

**Fitrix™**

***Production Order Scheduling ♦ Product Guide***

***Version 7.0***

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# Chapter 1

## Introduction to Production Scheduling

This chapter contains basic information about Fitrix Production Scheduling. It is meant to give you a general picture of what the module can do and how it is used. The sections that address this are as follows:

- General description of the Fitrix Production Scheduling system
- Features of Fitrix Production Scheduling
- Overview of Production Scheduling

### General Description

Production Scheduling uses the labor routings in production orders to generate schedules for managing the initiation and completion of manufacturing work. The purpose of the system is to supply production management with the tools needed to ensure that orders are executed in the proper sequence, and highlight areas where plant capacities are under- or over-utilized.

Labor routings contain information for labor and machine hours to be executed, including:

- Run, setup and machine hours required per unit, and for the quantity ordered
- Expected start and completion dates
- Resources to be used, such as departments, work centers, machines and teams

Labor routing steps are organized by production resource to present a list of work to be performed at the resource, in a user-defined priority sequence. Total labor and machine hours for open production orders are also compared to the capacity available at the required resources to support management review and rescheduling.

## Features

### Multiple Resources per Routing Step

Each labor routing step can be associated with a department, work center, machine, and/or team. Any or all of these resources can be scheduled. These resources can be set up in a hierarchical form, where departments are composed of work centers, which are composed of machines, but this is not a requirement. Teams are typically managed separately and used in environments where the constraining resource is human labor.

### Infinite Scheduling

Production Schedules are generated for a specific production facility (warehouse). Each facility can be set up to use Infinite or Finite Scheduling. When using Infinite Scheduling, the order's defined start date and due dates are used to create a load of hours for the steps within the order. These hours are summarized by resource and date, and compared to the hours available for the resource/date. The resulting comparison is used by production management, to help them decide how best to use plant resources, such as:

- Move orders from over-utilized resources to under-utilized alternate resources
- Expedite or defer orders to stabilize the hours loaded against a resource
- Hire additional production staff or implement overtime programs to address team level over-commitments

The Override Capacity menu options can be used to adjust resource capacities on a short-term basis to reflect whatever decisions are made.

### Finite Scheduling

When using Finite Scheduling, orders are scheduled based on a user-defined priority. The priority can be one of the following:

- Production Order Due Date
- Order Critical Ratio – the ratio of time remaining vs work remaining
- Order Manual Priority – a management-defined value from 1 to 9

The order with the highest priority is scheduled first. Each labor step's remaining hours are 'loaded' onto the associated resource and, based on the resource's capacity, a due date is calculated. The due date is then used as the start date for the next labor step on the order. After each step is analyzed, a resulting 'Scheduled Due Date' is calculated for the order. The next order in the priority sequence is then loaded in the same way. Each order is then assigned a system-generated due date for comparison to the originally defined due date.

Upon completion of the scheduling option, the Order Status by Warehouse and Capacity vs Load Inquiries can be used to see the effect on resources. Adjustments can be made to increase or decrease capacity using the Capacity Override options to calculate new start and completion dates on subsequent rescheduling runs.

### **Graphical Capacity Analysis**

The results of a scheduling process are presented in a graphical format for analysis and highlight of any bottleneck resources. The analysis can be done at any of the resource levels already noted (department, work center, machine or team). Load vs capacity for any resource can be presented in a daily, weekly, biweekly, semi-monthly, monthly or quarterly basis. Within each time period, drill-downs show the details by order and labor routing step. Time periods are also color-coded to quickly show resources that are over-committed (red), approaching full commitment (yellow), or under commitment (green).

### **Multiple User-Defined Scheduling Intervals**

Production scheduling details can be summarized into one or more time period formats for easy review and analysis. The details of resource load and capacity can be accumulated into user-defined time periods. The time periods can be analyzed for exceptions first and then details can be researched using drill down functions. The time periods can be daily, weekly, bi-weekly, 4-weekly, monthly, quarterly, or combinations of these frequencies. In addition, multiple ‘period interval templates’ may be created to satisfy the needs of users at different levels within the organization.

### **Multiple Warehouse Scheduling**

Each warehouse within Fitrix Inventory Control is also defined as a Production Facility. Production Scheduling manages each facility individually. Each facility can also be managed via Finite or Infinite Scheduling.

## **Overview**

### **Before You Begin**

Before you can use Production Scheduling, you must first complete “setup” of the module. Setup is the process by which you enter all of the information required to begin processing schedules. Setup includes entry of basic “control” information that the programs need to run, and entry of special parameters for each resource.

Scheduling-related activities can be divided into four broad categories: scheduling setup, scheduling runs, and inquiry and report reviews. Each activity is associated with a specific menu option, and these options are listed for quick reference in this overview section. (The “keystroke path” to a menu option is indicated in parentheses following each option.)

## Setup

There are three aspects of setup: Company Setup, Production Scheduling setup, and Resource setup.

Company setup includes entering basic control information that the programs need to run, such as company information and administrative information. This setup is covered in the *Getting Started with Fitrix User Guide*. Because the menu options used for company and administration pertain to the company as a whole, the menu options used to do this initial company setup are located under the General/Administrative menu (option 8). You only need to perform this setup procedure once for all modules in Fitrix ERP.

Production Scheduling setup is performed from the File Maintenance submenu in Production Scheduling. Here you will identify default information used by the reports and inquiries when they are used.

Resource Setup starts in the Standard Routing module but these programs can also be accessed from the Production Scheduling file maintenance submenu. This is where the basic information for departments, work centers, machines and teams are created. Then in either Standard or Production Scheduling, you associate the resources with the production facilities, with resource/warehouse maintenance. Here you define the default daily hours available, by shift. Finally, you can use the resource capacity override functions to define specific dates where you want to use a different capacity for one or more shifts on the date.

## Finite/Infinite Scheduling

After setup is complete, you can begin running the scheduling functions, and review the results. The scheduling functions are executed from the Processing submenu in Production Scheduling. You determine ahead of time, for each production facility, if you want to Finitely or Infinitely Schedule. It is recommended that you use Infinite Scheduling at first, to see how your resource capacities are comparing to actual load, without using the system to automatically calculate new operation and order due dates.

## Inquiry and Report Review

Scheduling data can be reviewed in a variety of formats, groupings, and sequences. Inquiries and Reports let you analyze by Department, Work Center, Machine, Team and individual production order. There are two types of data presentation:

- Work List – these inquiries and reports are used by production managers to see what the order of work is to be done at a specific resource. The production orders and labor steps are listed in order by priority (either Order Due Date, Critical Ratio, or Manual Priority), and are grouped by:
  - Current Orders – labor steps that have had SOME labor reported, but are not complete
  - Waiting Orders – labor steps completed at the previous operation, and waiting to be started at the current operation
  - Arriving Orders – labor steps still in process at the previous operation



- Capacity vs Load – these inquiries display the current status of specific resources by comparing their capacity in hours to the load from open orders. The capacity/load is divided into user-defined time periods (days, weeks, months, etc.) to show summarized comparisons, with drill-down capability to see the individual orders and labor steps that make up the load.

The inquiries available are:

- Order Status by Warehouse (5-2-3-a)
- Capacity/Load by Work Center (5-2-3-b)
- Capacity/Load by Department (5-2-3-c)
- Capacity/Load by Machine (5-2-3-d)
- Capacity/Load by Team (5-2-3-e)
- Work List by Work Center (5-2-3-f)
- Work List by Department (5-2-3-g)
- Work List by Machine (5-2-3-h)
- Work List by Team (5-2-3-i)

The reports available are:

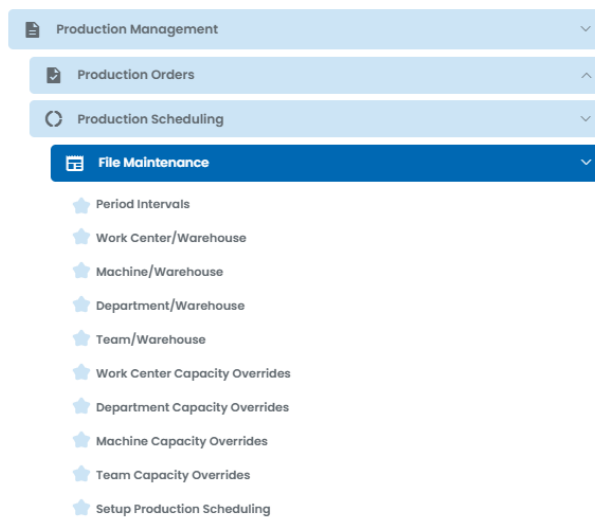
- Work List by Work Center (5-2-4-a)
- Work List by Department (5-2-4-b)
- Work List by Machine (5-2-4-c)
- Work List by Team (5-2-4-d)

# Chapter 2

## Setup Production Scheduling

- In this chapter you will learn to set up the information needed to assist in scheduling production which includes:

Period Intervals  
Work Center/Warehouse  
Machine/Warehouse  
Department/Warehouse  
Team/Warehouse  
Work Center Capacity Overrides  
Department Capacity Overrides  
Machine Capacity Overrides  
Team Capacity Overrides  
Setup Production Scheduling



## Period Intervals

This menu option is used to setup and maintain the Period Intervals, used by Production Scheduling Inquiries and Reports to place future capacity and load into user-defined time periods. You can define multiple period intervals, and then assign a default Interval in the Setup Production Scheduling menu option. When running inquiries and reports, you may be prompted to enter an Interval Code, or use the default value.

**NOTE:** Period Intervals are also used by Material Planning, Master Scheduling, and Capacity Planning, in inquiries and reports, for the same purpose.

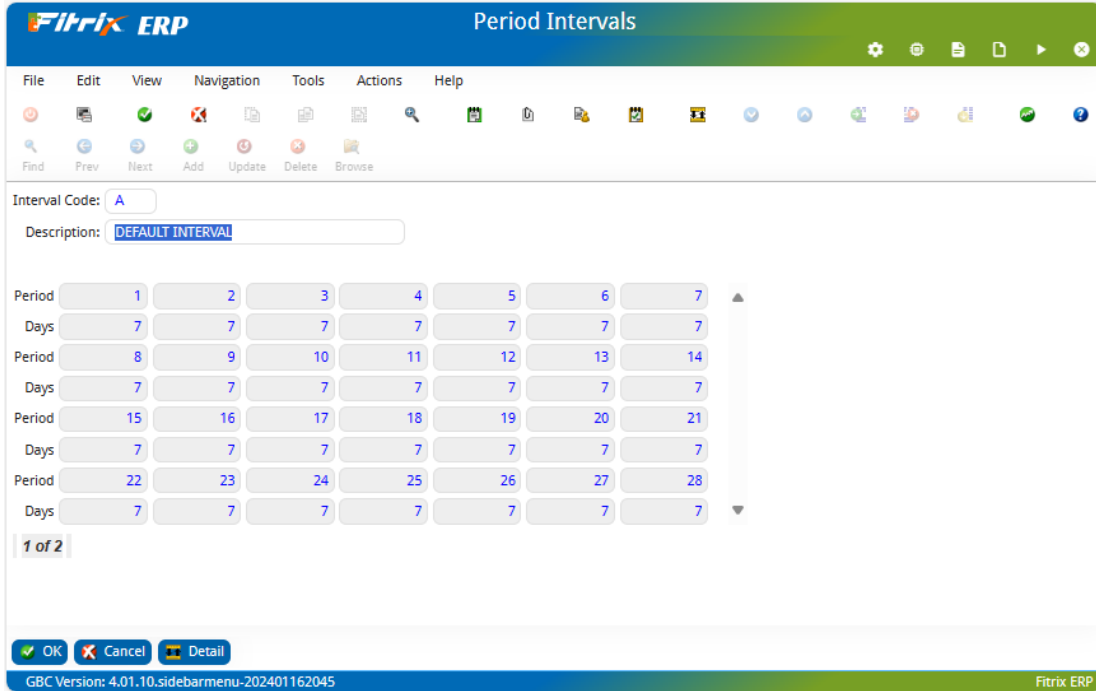
For example:

- Period interval code 'A' could use the following periods:
  - 8 weekly intervals
  - 4 biweekly intervals
  - 3 quarterly intervals

This setup would allow the user to view capacity and load for the next year (approximately). The nearer term plan would be displayed in weekly intervals. The periods would then become larger as the activity moves farther out.

- Interval code 'B' could use the following periods:
  - 52 weekly buckets

This would display all schedule data for the next year on weekly intervals.



The Period Interval screen contains the following fields:

- *Interval Code* - This field stores a unique three-character order type code.
- *Description* - You enter a description of this period interval (up to 30 characters) in this field.

One or more periods must be defined:

- *Period* – Period numbers are automatically assigned by the system. You are allowed to have up to 100 periods per period interval.
- *Days* – Enter the number of days in for the period. This value should be entered as either 1 (daily) or in multiples of 7 (for 1 or more weeks). This achieves a consistent division of time periods into multiples of weeks.

## **Work Center/Warehouse Maintenance**

Use this menu option to enter and maintain the information to describe the work centers for a specific warehouse. If you want a work center to apply to all warehouses you should enter the information using the Work Center Master Maintenance menu option. If you defined work centers using the Master Maintenance option and then use this option, the information entered here will affect only the warehouse being defined in this table.

A work center is a specific production facility consisting of one or more people and /or machines with similar characteristics. They can be considered a group for purposes of capacity requirements planning, standard and actual costing, and detailed scheduling.

### **Menu Selection:**

Production Management

    Production Scheduling

        File Maintenance

            Work Center/Warehouse

The screenshot shows the 'Work Center/Warehouse' form in the Fitrix ERP system. The form is organized into several sections. At the top, there is a header with the Fitrix ERP logo and the title 'Work Center/Warehouse'. Below the header is a menu bar with options: File, Edit, View, Navigation, Tools, Actions, and Help. A toolbar with various icons is located below the menu bar. The main form area contains the following fields and values:

- Work Center: QC
- Warehouse: MIAMI
- Status: Active
- Description: QC TESTING
- Department: 000
- Type: Direct
- Number of Machines: 1
- Number of Workers: 3
- Shift 1 Capacity: 8.00
- Shift 2 Capacity: 8.00
- Shift 3 Capacity: 8.00
- Rough-Cut Resource: (empty)
- Conversion: (empty)
- Standard Queue Time: 3.00
- Average Queue Time: 2.50
- Labor Rate: 15.0000
- Overhead Rate: 22.5000
- Unit Price: (empty)
- Add Date: (empty)
- Change Date: (empty)

At the bottom left of the form, there is a button labeled '(New Document)'. The footer of the form displays 'GBC Version: 4.01.10.sidebarmenu-202401162045' on the left and 'Fitrix ERP' on the right.

**Work Center** *Required*

The identifier for the work center.

**Warehouse**

The identifier for the warehouse in which this work center exists. To view a list of warehouses, click on the magnifying glass

**Status** *Required* *Default*

**Active**- indicates that this work center is active. An active work center will be used in the scheduling and costing routines. Time can be reported against routing steps in an active work center.

**Inactive** - indicates that this work center is inactive. No transactions or processing can be performed for an inactive work center.

**Description** *Required*

The 25 character description for this work center.

**Department**

The identifier of the department with which this work center could be associated. To view a list of departments, click on the magnifying glass.

**Type** - This column is reserved for future use

**Direct** - indicates that costs incurred in this work center are normally direct labor.

**Indirect** - indicates that the costs incurred in this work center are normally indirect labor.

**Subcontract** - indicates that the costs incurred in this work center are normally subcontract labor.

**Number of Machines**

The number of machines in this work center. This number is used as a general reference.

**Number of Workers**

The number of workers in this work center. This number is used as a general reference.

**Rough Cut Resource**

Reserved for future use with the Fitrix Master Schedule Planning module.

**Rough Cut Conversion**

Reserved for future use with the Fitrix Master Schedule Planning module.

**Capacity in Hours/Day**

**Shift 1**

This is the standard capacity of the work center in hours per day for the first shift.

### **Shift 2**

This is the standard capacity of the work center in hours per day for the second shift.

### **Shift 3**

This is the standard capacity of the work center in hours per day for the third shift.

**Queue Time in Hours** – This column is reserved for future use

### **Standard**

The standard (expected) amount of time, in hours, a job waits at a work center before setup or work is performed on the job. This is one element of total manufacturing lead time.

### **Average**

The average amount of time, in hours, a job waits at a work center before setup or work is performed on the job.

### **Labor Rate**

The labor rate for this work center. This labor rate is used when calculating the current standard cost of an item. Setup hours and labor hours can use this rate to calculate setup and labor costs.

### **Overhead Rate**

The overhead rate for this work center. This overhead rate is used when calculating the current standard cost of an item. Setup hours, labor hours and machine hours can use this rate to calculate standard overhead costs.

### **Date Added**

*Display Only*

The date that this record was added to the table.

### **Change Date**

*Display Only*

The last date that this item was changed.



## **Department/Warehouse Maintenance**

Use this menu option to enter and maintain the information to describe the department for a specific warehouse. If you want a department to apply to all warehouses you should enter the information using the Department Master Maintenance menu option. If you defined departments using the Master Maintenance option and then use this option, the information entered here will affect only the warehouse being defined in this table.

A department can be a collection of work centers. Departments are used in the Actual Costing application to generate the appropriate accounting entries to General Ledger. They are also used in Production Scheduling to analyze load and capacity at a departmental level.

### **Menu Selection:**

Production Management

    Production Scheduling

        File Maintenance

            Department/Warehouse

The screenshot shows the 'Department/Warehouse' form in the Fitrix ERP system. The form is titled 'Department/Warehouse' and has a status of 'Active'. The Department is '00' and the Warehouse is 'MIAMI'. The Description is 'STIM DEFAULT'. The Accounting Code is empty. The Shift 1 Capacity is 32.00, Shift 2 Capacity is .00, and Shift 3 Capacity is .00. The Rough-Cut Resource and Conversion fields are empty. The Add Date, Change Date, and Last Activity Date are all set to 03/15/2024. The Period-to-Date Costs and Year-to-Date Costs for Actual Labor, Standard Labor, and Standard Overhead are all \$0.00. A '(New Document)' button is located at the bottom left of the form.

**Department** *Required*

The identifier for the department.

**Warehouse**

The identifier for the warehouse in which this department exists. To view a list of departments, click on the magnifying glass.

**Status** *Required* *Default*

**Active** - indicates that this department is active. An active department will be used in the scheduling routines. Time can be reported against routing steps in an active department.

**Inactive** - indicates that this department is inactive. No transactions or processing can be performed for an inactive department.

**Description**

*Required*

The 25 character description for this department.

**Account Code**

A code to assign general ledger account numbers to a department. The account code references a table that contains the general ledger account numbers. To view a list of account codes, click on the magnifying glass.

**Capacity in Hours/Day**

**Shift 1**

The standard capacity of the department in hours per day for the first shift.

**Shift 2**

The standard capacity of the department in hours per day for the second shift.

**Shift 3**

The standard capacity of the department in hours per day for the third shift.

**Rough Cut Resource**

Reserved for future use with the Fitrix Master Schedule Planning module.

**Rough Cut Conversion**

Reserved for future use with the Fitrix Master Schedule Planning module.

**Period-to-Date Costs**

**Actual Labor**

*Display Only*

The total of all the actual labor costs for the department during the current period. This field will be set to zero during period end in the Actual Costing application.

**Standard Labor** *Display Only*

The total of all the standard labor costs for the department during the current period. This field will be set to zero during period close in the Actual Costing application.

**Standard Overhead** *Display Only*

The total of all the standard overhead costs for the department during the current period. This field will be set to zero during period close in the Actual Costing application.

**Year-to-Date Costs**

**Actual Labor** *Display Only*

The total of all the actual labor costs for the department year to date. This field will be set to zero during year end close in the Actual Costing application.

**Standard Labor** *Display Only*

The total of all the standard labor costs for the department year to date. This field will be set to zero during year end close in the Actual Costing applications.

**Standard Overhead** *Display Only*

The total of all the standard overhead costs for the department year to date. This field will be set to zero during year end close in the Actual Costing applications.

**System Dates**

**Add Date** *Display Only*

The date that this department was added to the table.

**Change Date** *Display Only*

The date the department was last maintained.

**Last Activity Date** *Display Only*

The last date the department had activity reported against it.

## **Machine/Warehouse Maintenance**

Use this menu option to enter and maintain the information to describe the machine for a specific warehouse. If you want a machine to apply to all warehouses you should enter the information using the Machine Master Maintenance menu option. If you defined machines using the Master Maintenance option and then use this option, the information entered here will affect only the warehouse being defined in this table.

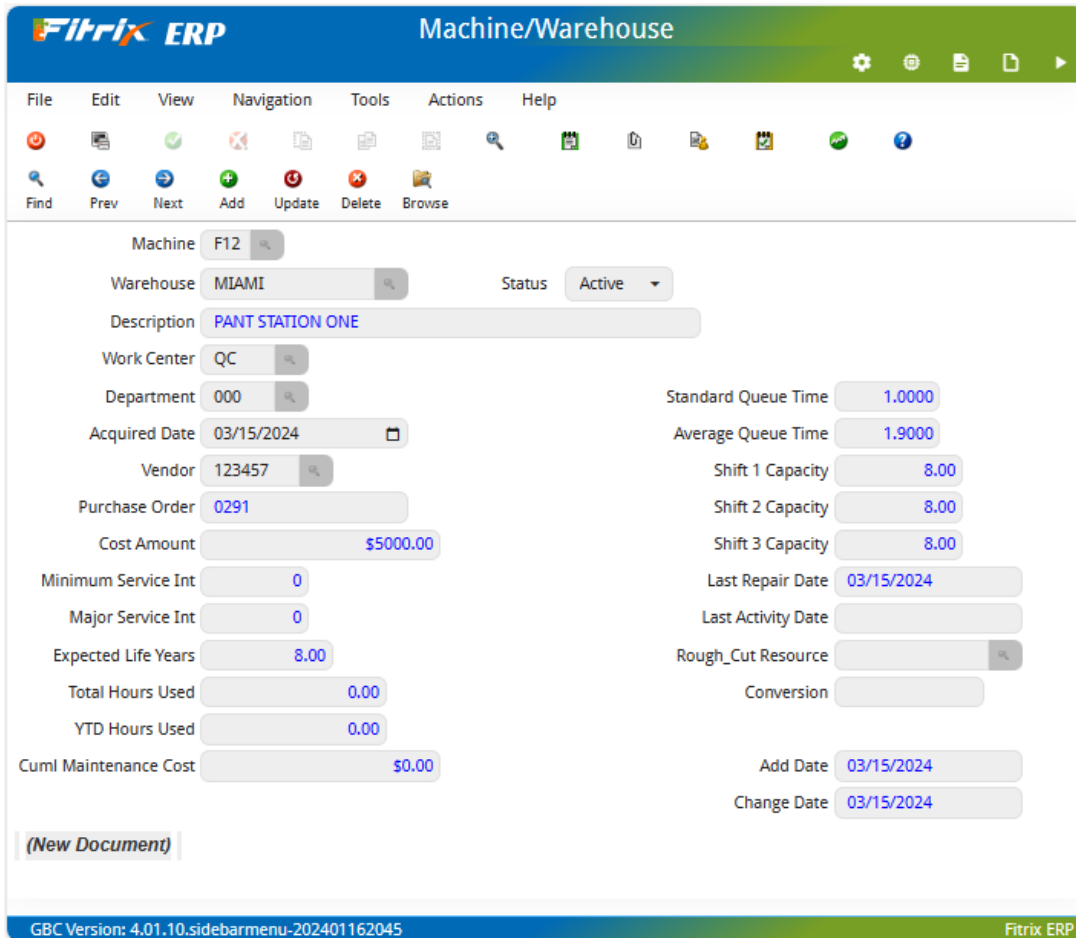
### **Menu Selection:**

Production Management

    Production Scheduling

        File Maintenance

            Machine/Warehouse



**Machine identifier** *Required*

The identifier for the machine that is being defined.

**Warehouse**

The identifier for the warehouse in which this work center exists. To view a list of warehouses, click on the magnifying glass.

**Status** *Required* *Default*

**Active** - indicates that the status of this machine is active. An active machine will be used in the scheduling routines. Time can be reported against routing steps for an active machine.

**Inactive** - indicates that the status of this machine is inactive. No transactions or processing can be performed against an inactive machine.

**Description** *Required*

The identifier for the machine that is being defined.

**Work Center** *Required*

The identifier for the work center with which this machine could be associated. To view a list of work centers, click on the magnifying glass.

**Department**

The identifier for the department with which this machine could be associated. To view a list of departments, click on the magnifying glass.

**Acquired Date**

The date that this machine was put into service.

**Vendor**

The identifier for the vendor from which the machine was purchased. This field is for reference only. To view a list of vendors, click on the magnifying glass.

**Purchase Order**

The purchase order number that was used to buy this machine. This field is for reference only.

**Cost Amount**

The price paid to buy this machine. This field is for reference only.

**Minimum Service Int.**

The number of hours of run time between minor maintenance service. This field is for reference only.

### **Major Service Int.**

The number of hours of run time between major maintenance service. This field is for reference only.

### **Expected Life Years**

The number of years this machine is expected to be in service. This field is for reference only.

**Queue Time in Hours** – These columns are reserved for future use.

#### **Standard**

The standard (expected) amount of time, in hours, a job waits at a machine before setup or work is performed on the job. This is one element of total manufacturing lead time.

#### **Average**

The average amount of time, in hours, a job waits at a machine before setup or work is performed on the job.

### **Capacity in Hours/Day**

#### **Shift 1**

This is the standard capacity of the machine in hours per day for the first shift.

#### **Shift 2**

This is the standard capacity of the machine in hours per day for the second shift.

#### **Shift 3**

This is the standard capacity of the machine in hours per day for the third shift.

### **Machine Statistics**

#### **Total Hours Used**                      *Display Only*

The number of hours this machine was used. This field is updated by the labor processing transactions.



**YTD Hours Used** *Display Only*

The number of hours this machine was used year to date. This field is updated by the labor processing transactions.

**Cuml Maintenance Cost** *Display Only*

The accumulated costs for maintenance since the machine was put into service.

**Last Maintenance Type** *Display Only*

This field is reserved for future use.

**Last Repair Date** *Display Only*

This field is reserved for future use.

**Last Activity Date** *Display Only*

The last date that this record was updated by transaction processing.

**Rough Cut Resource**

Reserved for future use with the Fitrix Master Schedule Planning module.

**Rough Cut Conversion**

Reserved for future use with the Fitrix Master Schedule Planning module.

**Add Date** *Display Only*

The date that this record was added to the table.

**Change Date** *Display Only*

The date the machine was last changed by maintenance.

## **Team/Warehouse Maintenance**

Use this menu option to enter and maintain the information to describe the team for a specific warehouse. If you want a team to apply to all warehouses you should enter the information using the Team Master Maintenance menu option. If you defined teams using the Master Maintenance option and then use this option, the information entered here will affect only the warehouse being defined in this table.

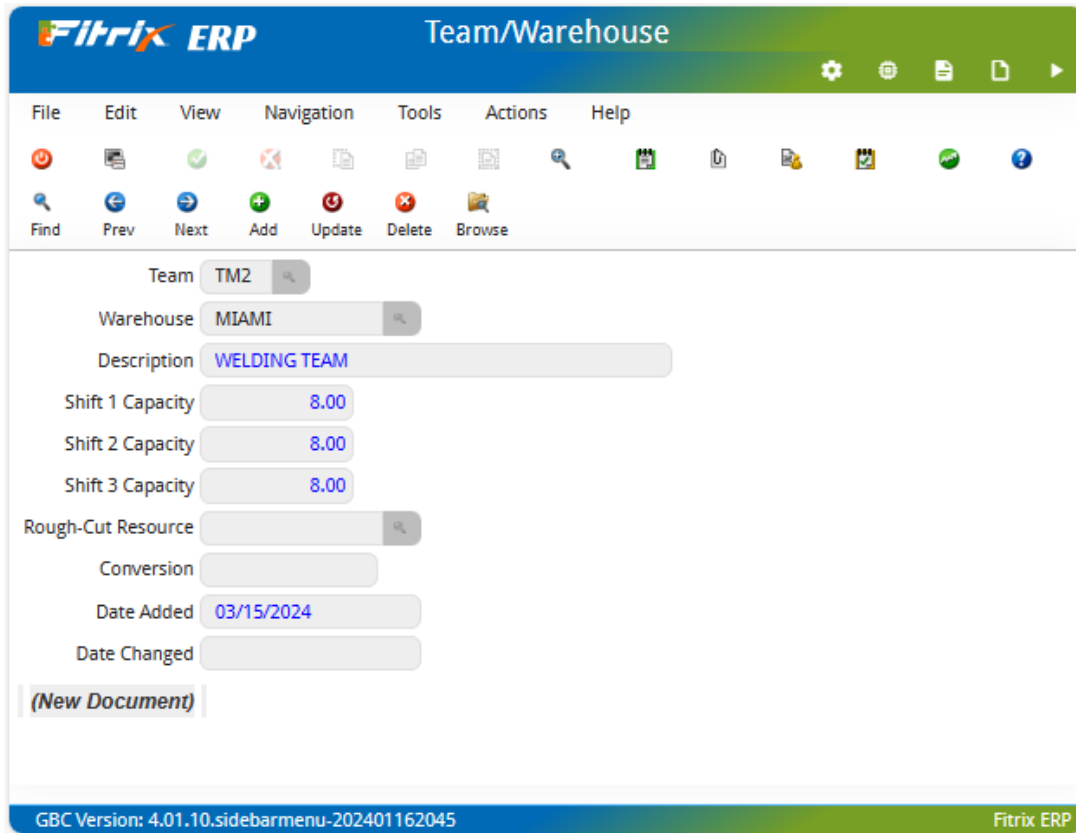
### **Menu Selection:**

Production Management

    Production Scheduling

        File Maintenance

            Team/Warehouse



**Team Number** *Required*

The identifier for the team that is being defined.

**Warehouse**

The identifier for the warehouse in which this team exists. To view a list of warehouses, click on the magnifying glass.

**Description** *Required*

The description for the team.

**Capacity in Hours/Day**

**Shift 1**

This is the standard capacity of the team in hours per day for the first shift.

**Shift 2**

This is the standard capacity of the team in hours per day for the second shift.

**Shift 3**

This is the standard capacity of the team in hours per day for the third shift.

**Rough Cut Resource**

Reserved for future use with the Fitrix Master Schedule Planning module.

**Rough Cut Conversion**

Reserved for future use with the Fitrix Master Schedule Planning module.

**Date Added**

**Display Only**

The date that this record was added to the table.

**Date Maintained**

**Display Only**

The date that this team was last maintained.

## Work Center Capacity Overrides

Use this menu option to enter and maintain specific dates when the work center/warehouse will have a capacity that differs from the default capacities for any of the three shifts. This is useful for adding or changing capacities to address over-commitments on a short-term basis.

To enter new date overrides, change existing overrides, or delete overrides, you must first click the Find option, then enter a valid work center and warehouse, then click OK. A screen similar to the following will display.

Date	Shift 1	Shift 2	Shift 3	Load
01/01/2014	8	0	0	
01/02/2014	8	0	0	
01/03/2014	8	0	0	
01/06/2014	8	0	0	
01/07/2014	8	0	0	
01/08/2014	8	0	0	
01/09/2014	8	0	0	
01/10/2014	8	0	0	
01/13/2014	8	0	0	
01/14/2014	8	0	0	
01/15/2014	8	0	0	
01/16/2014	8	0	0	
01/17/2014	8	0	0	
01/20/2014	8	0	0	
01/21/2014	8	0	0	

**Date** – the working date to be overridden

**Shift 1** – The overriding hours for shift 1 for the date

**Shift 2** - The overriding hours for shift 2 for the date. If shift 2 is not used, enter zero here

**Shift 3** - The overriding hours for shift 3 for the date. If shift 3 is not used, enter zero here

**Load** - A general reference to the load in hours for this date, from the last Order Reschedule operation. The load is updated by the Finite and Infinite Scheduling functions. It is the summ of labor routing step hours to be completed on that date, based on the start and due dates of the routing steps.

To enter a new date, use either the F1 key to insert a new line, or move the cursor to the end of the list, to a new blank line, and enter the date and hours. To change the hours for an existing date, move the cursor to the date and enter a new value for hours. To remove an override, move the cursor to the existing date, and press F2. This will remove the date, and revert back to the default hours for that date.

## Department Capacity Overrides

Use this menu option to enter and maintain specific dates when the department/warehouse will have a capacity that differs from the default capacities for any of the three shifts. This is useful for adding or changing capacities to address over-commitments on a short-term basis.

To enter new date overrides, change existing overrides, or delete overrides, you must first click the Find option, then enter a valid department and warehouse, then click OK. A screen similar to the following will display.

Date	Shift 1	Shift 2	Shift 3	Load
01/01/2014	0	0	0	
01/02/2014	40	0	0	
01/03/2014	0	0	0	
01/06/2014	20	0	0	
01/07/2014	0	0	0	
01/08/2014	0	0	0	
01/09/2014	0	0	0	
01/10/2014	0	0	0	
01/13/2014	0	0	0	
01/14/2014	0	0	0	
01/15/2014	0	0	0	
01/16/2014	0	0	0	
01/17/2014	0	0	0	
01/20/2014	0	0	0	
01/21/2014	0	0	0	

**Date** – the working date to be overridden

**Shift 1** – The overriding hours for shift 1 for the date

**Shift 2** - The overriding hours for shift 2 for the date. If shift 2 is not used, enter zero here

**Shift 3** - The overriding hours for shift 3 for the date. If shift 3 is not used, enter zero here

**Load** - A general reference to the load in hours for this date, from the last Order Reschedule operation . The load is updated by the Finite and Infinite Scheduling functions. It is the summ of labor routing step hours to be completed on that date, based on the start and due dates of the routing steps.

To enter a new date, use either the F1 key to insert a new line, or move the cursor to the end of the list, to a new blank line, and enter the date and hours. To change the hours for an existing date, move the cursor to the date and enter a new value for hours. To remove an override, move the cursor to the existing date, and press F2. This will remove the date, and revert back to the default hours for that date.



## Machine Capacity Overrides

Use this menu option to enter and maintain specific dates when the machine/warehouse will have a capacity that differs from the default capacities for any of the three shifts. This is useful for adding or changing capacities to address over-commitments on a short-term basis.

To enter new date overrides, change existing overrides, or delete overrides, you must first click the Find option, then enter a valid machine and warehouse, then click OK. A screen similar to the following will display.

Date	Shift 1	Shift 2	Shift 3	Load
01/01/2014	8	0	0	
01/10/2014	12	0	0	
01/15/2014	8	0	0	
01/20/2014	8	0	0	
01/21/2014	8	0	0	

**Date** – the working date to be overridden

**Shift 1** – The overriding hours for shift 1 for the date

**Shift 2** - The overriding hours for shift 2 for the date. If shift 2 is not used, enter zero here

**Shift 3** - The overriding hours for shift 3 for the date. If shift 3 is not used, enter zero here.

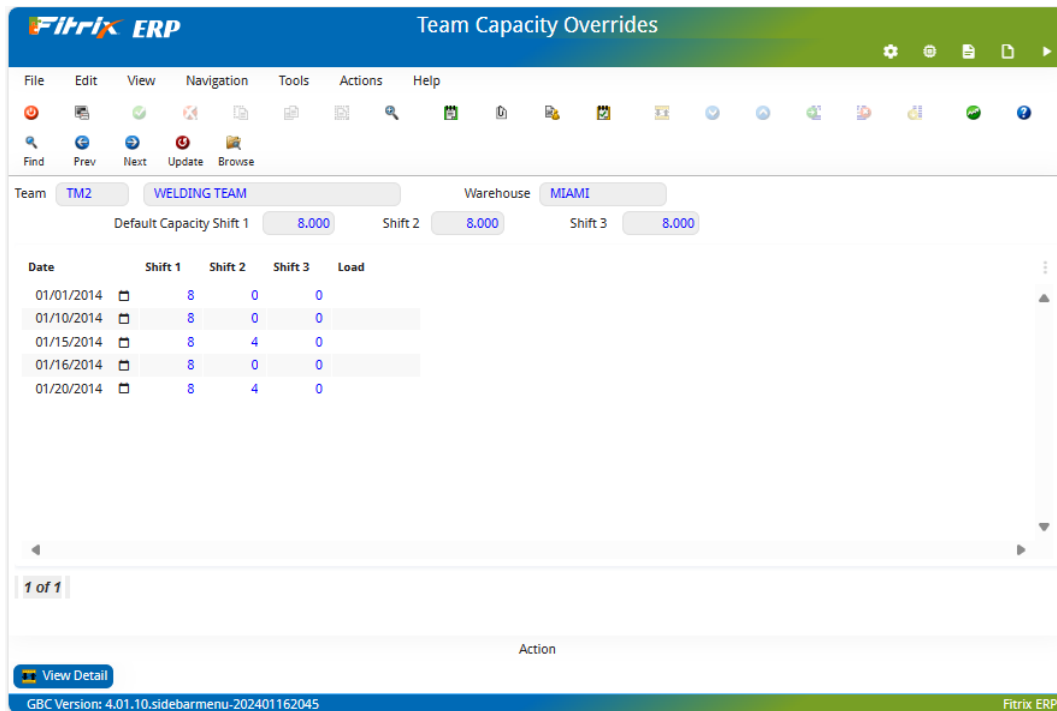
**Load** - A general reference to the load in hours for this date, from the last Order Reschedule operation . The load is updated by the Finite and Infinite Scheduling functions. It is the summ of labor routing step hours to be completed on that date, based on the start and due dates of the routing steps.

To enter a new date, use either the F1 key to insert a new line, or move the cursor to the end of the list, to a new blank line, and enter the date and hours. To change the hours for an existing date, move the cursor to the date and enter a new value for hours. To remove an override, move the cursor to the existing date, and press F2. This will remove the date, and revert back to the default hours for that date.

## Team Capacity Overrides

Use this menu option to enter and maintain specific dates when the team/warehouse will have a capacity that differs from the default capacities for any of the three shifts. This is useful for adding or changing capacities to address over-commitments on a short-term basis.

To enter new date overrides, change existing overrides, or delete overrides, you must first click the Find option, then enter a valid team and warehouse, then click OK. A screen similar to the following will display.



The screenshot displays the 'Team Capacity Overrides' window in Fitrix ERP. The window title is 'Team Capacity Overrides'. The interface includes a menu bar (File, Edit, View, Navigation, Tools, Actions, Help) and a toolbar with icons for Find, Prev, Next, Update, and Browse. The 'Team' is set to 'TM2' and 'WELDING TEAM', and the 'Warehouse' is 'MIAMI'. Default capacities for Shift 1, Shift 2, and Shift 3 are all 8,000. The main table lists dates and their corresponding shift capacities and loads.

Date	Shift 1	Shift 2	Shift 3	Load
01/01/2014	8	0	0	
01/10/2014	8	0	0	
01/15/2014	8	4	0	
01/16/2014	8	0	0	
01/20/2014	8	4	0	

At the bottom of the window, there is a 'View Detail' button and a footer indicating 'GBC Version: 4.01.10.sidebarmenu-202401162045' and 'Fitrix ERP'.

**Date** – the working date to be overridden

**Shift 1** – The overriding hours for shift 1 for the date

**Shift 2** - The overriding hours for shift 2 for the date. If shift 2 is not used, enter zero here

**Shift 3** - The overriding hours for shift 3 for the date. If shift 3 is not used, enter zero here.

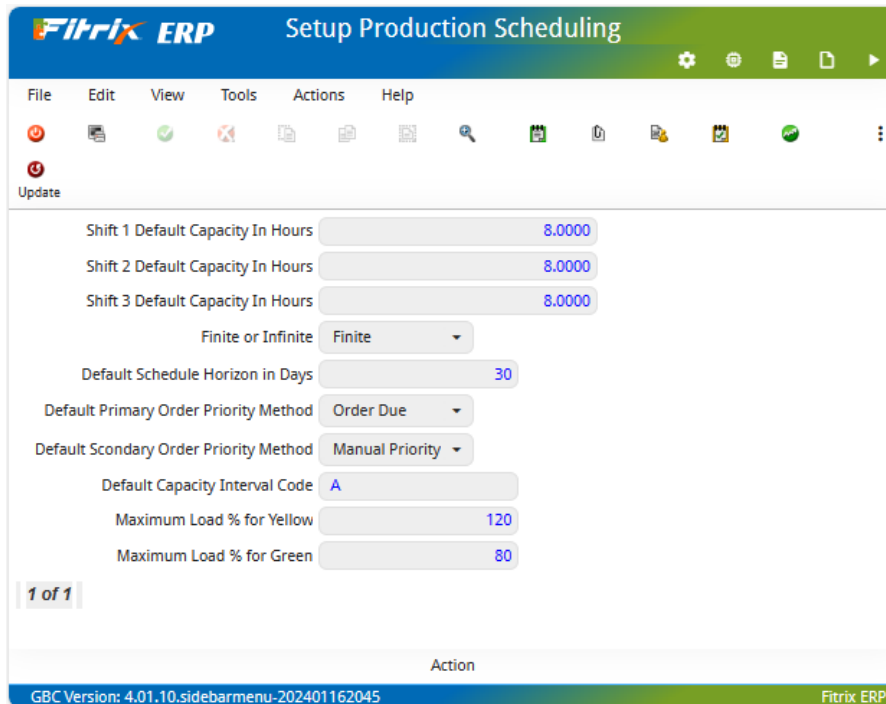
**Load** - A general reference to the load in hours for this date, from the last Order Reschedule operation. The load is updated by the Finite and Infinite Scheduling functions. It is the sum of labor routing step hours to be completed on that date, based on the start and due dates of the routing steps.

To enter a new date, use either the F1 key to insert a new line, or move the cursor to the end of the list, to a new blank line, and enter the date and hours. To change the hours for an existing

date, move the cursor to the date and enter a new value for hours. To remove an override, move the cursor to the existing date, and press F2. This will remove the date, and revert back to the default hours for that date.

## Setup Production Scheduling

Use this menu option to setup and change the application controls for production scheduling.



### Shift 1 Default Capacity in Hours

The number of hours available in shift one. This value can be changed in the variable capacity tables defined earlier in this chapter.

### Shift 2 Default Capacity in Hours

The number of hours available in shift two. This value can be changed in the variable capacity tables defined earlier in this chapter.

### Shift 3 Default Capacity in Hours

The number of hours available in shift three. This value can be changed in the variable capacity tables defined earlier in this chapter.

## Finite or Infinite

Select the default scheduling method to be used when scheduling production orders. The entry here is really just a reference to let schedulers know which method they use as a company. The user can still schedule each warehouse either way.

**Finite** – Uses the finite scheduling method, as defined in the Introduction to Production Scheduling chapter

**Infinite** – Uses the infinite scheduling method, as defined in the Introduction to Production Scheduling chapter

## Default Schedule Horizon in Days

The default number of future days to review resource capacity vs load. The capacity vs load inquiries display open orders for a range of dates. The default starting date is the current date, and the default ending date is the starting date plus the horizon days. Both of these dates can be overridden when running the inquiry

## Default Primary Order Priority Method

**Order Due** indicates that production orders will be prioritized by their due date.

**Critical Ratio** indicates that production orders will be prioritized by the critical ratio calculation. The calculation is the hours remaining on the operation divided by the hours available. A ratio of 1 means the order is on time. A ratio less than one means the order is ahead of schedule. A ratio greater than 1 means the order is behind schedule.

**Priority** indicates that production orders will be prioritized by the manual priority code on the order.

## Default Secondary Order Priority Method

**Order Due** indicates that production orders will be prioritized by their due date.

**Critical Ratio** indicates that production orders will be prioritized by the critical ratio calculation. The calculation is the hours remaining on the operation divided by the hours available. A ratio of 1 means the order is on time. A ratio less than one means the order is ahead of schedule. A ratio greater than 1 means the order is behind schedule.

**Priority** indicates that production orders will be prioritized by the manual priority code on

### **Default Capacity Interval Code**

The identifier for the capacity interval table entry that should be used for determining the schedule periods to be used. This value will display automatically when running inquiries and reports that prompt for an interval code. You should make sure you have properly set up the interval code you enter here.

### **Maximum Load % for Yellow**

The Capacity vs Load Inquiries will display the load % for a given time period with a color-coded background, to easily see bottlenecks or potential bottlenecks. This value is the threshold at which the load % changes from yellow to red. Any load above this % will display in red, and below (but above the Load % for green) will display in yellow.

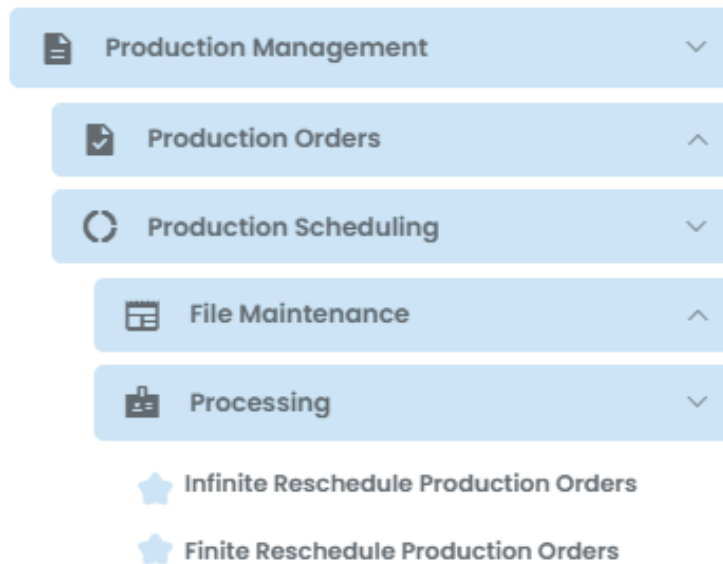
### **Maximum Load % for Green**

The Capacity vs Load Inquiries will display the load % for a given time period with a color-coded background, to easily see bottlenecks or potential bottlenecks. This value is the threshold at which the load % changes from green to yellow. Any load above this % will display in yellow, and below will display in green.

# Chapter 3

## Processing

- In this chapter you will learn about the order scheduling methods in Production Scheduling
  - Infinite Reschedule Production Orders
  - Finite Reschedule Production Orders



## Infinite Reschedule Production Order

When using this function, the production order's defined start date and due dates are used to create a load of hours for the steps within the order. The start and end dates for each labor step in the orders is calculated proportionally:

### Labor step lead time

$(\text{Hours required for the step} / \text{hours required for the order}) * (\text{order due date} - \text{order start date})$

### Labor step start date

Order start date + previous labor step lead times

### Labor step end date

Order start date + previous labor step lead times + current step lead time

The scheduling function creates a 'load' entry for each resource defined with the labor step (department, work center, machine, and/or team), within the range of start dates and end dates for the step. If the start and end dates are different, the scheduler evenly allocates the hours for the multiple days. For example:

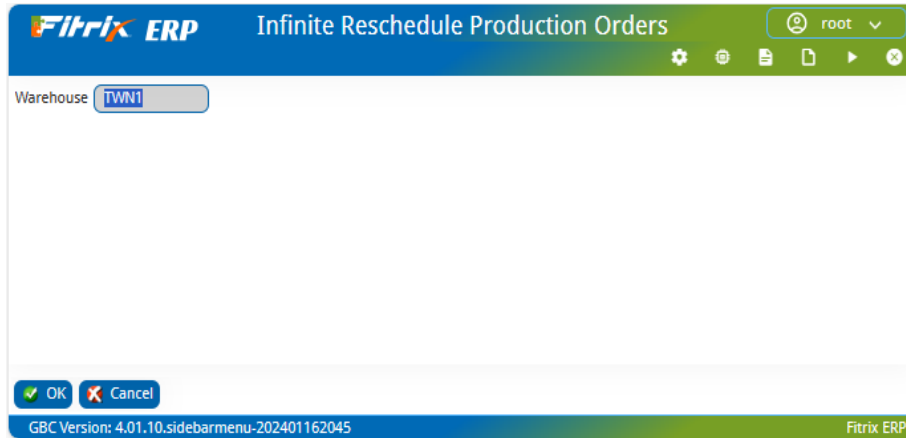
If a labor step starts on 1/5/xx and ends on 1/8/xx, and has 16 hours of required time, the scheduler assumes 4 hours of work will be performed on each of the 4 days (assuming all 4 days are valid working days)

These load hours are accumulated for the resource/date combination, for all open production orders. A list of orders included in the reschedule function is printed, showing the order scheduled start and completion dates, for later reference. Capacity vs Load Inquiries can then be used to analyze the commitment levels of each resource, over future periods. The results can help production management decide how best to use plant resources, such as:

- Move orders from over-utilized resources to under-utilized alternate resources
- Expedite, defer, or cancel orders to stabilize the hours loaded against a resource
- Hire additional production staff, or implement overtime programs to address over-commitments



The following screen displays:



**Warehouse** – Enter the production facility (warehouse) to be rescheduled

An example of the report that is generated;

01/17/2014 15:57:38 Page: 1  
 User: randyj ABC MANUFACTURING  
Production Order Reschedule Pgm: ps202

Order	Rel	Item	Order Qty	Completed	Scrapped	Remaining	Start	Orig Due	Curr Due	Oper's
140	000	C-MAC	2.00	0.00	0.00	2.00	11/16/2013	11/19/2013	11/19/2013	3
144	000	REPAIR	1.00	0.00	0.00	1.00	12/02/2013	12/04/2013	12/04/2013	1
154	000	C-MAC	1.00	0.00	0.00	1.00	12/06/2013	12/06/2013	12/06/2013	3
155	000	C-MAC	1.00	0.00	0.00	1.00	12/06/2013	12/06/2013	12/06/2013	3
156	000	C-MAC	1.00	0.00	0.00	1.00	12/06/2013	12/06/2013	12/06/2013	3
157	000	C-MAC	1.00	0.00	0.00	1.00	12/06/2013	12/06/2013	12/06/2013	3
158	000	C-MAC	1.00	0.00	0.00	1.00	12/06/2013	12/06/2013	12/06/2013	3
163	000	12104	2.00	0.00	0.00	2.00	12/11/2013	12/12/2013	12/12/2013	1
170	000	12112	2.00	0.00	0.00	2.00	12/13/2013	12/13/2013	12/13/2013	1
52	000	REPAIR	1.00	0.00	0.00	1.00	08/29/2013	08/29/2013	08/29/2013	1
56	000	REPAIR	1.00	0.00	0.00	1.00	09/09/2013	09/09/2013	09/09/2013	1
68	000	REPAIR	1.00	0.00	0.00	1.00	09/17/2013	09/17/2013	09/17/2013	1
70	000	REPAIR	1.00	0.00	0.00	1.00	09/17/2013	09/17/2013	09/17/2013	1
79	000	REPAIR	1.00	0.00	0.00	1.00	09/23/2013	09/23/2013	09/23/2013	1
80	000	REPAIR	1.00	0.00	0.00	1.00	09/23/2013	09/23/2013	09/23/2013	1
83	000	REPAIR	1.00	0.00	0.00	1.00	09/23/2013	09/23/2013	09/23/2013	1
84	000	REPAIR	1.00	0.00	0.00	1.00	09/24/2013	09/24/2013	09/24/2013	1
85	000	REPAIR	1.00	0.00	0.00	1.00	09/24/2013	09/24/2013	09/24/2013	1
92	000	REPAIR	1.00	1.00	0.00	0.00	09/30/2013	09/30/2013	09/30/2013	1
93	000	REPAIR	1.00	1.00	0.00	0.00	10/01/2013	10/01/2013	10/01/2013	1
96	000	REPAIR	1.00	0.00	0.00	1.00	10/03/2013	10/03/2013	10/03/2013	1

**NOTE:** Oper's is the number of open routing steps not yet completed

**NOTE:** This menu option does NOT change any order or labor step due dates. If you choose to use the calculated start and due dates from the report, use Production Order Maintenance to change them.

## Finite Reschedule Production Orders

When using this function, the production order's user-defined priority is used in combination with resource capacity, to calculate new recommended order and labor step start dates and due dates. It uses the available capacity of associated resources as a constraint, and calculates recommended changes to start and due dates, to ensure that resources are not over-committed.

Order priorities are established as one of the following:

**Order Due Date** – for multiple orders with the same due date, the orders are processed in the order in which they were entered (i.e. Order Number)

**Critical Ratio** - The calculation is the hours remaining on all operation divided by the hours between the current date and the order's due date. A ratio of 1 means the order is on time. A ratio less than one means the order is ahead of schedule and a ratio greater than 1 means the order is behind schedule. The orders are then processed with the highest ratio first

**Manual Priority** – Each order can be assigned a manual priority between 1 and 9, with 1 being the highest priority. So the orders with Priority 1 will be processed first. For multiple orders with the same priority, the orders are processed in the order in which they were entered (i.e. Order Number)

The scheduling function assumes a schedule start date of the current system date. So the first order to be processed has a start date of the current system date. The hours remaining for the order's first open labor step are 'loaded' into the resource defined as the 'Schedule Priority' for the step (Department, Work Center, Machine or Team), for the current date. If the resource's capacity for the date is less than the step's hours remaining, the NEXT working date(s) are loaded with the remaining hours.

When the next order or labor step requiring the same resource is processed, the next available date with unused capacity is loaded. In this way the resource never has a load that exceeds its capacity on any given day. As subsequent orders are loaded into later dates, their labor step start and end dates are

‘pushed’ out to match when they can be reasonably completed. The resulting labor step start and completion dates will create a new recommended start and completion date for the overall order.

Production Management can review the results of the schedule, to decide on possible changes to the schedule, such as:

- Move orders to under-utilized alternate resources
- Increase capacity by adding more machines, hiring additional production staff, or implementing overtime programs to address team level over-commitments
- Use the Manual Priority override feature to re-order the overall priority of the orders

The following screen displays:

The screenshot shows a software dialog box titled "Finite Reschedule Production Orders" from the Fitrix ERP system. The dialog has a blue header with the Fitrix ERP logo and the title. Below the header, there are several input fields: "Warehouse" with the value "TWN1", "Schedule Starting Date" with the value "01/24/2014", "Schedule Orders due Before" with the value "02/23/2015", "Primary Schedule by" with a dropdown menu set to "Due Date", and "Secondary Schedule by" with a dropdown menu set to "Manual Priority". At the bottom left, there are "OK" and "Cancel" buttons. At the bottom right, there is a footer with the text "GBC Version: 4.01.10.sidebarmenu-202401162045" and the Fitrix ERP logo.

**Warehouse** – Enter the production facility (warehouse) to be rescheduled

**Schedule Starting Date** – Enter the beginning date where open orders will be assigned scheduled starting dates. The default is the current system date.

**Schedule Orders due Before** – Enter a date after which orders will not be added to the schedule. It is often not necessary to include orders that will not be considered for scheduling until a later date. The default is the Starting Date, plus the Schedule Horizon lead time in days from the Setup Production Scheduling option.

**Primary Schedule by** – Select first method for assigning order priorities. Choices are:

**Order Due** - indicates that production orders will be prioritized by their due date.

**Critical Ratio** - indicates that production orders will be prioritized by the critical ratio calculation. The calculation is the hours remaining on the operation divided by the hours

available. A ratio of 1 means the order is on time. A ratio less than one means the order is ahead of schedule. A ratio greater than 1 means the order is behind schedule.

**Priority** - indicates that production orders will be prioritized by the manual priority code on the order.

The default is from the Setup Production Scheduling option.

**Secondary Schedule by** – Select second method for assigning order priorities, in the event multiple orders have the same Primary Schedule value. Choices are:

**Order Due** - indicates that production orders will be prioritized by their due date.

**Critical Ratio** - indicates that production orders will be prioritized by the critical ratio calculation. The calculation is the hours remaining on the operation divided by the hours available. A ratio of 1 means the order is on time. A ratio less than one means the order is ahead of schedule. A ratio greater than 1 means the order is behind schedule.

**Priority** - indicates that production orders will be prioritized by the manual priority code on the order.

The default is from the Setup Production Scheduling option.

**NOTE:** If multiple orders have the same Primary and Secondary schedule values, the orders will be processed by order number.

An example of the report that is generated;

01/17/2014 17:44:50		ABC MANUFACTURING										Page: 1				
User: randyj		Production Order Finite Reschedule										Pgm: ps204				
		Warehouse: SEATTLE														
Order	Rel	Sta	Item	Order Qty	Compl Qty	Scrap Qty	Rem Qty	Rem Hrs	Prt	Cr	Ratio	Start	Schd Start	Curr Due	Schd Due	Oper's
174	000	A	C-MAC	1.00	0.00	0.00	1.00	2			1.00	01/17/2014	01/23/2014	01/20/2014	01/23/2014	2
175	000	A	C-MAC	1.00	0.00	0.00	1.00	2			1.00	01/17/2014	01/23/2014	01/20/2014	01/23/2014	2
5		P	C-MAC	1.00			1.00	2				01/14/2014	01/23/2014	01/20/2014	01/23/2014	2
6		P	C-MAC	2.00			2.00	4				01/14/2014	01/24/2014	01/20/2014	01/24/2014	2
4		P	C-MAC	5.00			5.00	10				01/14/2014	01/24/2014	01/20/2014	01/27/2014	2
7		P	C-MAC	2.00			2.00	4				01/16/2014	01/27/2014	01/20/2014	01/28/2014	2
9		P	C-MAC	2.00			2.00	4				01/16/2014	01/28/2014	01/20/2014	01/28/2014	2
8		P	C-MAC	3.00			3.00	6				01/17/2014	01/28/2014	01/20/2014	01/17/2014	2
8		P	C-MAC	3.00			3.00	6				01/17/2014	01/28/2014	01/20/2014	01/17/2014	2

The date columns on the report are:

**Start** – The start date for the order, when it was entered or maintained

**Schd Start** – The start date calculated by the Finite Scheduler

**Curr Due** - The current due date for the order, when it was entered or maintained

**Schd Due** - The due date calculated by the Finite Scheduler

**NOTE** Oper's is the number of open routing steps not yet completed

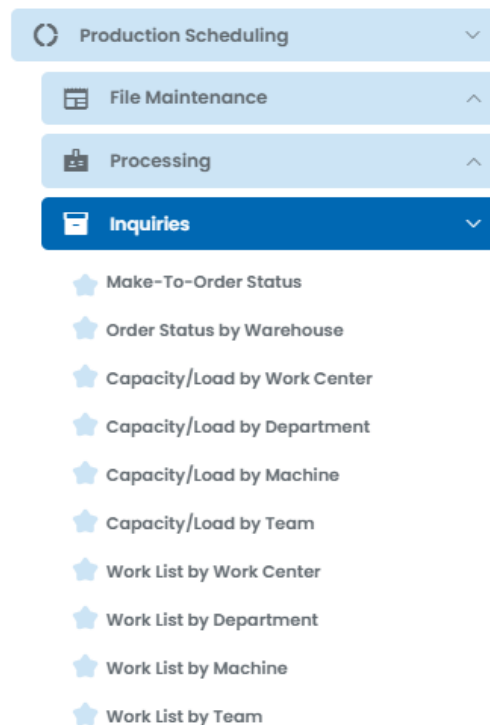
**NOTE:** This menu option does NOT change any order or labor step due dates. If you choose to use the calculated start and due dates from the report, use Production Order Maintenance to change them.

# Chapter 4

## Inquiries

In this chapter we will cover the various inquiries available. These include

- Order Status by Warehouse
- Capacity loads
- Work lists



# Order Status by Warehouse

Use this inquiry to review a summary status of active production orders for a selected production facility (warehouse). The orders are listed by due date, then end item code.

Order	Rel	Item	Start	Due	Prry	Customer/Stock	Sales Value	Qty Remains	Hrs Rem	Material Status
8	000	C-MAC	11/18/2023	03/11/2024		12-0654-01/15	999.00	1,000	0.000	Shipped
7	000	C-MAC	11/18/2023	03/11/2024		12-0654-01/15	999.00	1,000	0.000	Shipped
37	000	C-MAC	02/18/2023	01/25/2024		Stock/	0.00	1,000	0.000	Shipped
36	000	12120	04/26/2022	04/26/2022		53/16	7.85	1,000	0.000	Shipped
31	000	RB-89	04/26/2022	04/26/2022		31/15	20000.00	1,000	0.000	Shipped/Multiple
30	000	RB-89	04/26/2022	04/26/2022		30/15	22400.00	1,000	0.000	Shipped
29	000	RB-89	04/26/2022	04/26/2022		28/15	20000.00	1,000	0.000	Shipped/Multiple
28	000	RB-89	04/26/2022	04/26/2022		26/15	278000.00	1,000	0.000	Shipped/Multiple
27	000	RB-89	04/26/2022	04/26/2022		25/15	278000.00	1,000	0.000	Shipped/Multiple
26	000	RB-89	04/26/2022	04/26/2022		23/15	23000.00	1,000	0.000	Shipped/Multiple
25	000	RB-89	04/26/2022	04/26/2022		22/15	23000.00	1,000	0.000	Shipped/Multiple
24	000	RB-89	04/26/2022	04/26/2022		20/15	23000.00	1,000	0.000	Shipped/Multiple
23	000	RB-89	04/26/2022	04/26/2022		19/15	278000.00	1,000	0.000	Shipped/Multiple
22	000	RB-89	04/26/2022	04/26/2022		18/15	254000.00	1,000	0.000	Shipped/Multiple
21	000	RB-89	04/26/2022	04/26/2022		17/15	216000.00	1,000	0.000	Shipped/Multiple
20	000	RB-89	04/26/2022	04/26/2022		15/15	216000.00	1,000	0.000	Shipped/Multiple
19	000	RB-89	04/26/2022	04/26/2022		14/15	215000.00	1,000	0.000	Shipped/Multiple
18	000	RB-89	04/26/2022	04/26/2022		13/15	206000.00	1,000	0.000	Shipped
17	000	RB-89	04/26/2022	04/26/2022		12/15	23000.00	1,000	0.000	Shipped/Multiple
16	000	RB-89	04/26/2022	04/26/2022		10/15	22400.00	1,000	0.000	Shipped/Multiple
15	000	RB-89	04/26/2022	04/26/2022		7/15	216000.00	1,000	0.000	Shipped/Multiple
14	000	RB-89	04/26/2022	04/26/2022		6/15	216000.00	1,000	0.000	Shipped/Multiple
13	000	RB-89	04/26/2022	04/26/2022		5/15	216000.00	1,000	0.000	Shipped/Multiple
12	000	RB-89	04/26/2022	04/26/2022		4/15	22400.00	1,000	0.000	Shipped/Multiple
11	000	C-MAC	11/18/2023	03/11/2024		12-0654-01/15	999.00	1,000	0.000	Shipped

Select the Find option and then enter:

**Warehouse Code** – enter the code for the production facility you want to view

**Start Date** – enter a starting date for time period intervals to display. Active orders with hours remaining in their labor routing steps will be loaded into the time period intervals to the right of the Material Status column. Each labor routing step's start and due date will be used to determine the time period interval to be loaded. The default value is the current system date.

**Interval Code** – Enter a time period interval to control how the remaining hours on active orders will be displayed. The interval represents multiple time periods, each of which can be weekly, bi-weekly, monthly, semi-weekly, 4-weekly, or quarterly. The default is from the Setup Production Scheduling option.

After you have selected the above values, click OK, and a list of active orders will display for the facility. The columns are:

**Order (Production order number)** – the production order assigned

**Rel (Production Order release)** – the production order release number assigned

**Item** – Then end item being produced

**Start and due dates** – the current start and due date for the order

**Prty** – optionally set management priority

**Customer/Stock** – If the order has a type MTO or MTN, lists the sales order number and customer code. For any other order type, list ‘Stock’

**Sales Value** – For order type MTO or MTN, shows the extended price of the item on the sales order

**Qty Remain** – The quantity remaining to be made

**Hrs Remain** – The hours remaining to complete the production order

**Material status** – One of the following values

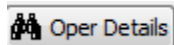
Short – If only one component is short, it lists the component item code. If more than one component is short, it lists ‘Multiple’. In either case it displays in a red background.

OK to Issue – All component items are available, but they have not been issued yet. Displays with a yellow background.

Issued – all components have been issued. Displays with a green background.

**Past** – If the order has open labor routing steps with hours remaining with start/due dates that are prior to the start date, the associated work center for the labor step is displayed for the matching column.

**Time Period Intervals** – multiple columns are displayed representing time periods consistent with the Period Interval Chosen. If the order has open labor routing steps with start/due dates that are within the period start date columns, the associated work center for the labor step is displayed for the matching column. If the work center is over-committed for that time period (i.e. the work center’s capacity for the time period is less than the total hours for all production order labor steps), it is displayed in red. If the work center is approaching capacity for that time period, it is displayed in yellow. If the work center has sufficient or excess capacity for the time period, it is displayed in green.



- To see the labor routing step details for all orders in a specific time period, click directly on the time period column, then click this button. If no details exist for the time period, a message will display. The following screen displays:

**Order** – the production order

**Release** – the production order release

**Sequence** – the labor routing step sequence



**Status** – the labor routing step status:

- 0 – production packet not printed
- 1 – not started, previous labor step not started
- 2 – not started, previous started
- 3 – not started, previous completed
- 4 – started
- 5 – completed

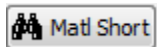
**Start Quantity** – the starting quantity in the labor step to complete

**Open Quantity** – the remaining quantity to be completed

**Oper Due** – the current due date for the labor step

**Hrs Remain** – the hours remaining for the labor step to complete

**Period Hours** – the hours remaining within the current time period interval



- To see a list of components which have insufficient quantity available for an order, place the cursor on the order line, and click on this button. The following screen displays:

Order	Release	Sequence	Component Item	Required Qty	Issued Qty	On Hand	Available	On Order	Due
20	000	0201	TR-1000	2.000	0.000	0.000	-38.000	0.000	
20	000	0202	TR-1500	2.000	0.000	0.000	-38.000	0.000	
20	000	0204	TR-2500	1.000	0.000	0.000	-19.000	0.000	
20	000	0206	TR-3500	1.000	0.000	0.000	-19.000	0.000	
20	000	0207	TR-4000	6.000	0.000	0.000	-114.000	0.000	
20	000	0208	TR-4500	1.000	0.000	0.000	-19.000	0.000	
20	000	0209	TR-5000	6.000	0.000	0.000	-114.000	0.000	
20	000	0210	TR-5500	1.000	0.000	0.000	-19.000	0.000	
20	000	0301	LG-1000	1.000	0.000	0.000	-19.000	0.000	
20	000	0302	LG-2000	2.000	0.000	0.000	-38.000	0.000	
20	000	0303	LG-3000	1.000	0.000	0.000	-19.000	0.000	
20	000	0304	LG-4000	1.000	0.000	0.000	-19.000	0.000	
20	000	0305	LG-5000	2.000	0.000	0.000	-38.000	0.000	
20	000	0306	LG-6000	2.000	0.000	0.000	-38.000	0.000	
20	000	0308	LG-8000	1.000	0.000	0.000	-19.000	0.000	

**Order** – the production order

**Release** – the production order release

**Sequence** – the bill of material sequence for the component

**Component Item** – the short component

**Issued Qty** – quantity already issued to the order

**On Hand** – the current on hand balance

**Available** – on hand minus previous allocations to other production or sales orders

**On order** – quantity currently on order from other production or purchase orders.

**Due** – the date the component item is needed for the current production order

## Capacity/Load by Work Center

Use this menu option to view the capacity/load for all work centers in a selected production facility (warehouse). The work centers are displayed with their description and a series of time period intervals representing the percentage load on the work center. The time period data is expressed as a percent (load divided by capacity). If the load is greater than the capacity, the percent is displayed with a red background. If the load is approaching capacity, it is displayed in yellow, and if the load is low or not approaching capacity, it is displayed in green. The threshold levels for the yellow and green display are entered in the Setup Production Scheduling option.

The following screen displays:

Work Ctr	Description	03/18	03/25	04/01	04/08	04/15	04/22	04/29	05/06	05/13	05/20	05/27	06/03	06/10	06/17	06/24	07/01
ASSY	GENERAL ASSEMBLY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QC	QC TESTING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Select the Find option and then enter:

**Warehouse Code** – enter the code for the production facility you want to view

**Start Date** – enter a starting date for time period intervals to display. Active orders with hours remaining in their labor routing steps will be loaded into the time period intervals to the right. Each labor routing step’s start and due date will be used to determine the time period interval to be loaded. The default value is the current system date.

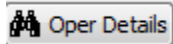
**Interval Code** – Enter a time period interval to control how the remaining hours on active orders will be displayed. The interval represents multiple time periods, each of which can be weekly, bi-weekly, monthly, semi-weekly, 4-weekly, or quarterly. The default is from the Setup Production Scheduling option.

After you have selected the above values, click OK, and a list of work centers will display for the facility. The columns are:

**Work Ctr** – the work center in the facility

**Description** – the free-form description of the work center.

**Time Period Intervals** – multiple columns are displayed representing time periods consistent with the Period Interval Chosen. If production orders have open labor routing steps with start/due dates that are within the period start date columns, the associated work center for the labor step is displayed for the matching column. If the work center is over-committed for that time period (ie the work center’s capacity for the time period is less than the total hours for all production order labor steps), it is displayed in red. If the work center is approaching capacity for that time period, it is displayed in yellow. If the work center has sufficient or excess capacity for the time period, it is displayed in green.



- To see the labor routing step details for all orders in a specific time period, click directly on the time period, then click this button. If no details exist for the time period, a message will display. The following screen displays:

**Capacity** – The work center’s capacity in hours, for the selected time period.

**Total Load** – The total hours for labor routing steps with start/due dates in this time period.

**Order** – the production order

**Release** – the production order release

**Sequence** – the labor routing step sequence

**Status** – the labor routing step status:

- 0 – production packet not printed
- 1 – not started, previous labor step not started
- 2 – not started, previous started
- 3 – not started, previous completed
- 4 – started
- 5 – completed

**Start Quantity** – the starting quantity for the labor step to complete

**Open Quantity** – the remaining quantity to be completed

**Oper Due** – the current due date for the labor step

**Hrs Remain** – the hours remaining for the labor step to complete

**Period Hours** – the hours remaining within the current time period interval



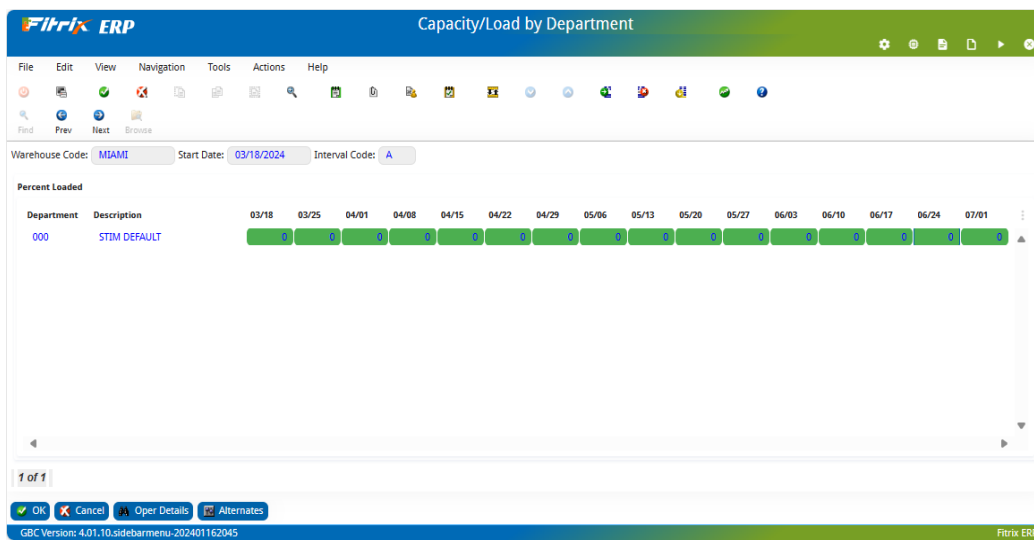
- if any work center is overloaded for a given time period place the cursor in the work center/interval field and click on this button to see alternate work centers.

The screen lists all work centers defined as alternates to the current work center. For the same time period, it displays the work center's capacity and load, with a calculated percentage. To balance the load you must then go to the production work order and change the work center

## Capacity/Load by Department

Use this menu option to view the capacity/load for all departments in a selected production facility (warehouse). The departments are displayed with their description and a series of time period intervals representing the percentage load on the department. The time period data is expressed as a percent (load divided by capacity). If the load is greater than the capacity, the percent is displayed with a red background. If the load is approaching capacity, it is displayed in yellow, and if the load is low or not approaching capacity, it is displayed in green. The threshold levels for the yellow and green display are entered in the Setup Production Scheduling option.

The following screen displays:



Select the Find option and then enter:

**Warehouse Code** – enter the code for the production facility you want to view

**Start Date** – enter a starting date for time period intervals to display. Active orders with hours remaining in their labor routing steps will be loaded into the time period intervals to the right. Each labor routing step’s start and due date will be used to determine the time period interval to be loaded. The default value is the current system date.

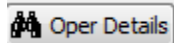
**Interval Code** – Enter a time period interval to control how the remaining hours on active orders will be displayed. The interval represents multiple time periods, each of which can be weekly, bi-weekly, monthly, semi-weekly, 4-weekly, or quarterly. The default is from the Setup Production Scheduling option.

After you have selected the above values, click OK, and a list of departments will display for the facility. The columns are:

**Department** – the department in the facility

**Description** – the free-form description of the department.

**Time Period Intervals** – multiple columns are displayed representing time periods consistent with the Period Interval Chosen. If production orders have open labor routing steps with start/due dates that are within the period start date columns, the associated department for the labor step is displayed for the matching column. If the department is over-committed for that time period (ie the department's capacity for the time period is less than the total hours for all production order labor steps), it is displayed in red. If the department is approaching capacity for that time period, it is displayed in yellow. If the department has sufficient or excess capacity for the time period, it is displayed in green.



- To see the labor routing step details for all orders in a specific time period, click directly on the time period, then click this button. If no details exist for the time period, a message will display. The following screen displays:

**Capacity** – The department's capacity in hours, for the selected time period.

**Total Load** – The total hours for labor routing steps with start/due dates in this time period.

**Order** – the production order

**Release** – the production order release

**Sequence** – the labor routing step sequence

**Status** – the labor routing step status:

- 0 – production packet not printed
- 1 – not started, previous labor step not started
- 2 – not started, previous started
- 3 – not started, previous completed
- 4 – started
- 5 – completed

**Start Quantity** – the starting quantity for the labor step to complete

**Open Quantity** – the remaining quantity to be completed

**Oper Due** – the current due date for the labor step

**Hrs Remain** – the hours remaining for the labor step to complete

**Period Hours** – the hours remaining within the current time period interval



- if any department is overloaded for a given time period place the cursor in the department/interval field and click on this button to see alternate departments.

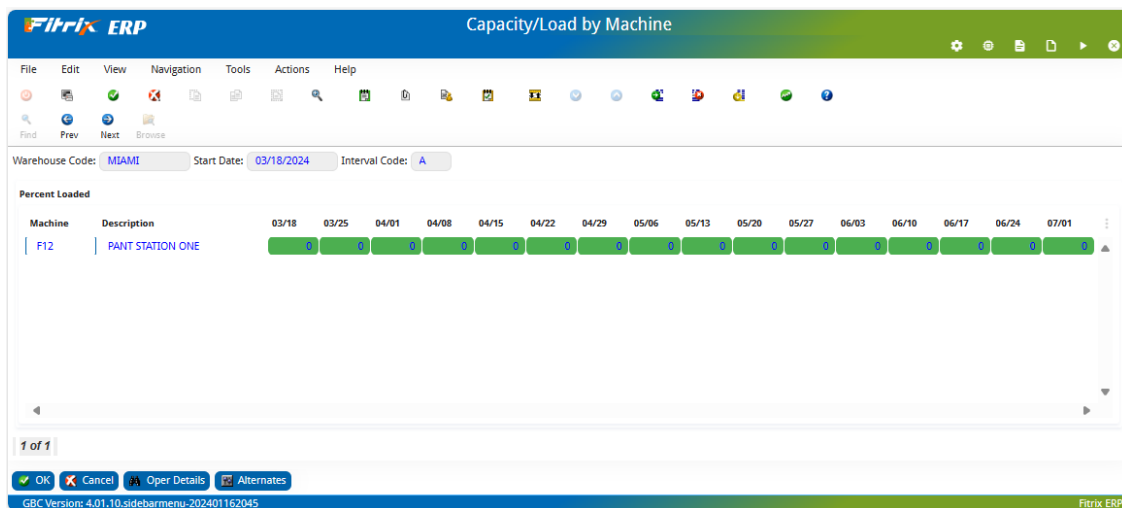
The screen lists all departments defined as alternates to the current departments. For the same time period, it displays the department's capacity and load, with a calculated percentage.



## Capacity/Load by Machine

Use this menu option to view the capacity/load for all machines in a selected production facility (warehouse). The machines are displayed with their description and a series of time period intervals representing the percentage load on the machine. The time period data is expressed as a percent (load divided by capacity). If the load is greater than the capacity, the percent is displayed with a red background. If the load is approaching capacity, it is displayed in yellow, and if the load is low or not approaching capacity, it is displayed in green. The threshold levels for the yellow and green display are entered in the Setup Production Scheduling option.

The following screen displays:



Select the Find option and then enter:

**Warehouse Code** – enter the code for the production facility you want to view

**Start Date** – enter a starting date for time period intervals to display. Active orders with hours remaining in their labor routing steps will be loaded into the time period intervals to the right. Each labor routing step’s start and due date will be used to determine the time period interval to be loaded. The default value is the current system date.

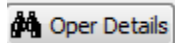
**Interval Code** – Enter a time period interval to control how the remaining hours on active orders will be displayed. The interval represents multiple time periods, each of which can be weekly, bi-weekly, monthly, semi-weekly, 4-weekly, or quarterly. The default is from the Setup Production Scheduling option.

After you have selected the above values, click OK, and a list of machines will display for the facility. The columns are:

**Machine** – the machine in the facility

**Description** – the free-form description of the machine.

**Time Period Intervals** – multiple columns are displayed representing time periods consistent with the Period Interval Chosen. If production orders have open labor routing steps with start/due dates that are within the period start date columns, the associated machine for the labor step is displayed for the matching column. If the machine is over-committed for that time period (ie the machine's capacity for the time period is less than the total hours for all production order labor steps), it is displayed in red. If the machine is approaching capacity for that time period, it is displayed in yellow. If the machine has sufficient or excess capacity for the time period, it is displayed in green.



- To see the labor routing step details for all orders in a specific time period, click directly on the time period, then click this button. If no details exist for the time period, a message will display. The following screen displays:

**Capacity** – The machine's capacity in hours, for the selected time period.

**Total Load** – The total hours for labor routing steps with start/due dates in this time period.

**Order** – the production order

**Release** – the production order release

**Sequence** – the labor routing step sequence

**Status** – the labor routing step status:

- 0 – production packet not printed
- 1 – not started, previous labor step not started
- 2 – not started, previous started
- 3 – not started, previous completed
- 4 – started
- 5 – completed

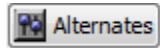
**Start Quantity** – the starting quantity for the labor step to complete

**Open Quantity** – the remaining quantity to be completed

**Oper Due** – the current due date for the labor step

**Hrs Remain** – the hours remaining for the labor step to complete

**Period Hours** – the hours remaining within the current time period interval



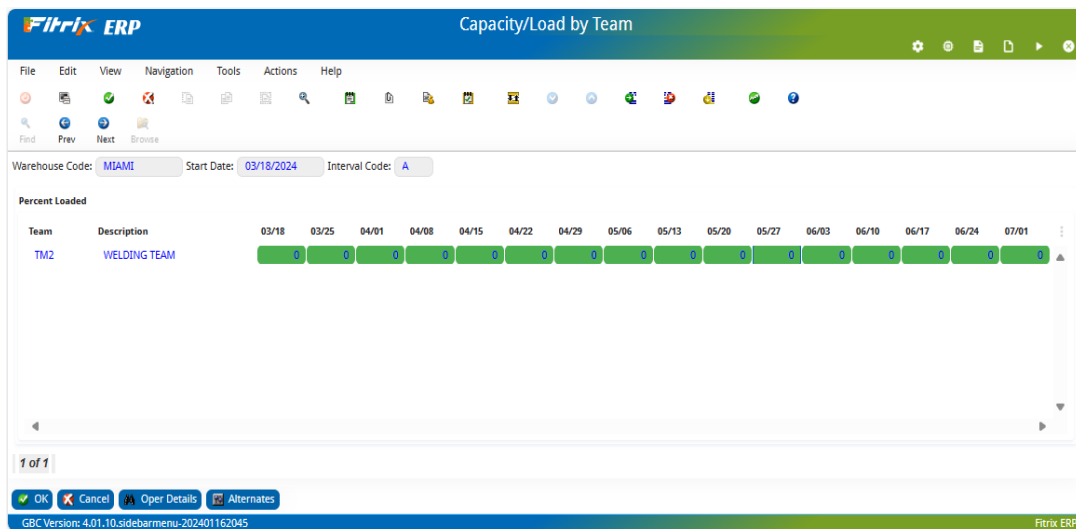
- if any machine is overloaded for a given time period place the cursor in the machine/interval field and click on this button to see alternate machines.

The screen lists all machines defined as alternates to the current machines. For the same time period, it displays the machine's capacity and load, with a calculated percentage.

## Capacity/Load by Team

Use this menu option to view the capacity/load for all teams in a selected production facility (warehouse). The teams are displayed with their description and a series of time period intervals representing the percentage load on the team. The time period data is expressed as a percent (load divided by capacity). If the load is greater than the capacity, the percent is displayed with a red background. If the load is approaching capacity, it is displayed in yellow, and if the load is low or not approaching capacity, it is displayed in green. The threshold levels for the yellow and green display are entered in the Setup Production Scheduling option.

The following screen displays:.



Select the Find option and then enter:

**Warehouse Code** – enter the code for the production facility you want to view

**Start Date** – enter a starting date for time period intervals to display. Active orders with hours remaining in their labor routing steps will be loaded into the time period intervals to the right. Each labor routing step’s start and due date will be used to determine the time period interval to be loaded. The default value is the current system date.

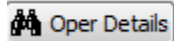
**Interval Code** – Enter a time period interval to control how the remaining hours on active orders will be displayed. The interval represents multiple time periods, each of which can be weekly, bi-weekly, monthly, semi-weekly, 4-weekly, or quarterly. The default is from the Setup Production Scheduling option.

After you have selected the above values, click OK, and a list of teams will display for the facility. The columns are:

**Team** – the team in the facility

**Description** – the free-form description of the team.

**Time Period Intervals** – multiple columns are displayed representing time periods consistent with the Period Interval Chosen. If production orders have open labor routing steps with start/due dates that are within the period start date columns, the associated team for the labor step is displayed for the matching column. If the team is over-committed for that time period (ie the team's capacity for the time period is less than the total hours for all production order labor steps), it is displayed in red. If the team is approaching capacity for that time period, it is displayed in yellow. If the team has sufficient or excess capacity for the time period, it is displayed in green.



- To see the labor routing step details for all orders in a specific time period, click directly on the time period, then click this button. If no details exist for the time period, a message will display. The following screen displays:

**Capacity** – The team's capacity in hours, for the selected time period.

**Total Load** – The total hours for labor routing steps with start/due dates in this time period.

**Order** – the production order

**Release** – the production order release

**Sequence** – the labor routing step sequence

**Status** – the labor routing step status:

- 0 – production packet not printed
- 1 – not started, previous labor step not started
- 2 – not started, previous started
- 3 – not started, previous completed
- 4 – started
- 5 – completed

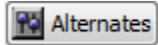
**Start Quantity** – the starting quantity for the labor step to complete

**Open Quantity** – the remaining quantity to be completed

**Oper Due** – the current due date for the labor step

**Hrs Remain** – the hours remaining for the labor step to complete

**Period Hours** – the hours remaining within the current time period interval



- if any team is overloaded for a given time period place the cursor in the team/interval field and click on this button to see alternate teams.

The screen lists all teams defined as alternates to the current team. For the same time period, it displays the team's capacity and load, with a calculated percentage.

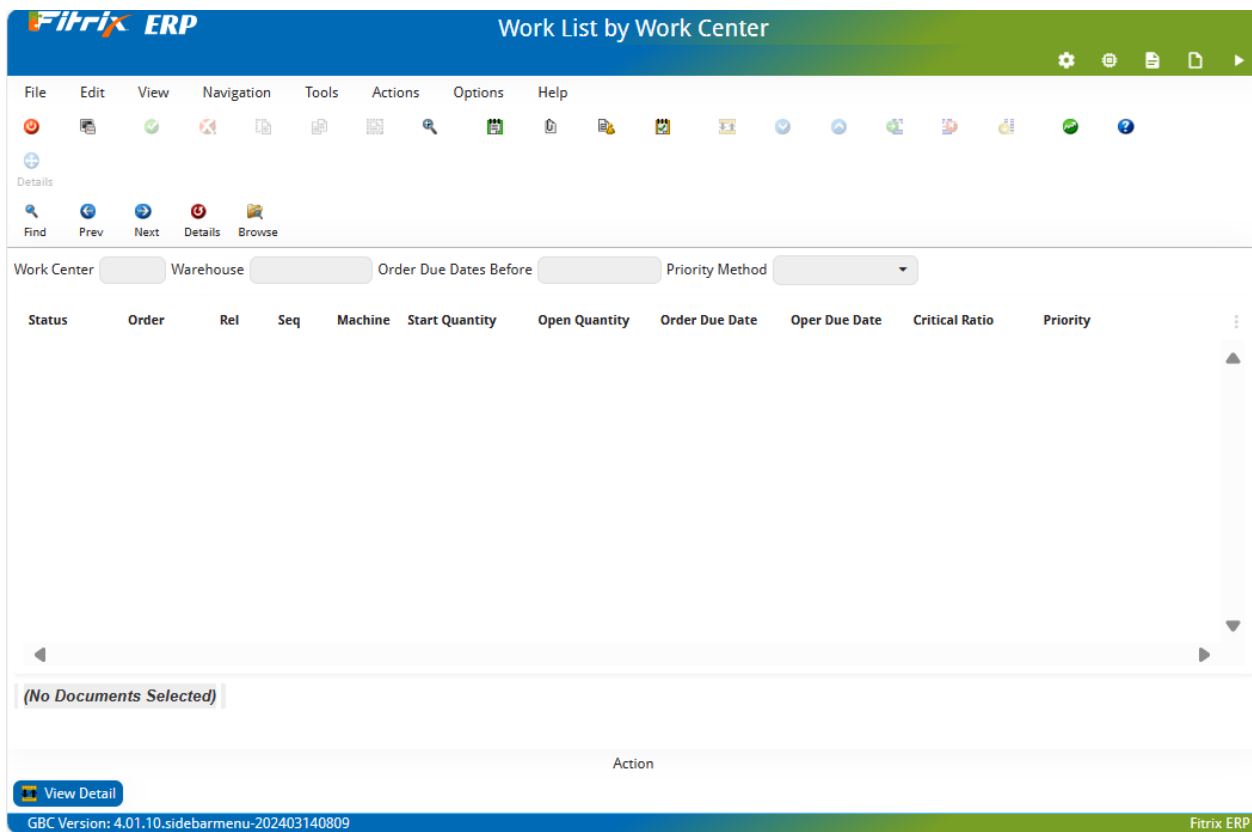
# Work List by Work Center

Use this menu option to view a list of work to be performed at specific work centers. The list is prioritized to show production order labor routing steps in 3 categories:

- Current – steps where some labor or machine time has been reported
- Waiting – steps completed at the previous step, and ready to start at the current step
- Arriving – steps still in process at the previous step

Within each category, labor steps are sorted based on a user-enter priority, to provide flexibility in determining which steps should be executed first, second, and so on.

The following screen displays:



Select the Find option and then enter:

**Work Center** – Enter the work center you want to view

**Warehouse** – Enter the production facility you want to view

**Order Due Dates Before** – enter a date after which you do not want to view orders. This prevents unnecessary detail for orders due too far into the future to be of concern. The default date is the current system date, plus the schedule horizon defined in the Setup Production Scheduling.

**Priority Method** – Select one of the following choices:

**Order Due** - indicates that production orders will be prioritized by their due date.

**Critical Ratio** -indicates that production orders will be prioritized by the critical ratio calculation. The calculation is the hours remaining on the operation divided by the hours available. A ratio of 1 means the order is on time. A ratio less than one means the order is ahead of schedule. A ratio greater than 1 means the order is behind schedule.

**Priority** - indicates that production orders will be prioritized by the manual priority code on the order.

After you have selected the above values, click OK, and a list of labor steps will display for the work center. The columns are:

**Status** – one of the following values:

**CURRENT** – displayed in red. Either quantities or hours have been reported on this step, but it is not yet complete.

**WAITING** – displayed in yellow. The previous labor step has been completed, but no activity has been reported on the step at the current department

**ARRIVING** – displayed in green. The previous labor step is not yet completed.

**Order** – the production order

**Rel (Release)**– the production order release

**Seq (Routing Sequence)** – the labor routing step sequence

**Machine**

**Start Quantity** – the quantity this step originally started with

**Open Quantity** – the quantity still be completed

**Order Due Date** – the current due date for the whole order



**Oper Due Date** – the current due date for this labor step on the order

**Critical Ratio** – the calculated critical ratio for the order



**Priority** – the manual priority of the production order

To view the details for a labor step:

1. Click on the  button to go to the detail section of the screen
2. Click the  button. The following screen displays:

Reported Hours, Move and Queue Times, and completed quantities are displayed. Also included are references to the previous, and next, operations.

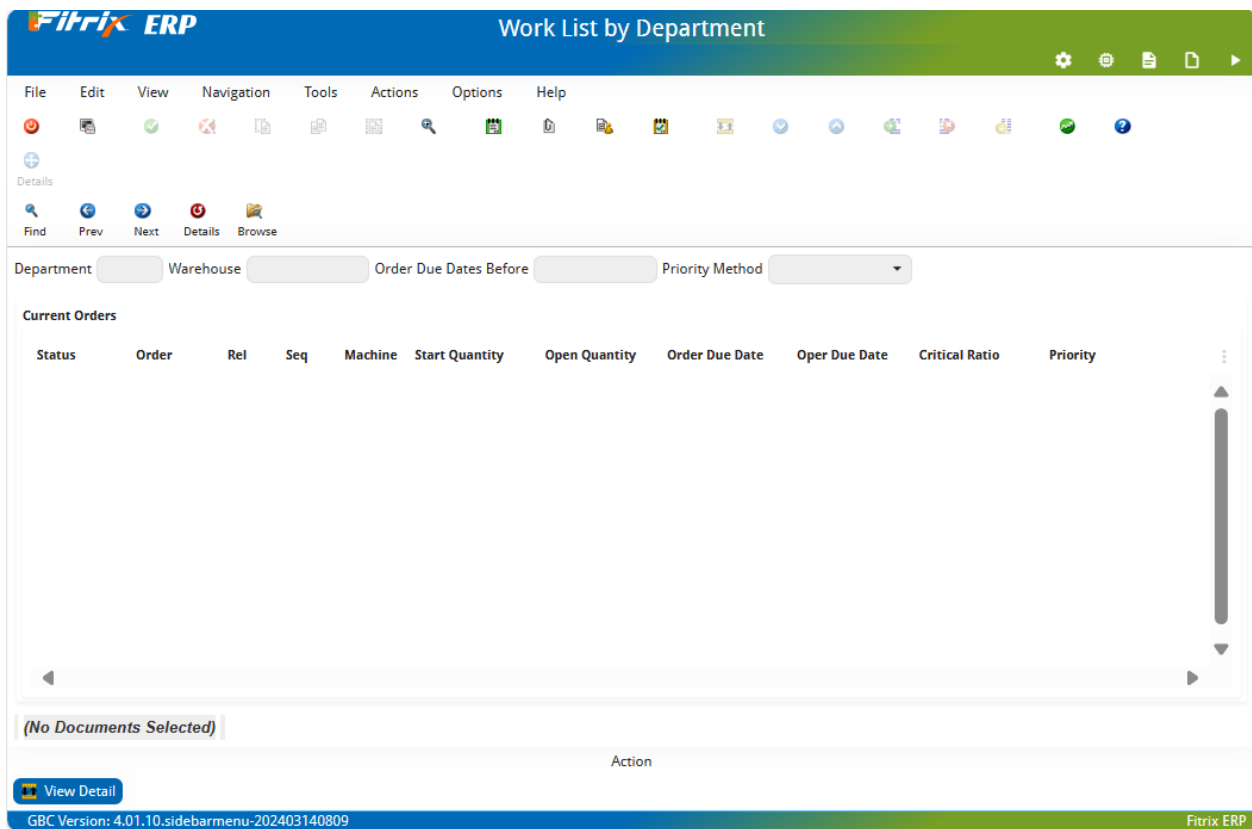
## Work List by Department

Use this menu option to view a list of work to be performed at specific departments. The list is prioritized to show production order labor routing steps in 3 categories:

- Current – steps where some labor or machine time has been reported
- Waiting – steps completed at the previous step, and ready to start at the current step
- Arriving – steps still in process at the previous step

Within each category, labor steps are sorted based on a user-enter priority, to provide flexibility in determining which order steps should be executed first, second, and so on.

The following screen displays:



Select the Find option and then enter:

**Department** – department you want to view

**Warehouse** – Enter the production facility you want to view

**Order Due Dates Before** – enter a date after which you do not want to view orders. This prevents unnecessary detail for orders due too far into the future to be of concern. The default date is the current system date, plus the schedule horizon defined in the Setup Production Scheduling.

**Priority Method** – Select one of the following choices:

**Order Due** - indicates that production orders will be prioritized by their due date.

**Critical Ratio** - indicates that production orders will be prioritized by the critical ratio calculation. The calculation is the hours remaining on the operation divided by the hours available. A ratio of 1 means the order is on time. A ratio less than one means the order is ahead of schedule. A ratio greater than 1 means the order is behind schedule.

**Priority** - indicates that production orders will be prioritized by the manual priority code on the order.

After you have selected the above values, click OK, and a list of labor steps will display for the work center. The columns are:

**Status** – one of the following values:

**CURRENT** – displayed in red. Either quantities or hours have been reported on this step, but it is not yet complete.

**WAITING** – displayed in yellow. The previous labor step has been completed, but no activity has been reported on the step at the current department

**ARRIVING** – displayed in green. The previous labor step is not yet completed.

**Order** – the production order

**Rel (Release)**– the production order release

**Seq (Routing Sequence)** – the labor routing step sequence

**Machine**

**Start Quantity** – the quantity this step originally started with

**Open Quantity** – the quantity still to be completed



**Order Due Date** – the current due date for the whole order

**Oper Due Date** – the current due date for this labor step on the order

**Critical Ratio** – the calculated critical ratio for the order

**Priority** – the manual priority of the production order

To view the details for a labor step:

3. Click on the  button to go to the detail section of the screen
4. Click the  button. The following screen displays:

Reported Hours, Move and Queue Times, and completed quantities are displayed. Also included are references to the previous, and next, operations.

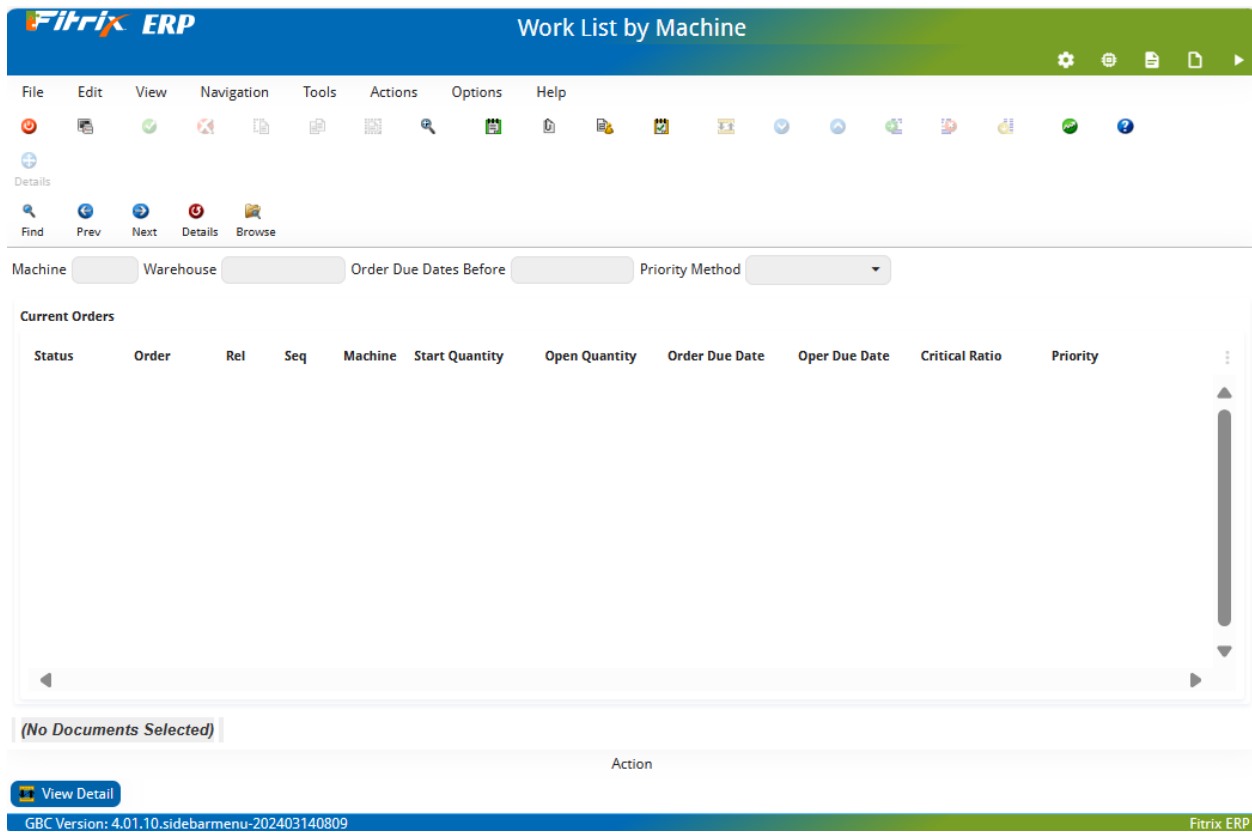
# Work List by Machine

Use this menu option to view a list of work to be performed at specific machines. The list is prioritized to show production order labor routing steps in 3 categories:

- Current – steps where some labor or machine time has been reported
- Waiting – steps completed at the previous step, and ready to start at the current step
- Arriving – steps still in process at the previous step

Within each category, labor steps are sorted based on a user-enter priority, to provide flexibility in determining which order steps should be executed first, second, and so on.

The following screen displays:



Select the Find option and then enter:

**Machine** – Enter the machine you want to view

**Warehouse** – Enter the production facility you want to view

**Order Due Dates Before** – enter a date after which you do not want to view orders. This prevents unnecessary detail for orders due too far into the future to be of concern. The default date is the current system date, plus the schedule horizon defined in the Setup Production Scheduling.

**Priority Method** – Select one of the following choices:

**Order Due** - indicates that production orders will be prioritized by their due date.

**Critical Ratio** - indicates that production orders will be prioritized by the critical ratio calculation. The calculation is the hours remaining on the operation divided by the hours available. A ratio of 1 means the order is on time. A ratio less than one means the order is ahead of schedule. A ratio greater than 1 means the order is behind schedule.

**Priority** - indicates that production orders will be prioritized by the manual priority code on the order.

After you have selected the above values, click OK, and a list of labor steps will display for the work center. The columns are:

**Status** – one of the following values:

**CURRENT** – displayed in red. Either quantities or hours have been reported on this step, but it is not yet complete.

**WAITING** – displayed in yellow. The previous labor step has been completed, but no activity has been reported on the step at the current department

**ARRIVING** – displayed in green. The previous labor step is not yet completed.

**Order** – the production order

**Rel (Release)**– the production order release

**Seq (Routing Sequence)** – the labor routing step sequence

**Machine**

**Start Quantity** – the quantity this step originally started with

**Open Quantity** – the quantity still to be completed



**Order Due Date** – the current due date for the whole order

**Oper Due Date** – the current due date for this labor step on the order

**Critical Ratio** – the calculated critical ratio for the order

**Priority** – the manual priority of the production order

To view the details for a labor step:

5. Click on the  button to go to the detail section of the screen
6. Click the  button. The following screen displays:

Reported Hours, Move and Queue Times, and completed quantities are displayed. Also included are references to the previous, and next, operations.

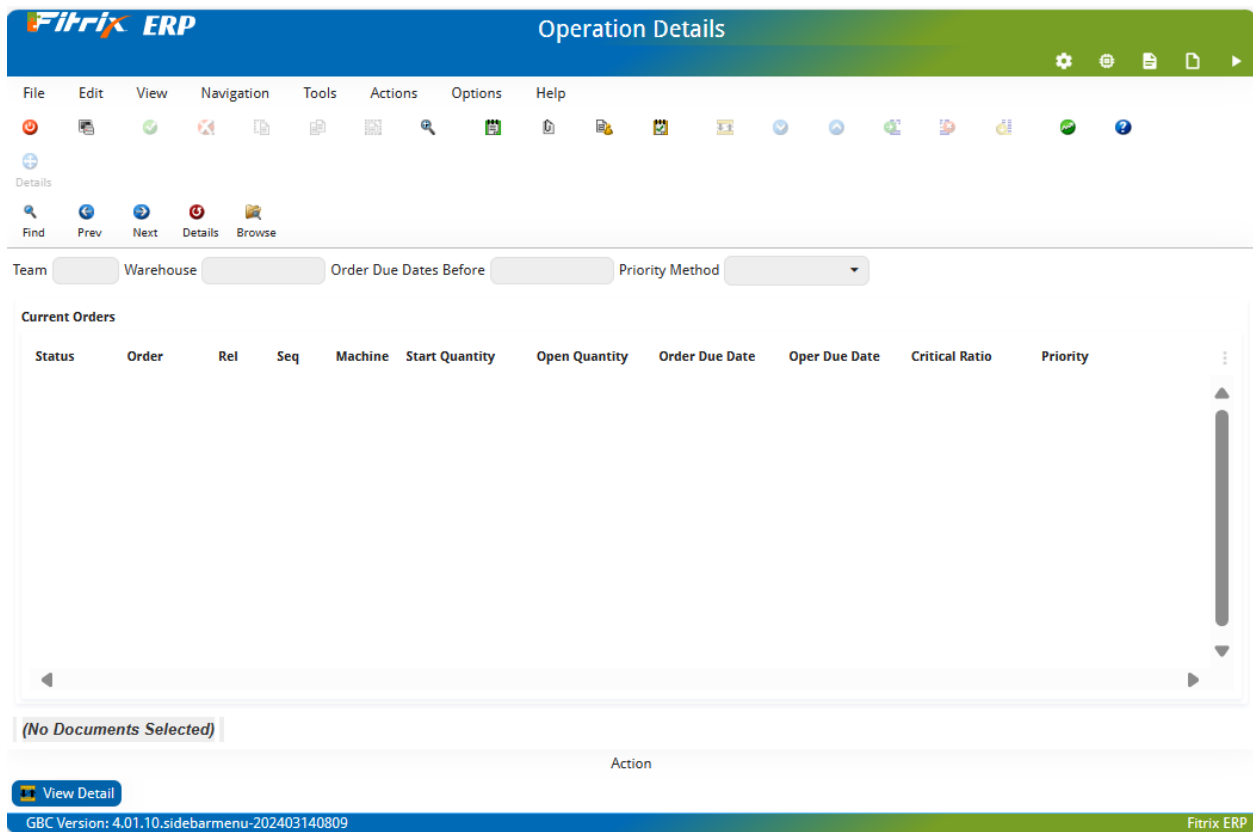
## Work List by Team

Use this menu option to view a list of work to be performed by specific teams. The list is prioritized to show production order labor routing steps in 3 categories:

- Current – steps where some labor time has been reported
- Waiting – steps completed at the previous step, and ready to start at the current step
- Arriving – steps still in process at the previous step

Within each category, labor steps are sorted based on a user-enter priority, to provide flexibility in determining which order steps should be executed first, second, and so on.

The following screen displays:



Select the Find option and then enter:

**Team** – Enter the team you want to view

**Warehouse** – Enter the production facility you want to view



**Order Due Dates Before** – enter a date after which you do not want to view orders. This prevents unnecessary detail for orders due too far into the future to be of concern. The default date is the current system date, plus the schedule horizon defined in the Setup Production Scheduling.

**Priority Method** – Select one of the following choices:

**Order Due** - indicates that production orders will be prioritized by their due date.

**Critical Ratio** -indicates that production orders will be prioritized by the critical ratio calculation. The calculation is the hours remaining on the operation divided by the hours available. A ratio of 1 means the order is on time. A ratio less than one means the order is ahead of schedule. A ratio greater than 1 means the order is behind schedule.

**Priority** - indicates that production orders will be prioritized by the manual priority code on the order.

After you have selected the above values, click OK, and a list of labor steps will display for the work center. The columns are:

**Status** – one of the following values:

**CURRENT** – displayed in red. Either quantities or hours have been reported on this step, but it is not yet complete.

**WAITING** – displayed in yellow. The previous labor step has been completed, but no activity has been reported on the step at the current department

**ARRIVING** – displayed in green. The previous labor step is not yet completed.

**Order** – the production order

**Rel (Release)**– the production order release

**Seq (Routing Sequence)** – the labor routing step sequence

**Machine**

**Start Quantity** – the quantity this step originally started with

**Open Quantity** – the quantity still be completed



**Order Due Date** – the current due date for the whole order

**Oper Due Date** – the current due date for this labor step on the order

**Critical Ratio** – the calculated critical ratio for the order

**Priority** – the manual priority of the production order

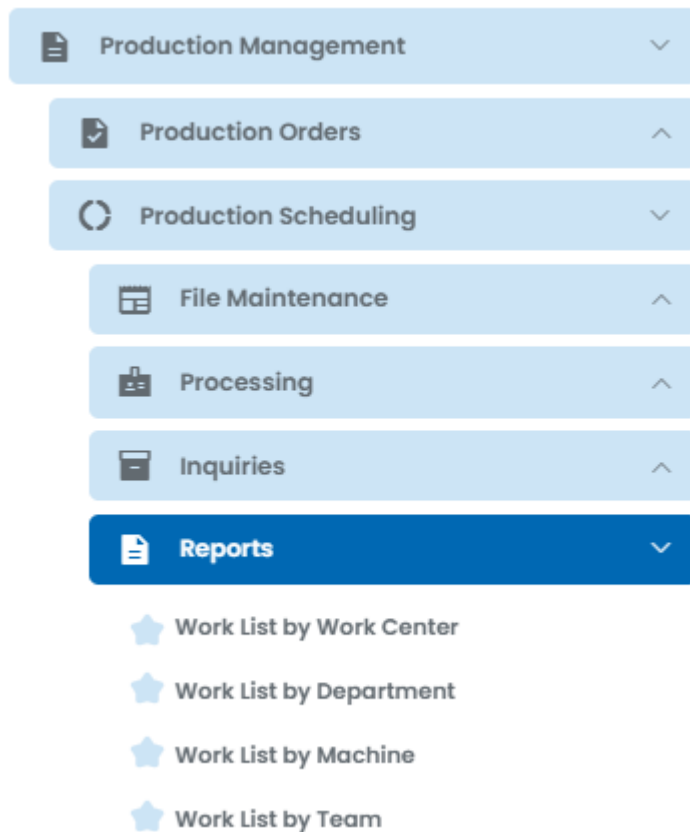
To view the details for a labor step:

7. Click on the  button to go to the detail section of the screen
8. Click the  button. The following screen displays:

Reported Hours, Move and Queue Times, and completed quantities are displayed. Also included are references to the previous, and next, operations

# Chapter 5

## Reports



## Work List Reports

Select this option to run reports that list outstanding work by work center, department, machine, or team. The report prompts and details have the same format. Each report allows you to select a range of work centers, departments, machines or teams.

The example here is for the Work List by Work Center. The following screen displays:

The screenshot shows the 'Work List by Work Center' configuration window in the Fitrix ERP system. The window has a blue header with the Fitrix ERP logo and the title 'Work List by Work Center'. A user profile 'root' is visible in the top right corner. The main area contains several input fields and checkboxes:

- Warehouse:** A text input field containing 'MIAMI'.
- Work Center From:** An empty text input field.
- To:** An empty text input field.
- Order Due Dates Before:** A date input field containing '03/15/2024' with a calendar icon.
- Priority Method:** A dropdown menu set to 'Order Due Date'.
- Sections to include:** A list of three items, each with a checked checkbox:
  - Current Orders
  - Waiting Orders
  - Arriving Orders

At the bottom left, there are 'OK' and 'Cancel' buttons. At the bottom, a status bar shows 'GBC Version: 4.01.10.sidebarmenu-202401162045' on the left and 'Fitrix ERP' on the right.

### Warehouse

Enter the warehouse for which you want to print the work list.

### Work Center From

Enter the identifier for the low end of the range of work centers that you want to include in this report.

### Work Center To

Enter the identifier for the high end of the range of work centers that you want to include in this report.

### **Order Due Dates Before**

Enter the latest date for orders you want to include in this report. The default is today's date.

### **Priority Method**

Order Due Date - indicates the priority for this order is based on the order due date.

Critical Ratio - indicates the priority for this order is the critical ratio

Manual Priority - indicates the priority for this order is based on the manual priority entered in the order.

**Current Orders** – check to include orders currently being worked. Uncheck to exclude

**Waiting Orders** – check to include orders waiting to start at the current labor step. Uncheck to exclude

**Arriving Orders** - check to include orders still in process at previous labor steps. Uncheck to exclude.

Here is a sample of the Work List by Work Center report. This report can also be run by Department, Machine, or Team.

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