# Capacity Requirements Planning

Passport Business Solutions ™

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If you have any comments about this guide, please send your feedback to:

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# Table of Contents

# Understanding Capacity Requirements Planning

This chapter contains the following topics:

## PRODUCT DESCRIPTION

PBS Manufacturing Capacity Requirements Planning allows you to convert production plans, stated in product units, to required manufacturing resource units and estimated dollar expenditures. Manufacturing resource units include labor hours, machine hours, or other units of production which differ from product inventory units. Estimated dollar outlays for purchased materials and outside processing services are also reported by these programs.

Manufacturing resource plans are also converted to an overall factory financial resource plan, including projected dollar expenditures for both purchased and internal factory resources.

Information provided includes the comparison of factory resource requirements, in hours or production units, to planned Work Center capacities. This helps you to determine feasibility of the production plan, to change available capacities to accommodate planned production, or to adjust manufacturing schedules to match planned capacities.

These capacity planning functions do not use "finite capacity" scheduling techniques. The main purpose of these programs is to determine resource capacity requirements for defined order schedules, not to schedule orders within finite capacities.

Rough cut capacity planning allows you to estimate capacity requirements by using a few planning Item Numbers to represent major product lines and Bills of Resources for those items. An item's Bill of Resources is a profile of lead times and key resources required for each order and unit produced. You can define a production schedule of Rough Planned Orders and convert them to timephased resource requirements, using the Bills of Resources.

A rough cut plan that is determined to be achievable may be used as the basis for developing and exploding a more detailed item plan with the PBS Manufacturing Master Scheduling & MRP package. The MRP explosion uses Bills of Material in generating timephased schedules of open and planned order quantities for manufactured and purchased items.

Detail capacity planning converts detail schedules of orders from the Master Scheduling & MRP explosion into timephased manufacturing resource requirements, using manufacturing Routing, Work Center, and Item Master information. This helps you to determine feasibility of the detailed MRP plan, or to adjust that plan to more closely match defined resource capacities.

These resource planning capabilities, plus monitoring of actual Work Center outputs and manufacturing schedule performance provided by PBS Manufacturing Shop Floor Control, provide a "closed loop" manufacturing planning and control system.

Major functions of PBS Manufacturing Capacity Requirements Planning are:

- Resource Structures and Rough Plan Orders maintenance. These programs are used to create, change, or delete Bills of Resources and timephased Rough Plan Order production schedules for items used in your rough cut capacity plan.
- Generation of rough plan reports, from Bills of Resources and Rough Plan Orders schedules.

- Generation of detail plan reports, from MRP order schedules, Routings, Work Centers, and Item Masters.
- Management reporting of manufacturing and financial resource requirements, with comparisons to planned manufacturing capacities by Work Center, available as on-line displays or printed lists.

Supporting programs include maintenance of Timephased Work Center Capacities, Rough Plan Periods, and Detail Plan Periods.

Access to PBS Manufacturing Capacity Planning report information to graphical format is available by using the XDBC and the PBS Manufacturing System Catalog. XDBC may be used to develop simple bar graphs reports, or to export this information to file formats usable by popular spread sheet and data base programs with more powerful graphical features.

Input files for detail Capacity Planning are built with other PBS Manufacturing modules. These include Bill of Material, Routing, and Work Center data maintained with Product Definition & Costing, Item Masters from Inventory Management, and orders from Master Scheduling & MRP.

# KEY WORDS AND CONCEPTS

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

### ERP

(Enterprise Resource Planning) An integrated information system that serves all departments within an enterprise. Evolving out of the manufacturing industry, ERP implies the use of packaged software rather than proprietary software written by or for one customer. An ERP system can include software for manufacturing, order entry, accounts receivable and payable, general ledger, and purchasing.

### MRP

(Manufacturing Resource Planning) A method for the effective planning of all resources of a manufacturing company. An MRP system is intended to simultaneously meet three objectives:

Ensure materials are available for production and products are available for delivery to customers.

Maintain the lowest possible material and product levels in store.

Plan manufacturing activities, delivery schedules and purchasing activities.

### 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 or SQL table), 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/Column**

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. In SQL it is often referred to as a column.

**Record/Row**

A record is a group of one or more related fields. Using SQL it may referred to as a row. 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 or table. is often referred to as an entry.

**Data File/Table**

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). When using SQL it is referred to as a table.

The Customers 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. In SQL it is kept in a separate table.

(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 data, you permanently remove information from that file/table. Once the information is purged, it cannot be recovered.

## Compress

Compress means to make smaller. The *compress* selection reduces the number of records 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. 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).

# Getting Started

This chapter contains the following topics:

# PREPARING TO USE CAPACITY REQUIREMENTS PLANNING

Before getting started, ensure that the Capacity Requirements Planning software is installed on your computer. Refer to the Passport Business Solutions *PBS Administration* documentation to install the C/R module before proceeding.

Also, you may want to familiarize yourself with the main features of this module by reading the Understanding Capacity Requirements Planning 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 Capacity Requirements Planning system.

# STARTING CAPACITY REQUIREMENTS PLANNING

To begin using Capacity Requirements Planning, complete the following steps:

## Set up of System Data

| Step | Description |
|---|---|
| 1 | Study the PBS general features in the *System User* documentation. |
| 2 | Start C/P using the instructions in the Using Capacity Requirements Planning chapter in this documentation. |
| 3 | Company information is set up for you as part of the installation procedure. Use Company Information to modify the controls for your company. Refer to the *Company Information* chapter in the *PBS Administration* documentation. |
| 4 | If you use sub accounts enter those via *Cost centers / Sub accounts*.<br><br>Enter your valid G/L accounts, using *Valid G/L accounts* on the CTL menu. If you are also using the Passport Business Solutions 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. |

## Setup of Other Manufacturing Data

Before you install Capacity Requirements Planning:

1. Install the PBS Manufacturing Inventory Management and Product Definition & Costing modules.
2. Build the Item Master in Inventory Management and build the Product Structures, Work Centers, and Routings with Product Definition & Costing. Work Centers are used by both rough cut and detail capacity planning. Product Structures and Routings are required for MRP and detail capacity plans.
3. When you set up or modify Work Center records, carefully consider the specified Capacity Units of Measure. These will be the capacity units used for comparisons of resource requirements to planned capacities in this package. Also enter labor and burden rate information for the Work Centers to allow conversion of capacity resource requirements to labor and burden dollars.
4. Install and implement PBS Manufacturing Master Scheduling & MRP before you use the detail Capacity Planning functions. Orders from the MRP explosion are required input for detail plan generation.
5. You must also install the Capacity Planning software. Your PBS Manufacturing representative may assist you with the PBS Manufacturing package installation procedures.

## Set Up Capacity Requirements Planning

You should setup your data in the following order before you proceed with the other functions of this module.

1. Enter the C/P *Control information*.
2. If your Work Center capacity plans vary by day or week (e.g. different total work hours for different week days, scheduling of Saturday work for selected areas, etc.) or you have planned future changes to Work Center capacity levels, build Timephased Capacity records that define capacities by date.
3. Review the Schedule Exception Dates and add any non-working days within the Capacity Planning time horizons.
4. Define the Rough Plan Periods and Detail Plan Periods that you will use for your initial Capacity Planning reports.

After completing these set up tasks, you may proceed to use the capacity requirements generation and reporting functions. See the Guide to Daily Operations chapter for the recommended daily and periodic functions.

## PASSPORT TRAINING AND SUPPORT

If you have problems with the Passport Business Solutions software, contact your dealer or authorized consultant.

For the name and location of a Passport Software, Inc. dealer or an authorized consultant near you, contact Passport at 1-800-969-7900.

If you wish to receive support directly from Passport, please call our End User Support Department at 1-800-969-7900, x124.

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

Additional information about Passport's products and servers are available at www.pass-port.com.

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

# Using Capacity Requirements Planning

This chapter contains the following topics:

# ORGANIZATION OF THIS DOCUMENTATION

This documentation provides the information you need to use Passport Business Solutions Capacity Requirements Planning.

## Organization

The following chapter is a guide to daily operations. It explains how to use the Passport Business Solutions Capacity Requirements Planning 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 Capacity Requirements Planning 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.

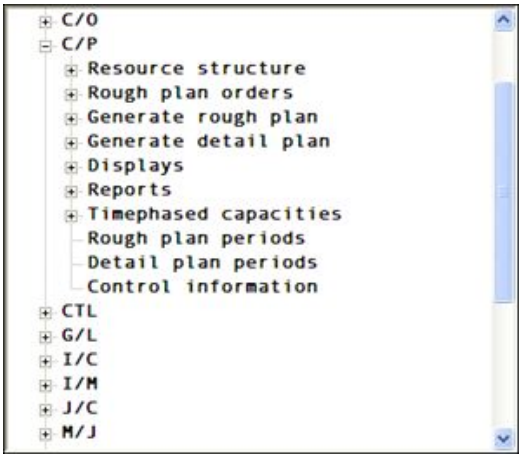
Selecting items from a menu on a computer is the way you tell your computer what you want to do.

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 CAPACITY REQUIREMENTS PLANNING

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.

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

### Exiting Capacity Requirements Planning

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.

# Guide to Daily Operations

This chapter contains the following topics:

# CAPACITY REQUIREMENTS PLANNING CHECKLISTS

The following checklists are provided as examples of how you might use Capacity Requirements Planning to perform various daily 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 Trainor 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 Capacity Requirements Planning tasks:

| Each Day | Each Day as Needed |
|---|---|
| | Enter and maintain Resource Structures if using Rough Cut Planning using Resource Structure, Enter. |
| | Enter and maintain Rough Plan orders if using Rough Cut Planning using Rough Plan Orders. |
| | Generate the Rough Plan using Generate Rough Plan, Run Plan. |
| | Generate the Detail Plan using Detail Plan by Resource. This should be done immediately after performing your MRP Explosion in the Master Scheduling and MRP module. |
| | Review the Rough Plan using Reports or Displays, Rough Plan by Resource or by Item. |
| | View the detail plan by Resource to see if you have capacity concerns using Displays, Detail Plan by Resource or print the same information using Reports, Detail Plan by Resource. |
| | Print a report to show you how much it will cost to execute your current detail plan using Reports, Detail Plan Dollar Summary. |
| | Enter Timephased Capacities as needed to reflect changes in the standard available capacity for one or more work centers using Timephased Capacities, Enter. |

## Periodic/Monthly Operations Checklist

Use the following guidelines for performing weekly and periodic Capacity Requirements Planning tasks:

| Each Period | Each Period as Needed |
|---|---|
| Shift Rough Cut Planning Periods to drop past periods and to add new ones for planning. | |
| Shift Detail Plan Periods to drop past periods and to add new ones for planning | |
| | Purge timephased capacities entered for prior periods using Timephased Capacities, Purge. |

# Control Information

This chapter contains the following topics:

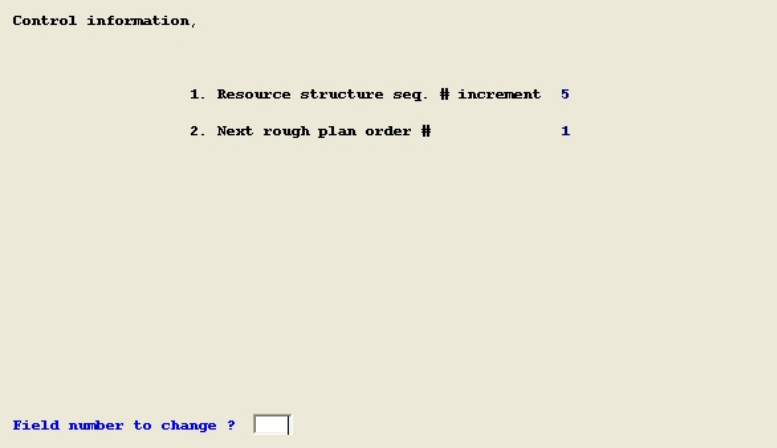
# CONTROL INFORMATION

C/P Control information is used by other programs in the Capacity Planning package. You set up these values when you install the package and may modify them later as necessary.

## Select

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

The following screen displays:




### 1. Resource structure seq. # increment

When you add Resource Structure records using the Resource Structure entry program, you must assign a sequence number to each resource in the structure. This determines the order in which resources will list when you print or display that structure. The entry program automatically displays a "default" sequence number for each resource 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 resources. If you specify an increment of 5, for example, the automatically assigned sequence numbers for resources of the same item would be 5, 10, 15, 20, 25, etc. This example increment of 5 would leave some "open spaces" in the overall structure sequence into which other resources could later be inserted without revising sequence numbers already in that structure.

The highest sequence number that may be assigned to any resource for the same item is 999. This limit and the maximum number of items likely to appear in any resource structure 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 resource structures when you maintain the data.

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

### 2. Next rough plan order #

Entry Format: From 1 to 6 numeric digits.

Comments: This is the number automatically assigned to the next rough plan order entered. Each time a new rough plan order is entered, it is increased by 1.

# Timephased Capacities

This chapter contains the following topics:

## INTRODUCTION TO TIMEPHASED CAPACITIES

Use this function to define and list Timephased Capacities by Work Center and date.

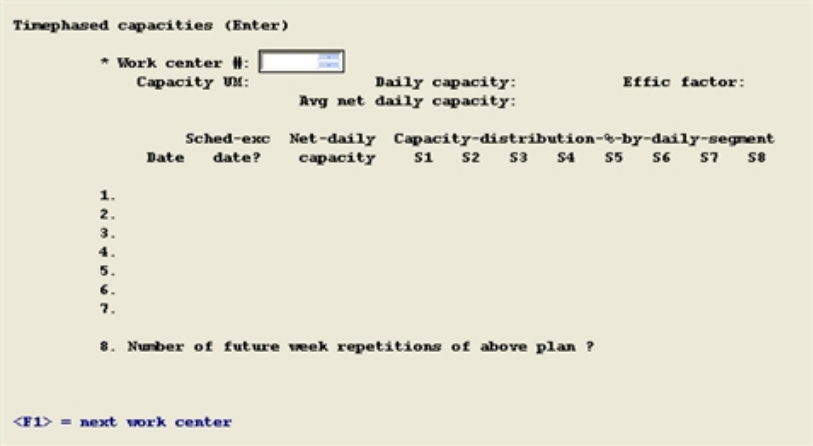
If you do not define any timephased capacity values for a Work Center, the "Daily capacity" and "Efficiency factor" in the Work Center record is used to determine capacity for all regular schedule dates. Regular schedule dates are all dates that are not in I/M Schedule Exception Dates.

If you define a non-zero timephased capacity for a regular schedule date, other programs will use the Timephased Capacities record value for that day instead of capacity information in the Work Center record. You may also use Timephased Capacities to define Work Center capacities for Schedule Exception Dates, if you plan to operate selected Work Centers on weekend days.

# ENTERING TIMEPHASED CAPACITIES

## Select

*Enter* from the *Timephased capacities* menu. The following screen appears:




Enter the following fields:

### * Work center #

Entry Format: Up to 6 alphanumeric characters, press F1 for the next Work Center.

Comments: This entry must match a valid Work Center. The Work Center description and Department are displayed.

The following entries are repeated seven times, in Fields 1-7. Each line represents a separate record for the Work Center. Only records with non-zero capacity values are written.

### 1.-7. Date

Entry Format: 6 numeric digits in MMDDYY format.

Comments: After you enter the first date, the six following dates automatically display. Any capacities previously entered for the 7 days are displayed.

### 1.-7. Net daily capacity

Entry Format: Up to 5 numeric digits and 2 decimals, or

F1 = Work center average, or F2 = skip remaining dates. Zero is allowed.

Comments: If you use F1 for "Work center average", the net daily capacity is calculated by multiplying the Work Center's "Efficiency factor" by its average "Daily capacity".

### 1.-7. Capacity distribution % by daily segment

(Up to 8 segments)

Entry Format: Up to 3 numeric digits or zero. The sum of all segments cannot exceed 100 %. Entry defaults displayed are from S/F Control Information.

Comments: If you only plan to use "infinite capacity" scheduling, enter 100 in Segment 1. The percentages are used to split the net daily capacity into segments of the day for "finite capacity" scheduling purposes. If finite capacity schedules are generated with the Shop Floor Control package, a job scheduled to be completed within one capacity segment for a Work Center cannot be scheduled in an earlier segment of the same day at the next operation's Work Center.

### 8. Number of future week repetitions of above plan

Entry Format: Up to 2 numeric digits. Zero allowed.

Comments: If you enter a non-zero value, the program automatically creates or updates records for all dates within the specified number of future weeks, repeating the same daily capacity pattern shown on the screen for each of the future 7-day periods.

Use "Field number to change ?" to modify data entered. When you have completed any revisions, press ENTER at that position to post the data. A separate record is created for each date specified for the Work Center. Records are not created for dates with zero "Net daily capacity". Capacity values entered either create new records or replace previous records. A zero "Net daily capacity" entry causes deletion of a previously created record for the date.

# PURGE

Use this program to easily delete all Timephased Capacities for prior dates.

## Select

*Purge* from the *Timephased capacities* menu.

The fields you enter are:

**Purge timephased capacity plans through _____**

Enter a date in MMDDYY format. You will then be asked "Are you sure ?". A Y response causes the program to delete the selected records. A N response takes you out of this program.

# Rough Plan Periods

This chapter contains the following topics:

## INTRODUCTION TO ROUGH PLAN PERIODS

Rough Plan Periods are the reporting time periods used for rough cut capacity planning displays and reports. You may define up to 60 periods, or a lesser number, of equal or varying time spans.

These plan periods only define the "time buckets" into which detail dated resource requirements and capacities are summarized on some rough plan reports and screen displays. Since actual planning detail refers to specific calendar dates, the length of defined reporting periods does not affect the amount of item lead time offset applied by the plan generation program.

Capacity Planning programs will only create information about those requirements and orders due within the schedule horizon, as defined by the End Date of the last Rough Plan period. The End Date should be no less than the latest Due Date in your Rough Plan Orders.

Rough Plan Periods for the short to medium range planning could be defined as weekly or monthly time increments. You may wish to define some quarterly schedule periods for longer range planning, beyond the short to medium range horizon.

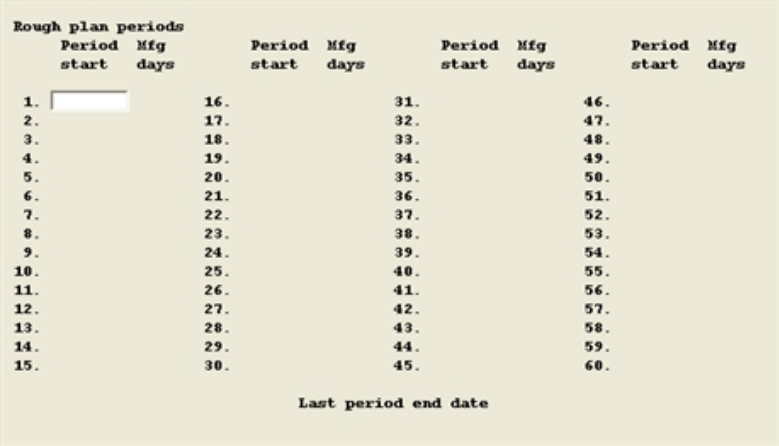
Use this program to initially define or to completely redefine your Rough Plan Periods. After Rough Plan Periods are initialized, you may use the "Shift periods" program, on the menu for "Generate rough plan", to easily drop the first period and add one new period as you start each new rough planning cycle.

There are no restrictions on how frequently you may redefine or shift periods. Capacity Planning programs use the Rough Plan Periods at the time that you run the "Generate rough plan" program to create new reports.

# ENTERING ROUGH PLAN PERIODS

## Select

*Rough plan periods* from the *C/P* menu. The following screen appears:




If you previously entered Rough Plan Periods, they will display and the program asks "Do you wish to re-enter periods ?". If there are no previously defined periods, or you elect to re-enter all periods, you enter:

### 1. Period start date

6 numeric digits in MMDDYY format.

Enter the next Period Start date after which the Mfg Days for the preceding plan period will display. Mfg Days are the calculated number of manufacturing days between Period Start Dates, excluding exception days (non-working days) in Schedule Exception Dates.

You may enter up to 60 planning periods, or press F1 to end entering planning periods. You then are prompted to enter the Last Period End Date, after which Mfg Days are displayed for the last plan period.

# Detail Plan Periods

This chapter contains the following topics:

## INTRODUCTION TO DETAIL PLAN PERIODS

Detail Plan Periods are the reporting time periods used for detail capacity planning displays and reports. You may define up to 60 periods, or a lesser number, of equal or varying time spans.

These plan periods only define the "time buckets" into which detail dated resource requirements and capacities are summarized on some detail plan reports and screen displays. Since actual planning detail refers to specific calendar dates, the length of defined reporting periods does not affect the amount of item lead time offset applied by the plan generation program.

Capacity Planning programs will only create information about those requirements and orders due within the schedule horizon, as defined by the End Date of the last Detail Plan period. This End Date should usually be set to correspond with the End Date in the MRP Schedule Periods used for the MRP explosions that you convert to detail capacity plans.

Detail Plan Periods for the short to medium range planning range could be set to daily or weekly time spans. You may wish to define some monthly or quarterly schedule periods for longer range planning, beyond the short to medium range horizon.

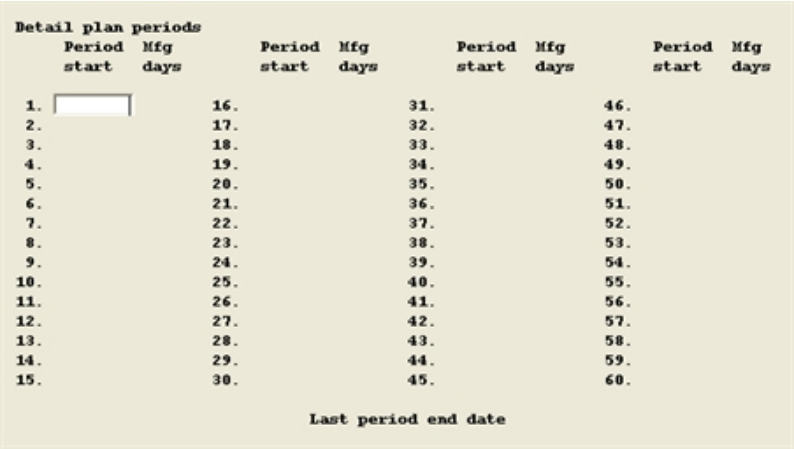
# ENTERING DETAIL PLAN PERIODS

Use this program to initially define or to completely redefine your Detail Plan Periods. After Detail Plan Periods are initialized, you may use the "Shift periods" program, on the menu for "Generate detail plan", to easily drop the first period and add one new period as you start each new detail planning cycle.

There are no restrictions on how frequently you may redefine or shift periods. Capacity Planning programs use the Detail Plan Periods at the time that you run the "Generate detail plan" program to create new reports.

## Select

*Detail plan periods* from the *C/P* menu. The following screen displays:




If you previously entered Detail Plan Periods, they will display and the program asks "Do you wish to re-enter periods ?". If there are no previously defined periods, or you elect to re-enter all periods, you enter:

### 1. Period start date

6 numeric digits in MMDDYY format.

Enter the next Period Start date after which the Mfg Days for the preceding plan period will display. Mfg Days are the calculated number of manufacturing days between Period Start Dates, excluding exception days (non-working days) in the Schedule Exception Dates data.

You may enter up to 60 planning periods, or press F1 to end entering planning periods. You then are prompted to enter the Last Period End Date, after which Mfg Days are displayed for the last plan period.

# Resource Structure

This chapter contains the following topics:

## INTRODUCTION TO RESOURCE STRUCTURES

Resource Structures are used for rough cut capacity planning. It defines a "bill of resources" for each planning Item Number that you decide to use. Bills of resources are used to explode schedules of rough planned orders into manufacturing resource requirements when you run "Generate rough plan".

Use this function to define planning item resource structures for labor hours, machine hours, production units, and purchase dollars. Production unit resources may be included in these records when production capacity planning units differ from product units. For example, production planning units of machine cycles or feet may be derived from machine cycles/product unit or feet/product unit factors defined in resource structure records.

All types of resources may be offset from rough plan order due dates by the lead time offsets specified for each structure record. Work Centers are identified in resource structure records for labor hours, machine hours, or production units. This allows reporting of total timephased resource requirements by Work Center and Department, and comparisons of those requirements to planned Work Center capacity levels.

Resource structures define single level resource bills for rough planning. While actual production processes may involve several levels of fabrication and assembly, the lead time offset factors available in resource structures allow you to timephase the entire production and materials acquisition process for typical products or product families.

# ENTERING RESOURCE STRUCTURES

## Select

*Enter* from the *Resource structure* menu.

The following screen displays:


When you select the program, you are first prompted to enter the Resource sequence # increment default value that you wish to use for the structure records to be added. A message displayed under this entry explains that:

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

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

### 1. Item #

Entry Format: Up to 15 alphanumeric characters.

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

Validation: Must match an Item Master record.

### 2. Resource 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 bill of resource plus the Resource Sequence Number Increment.

Validation: Must not equal Resource Sequence No. of another item in the same bill of resource.

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

### 3. Resource type

Entry Format: LH = Labor hour, or MH = Machine hour, or PD = Purchase $, or UP = Unit production

### 4. Work center #

Entry Format: Up to 6 alphanumeric characters

Comments: The Work Center Number must be in Work Centers and its description will display.

If Resource Type was defined as Purchase $ the entry is bypassed, (Not applicable) is displayed, and the field is not changeable.

### 5. Resource units/order

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

Comments: This is a fixed amount of estimated resource usage for each order, regardless of order quantity. If resource type is Labor Hour or Machine Hour, this value may represent the estimated job set up hours for an order. If the resource type is Purchase Dollar, this may represent the estimated fixed dollar cost to prepare and receive a purchase order.

### 6. Resource units/qty

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

Stock unit of measure for the item is displayed to the right of this entry.

Comments: This is the quantity variable amount of the resource that is consumed to manufacture, or purchase materials for, each product unit ordered. For example, this could be the Machine Hours or Labor Hours run time in a Work Center to produce one unit of the product.

### per

(per quantity, related to resource units)

Entry Format: Up to 4 numeric digits.

The value of 1 displays as the default.

Comments: If the resource unit is for 1 unit of product, enter 1. Otherwise enter the number of product units related to the resource unit.

### 7. Lead time offset

(in days)

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

Comments: This is the number of working days prior to the due date of each order that the resource usage is expected to occur. Zero means the resource will be required on the due date of the order. An offset of 3 means the resource will be used 3 working days prior to the order due date.

## COPY

This program allows you to copy the bill of resource for one Item Number to another Item Number, provided that no Resource Structure records have previously been defined for the new item.

This function does not delete the original item's Resource Structure records from which structure records are automatically created for the other Item Number. To copy a bill, you are requested to enter:

**1. Copy from this item #**

Entry Format: Up to 15 alphanumeric characters.

Validation: Resource Structure records must be available for this Item Number.

**2. Copy to this item #**

Entry Format: Up to 15 alphanumeric characters.

Validation: Resource Structure records must not already be available for this Item Number.

## DELETE ALL FOR ITEM

Use this program to delete all Resource Structure records for a planning Item Number with one entry.

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

**OK to delete resource structure records ?**

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

# Rough Plan Orders

This chapter contains the following topics:

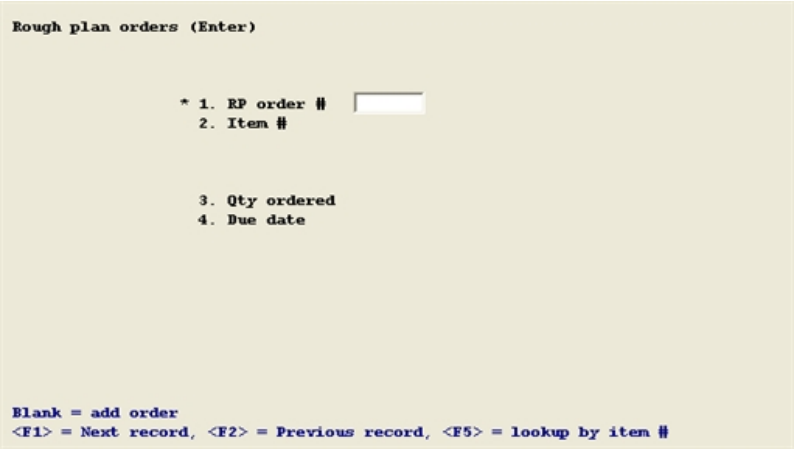
# ENTERING ROUGH PLAN ORDERS

Use this function to define schedules of Rough Planned Orders used for rough cut capacity planning. Rough Planned Orders for planning Item Numbers are exploded, using Resource Structures for those items, when you run the "Generate rough plan" function.

## Select

*Enter* from *Rough plan orders* menu.

The following screen displays:




Enter the following fields:

### 1. RP order #

Entry Format: To add a Rough Plan order, you must enter spaces to assign the next available Rough Plan Order Number from C/P Control information. This becomes the RP Order Number.

To retrieve a Rough Plan Order, enter the RP Order Number, up to 6 numeric digits, or

Press F1 to look at consecutive order numbers until the order you want appears, or

Press F5 to lookup the order by Item Number.

### 2. Item #

Entry Format: Up to 15 alphanumeric characters.

Validation: Must match an Item Master record.

### 3. Qty ordered

Entry Format: Up to 8 numeric digits.

### 4. Due date

Entry Format: 6 numeric digits, in MMDDYY sequence.

Validation: Must not match a date in Schedule Exception Dates.

If you are adding an order, the program asks:

### 5. Repeat order for future dates ?

Entry Format: Y or N.

Comments: Answer Y if you want the program to create additional Rough Plan Orders for the same quantity, at fixed time intervals beyond the date of the order on the screen. You then enter:

### Repetition interval in days

Entry Format: Up to 2 numeric digits, specifying order Due Date intervals in number of calendar days.

### Number of repetitions

Entry Format: Up to 2 numeric digits, indicating the additional number of orders to be created for the same quantity as the one on the screen.

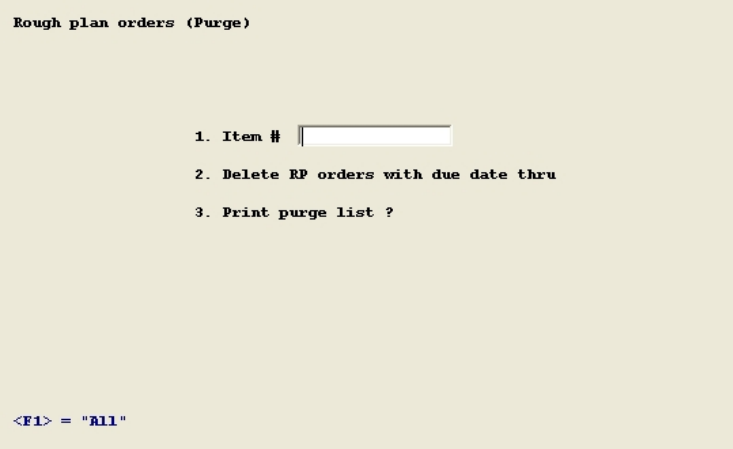
# PURGING ROUGH PLAN ORDERS

This program provides a convenient method of deleting multiple Rough Plan Orders for one or all items, through a specified date.

## Select

*Purge* from *Rough plan orders* menu.

The following screen displays:




The data you enter are:

### 1. Item #

Entry Format: Up to 15 alphanumeric characters, or F1 = "All".

### 2. Delete RP orders with due date thru

Entry Format: 6 numeric digits in MMDDYY sequence, or F1 = "All".

### 3. Print purge list ?

Entry Format: Y or N.

If you answered Y to the print purge list question, the records to be purged will print. The records in the requested range are then deleted.

# Generate Rough Plan

This chapter contains the following topics:

## INTRODUCTION TO GENERATE ROUGH PLAN

Use this function to shift rough plan periods and to run the rough plan generation program.

The rough plan generation program creates reports used by other rough plan display and print programs. Input information for the rough plan is obtained from Rough Plan Orders, Resource Structures, Rough Plan Periods, Work Centers and Timephased Capacities. The generation program does not print any planning reports. An exception list of rough plan order items that were not converted to resource requirements, because related data is not on file, may print at the end of the run.

Each time you run a new rough plan, the output from the previous rough cut planning run are replaced by new data.

## SHIFT PERIODS

After you initially define Rough Plan Periods, you may use this program to easily drop one or more of the earliest periods and to add one or more periods at the end of the schedule horizon, as you start a new planning cycle.

### Select

*Shift periods* from the *Generate rough plans* menu.

Rough Plan Periods are displayed on the screen, and you are prompted to enter the number of periods to drop. The default value displayed will cause the beginning schedule period, after the shift, to coincide with the current date. If you enter zero or press ESC (or TAB), you exit the program. Otherwise, the screen redisplays with the periods shifted, excluding the number of periods you requested to be dropped. You then must enter the new periods at the end of the schedule horizon, including the Start Date of each new period and the End Date of the last Rough Plan Period.

# RUN PLAN

Use this program to create new rough plan reports from information currently in Rough Plan Orders, Resource Structures, Rough Plan Periods, Work Centers, and Timephased Capacities. The program applies resource requirement factors in item Resource Structure records to scheduled Rough Plan Orders for those items.

You are only allowed to run this program when nobody else is presently using rough plan display or report programs that access rough plans. While you are running this rough plan generation, other users are prevented from accessing rough plan display and report programs until new rough plans are created.

## Select

*Run plan* from the *Generate rough plans* menu.


Enter the following fields:

### 1. Run date

Enter in MMDDYY format, or press ENTER for the System Date default displayed.

Comments: The run date is for subsequent reference. It is shown each time that you use other programs to display or print the output created by this planning run.

### 2. Primary warehouse for items

F1 = "All", Blank = "Main", or up to 2 alphanumeric characters.

Comments: If there is more than one primary warehouse in Item Masters (e.g. several plant locations) for those items in Rough Plan Orders, you may run a selective rough plan generation for one location by designating a specific warehouse. This selective approach is OK if there are not significant demand/supply relationships between primary warehouses.

A period of processing occurs during which new rough plan reports are created. If there are rough plan input data exceptions (for example, no matching Resource Structures are found for a Rough Plan Order item), they are printed at the end of this process.

Following is a summary of logical procedures used by this program:

- Resource Structures are matched to related Rough Plan Orders by the Item Numbers.
- Resource requirements dates are set back in time from the Rough Plan Order due date by the number of "Lead time offset" days specified in the related Resource Structure record. The defined offset days are assumed to be working days, so this procedure does not count weekend or holidays in Schedule Exception Dates when calculating the resource requirement dates.
- Resource requirements dated beyond the "Last period end date" in Rough Plan Periods are not included in the output files.
- "Resource units/order" in Resource Structure records are assumed to occur once for each matching Rough Plan Order. These are set up or ordering units incurred for each order, but do not vary with the quantity ordered.
- "Resource units/qty" in Resource Structure records are extended by the order quantity of each matching Rough Plan Order. These are quantity dependent resource units.
- Work Center planned capacities are retrieved for comparison to calculated resource requirements, if Resource Type in the Resource Structure matches the "Capacity and load UM" in the related Work Center record. Capacities are obtained from Timephased Capacities records for Work Centers and dates included in that file. Capacities for working days not found in Timephased Capacities records are obtained from Work Center record "Average daily capacity" extended by "Efficiency factor".

# Generate Detail Plan

This chapter contains the following topics:

## INTRODUCTION TO GENERATE DETAIL PLAN

Use this function to shift detail plan periods and to run the detail plan generation program.

Detail plan generation creates reports used by other detail capacity plan display and report programs. You must use PBS Manufacturing Master Scheduling & MRP to run an MRP explosion before you run detail capacity plan generation. Input information for the rough plan is obtained from MRP Orders, Routings, Detail Plan Periods, Work Centers, Timephased Capacities, and Item Masters. If PBS Manufacturing Shop Floor Control or Manufacturing Job Costing is installed, Shop Order Operations are accessed to obtain released shop order routings and operation balances. This report data generation program does not print any planning reports. An exception list of detail plan items not converted to resource requirements, because related data is not on file, may print at the end of the run.

The detail capacity plan includes MRP open and planned orders that are due within the defined Detail Plan Periods horizon.

Each time you run a new detail plan, the output data from the previous detail capacity plan are replaced by new data.

## SHIFT PERIODS

After you initially define Detail Plan Periods, you may use this program to easily drop one or more of the earliest periods and to add one or more periods at the end of the schedule horizon, as you start a new planning cycle.

### Select

*Shift periods* from the *Generate detail plan* menu.

Detail Plan Periods are displayed on the screen, and you are prompted to enter the number of periods to drop. The default value displayed will cause the beginning schedule period, after the shift, to coincide with the current date. If you enter zero or press ESC (or TAB), you exit the program. Otherwise, the screen redisplays with the periods shifted, excluding the number of periods you requested to be dropped. You then must enter the new periods at the end of the schedule horizon, including the Start Date of each new period and the End Date of the last Detail Plan Period.

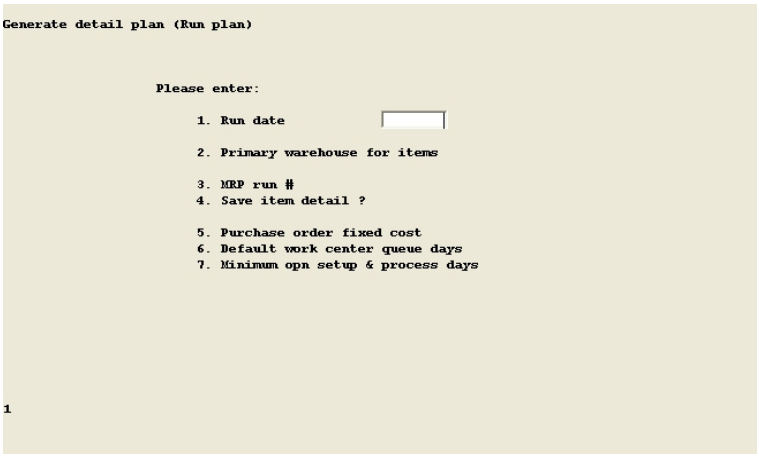
# RUN PLAN

Use this program to create new detail capacity plan reports from information currently in MRP Orders, Routings, Detail Plan Periods, Work Centers, Timephased Capacities, and Item Masters. This program applies resource requirement factors in Routing records for manufactured items, and Item Master costs for purchased items, to the MRP open and planned order schedules.

This program can only be used if Master Scheduling & MRP is installed and the output from an MRP explosion run is presently on file. You are only allowed to run it when nobody else is using detail capacity plan display or report programs that access the detail plans. While you are running the detail plan generation, other users are prevented from accessing detail plan display and report programs until the new detail plan data is created.

## Select

*Run plan* from the *Generate detail plan* menu.




Enter the following fields:

### 1. Run date

Enter in MMDDYY format, or press ENTER for the System Date default displayed.

Comments: The run date is for subsequent reference. It is shown each time that you use other programs to display or print the output created by this planning run.

### 2. Primary warehouse for items

F1 = "All", Blank = "Main", or up to 2 alphanumeric characters.

Comments: If there is more than one primary warehouse in Item Masters (e.g. several plant locations) for those items in MRP Orders, you may run a selective detail plan generation for one location by designating a specific warehouse. This approach is OK if there are not significant demand/supply relationships between primary warehouses.

The MRP explosion that created the MRP Orders used by this program may or may not have limited the MRP explosion to one primary warehouse.

### 3. MRP run #

One numeric digit, or press ENTER to accept the default of the first MRP Run Number.

Comments: Master Scheduling & MRP allows you to retain output from one or more MRP explosion runs. You may use MRP Orders from only one explosion each time you generate a detail capacity plan.

### 4. Save item detail ?

Y or N.

Comments: A Y answer saves detail resource requirements by Item Number, and by operation for manufactured items. This detail may optionally be printed when you later run the "Detail plan by resource" summary report.

Answer N to retain only resource requirements summary information, by Resource Type, Work Center, and Plan Period, for reporting purposes.

### 5. Purchase order fixed cost

Up to 2 numeric digits plus 2 decimals, or zero.

Comments: If used, this is the estimated administrative fixed cost to place and receive each purchase order. It is used in calculating Purchase Dollar resources required.

### 6. Default work center queue days

Up to 2 numeric digits plus one decimal, or zero.

Comments: For scheduling manufactured item operations, this planned "wait time" value is used for any Work Center that has zero "Average queue days" in the Work Center record.

### 7. Minimum opn setup & process days

Up to 1 numeric digit plus one decimal, or zero.

Comments: This factor may optionally be specified for scheduling manufactured item operations. If the total setup and process time calculated from routing operation values, and converted to days, is less than this value, this number will replace the calculated days for scheduling purposes. This minimum does not include allowed queue time.

A period of processing occurs during which new detail plan report data is created. If there are detail plan input data exceptions (for example, no matching Routing records for a manufactured item order), they are printed at the end of this process.

Following are some of the logical procedures used by this program.

- Requirements are calculated for these types of resources:

  Purchased material dollars, or purchased outside processing dollars are calculated for MRP purchase orders.

Manufacturing labor hours, manufacturing machine hours, and manufacturing units of production are computed for MRP manufacturing orders. These manufacturing resources may be subsequently converted to labor and burden dollars by the "Detail dollar plan" report program.

- Purchase dollar requirements are estimated to occur on the Due Date of the purchase orders. There is no factor applied for a planned difference between receipt dates and payment dates.
- Open or planned purchase orders are determined to be for material if the Item Master value for "This level - Standard (or Average) material unit cost" is not zero. In this case, Item Master "Total unit cost" is extended by the order quantity and added to the "Purchase order fixed cost", if any, to compute Purchased Material Dollars.
- Open or planned purchase orders are determined to be for outside processing if the Item Master value for "This level - Outside unit cost" is not zero, and material unit cost is zero. In this case, Item Master "Total unit cost" is extended by the order quantity and added to the "Purchase order fixed cost", if any, to compute Purchased Outside Dollars.

  To achieve the above item unit cost profile for Outside Processing requires that you create separate Item Masters for purchased outside processes, and structure those items as components in manufactured item bills of material. This is described in more detail in Chapter 17 of the Inventory Management user guide.
- Factory resource requirement dates are operation Due Dates, determined by "back scheduling" from the open and planned manufacturing order Due Dates, using item Routings and other scheduling factors specified at run time. The last routing operation is scheduled for the Due Date of the order. Operation setup and run times plus planned Work Center queue (wait) time, converted to days, are used to calculate Due Dates of the preceding operations. Schedule Exception Dates are "skipped" by the back scheduling procedure. Daily capacity data in Work Center records is used to convert estimated manufacturing hours to elapsed days. If daily capacity hours are not defined for a Work Center, an eight hour daily capacity is assumed.
- If PBS Manufacturing Shop Floor Control or Manufacturing Job Costing is installed, Shop Order Operations are accessed to obtain released shop order routings and operation balances due. If released routing operations are not found, it is assumed the entire order quantity balance is due at all operations for the item's Routing, defined in Product Definition & Costing.
- Machine hours, labor hours, and units of production resource requirements are calculated for each Routing operation for open and planned manufacturing orders. Machine hours are calculated from operation setup and run hour standards. Labor hours are machine hours times the operation's "Labor/run ratio". Units of production are the quantity balance due at the operation, in stock units, divided by the operation's "stock/production ratio".
- Work Center planned capacities are retrieved for comparison to calculated manufacturing resource requirements. Each Work Center's capacity may be defined and compared to just one of the three resource requirement types (machine hours, labor hours, or units of production) calculated for manufacturing orders. Capacities are obtained from Timephased Capacities records for Work Centers and dates defined in there. Capacities for working days not found in Timephased Capacities are obtained from Work Center record "Average daily capacity" extended by "Efficiency factor".

# Displays

This chapter contains the following topics:

## INTRODUCTION TO DISPLAYS

Use these programs to display rough cut capacity plan information, bills of resources used to generate the rough plan, or detail capacity plan information.

Rough or detail plan information is displayed from report files created by the most recent rough plan generation run or detail plan generation run. The "Bill of resources" display shows information currently in Resource Structures.

# ROUGH PLAN BY RESOURCE

The program displays rough plan summary information by resource type and rough plan period. For manufacturing resources, you also specify the Department and Work Center that you want to view. You may optionally view the rough plan requirement detail that is included in the summary statistics.

Comparative Work Center capacity values are included for any manufacturing resource type that matched the Work Center "Capacity & load UM" at the time of rough plan generation. Otherwise, planned capacity values will be zero.

## Select

*Rough plan by resource* from the *Displays* menu. The following screen displays:

Insert Screen.

Enter the following fields:

### Resource

LH = Labor hour, or MH = Machine hour, or PD = Purchase $, or UP = Unit production

If Resource type entered is not Purchase $, enter:

### Dept

Up to 3 alphanumeric characters, or Blank for N/A (Not Applicable), or F1 = next Dept and Work Center

### Work center

Up to 6 alphanumeric characters.

The Work Center's description is displayed.

The following rough plan summary data, if any, are displayed:

### Period

Rough plan period start date.

### Pd-capacity

Period total capacity, in resource units.

### Pd-required

Period total required, in resource units.

### Cum-capacity

Cumulative capacity, through the period, in resource units.

**Cum-required**

Cumulative required, through the period, in resource units.

**Cum-available**

Cumulative available; the cumulative capacity less the cumulative required, through the period.

You may also view the rough plan requirement detail by pressing F2 when the cursor is at the bottom of the screen. After pressing F2, the following rough plan detail data are displayed:

**Req-date**

Required date.

**Item-#**

Item number.

**Reqd-per-order**

Required per order; the fixed number of resource units assigned to each order.

**Reqd-for-qty**

Required for quantity; the quantity dependent total resource units required.

**Tot-required**

Total required; the sum of the "Required per order" and "Required for quantity" units.

**Cum-required**

Cumulative required total resource units.

# ROUGH PLAN BY ITEM

This program displays rough plan detail by Item Number. This sequence of rough plan information makes it easy to trace the requirement values to Rough Plan Orders and Bills of Resources.

## Select

*Rough plan by item* from the *Displays* menu. The following screen displays:

Insert Screen.

Enter the following fields:

**Item #**

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

**Resource**

LH = Labor hour, MH = Machine hour, PD = Purchase $, or UP = Unit production

The following rough plan item detail data, if any, are displayed:

**Resource**

Resource type.

**Dept**

Department.

**Wrk-ctr**

Work Center Number.

**Req-date**

Required date.

**RPO-#**

Rough Plan Order Number, or "Several" to indicate that more than one Rough Plan Order Number contributes to the item resource requirement for this date.

**Reqd-per-order**

Required per order; the fixed number of resource units assigned to each order.

**Reqd-for-qty**

Required for quantity; the quantity dependent total resource units required.

**Tot-required**

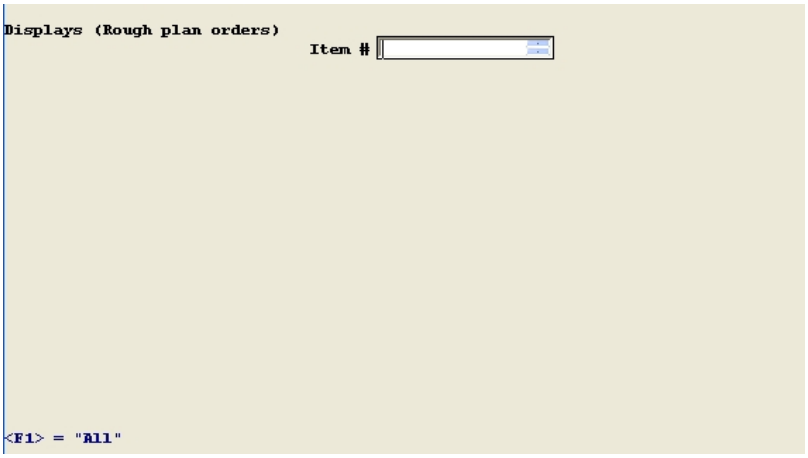
Total required; the sum of the "Required per order" and "Required for quantity" units.

# ROUGH PLAN ORDERS

This program displays a list of Rough Plan Orders.

## Select

*Rough plan orders* from the *Displays* menu. The following screen displays:




Enter the following fields:

### Item #:

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

The program then displays the following information about Rough Plan Orders starting with the Item number you entered:

### Item-#

Item Number.

### Description

Item description.

### RPO-#

Rough Plan Order Number.

### Qty-ord

Quantity ordered.

### UM

Item inventory unit of measure.

### Due-date

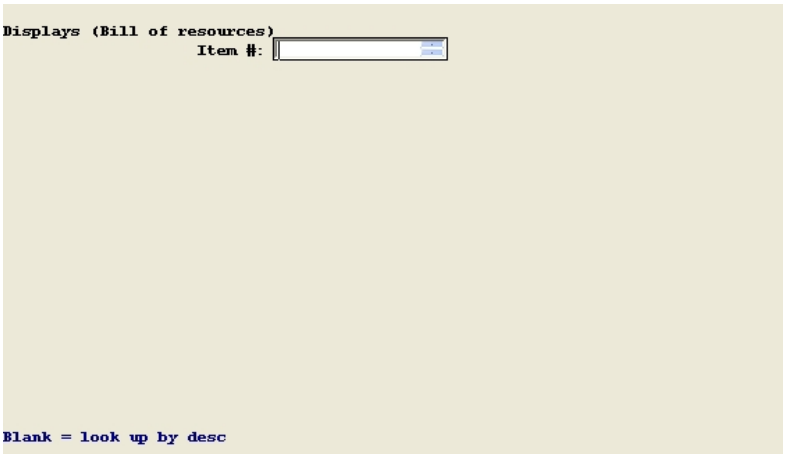
Order due date.

# BILL OF RESOURCES

This program displays Bills of Resources from Resource Structures for items that you request.

## Select

*Bill of resources* from the *Displays* menu. The following screen displays:




Enter the following fields:

### Item #

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

The following Bill of Resources data are displayed:

### Seq

Resource sequence number.

### Resource

Resource type.

### Work-ctr

Work Center Number.

### Per-order

Fixed number of resource units required for each order.

### Per-quantity

Number of resource units required per stock unit ordered.

### LT-offset

Lead time offset in days. The number of work days prior to a rough plan order due date that the resource will be required.

# DETAIL PLAN BY RESOURCE

This program displays detail capacity plan summary information by resource type and detail plan period. For manufacturing resources, you also specify the Department and Work Center that you want to view. If the option to save item detail was selected when the detail plan was generated, you may also view the requirement detail that is included in the summary statistics.

Comparative Work Center capacity values are included for any manufacturing resource type that matched the Work Center "Capacity & load UM" at the time of rough plan generation. Otherwise, planned capacity values will be zero.

## Select

*Detail plan by resource* from the *Displays* menu. The following screen displays:

Insert Screen.

Enter the following fields:

### Resource

LH = Labor hour, MH = Machine hour, PO = Purchase outs $, UP = Unit production, PM = Purchase matl $

If Resource type entered is not Purchase outs $, and is not Purchase matl $, enter:

### Dept

Up to 3 alphanumeric characters, or Blank = N/A (Not Applicable), or F1 = next Dept and Work Center

### Work center

Up to 6 alphanumeric characters.

The Work Center's description is displayed.

The following detail plan summary data, if any, are displayed:

### Period

Detail plan period start date.

### Pd-capacity

Period total capacity, in resource units.

### Pd-required

Period total required, in resource units.

### Cum-capacity

Cumulative capacity, through the period, in resource units.

**Cum-required**

Cumulative required, through the period, in resource units.

**Cum-available**

Cumulative available; the cumulative capacity less the cumulative required, through the period.

If the option to save item detail was selected when the detail plan was generated, you may view the requirements detail by pressing F2 when the cursor is at the bottom of the screen. After pressing F2, the following requirements detail data are displayed:

**Req-date**

Required date.

**Item-#**

Item number.

**Opn**

Operation number.

**Alt**

Alternate operation number.

**Reqd-per-order**

Required per order; the fixed number of resource units assigned to the order or operation.

**Reqd-for-qty**

Required for quantity; the quantity dependent total resource units required.

**Cum-required**

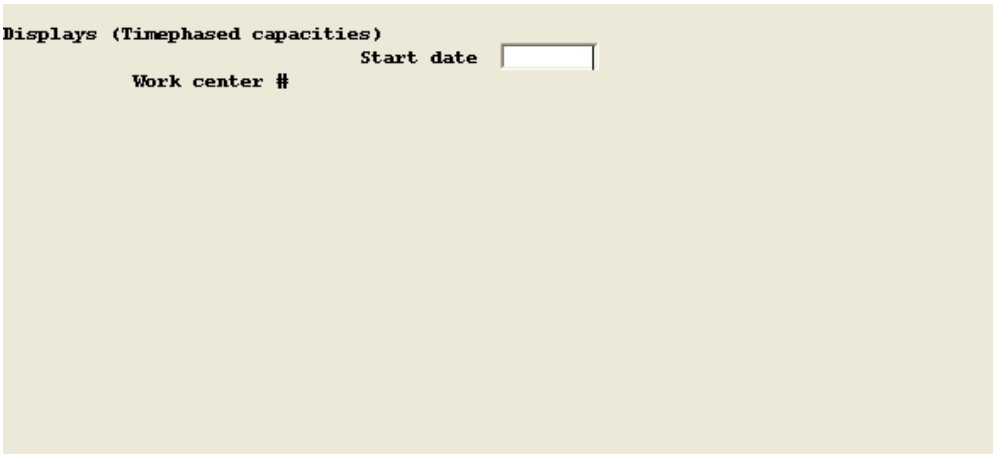
Cumulative required total resource units.

## TIMEPHASED CAPACITIES

Use this program to display a list of Timephased Capacity plans for a specified Work Center Number, starting with a specified date.

### Select

*Timephased capacities* from the *Displays* menu. The following screen displays:




The following information displays:

**Net Daily Capacity**

**Capacity Unit of Measure**

**Capacity Distribution % by Daily Segment.**

# Reports

This chapter contains the following topics:

## INTRODUCTION TO REPORTS

Use these programs to print rough cut capacity plan information, bills of resources used to generate the rough plan, or detail capacity plan information. Rough plan and detail plan dollar summaries convert all types of resource requirements to estimated dollar expenditures for purchased material and outside processes, labor, and burden.

Rough or detail plan information is printed from report files created by the most recent rough plan generation run or detail plan generation run. The "Bill of resources" display shows information currently in Resource Structures.

# ROUGH PLAN BY RESOURCE

This program prints rough plan summary information by resource type and rough plan period. For manufacturing resource types, you also specify the range of Departments and Work Centers that you want to list. You may optionally print the rough plan requirement detail that is included in the summary statistics.

Comparative Work Center capacity values are included for any manufacturing resource type that matched the Work Center "Capacity & load UM" at the time of rough plan generation. Otherwise, planned capacity values will be zero.

See a Rough Plan By Resource example in the *Sample Reports* appendix.

## Select

*Rough plan by resource* from the *Reports* menu.

The following screen displays:

```
Reports (Rough plan by resource)


                    Please enter

                         1. Resource type

                         2. Starting department #
                         3. Ending department #

                         4. Starting work center #
                         5. Ending work center #

                         6. Print requirement detail ?




LH = Labor hour,  MH = Machine hour,  PD = Purchase $,  UP = Unit production
```

Enter the information as follows:

### 1. Resource type

LH = Labor hour, MH = Machine hour, PD = Purchase $, UP = Unit production

### 2. Starting department #

Up to 3 alphanumeric characters, or F1 = "All", or Blank = N/A.

This entry is bypassed for resource type Purchase $.

### 3. Ending department #

Up to 3 alphanumeric characters, or Blank = Starting value.

This entry is bypassed for resource type Purchase $.

### 4. Starting work center #

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

This entry is bypassed for resource type Purchase $.

### 5. Ending work center #

Up to 6 alphanumeric characters, or Blank = Starting value.

This entry is bypassed for resource type Purchase $.

### 6. Print requirement detail ?

Y or N.

# ROUGH PLAN BY ITEM

This program prints rough plan detail by Item Number. This sequence of rough plan information makes it easy to trace the requirement values to Rough Plan Orders and Bills of Resources.

See a Rough Plan by Item example in the *Sample Reports* appendix.

## Select

*Rough plan by item* from the *Reports* menu.

The following screen displays:


Enter the information as follows:

### 1. Starting item #

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

### 2. Ending item #

Up to 15 alphanumeric characters, or Blank = Starting value.

### 3. Resource type

LH = Labor hour, MH = Machine hour, PD = Purchase $, UP = Unit production, or F1 = "All:

### 4. Starting date

6 numeric digits in MMDDYY format, or F1 = "Earliest"

### 5. Ending date

6 numeric digits in MMDDYY format, or F1 = "Latest"

## ROUGH PLAN DOLLAR SUMMARY

This program prints a report of rough plan estimated dollar expenditures for purchased material and outside processes, labor, and burden by detail plan period. Work Center labor and burden rates are used to convert manufacturing resource requirements in hours, or units of production, to labor and burden dollars.

### Select

*Rough dollar plan summary* from the *Reports* menu.

Enter the information as follows:

This program prints a report of rough plan estimated dollar expenditures for purchased material and outside processes, labor, and burden by detail plan period. Work Center labor and burden rates are used to convert manufacturing resource requirements in hours, or units of production, to labor and burden dollars.

You are prompted to enter:

**Print labor & burden by work center ?**

Enter Y if you want to also print the timephased labor and burden dollars by department and work center.

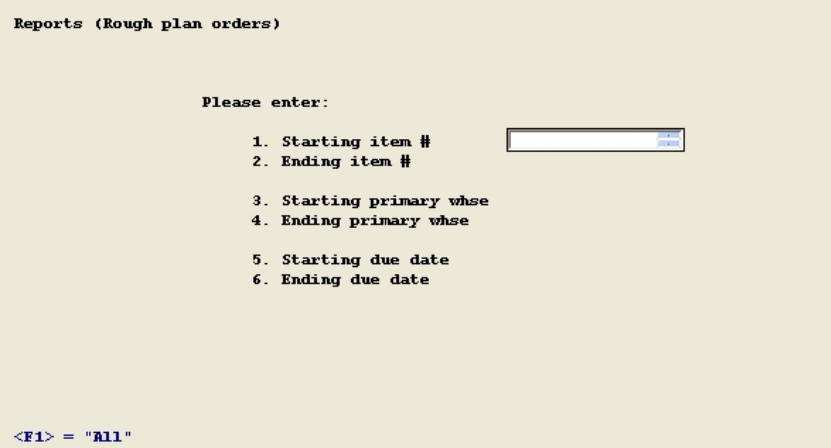
# ROUGH PLAN ORDERS

This program prints the Rough Plan Order List.

## Select

*Rough plan orders* from the *Reports* menu.

The following screen displays:




Enter the information as follows:

### 1. Starting item #

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

### 2. Ending item #

Up to 15 alphanumeric characters, or Blank = Starting value.

### 3. Starting primary whse

Up to 2 alphanumeric characters, or Blank = Main, or F1 for "All".

### 4. Ending primary whse

Up to 2 alphanumeric characters, or Blank = Starting value.

### 5. Starting due date

6 numeric digits in MMDDYY sequence, or F1 = "Earliest".

### 6. Ending due date

6 numeric digits in MMDDYY sequence, or Blank = Starting value, or F1 = "Latest".

# BILL OF RESOURCES

This program prints Bills of Resources from Resource Structures, for requested range of items.

## Select

*Bill of resources* from the *Reports* menu.

The following screen displays:


Enter the information as follows:

### 1. Starting item #

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

### 2. Ending item #

Up to 15 alphanumeric characters, or Blank = Starting value.

# DETAIL PLAN BY RESOURCE

This program prints detail capacity plan summary information by resource type and detail plan period. For manufacturing resources, you also specify the range of Departments and Work Centers that you want to list. If the option to save item detail was selected when the detail plan was generated, you may optionally print the requirement detail that is included in the summary statistics.

Comparative Work Center capacity values are included for any manufacturing resource type that matched the Work Center "Capacity & load UM" at the time of rough plan generation. Otherwise, planned capacity values will be zero.

## Select

*Detail plan by resource* from the *Reports* menu.

The following screen displays:

```
Reports (Detail plan by resource)

                  Please enter

                       1. Resource type

                       2. Starting department #
                       3. Ending department #

                       4. Starting work center #
                       5. Ending work center #

                       6. Print requirement detail ?

                          Detail plan generation date      0/00/00
                          Primary warehouse for plan items Main
                          MRP run #                        0
                          Item detail saved ?


LH = Labor hr,  MH = Machine hr,  PM = Purchase matl $
PO = Purchase outs $, UP = Unit production
```

Enter the information as follows:

### 1. Resource type

LH = Labor hour, MH = Machine hour, PO = Purchase outs $, PM = Purchase matl $, UP = Unit production

The next four entries are bypassed for resource types Purchase matl $ and Purchase outs $, but required for other resource types.

### 2. Starting department #

Up to 3 alphanumeric characters, or F1 = "All", or Blank = N/A.

### 3. Ending department #

Up to 3 alphanumeric characters, or Blank = Starting value.

### 4. Starting work center #

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

### 5. Ending work center #

Up to 6 alphanumeric characters, or Blank = Starting value.

The next entry is requested only if the option to save item detail was selected when the detail plan was generated:

### 6. Print requirement detail ?

Y or N.

## DETAIL PLAN DOLLAR SUMMARY

This program prints a report of detail plan estimated dollar expenditures for purchased material and outside processes, labor, and burden by detail plan period. Work Center labor and burden rates are used to convert manufacturing resource requirements in hours, or units of production, to labor and burden dollars.

### Select

*Detail plan dollar summary* from the *Reports* menu.

Enter the information as follows:

**Print labor & burden by work center ?**

Enter Y if you want to also print the timephased labor and burden dollars by department and work center.

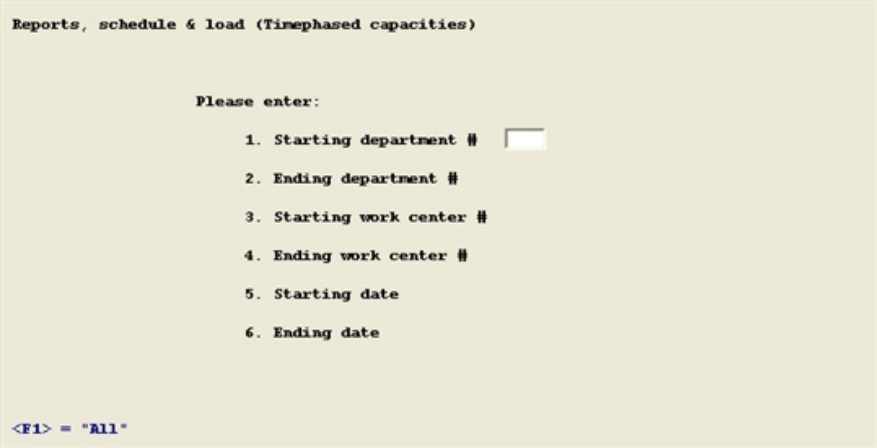
# TIMEPHASED CAPACITIES

Use this program to print a list of Timephased Capacities, by Department and Work Center.

## Select

*Purchase cost variances* from the *Reports, job cost* menu.

The following screen displays:




Enter the information as follows:

### 1. Starting department #

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

Refers to Department identifier in Work Centers.

### 2. Ending department #

Up to 3 alphanumeric characters, or Blank = Starting value.

### 3. Starting work center #

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

# Sample Reports

This appendix contains sample Capacity Requirements Planning reports.

# Rough Plan By Resource

This example uses the Labor Hour resource type.

Date 07/14/2014 Time 20:49:33 XYZ Company Report #1001414 Page 0001

R O U G H P L A N B Y R E S O U R C E

Resource type: Labor hour Dept range: "All" Work center range: "All" Print reqt detail? Y Primary whse: Main

| Dept | Work-center | Plan period | Period capacity | Period required | Cumulative capacity | Cumulative required | Cum-available capacity | Cum-reqd-% of-cum-capy |
|---|---|---|---|---|---|---|---|---|
| 1 | P110 Effic factor: .85 | Past-due | | .000 | | .000 | | |
| | BLANK PUNCH FORM | 1/01/12 | .00 | .000 | .00 | .000 | .000 | |
| | | 2/01/12 | .00 | .000 | .00 | .000 | .000 | |
| | | 3/01/12 | .00 | .000 | .00 | .000 | .000 | |
| | | 4/01/12 | .00 | .000 | .00 | .000 | .000 | |
| | | 5/01/12 | .00 | 350.000 | .00 | 350.000 | 350.000- | |
| | | 6/01/12 | .00 | 1,400.000 | .00 | 1,750.000 | 1,750.000- | |
| | | 7/01/12 | .00 | 350.000 | .00 | 2,100.000 | 2,100.000- | |
| | | 8/01/12 | .00 | .000 | .00 | 2,100.000 | 2,100.000- | |
| | | 9/01/12 | .00 | .000 | .00 | 2,100.000 | 2,100.000- | |
| | Dept totals: | Past-due | | .000 | | .000 | | |
| | | 1/01/12 | .00 | .000 | .00 | .000 | .000 | |
| | | 2/01/12 | .00 | .000 | .00 | .000 | .000 | |
| | | 3/01/12 | .00 | .000 | .00 | .000 | .000 | |
| | | 4/01/12 | .00 | .000 | .00 | .000 | .000 | |
| | | 5/01/12 | .00 | 350.000 | .00 | 350.000 | 350.000- | |
| | | 6/01/12 | .00 | 1,400.000 | .00 | 1,750.000 | 1,750.000- | |
| | | 7/01/12 | .00 | 350.000 | .00 | 2,100.000 | 2,100.000- | |
| | | 8/01/12 | .00 | .000 | .00 | 2,100.000 | 2,100.000- | |
| | | 9/01/12 | .00 | .000 | .00 | 2,100.000 | 2,100.000- | |

Date 07/14/2014 Time 20:49:33 XYZ Company Report #1001414 Page 0002

R O U G H P L A N B Y R E S O U R C E - R E Q U I R E M E N T D E T A I L

Resource type: Labor hour Dept range: "All" Work center range: "All" Print reqt detail? Y Primary whse: Main

| Dept | Work-center | Reqd-date | Item-# | Reqd-per-order | Reqd-for-qty | Tot-required | Cum-required |
|---|---|---|---|---|---|---|---|
| 1 | P110 BLANK PUNCH FORM | 5/30/12 | 1101 | .000 | 350.000 | 350.000 | 350.000 |
| | | 6/06/12 | 1101 | .000 | 350.000 | 350.000 | 700.000 |
| | | 6/13/12 | 1101 | .000 | 350.000 | 350.000 | 1,050.000 |
| | | 6/20/12 | 1101 | .000 | 350.000 | 350.000 | 1,400.000 |
| | | 6/27/12 | 1101 | .000 | 350.000 | 350.000 | 1,750.000 |
| | | 7/04/12 | 1101 | .000 | 350.000 | 350.000 | 2,100.000 |

-- End of report --

# ROUGH PLAN BY ITEM

Date 07/14/2014 Time 21:05:08 XYZ Company Report #1001415 Page 0001

R O U G H P L A N B Y I T E M

Item # range: "All" Resource type: Labor hour Reqd date range:"Earliest" to "Latest"

| Item-# | Description | Resource | Dept | Wrk-ctr | Req-date | RPO-# | Reqd-per-ord | Reqd-for-qty | Tot-required |
|---|---|---|---|---|---|---|---|---|---|
| 1101 | Test Item | Labor hr | 1 | P110 | 5/30/12 | 1 | .000 | 350.000 | 350.000 |
| | | Labor hr | 1 | P110 | 6/06/12 | 2 | .000 | 350.000 | 350.000 |
| | | Labor hr | 1 | P110 | 6/13/12 | 3 | .000 | 350.000 | 350.000 |
| | | Labor hr | 1 | P110 | 6/20/12 | 4 | .000 | 350.000 | 350.000 |
| | | Labor hr | 1 | P110 | 6/27/12 | 5 | .000 | 350.000 | 350.000 |
| | | Labor hr | 1 | P110 | 7/04/12 | 6 | .000 | 350.000 | 350.000 |
| | | | | | | | | Resource total for item: | 2,100.000 |

1 items listed; 6 rough plan detail records listed

-- End of report --

# Index