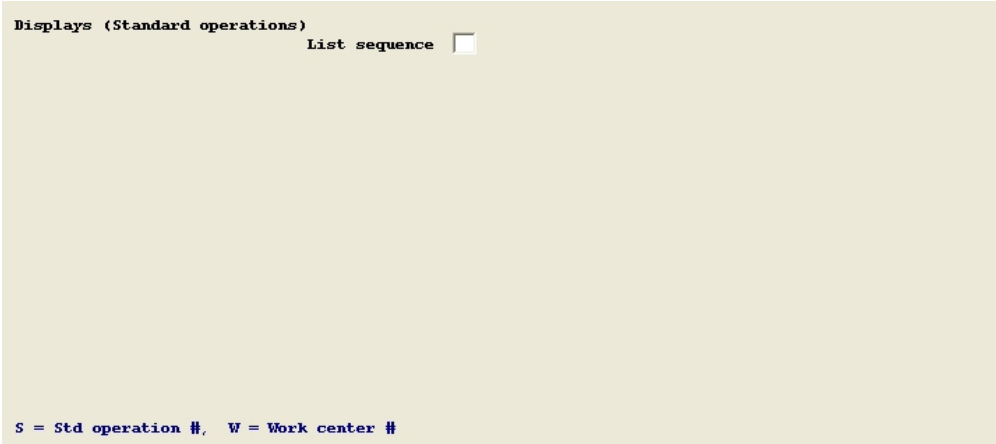
Receive item to stock at this operation ?

STANDARD OPERATIONS

Use this program to display a list of Standard Operations on file.

Select

Standard operations from the *Displays* menu.

```
Displays (Standard operations)
                              List sequence    ☐




















    S = Std operation #,   W = Work center #
```

The data you enter are:

List sequence

S = Std operation #, **W** = Work center #

If you choose S for the sequence, you enter:

Starting Std Operation #

Up to 6 alphanumeric characters, or <F1> = "All".

If you choose W for the sequence, you enter:

Starting Work Center #

Up to 6 alphanumeric characters, or <F1> = "All".

Standard Operation data displayed includes:

Opn-#

Standard Operation Number

Description

Standard Operation Description

W/C-#

Work Center Number, or "Any"

Passport Business Solutions

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Tooling/CNC-ref

Tooling or Computer Numerical Control Reference.

Standard Times:

(if any)

SU hrs:

Setup Time in Hours

Run hrs:
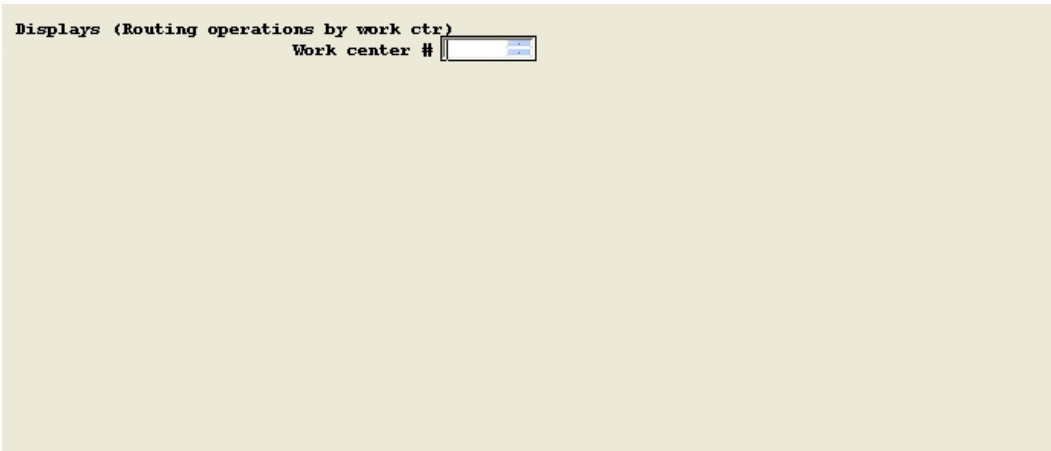
Run Time (Hours per quantity, and Production Unit)

ROUTING OPERATIONS BY WORK CENTER

Use this program to display a list of Routing Operations by Work Center Number.

Select

Routings operations by work center from the *Displays* menu.

```
Displays (Routing operations by work ctr)
                        Work center #
```

The fields you enter are:

Work Center

Up to 6 alphanumeric characters, or <F1> = "All".

Include alternate opns ?

Y or N.

Operation information displayed includes:

Item-#

Item Number

Stk-UM

Item Stock Unit of Measure

Opn-seq

Operation Sequence Number

Alt

Operation Alternate Number, if any.

Description

Routing Operation Description

Std-setup-hrs

Setup Time in Hours

Std-run-hrs

Run Time Hours, per Quantity, and Production Unit.

Tooling/CNC-ref:

(if any)
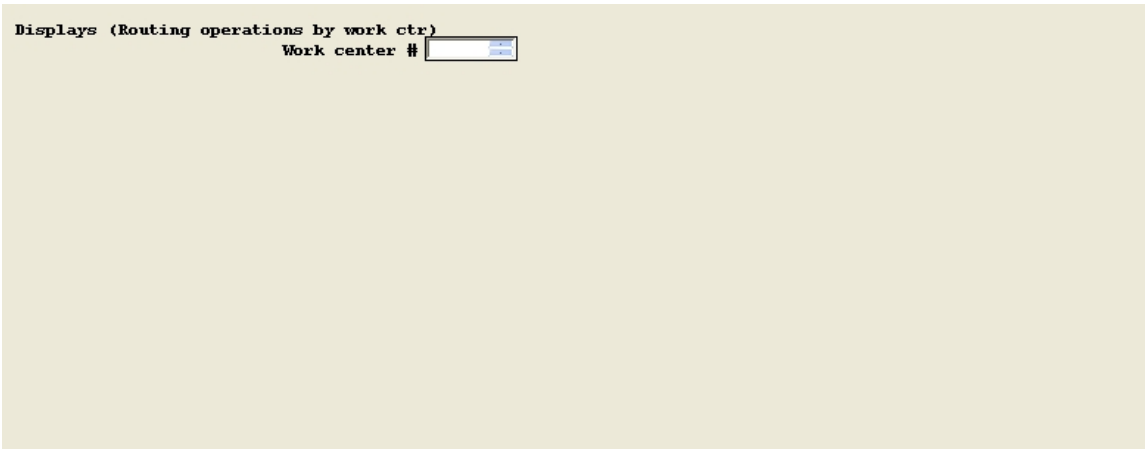
Tooling or Computer Numerical Control Reference.

STANDARD OPERATIONS BY WORK CENTER

Use this program to display a list of Standard Operations by Work Center Number.

Select

Standard operations by work center from the *Displays* menu.


```
Displays (Routing operations by work ctr)
                        Work center #
```

The program requests you enter:

Work Center

Up to 6 alphanumeric characters, or <F1> = "Any work center".

Operation information displayed includes:

Std-opn

Standard Operation Number.

Description

Standard Operation Description.

Tooling/CNC-ref:

Tooling or Computer Numerical Control Reference.

Std-setup-hrs

Setup Time in Hours

Std-run-hrs

Run Time Hours, per Quantity, and Production Unit.

ITEM ESTIMATED COSTS

Use this program to display Item estimated costs by Item Number, Item Description, or Item Type.

Select

Item estimated costs from the *Displays* menu.

```
Displays (Item estimated costs)
                           List sequence ?    □




















I = Item #    D = Description    T = Type
```

The data you enter are:

List Sequence

I = Item #, D = Description, T = Type

Starting Item #

<F1> = "All"

or **Description**

or **Type**

Ending Item #

Blank = Starting value.

or **Description**

or **Type**

Data listed for each record includes:

Item-#

Item Number

Description

Item Description

Estimated-unit-costs-this-level

Item Estimated Material Cost, Item Estimated Outside Cost, Item Estimated Labor Cost, Item Estimated Burden Cost

Type

Item Type

UM

Item Stock Unit of Measure

Primary vendor:

Item Prime Vendor (if any)

ITEM MASTERS

This program displays partial information, or all information, from a selected Item Master record.

Select

Item masters from the *Displays* menu.

```
Displays (Item masters)
        Item #            [            ]
        Description




















Blank = look up by desc
```

Enter the Item Number you want to inquire about. Material Control information about the item will then be displayed, after which the program will ask "Display item cost & engineering data ?" Answer Y to view the second screen of information about the item.

If you display the second screen of data for the item and if the answer to "Is this item sold ?" is Y, the program will next ask "Display sales data ?". If the item is not sold or you do not elect to view item sales data, the program returns you to the Item Number entry position on the first screen.

If the third screen of item sales data is displayed, the program subsequently returns you to the Item Number entry position on the first screen.

Reports, Cost

This chapter contains the following topics:

COST REPORTS INTRODUCTION

These reports include cost information from data files maintained by other Product Definition and Costing programs.

ITEM MASTER COSTS

This report lists all cost data in Item Masters for a requested range of items.

See an Item Master Costs example in the *Sample Reports* appendix.

Select

Item master costs from the *Reports, cost* menu.

```
Reports, cost (Item master costs)



                   Please enter:

                       1. Report sequence        □

                       2. Starting item

                       3. Ending item








  I = Item #    D = Description    T = Type
```

Enter the following fields:

1. Report sequence

I (Item #), or D (Description), or T (Type)

2. Starting Item #

Requested entry is based on Sequence.

or Item desc

F1 = "All"

or Item type

3. Ending item #

Requested entry is based on Sequence.

or Item desc

Blank = Starting value.

or Item type

COSTED SUMMARIZED BILLS

Use this program to list costs of <u>all</u> components in a single or multiple level bill of material and the total costs of the parent.

The summarized bill of material format lists each Component Item Number only once, even if the component appears in several places within a multiple level product structure. The program summarizes each component's total "Quantity Per" usage in the parent and then extends that quantity by the component costs. The extended total costs of each component are added to costs incurred at the parent level to obtain Total Costs of the parent item.

You may include or exclude Component Scrap Allowances, if such allowances are used in your Product Structure File. You may choose to use Standard or Estimated Costs from the Item Master File, and may optionally substitute the Last Material Cost of components for Material Cost calculations. Estimated Costs may be maintained in the Update Product Costs function of this package.

See a Costed Summarized Bill of Material report example in the *Sample Reports* appendix.

Select

Costed summarized bills from the *Reports, cost* menu.

```
Reports, cost (Costed summarized bills)


          Please enter:

              1. Starting parent item #        [            ]

              2. Ending parent item #

              3. Effective date

              4. Add scrap allowances ?
              5. Use estimated or std costs
              6. Use last material cost ?
              7. Include components of purchased items ?
```

Enter the following fields:

Starting parent item number

Enter up to 15 alphanumeric characters. Select the Enter key to lookup by item description.

Ending parent item number

Up to 15 alphanumeric characters, or Blank to default to Starting Item.

Effective date

Default is System Date, or enter another date in MMDDYY format.

Add scrap allowances

Enter Y or N.

Use estimated or std costs

Enter either E = Estimated or S = Standard.

Use last material cost

Enter Y or N.

Include components of purchased items

Enter Y or N.

If you purchase subassemblies or assemblies for which you maintain bills of material only for purpose of configuration control, leave the last question unchecked or N to avoid adding costs of any such components to the parent purchase cost.

OK or Cancel

Select OK to print the report or Cancel to not print and return to the menu.

COSTED ITEM ROUTINGS

This program calculates and lists item standard labor and burden costs by routing operation and in total, for a range of items that you request. You are given an option to cost alternate operations for comparative purposes, but only the regular operations without an Alternate Number are included in the Item Number total costs. Only direct labor hours are included in standard labor costs.

See a Costed Item Routings report example in the *Sample Reports* appendix.

Select

Costed item routings from the *Reports, cost* menu.

```
Reports, cost (Costed item routings)


                    Please enter:

                        1. Starting item #        [         ] :

                        2. Ending item #

                        3. Cost alternate opns ?

                        4. Round unit costs to

                        5. Default run quantity

                        6. Use item minimum order
                           quantity if not zero ?


<F1> = "All"
```

Enter the following fields:

1. Starting item #

Up to 15 alphanumeric characters or F1 = "All".

2. Ending item #

Up to 15 alphanumeric characters, or Blank = Starting Item #.

3. Cost alternate opns ?

Y or N.

4. Round unit costs to

.01, .001, or .0001

5. Default run quantity

Up to 8 numeric digits.

6. Use item minimum order

quantity if not zero ?

Y or N. A Y answer tells the program to use the Minimum Order Quantity in the Item Master, if not zero, to calculate unit setup costs. Otherwise, the Default Run Quantity is used for this purpose.

Cost calculations for each Routing Operation are:

If Setup Hours are Direct:

- Setup Hours per Stock Unit =

    Setup Hours

    / Run Quantity

Value is set to zero if Setup Hours are not Direct.

If Run Hours are Direct:

- Run Hours per Stock Unit =

    (Standard Run Hours x Labor Hours/Run Hour)

    / (Per Quantity x Stock Units/Production Unit)

Value is set to zero if Run Hours are not Direct.

If the operation's Work Center Setup Labor Rate is zero, the Work Center Regular Labor Rate is substituted for the Setup Labor Rate in the following calculation of operation labor cost:

- Standard Labor Cost per Stock Unit =

    (Setup Hours per Stock Unit x Work Center Setup Labor Rate)

    + (Run Hours per Stock Unit x Work Center Regular Labor Rate).

All of the burden factors in the operation's Work Center record are used in the following calculation of operation burden cost:

- Standard Burden Cost per Stock Unit =

    Standard Labor Cost per Stock Unit

    x (Work Center Burden Percent of Labor / 100)

    + (Setup Hours per Stock Unit + Run Hours per Stock Unit)

    x Work Center Burden Rate per Labor Hour

    + (Standard Run Hours / (Quantity Per x Stock Units/Production Unit))

    x Work Center Burden Rate per Machine Hour

    + Work Center Burden Rate per Unit of Production

    / Stock Units/Production Unit

Operation unit costs are rounded to the specified number of decimals before they are added to item unit cost totals.
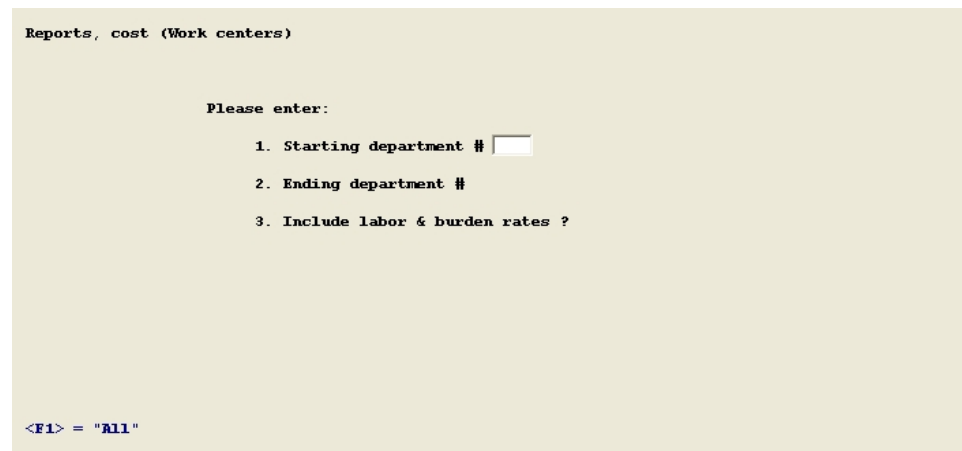
WORK CENTERS

This report lists Work Center File information for all Work Centers within a Department No. range that you designate.

See a Work Center List example in the *Sample Reports* appendix.

Select

Work centers from the *Reports, cost* menu.

```
Reports, cost (Work centers)



                 Please enter:

                        1. Starting department #  [    ]

                        2. Ending department #

                        3. Include labor & burden rates ?







<F1> = "All"
```

Enter the following fields:

1. Starting department #

Up to 3 alphanumeric characters, or F1 = "All".

2. Ending department #

Blank = Starting Department #.

3. Include labor & burden rates ?

Y or N.

ITEM ESTIMATED COSTS

Select

Item estimated costs from the *Reports, cost* menu.

```
Reports, cost (Item estimated costs)



                 Please enter:

                     1. Report sequence       [ ]

                     2. Starting item

                     3. Ending item

                     4. Exclude items with all est costs zero ?

                     5. Include standard costs comparison ?




 I = Item #   D = Description   T = Type
```

Enter the following fields:

1. Report Sequence

I = Item #, D = Description, T = Type

2. Starting Item #

F1 = "All" or Description or Type

3. Ending Item #

Blank = Starting value.

or Description

or Type

4. Exclude items with all est costs zero ?

Y or N (Default is Y).

5. Include standard costs comparison ?

Y or N.

Reports, Other

This chapter contains the following topics:

SINGLE LEVEL BILLS

Use this program to print information about single level bills of material.

Select

Single level bills from the *Reports, other* menu.

```
File  Print  Options  Tools  Help

  Report criteria

              Starting item number [          ]  🔍  [          ]
              Ending item number  [          ]  🔍  [          ]
                 Effective date [08/03/2018]  📅
        Print component effective dates ☑
        Print component fit lead times ☑
           Print engineering references ☐
                    Print user code ☑
          Print used at operation seq # ☑


            <F1> = "All", Blank = look up by description

                        [  OK  ]    [  Cancel  ]
```

Character Mode

```
Reports, other (Single level bills)


            Please enter:

                1. Starting parent item #  [          ]

                2. Ending parent item #

                3. Effective date

                4. Print component effective dates ?
                5. Print component fit lead times ?
                6. Print engineering references ?
                7. Print user code ?
                8. Print used at operation seq # ?




 <F1> = "All"
```

The fields you enter are:

Starting item number

Press <F1> to select "All" items.

Ending item number

Blank = Starting Parent Item Number

Effective date

Default = System Date, or <F1> = "All" dates.

Press <F1> for "All" effective dates if you wish to list any previously obsoleted components and future components, as well as the currently effective components in the parent bill.

Print component effective date

Default = N

Print component fit lead times

Bypassed if not used.

Print engineering references

Bypassed if not used.

Print user code

Bypassed if not used.

Print used at operation seq #

Bypassed if not used.

Default answers displayed for the last two questions are related to values in P/D Control Information that specify whether you use Component Fit Time or Engineering References in your Product Structure records.

OK or Cancel

Select OK to print the report or Cancel to not print the report and return to the menu.

INDENTED BILLS

Use this program to print a multiple level bill of material, in indented format.

Select

Indented bills from the *Reports, other* menu.

Character Mode

The fields you enter are:

Starting parent item number

Press <F1> for "All" items.

Ending parent item number

Blank = Starting Parent #

Effective date

The default is the System Date or select <F1> for "All" dates.

Press <F1> for "All" effective dates if you wish to list any previously obsoleted components and future components, as well as the currently effective components in the indented parent bill.

Print item comments

Check this box to print the item comments.

OK or Cancel

Select OK to print the report or Cancel to not print and return to the menu.

SUMMARIZED BILLS

The summarized bill of material lists <u>all components at all levels</u> in the bill of material for a specified parent item, in summary format. This format prints each Component Item Number only once, even if the component appears in several places within a multiple level product structure.

The program summarizes each component's total "Quantity Per" usage in the parent item.

The option is provided to include or exclude Component Scrap Allowances, if such allowances are used in your Product Structures.

Select

Summarized bills from the *Reports, other* menu.

Character Mode

The fields you enter are:

Starting parent item number

There is no default value.

Ending parent item number

Blank = Starting Parent #

Parent quantity

The default is 1.

Effective date

The default is system date, enter another date in MMDDYY format or use the calendar lookup to find a date and select it.

Add scrap allowances

Either checked or not checked. In character mode enter Y or N.

OK or Cancel

Select OK to print the report or Cancel to not print and return to the menu.

SINGLE LEVEL WHERE USED

Use this program to print a single level component where used list, in sequence of the used on parent Item Numbers. The single level retrieval lists the parents on which the component is directly used, which may not be the top level parent items.

Select

Single level where used from the *Reports, other* menu.

Character Mode

The fields you enter are:

Starting item number

Enter an item number or select <F1> for "All" items.

Ending item number

Enter an ending item number or leave it blank for same as starting item.

Effective date

Enter the date or use the default of the System Date. You may select <F1> for "All" dates.

Press <F1> for "All" effective dates if you wish to list any parents on which the component was previously obsoleted and any parents on which the component will be used in the future, as well as current component usage.

Print component fit lead times

Check this box to print the component fit lead times or leave it unchecked to exclude that information.

Print user code

Check this box to print the user code.

OK or Cancel

Select OK to print the report or Cancel to not print and return to the menu.

INDENTED WHERE USED

This program prints a multiple level component where used list, in indented format. The indented list will trace component usage to top level parent items, and show any intermediate parent levels.

Select

Indented where used from the *Reports, other* menu.

Character Mode

The fields you enter are:

Starting parent item number

Enter the starting item number or <F1> = "All" items.

Ending parent item number

Blank = Starting

Effective date

Enter the effective date or use the default which is the System Date. You may also select <F1> for "All" dates.

Press <F1> for "All" effective dates if you wish to list any parents on which the component was previously obsoleted and any parents on which the component will be used in the future, as well as current component usage.

OK or Cancel

Select OK to print the report or Cancel to not print and return to the menu.

PENDING BILL CHANGES

Use this program to print information about pending component effectivity changes in single level bills of material.

Select

Pending bill changes from the *Reports, other* menu.

```
Reports, other (Pending bill changes)



                   Please enter:

                        1. Starting parent item #  |
                        2. Ending parent item #
                        3. Pending from date
                        4. Print component fit lead times ?
                        5. Print engineering references ?
                        6. Print user code ?




<F1> = "All"
```

The fields you enter are:

1. Starting parent item

Enter <F1> for "All" items.

2. Ending parent item

Blank = Starting

3. Pending from date

Enter a date or use the default which is the System Date .

4. Print component fit lead times ?

The program bypasses this field if not used.

5. Print engineering references ?

The program bypasses this field if not used.

Default answers displayed for the last two questions are related to values in P/D Control Information that specify whether you use 3. Product structure component fit lead time used ? or Engineering References in your Product Structure records.

WORK CENTERS

This report lists Work Center information, excluding cost rates, for all Work Centers within a Department No. range that you designate.

Select

Work centers from the *Reports, other* menu.

```
Reports, other (Work centers)



                Please enter:

                    1. Starting department #  |    |

                    2. Ending department #









<F1> = "All"
```

The fields you enter are:

1. Starting department #

Enter the starting department number or enter <F1> for "All" departments.
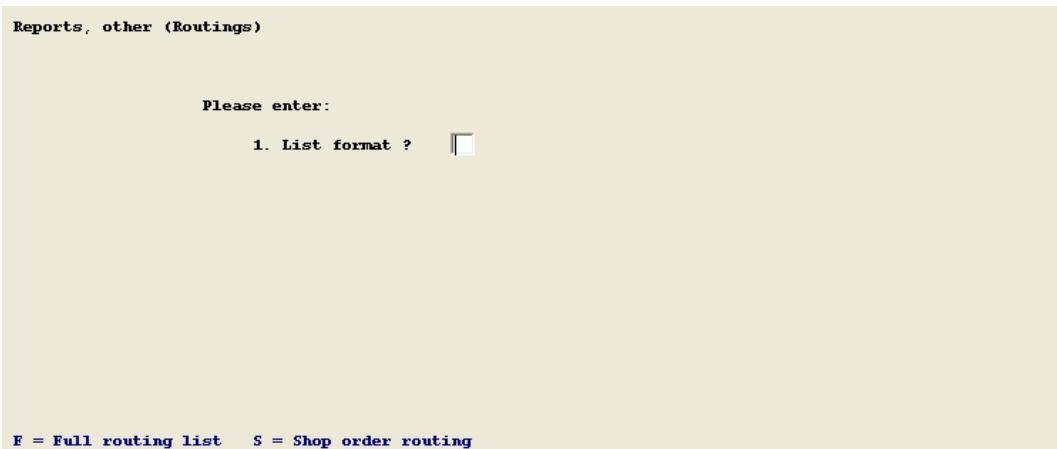
2. Ending department #

Blank = Starting Department Number.

ROUTINGS

Use this program to print a full list of Routing information on file for a range of Item Numbers that you specify, or to print Shop Order Routings for requested Shop Order and Item Numbers.

Select

Routings from the *Reports, other* menu.

```
Reports, other (Routings)


                    Please enter:

                        1. List format ?      |   |











F = Full routing list   S = Shop order routing
```

The fields you enter are:

1. List format

F = Full routing list, or **S** = Shop Order Routing.

If you choose F for the format, you enter:

2. Starting item #

Up to 15 alphanumeric characters, or <F1> = "All".

3. Ending item #

Blank = Starting Item Number.

4. Include alternate operations ?

Y or N.

5. Include opn instructions ?

Y or N.

6. Include Shop Floor Control data ?

Y or N.

If you choose S for the format, you enter:

2. Shop order

Up to 6 alphanumeric characters.

Rls

Up to 2 numeric digits or space.

Not validated to the Shop Order File.

3. Item

Up to 15 alphanumeric characters.

4. Order quantity

Up to 8 numeric digits, in Stock Unit which displays. If the Shop Order Number entered matches an order on file, its Order Quantity displays as the default.

5. Include alternate operations ?

Y or N.

6. Include standard times ?

Y or N.

STANDARD OPERATIONS

Use this program to print a list of Standard Operations on file for a specified range of records.

Select

Standard operations from the *Reports, other* menu.

```
Reports, other (Standard operations)


              Please enter:

                  1. List sequence        □

                  2. Starting

                  3. Ending






  S = Standard operation #   W = Work center #
```

The fields you enter are:

1. List sequence

S = Standard operation #, or **W** = Work Center #

If you choose S for the sequence, you enter:

2. Starting std opn #

Up to 6 alphanumeric characters, or <F1> = "All".

3. Ending std opn #

Blank =Starting Operation.

If you choose W for the sequence, you enter:

2. Starting work ctr #

Up to 6 alphanumeric characters, or <F1> = "All", or F2 = "Any".

3. Ending work ctr #

Blank = Starting Work Center.

ROUTING OPERATIONS BY WORK CENTER

Use this program to print a list of Routing Operations on file for a specified range of records.

Select

Routing operations by work center from the *Reports, other* menu.

```
Reports, other (Routing operations by work ctr)


              Please enter:

                  1.  Starting work center #      [        ]

                  2.  Ending work center #

                  3.  Include alternate opns ?








<F1> = "All"
```

The fields you enter are:

1. Starting work center #

Up to 6 alphanumeric characters, or <F1> = "All".

2. Ending work center #

Blank = Starting Work Center

3. Include alternate opns ?

Y or N.

STANDARD OPERATIONS BY WORK CENTER

Use this program to print a list of Standard Operations on file for a specified range of records.

Select

Standard operations by work center from the *Reports, other* menu.

```
Reports, other (Standard operations by work ctr)



              Please enter:

                  1. Starting work center # [        ]

                  2. Ending work center #










<F1> = "All", <F2> = "Any work center"
```

The fields you enter are:

1. Starting work center

Up to 6 alphanumeric characters, or <F1> = "All", or F2 = "Any work center".

2. Ending work center

Blank = Starting Work Center

COMPONENTS USED BY ROUTING OPERATION

Use this program to list components used, by the parent item Routing Operation where the component is added. The report will only include items with both a Routing and Bill Of Material on file, and only includes those Routing Operations where components are added.

If you do not specify the parent Operation Sequence Number for components in Product Structure records, all components are assumed to be added at the first operation.

Select

Components used by routing operation from the *Reports, other* menu.

```
Reports, other (Components used by routing opn)


                Please enter:

                    1. Starting parent item #    |

                    2. Ending parent item #

                    3. Effective date













<F1> = "All"
```

The fields you enter are:

1. Starting item #

Up to 15 alphanumeric characters, or <F1> = "All".

2. Ending item #

Blank = Starting Item Number.

3. Effective date

Enter date in MMDDYY format, or <F1> = "All".

Update Costs

This chapter contains the following topics:

INTRODUCTION TO UPDATE COSTS

This function uses the Item Master, Product Structure, Work Center, and Routing files to update unit costs of finished products and costs of fabricated subassemblies and parts used to make those products. Total unit cost of a manufactured item may be comprised of Material, Outside Processing, Labor, and Burden costs. Component parts may be assigned some or all of these cost elements.

The Product Structure File is used to "roll up" the costs of lower level components in the process of calculating total costs of a parent item. Before performing the bill of material cost roll up processing, you may use another program that recalculates item labor and burden costs from detailed time and cost rate information in the Routing and Work Center files.

You don't need to maintain Routing or Work Center Files to use this function, provided that you use other methods of updating item Labor and Burden Costs as explained in the Item Masters section of the Inventory Management user manual.

ITEM LABOR AND BURDEN

Use this program to periodically recalculate and post Item Master values for Standard Labor and Standard Burden Costs at "this level", for those items with a Labor/Burden Method of R or W in the Item Master File.

Select

Item labor & burden from the *Update costs* menu.

The following screen displays:

Enter the following fields:

Starting item #

Up to 15 alphanumeric characters, or <F1> = "All".

Ending item #

Up to 15 alphanumeric characters, or Blank = Starting Item #.

Round unit cost to

Round to either .01, .001, or .0001.

The run quantity, referred to in the next two entries, is used to calculate Setup Costs per Unit when the Routing method is used to calculate item labor and burden costs:

Default run quantity

Up to 8 numeric digits.

Use item minimum order quantity if not zero

Check box where checked is yes and unchecked is no.

A checked box tells the program to use the Minimum Order Quantity in the Item Master, if not zero, to calculate unit setup costs. Otherwise, the Default Run Quantity is used for this purpose.

Post to estimated or standard costs

Drop down list box with the choices of Estimated, or Standard.

OK and Cancel

Select OK to continue and Cancel to go back to the menu. If you select OK, then a screen displays with the following information and question:

This program recalculates, prints, and posts labor and burden "costs at this level" for items with a labor/burden method code of "W" (Work Center) or "R" (Routing) in the Item Master File.

It may require a considerable amount of processing time during which other user stations will be unable to access the Item Master File.

OK to proceed with update ?

Selecting the Cancel button will return you to the Starting Item Number entry position where you may exit the program or re-enter update specifications. Selecting the OK button starts the labor and burden cost update process.

For items with a Labor/Burden Method code of **W** in the Item Master, the program posts the current Regular Labor Rate and the Burden Rate Per Hour from the Work Center record for the item's designated Work Center Number to the Standard Labor Rate and Standard Burden Rate fields in the Item Master. Each of these updated rates is automatically extended by the Item Master Standard Labor Hours value, and the results posted to the Standard Labor Cost and Standard Burden Cost (at this level) fields in the Item Master.

For items with a Labor/Burden Method code of **R** in the Item Master, the item Labor Cost and Burden Cost at this level are recalculated from detail data about manufacturing operations in the Routing and Work Center Files, using current Routing Operation times and Work Center dollar rates. For more detail on Routing cost calculations, refer to the explanation of Print Costed Routing in the "Reports, cost" chapter.

When the file update processing is completed an audit list that shows all updated Item Master labor and burden cost values is automatically printed. Exception messages are also printed on this report if the program was unable to find Work Center or Routing records for some Item Numbers included in the update.

TOTAL COSTS - ALL ITEMS

Use this program to recalculate total unit costs for all items in the Item Master File. This processing also uses the Product Structure File to accomplish the following update procedures for each Item Master:

1. Accumulate total unit Material, Outside, Labor, and Burden costs of all lower level components, if any, of the item.

2. Add item "Unit Costs At This Level" to the total accumulated costs of any components of that item.

3. Post the results of the above steps to the four "Total Unit Cost" fields for Material, Outside Processing, Labor and Burden, sum those four values to the Total Unit Cost value, and move the current System Date to the Date of Last Total Cost Update in the Item Master record.

The internal logic of this processing requires that Low Level Codes in the Item Master File have been updated since the last maintenance to your Product Structure File. Therefore, when you select this program from the Product Definition & Costing Menu the following message may display:

Product structure records have been added or deleted since the last update of low level codes.

You must run the update low level codes program before you perform this cost update processing.

Select

Total costs - all items from the *Update costs* menu.

The following screen displays:

Insert Screen.

Enter the following fields:

If Low Level Codes need to be updated, the program will return to the Product Definition & Costing Menu. Otherwise, the fields you enter are:

1. Effective date

Default = System Date, or enter another date in MMDDYY format.

2. Add scrap allowances ?

Y or N. Default = N.

3. Include components of purchased items ?

Y or N.

4. Include "this level costs" of transient components ?

Y or N. Default = N.

The Effective Date and Component Status in Product Structure records are used with your Effective Date entry to determine which components are used in the cost buildup for parent items. Your

answer to **" Add scrap allowances ?"** determines whether the scrap allowance percentages specified in your Product Structure records will be used in the calculation of component costs for the parent items.

If you purchase subassemblies or assemblies for which you maintain bills of material only for purpose of configuration control, answer N to the question about components of purchased items to avoid adding costs of any such components to the parent purchase cost.

If you use a Purch/Mfd Code of "Transient" in some Item Masters, you probably have included the operations to build the transient item in "this level costs" of the transient's parent. If the transient is also sold as a service part, you may also have posted "this level costs" to the transient Item Master. To avoid duplicate accumulation of transient operation costs in this situation, answer N to the question about transient components.

Use "Field number to change ?" to modify your entries, after which the following message is displayed:

This program recalculates and posts item total costs from "costs at this level" plus the total cost of any lower level components in the item's bill of material.

This processing of all Item Masters may require a considerable amount of time during which other user stations will be unable to access the Item Master File.

You are then then asked **"OK to proceed with update ?".** An answer of N will return you to the Effective Date entry position where you may exit the program or re-enter other values to be used in the update. An Y answer will start the total costs update process, and the program later informs you when this processing is completed.

This program does not print an audit list of the updated Item Master cost data. You may use the Item Master Costs report program to list the results of this update.

TOTAL COSTS - SELECTIVE ITEMS

Use this program to perform similar bill of material cost buildup procedures as described for Update Product Costs - All Items, but for specific Item Numbers that you request.

This selective item cost update displays the resultant Item Number costs on the screen and then gives you the option of posting these costs to the Item Master record. The posting option allows you to use this program for cost simulation; you may temporarily change Item Master cost data in selective component or parent records and then use this program to quickly recalculate and view the resultant effect on parent item total unit costs.

Running this update program does not lock the Item Master File from use by other stations.

Select

Total costs - selective items from the *Update costs* menu.

The following screen displays:

Enter the following fields:

Item #

Up to 15 alphanumeric characters, or Blank to look up by description.

Effective date

Default = System Date, or enter another date in MMDDYY format.

Add scrap allowances

Check box, yes is checked and unchecked is no. Default = Unchecked.

Include components of purchased items

Check box, yes is checked and unchecked is no.

Include "this level costs" of transient components

Check box, yes is checked and unchecked is no. Default = Unchecked.

The Effective Date and Component Status in Product Structure records are used with your Effective Date entry to determine which components are used in the cost buildup for parent items. Your answer to **"Add scrap allowances ?"** determines if scrap allowance percentages specified in your Product Structure records will be used in the calculation of component costs for parent items.

If you purchase subassemblies or assemblies for which you maintain bills of material only for purpose of configuration control, answer N to the question about components of purchased items to avoid adding costs of any such components to the parent purchase cost.

If you use a Purch/Mfd Code of "Transient" in some Item Masters, you probably have included the operations to build the transient item in "this level costs" of the transient's parent. If the transient is also sold as a service part, you may also have posted "this level costs" to the transient Item Master. To avoid duplicate accumulation of transient operation costs in this situation, answer No to the question about transient components.

Use "Field number to change ?" to modify your entries, after which the program will recalculate and display total costs for the requested Item Number.

The program then asks **"OK to post costs to item master record ?".**

If you answer Yes, the data on the screen is posted to the record; a No answer will bypass posting. You are then returned to the Item Number entry position where you may request another item or exit.

OK or Cancel

If you select the posting option, only the record for the Item Number displayed on the screen is updated; costs of any lower level component subassemblies or parts used to make that item are not updated by this program. If you select Cancel, you will be returned to the menu.

Estimated Costs

This chapter contains the following topics:

INTRODUCTION TO ESTIMATED COSTS

Estimated Costs do not display or print when you retrieve Item Masters. Item estimated cost fields may be maintained with this function, may optionally be updated by the Update Item Labor & Burden Costs program, and may be used by the Print Costed Summarized Bill of Material program.

If you use standard costs, you may enter next year's standards to the estimated cost fields and then use Post Estimated Costs to Standard Costs at the beginning of your next fiscal year.

ENTERING ESTIMATED COSTS

Use this program to display or enter Item Master estimated costs as "this level" costs.

Select

Enter from the *Estimated costs* menu.

The following screen displays:

```
Estimated costs (Enter)



          * Item #  [            ]

           Unit costs at this level:                    UM:

           1. Estimated material cost

           2. Estimated outside cost

           3. Estimated labor cost

           4. Estimated burden cost




Blank = look up by desc
```

After you enter an Item Number, the following fields display which you may modify:

1. Estimated material cost

Up to 6 numeric digits plus 4 decimals.

2. Estimated outside cost

Up to 6 numeric digits plus 4 decimals.

3. Estimated labor cost

Up to 6 numeric digits plus 4 decimals.

4. Estimated burden cost

Up to 6 numeric digits plus 4 decimals.

The following field appears only for Purchased items:

5. Primary vendor #

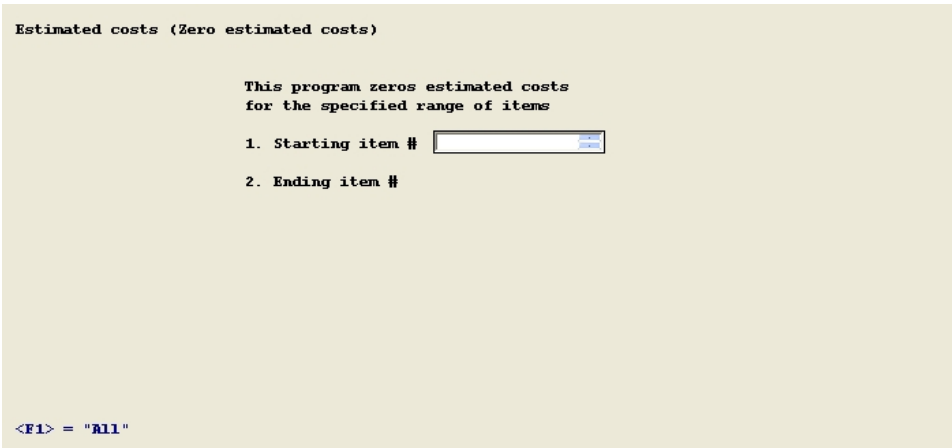Up to 6 alphanumeric characters, or space.

ZERO ESTIMATED COSTS

Use this program to zero estimated costs for the specified range of items.

Select

Zero estimated costs from the *Estimated costs* menu.

The following screen displays:

```
Estimated costs (Zero estimated costs)


                        This program zeros estimated costs
                        for the specified range of items

                        1. Starting item #  [            ]

                        2. Ending item #




<F1> = "All"
```

1. Starting Item

Up to 15 alphanumeric characters, or <F1> = "All".

2. Ending Item

Blank = Starting value.

Answer Y to **Are you sure ?** to zero estimated costs for the specified range of items, answer N to cancel the procedure.

POST ITEM ESTIMATED COSTS

Use this program to post item estimated costs at this level to standard unit costs at this level. If the item is purchased and has no bill of material, the estimated costs are also posted to total unit costs. The material unit costs are only posted if the I/M Control information has the material valuation method set to Standard.

Select

Post item estimated costs from the *Estimated costs* menu.

The following screen displays:

```
Estimated costs (Post estimated to standard)


                    Please enter

                        1. Starting item #  [            ]

                        2. Ending item #

                        3. Bypass item update if all
                              estimated costs are zero ?

             This program posts item "estimated unit costs at this level"
             to "standard unit costs at this level" in the Item Master File.

             If the item is purchased and has no bill of material, its
             estimated unit costs are also posted to "total unit costs".

             Material unit costs are posted only if the "standard" method
             of material valuation is specified in the I/M Control File.
<F1> = "All"
```

1. Starting Item

Up to 15 alphanumeric characters, or <F1> = "All".

2. Ending Item

Blank = Starting value.

3. Bypass item update if all estimated costs are zero ?

Y or N (default is Y).

Answer Y to **Are you sure ?** to post estimated costs to standard costs for the specified range of items, answer N to cancel the procedure.

Update Low Level Codes

This chapter contains the following topics:

UPDATING LOW LEVEL CODES

Use this program to update Low Level Codes in Item Master records for all items, or selectively for those component items affected by bill of material maintenance since this program was last run.

When Product Structure records are added or deleted in Enter Product Structures, the component Item Numbers in those structure records are automatically added to Low Level Codes Updates. When you run the selective update option of this program, the Low Level Codes are recalculated for component Item Numbers in the Low Level Codes Update. After selective or comprehensive Low Level Code update processing is completed, the Low Level Codes Updates are automatically cleared.

Low Level Codes must be updated by this program before you are allowed to run Update Total Costs - All Items in Product Definition & Costing, or before you are allowed to perform a multiple level material requirements explosion in Master Scheduling & MRP. Those programs use Low Level Codes and will not allow you to complete their processing functions if the Low Level Codes Updates have not been cleared.

It is not necessary to do a full file update of item Low Level Codes unless you have created Product Structures by importing a bill of material file from another source, or your Low Level Codes Updates data has been damaged. The selective update method will normally be much faster, since it only updates those item records affected by recent Product Structure entries.

Select

Update low level codes from the *P/D* menu.

The following screen displays:

```
Update low level codes


             Please select  ☐

                 1.  Selectively update items with BOM activity

                 2.  Update all items on file


             The first choice updates low level codes only for
             items that were affected by product structure file
             maintenance since this program was last run.

             Either selection may require a considerable amount
             of processing time during which other user stations
             will be unable to access the item master file.
```

Enter the information as follows:

Please select __

1. Selectively update items with BOM activity

2. Update all items on file

The first choice updates low level codes only for items that were affected by product structure file maintenance since this program was last run.

Either selection may require a considerable amount of processing time during which other user stations will be unable to access the Item Master File.

Enter your choice. If you enter a selection, the program asks you if it is "OK to proceed with update ?". Answer Y to start the processing or N to exit the program.

This program also checks for product structure exception conditions, such as "Item structured as component of itself at a lower level in bill". Exception messages with related Item Numbers, if any, are automatically printed after Low Level Code updating is completed. Use the Product Structure entry program to correct any exceptions listed, and then rerun this function.

A message informs you when processing is completed.

Sample Reports

This appendix contains sample Product Definition and Costing reports.

Item Master Costs

                         I T E M   M A S T E R   C O S T S   B Y   I T E M   N O

Item # range: 5000   to 5000   Material cost method: Average

Report location :Q:\Sup_test\120test_gui\RWWRK/13432015.htm

Item-#   Description   UM Unit-costs: Material   Outside   Labor   Burden   Total
Type   P/M

5000   FRONT AXLE HOUSING   EACH This level: .00   .00   2.0460   2.5575   4.6035
              ASSY   M   Total/unit: 1.1710   .00   2.0460   2.5575   5.7745
              Labor/burden method: R

                                                                      Total/unit updated on: 5/03/10

      1 items listed

                                        -- End of report --

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COSTED SUMMARIZED BILL OF MATERIAL

                        C O S T E D   S U M M A R I Z E D   B I L L   O F   M A T E R I A L

Parent item #: 1000   WAGON BODY RED   UM: EACH Effective date: 10/15/14 Add scrap allowance ? Y
                                                         Standard cost   Last matl cost ? Y Components of purchased items ? Y

Component   Total
item-#   Description   P/M qty-per UM   Material   Outside   Labor   Burden   Total
----

Component item-#	Description	P/M qty-per	UM	Material	Outside	Labor	Burden	Total
7001	MILD SHEET STEEL 14GA	P 6.2550	SQFT	4.0032	.00	.00	.00	4.0032
	Matl cost on 8/07/13							
7002	12 GUAGE GALV SHEET STEEL	P As reqd	SQFT	.00	.00	.00	.00	.00
	Matl cost on 12/05/12							
7503	PAINT RED GLOSSY	P .1250	GAL	.00	.00	.00	.00	.00
7504	PRIMER ZINC DICROMATE	P .0043	GAL	.00	.00	.00	.00	.00

       4 components listed   Component total costs: 4.0032   .00   .00   .00   4.0032
                                  Costs at parent level: .00   1.00   1.875   2.344   5.219
                                  Parent item total costs: 4.0032   1.00   1.875   2.344   9.2222

                                  -- End of report --

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COSTED ITEM ROUTINGS

                              C O S T E D   I T E M   R O U T I N G

Item # range: 1000   to 1000   Cost alternate opns ? Y Round unit costs to: .01   Default run qty: 10
                                                                                               Use min ord qty if not zero? Y
Item #: 1000   WAGON BODY RED   Std run qty: 100 Min order qty   Stock UM: EACH

Opn Alt Description   Work Direct-labor-stds   Lab-hrs/ W/C-lab Work-center-burden   Total-cost-per-stock-unit
Seq   ctr-#   stk-unit rate   Method   Rate   Labor   Burden
----

 10   FORM WAGON BODY   P110 SU: .250   .002   15.00 Pct labor 125.00 %   .14   .18
                                       Run: 1.000/ 150 EACH   .006   15.00

----

 10 11 FORM WAGON BODY   VCM   SU: .000   .000   15.00 Pct labor 120.00 %   15.00   18.00
                                       Run: 1.000/   1 EACH   1.000   15.00

----

 20   PREP METAL AND APPLY PRIMER PB SU: .000   .000   12.00 Pct labor 125.00 %   .60   .75
        ALLOW 2 HOURS FOR DRYING   Run: .050/   1 EACH   .050   12.00

 30   APPLY PAINT TO PRIMED MATERIAL PB SU: .000   .000   12.00 Pct labor 125.00 %   1.00   1.25
                                       Run: .083/   1 EACH   .083   12.00

 3 regular opns   1 alternate opns   Item regular operation totals: 1.74   2.18

                              -- End of report --

WORK CENTER LIST

```
                                          W O R K   C E N T E R   L I S T
```

Department # range: 1   to 1   Include labor & burden rates ? Y

```
--------------------------------------------------------------------------------------------------------------

                                     Number-of    Daily  Capacity-load   Effic                      Date-last-reg
Dept  W/C-#   Description          Machine-#  Mach People  capacity unit-of-meas  factor Work-center-usage machine-maint
--------------------------------------------------------------------------------------------------------------

1    P110    BLANK PUNCH FORM         N/A       2    .00     16.00 MH   Machine hr  .85  PTD:          5.2
                                                                                        YTD:          6.4
                                      Avg q days:  .0  Avg setup hrs:   .000   Last yr:          .0

                                     Labor rates:              Burden rates:
                                      Reg labor grade:           Percent of labor: 125.00
                                      Reg labor rate: 15.00    Rate per labor hr:   .00
                                      Setup lab grade:          Rate per mach hr:    .00
                                      Setup lab rate: 15.00    Rate per unit prod:  .0000

1    SAW     BAND SAW                 N/A       0    .00      8.00 MH   Machine hr  .85  PTD:          .0
                                                                                        YTD:          .0
                                      Avg q days:  .0  Avg setup hrs:   .000   Last yr:          .0

                                     Labor rates:              Burden rates:
                                      Reg labor grade:           Percent of labor: 150.00
                                      Reg labor rate: 12.00    Rate per labor hr:   .00
                                      Setup lab grade:          Rate per mach hr:    .00
                                      Setup lab rate: 12.00    Rate per unit prod:  .0000

1    THD     THREADING MACHINE        N/A       0    .00     16.00 MH   Machine hr  .85  PTD:          .0
                                                                                        YTD:          .0
                                      Avg q days:  .0  Avg setup hrs:   .000   Last yr:          .0

                                     Labor rates:              Burden rates:
                                      Reg labor grade:           Percent of labor:  .00
                                      Reg labor rate: 19.80    Rate per labor hr:   .00
                                      Setup lab grade:          Rate per mach hr:    .00
                                      Setup lab rate: 19.80    Rate per unit prod:  .0000

1    VCM     Vertical Contraint Mill  N/A       0    .00      8.00 LH   Labor hr    .85  PTD:          .0
                                                                                        YTD:          .0
                                      Avg q days:  .0  Avg setup hrs:   .000   Last yr:          .0

                                     Labor rates:              Burden rates:
                                      Reg labor grade:           Percent of labor: 120.00
                                      Reg labor rate: 15.00    Rate per labor hr:   .00
                                      Setup lab grade:          Rate per mach hr:    .00
                                      Setup lab rate: 15.00    Rate per unit prod:  .0000

     1 departments listed
     4 work centers listed


                          -- End of report --
```

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Y

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