
# Manufacturing Routing and Resources

# Training Manual

**ETMMR11**

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This document has been prepared to conform to the current release version of TRAVERSE Accounting Business Software for Windows. Because of our extensive development efforts and our desire to further improve and enhance the product, inconsistencies may exist between the software and the documentation in some instances. Call your customer support representative if you encounter an inconsistency.

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# Introduction

# 1 INTRODUCTION

# OVERVIEW

The Routing and Resources module allows you to define non-material items such as labor and machinery for your facility. Routing and Resources helps you define the step-by-step routing that manufacturing follows when producing a product. These manufacturing items are broken down into such areas as Labor, Work Centers, Operations, Tooling, Machines, and so on. By defining these different areas, you can track their impact on the manufacturing process as a whole, and you can see where to fine-tune these areas in order to improve overall profitability.

The Routing and Resources module provides much of the data required to use Routing and non-material resources in the Production and Bills of Material modules. Routing and Resources is crucial to establishing proper lead times, accommodating Work Center, Machine, or Labor dispatching, and any type of capacity planning.

This module is also a key element in determining Operation costs. Every Operation has costs associated with where the process takes place, how long it lasts, who does the work, what machinery is involved, and how much it costs in terms of overhead and management, not to mention the basic costs of the materials themselves. Routing and Resources helps you estimate, and later capture, these costs in the Production module, in the most effective manner possible.

Routing and Resources also provides a media option that allows you to include and attach movies, drawings, and pictures to any Work Center, Labor Type, Machine Group, or Operation.

## System Information

Additional information about using the system is found in the following sources:

- the *Routing and Resources User's Help*
- the Training Manuals for other TRAVERSE applications
- the *Developer's Guide* and *Developer's Object Descriptions* manuals
- online help

## Customer Support

Open Systems Holdings Corp. has a strong commitment to customer service and product quality. If you need help using any Open Systems product, follow these procedures:

- Consult the user's guide and other TRAVERSE reference materials.

- If you are a subscriber to the TRAVERSE customer support program, you can consult your customer support representative (1-800-320-3088) or e-mail them at traverse_support@osas.com.

# ABOUT ROUTING AND RESOURCES

## Frequently used functions

The most frequently used functions are on the Global Replacement and Setup and Maintenance menus. Use these functions for the following tasks:

- Globally replace manufacturing related Work Centers, Labor Types, Machine Groups, and Tooling IDs throughout the entire Bill of Material and Routing database.
- Enter and edit information in your Routings, Operations, Work Centers, Machine Groups, Labor Types, Tooling and your Schedule calendar.

## Reports

The Reports menu consists mainly of a group of Where-Used reports. These reports are similar to each other in functionality. Print the Where-Used reports before you run any global replacement functions so you can view the substitutions you are about to make.

## Interactive Views

Use the Interactive Views to view the setup information for your Routings, Operations, Work Centers, Machine Groups, Labor Types and Tooling.

## Interfaces

Routing and Resources can be interfaced with Accounts Payable, General Ledger and Payroll.

# 2

# Setting Up Routing and Resources

# 2 SETTING UP ROUTING AND RESOURCES

# SETUP CHECKLIST

Before you can use the Routing and Resources module, follow the setup procedures in this chapter. Follow these procedures carefully. The choices you make determine how the system operates.

Perform these tasks to set up Routing and Resources:

___ Set up Business Rules.

___ Define Cost Groups (using the Bills of Material module).

___ Set up Employee information (using Payroll or System Manager).

___ Define Media Groups (using the Bills of Material module).

___ Set up a shop Schedule calendar.

___ Define Tooling items.

___ Define Labor Types.

___ Set up Machine Groups.

___ Set up Work Centers.

___ Set up Operations.

___ Define Routings.

___ Set up Bills of Material (using the Routing information you set up using the Routing and Resources module).

# 2 SETTING UP ROUTING AND RESOURCES

*Setup Checklist*

# SETUP PROCEDURES

## Business Rules

Set up your **Business Rules** first. The **Business Rules** function allows you to interface Routing and Resources with General Ledger, Payroll, and Accounts Payable; set the Default Time Units and define a Default Schedule ID.

## Cost Groups

Next, set up your Cost Groups. Use the Cost Groups function within the Bills of Material module to create predefined groups of cost areas. Use Cost Groups to group BOM costs into specific assigned areas. Each Cost Group is summarized in the General area of the Bills of Material screen. You can assign each BOM element to a unique Cost Group. See the Bills of Material Training Manual for more information on setting up Cost Groups.

> **Example: Your company makes cabinets and, for costing purposes, you want to break down your components by Vendor, or you want to break out hardware components from the rest of the wood components. You could assign such Cost Groups as MATLACE001 and MATLCAB001 to separate Vendors, or MATLHWRE and MATLWOODS to break out components by their use.**

## Employees

After you define your Cost Groups, set up your Employee information. If you do not have the TRAVERSE Payroll application, use System Manager to store Employee Names, Addresses, and Contact information. The Job Cost/Project Cost application also references this table for Employee ID lookups if the TRAVERSE Payroll application is not installed and not interfaced. If Payroll is installed, use the Employee Information function on the Payroll Setup and Maintenance menu. See the System Manager Training Manual or the Payroll Training Manual for more information on entering Employee Information.

## Media Groups

Next, set up your Media Groups. Use the Media Groups function within the Bills of Material module to group multimedia documents under one Media Group ID. Rather than assign specific documents to specific Inventory Item IDs, Bills of Material, and Operations, the system enables you to assign those documents to a Media Group ID. This ID can then be assigned to a specific Operation, Tooling, Component, and so on. This creates the flexibility to assign a potentially large group of related documents to a single process or material requirement.

## Schedules

You must set up at least one Schedule next. The Schedule is used in the Bills of Material and Production modules although you set it up and maintain it in the Routing and Resources module. Schedules enable you to specify the availability of shifts, the hours in each shift, plant closings, special holidays, planned repairs, maintenance, and so on. You can maintain as many Schedules as you want. You can then assign shop Schedule IDs to specific Work Centers, Machine Groups, or Labor Types so that specific availability or capacity can be calculated. The Scheduling function in Manufacturing Production uses the Schedules to calculate Estimated Start and Finish Dates by looking at the available days of the week and holidays.

## Tooling

Define your Tooling use. Having the correct Tooling is crucial to many machine processes. You can choose to set up and define Tooling based on its maintenance, method of use, cost, and so on. TRAVERSE Manufacturing does not track Tooling use or maintenance, but the proper Tooling for each Operation appears on relevant reports and Interactive Views to help properly set up the Operation.

## Labor Types

Next, define your Labor Types. Labor Types define the skill or grade that can be defined and applied to specific processes. Associated with the Labor Type is either a Rate Per Piece or an Hourly Rate. You can assign a Labor Type to multiple Employees, and you can assign an Employee to multiple Labor Types. Labor Types are later assigned to Operations to calculate the labor costs involved.

## Machine Groups

Your next step is to set up your Machine Groups. A Machine Group can represent a single machine or an entire bank of machines. If the cost factors differ significantly from machine to machine, or the materials that can be processed vary from machine to machine, you may want to define each machine with its own Machine Group ID. Group machines by their basic function and cost factors. Like labor, you can assign Machine Groups a shop Schedule calendar, hourly costs, and so on. In some environments, specific labor skills are required to operate that machinery, so be sure to identify those Labor Types that are appropriate for the Machine Group. Assign Machine Groups to Operations to establish a machine-related cost.

## Work Centers

After you set up Machine Groups, use the Work Centers function to define where work takes place and to set up overhead rates, methodology, and GL Accounts. The Work Centers function also includes a field for a shop Schedule calendar so that the capacity and load can be calculated by each Work Center. Within the TRAVERSE Manufacturing modules, more emphasis is placed on Operations than on a Work Center, but Work Centers play an important part in managing labor and machine resources. Later, you will assign Work Centers to Operations to indicate where the work takes place or what the overhead factors should be for that Operation.

## Operations

Next, use the Operations function to define the Operation process by pulling the Tooling, Machine Group, Labor Type, and Work Center information together. Drilling, painting, mixing, and packaging all describe typical internal Operations. If the Operation is internal, you can define the various related times involved in manufacturing. Here, you can define Queue Time, Setup Time, Run Time, Wait Time, and Move Time in Hours, Minutes, and Seconds. You can also use this function to set up a Subcontracted Operation.

## Routings

Next, define your Routings. Routings are defined as the general flow of an Assembly as it goes through the plant. Routings are made up of Routing Steps, which define the Operation performed at each step. You can assign the appropriate Routing when you set up a Bill of Material (BOM). Having standard Routings makes creating a BOM easier and quicker.

**NOTE: You do not need to create any preset Routings to use the Bill of Material module. If you choose not to set up standard Routings, you can define the Routing Steps individually when you set up a BOM.**

## Bills of Material

The final setup step is to define your Bills of Material. You define all elements of the BOM using the Bills of Material function within the Bills of Material module. The BOM consists of both Material Components and Routings, and you establish a connection between the two.

**NOTE: You can disregard Routing Steps completely and create BOMs that are solely Material Components, if necessary. For more information on defining Bills of Material, see the Bills of Material Training Manual.**

# WORKFLOW

## Initial Tasks

The Routing and Resources module provides much of the data required to use Routing and non-material resources in the Production and Bills of Material modules. Therefore, most tasks within this module are setup tasks; there are no daily tasks required. The initial tasks within this module help you define non-material items such as Labor and Machinery for your facility, and to define the step-by-step Routing that manufacturing follows when producing a product. These manufacturing tasks are broken down into such areas as Labor Types, Work Centers, Operations, Tooling, Machine Groups, and so on. By defining these different areas, you can track their impact on the manufacturing process as a whole, and you can see where to fine-tune these areas in order to improve overall profitability.

The initial tasks are discussed in depth within the “Routing and Resources Setup” section as well as the “Setup and Maintenance” chapter of this manual.

Use these functions to set up Routing and Resources:

- Define Schedules
- Define Tooling (if needed)
- Define Labor Types
- Set Up Machine Groups
- Set Up Work Centers
- Define Operations
- Set Up Routings

## Business Processes

The Routing and Resources module includes a Global Replacement function, Interactive Views functions, Reports, and Lists that provide you with the manufacturing information you need to analyze your business practices. To make the most of your manufacturing processes, use the functions described below.

## Global Replacement

Use the Global Replacement function to globally replace manufacturing related Work Centers, Labor Types, Machine Groups, and Tooling IDs throughout the entire Bill of Material and Routing database. For example, you may need to change the name of a Work Center that is used in hundreds of Routings and Operations. It would take a lot of time and effort to print a Work Centers Where-Used report and then locate each instance of the old Work Center and replace it manually with the ID for the new Work Center. By using the Global Replacement function, you can make this change to several hundred assemblies in one step.

## Interactive Views

Interactive Views functions are designed to give you quick access to vital manufacturing information more quickly and with as much detail as a report. The flexible nature of Interactive Views is designed to deliver information efficiently without having to sort through a lot of additional information.

### Routings

Routings are defined as the general flow of an assembly as it goes through the plant. Routings are made up of Routing Steps, which define the Operation performed at each step. When you set up a Bill of Material (BOM), Routings are used to define the processes for that BOM. Having standard Routings makes creating a Routing for a BOM easier and quicker.

The Routings View function allows you to view Routings information such as the Routing Step number, a Routings Description, and associated Operation, Work Center, Labor Type, and Machine Group IDs.

### Operations

The Operations View function allows you to view Operation process information, both internal and Subcontracted.

### Work Centers

Use the Work Centers View function to view where work takes place as well as the overhead accounts set up for GL, overhead rates, and methodology.

### Machine Groups

The Machine Groups View function allows you to view Machine Group information such as maintenance cycles, quantity available, billing information rate, shop Schedule calendar, and Labor Types associated with a Machine Group.

### Labor Types

Use the Labor Types View function to view Labor Type information such as hourly burden rate, per piece cost, billing information rate, and Employees assigned to the Labor Type.

### Tooling

The Tooling View function allows you to view Tooling information such as Tooling ID, quantity available, associated Vendor, and whether or not the Item is consumable.

## Reports

Since Routing and Resources is not activity oriented, the Reports menu is minimal, consisting of a group of Where-Used reports that are similar in functionality. Print the Where-Used reports before you run the Global Replacement functions so that you can see the substitutions you are about to make.

These Where-Used reports are available:

- **Operations** – displays the Routings and BOMs in which each Operation is used and the impact of any changes in the current Operation availability and cost structure. Print this report before you run a Global Replacement on Operation IDs.
- **Work Centers** – displays the Operations, Routings, and BOMs in which each Work Center is used and the impact of any changes in the current Work Center availability and cost structure. Print this report before you run a Global Replacement on Work Centers.
- **Machine Groups** – shows the Work Centers, Operations, Routings, and Bills of Material in which each Machine Group is used, and shows the impact of any changes in the current Machine Group availability and cost structure. Print this report before you run a Global Replacement of Machine Group IDs.
- **Labor Types** – shows the Machine Groups, Operations, Routings, and BOMs in which each Labor Type is used and the impact of any changes in the current Labor Type availability and cost structure. Print this report before you run a Global Replacement of Labor Types.
- **Tooling** – shows which Operations in which each Tooling ID is used and shows the impact of any changes in the current Tooling availability. Print this report before you run a Global Replacement of Tooling Items.

## Master Lists

Master Lists are basic reports that display the contents of the main files, but do not show historical detail, complex calculations, or anything you can't access using the Setup and Maintenance functions. The purpose of the Master List is to review the master file information you set up for accuracy.

These lists are available:

- **Routings** – displays a list of Routings, Routings Descriptions, and any associated Operation, Work Group, Machine Group, and Labor Type information.
- **Operations** – displays a list of Operations, Operation Descriptions, Machine Group, Labor Type, Setup Labor Type, Work Center information, and associated times.
- **Work Centers** – displays a list of Work Centers, Work Center Descriptions, and associated GL Account, shop Schedule calendar, Cost Group, Billing Rate, and Billing Method.
- **Machine Groups** – displays a list of Machine Groups, Machine Group Descriptions, Maintenance Cycles, Quantity available, Hourly Cost Factor, and associated GL Account, shop Schedule calendar, and Cost Group.
- **Labor Types** – displays a list of Labor Types, Labor Type Descriptions, Hourly Rate, Per Piece Cost, Billing Rate and Method, and associated GL Account, shop Schedule calendar, and Cost Group.
- **Tooling** – displays a list of Tooling Items, Descriptions, Quantity Available, Cost, and the associated Vendor.

# 3

# Implementing Routing & Resources

# 3 IMPLEMENTING ROUTING & RESOURCES

# OVERVIEW

The Routing and Resources module provides much of the data required to use Routing and non-material resources in the Production and Bills of Material modules. Therefore, most tasks within this module are setup tasks; there are no daily tasks required. The initial tasks within this module help you define non-material items such as Labor and Machinery for your facility, and to define the step-by-step Routing that manufacturing follows when producing a product. These manufacturing tasks are broken down into such areas as Labor Types, Work Centers, Operations, Tooling, Machine Groups, and so on. By defining these different areas, you can track their impact on the manufacturing process as a whole, and you can see where to fine-tune these areas in order to improve overall profitability.

## Setting Up IDs and Codes

IDs and codes tell the system how to identify each item on file. The system uses these identifiers to organize information.

Below are descriptions of the setup functions in Routing and Resources.

## Business Rules

The **Business Rules** function allows you to interface Routing and Resources with General Ledger, Payroll, and Accounts Payable; set the default Time Units and define a Default Schedule ID. For more information on the **Business Rules** screen, see (page 3-7).

## Cost Groups

Use the **Cost Groups** function within the Bills of Material module to create predefined groups of cost areas. Use Cost Groups to group BOM costs into specific assigned areas. Each Cost Group is summarized on the General tab of the Bills of Material screen. You can assign each BOM element to a unique Cost Group. See the Bills of Material Training Manual for more information on setting up Cost Groups.

**Example: Your company makes cabinets and, for costing purposes, you want to break down your components by Vendor, or you want to break out hardware components from the rest of the wood components. You could assign such Cost Groups as MATLACE001 and MATLCAB001 to separate Vendors, or MATLHWRE and MATLWOODS to break out components by their use.**

## Media Groups

Use the **Media Groups** function within the Bills of Material module to group multimedia documents under one Media Group ID. Rather than assign specific documents to specific Inventory Items, Bills of Material, and Operations, the system enables you to assign those documents to a Media Group ID. This ID can then be assigned to a specific Operation, Tooling, Component, and so on. This creates the flexibility to assign a potentially large group of related documents to a single process or material requirement. For more information on setting up Media Groups, see the Bills of Material Training Manual.

## Schedules

The **Schedule** (page 3-11) is used in the Bills of Material and Production modules although you set it up and maintain it in the Routing and Resources module. Schedules enable you to specify the availability of shifts, the hours in each shift, plant closings, special holidays, planned repairs, maintenance, and so on. You can maintain as many Schedules as you want. You can then assign shop Schedule IDs to specific Work Centers, Machine Groups, or Labor Types so that specific availability or capacity can be calculated.

## Tooling

Having the correct **Tooling** (page 3-17) is crucial to many machine processes. You can choose to set up and define Tooling based on its maintenance, method of use, cost, and so on. TRAVERSE Manufacturing does not track Tooling use or maintenance, but the proper Tooling for each Operation appears on relevant Reports and Interactive Views to help properly set up the Operation.

## Labor Types

**Labor Types** (page 3-21) define the skill or grade that can be defined and applied to specific processes. Associated with the Labor Type is either a Rate Per Piece or an Hourly Rate. You can assign a Labor Type to multiple Employees, and you can assign an Employee to multiple Labor Types. Labor Types are later assigned to Operations to calculate the labor costs involved.

## Machine Groups

A **Machine Group** (page 3-27) can represent a single machine or an entire bank of machines. If the cost factors differ significantly from machine to machine, or the materials that can be processed vary from machine to machine, you may want to define each machine with its own Machine Group ID. Group machines by their basic function and cost factors. Like labor, you can assign to Machine Groups a shop Schedule calendar, hourly costs, and so on. Assign Machine Groups to Operations to establish a machine-related cost.

## Work Centers

Use the **Work Centers** (page 3-35) function to define where work takes place and to set up overhead rates, methodology, and GL Accounts. The Work Centers function also includes a field for a shop Schedule calendar so that the capacity and load can be calculated by each Work Center. Within the TRAVERSE Manufacturing modules, more emphasis is placed on Operations than on a Work Center, but Work Centers play an important part in managing labor and machine resources. Later, you will assign Work Centers to Operations to indicate where the work takes place or what the overhead factors should be for that Operation.

## Operations

Use the **Operations** (page 3-43) function to define the operation process by pulling the Tooling, Machine Group, Labor Type, and Work Center information together. Drilling, painting, mixing, and packaging all describe typical internal Operations. If the Operation is internal, you can define the various related times involved in manufacturing. Here, you can define Queue Time, Setup Time, Run Time, Wait Time, and Move Time in Hours, Minutes, and Seconds. You can also use this function to set up a Subcontracted Operation.

## Routings

**Routings** (page 3-59) are defined as the general flow of an Assembly as it goes through the plant. Routings are made up of Routing Steps, which define the Operation performed at each step. You can assign the appropriate Routing when you set up a Bill of Material (BOM). Having standard Routings makes creating a BOM easier and quicker.

**NOTE: You do not need to create any preset Routings to use the Bill of Material module. If you choose not to set up standard Routings, you can define the Routing Steps individually when you set up a BOM.**

## Suggestions for Defining IDs and Codes

IDs and codes tell the system how to identify each item on file. The system uses these identifiers to organize information.

When you assign IDs and codes, establish a format that makes sense for your business and use it consistently. The following suggestions may help you to establish a useful format:

- Do not use these characters in an ID or a code: | “ ' & #.
- To prevent organization problems, use zeros to make all IDs the same length. If IDs are divided into more than one part, the parts should be the same length in every ID. Do not use spaces to divide IDs into more than one part. For example, use ACE-001 and ACE-011 instead of ACE-1 and ACE-11 or ACE 01 and ACE 11.
- If you use letters in IDs, use either all uppercase or all lowercase letters so that the IDs can be sorted correctly.
- Use descriptive IDs. For example, WIN001 and WIN002 are more descriptive than 000001 and 000002.
- If you want to sort items by a particular attribute, name or group, put the attribute in the ID. For example, to organize vendors by name, put the first characters of the vendor name in the vendor ID.

To ensure that new items can be inserted into a sequence, use a combination of letters and numbers that leaves room in the sequence for later additions. For example, WIN001 and WIN005 leave room for three IDs in between.

# BUSINESS RULES

The **Business Rules** function allows you to interface Routing and Resources with General Ledger, Payroll, and Accounts Payable; set the Default Time Units and define a Default Schedule ID.

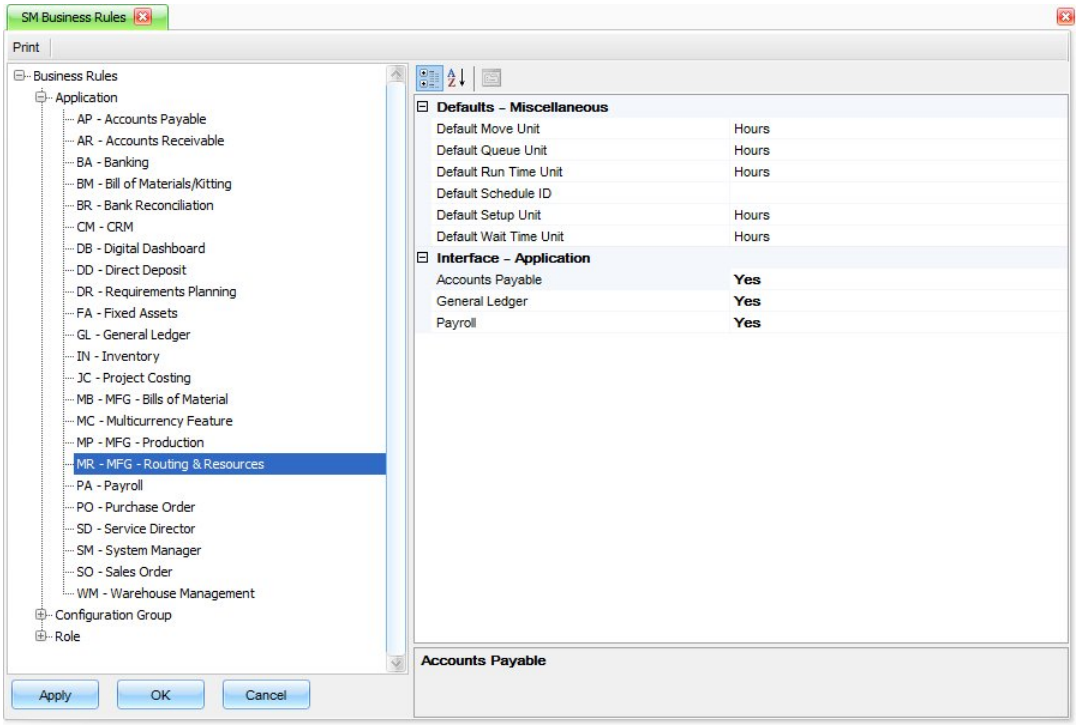
To set up **Business Rules**, follow these steps:

1. Select **Business Rules** from the **System Manager, Company Setup** menu.

## Business Rules Menu

2. The **Business Rules** screen appears. Select **MFG - Routing & Resources**.

## Business Rules Screen




### Defaults - Miscellaneous

3. **Default Move Unit**: Select the default time unit for the **Move Unit** field in the Operations setup; **Hours**, **Minutes** and **Seconds**.
4. **Default Queue Unit**: Select the default time unit for the **Queue Unit** field in the Operations setup; **Hours**, **Minutes** and **Seconds**.
5. **Default Run Time Unit**: Select the default time unit for the **Run Time Unit** field in the Operations setup; **Hours**, **Minutes** and **Seconds**.
6. **Default Schedule ID**: Select a default schedule to use throughout the Routing and Resource application.
7. **Default Setup Unit**: Select the default time unit for the **Setup Unit** fields in the Operations setup; **Hours**, **Minutes** and **Seconds**.
8. **Default Wait Time Unit**: Select the default time unit for the **Wait Time Unit** field in the Operations setup; **Hours**, **Minutes** and **Seconds**.

## Interface - Application

9. **Accounts Payable**: Select **Yes** to interface Routing and Resource with Accounts Payable. Interfacing to Accounts Payable allows you to select a Vendor ID when you are setting up Operations that are a Subcontract type.
10. **General Ledger**: Select **Yes** to interface Routing and Resources with General Ledger. Interfacing with General Ledger will allow you to select valid GL Account IDs where they are needed.
11. **Payroll**: Select **Yes** to interface Routing and Resource with Payroll. Interfacing to Payroll will allow you to select Employee IDs in the Labor Types setup.
12. Click **Print** to preview and print a report showing your selected business rules.
13. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **Apply** | Save the changes you have made to the business rules functions. The screen will remain open. |
| **OK** | Save the changes and exit the business rules function. |
| **Cancel** | Close the business rules screen without saving any changes. |
| **Print** | Preview and print a business rules report. |
| **Search** | Perform a wildcard search of all existing business rule descriptions. The results will display in a tree-view for easy navigation. |

## Business Rules Report

**Continental Products Unlimited** Page 1
**Business Rules List**

| Application | Group / Description | Current Value | Default Value |
|---|---|---|---|
| MR - MFG - Routing & Resources | | | |
| | Defaults - Miscellaneous | | |
| | Default Move Unit | Hours | Hours |
| | Default Queue Unit | Hours | Hours |
| | Default Run Time Unit | Hours | Hours |
| | Default Schedule ID | | - |
| | Default Setup Unit | Hours | Hours |
| | Default Wait Time Unit | Hours | Hours |
| | Interface - Application | | |
| | Accounts Payable | Yes | No |
| | General Ledger | Yes | No |
| | Payroll | Yes | No |

7/16/2014 4:17 PM *** End of Report *** OPEN_SYSTEMS\KentHe

# SCHEDULES

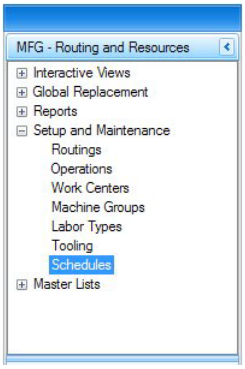
The **Schedule** is used to assist in the calculation of how long products will take to complete. Schedules are generally intended to be used with Machine Group resources but could be used to a limited extent with Labor Types or Work Centers.

The **Schedule** function defines the daily and hourly availability of a given resource. Within each Schedule there are multiple date ranges or days and within each date range or day called Availability Descriptions, there are usually multiple time frames. Each one of these shows availability in terms of a start time and a finish time.

To set up **Schedules**, follow these steps:

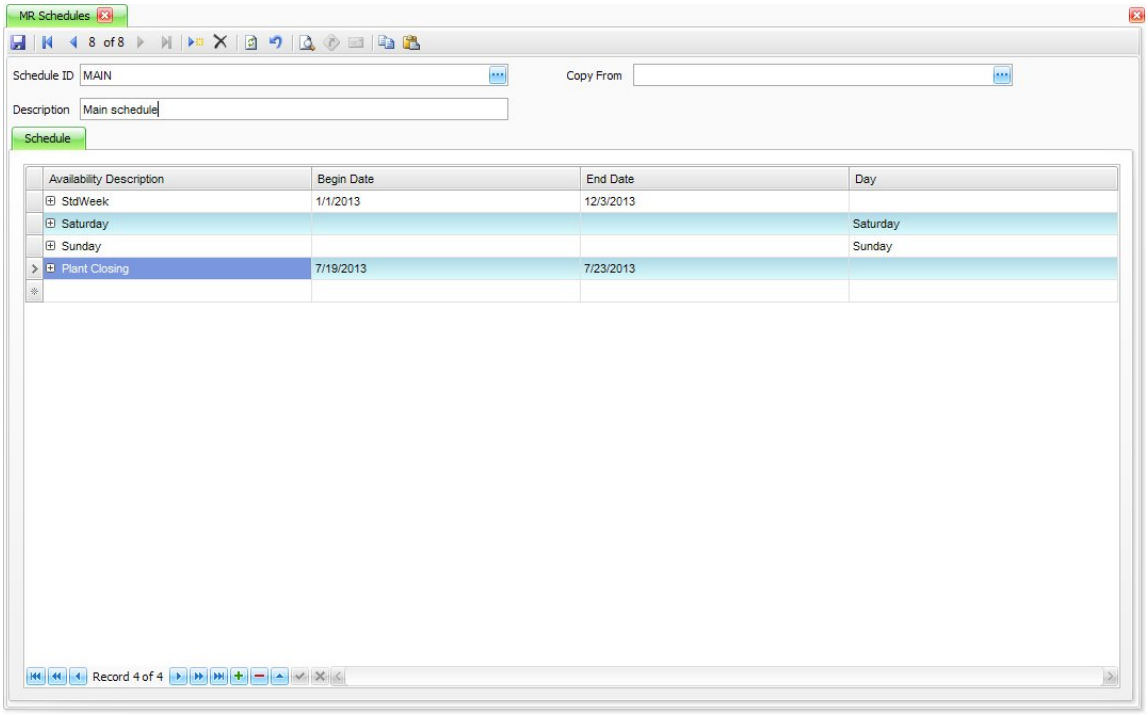
1. Select **Schedules** from the **Setup and Maintenance** menu.

## Schedules Menu



2. The **Schedules** screen appears.

## Schedules Screen

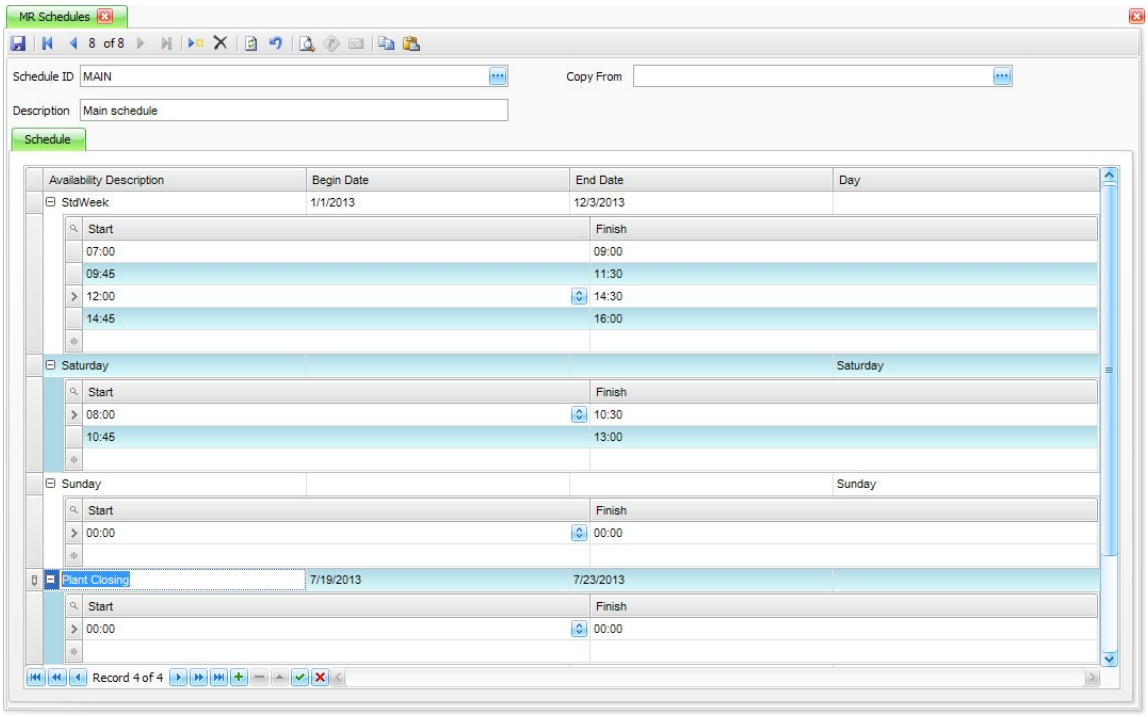



3. Select the **New Record** button from the Toolbar and enter the **Schedule ID.**
4. Select the **Copy From** Schedule ID, if you want to copy an existing Schedule and edit the things that are different in your new Schedule.
5. Enter a **Description** describing this Schedule. This description will be seen in the drop down as one selects the Schedule to be assigned to Work Centers, Labor Types, and Machine Groups.
6. Enter the description of the date range or day of the week into the **Availability Description** field. Since, each Schedule ID can have multiple date ranges or days, you may be creating one of several Availability Descriptions. Each one defines the availability for a given day, date, or days and within it hours of availability.
7. Enter the **Begin Date** if this time-frame is based a specific dates or a given day. If the hours will pertain to a day of the week, rather than a date range, this field is left blank.
8. If a Beginning Date exists, an **End Date** is required, otherwise this field is left blank.

9. Enter a **Day** of the week if no date range exists. The entry can be Sunday, Monday, Tuesday, etc., or the corresponding number of 1, 2, 3, etc.

10. Click the **Plus** (+) next to the desired line to add times.

## Schedules Screen (Expanded)




11. Enter **Start** times for the various shifts and breaks for this time-frame. Use the Up and Down arrows to increase or decrease the hour or minutes.

**NOTE: Since most days will have short breaks and/or meal breaks you will need to enter multiple records of each Start and Finish time during the given day.**

12. Enter a **Finish** time for each start time for this time-frame. Use the Up and Down arrows to increase or decrease the hour or minutes.

**NOTE: These times are in 24 hour time, so as not to cause confusion with AM and PM.**

13. Enter the next times for the next shift available.

The above screen shows a finished example of what a schedule might look like. Looking at the completed schedule, we can determine that the normal weekday is from 7:00 to 16:00. There is a morning break from 9:30 to 9:45, lunch is from 11:30 to 12:00 and there is an afternoon break from 14:30 to 14:45 and the day ends at 16:00. We can also see that the schedule and this time-frame applies to all dates, however exceptions do exist, and they appear under a different description further down the screen. We work a shorter day on Saturday and we can see that the plant is closed from July 19th through the 23rd.

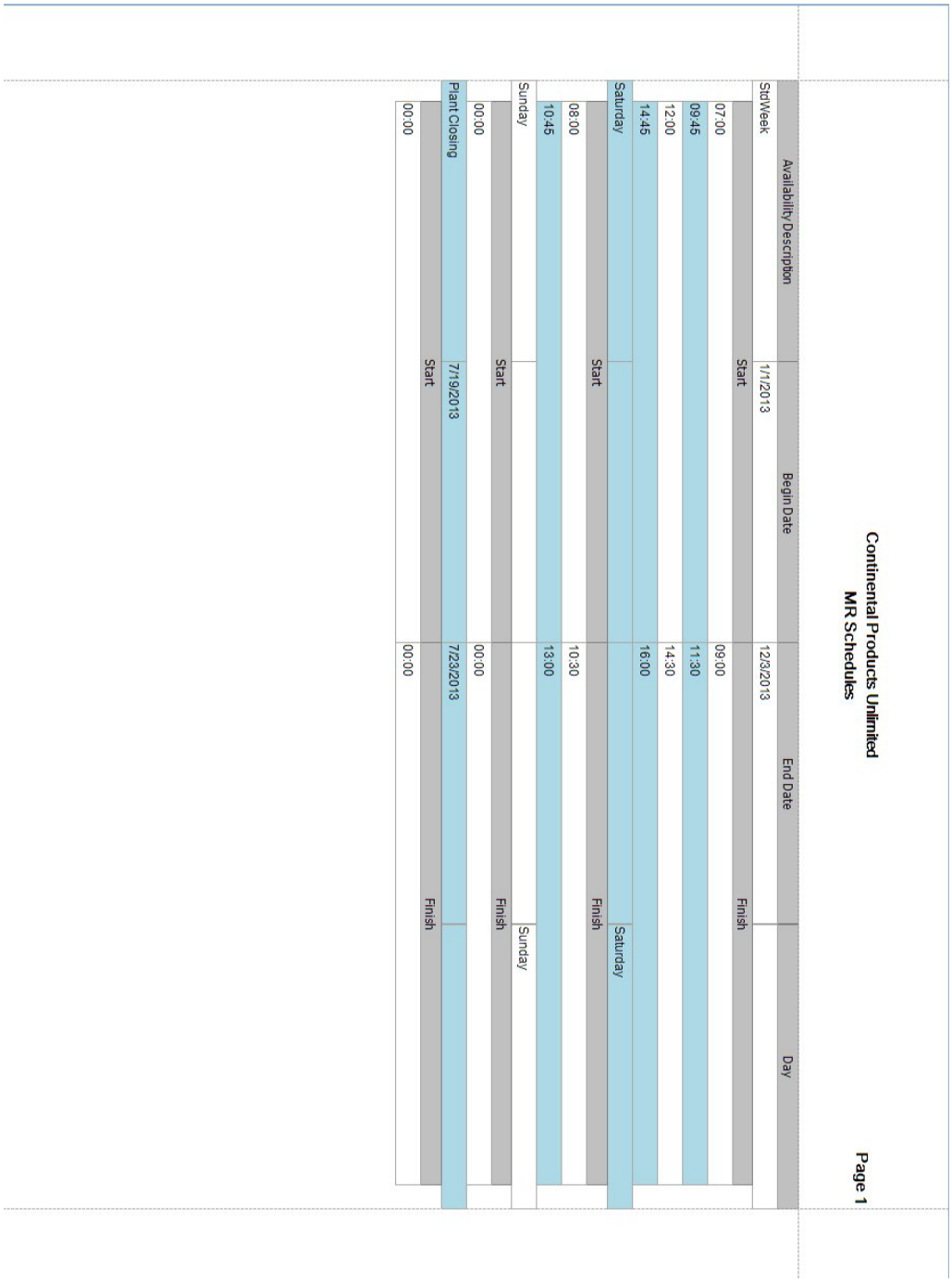
## Producing a Schedules List

To produce a **Schedules List**, follow these steps:

1. Select the **Print Preview** button  to preview the Schedule report for the Schedule you have displayed on the screen.
2. The **Preview Report** screen appears.
3. Select the **Print** button  in the toolbar to print your list.

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

## Schedules List



Continental Products Unlimited
MR Schedules

Page 1

| Availability Description | Begin Date | End Date | Day |
|---|---|---|---|
| StdWeek | 1/1/2013 | 12/3/2013 | |
| | Start | 09:00 | Finish |
| | 07:00 | 11:30 | |
| | 09:45 | 14:30 | |
| | 12:00 | 16:00 | |
| | 14:45 | | Saturday |
| Saturday | Start | Finish | |
| | 08:00 | 10:30 | |
| | 10:45 | 13:00 | |
| Sunday | | | Sunday |
| | Start | Finish | |
| | 00:00 | 00:00 | |
| Plant Closing | 7/19/2013 | 7/23/2013 | |
| | Start | Finish | |
| | 00:00 | 00:00 | |

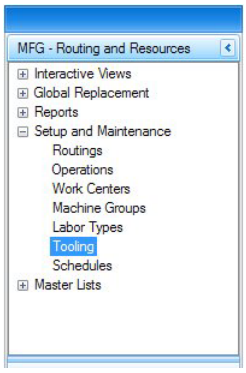
# TOOLING

Using the correct **Tooling** is crucial to many machine processes. Set up Tooling to define its maintenance, method of use, cost, and so on. The TRAVERSE manufacturing applications do not track Tooling use or maintenance, but the Tooling you assign for each machine appears on relevant reports and inquiries to help you properly set up machinery.

To set up **Tooling**, follow these steps:

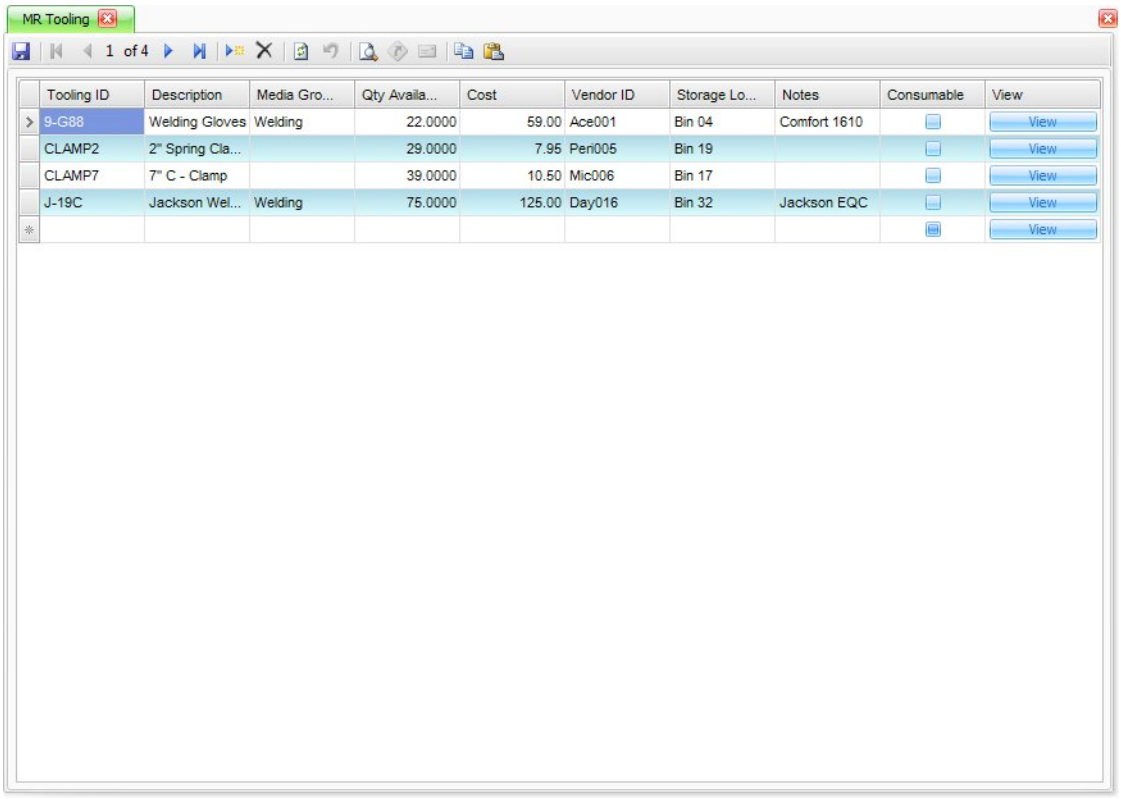
1. Select **Tooling** from the **Setup and Maintenance** menu.

## Tooling Menu



2. The **Tooling** screen appears.

## Tooling Screen




3. Enter a **Tooling ID** for the tool you are adding and a brief **Description**.

Maint

4. Enter the **Media Group ID** of the Media Group documents associated with this Tooling, if applicable.
5. In the **Qty Available** text box, enter how many of the Tooling Item are currently available.
6. Enter the cost of the Tooling Item in the **Cost** field. This would be the cost you paid to purchase the tool.

Maint

7. If a Vendor supplies this Tooling Item, select that **Vendor's ID** from the drop down list.
8. Enter the **Storage Bin** location or bin number where the Tooling Item is kept.

**NOTE: This field is not associated with the Inventory or Warehouse Management application.**

9. Use the **Notes** box to enter any other information such as special instructions for the Tooling Item or a more specific description.
10. Select whether or not the item is **Consumable**. For example, a drill bit, a mold, a saw blade, a cutting disk are consumable because they wear out as they are used.
11. Click the **View** button to view the primary media file associated with the Tooling Item, if a Media Group is assigned.

## Producing a Tooling List

To produce a **Tooling List**, follow these steps:

1. Select the Print Preview button  to preview the schedule report for the Toolings you have set up.
2. The **Preview Report** screen appears.
3. Select the **Print** button  in the toolbar to print your list.

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

## Tooling List

**Continental Products Unlimited**
**MR Tooling**

**Page 1**

| Tooling ID | Description | Media Group ID | Qty Available | Cost | Vendor ID | Storage Location | Notes | Consumable | View |
|---|---|---|---|---|---|---|---|---|---|
| 9-G88 | Welding Gloves | Welding | 22.0000 | 59.00 | Ace001 | Bin 04 | Comfort 1610 | ☐ | |
| CLAMP2 | 2" Spring Clamps | | 29.0000 | 7.95 | Per005 | Bin 19 | | ☐ | |
| CLAMP7 | 7" C - Clamp | | 39.0000 | 10.50 | Mic006 | Bin 17 | | ☐ | |
| J-19C | Jackson Welding H | Welding | 75.0000 | 125.00 | Day016 | Bin 32 | Jackson EQC | ☐ | |

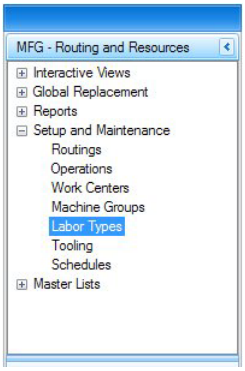
# LABOR TYPES

Labor is an important factor in many manufacturing processes. **Labor Types** define the skill level or grade that can be applied to specific processes. Associated with the Labor Type is a rate by the piece or by the hour. You can assign multiple Employees to a specific Labor Type, and you can assign specific Employees to multiple Labor Types. You can assign Labor Types to Operations to calculate the labor costs involved.

To set up **Labor Types**, follow these steps:

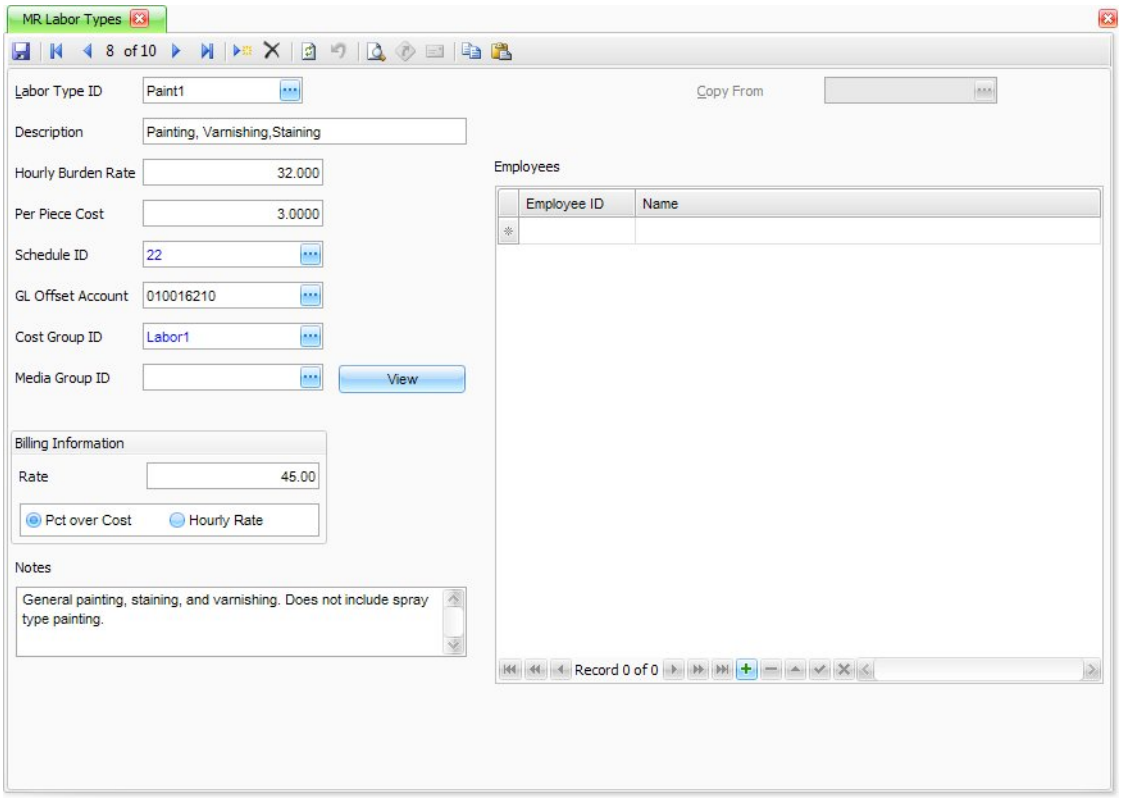
1. Select **Labor Types** from the **Setup and Maintenance** menu.

## Labor Types Menu



2. The **Labor Types** screen appears.

## Labor Types Screen




3. Move the cursor to the **Labor Type ID** field and click the **New Record** button on the toolbar. A blank Labor Types screen appears. Enter a Labor Type ID.
4. Enter a **Description** of the Labor Type.
5. When you set up a Labor Type for the first time, you can copy information from an existing Labor Type to save time if the Labor Types are similar.

   To do so, select an existing Labor Type from the **Copy From** field. Information from the existing Labor Type appears.
6. Enter an **Hourly Burden Rate** per hour. This cost is multiplied by the actual or estimated time to determine the total labor cost.
7. Enter the **Per Piece Cost**. This cost is multiplied by the actual or estimated number of pieces required to be built and to determine the total labor cost.

Maint

8. Enter the **Schedule ID** of the Schedule that best represents the Labor Type's availability. You can set up a unique Schedule for each Labor Type, or you can set up a general Schedule that uses all Labor Types, Machine Groups, and work Center loads throughout your company.

9. If Routing and Resources interfaces with General Ledger, enter the **GL Offset Account** to credit as an offset in conjunction with any labor costs calculated by this Labor Type. As labor costs accrue, they are posted to WIP and eventually that WIP is posted to General Ledger as a debit to finished goods. These costs are saved into Inventory as finished goods are produced and that activity is posted. The offsetting entry is credited to this GL Offset Account, which serves as an offset against normal Payroll expense accounts.

Maint

10. Select the **Cost Group ID** to which you want to assign the Labor Type. Cost Groups enable you to break down costs in any way you choose. When you view the Cost section on the Bills of Material screen, all costs for the Bill of Material are summarized by Cost Group. You can assign all cost areas to the same Cost Group, break down costs into Labor, Machine, Overhead, and Material types.

Maint

11. Enter the **Media Group ID** of the Media Group documents associated with this Labor Type. Click the **View** button to view the primary media file.

    Media Groups are set up using the Manufacturing Bill of Material application.

12. Enter the **Billing Information Rate** as a **Pct over Cost** or a **Hourly Rate**. The Billing Rate is for your information only and is not currently used by the Production module.

    Select whether you want to calculate the Billing Rate by using the rate you entered above as a percentage over the calculated cost or strictly as an hourly rate.

13. Enter any additional **Notes**, warnings, or instructions relevant to this Labor Type.

Maint

14. Use the **Employees** area to list which **Employee IDs** have the skill level to work as this Labor Type. No costing or other information is derived from it.

    The Employees listed in the search box will be from either Payroll or System Manager Employee setup. The source of the Employee IDs will depend on whether Routing and Resources is interfaced to Payroll.

## Producing a Labor Types List

The **Labor Types** Master List displays all the fields of the current Labor Types master records.

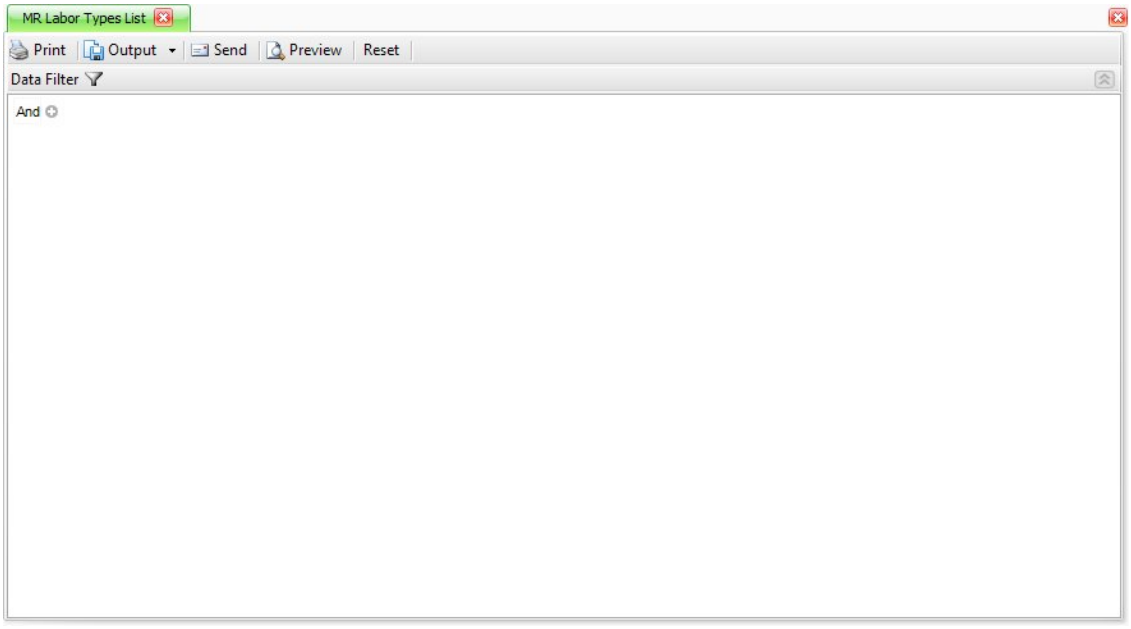
To produce a **Labor Types List**, follow these steps:

1. Select **Labor Types List** from the **Master Lists** menu.

### Labor Types List Menu


2. The **Labor Types List** screen appears.

### Labor Types List Screen




3. Use the **Data Filter** to select the range of filtering options, or leave the filter blank to include all available data.

4. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **Reset** | Set all fields to their defaults. |
| **Preview** | Preview the report on your monitor. |
| **Output** | Output the report as a .pdf file and save it. |
| **Send** | Email the report with the report attached as a .pdf file. |
| **Print** | Print the report. |

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

# Labor Types List Report

Continental Products Unlimited — Page 1
Labor Types List

Report Filter

| Labor Type ID / Description / Notes | Hourly Rate / Per Piece Cost | Schedule ID / GL Offset Acct | Media Group ID / Cost Group ID | Billing Method / Billing Rate |
|---|---|---|---|---|
| ASSEMBLY7 | 13.000 | 11 | | Pct over Cost |
| General Light Assembly | 0.0000 | 00-000-1310 | Labor1 | 20.00 |
| 0 | | | | |
| GENASMB7 | 0.000 | 11 | | Pct over Cost |
| General Light Assembly 1 | 2.5000 | 00-000-1300 | Labor2 | 0.00 |
| GENWOOD7 | 30.000 | 11 | | Pct over Cost |
| General Woodworking 1 | 0.0000 | 00-000-1520 | Labor1 | 0.00 |
| GLU17 | 20.000 | 11 | | Pct over Cost |
| Gluing and Sealing | 0.0000 | 00-000-1500 | Labor2 | 0.00 |
| MACHSHOP7 | 22.000 | 11 | | Pct over Cost |
| Machine Shop Labor 1 | 0.0000 | 00-000-1510 | Labor1 | 0.00 |
| Notching | 2.440 | 11 | | Pct over Cost |
| Notching Wood Products | 0.0300 | 00-000-1210 | Labor2 | 0.00 |
| NOT-USED | 0.000 | 11 | | Pct over Cost |
| Labor Not Applicable | 0.0000 | 01-001-6210 | None | 0.00 |
| Paint1 | 32.000 | 22 | | Pct over Cost |
| Painting, Varnishing,Staining | 3.0000 | 01-001-6210 | Labor1 | 45.00 |
| General painting, staining, and varnishing. Does not include spray type painting. | | | | |
| PNTG7 | 24.000 | 11 | | Pct over Cost |
| Painting Related | 0.0000 | 00-000-1310 | Labor1 | 0.00 |
| WELD7 | 42.000 | 11 | | Pct over Cost |
| Welding Related | 0.0000 | 00-000-1310 | Labor2 | 0.00 |

4/1/2013 2:13 PM *** End of Report *** OPEN_SYSTEMS\KenHe

# MACHINE GROUPS

Use of machines is a key element in profitable manufacturing, and machine costs can represent a significant portion of manufacturing process costs. **Machine Groups** can represent a single machine or an entire bank of machines. If the cost factors differ significantly from machine to machine, or the materials processed vary from machine to machine, you may want to define each machine with its own Machine Group ID. Group machines by their basic function and cost factors. Like labor, you can assign Machine Groups a Schedule, hourly costs, and so on. You assign Machine Groups to Operations to establish a machine-related cost.

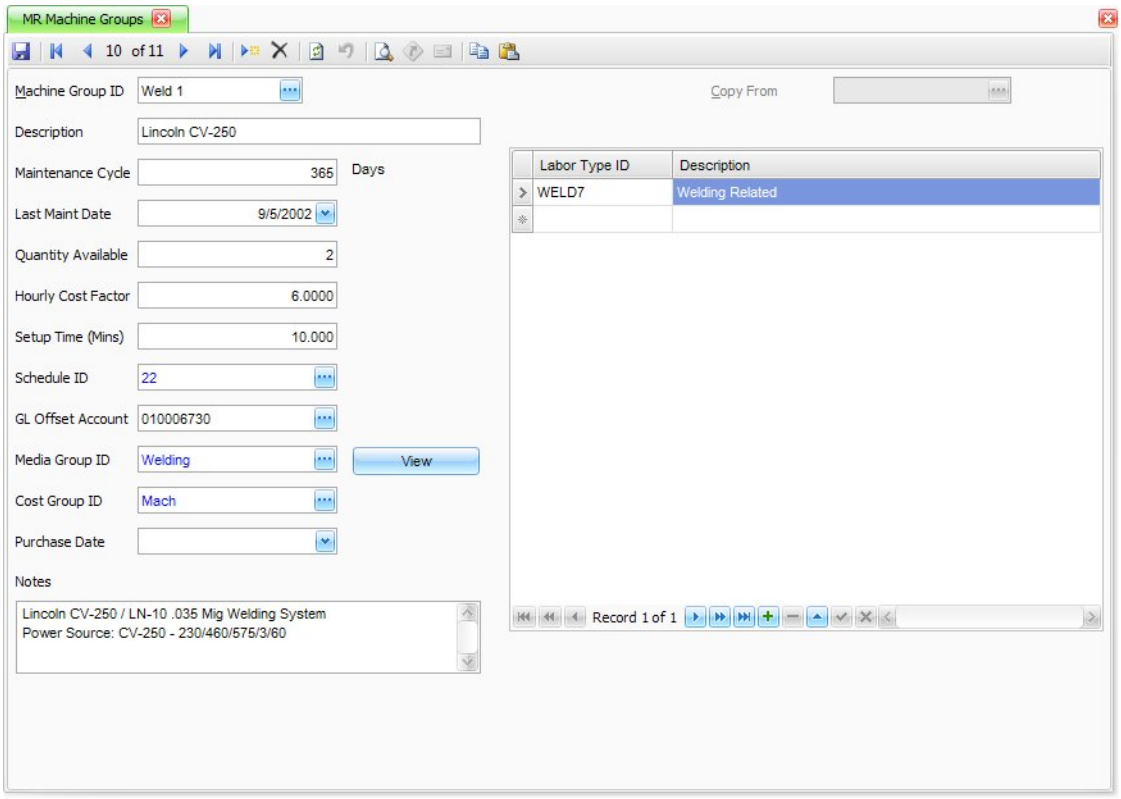
To set up **Machine Groups**, follow these steps:

1. Select **Machine Groups** from the **Setup and Maintenance** menu.

## Machine Groups Menu

2. The **Machine Groups** screen appears.

## Machine Groups Screen




3. Move the cursor to the **Machine Group ID** box and click the **New Record** button on the toolbar. A blank Machine Group screen appears.
4. Enter a **Description** of the Machine Group.
5. When you set up a Machine Group for the first time, you can copy information from an existing Machine Group to save time if the Machine Groups are similar.

   To do so, select an existing Machine Group from the **Copy From** field. Information from the existing Machine Group appears.
6. Enter the number of days in the **Maintenance Cycle**. If you leave this field blank or set it to zero, the system assumes this Machine Group is not on any sort of maintenance cycle, meaning you cannot selectively print machines due for maintenance on the Machine Groups Master List.

7. Enter the last date the machine received maintenance. When you print the Machine Group Master List, you can pick all machines that are past their maintenance date based on the information in **Last Maint Date** and the Maintenance Cycle boxes.

8. Enter the **Quantity Available** of machines in this Machine Group. This field is for your information only.

9. Enter the **Hourly Cost Factor** as a cost per hour. This cost is multiplied by the actual or estimated time to determine the total machine cost.

10. Enter the **Setup Time** as a number of minutes required to set the machine up. This number is used as a default when you use the Machine Group in an Operation or BOM.

    For many machinery types, the Setup Time varies depending on what the machine is being set up to do. In those cases, you may not want to use this field or change the time when using the machine in a Routing Step, Operation, or in a BOM.

Maint

11. Enter the **Schedule ID** of the Schedule that best represents the Machine Group's availability. You can set up a unique Schedule for each Machine Group, or you can set up a general schedule that uses all Labor Types, Machine Groups, and Work Center loads throughout your company.

12. If Routing and Resources interfaces with General Ledger, enter the **GL Offset Account** to credit, as an offset in conjunction with any machine costs calculated by this Machine Group. As machine related costs accrue, they are posted to General Ledger as a debit to WIP. These costs are saved into Inventory as finished goods are produced and that activity is posted.

Maint

13. Enter the **Media Group ID** of the Media Group of documents associated with this Machine Group. Click the **View** button to view the primary media file.

Maint

14. Select the **Cost Group ID** of the Cost Group to which you want to assign the Machine Group. Cost Groups enable you to break down costs in any way you choose. When you view the Costs area on the Bills of Material screen, all costs for the Bill of Material are summarized by Cost Group. You can assign all cost areas to the same Cost Group, break down costs into labor, machine, overhead, and materials types.

15. Enter the **Purchase Date**. This would be the date you purchased this machine or group of machines.

16. Enter any additional **Notes**, warnings, or instructions relevant to this labor type.

Maint

17. Use this area to list the **Labor Types** and skill levels required to use the Machine Group. No costing or other information is derived from this list.

## Producing a Machine Groups List

The **Machine Groups** Master List prints a list of current Machine Groups. The report has a unique feature that allows you to print machines that have fallen behind on their maintenance schedule, provided the Last Maintenance Date has been entered in the Machine Group record. The system looks at the machine's last maintenance date and based on today's date, the Based on Date, previously called Maintenance Cutoff Date, it checks to see if the days that have passed is greater than the machine's Maintenance Cycle number of days. In other words, if the machine was maintained on 3/1/2017 and today's date is 06/01/2017 and the Maintenance Cycle is 120 days, we are OK, but if the machine's Maintenance Cycle is only 60 days, the machine should be checked again.

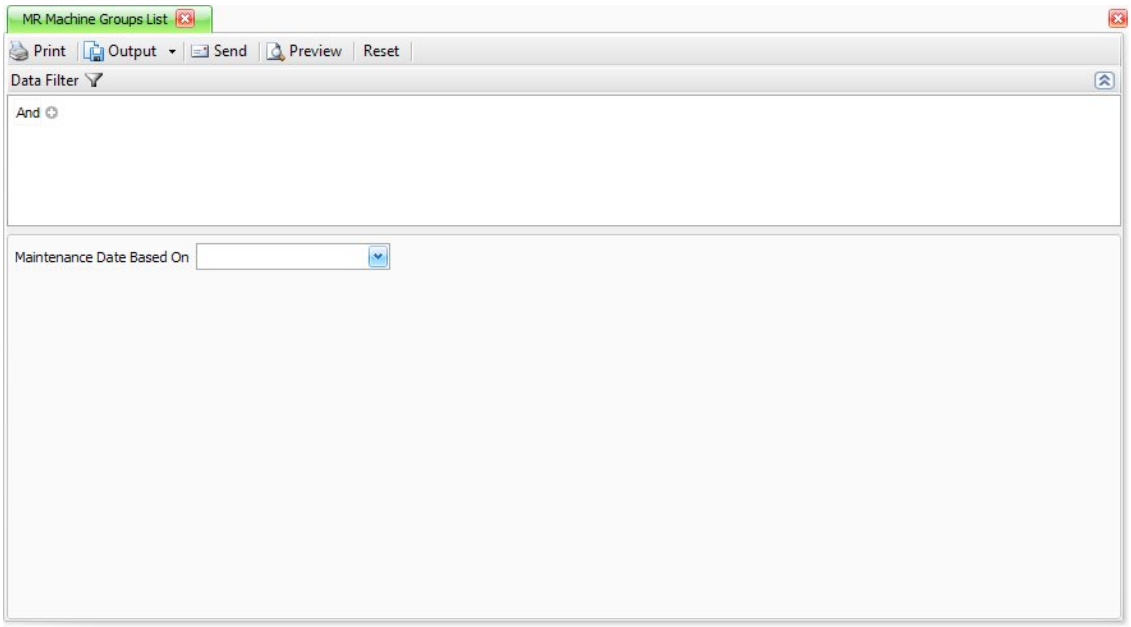
To produce a **Machine Groups List**, follow these steps:

1. Select **Machine Groups List** from the **Master Lists** menu.

### Machine Groups List Menu

2. The **Machine Groups List** screen appears.

### Machine Groups List Screen




3. Use the **Data Filter** to select the range of filtering options, or leave the filter blank to include all available data.
4. Enter the **Maintenance Date Based On** date to base your next scheduled maintenance on this date. Leave it blank to use today's date.
5. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **Reset** | Set all fields to their defaults. |
| **Preview** | Preview the report on your monitor. |
| **Output** | Output the report as a .pdf file and save it. |
| **Send** | Email the report with the report attached as a .pdf file. |

| Name | Description |
|---|---|
| **Print** | Print the report. |

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

## Machine Groups List Report

**Continental Products Unlimited**
**Machine Groups List**



**Report Filter**
**Maintenance Date Based On**

| Machine Group ID / Description / Notes | Maint Cycle | Qty Avail | Hrly Cost Factor / Setup Time (Mins) | Schedule ID / GL Offset Acct | Cost Group ID / Media Group ID | Maint Date / Purchase Date |
|---|---|---|---|---|---|---|
| BEND07 | 1 | 1 | 7.0000 | 11 | Mach | |
| Y-73 Tk Press Brake | | | 0.000 | 00-000-1520 | PressBrake | 8/25/1995 |
| BOOTH7 | 1 | 1 | 3.0000 | 11 | Mach2 | |
| Paint Drying Booth 7 | | | 0.000 | 00-000-1700 | Storage | |
| BRK07 | 1 | 1 | 7.0000 | 11 | Mach2 | |
| Industrial Press Brake Niag. | | | 0.000 | 00-000-1210 | | |
| DRLPRESS7 | 1 | 1 | 4.5000 | 11 | Mach2 | |
| Drill Press 1 | | | 10.000 | 00-000-1500 | DrillPress | |
| DRY7 | 1 | 1 | 0.0000 | 11 | Mach | |
| Painting Unit 7 | | | 0.000 | 01-001-6510 | | |
| GRINDER07 | 1 | 1 | 1.4000 | 11 | Mach2 | |
| Delta 23-725 Industrial Grndr | | | 0.000 | 00-000-1540 | Grinders | |
| NOT-USED | 1 | 1 | 0.0000 | 11 | None | |
| Machine Group Not Applicable | | | 0.000 | 01-001-6510 | | |
| SAW07 | 1 | 1 | 3.0000 | 11 | Mach | |
| Ellvon Band Saw | | | 0.000 | 00-000-1210 | | |
| TABLE7 | 1 | 1 | 0.0000 | 11 | Mach2 | |
| Work Tables Area | | | 0.000 | 00-000-1000 | | |
| Weld 1 | 365 | 2 | 6.0000 | 22 | Mach | 9/5/2002 |
| Lincoln CV-250 | | | 10.000 | 01-000-6730 | Welding | |
| Lincoln CV-250 / LN-10 .035 Mig Welding System<br>Power Source: CV-250 - 230/460/575/3/60 | | | | | | |
| **Labor Type ID** / **Description**<br>WELD7 / Welding Related | | | | | | |
| WELDINGM7 | 1 | 1 | 12.0000 | 11 | Mach | |
| Hobart 135 Welder | | | 0.000 | 00-000-1540 | Welding | |

# WORK CENTERS

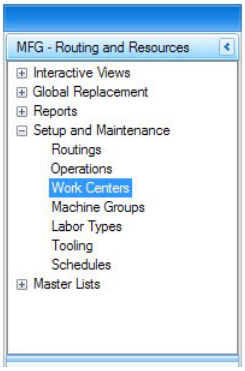
Use the **Work Centers** function to define where work takes place and to set up overhead rates, methodology, and GL Accounts. The Work Centers function includes a field for a Schedule that is used to calculate capacity and load by Work Center.

Within the TRAVERSE Manufacturing modules, more emphasis is placed on Operations than on Work Centers, but Work Centers play an important part in managing labor and machine resources. Work Centers are assigned to Operations to indicate where the work takes place or what the overhead factors should be for that Operation.

To set up **Work Centers**, follow these steps:

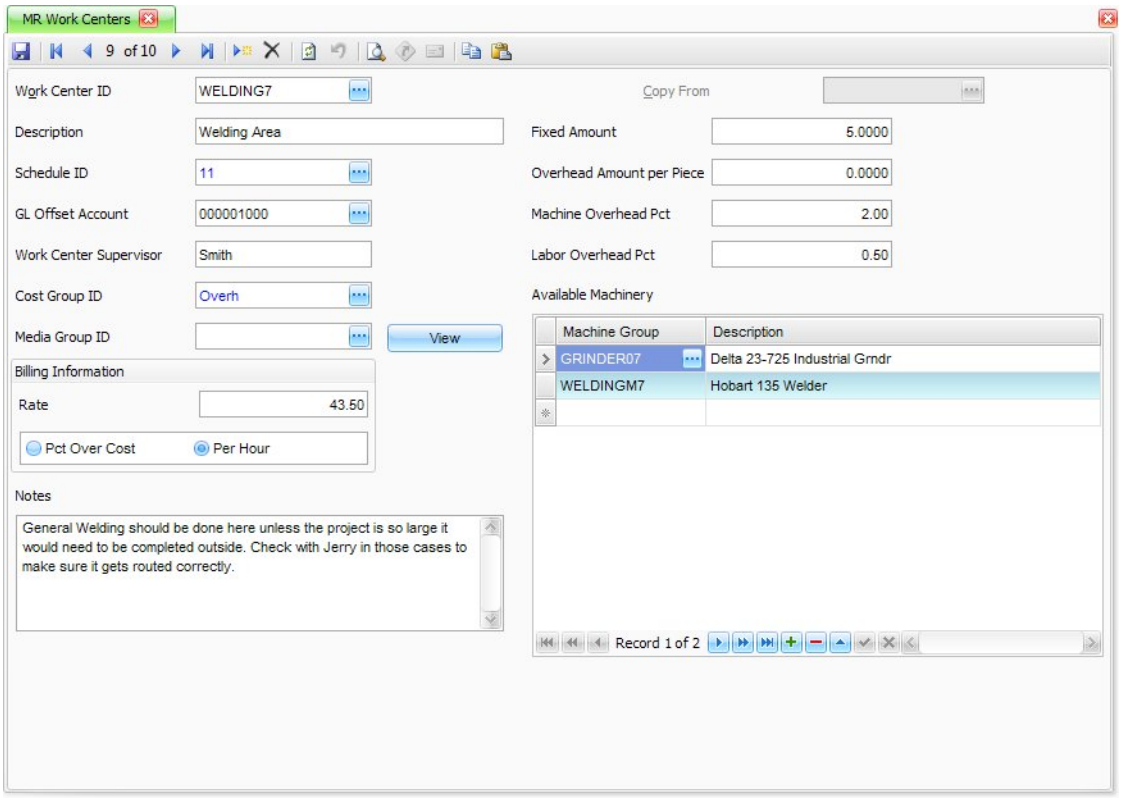
1. Select **Work Centers** from the **Setup and Maintenance** menu.

## Work Centers Menu



2. The **Work Centers** screen appears.

## Work Centers Screen




3. Move the cursor to the **Work Center ID** box and click the **New Record** button on the toolbar. A blank Work Centers screen appears.
4. Enter a **Description** of the Work Center.
5. When you set up a Work Center for the first time, you can copy information from an existing Work Center to save time if the Work Centers are similar.

   To do so, select an existing Work Center from the **Copy From** field. Information from the existing Work Center appears.

Maint

6. Enter the **Schedule ID** of the Schedule that best represents the Work Center's availability. You can set up a unique Schedule for each Work Center, or you can set up a general schedule that uses all Labor Types, Machine Groups, and Work Center loads throughout your company.

7. If Routing and Resources interfaces with General Ledger, enter the **GL Offset Account** to credit as an offset in conjunction with any accrued overhead calculated by this Work Center. As overhead costs accrue, they are posted to General Ledger as a debit to WIP as the Assembly is produced. The offsetting entry is credited to an Account that serves as an offset against your normal Overhead or Operating Expenses Accounts.

8. Enter the name of the **Work Center Supervisor** for this Work Center. This field is for your information only.

Maint

9. Select the **Cost Group ID** of the Cost Group to which you want to assign the Work Center. Cost Groups enable you to break down costs in any way you choose. When you view the Cost area on the Bills of Material screen, all costs for the Bill of Material are summarized by Cost Group. You can assign all cost areas to the same Cost Group, break down costs into labor, machine, overhead, and materials types.

Maint

10. Enter the **Media Group ID** of the Media Group of documents associated with this Work Center. Click the **View** button to view the primary media file.

11. Enter the **Billing Information Rate** as a percentage or a rate per hour. The billing rate is for your information only and is not currently used by the Production module.

    Select whether you want to calculate the billing rate by using the rate you entered above as a **Pct over Cost** of the calculated cost or strictly a **Per Hour** rate.

12. Enter any additional **Notes**, warnings, instructions that may be relevant to this work center.

13. The **Fixed Amount** field works with the Overhead Amount per Piece, Machine Overhead Pct, and Labor Overhead Pct fields to establish an overhead cost or rate for BOMs or Routing steps that use the Work Center. All fields are optional and any combination is allowed. All costs are calculated individually and then added together to attain a total overhead cost for any Routing Step or process to which the Work Center is assigned. The overhead for any given process or Routing Step could be any combination of these four cost areas.

    Enter a fixed amount for any production order involving the Work Center. This amount is generally divided by the total production quantity to attain a per piece cost. For estimating purposes, the lot size is considered the production quantity.

**NOTE: If you have several Routing Steps and have indicated a Work Center for each one, all of the fixed amount costs are added together.**

**Example: If you assign $50.00 as the Fixed Amount and have three Routing Steps in the BOM using the same Work Center, you incur $150.00 worth of expense.**

**NOTE: This amount is added into each Routing Step that references the associated Work Center when calculating overhead. This may not be an appropriate method if you use the Work Center in multiple operations.**

14. The **Overhead Amount per Piece** field works with the Fixed Amount, Machine Overhead Pct, and Labor Overhead Pct fields to establish an overhead cost or rate for BOMs or routing steps that use the Work Center.

    Enter a specific dollar amount per piece to be calculated as overhead.

**NOTE: This amount is added into each routing step that references the associated work center when calculating overhead. This may not be an appropriate method if you use the Work Center in multiple Operations.**

15. The **Machine Overhead Pct** field works with the Fixed Amount, Overhead Amount per Piece, and Labor Overhead Pct fields to establish an overhead cost or rate for BOMs or Routing Steps that use the Work Center.

    Enter a percentage. A one percent overhead factor is entered as 1.00. After the machine costs related to a given Routing Step are calculated, the machine cost is multiplied by this percentage to attain this portion of the overhead.

16. The **Labor Overhead Pct** field works with the Fixed Amount, Overhead Amount per Piece, and Machine Overhead Pct fields to establish an overhead cost or rate for BOMs or Routing Steps that use the Work Center.

    Enter a percentage. A one percent overhead factor is entered as 1.00. After the labor costs related to a given routing step are calculated, the labor cost is then multiplied by this percentage to attain this portion of the overhead.

Maint

17. Use the **Machine Group** area to list which machines are associated with the Work Center. No costing or other information is derived from them.

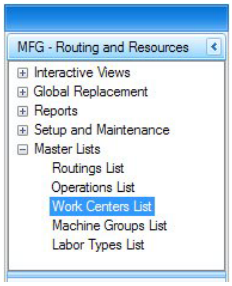
## Producing a Work Centers List

The **Work Centers** Master List displays all the fields of the current Work Center master records.

To produce a **Work Centers List**, follow these steps:

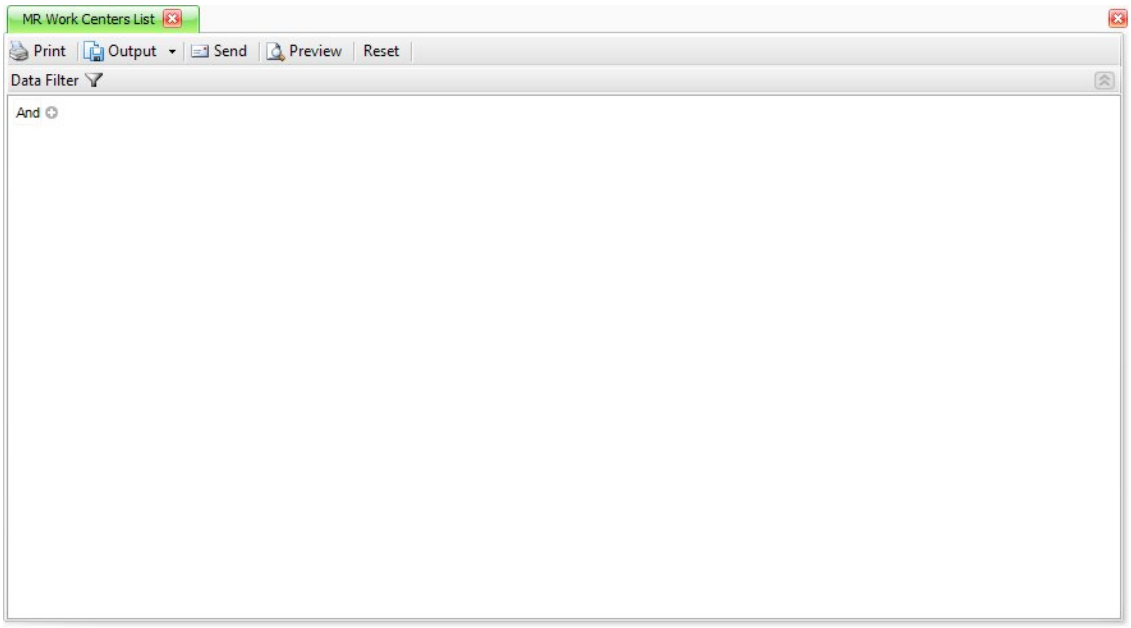
1. Select **Work Centers List** from the **Master Lists** menu.

### Work Centers List Menu




2. The **Work Centers List** screen appears.

### Work Centers List Screen



3. Use the **Data Filter** to select the range of filtering options, or leave the filter blank to include all available data.
4. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **Reset** | Set all fields to their defaults. |
| **Preview** | Preview the report on your monitor. |
| **Output** | Output the report as a .pdf file and save it. |
| **Send** | Email the report with the report attached as a .pdf file. |
| **Print** | Print the report. |

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

# Work Centers List Report

**Continental Products Unlimited**
**Work Centers List**



**Report Filter**

| Work Center ID / Description | Media Group ID | Schedule ID / GL Acct | Supervisor / Cost Group ID | Billing Rate / Billing Method | Overheads: Labor Percent / Fixed Amount | Overheads: Amount Per Piece / Machine Percent |
|---|---|---|---|---|---|---|
| BOOTH7 | | 11 | | 0.0000 | 0.00 | 0.0000 |
| Paint Booth 7 | | 00-000-6510 | Overh | Pct over Cost | 0.0000 | 0.00 |
| FINAL7 | | 11 | | 0.0000 | 0.00 | 0.0000 |
| Final Assembly Area | | 00-000-1120 | Overh | Pct over Cost | 0.0000 | 0.00 |
| GEN007 | | 11 | | 0.0000 | 0.00 | 0.0000 |
| Main Shop Floor | | 00-000-6500 | Overh | Pct over Cost | 0.0000 | 0.00 |
| METALS7 | | 11 | | 0.0000 | 0.00 | 0.0000 |
| Metal processing | | 00-000-6510 | Overh | Pct over Cost | 0.0000 | 0.00 |
| NOT-USED | | | | 0.0000 | 0.00 | 0.0000 |
| Work Center Not Applicable. | | 00-000-1210 | None | Pct over Cost | 0.0000 | 0.00 |
| PAINT7 | | 11 | | 0.0000 | 0.00 | 0.0000 |
| Painting | | 00-000-6510 | Overh | Pct over Cost | 0.0000 | 0.00 |
| VENTED7 | | 11 | | 0.0000 | 0.00 | 1.5000 |
| Ventilated Drying Area 7 | | 00-000-1210 | Overh | Pct over Cost | 20.0000 | 0.00 |
| WDWRK7 | | 11 | | 0.0000 | 0.00 | 0.0000 |
| General Woodworking | | 00-000-6510 | Overh | Pct over Cost | 0.0000 | 0.00 |
| WELDING7 | | 11 | Smith | 43.5000 | 0.50 | 0.0000 |
| Welding Area | | 00-000-1000 | Overh | Hourly Rate | 5.0000 | 2.00 |

General Welding should be done here unless the project is so large it would need to be completed outside. Check with Jerry in those cases to make sure it gets routed correctly.

| Machine Group ID | Description |
|---|---|
| GRINDER07 | Delta 23-725 Industrial Grndr |
| WELDINGM7 | Hobart 135 Welder |

| | | | | | | |
|---|---|---|---|---|---|---|
| WOODWORK7 | | 11 | | 0.0000 | 0.00 | 0.0000 |
| General Woodworking | | 00-000-6510 | Overh | Pct over Cost | 0.0000 | 0.00 |

# OPERATIONS

Use the **Operations** function to define the Operation process by pulling the Tooling, Machine Group, Labor Type, and Work Center together. Drilling, painting, mixing, and packaging all describe typical internal Operations. If the Operation is internal, you can define the various related times involved in manufacturing. Within this function, you can define Queue Time, Setup Time, Run Time, Wait Time, and Move Time in terms of Hours, Minutes, and Seconds. You can also use this function to set up a Subcontracted Operation.

**NOTE: Using the Production module, you can track actual setup and run times.**

There are two approaches to setting up internal Operations. One method is to create very few Operations and use them for a broad range of needs, resulting in a limited number of generic Operations used for all processes, which makes the setup of Operations much simpler and quicker. The other method is to create detailed Operations, which makes each Operation slightly different and more specifically addresses each unique Operation within your environment.

There are four types of Operations;

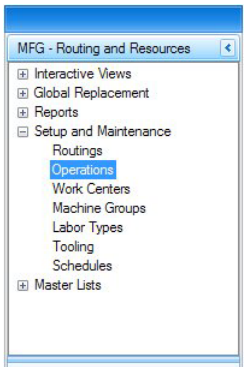
- **Per Unit** - Time is stated in the number of seconds, minutes, or hours to produce 1 unit. Example: 45 Seconds. This is the traditional way we've done it in the past.
- **Run Rate** - Time is not stated but selected as Seconds, Minutes, or Hours. The user enters the Quantity in the first field, not the time. Example 900 Units per Hour.
- **Batch** - Time is stated in terms of what it takes to process a Batch. Batch size is stated in the Max Batch Qty field. Example 4 hours to produce 5000 kilos. This would say it will take 4 hours to process 5000 kilos and, of course, 5000 would be set up in the Max Batch Qty. Setup is still setup, if setup says 1 hour, it's the time to set up each batch so you would add it to the time, thus, in this case it would actually take 5 hours to process 5000 kilos.
- **Subcontracted** - Operations are Operations done outside the plant by someone else. You define lead times, rather than run or setup times for Subcontracted Operations.

Each is shown it a separate section below.

To set up **Operations**, follow these steps:

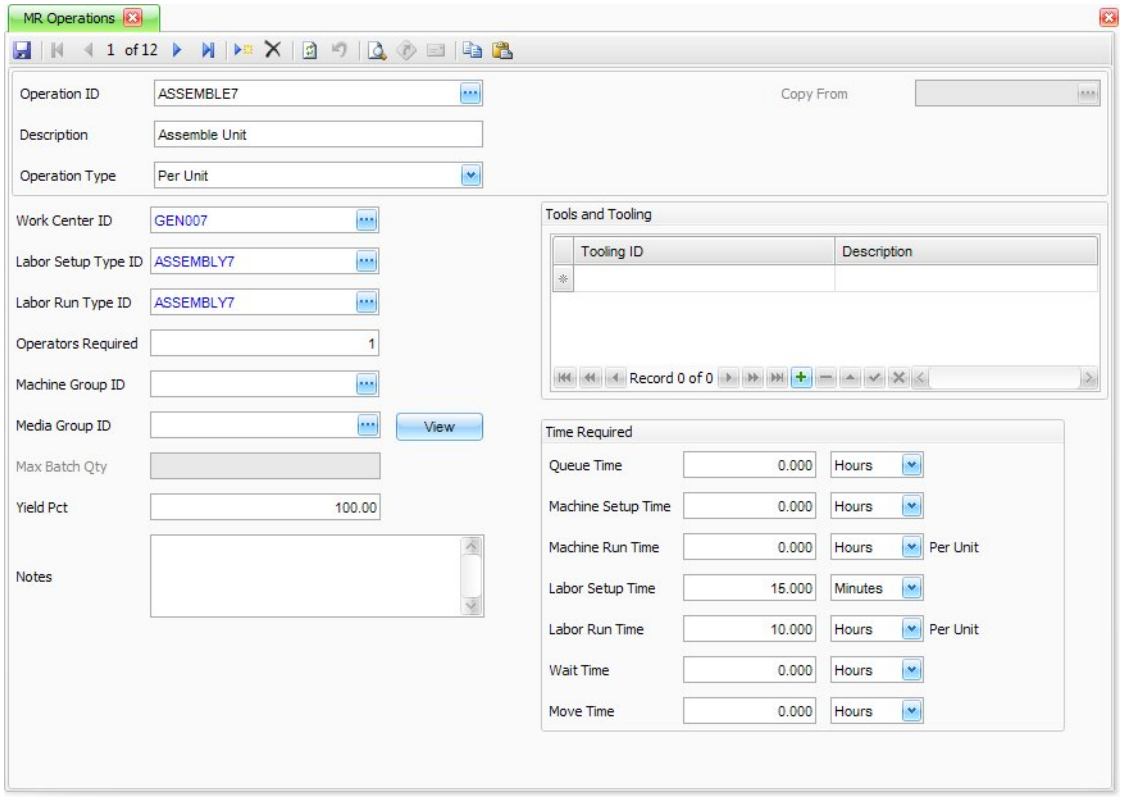
1. Select **Operations** from the **Setup and Maintenance** menu.

## Operations Menu



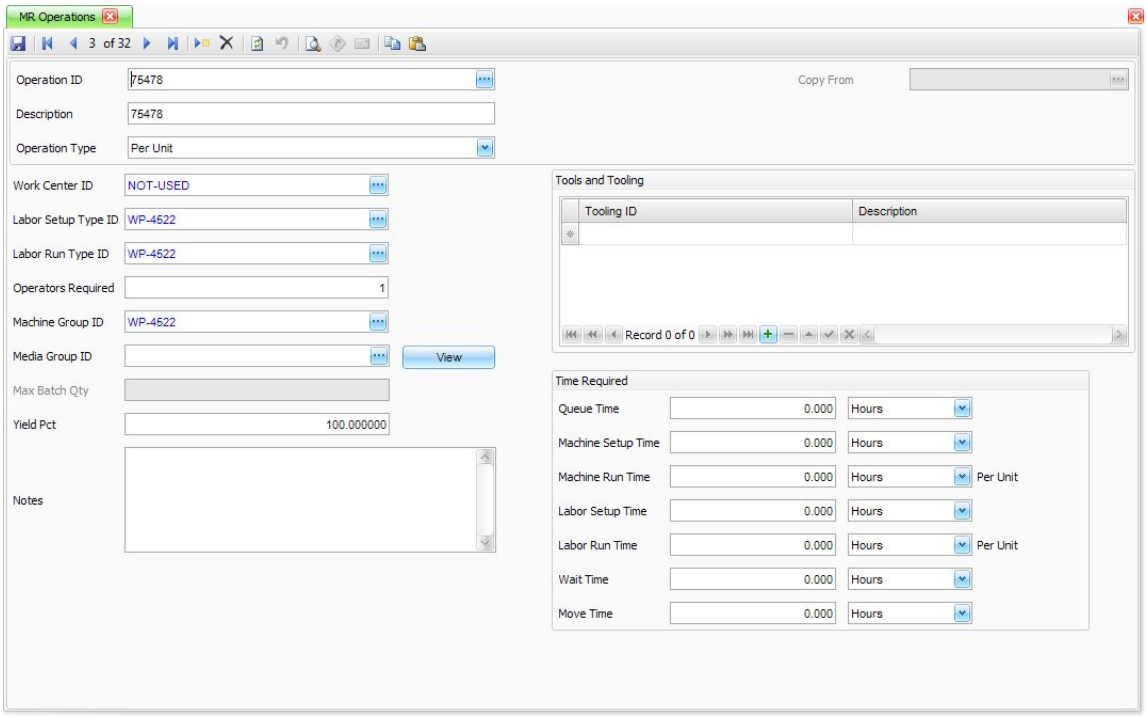
2. The **Operations** screen appears.

## Operations Screen



## Per Unit Type Operation

### Per Unit Operation Screen




1. Move the cursor to the **Operation ID** box and click the **New Record** button on the toolbar. A blank Operations screen appears.
2. When you set up an Operation for the first time, you can copy information from an existing Operation to save time if the Operations are similar.

   To do so, select an existing Operation from the **Copy From** field. Information from the existing Operation populates the screen.
3. Enter a description for the Operation into the **Description** field.
4. Select the **Operation Type**: For this type of operation the Operation Type should be set to **Per Unit**. These are generally processes with relatively low quantities and process time of over a minute.

Maint

5. Select the **Work Center ID**: The Work Center ID defines the Work Center where the work is to take place and the overhead rate for that given Work Center via the Work Center master. This field can be changed later, in the Bill of Material, if this Operation is inserted into a Bill of Materials.

Maint

6. Select the **Labor Setup Type**: The Labor Setup Type defines the labor skill required for the setup of this Operation. This field can be changed later, in the Bill of Material, if this Operation is inserted into a Bill of Materials.

Maint

7. Select the **Labor Run Type**: The Labor Run Type defines the labor skill required to run this Operation. This field can be changed later, in the Bill of Material, if this Operation is inserted into a Bill of Materials.

8. Enter the number of **Operators Required** to run the Machine Group for the run to be processed.

Maint

9. Select the **Machine Group**: The Machine Group identifies the machine required for this process. It is an optional field. This field can be changed later, in the Bill of Material, if this Operation is inserted into a Bill of Materials.

Maint

10. Select the **Media Group**: The Media Group identifies the group of documents to be associated with this process. This is an optional field.

11. Enter the **Yield Pct**: The yield percentage indicates the efficiency of this process.

12. Enter **Notes**: The Notes field is an unlimited length field in which Notes specific to this process can be entered. These Notes pass through to the Bills of Material, and later appear on the Production Order Worksheets.

Maint

13. In the **Tools and Tooling** box, select the **Tooling ID**s needed to process this Operation. The description of the Tooling ID is displayed.

14. Enter the **Queue Time**: The Queue Time is the time we generally wait for the process to become available. It is not part of the BOM cost algorithm and is more or less an extra buffer time.

15. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

16. Enter the **Machine Setup Time**: The Machine Setup Time is the time required to setup the machine up to run.

17. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

18. Enter the **Machine Run Rate**: The Machine Run Rate is the time required to process one piece or unit. For example; the CAD machine can drill and tap one unit in 7 minutes.

19. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

20. Enter the **Labor Setup Time**: The Labor Setup Time is the labor required to set up the process.

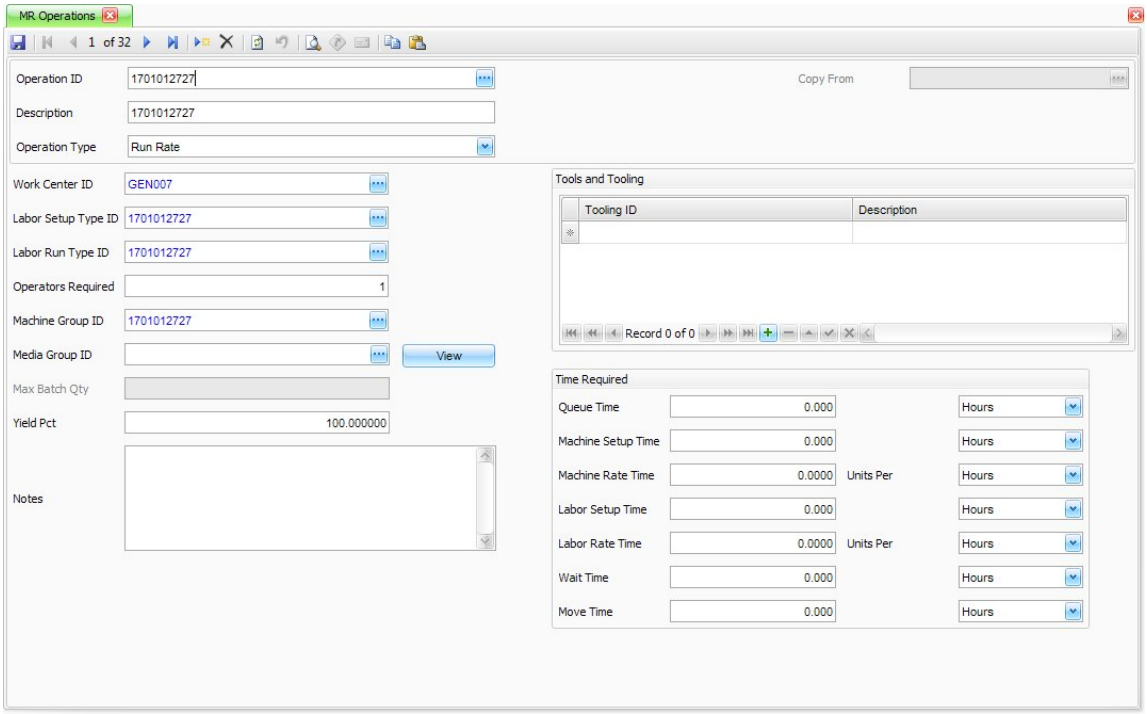
21. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

22. Enter the **Labor Run Rate**: The Labor Run Rate is the time required to process one piece or unit. For example; Bob can encase and package a unit in 5 minutes.

23. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.
24. Enter the **Wait Time**: The Wait Time is the time required for the process to be ready to be used. It may be cooling, drying, solidifying, curing, etc. It is not part of the BOM costing algorithm.
25. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.
26. Enter the **Move Time**: The Move Time is the time required for the materials to be moved to the next step. It is not part of the BOM costing algorithm.
27. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

## Run Rate Type Operation

### Run Rate Type Operation Screen




1. Move the cursor to the **Operation ID** box and click the **New Record** button on the toolbar. A blank Operations screen appears.

2. When you set up an Operation for the first time, you can copy information from an existing Operation to save time if the Operations are similar.

   To do so, select an existing Operation from the **Copy From** field. Information from the existing Operation populates the screen.

3. Select the **Operation Type**: For this type of Operation the Operation Type should be set to **Run Rate**. These are generally very fast high quantity Operations. Many processes could be defined as Per Unit or Run Rate with essentially the same results. Note that many processes could be defined as Per Unit or Run Rate, and although the setup within TRAVERSE would be different, the results would be essentially the same. The advantage of a Run Rate operation is that one need not set the run times to extremely short times in terms of Seconds or Minutes, which can result in rounding problems.

Maint

4. Select the **Work Center ID**: The Work Center ID defines the Work Center where the work is to take place, and the overhead rate for that given Work Center via the Work Center master. This field can be changed later, in the Bill of Material, if this operation is inserted into a Bill of Materials.

Maint

5. Select the **Labor Setup Type**: The Labor Setup Type defines the labor skill required for the setup of this Operation. This field can be changed later, in the Bill of Material, if this operation is inserted into a Bill of Materials.

Maint

6. Select the **Labor Run Type**: The Labor Run Type defines the labor skill required to run this Operation. This field can be changed later, in the Bill of Material, if this operation is inserted into a Bill of Materials.

7. Enter the number of **Operators Required** to run the Machine Group for the run to be processed.

Maint

8. Select the **Machine Group**: The Machine Group identifies the machine required for this process. It is an optional field. This field can be changed later, in the Bill of Material, if this Operation is inserted into a Bill of Materials.

Maint

9. Select the **Media Group**: The Media Group identifies the group of documents to be associated with this process. This is an optional field.

10. Enter the **Yield Pct**: The yield percentage indicates the efficiency of this process.

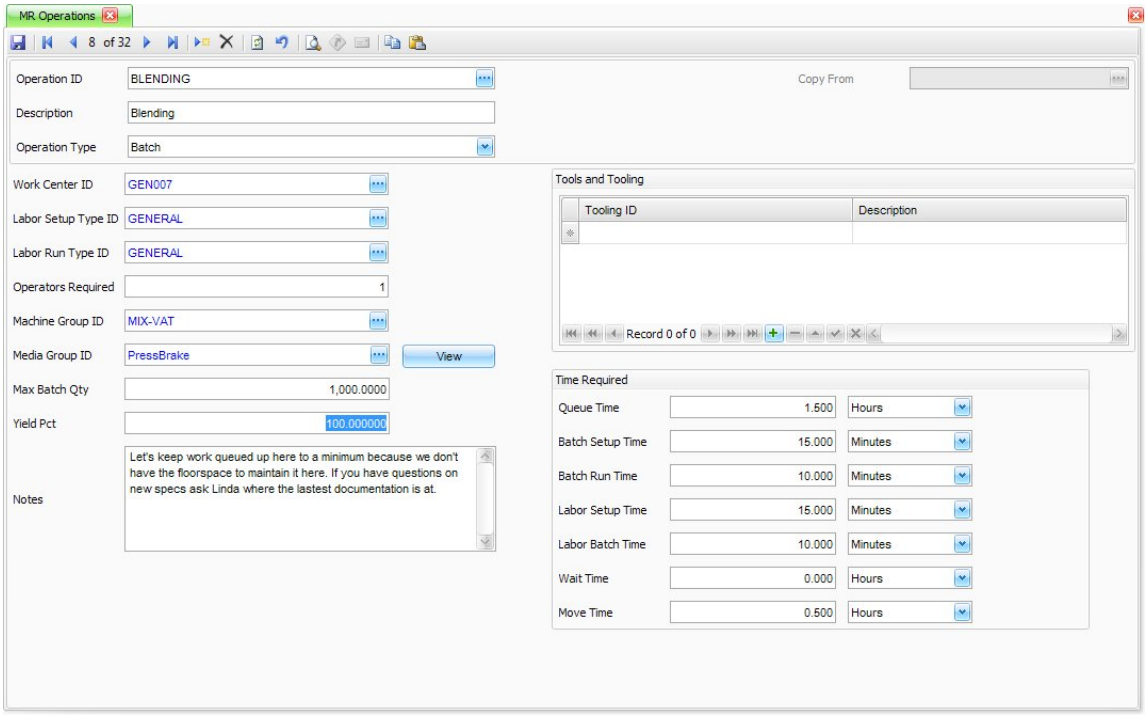
11. Enter **Notes**: The Notes field is an unlimited length field in which Notes specific to this process can be entered. These Notes pass through to the Bills of Material, and later appear on the Production Order Worksheets.

12. In the **Tools and Tooling** box, select the **Tooling ID**s needed to process this Operation. The description of the Tooling ID is displayed.

13. Enter the **Queue Time**: The Queue time is the time we generally wait for the process to become available. It is not part of the BOM cost algorithm and is more or less an extra buffer time.
14. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.
15. Enter the **Machine Setup Time**: The Machine Setup Time is the time required to setup the machine up to run. This process can be costed.
16. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.
17. Enter the **Machine Run Rate**: The Machine Rate is the number of pieces or units that can be run in a given time frame. For example; the label applicator can process 200 bottles per minute.
18. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.
19. Enter the **Labor Setup Time**: The Labor Setup Time is the labor required to set up the process.
20. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.
21. Enter the **Labor Run Rate**: The Labor Rate is the number of pieces or units that can be run for a given time frame. For example; Bob can paint 120 pieces per hour.
22. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.
23. Enter the **Wait Time**: The Wait Time is the time required for the process to be ready to be used. It may be cooling, drying, solidifying, curing, etc. It is not part of the BOM costing algorithm.
24. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.
25. Enter the **Move Time**: The Move Time is the time required for the materials to be moved to the next step. It is not part of the BOM costing algorithm.
26. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

## Batch Type Operation

### Batch Type Operation Screen




1. Move the cursor to the **Operation ID** box and click the **New Record** button on the toolbar. A blank Operations screen appears.
2. When you set up an Operation for the first time, you can copy information from an existing Operation to save time if the Operations are similar.

   To do so, select an existing Operation from the **Copy From** field. Information from the existing Operation populates the screen.
3. Select the **Operation Type**: For this type of Operation the Operation Type should be set to **Batch**. These are generally an Operation that will run a specific number of units per batch.

Maint

4. Select the **Work Center ID**: The Work Center ID defines the Work Center where the work is to take place and the overhead rate for that given Work Center via the Work Center master. This field can be changed later, in the Bill of Material, if this Operation is inserted into a Bill of Materials.

Maint

5. Select the **Labor Setup Type**: The Labor Setup Type defines the labor skill required for the setup of this Operation. This field can be changed later, in the Bill of Material, if this Operation is inserted into a Bill of Materials.

Maint

6. Select the **Labor Run Type**: The Labor Run Type defines the labor skill required to run this Operation. This field can be changed later, in the Bill of Material, if this Operation is inserted into a Bill of Materials.

7. Enter the number of **Operators Required** to run the Machine Group for the run to be processed.

Maint

8. Select the **Machine Group**: The Machine Group identifies the machine required for this process. It is an optional field. This field can be changed later, in the Bill of Material, if this Operation is inserted into a Bill of Materials.

Maint

9. Select the **Media Group**: The Media Group identifies the group of documents to be associated with this process. This is an optional field.

10. Enter the **Max Batch Qty**: The Max Batch Qty is the maximum size of the batch.

    Knowing this and using the shown example of 1000, we know that an order for 2500 units would require 3 Batches, as would an order for 3000 or 2001. The system will calculate time, not based on the quantity to be produced, but on the number of Batches that quantity requires. The Time Required relates to the time to process a Batch, not necessarily a given quantity.

    The issue of unit of measure may come up as a significant issue but we should be able to assume the quantity generated by the product or “subassembly” this operation is used to produce, can drive this calculation.

    **Example: We make chocolate candy bars; telling the system we need 10,000 bars doesn't translate into a batch size of 10,000, but if the chocolate is set up as a “subassembly” called “chocolate batch mix”, the system will calculate how much “chocolate batch mix” is required to make 10,000 bars and that's the number we will need to use. This number is probably in pounds, ounces, kilograms, etc. but it doesn't matter as long as the batch size is matched to the specific production process.**

    It would be highly unlikely that one product is produced in the same process in ounces and another is produced in pounds but the system could handle that because each Routing Step in each Bill of Material could be unique. Also note that the Max Batch Qty is used in the setup time calculation as well as the run time.

11. Enter the **Yield Pct**: The yield percentage indicates the efficiency of this process.

12. Enter **Notes**: The Notes field is an unlimited length field in which Notes specific to this process can be entered. These Notes pass through to the Bills of Material, and later appear on the Production Order Worksheets.

Maint

13. In the **Tools and Tooling** box, select the **Tooling ID**s needed to process this operation. The description of the Tooling ID is displayed.

14. Enter the **Queue Time**: The Queue time is the time we generally wait for the process to become available. It is not part of the BOM cost algorithm and is more or less an extra buffer time.

15. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

16. Enter the **Batch Setup Time**: The Batch Setup Time is the time required to setup the Batch to run. This process can be costed.

17. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

18. Enter the **Batch Run Time**: The Batch Run Time is the time to process one Batch, generally not including setup time. One might think of this, when thinking in terms of non-batch processes, as similar to machine time.

19. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

20. Enter the **Labor Setup Time**: The Labor Setup Time is the labor required to set up the process.

21. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

22. Enter the **Labor Batch Time**: The Labor Batch Time is the labor required in running the Batch. This may be only a fraction of the Batch run time because one laborer may maintain multiple Batches or a minimal amount of labor is required during the Batch process time. Generally the labor is far less than the total Batch run time and may be set to zero.

23. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

24. Enter the **Wait Time**: The Wait Time is the time required for the process to be ready to be used. It may be cooling, drying, solidifying, curing, etc. It is not part of the BOM costing algorithm.

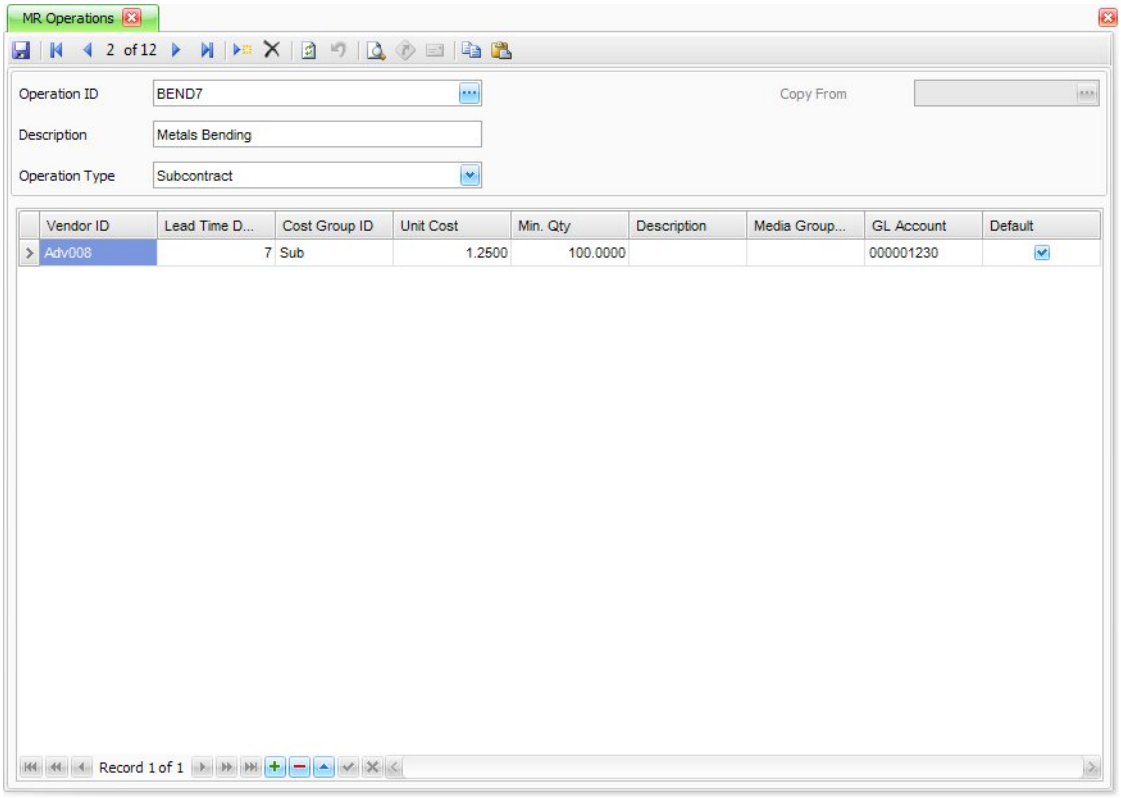
25. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

26. Enter the **Move Time**: The Move Time is the time required for the materials to be moved to the next step. It is not part of the BOM costing algorithm.

27. Select the Unit of Time to use: **Hours**, **Minutes** or **Seconds**.

## Subcontracted Type Operation

### Subcontracted Type Operation Screen




1. Move the cursor to the **Operation ID** box and click the **New Record** button on the toolbar. A blank Operations screen appears.
2. When you set up an Operation for the first time, you can copy information from an existing Operation to save time if the Operations are similar.

   To do so, select an existing Operation from the **Copy From** box. Information from the existing Operation populates the screen.
3. Select the **Operation Type**: For this type of operation the Operation Type should be set to **Subcontracted**. Subcontracted Operations are Operations done outside the plant by someone else. You define lead times, rather than run or setup times for Subcontracted Operations.

Maint

4. Select the **Vendor ID**: The Vendor ID is the AP Vendor who performs the Subcontracted service. All Subcontractors must be set up in AP, although one does not need to process and invoice from them nor does the system automatically pay or create anything for them in regard to Subcontracted Operations they perform.
5. Enter the **Lead Time**: The Lead Time represents the number of days required to send and receive back work from this Vendor.

Maint

6. Select the **Cost Group**: The Cost Group selected here will be used when this Operation is inserted into a Bill of Material in breaking out the costs of that Bill of Material by Cost Group.
7. Enter the **Unit Cost**: This field represents the cost per unit to process one unit. The field is optional. Because the Vendor may perform a number of different Operations at different costs, this field may or may not be meaningful.
8. Enter the **Min. Qty**: This field indicates what the minimum quantity is for this Vendor. The field is optional and is information only. Because the Vendor may perform a number of different Operations and have different minimums depending on the job, this field may or may not be meaningful.
9. Enter the **Description**: The Description field is a 30 character field, which describes the Operation and which may include comments specific to this Vendor.

Maint

10. Select the **Media Group**: Media Group: The Media Group identifies the group of documents to be associated with this process. This is an optional field.
11. Select or enter the **GL Account**: Enter or select from the drop down, the GL Expense Account associated with this Subcontracted Operation when handled through the selected Vendor.
12. Select the **Default**: Select this check box if this is the default or preferred Vendor amongst the Vendors listed.

## Producing an Operations List

The **Operations** Master List displays all the fields of the current Operations master records.

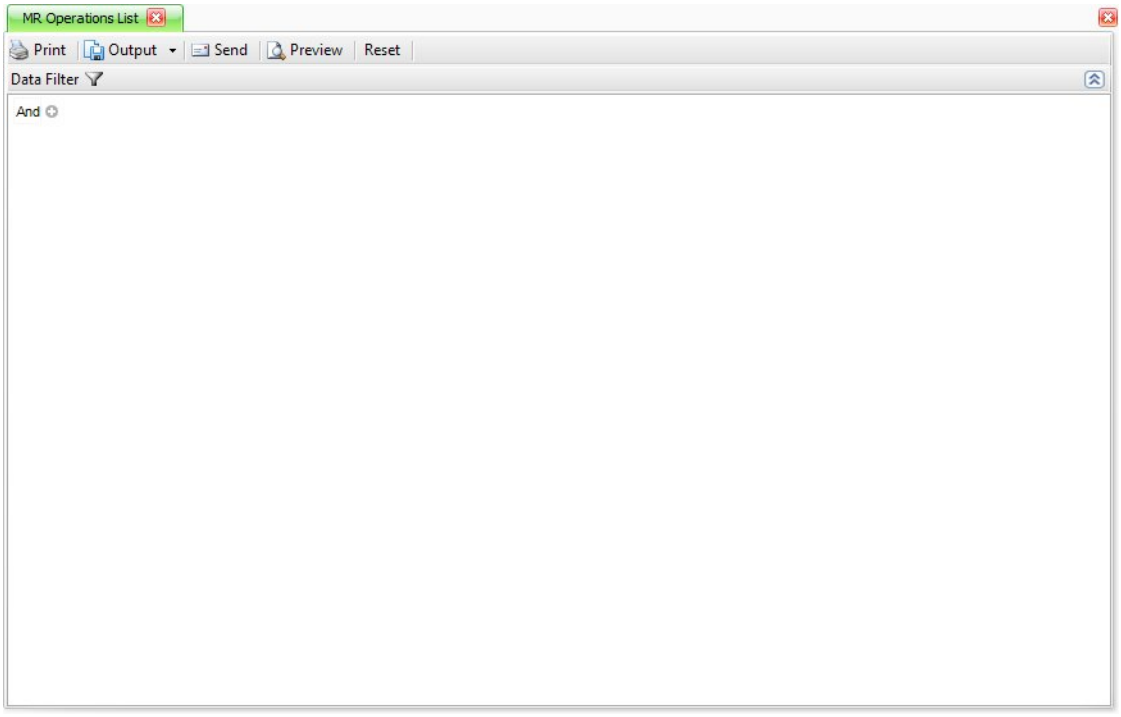
To produce a **Operations List**, follow these steps:

1. Select **Operations List** from the **Master Lists** menu.

### Operations List Menu


2. The **Operations List** screen appears.

### Operations List Screen



3. Use the **Data Filter** to select the range of filtering options, or leave the filter blank to include all available data.
4. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **Reset** | Set all fields to their defaults. |
| **Preview** | Preview the report on your monitor. |
| **Output** | Output the report as a .pdf file and save it. |
| **Send** | Email the report with the report attached as a .pdf file. |
| **Print** | Print the report. |

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

# Operations List Report

**Continental Products Unlimited**

**Operations List**



**Report Filter**

| Operation ID | Description | Operation Type | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ASSEMBLE7 | Assemble Unit | Per Unit | | | 0.000 | Hrs | | | 0.000 | Hrs |
| | Work Center ID | GEN007 | Machine Group ID | | Machine Setup Time | 0.000 | Hrs | Queue Time | 0.000 | Hrs |
| | Labor Setup Type ID | ASSEMBLY7 | Media Group ID | | Machine Run Time | 0.000 | Hrs | Wait Time | 0.000 | Hrs |
| | Labor Run Type ID | ASSEMBLY7 | Max Batch Qty | 0.0000 | Labor Setup Time | 15.000 | Mins | Move Time | 0.000 | Hrs |
| | Operators Required | 1 | Yield Pct | 100.00 | Labor Run Time | 10.000 | Hrs | Per Unit | | |
| | Notes | | | | | | | | | |

| Operation ID | Description | Operation Type |
|---|---|---|
| BEND7 | Metals Bending | Subcontract |

**Tooling Information**

| Tooling ID | Description |
|---|---|
| CLAMP2 | 2" Spring Clamps |
| CLAMP7 | 7" C - Clamp |

| Vendor ID | Lead Time Days | Cost Group ID | Unit Cost | Min Qty | Description | Media Group ID | GL Account | Default |
|---|---|---|---|---|---|---|---|---|
| Adv008 | 7 | Sub | 1.2500 | 100.0000 | | | 00-000-1230 | Yes |

| Operation ID | Description | Operation Type |
|---|---|---|
| CUT7 | Cutting Services | Subcontract |

**Tooling Information**

| Tooling ID | Description |
|---|---|
| 9-G88 | Welding Gloves |
| CLAMP2 | 2" Spring Clamps |
| CLAMP7 | 7" C - Clamp |

| Vendor ID | Lead Time Days | Cost Group ID | Unit Cost | Min Qty | Description | Media Group ID | GL Account | Default |
|---|---|---|---|---|---|---|---|---|
| Ace001 | 7 | Sub | 0.2700 | 1.0000 | | | 00-000-1230 | Yes |

| Operation ID | Description | Operation Type |
|---|---|---|
| DEBUR7 | Deburring | Subcontract |

| Vendor ID | Lead Time Days | Cost Group ID | Unit Cost | Min Qty | Description | Media Group ID | GL Account | Default |
|---|---|---|---|---|---|---|---|---|
| Ace001 | 3 | Labor2 | 44.0000 | 1.0000 | | DrillPress | 00-000-1230 | Yes |
| Com002 | 6 | Labor1 | 30.0000 | 1.0000 | | Electronic | 00-000-1230 | No |

| Operation ID | Description | Operation Type |
|---|---|---|
| DRILL7 | Drilling | Per Unit |

# ROUTINGS

**Routings** are defined as the general flow of an Assembly as it goes through the plant. Routings are made up of Routing Steps, which define the Operation performed at each step. When you set up a Bill of Material (BOM), use Routings to define the manufacturing process for that BOM. Having standard Routings makes creating a Routing for a BOM easier and quicker.

**NOTE: You do not need to create any preset Routings to use or maintain the Bill of Material module. If you choose not to set up standard Routings, create the Routing steps individually when you set up a BOM.**

A Routing is a series of steps involved in the creation of an Assembly or Subassembly. TRAVERSE Routings are created for one level at a time. In other words if finished Assembly A, consists of Subassembly B and Subassembly C, three Routings would need to be created to define all three items. Create a Routing ID to indicate each unique Routing. Later, when creating a new Bill of Material, one can reference the Routing ID to drop the Routing into the Bill of Material. Following the Routing ID, enter the Operation ID. At this point this system will automatically pull up the Work Center, Labor Type, and optionally, the Machine Group set up for this Operation as defined in the Operations maintenance function (page 3-43). Any of these resources can be changed at this time. After the resources have been defined, you can choose to select or not select, the Use Overlap check box. See further documentation on the use of the Use Overlap function later in this section.

**NOTE: If you change the Machine Group, for example, when the Routing is "copied" into a Bill of Material, the time for the Machine Group will not be copied from the Operation master record and will appear as zeros. This happens because the Machine Group stated in the Operation master record is different than the Machine Group used in the Routing, thus the time is unknown for this "new" machine. If you want to maintain Routings for like processes but with different machines, you should create multiple Operations, which then can be used in the Routing.**

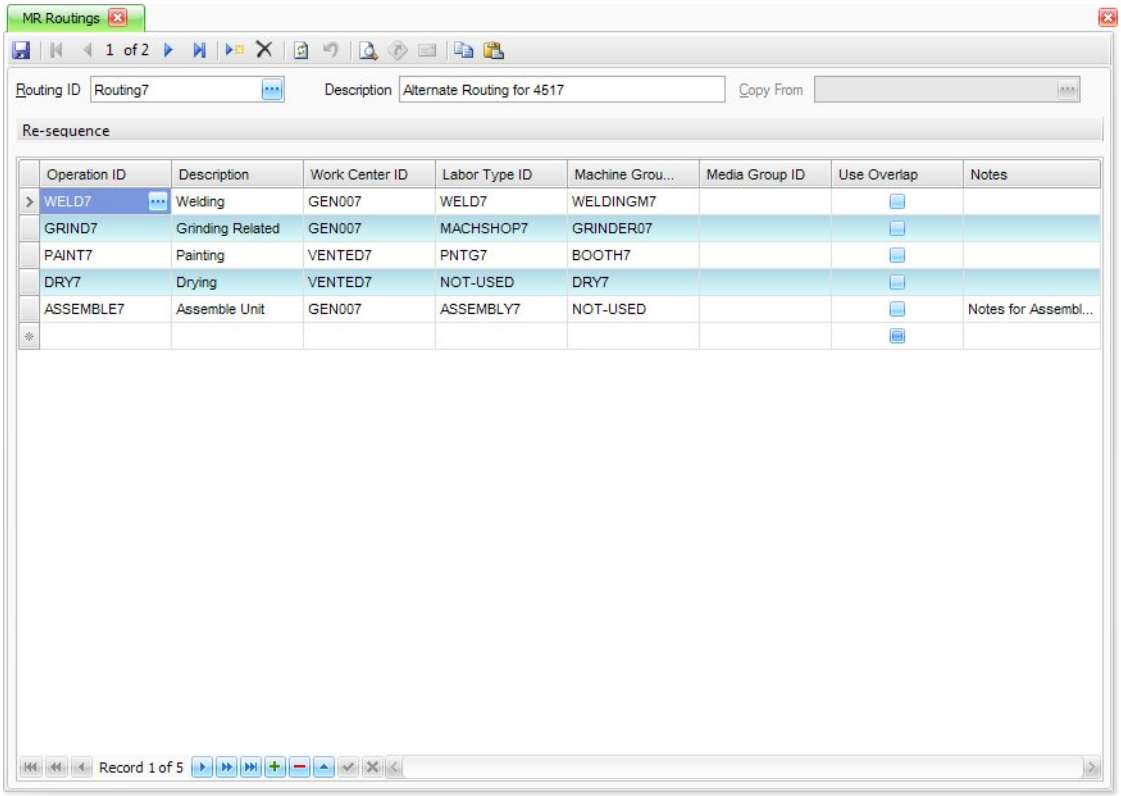
To set up **Routings**, follow these steps:

1. Select **Routings** from the **Setup and Maintenance** menu.

## Routings Menu

2. The **Routings** screen appears.

## Routings Screen




3. Click the cursor into the **Routing ID** box and click the **New Record** button from the toolbar. A blank Routings line appears.
4. Enter a new **Routing ID** to identify the routing.
5. Enter a brief routing **Description** to describe what the routing will be used for.
6. Enter an **Operation ID**. The associated fields populate automatically according to how you set up the operations.

**NOTE: The order you enter the Operation IDs will be the default order of the Operations within the Routing when the Routing is assigned to the BOM.**

7. In the **Description** text box, enter a description of the step.

8. Accept the default **Work Center ID** associated with this step or change it. You assign the default Work Center ID using the Operations function. See “Operations” on (page 3-43) for more information.
9. Accept the default **Labor Type ID** associated with this step or change it. You assign the default Labor Type ID using the Operations function. See “Operations” on (page 3-43) for more information.
10. Accept the default **Machine Group ID** associated with this step or change it. You assign the default Machine Group ID using the Operations function. See “Operations” on (page 3-43) for more information.
11. Accept the default **Media Group ID** associated with this step or change it. You assign the default Media Group ID using the Operations function. See “Operations” on (page 3-43) for more information.
12. Select the Use **Overlap** check box to indicate that this step overlaps with the next step. Overlap means that as work is completed, it immediately moves to the next step in the operation rather than waiting for all in a batch to be completed and then moved as a group. This affects lead time and estimated throughput time.
13. In the **Notes** text box, enter any additional Notes required for the step.
14. Continue adding steps to the Routing or close the screen to save your changes and return to the main menu.

## Add a Step

1. To add a step to a routing, select the Routing ID and use the right scroll bar to scroll down to the first blank line.
2. Alternatively, select the Routing ID, move the cursor to the Operation ID box and click the **New Record** button  from the bottom of the screen. The cursor moves to the first blank line at the bottom of the steps list.
3. Add the required information. If you are adding a step between two existing steps, drag the step to the desired location and drop it, click Re-sequence to re-sequence the steps in the new order you set.
4. Close the screen to save your changes and return to the main menu.

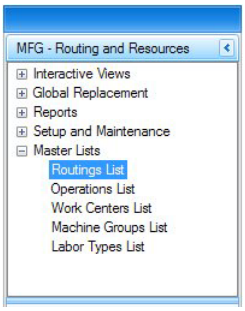
## Producing an Routings List

The **Routings** Master List displays all the fields of the current Routings master records.

To produce a **Routings List**, follow these steps:

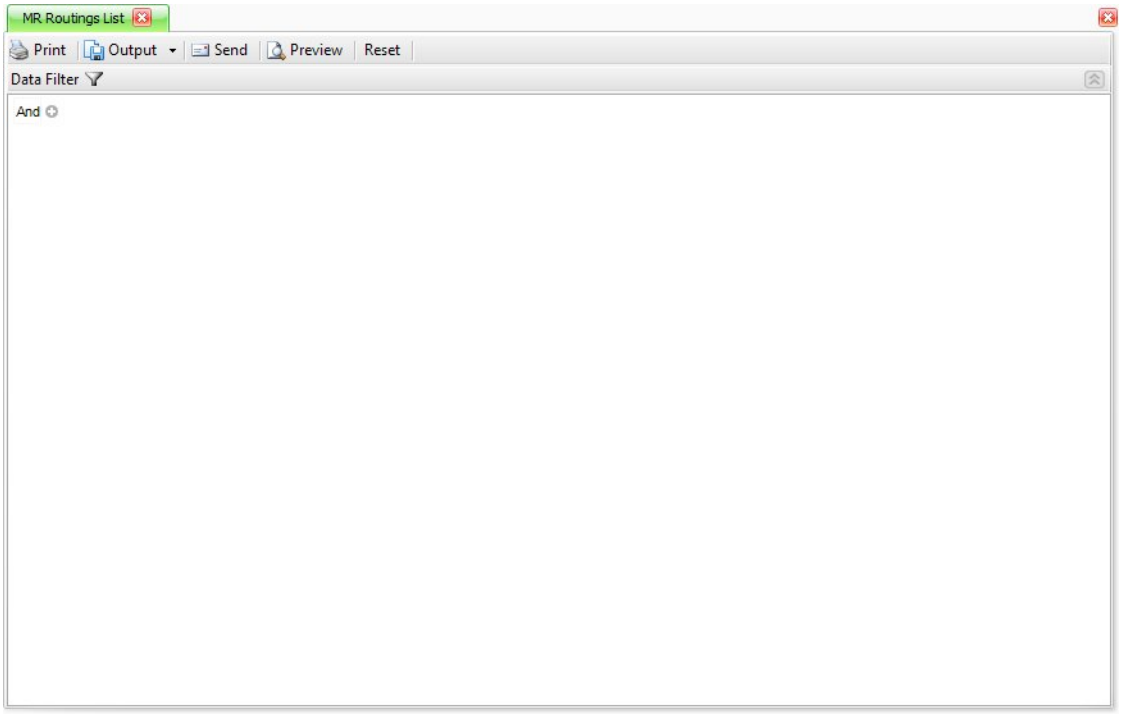
1. Select **Routings List** from the **Master Lists** menu.

### Routings List Menu



2. The **Routings List** screen appears.

## Routings List Screen




3. Select the **Filter Criteria** to include in the list or leave the fields blank to include all.
4. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **Reset** | Set all fields to their defaults. |
| **Preview** | Preview the report on your monitor. |
| **Output** | Output the report as a .pdf file and save it. |
| **Send** | Email the report with the report attached as a .pdf file. |
| **Print** | Print the report. |

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

## Routings List Report

Continental Products Unlimited
Routings List
Page 1

Report Filter

| Routing ID / Description / Notes | Step No | Operation ID / Work Center ID | Labor Type ID / Machine Group ID | Use Overlap |
|---|---|---|---|---|
| Routing7<br>Welding | 10 | WELD7<br>GEN007 | WELD7<br>WELDINGM7 | No |
| Routing7<br>Grinding Related | 20 | GRIND7<br>GEN007 | MACHSHOP7<br>GRINDER07 | No |
| Routing7<br>Painting | 30 | PAINT7<br>VENTED7 | PNTG7<br>BOOTH7 | No |
| Routing7<br>Drying | 40 | DRY7<br>VENTED7 | NOT-USED<br>DRY7 | No |
| Routing7<br>Assemble Unit<br>Notes for Assembly Unit 7 include more detailed instructions. See for reference. | 50 | ASSEMBLE7<br>GEN007 | ASSEMBLY7<br>NOT-USED | No |
| Routing7-2<br>Painting | 10 | PNTSUB2<br>NOT-USED | NOT-USED | No |
| Routing7-2<br>Assemble Unit<br>Notes for Assembly Unit 7 include more detailed instructions. See for reference. | 20 | ASSEMBLE7<br>GEN007 | ASSEMBLY7<br>NOT-USED | No |

4/1/2013 9:25 AM *** End of Report *** OPEN_SYSTEMS\KentHe

# 4

# Global Replacement

# 4 GLOBAL REPLACEMENT

# OVERVIEW

Use the **Global Replacement** functions to globally replace manufacturing related Work Centers, Labor Types, Machine Groups, and Tooling IDs throughout the entire Bill of Material and Routing database. For example, you might need to change the name of a Work Center that is used in hundreds of Routings and Operations. It would take a lot of time and effort to print a Work Centers Where-Used report and then locate each instance of the old Work Center and replace it manually with the ID for the new Work Center. By using the Global Replacement function, you can make this change to several hundred assemblies in just a few seconds.

**NOTE: Print the associated Where-Used report before you run any global replacement function so that you can view the substitutions you are about to make.**

The Global Replacement menu will allow you to replace the following functions:

## Replace Operations

The **Replace Operations** (page 4-5) is designed to allow you to globally replace Operations throughout Routings or Bills of Material.

## Replace Work Centers

The **Replace Work Centers** (page 4-11) is designed to allow you to globally replace Work Centers throughout Routings, Operations, or Bills of Material. Select the Work Center ID to be replaced and the Work Center ID to replace it with.

## Replace Machine Groups

The **Replace Machine Groups** (page 4-17) is designed to allow you to globally replace Machine Groups throughout Routings, Work Centers, Operations, or Bills of Material. Select the Machine Group ID to be replaced and the Machine Group ID to replace it with.

## Replace Labor Types

The **Replace Labor Types** (page 4-23) is designed to allow you to globally replace Labor Types throughout Routings, Machine Groups, Operations, or Bills of Material. Select the Labor Type ID to be replaced and the Labor Type ID to replace it with.

## Replace Tooling

The **Replace Tooling** (page 4-29) is designed to allow you to globally replace Toolings throughout defined Operations. It is the simplest of all the replacement functions. Select the Tooling ID to be replaced and the Tooling ID to replace it with.

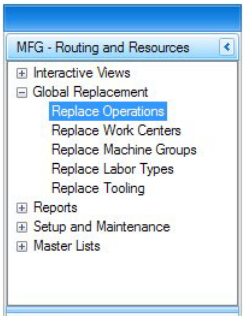
# REPLACE OPERATIONS

The **Replace Operations** is designed to allow you to globally replace Operations throughout Routings or Bills of Material. Select the Operation ID to be replaced and the Operation ID to replace it with. One can choose to include Assemblies and/or Routings and thereafter pick the specific Assemblies or Routings to apply the change. The Replace Operations also includes a prompt, Include Operation Detail. This check box is automatically checked. If the check box is checked, the Operation as defined in the Operation setup is inserted in the Bill of Material, replacing all aspects of the previous operational step. If the check box is not checked, only the name of the Operation is replaced. The data in the Operation remains intact. Essentially the question might be stated as; “Is the intent to replace the Operation with a different Operation or just rename the Operation?”

To use the **Replace Operations** follow these steps:

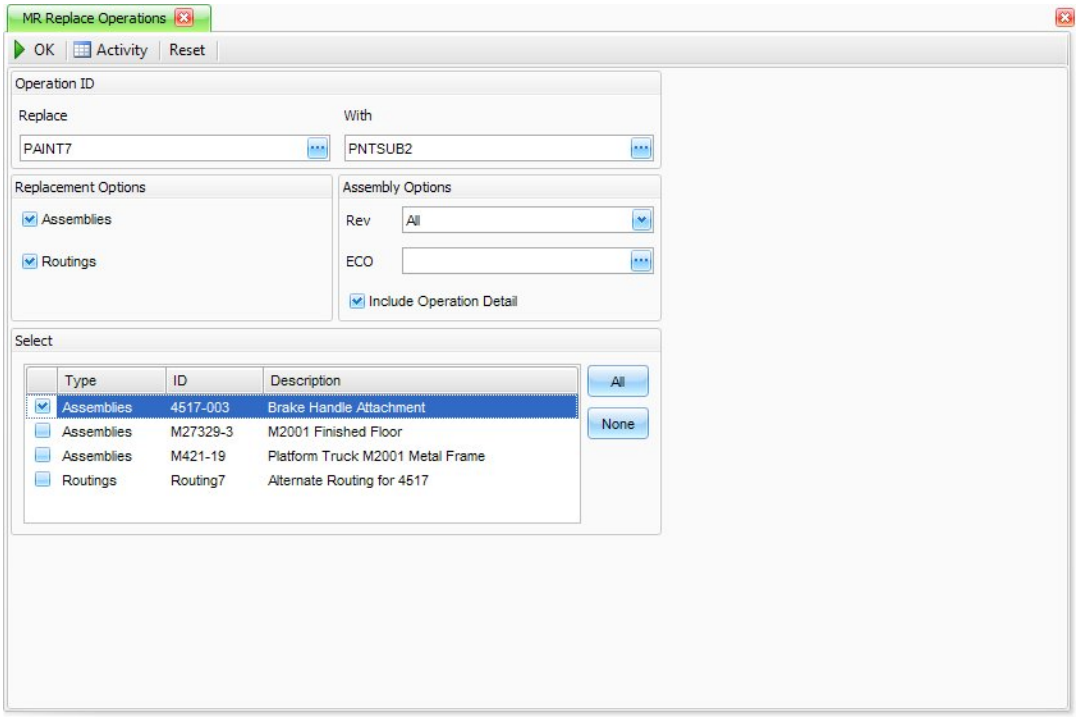
1. Select **Replace Operations** from the **Global Replacement** menu.

## Replace Operations Menu



2. The **Replace Operations** screen appears.

## Replace Operations Screen




3. Select the **Operation ID** to **Replace**. This would be the Operation you will be replacing.
4. Select the **Operation ID** you want to replace **With**. This would be the new Operation with which you want to replace the old Operation.
5. Select your **Replacement Options**:
    - **Assemblies** - Include Assemblies in the list of available options in which to replace Operations. The Assemblies that contain the Operation you selected in the Replace field will be included in the list of available options.
    - **Routings** - Include Routings in the list of available options in which to replace Operations. The routings that contain the Operation you selected in the Replace field will be included in the list of available options.
6. Select your **Assembly Options**:
    - **Rev** - Select which Revision of the Assemblies in which you want to do the replacing. The **Effective** revision only or **All** revisions.

- **ECO** - If you use Engineering Change Orders, which ECO do you want the replacement to affect.
- **Include Operation Detail** - This check box is automatically selected. If the check box is selected, the Operation as defined in the Operation setup is inserted in the Bill of Material, replacing all aspects of the previous Operational step. If the check box is not selected, only the name of the Operation is replaced. The data in the Operation remains intact. Essentially the question might be stated as; “Is the intent to replace the Operation with a different Operation or just rename the Operation?”

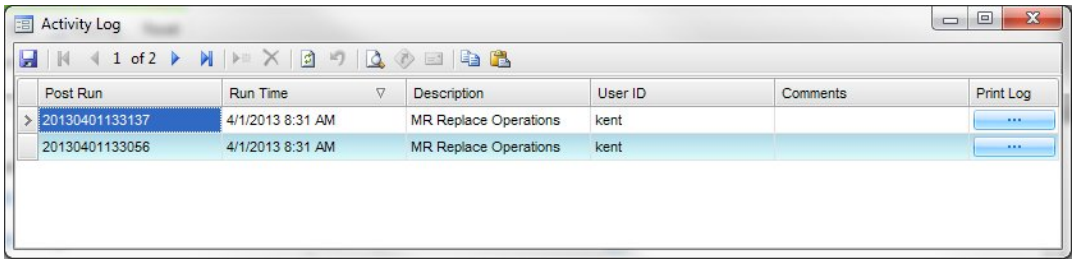
7. **Select** which Assemblies and/or Routings in which you want to replace operations. You can check each selection individually, or click the **All** button to select all in the list. Select the **None** button to unselect all selections in the list.
8. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **OK** | Begin processing. |
| **Activity** | View the Activity Log for posting production orders. |
| **Reset** | Set all fields to their default values |

- A message appears when the replace completes successfully. After you click **OK** to close this message box, the Replace Operations Log appears.

## Activity Log Dialog Box




The Activity Log dialog box appears when you click **Activity**. The Activity Log dialog box tracks all post activity for administrative purposes. The system assigns each post a run ID.

**Post Run** - The system generated number used to identify the replace appears.

**Run Time** - The date and time the replace was made appear.

**Description** - The replace description appears.

**User ID** - The user who performed the replace appears.

**Comments** - Comments entered for the replace appear.

**Print Log** - to print the replace log from the selected replace.

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

# Replace Operations Log

**Continental Products Unlimited** 

**Replace Operations Log**

| | | | |
|---|---|---|---|
| **Replace Assemblies** | Yes | **Replace Routings** | Yes |
| **Revision** | All | **ECO** | |
| **Include Operation Detail** | Yes | | |

**Replacements in Assemblies**

| Assembly ID | Description | User ID | Date / Time Changed | Alteration Made To | Changed From | Changed To |
|---|---|---|---|---|---|---|
| M27329-3 | M2001 Finished Floor | kent | 4/1/2013 8:31 AM | Operation ID | PAINT7 | PNTSUB2 |
| M421-19 | Platform Truck M2001 Metal Frame | kent | 4/1/2013 8:31 AM | Operation ID | PAINT7 | PNTSUB2 |

**Replacements in Routings**

| Routing ID | Description | User ID | Date / Time Changed | Alteration Made To | Changed From | Changed To |
|---|---|---|---|---|---|---|
| Routing7 | Alternate Routing for 4517 | kent | 4/1/2013 8:31 AM | Operation ID | PAINT7 | PNTSUB2 |

**4/1/2013 8:31 AM** *** End of Report *** **OPEN_SYSTEMS\KentHe**

**GLOBAL REPLACEMENT**

*Replace Operations*

# REPLACE WORK CENTERS

The **Replace Work Centers** is designed to allow you to globally replace Work Centers throughout Routings, Operations, or Bills of Material. Select the Work Center ID to be replaced and the Work Center ID to replace it with. You can choose to include Assemblies, Operations and/or Routings and thereafter pick the specific Assemblies, Operations or Routings to apply the change. Replacing the Work Center doesn't change any other data shown on the Bill of Materials, Operations, or Routings screen, but the overhead costing, which is driven by the Work Center, could work very differently since each Work Center may have a costing factors.

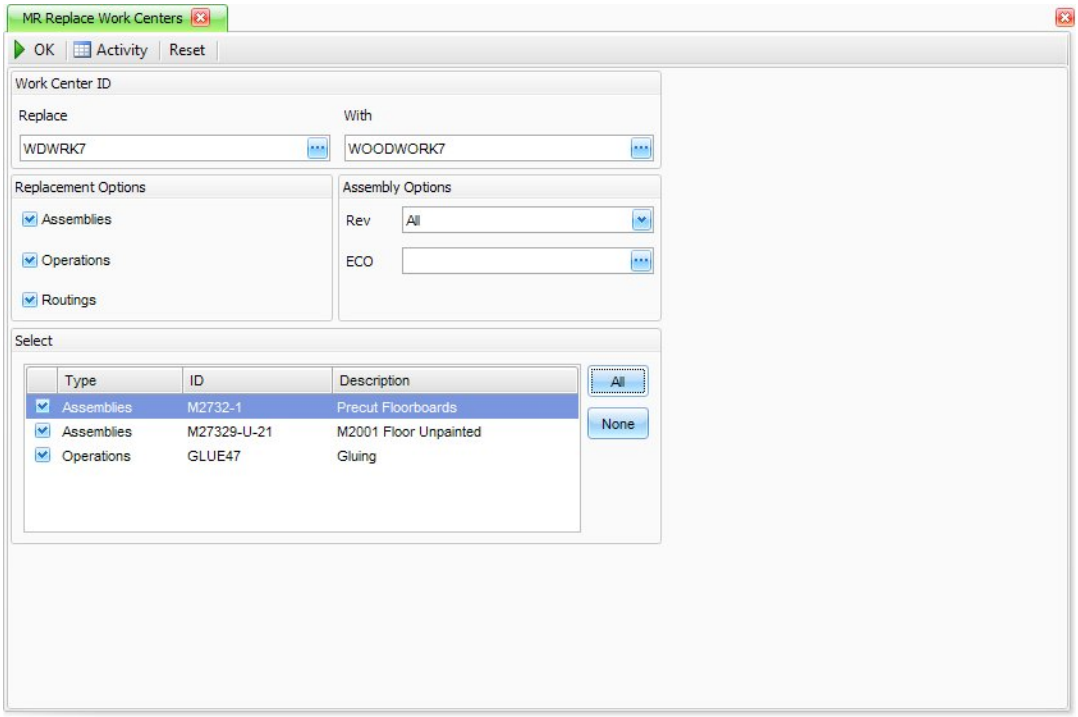
To use the **Replace Work Centers** follow these steps:

1. Select **Replace Work Centers** from the **Global Replacement** menu.

## Replace Work Centers Menu

2. The **Replace Work Centers** screen appears.

## Replace Work Centers Screen




3. Select the **Work Center ID** to **Replace**. This would be the Work Center you will be replacing.
4. Select the **Work Center ID** you want to replace **With**. This would be the new Work Center you want to replace the old Work Center with.
5. Select your **Replacement Options**:
    - **Assemblies** - Include Assemblies in the list of available options in which to replace Work Centers. The Assemblies that contain the Work Center you selected in the Replace field will be included in the list of available options.
    - **Operations** - Include Operations in the list of available options in which to replace Work Centers. The Routings that contain the Work Center you selected in the Replace field will be included in the list of available options.
    - **Routings** - Include Routings in the list of available options in which to replace Work Centers. The Routings that contain the Work Center you selected in the Replace field will be included in the list of available options.

6. Select your **Assembly Options**:

   - **Rev** - Select which Revision of the Assemblies in which you want to do the replacing. The **Effective** revision only or **All** revisions.
   - **ECO** - If you use Engineering Change Orders, which ECO do you want the replacement to affect.

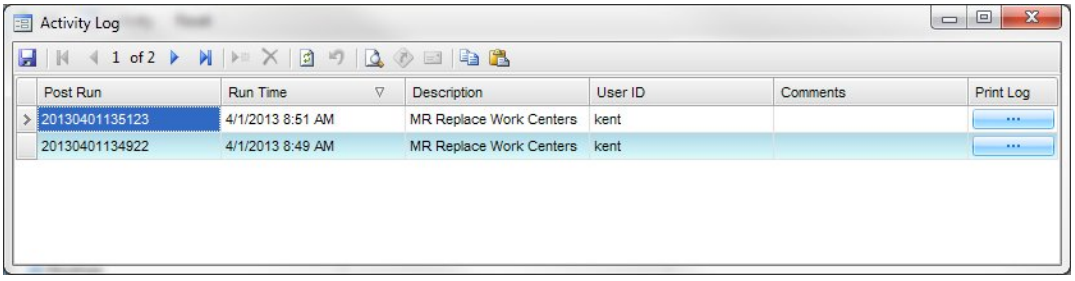
7. **Select** which Assemblies, Operations and/or Routings in which you want to replace Work Centers. You can select each selection individually or click the **All** button to select all in the list. Select the **None** button to unselect all selections in the list.
8. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **OK** | Begin processing. |
| **Activity** | View the Activity Log for posting production orders. |
| **Reset** | Set all fields to their default values |

   - A message appears when the replace completes successfully. After you click **OK** to close this message box, the Replace Work Centers Log appears.

## Activity Log Dialog Box




The Activity Log dialog box appears when you click **Activity**. The Activity Log dialog box tracks all post activity for administrative purposes. The system assigns each post a run ID.

**Post Run** - The system generated number used to identify the replace appears.

**Run Time** - The date and time the replace was made appear.

**Description** - The replace description appears.

**User ID** - The user who performed the replace appears.

**Comments** - Comments entered for the replace appear.

**Print Log** - to print the replace log from the selected replace.

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

# Replace Work Centers Log

**Continental Products Unlimited** Page 1

**Replace Work Centers Log**

| | | | |
|---|---|---|---|
| **Replace Assemblies** | Yes | **Replace Operations** | Yes |
| **Replace Routings** | Yes | | |
| **Revision** | All | **ECO** | |

**Replacements in Assemblies**

| Assembly ID | Description | User ID | Date / Time Changed | Alteration Made To | Changed From | Changed To |
|---|---|---|---|---|---|---|
| M2732-1 | Precut Floorboards | kent | 4/1/2013 8:49 AM | Work Center ID | WDWRK7 | WOODWORK7 |
| M27329-U-21 | M2001 Floor Unpainted | kent | 4/1/2013 8:49 AM | Work Center ID | WDWRK7 | WOODWORK7 |

**Replacements in Operations**

| Operation ID | Description | User ID | Date / Time Changed | Alteration Made To | Changed From | Changed To |
|---|---|---|---|---|---|---|
| GLUE47 | Gluing | kent | 4/1/2013 8:49 AM | Work Center ID | WDWRK7 | WOODWORK7 |

4/1/2013 8:49 AM *** End of Report *** OPEN_SYSTEMS\KentHe

**GLOBAL REPLACEMENT**

*Replace Work Centers*

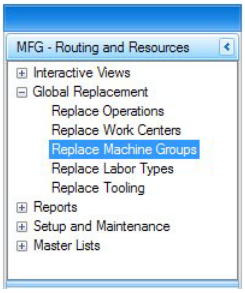
# REPLACE MACHINE GROUPS

The **Replace Machine Groups** is designed to allow you to globally replace Machine Groups throughout Routings, Work Centers, Operations, or Bills of Material. Select the Machine Group ID to be replaced and the Machine Group ID to replace it with. One can choose to include Assemblies, Work Centers, Operations and/or Routings and thereafter pick the specific Assemblies, Work Centers, Operations or Routings to apply the change. Replacing the Machine Group doesn't change any other data shown on the Bill of Materials, Work Centers, Operations, or Routings screen, but the Machine Costing, which is driven by the Machine Group rate, could work very differently since each Machine Group may have different cost rates.

To use the **Replace Machine Groups** follow these steps:

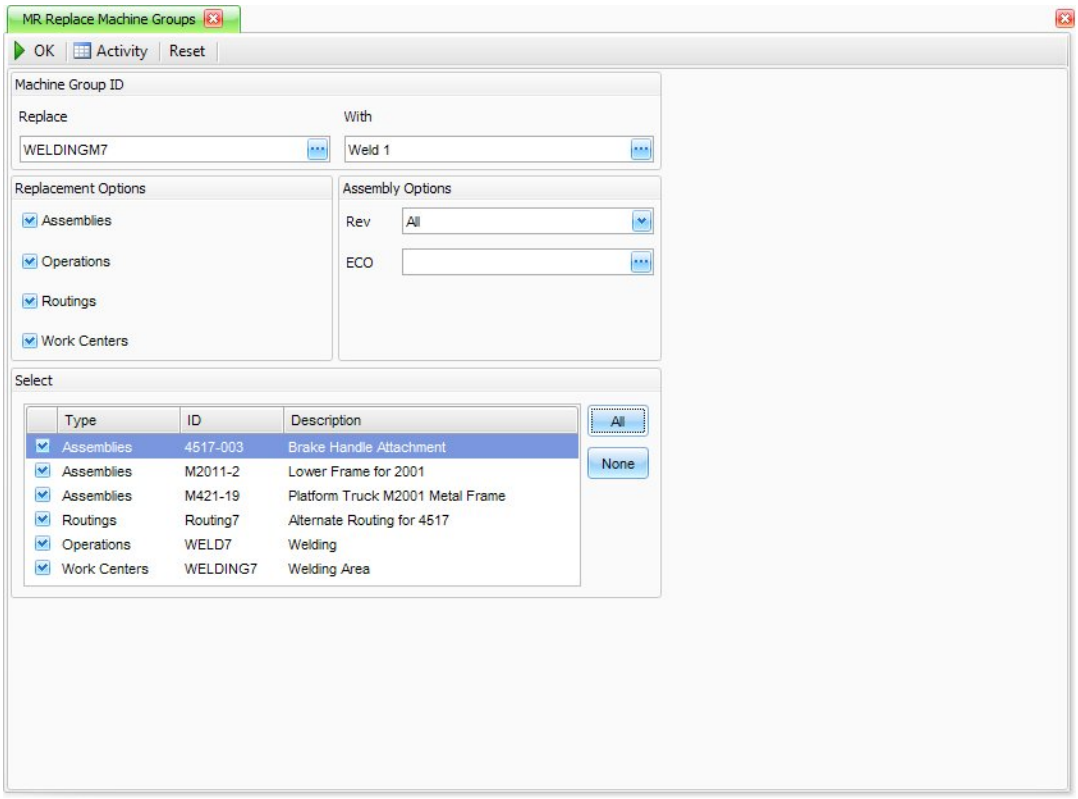
1. Select **Replace Machine Groups** from the **Global Replacement** menu.

## Replace Machine Groups Menu



2. The **Replace Machine Groups** screen appears.

## Replace Machine Groups Screen




3. Select the **Machine Group ID** to **Replace**. This would be the Machine Group you will be replacing.
4. Select the **Machine Group ID** you want to replace **With**. This would be the new Machine Group you want to replace the old Machine Group with.
5. Select your **Replacement Options**:
    - **Assemblies** - Include Assemblies in the list of available options in which to replace Machine Groups. The Assemblies that contain the Machine Group you selected in the Replace field will be included in the list of available options.
    - **Operations** - Include Operations in the list of available options in which to replace Machine Groups. The Operations that contain the Machine Group you selected in the Replace field will be included in the list of available options.

- **Routings** - Include Routings in the list of available options in which to replace Machine Groups in. The Routings that contain the Machine Group you selected in the Replace field will be included in the list of available options.
- **Work Centers** - Include Work Centers in the list of available options in which to replace Machine Groups. The Work Centers that contain the Machine Group you selected in the Replace field will be included in the list of available options.

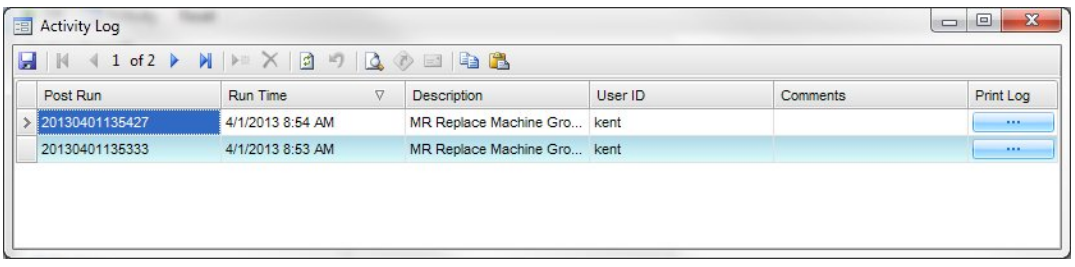
6. Select your **Assembly Options**:
   - **Rev** - Select which Revision of the Assemblies in which you want to do the replacing. The **Effective** revision only or **All** revisions.
   - **ECO** - If you use Engineering Change Orders, which ECO do you want the replacement to affect.
7. **Select** which Assemblies, Operations, Routings and/or Work Centers in which you want to replace Machine Groups. You can select each selection individually or click the **All** button to select all in the list. Select the **None** button to unselect all selections in the list.
8. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **OK** | Begin processing. |
| **Activity** | View the Activity Log for posting production orders. |
| **Reset** | Set all fields to their default values |

- A message appears when the replace completes successfully. After you click **OK** to close this message box, the Replace Machine Groups Log appears.

## Activity Log Dialog Box



The Activity Log dialog box appears when you click **Activity**. The Activity Log dialog box tracks all post activity for administrative purposes. The system assigns each post a run ID.

**Post Run** - The system generated number used to identify the replace appears.

**Run Time** - The date and time the replace was made appear.

**Description** - The replace description appears.

**User ID** - The user who performed the replace appears.

**Comments** - Comments entered for the replace appear.

**Print Log** - to print the replace log from the selected replace.

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

## Replace Machine Groups Log

**Continental Products Unlimited** Page 1

**Replace Machine Groups Log**

| | | | |
|---|---|---|---|
| **Replace Assemblies** | Yes | **Replace Operations** | Yes |
| **Replace Routings** | Yes | **Replace Work Centers** | Yes |
| **Revision** | All | **ECO** | |

### Replacements in Assemblies

| Assembly ID | Description | User ID | Date / Time Changed | Alteration Made To | Changed From | Changed To |
|---|---|---|---|---|---|---|
| M421-19 | Platform Truck M2001 Metal Frame | kent | 4/1/2013 8:53 AM | Machine Group ID | WELDINGM7 | Weld 1 |
| M421-19 | Platform Truck M2001 Metal Frame | kent | 4/1/2013 8:53 AM | Machine Group ID | WELDINGM7 | Weld 1 |
| M421-19 | Platform Truck M2001 Metal Frame | kent | 4/1/2013 8:53 AM | Machine Group ID | WELDINGM7 | Weld 1 |
| 4517-003 | Brake Handle Attachment | kent | 4/1/2013 8:53 AM | Machine Group ID | WELDINGM7 | Weld 1 |
| M2011-2 | Lower Frame for 2001 | kent | 4/1/2013 8:53 AM | Machine Group ID | WELDINGM7 | Weld 1 |

### Replacements in Routings

| Routing ID | Description | User ID | Date / Time Changed | Alteration Made To | Changed From | Changed To |
|---|---|---|---|---|---|---|
| Routing7 | Alternate Routing for 4517 | kent | 4/1/2013 8:53 AM | Machine Group ID | WELDINGM7 | Weld 1 |

### Replacements in Operations

| Operation ID | Description | User ID | Date / Time Changed | Alteration Made To | Changed From | Changed To |
|---|---|---|---|---|---|---|
| WELD7 | Welding | kent | 4/1/2013 8:53 AM | Machine Group ID | WELDINGM7 | Weld 1 |

### Replacements in Work Centers

| Work Center ID | Description | User ID | Date / Time Changed | Alteration Made To | Changed From | Changed To |
|---|---|---|---|---|---|---|
| WELDING7 | Welding Area | kent | 4/1/2013 8:53 AM | Machine Group ID | WELDINGM7 | Weld 1 |

**4/1/2013 8:53 AM** ***** End of Report ***** **OPEN_SYSTEMS\KentHe**

**GLOBAL REPLACEMENT**

*Replace Machine Groups*

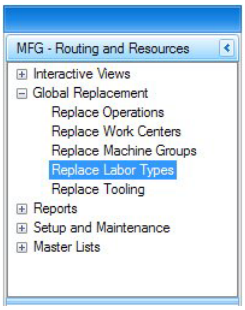
# REPLACE LABOR TYPES

The **Replace Labor Types** is designed to allow you to globally replace Labor Types throughout Routings, Machine Groups, Operations, or Bills of Material. Select the Labor Type ID to be replaced and the Labor Type ID to replace it with. One can choose to include Assemblies, Machine Groups, Operations and/or Routings and thereafter pick the specific Assemblies, Machine Groups, Operations or Routings to apply the change. Replacing the Labor Type doesn't change any other data shown on the Bill of Materials, Machine Groups, Operations, or Routings screen, but the Labor Costing, which is driven by the Labor Type Rate and Per Piece Cost, could work very differently since each Labor Type may have different cost rates.

To use the **Replace Labor Types** follow these steps:

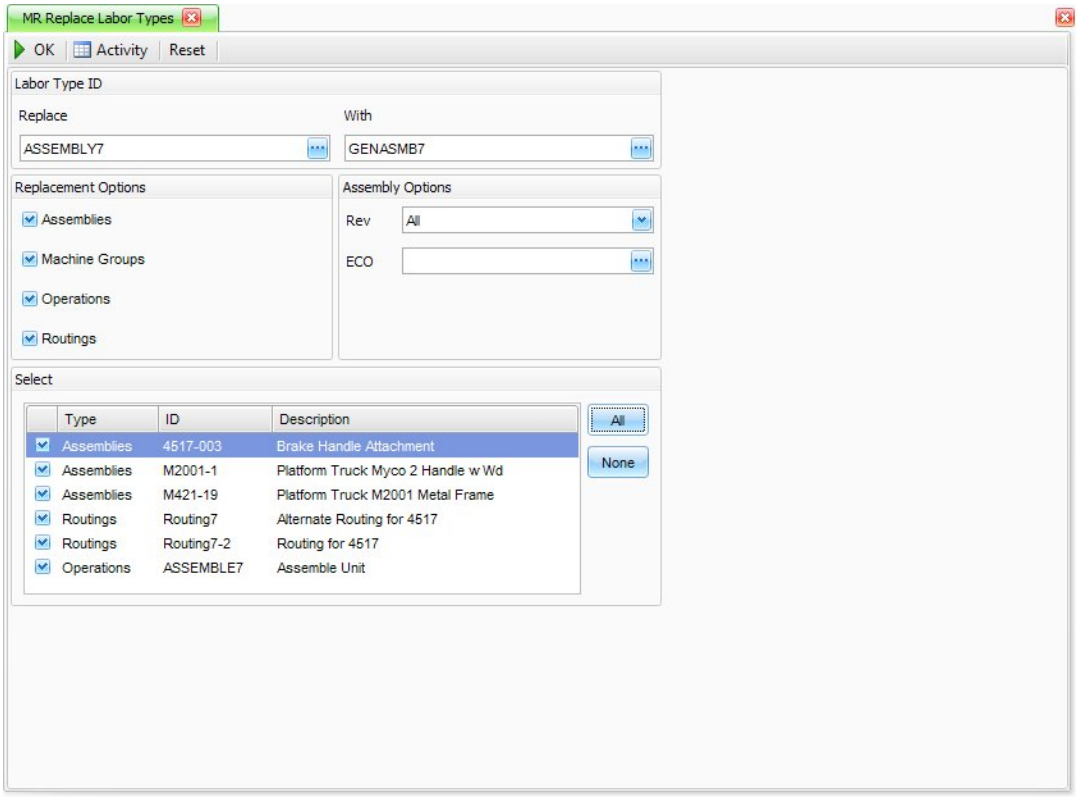
1. Select **Replace Labor Types** from the **Global Replacement** menu.

## Replace Labor Types Menu



2. The **Replace Labor Types** screen appears.

## Replace Labor Types Screen




3. Select the **Labor Type ID** to **Replace**. This would be the Labor Type you will be replacing.
4. Select the **Labor Type ID** you want to replace **With**. This would be the new Labor Type with which you want to replace the old Labor Type.
5. Select your **Replacement Options**:
    - **Assemblies** - Include Assemblies in the list of available options in which to replace Labor Types in. The Assemblies that contain the Labor Type you selected in the Replace field will be included in the list of available options.
    - **Machine Groups**- Include Machine Groups in the list of available options in which to replace Labor Types. The Machine Groups that contain the Labor Types you selected in the Replace field will be included in the list of available options.

- **Operations** - Include Operations in the list of available options in which to replace Labor Types. The Operations that contain the Labor Types you selected in the Replace field will be included in the list of available options.
- **Routings** - Include Routings in the list of available options in which to replace labor types. The Routings that contain the Labor Types you selected in the Replace field will be included in the list of available options.

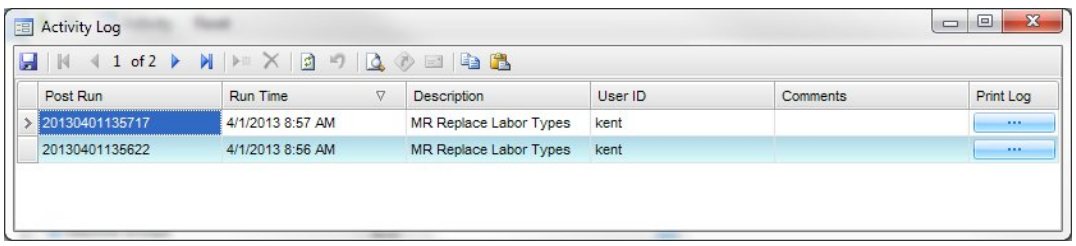
6. Select your **Assembly Options**:
   - **Rev** - Select which Revision of the Assemblies in which you want to do the replacing. The **Effective** revision only or **All** revisions.
   - **ECO** - If you use Engineering Change Orders, which ECO do you want the replacement to affect.
7. **Select** which Assemblies, Machine Groups, Operations and/or Routings in which you want to replace Labor Types. You can select each selection individually or click the **All** button to select all in the list. Select the **None** button to unselect all selections in the list.
8. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **OK** | Begin processing. |
| **Activity** | View the Activity Log for posting production orders. |
| **Reset** | Set all fields to their default values |

- A message appears when the replace completes successfully. After you click **OK** to close this message box, the Replace Labor Types Log appears.

## Activity Log Dialog Box



The Activity Log dialog box appears when you click **Activity**. The Activity Log dialog box tracks all post activity for administrative purposes. The system assigns each post a run ID.

**Post Run** - The system generated number used to identify the replace appears.

**Run Time** - The date and time the replace was made appear.

**Description** - The replace description appears.

**User ID** - The user who performed the replace appears.

**Comments** - Comments entered for the replace appear.

**Print Log** - to print the replace log from the selected replace.

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

# Replace Labor Types Log

**Continental Products Unlimited** Page 1

**Replace Labor Types Log**

| | | | |
|---|---|---|---|
| **Replace Assemblies** | Yes | **Replace Machine Groups** | Yes |
| **Replace Operations** | Yes | **Replace Routings** | Yes |
| **Revision** | All | **ECO** | |

## Replacements in Assemblies

| Assembly ID | Description | User ID | Date / Time Changed | Alteration Made To | Changed From | Changed To |
|---|---|---|---|---|---|---|
| M421-19 | Platform Truck M2001 Metal Frame | kent | 4/1/2013 8:56 AM | Labor Type ID | ASSEMBLY7 | GENASMB7 |
| M421-19 | Platform Truck M2001 Metal Frame | kent | 4/1/2013 8:56 AM | Setup Labor Type ID | ASSEMBLY7 | GENASMB7 |
| 4517-003 | Brake Handle Attachment | kent | 4/1/2013 8:56 AM | Labor Type ID | ASSEMBLY7 | GENASMB7 |
| 4517-003 | Brake Handle Attachment | kent | 4/1/2013 8:56 AM | Setup Labor Type ID | ASSEMBLY7 | GENASMB7 |
| M2001-1 | Platform Truck Myco 2 Handle w Wd | kent | 4/1/2013 8:56 AM | Labor Type ID | ASSEMBLY7 | GENASMB7 |
| M2001-1 | Platform Truck Myco 2 Handle w Wd | kent | 4/1/2013 8:56 AM | Setup Labor Type ID | ASSEMBLY7 | GENASMB7 |

## Replacements in Routings

| Routing ID | Description | User ID | Date / Time Changed | Alteration Made To | Changed From | Changed To |
|---|---|---|---|---|---|---|
| Routing7 | Alternate Routing for 4517 | kent | 4/1/2013 8:56 AM | Labor Type ID | ASSEMBLY7 | GENASMB7 |
| Routing7-2 | Routing for 4517 | kent | 4/1/2013 8:56 AM | Labor Type ID | ASSEMBLY7 | GENASMB7 |

## Replacements in Operations

| Operation ID | Description | User ID | Date / Time Changed | Alteration Made To | Changed From | Changed To |
|---|---|---|---|---|---|---|
| ASSEMBLE7 | Assemble Unit | kent | 4/1/2013 8:56 AM | Labor Type ID | ASSEMBLY7 | GENASMB7 |
| ASSEMBLE7 | Assemble Unit | kent | 4/1/2013 8:56 AM | Setup Labor Type ID | ASSEMBLY7 | GENASMB7 |

**4/1/2013 8:56 AM** ***** End of Report ***** **OPEN_SYSTEMS\KentHe**

## 4 GLOBAL REPLACEMENT

*Replace Labor Types*

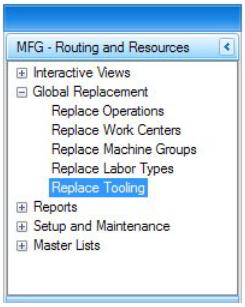
# REPLACE TOOLING

The **Replace Tooling** is designed to allow you to globally replace Tooling throughout defined Operations. It is the simplest of all the replacement functions. Select the Tooling ID to be replaced and the Tooling ID to replace it with. You can then pick the specific Operations to apply the change. Tooling is only defined in Operations. Replacing the Tooling ID doesn't change any other data and only has a cosmetic effect on the system. Tooling has no effect on costs.

To use the **Replace Tooling** follow these steps:

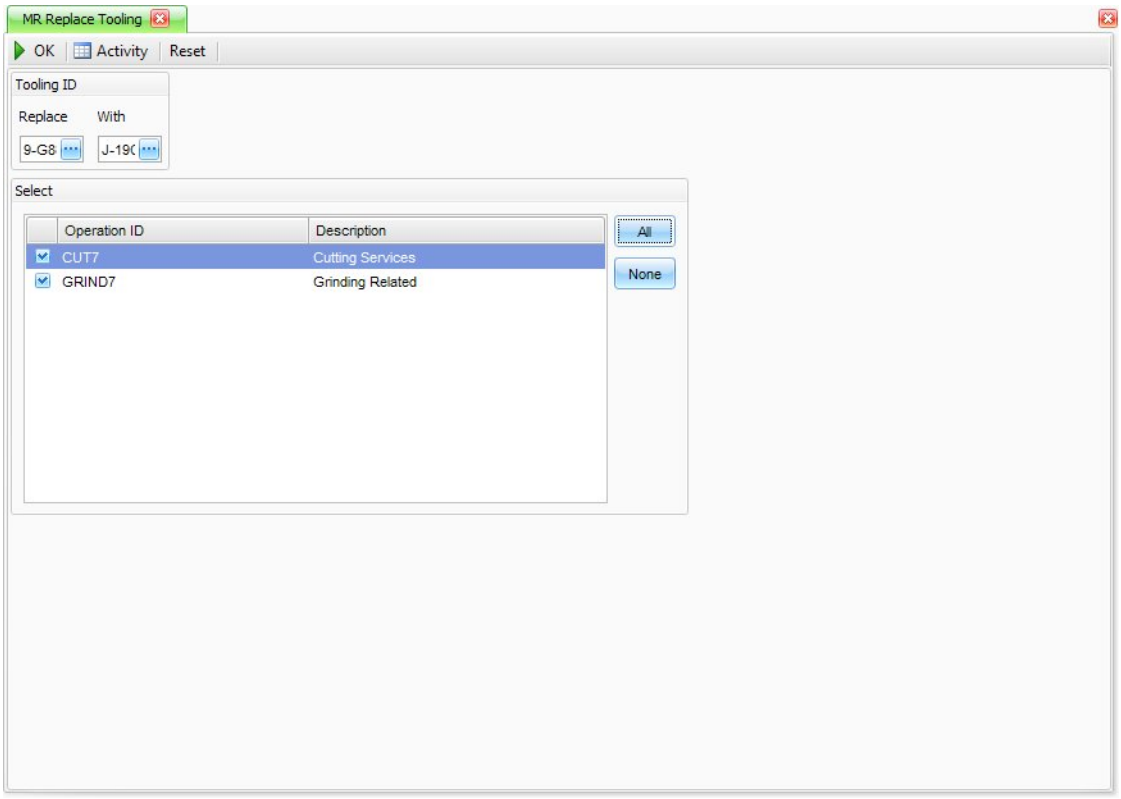
1. Select **Replace Tooling** from the **Global Replacement** menu.

## Replace Tooling Menu



2. The **Replace Tooling** screen appears.

## Replace Tooling Screen




3. Select the **Tooling ID** to **Replace**. This would be the Tooling you will be replacing.
4. Select the **Tooling ID** you want to replace **With**. This would be the new Tooling with which you want to replace the old Tooling.
5. **Select** which Operations in which you want to replace Toolings. You can select each selection individually or click the **All** button to select all in the list. Select the **None** button to unselect all selections in the list.

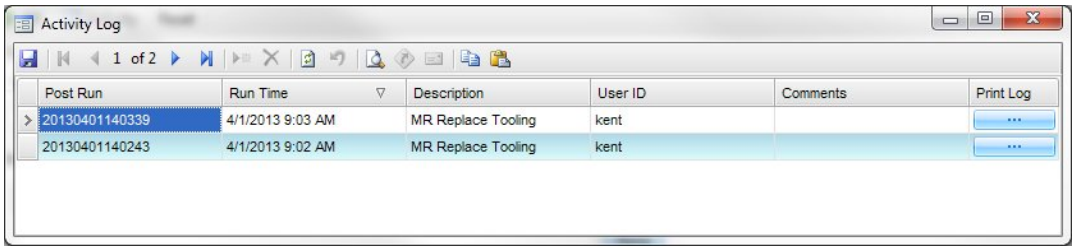
6. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **OK** | Begin processing. |
| **Activity** | View the Activity Log for posting production orders. |
| **Reset** | Set all fields to their default values |

- A message appears when the replace completes successfully. After you click **OK** to close this message box, the Replace Tooling Log appears.

## Activity Log Dialog Box




The Activity Log dialog box appears when you click **Activity**. The Activity Log dialog box tracks all post activity for administrative purposes. The system assigns each post a run ID.

**Post Run** - The system generated number used to identify the replace appears.

**Run Time** - The date and time the replace was made appear.

**Description** - The replace description appears.

**User ID** - The user who performed the replace appears.

**Comments** - Comments entered for the replace appear.

**Print Log** - to print the replace log from the selected replace.

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

## Replace Tooling Log

**Continental Products Unlimited**

**Replace Tooling Log**

Page 1

| Operation ID | Description | Changed From | Changed To | Date / Time | User ID |
|---|---|---|---|---|---|
| CUT7 | Cutting Services | 9-G88 | J-19C | 4/1/2013 9:02 AM | kent |
| GRIND7 | Grinding Related | 9-G88 | J-19C | 4/1/2013 9:02 AM | kent |

4/1/2013 9:02 AM

*** End of Report ***

OPEN_SYSTEMS\KentHe

# 5

# Interactive Views

# 5 INTERACTIVE VIEWS

# USING THE INTERACTIVE VIEWS MENU

Use the Interactive Views menu functions to view (but not change) the following setup information:

- Routings
- Operations
- Work Centers
- Machine Groups
- Labor Types
- Tooling

Using Interactive Views you can easily and quickly build and manipulate tables to display information. After selecting from the available criteria to display as filter fields, data items, column fields, or row fields, you can highlight columns and rows to have the selected rows and columns display as a graph below the table. To include multiple rows or columns in the graph, you can use the CTRL+ click (to select multiple rows or columns) and SHIFT+ click (to select all rows or columns between the first and second click) shortcuts, after selecting the first row and column.

## Sorting and Filtering

When you arrange the columns to your liking, you can sort, group, or filter the data by the column's contents. To sort and filter the data, right-click a column heading and use the functions outlined in the table below.

| Button | Name | Select To |
|---|---|---|
|  | **Sort Ascending** | Sort the selected column’s data in ascending order.<br>**NOTE: You can also accomplish this task by clicking the column heading until  appears.** |
|  | **Sort Descending** | Sort the selected column’s data in descending order.<br>**NOTE: You can also accomplish this task by clicking the column heading until  appears.** |
| | **Clear Sorting** | Remove all sorting options and revert to the default view. |

| | |
|---|---|
| **Group By This Column** | Group the identical entries from this column into a single group.<br>**NOTE: If you group by column entry, you can right-click on the grouped column heading to select from the options outlined in this table, or choose Full Expand to expand all of the grouped entries, Full Collapse to collapse all of the grouped entries, or UnGroup to undo the grouped entry.** |
| **Column Chooser** | Open the Customization window. With the Customization window open, you can click and drag columns to the window to remove them from the screen or click and drag columns from the window to place them back onto the screen.<br>**NOTE: You can also remove a column from the form by clicking on the heading of the column and dragging it to the bottom of the screen and releasing it when your cursor changes to an *X*.** |
| **Best Fit** | Adjust the selected column to resize the column for the best view of that column's data. |
| **Clear Filter** | Remove all filter options and revert to the default view. |
| **Filter Editor** | See "Filtering Across All Columns" in the General Information guide for more information. |
| **Best Fit (all columns)** | Adjust all columns to resize for the best view all of the data at once. |

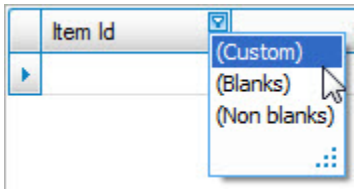
## Filtering by an Individual Column

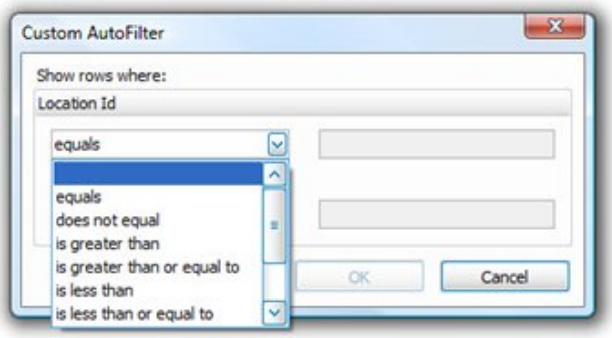
To create a filter for a single column, click the funnel icon that appears once you place the cursor in the associated column and then select a filter option from the drop down menu.

| Select | To |
|---|---|
| | Enter criteria for filtering the selected column. |
| **(Custom)** | **NOTE: View the following paragraph for additional information.** |
| **(Blanks)** | Display only entries with blank information in the selected column. |
| **(Non blanks)** | Display only entries with information in the selected column. |

From the drop down menu, you can also select from the entries in the selected column to group the column by the selected entry.

If you select (**Custom**), the Custom AutoFilter function appears. Select up to two filtering criteria for the selected column from the drop down menus, then enter a string of text or numbers to complete the condition and click **OK**.




## Sorting and Filtering Pivot Chart Data

Right-click on the pivot table gray area or a field button when in Pivot Chart View for each application, to use the following functions:

| Select | To |
|---|---|
| Refresh Data | Refresh the data in the tables. |
| Hide | Remove the selected criterion from the table. |
| Order | Move the selected criterion to the beginning, left, right, or end of the list of criteria. |
| Show Field List | Open the PivotGrid Field List, then click and drag the applicable fields to the desired locations. |

| Select | To |
|---|---|
|  | Close the PivotGrid Field List. |

**NOTE: Note: See instructions in the "Filtering Across All Columns" section for more information on filtering.**

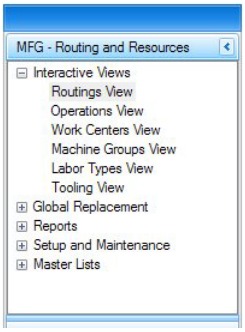
# ROUTINGS VIEW

The **Routings View** will show setup information from the Routings you set up using the Setup and Maintenance function (page 3-59).

To use the **Routings View**, follow these steps:

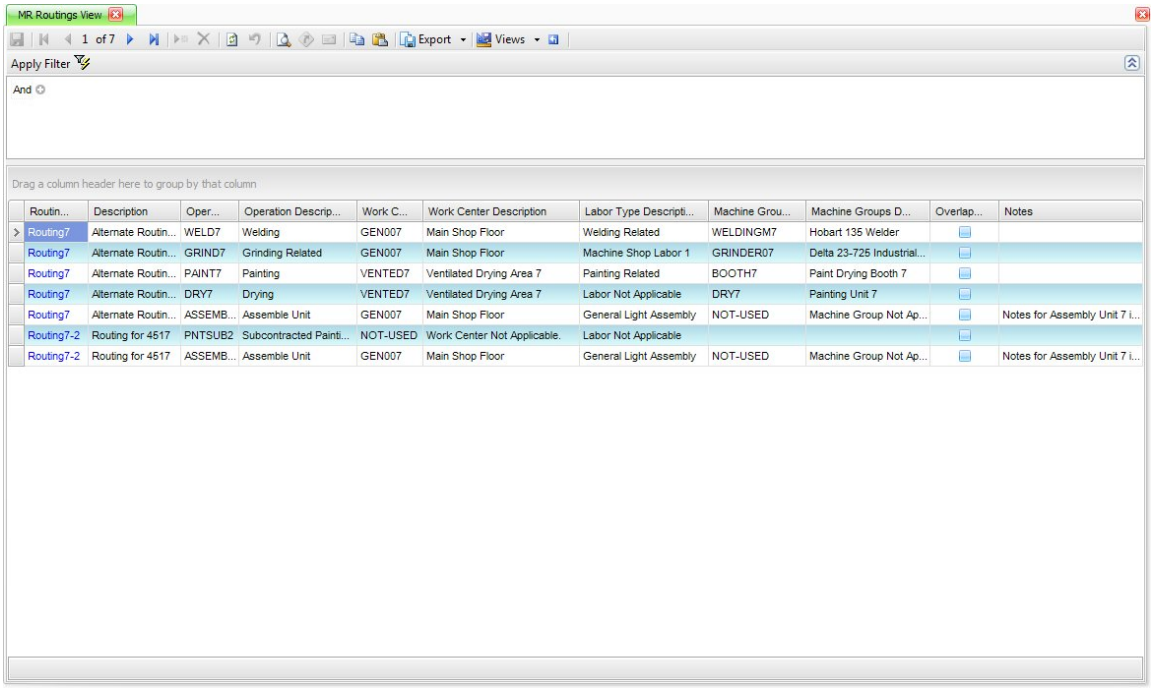
1. Select **Routings View** from the **Interactive Views** menu.

## Routings View Menu



2. The **Routings View** screen appears.

## Routings View Screen




3. Select the range of **Filter Criteria** to include in the View. Leave the filter criteria blank to include all records. Click **Apply Filter** to populate the grid below.
4. Double click on the blue **Routing ID** field to drill down to the Routings setup screen.
5. Refer to the **Using the Interactive Views Menu** section at the beginning of this chapter for more details on using the Routings View.

**NOTE: Refer to the How to Use Grids Section in the General Information guide for more details on how to add or take away columns from the grid screen.**

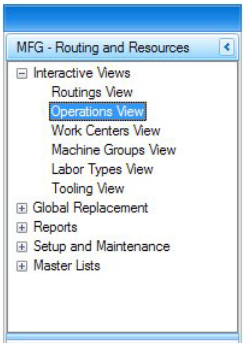
# OPERATIONS VIEW

The **Operations View** will show setup information from the Operations you set up using the Setup and Maintenance function.

To use the **Operations View**, follow these steps:

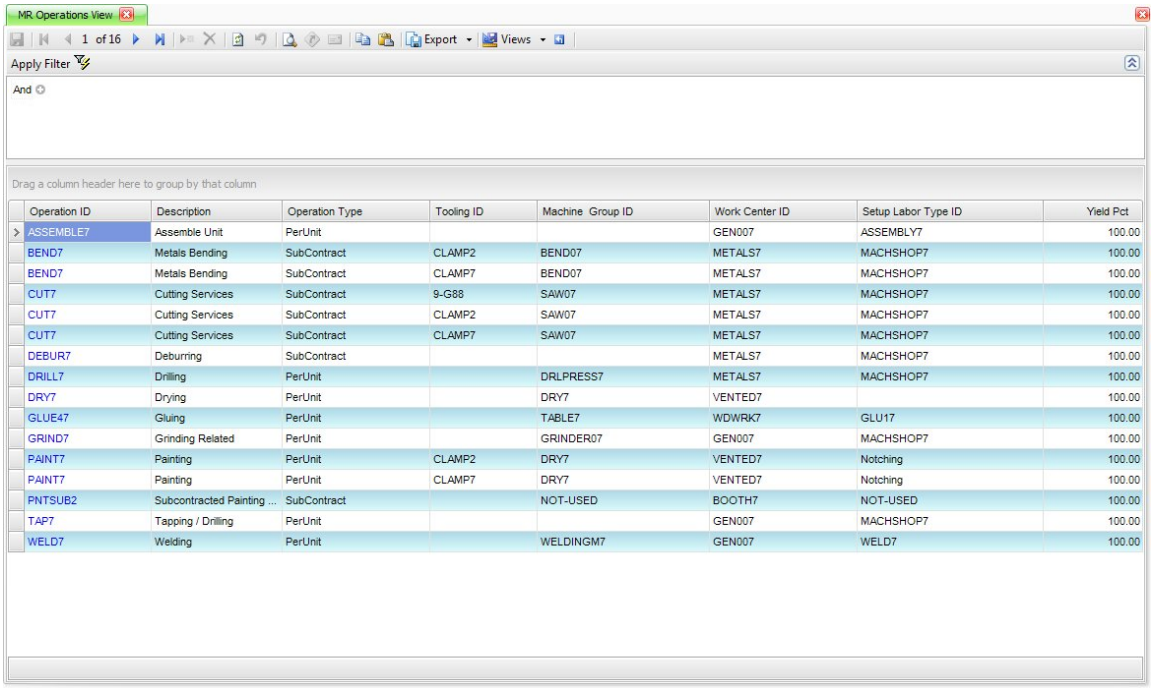
1. Select **Operations View** from the **Interactive Views** menu.

## Operations View Menu



2. The **Operations View** screen appears.

## Operations View Screen




| Operation ID | Description | Operation Type | Tooling ID | Machine Group ID | Work Center ID | Setup Labor Type ID | Yield Pct |
|---|---|---|---|---|---|---|---|
| ASSEMBLE7 | Assemble Unit | PerUnit | | | GEN007 | ASSEMBLY7 | 100.00 |
| BEND7 | Metals Bending | SubContract | CLAMP2 | BEND07 | METALS7 | MACHSHOP7 | 100.00 |
| BEND7 | Metals Bending | SubContract | CLAMP7 | BEND07 | METALS7 | MACHSHOP7 | 100.00 |
| CUT7 | Cutting Services | SubContract | 9-G88 | SAW07 | METALS7 | MACHSHOP7 | 100.00 |
| CUT7 | Cutting Services | SubContract | CLAMP2 | SAW07 | METALS7 | MACHSHOP7 | 100.00 |
| CUT7 | Cutting Services | SubContract | CLAMP7 | SAW07 | METALS7 | MACHSHOP7 | 100.00 |
| DEBUR7 | Deburring | SubContract | | | METALS7 | MACHSHOP7 | 100.00 |
| DRILL7 | Drilling | PerUnit | | DRLPRESS7 | METALS7 | MACHSHOP7 | 100.00 |
| DRY7 | Drying | PerUnit | | DRY7 | VENTED7 | | 100.00 |
| GLUE47 | Gluing | PerUnit | | TABLE7 | WDWRK7 | GLU17 | 100.00 |
| GRIND7 | Grinding Related | PerUnit | | GRINDER07 | GEN007 | MACHSHOP7 | 100.00 |
| PAINT7 | Painting | PerUnit | CLAMP2 | DRY7 | VENTED7 | Notching | 100.00 |
| PAINT7 | Painting | PerUnit | CLAMP7 | DRY7 | VENTED7 | Notching | 100.00 |
| PNTSUB2 | Subcontracted Painting ... | SubContract | | NOT-USED | BOOTH7 | NOT-USED | 100.00 |
| TAP7 | Tapping / Drilling | PerUnit | | | GEN007 | MACHSHOP7 | 100.00 |
| WELD7 | Welding | PerUnit | | WELDINGM7 | GEN007 | WELD7 | 100.00 |

3. Select the range of **Filter Criteria** to include in the View. Leave the filter criteria blank to include all records. Click **Apply Filter** to populate the grid below.
4. Double click on the blue **Operations ID** field to drill down to the Operations setup screen.
5. Refer to the **Using the Interactive Views Menu** section at the beginning of this chapter for more details on using the Operations View.

**NOTE: Refer to the How to Use Grids Section in the General Information guide for more details on how to add or take away columns from the grid screen.**

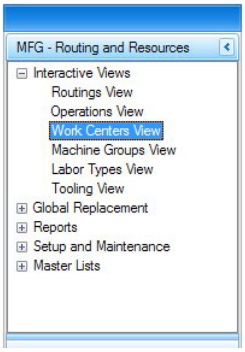
# WORK CENTERS VIEW

The **Work Centers View** will show setup information from the Work Centers you set up using the Setup and Maintenance function.

To use the **Work Centers View**, follow these steps:

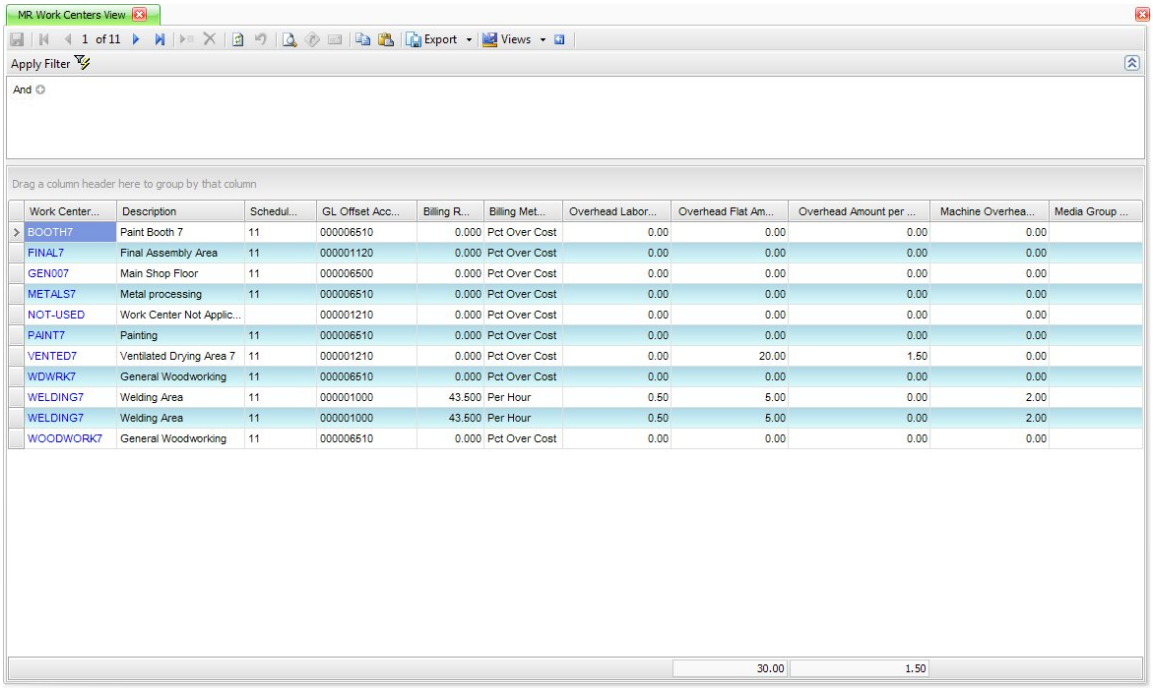
1. Select **Work Centers View** from the **Interactive Views** menu.

## Work Centers View Menu



2. The **Work Centers View** screen appears.

## Work Centers View Screen




| Work Center... | Description | Schedul... | GL Offset Acc... | Billing R... | Billing Met... | Overhead Labor... | Overhead Flat Am... | Overhead Amount per ... | Machine Overhea... | Media Group ... |
|---|---|---|---|---|---|---|---|---|---|---|
| BOOTH7 | Paint Booth 7 | 11 | 000006510 | 0.000 | Pct Over Cost | 0.00 | 0.00 | 0.00 | 0.00 | |
| FINAL7 | Final Assembly Area | 11 | 000001120 | 0.000 | Pct Over Cost | 0.00 | 0.00 | 0.00 | 0.00 | |
| GEN007 | Main Shop Floor | 11 | 000006500 | 0.000 | Pct Over Cost | 0.00 | 0.00 | 0.00 | 0.00 | |
| METALS7 | Metal processing | 11 | 000006510 | 0.000 | Pct Over Cost | 0.00 | 0.00 | 0.00 | 0.00 | |
| NOT-USED | Work Center Not Applic... | | 000001210 | 0.000 | Pct Over Cost | 0.00 | 0.00 | 0.00 | 0.00 | |
| PAINT7 | Painting | 11 | 000006510 | 0.000 | Pct Over Cost | 0.00 | 0.00 | 0.00 | 0.00 | |
| VENTED7 | Ventilated Drying Area 7 | 11 | 000001210 | 0.000 | Pct Over Cost | 0.00 | 20.00 | 1.50 | 0.00 | |
| WDWRK7 | General Woodworking | 11 | 000006510 | 0.000 | Pct Over Cost | 0.00 | 0.00 | 0.00 | 0.00 | |
| WELDING7 | Welding Area | 11 | 000001000 | 43.500 | Per Hour | 0.50 | 5.00 | 0.00 | 2.00 | |
| WELDING7 | Welding Area | 11 | 000001000 | 43.500 | Per Hour | 0.50 | 5.00 | 0.00 | 2.00 | |
| WOODWORK7 | General Woodworking | 11 | 000006510 | 0.000 | Pct Over Cost | 0.00 | 0.00 | 0.00 | 0.00 | |
| | | | | | | | 30.00 | 1.50 | | |

3. Select the range of **Filter Criteria** to include in the View. Leave the filter criteria blank to include all records. Click **Apply Filter** to populate the grid below.
4. Double click on the blue **Work Center ID** field to drill down to the Work Center setup screen.
5. Refer to the **Using the Interactive Views Menu** section at the beginning of this chapter for more details on using the Work Centers View.

**NOTE: Refer to the How to Use Grids Section in the General Information guide for more details on how to add or take away columns from the grid screen.**

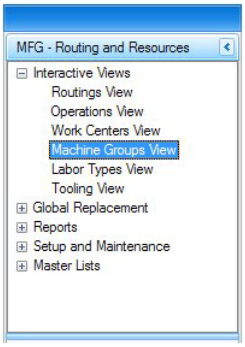
# MACHINE GROUPS VIEW

The **Machine Groups View** will show setup information from the Machine Groups you set up using the Setup and Maintenance function.

To use the **Machine Groups View**, follow these steps:

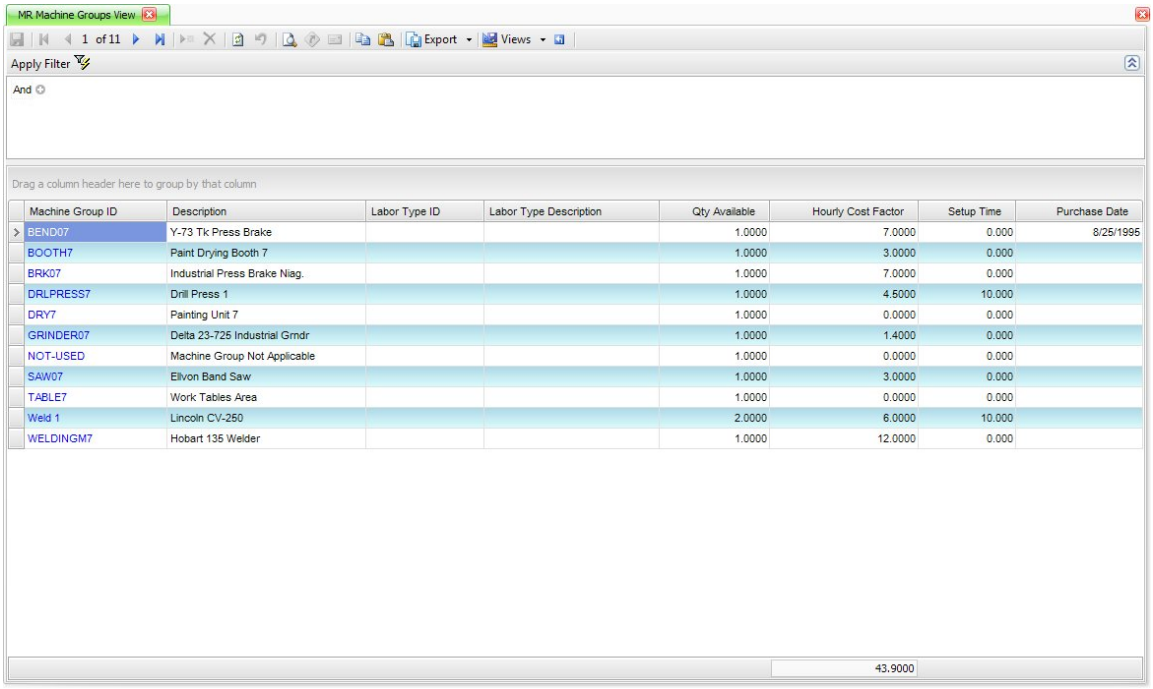
1. Select **Machine Groups View** from the **Interactive Views** menu.

## Machine Groups View Menu



2. The **Machine Groups View** screen appears.

## Machine Groups View Screen




3. Select the range of **Filter Criteria** to include in the View. Leave the filter criteria blank to include all records. Click **Apply Filter** to populate the grid below.
4. Double click on the blue **Machine Group ID** field to drill down to the Machine Groups setup screen.
5. Refer to the **Using the Interactive Views Menu** section a the beginning of this chapter for more details on using the Machine Groups View.

**NOTE: Refer to the How to Use Grids Section in the General Information guide for more details on how to add or take away columns from the grid screen.**

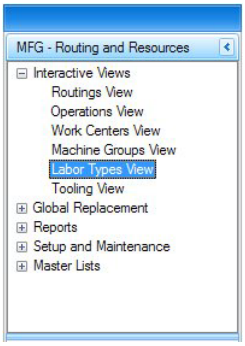
# LABOR TYPES VIEW

The **Labor Types View** will show setup information from the Labor Types you set up using the Setup and Maintenance function.

To use the **Labor Types View**, follow these steps:

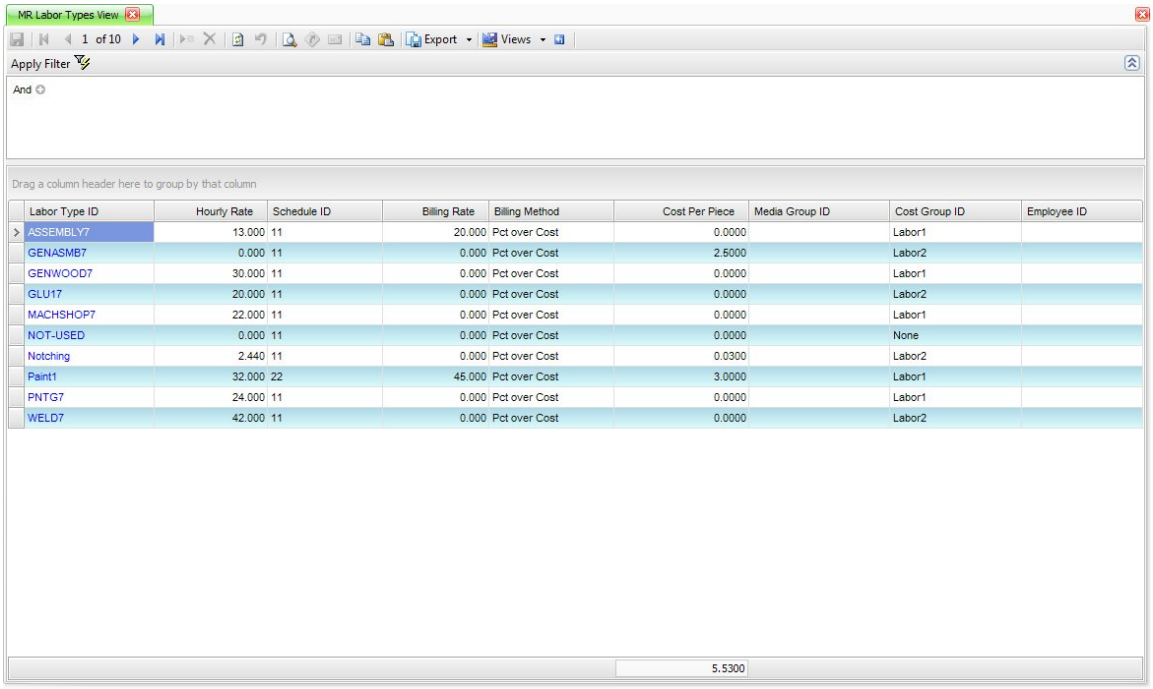
1. Select **Labor Types View** from the **Interactive Views** menu.

## Labor Types View Menu



2. The **Labor Types View** screen appears.

## Labor Types View Screen




| Labor Type ID | Hourly Rate | Schedule ID | Billing Rate | Billing Method | Cost Per Piece | Media Group ID | Cost Group ID | Employee ID |
|---|---|---|---|---|---|---|---|---|
| ASSEMBLY7 | 13.000 | 11 | 20.000 | Pct over Cost | 0.0000 | | Labor1 | |
| GENASMB7 | 0.000 | 11 | 0.000 | Pct over Cost | 2.5000 | | Labor2 | |
| GENWOOD7 | 30.000 | 11 | 0.000 | Pct over Cost | 0.0000 | | Labor1 | |
| GLU17 | 20.000 | 11 | 0.000 | Pct over Cost | 0.0000 | | Labor2 | |
| MACHSHOP7 | 22.000 | 11 | 0.000 | Pct over Cost | 0.0000 | | Labor1 | |
| NOT-USED | 0.000 | 11 | 0.000 | Pct over Cost | 0.0000 | | None | |
| Notching | 2.440 | 11 | 0.000 | Pct over Cost | 0.0300 | | Labor2 | |
| Paint1 | 32.000 | 22 | 45.000 | Pct over Cost | 3.0000 | | Labor1 | |
| PNTG7 | 24.000 | 11 | 0.000 | Pct over Cost | 0.0000 | | Labor1 | |
| WELD7 | 42.000 | 11 | 0.000 | Pct over Cost | 0.0000 | | Labor2 | |

3. Select the range of **Filter Criteria** to include in the View. Leave the filter criteria blank to include all records. Click **Apply Filter** to populate the grid below.
4. Double click on the blue **Labor Type ID** field to drill down to the Labor Types setup screen.
5. Refer to the **Using the Interactive Views Menu** section a the beginning of this chapter for more details on using the Open Invoice View.

**NOTE: Refer to the How to Use Grids Section in the General Information guide for more details on how to add or take away columns from the grid screen.**

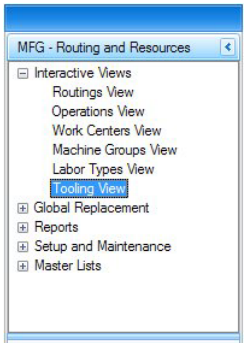
# TOOLINGS VIEW

The **Toolings View** will show setup information from the Toolings you set up using the Setup and Maintenance function.

To use the **Toolings View**, follow these steps:

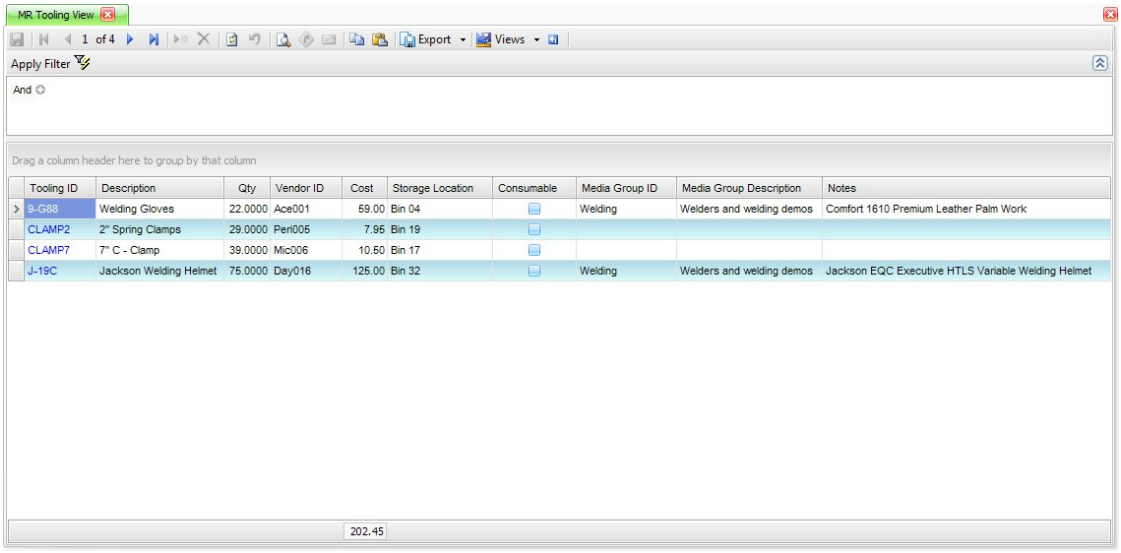
1. Select **Toolings View** from the **Interactive Views** menu.

## Toolings View Menu




2. The **Toolings View** screen appears.

## Toolings View Screen



3. Select the range of **Filter Criteria** to include in the View. Leave the filter criteria blank to include all records. Click **Apply Filter** to populate the grid below.
4. Double click on the blue **Tooling ID** field to drill down to the Toolings setup screen.
5. Refer to the **Using the Interactive Views Menu** section a the beginning of this chapter for more details on using the Toolings View.

**NOTE: Refer to the How to Use Grids Section in the General Information guide for more details on how to add or take away columns from the grid screen.**

# 6

# Reports

# 6 REPORTS

# USING THE REPORTS MENU

Before you use the functions on the Reports menu, make sure you have set up the Routing and Resources module using the corresponding functions on the Setup and Maintenance menu. Verify your setup information using the functions on the Master Lists and Interactive Views menus. See “Routing and Resources Setup” on (page 3-1) for more information on setup.

Since Routing and Resources is not activity-oriented, the Reports menu consists mainly of a group of Where-Used reports. These reports are similar to each other in functionality. Print the Where-Used reports before you run any global replacement functions so you can view the substitutions you are about to make.

The Routing and Resources Reports menu has the following reports:

## Operations Where-Used

The Operations Where-Used report displays the Routings and BOMs in which each Operation is used, and the impact of any changes in the current Operation availability and cost structure. Print this report before you perform a global replacement on Operation IDs.

## Work Centers Where-Used

The Work Centers Where-Used report displays the Operations, Routings, and BOMs in which each Work Center is used, and the impact of any changes in the current Work Center availability and cost structure. Print this report before you perform a global replacement on Work Centers.

## Machine Groups Where-Used

The Machine Group Where-Used report shows the Work Centers, Operations, Routings, and Bills of Material in which each Machine Group is used, and shows the impact of any changes in the current Machine Group availability and cost structure. Print this report before you run a global replacement of Machine Group IDs.

## Labor Types Where-Used

The Labor Types Where-Used report shows the Machine Groups, Operations, Routings, and BOMs in which each Labor Type is used, and the impact of any changes in the current Labor Type availability and cost structure. Print this report before you perform a global replacement of Labor Types.

## Tooling Where-Used

The Tooling Where-Used report shows the Operations in which each Tooling ID is used, and shows the impact of any changes in the current Tooling availability. Print this report before you perform a global replacement of Tooling items.

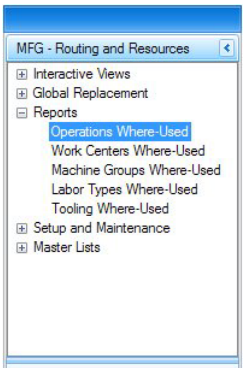
# OPERATIONS WHERE - USED REPORT

The **Operations Where - Used Report** displays the Routings and BOMs in which each Operation is used, and the impact of any changes in the current Operation availability and cost structure. Print this report before you perform a global replacement on Operation IDs.

To produce the **Operations Where - Used Report**, follow these steps:

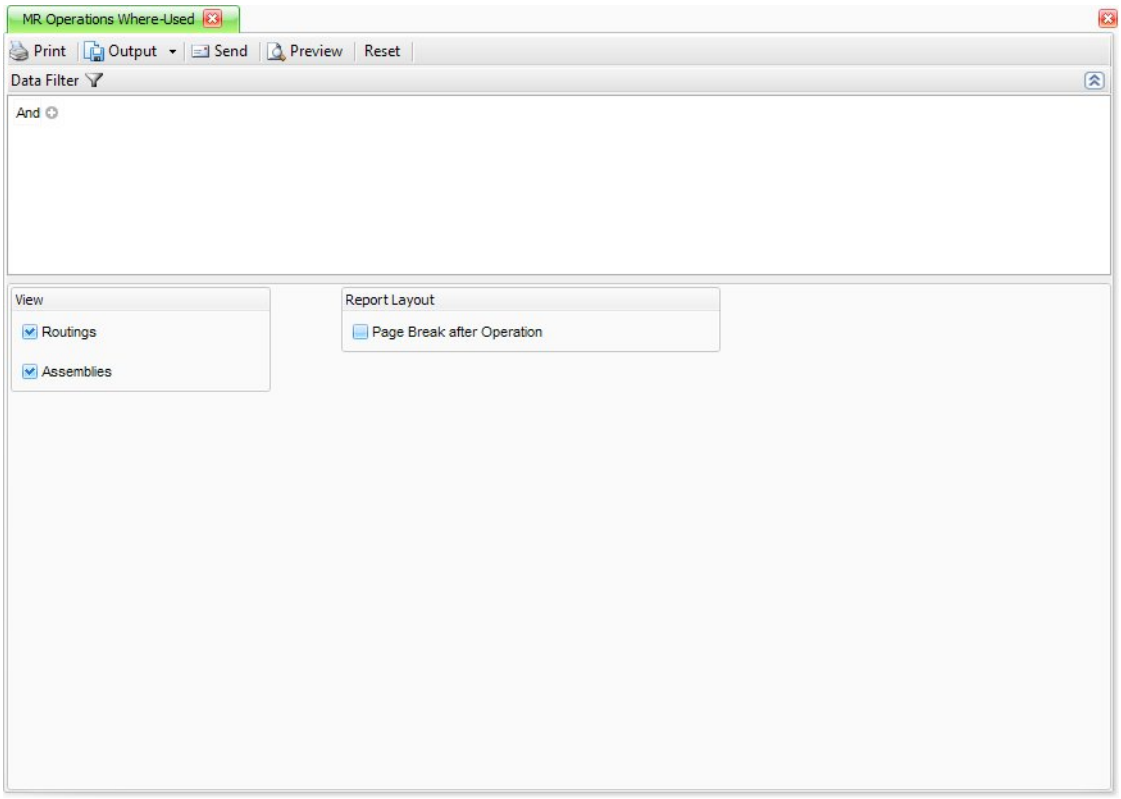
1. Select **Operations Where - Used Report** from the **Reports** menu.

## Operations Where - Used Report Menu



2. The **Operations Where - Used Report** screen appears.

## Operations Where - Used Report Screen




3. Select the range of **Filter Criteria** to include in the report. Leave this area blank to include all information in the report.
4. Select the information to **View** on the report; **Routings** and **Assemblies**. You may select any one or any combination of these check boxes.
5. Select the **Report Layout**; select the box if you want to have a **Page Break after Operations**. Leave this check box blank to have a continuous report.

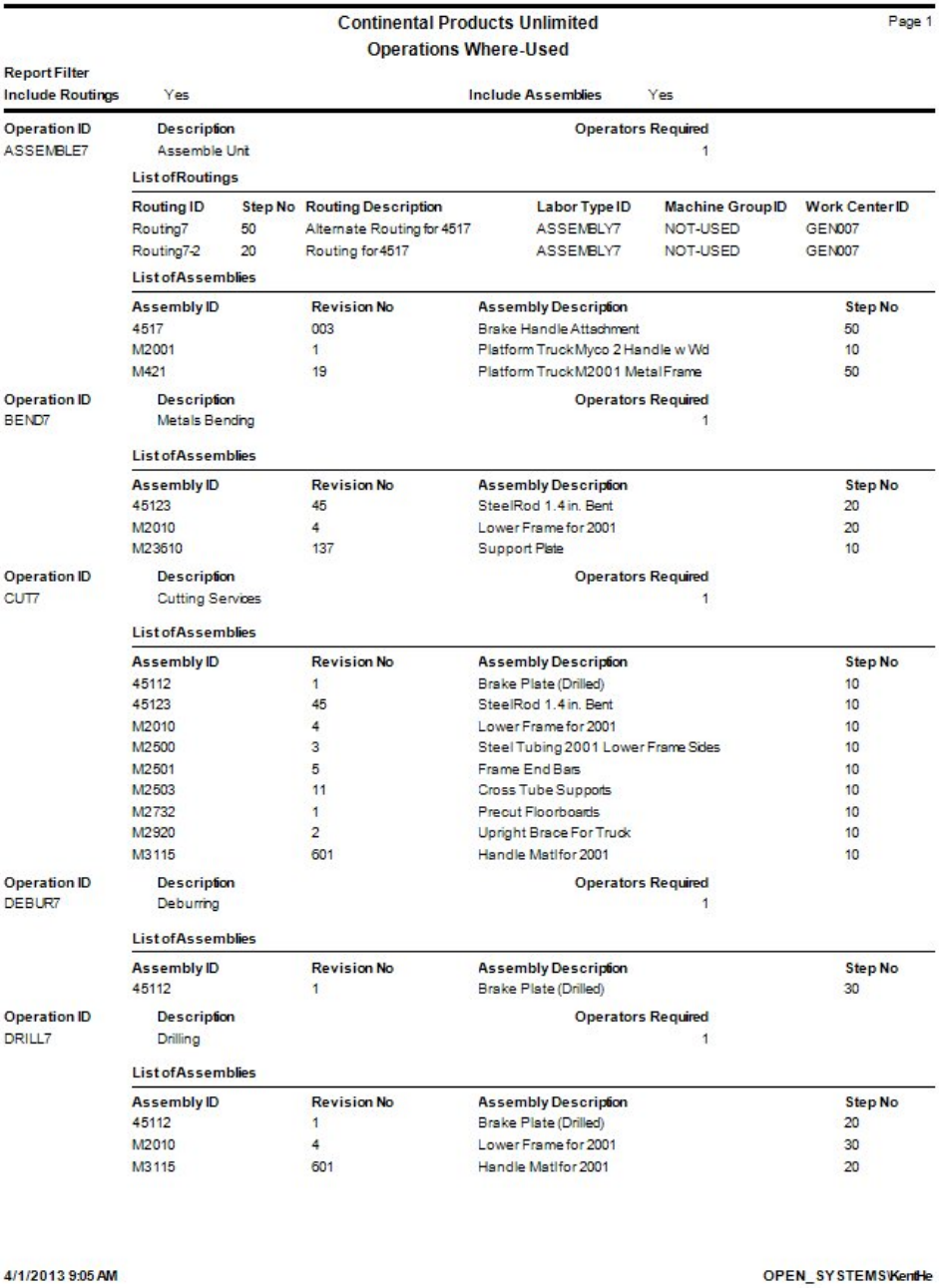
6. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **Reset** | Set all fields to their defaults. |
| **Preview** | Preview the report on your monitor. |
| **Output** | Output the report as a .pdf file and save it. |
| **Send** | Email the report with the report attached as a .pdf file. |
| **Print** | Print the report. |

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

# Operations Where - Used Report



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Operations Where-Used

**Report Filter**
**Include Routings** Yes **Include Assemblies** Yes

| Operation ID | Description | Operators Required |
|---|---|---|
| ASSEMBLE7 | Assemble Unit | 1 |

**List of Routings**

| Routing ID | Step No | Routing Description | Labor Type ID | Machine Group ID | Work Center ID |
|---|---|---|---|---|---|
| Routing7 | 50 | Alternate Routing for 4517 | ASSEMBLY7 | NOT-USED | GEN007 |
| Routing7-2 | 20 | Routing for 4517 | ASSEMBLY7 | NOT-USED | GEN007 |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 4517 | 003 | Brake Handle Attachment | 50 |
| M2001 | 1 | Platform Truck Myco 2 Handle w Wd | 10 |
| M421 | 19 | Platform Truck M2001 Metal Frame | 50 |

| Operation ID | Description | Operators Required |
|---|---|---|
| BEND7 | Metals Bending | 1 |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 45123 | 45 | Steel Rod 1.4 in. Bent | 20 |
| M2010 | 4 | Lower Frame for 2001 | 20 |
| M23610 | 137 | Support Plate | 10 |

| Operation ID | Description | Operators Required |
|---|---|---|
| CUT7 | Cutting Services | 1 |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 45112 | 1 | Brake Plate (Drilled) | 10 |
| 45123 | 45 | Steel Rod 1.4 in. Bent | 10 |
| M2010 | 4 | Lower Frame for 2001 | 10 |
| M2500 | 3 | Steel Tubing 2001 Lower Frame Sides | 10 |
| M2501 | 5 | Frame End Bars | 10 |
| M2503 | 11 | Cross Tube Supports | 10 |
| M2732 | 1 | Precut Floorboards | 10 |
| M2920 | 2 | Upright Brace For Truck | 10 |
| M3115 | 601 | Handle Matl for 2001 | 10 |

| Operation ID | Description | Operators Required |
|---|---|---|
| DEBUR7 | Deburring | 1 |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 45112 | 1 | Brake Plate (Drilled) | 30 |

| Operation ID | Description | Operators Required |
|---|---|---|
| DRILL7 | Drilling | 1 |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 45112 | 1 | Brake Plate (Drilled) | 20 |
| M2010 | 4 | Lower Frame for 2001 | 30 |
| M3115 | 601 | Handle Matl for 2001 | 20 |

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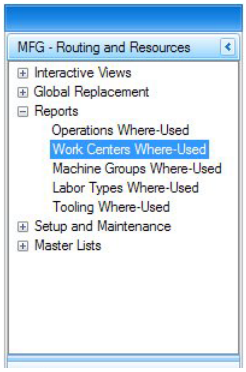
# WORK CENTERS WHERE - USED REPORT

The **Work Centers Where - Used Report** displays the Operations, Routings, and BOMs in which each Work Center is used, and the impact of any changes in the current Work Center availability and cost structure. Print this report before you perform a global replacement on Work Centers.

To produce the **Work Centers Where - Used Report**, follow these steps:

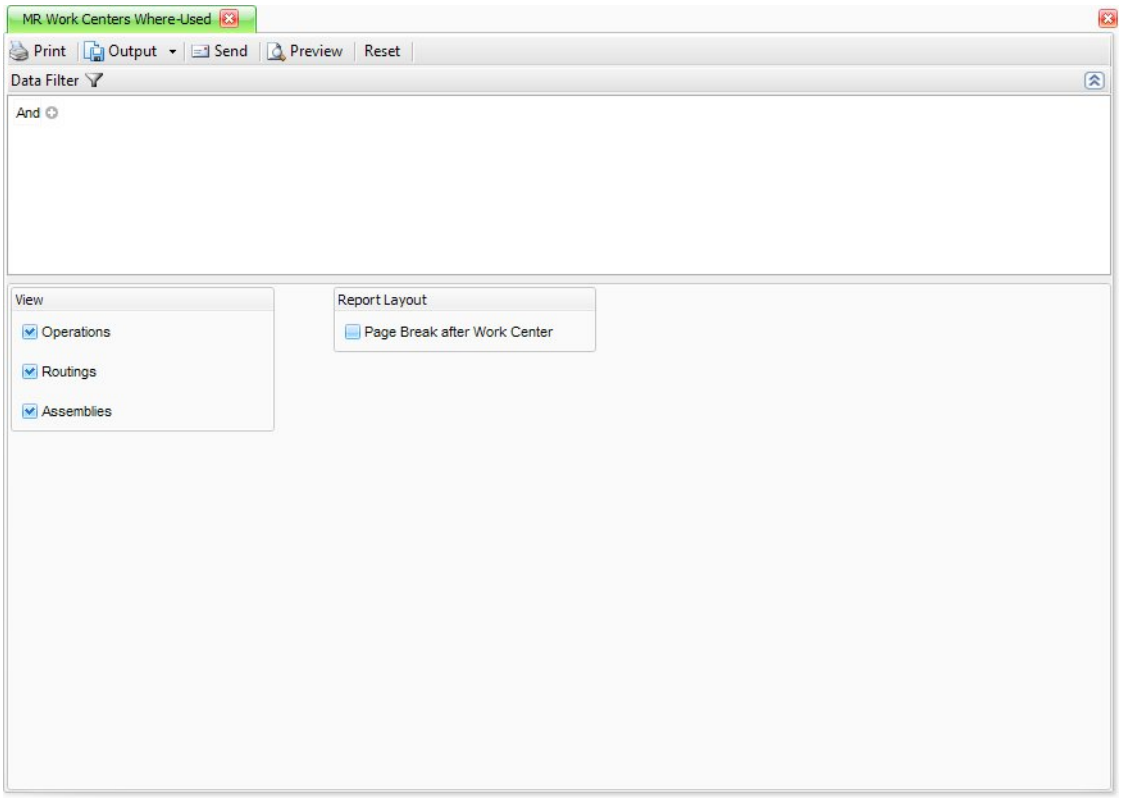
1. Select **Work Centers Where - Used Report** from the **Reports** menu.

## Work Centers Where - Used Report Menu



2. The **Work Centers Where - Used Report** screen appears.

## Work Centers Where - Used Report Screen




3. Select the range of **Filter Criteria** to include in the report. Leave this area blank to include all information in the report.
4. Select the information to **View** on the report; **Operations, Routings**, and **Assemblies**. You may select any one or any combination of these check boxes.
5. Select the **Report Layout**; select the box if you want to have a **Page Break after Work Centers**. Leave this check box blank to have a continuous report.

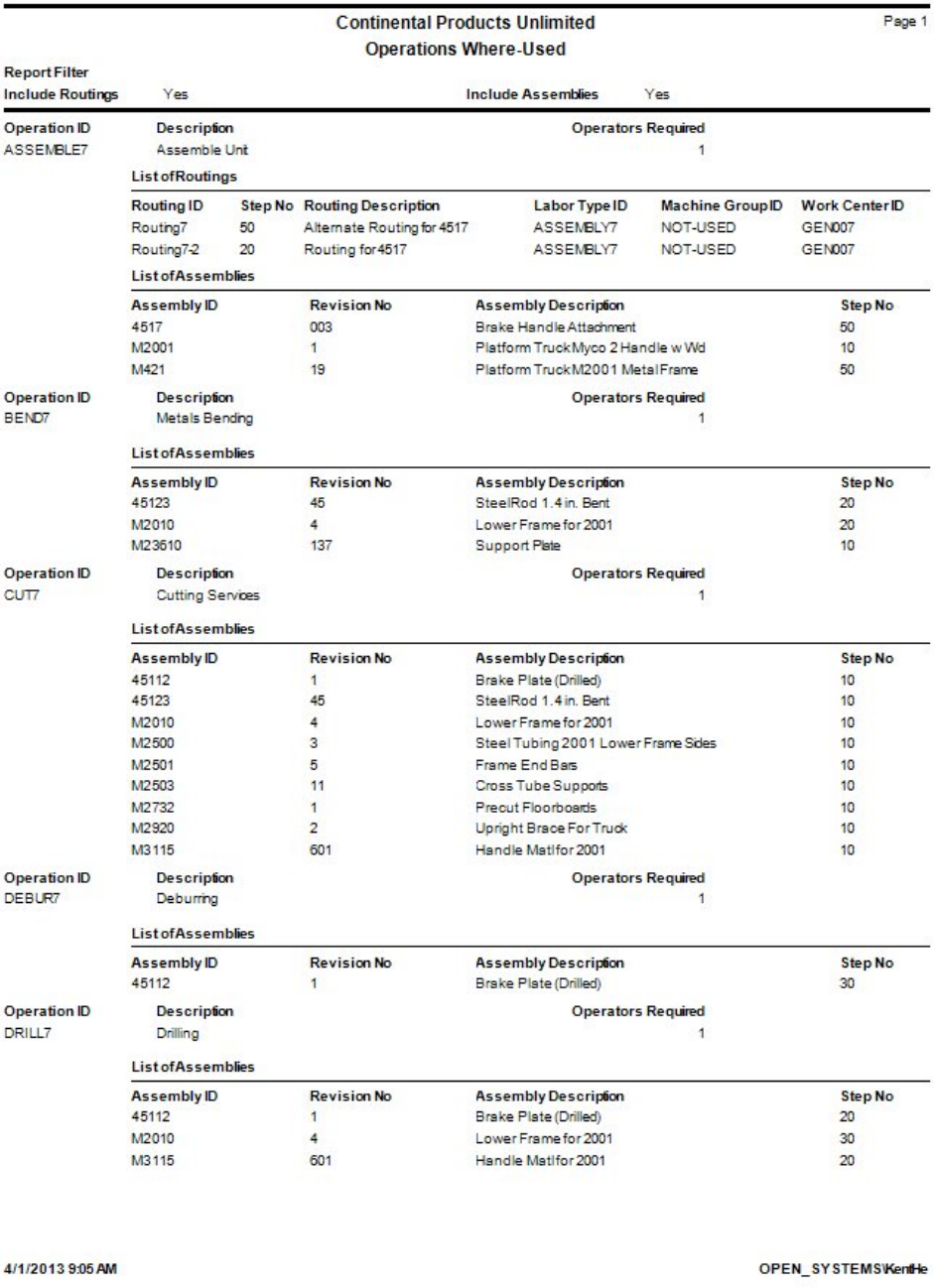
6. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **Reset** | Set all fields to their defaults. |
| **Preview** | Preview the report on your monitor. |
| **Output** | Output the report as a .pdf file and save it. |
| **Send** | Email the report with the report attached as a .pdf file. |
| **Print** | Print the report. |

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

# Work Centers Where - Used Report



Continental Products Unlimited
Operations Where-Used

Page 1

**Report Filter**
**Include Routings** Yes **Include Assemblies** Yes

| Operation ID | Description | Operators Required |
|---|---|---|
| ASSEMBLE7 | Assemble Unit | 1 |

**List of Routings**

| Routing ID | Step No | Routing Description | Labor Type ID | Machine Group ID | Work Center ID |
|---|---|---|---|---|---|
| Routing7 | 50 | Alternate Routing for 4517 | ASSEMBLY7 | NOT-USED | GEN007 |
| Routing7-2 | 20 | Routing for 4517 | ASSEMBLY7 | NOT-USED | GEN007 |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 4517 | 003 | Brake Handle Attachment | 50 |
| M2001 | 1 | Platform Truck Myco 2 Handle w Wd | 10 |
| M421 | 19 | Platform Truck M2001 Metal Frame | 50 |

| Operation ID | Description | Operators Required |
|---|---|---|
| BEND7 | Metals Bending | 1 |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 45123 | 45 | Steel Rod 1.4 in. Bent | 20 |
| M2010 | 4 | Lower Frame for 2001 | 20 |
| M23610 | 137 | Support Plate | 10 |

| Operation ID | Description | Operators Required |
|---|---|---|
| CUT7 | Cutting Services | 1 |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 45112 | 1 | Brake Plate (Drilled) | 10 |
| 45123 | 45 | Steel Rod 1.4 in. Bent | 10 |
| M2010 | 4 | Lower Frame for 2001 | 10 |
| M2500 | 3 | Steel Tubing 2001 Lower Frame Sides | 10 |
| M2501 | 5 | Frame End Bars | 10 |
| M2503 | 11 | Cross Tube Supports | 10 |
| M2732 | 1 | Precut Floorboards | 10 |
| M2920 | 2 | Upright Brace For Truck | 10 |
| M3115 | 601 | Handle Matl for 2001 | 10 |

| Operation ID | Description | Operators Required |
|---|---|---|
| DEBUR7 | Deburring | 1 |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 45112 | 1 | Brake Plate (Drilled) | 30 |

| Operation ID | Description | Operators Required |
|---|---|---|
| DRILL7 | Drilling | 1 |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 45112 | 1 | Brake Plate (Drilled) | 20 |
| M2010 | 4 | Lower Frame for 2001 | 30 |
| M3115 | 601 | Handle Matl for 2001 | 20 |

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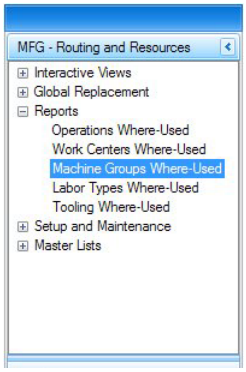
# MACHINE GROUPS WHERE - USED REPORT

The **Machine Groups Where - Used Report** shows the Work Centers, Operations, Routings, and Bills of Material in which each Machine Group is used and shows the impact of any changes in the current Machine Group availability and cost structure. Print this report before you run a global replacement of Machine Group IDs.

To produce the **Machine Groups Where - Used Report**, follow these steps:

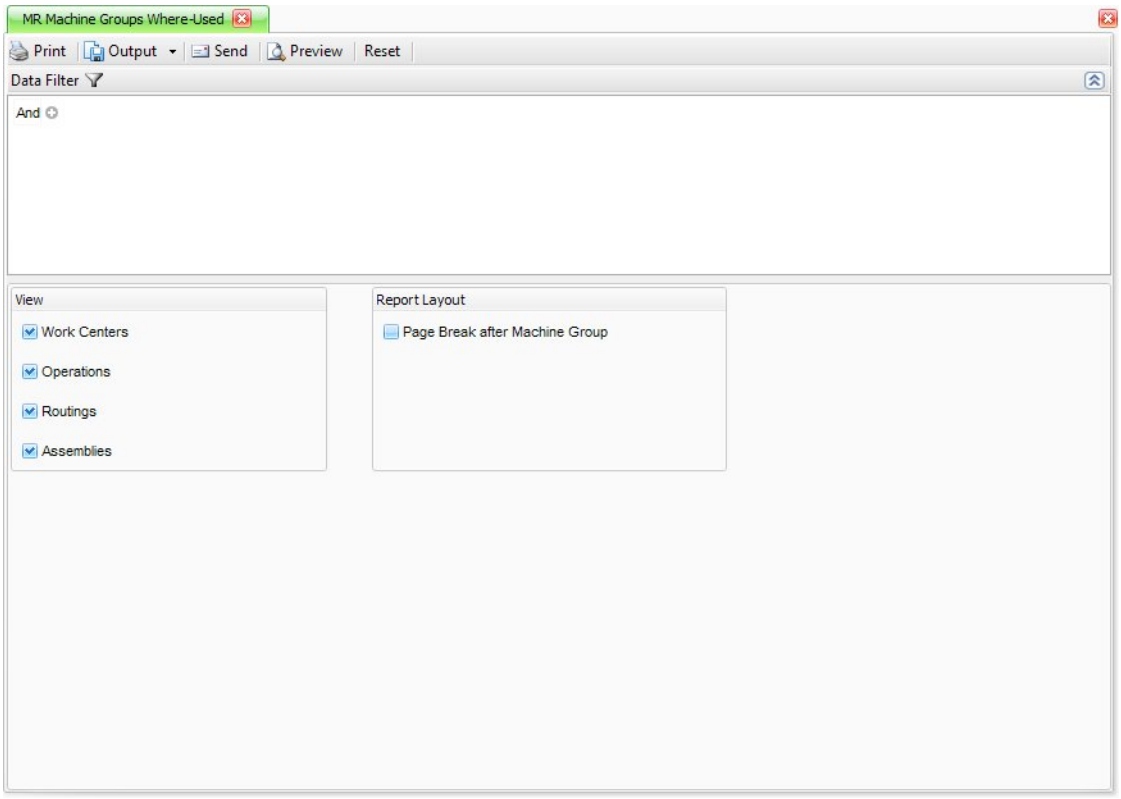
1. Select **Machine Groups Where - Used Report** from the **Reports** menu.

## Machine Groups Where - Used Report Menu



2. The **Machine Groups Where - Used Report** screen appears.

## Machine Groups Where - Used Report Screen




3. Select the range of **Filter Criteria** to include in the report. Leave this area blank to include all information in the report.
4. Select the information to **View** on the report; **Work Centers, Operations, Routings**, and **Assemblies**. You may select any one or any combination of these check boxes.
5. Select the **Report Layout**; select the box if you want to have a **Page Break after Machine Groups**. Leave this check box blank to have a continuous report.

6. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **Reset** | Set all fields to their defaults. |
| **Preview** | Preview the report on your monitor. |
| **Output** | Output the report as a .pdf file and save it. |
| **Send** | Email the report with the report attached as a .pdf file. |
| **Print** | Print the report. |

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

# Machine Groups Where - Used Report

Continental Products Unlimited
Machine Groups Where-Used

Page 1

**Report Filter**

| | | | |
|---|---|---|---|
| **Include Work Centers** | Yes | **Include Operations** | Yes |
| **Include Routings** | Yes | **Include Assemblies** | Yes |

| Machine Group ID | Description | Machine Quantity Available | Cost Group ID |
|---|---|---|---|
| BEND07 | Y-73 Tk Press Brake | 1.0000 | Mach |

**List of Operations**

| Operation ID | Operation Description | Operators Required | Machine Run Time |
|---|---|---|---|
| BEND7 | Metals Bending | 1 | 10.000 Mins |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 45123 | 45 | SteelRod 1.4 in. Bent | 20.000 |
| M2010 | 4 | Lower Frame for 2001 | 20.000 |

| Machine Group ID | Description | Machine Quantity Available | Cost Group ID |
|---|---|---|---|
| BOOTH7 | Paint Drying Booth 7 | 1.0000 | Mach2 |

**List of Routings**

| Routing ID | Routing Description |
|---|---|
| Routing7 | Alternate Routing for 4517 |

| Machine Group ID | Description | Machine Quantity Available | Cost Group ID |
|---|---|---|---|
| BRK07 | Industrial Press Brake Mag. | 1.0000 | Mach2 |

| Machine Group ID | Description | Machine Quantity Available | Cost Group ID |
|---|---|---|---|
| DRLPRESS7 | Drill Press 1 | 1.0000 | Mach2 |

**List of Operations**

| Operation ID | Operation Description | Operators Required | Machine Run Time |
|---|---|---|---|
| DRILL7 | Drilling | 1 | 0.000 Hrs |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 45112 | 1 | Brake Plate (Drilled) | 20.000 |
| M2010 | 4 | Lower Frame for 2001 | 30.000 |
| M3115 | 601 | Handle Matl for 2001 | 20.000 |

| Machine Group ID | Description | Machine Quantity Available | Cost Group ID |
|---|---|---|---|
| DRY7 | Painting Unit 7 | 1.0000 | Mach |

**List of Operations**

| Operation ID | Operation Description | Operators Required | Machine Run Time |
|---|---|---|---|
| DRY7 | Drying | 1 | 0.000 Hrs |
| PAINT7 | Painting | 1 | 5.000 Hrs |

**List of Routings**

| Routing ID | Routing Description |
|---|---|
| Routing7 | Alternate Routing for 4517 |

**List of Assemblies**

| Assembly ID | Revision No | Assembly Description | Step No |
|---|---|---|---|
| 4517 | 003 | Brake Handle Attachment | 30.000 |
| M27329 | 3 | M2001 Finished Floor | 10.000 |
| M421 | 19 | Platform Truck M2001 Metal Frame | 40.000 |

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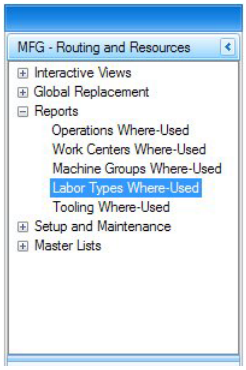
# LABOR TYPES WHERE - USED REPORT

The **Labor Types Where - Used Report** shows the Machine Groups, Operations, Routings, and BOMs in which each Labor Type is used and the impact of any changes in the current Labor Type availability and cost structure. Print this report before you perform a global replacement of Labor Types.

To produce the **Labor Types Where - Used Report**, follow these steps:

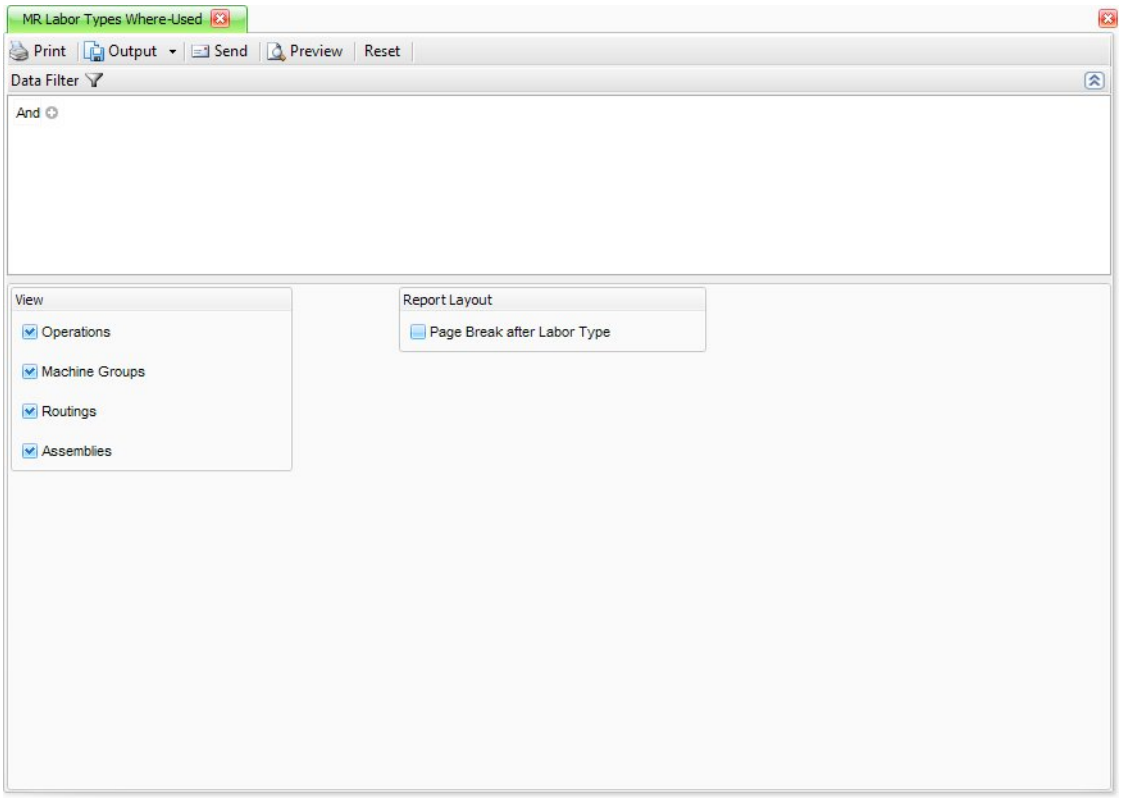
1. Select **Labor Types Where - Used Report** from the **Reports** menu.

## Labor Types Where - Used Report Menu



2. The **Labor Types Where - Used Report** screen appears.

## Labor Types Where - Used Report Screen




3. Select the range of **Filter Criteria** to include in the report. Leave this area blank to include all information in the report.
4. Select the information to **View** on the report; **Operations, Machine Groups, Routings**, and **Assemblies**. You may select any one or any combination of these check boxes.
5. Select the **Report Layout**; select the box if you want to have a **Page Break after Labor Types**. Leave this check box blank to have a continuous report.

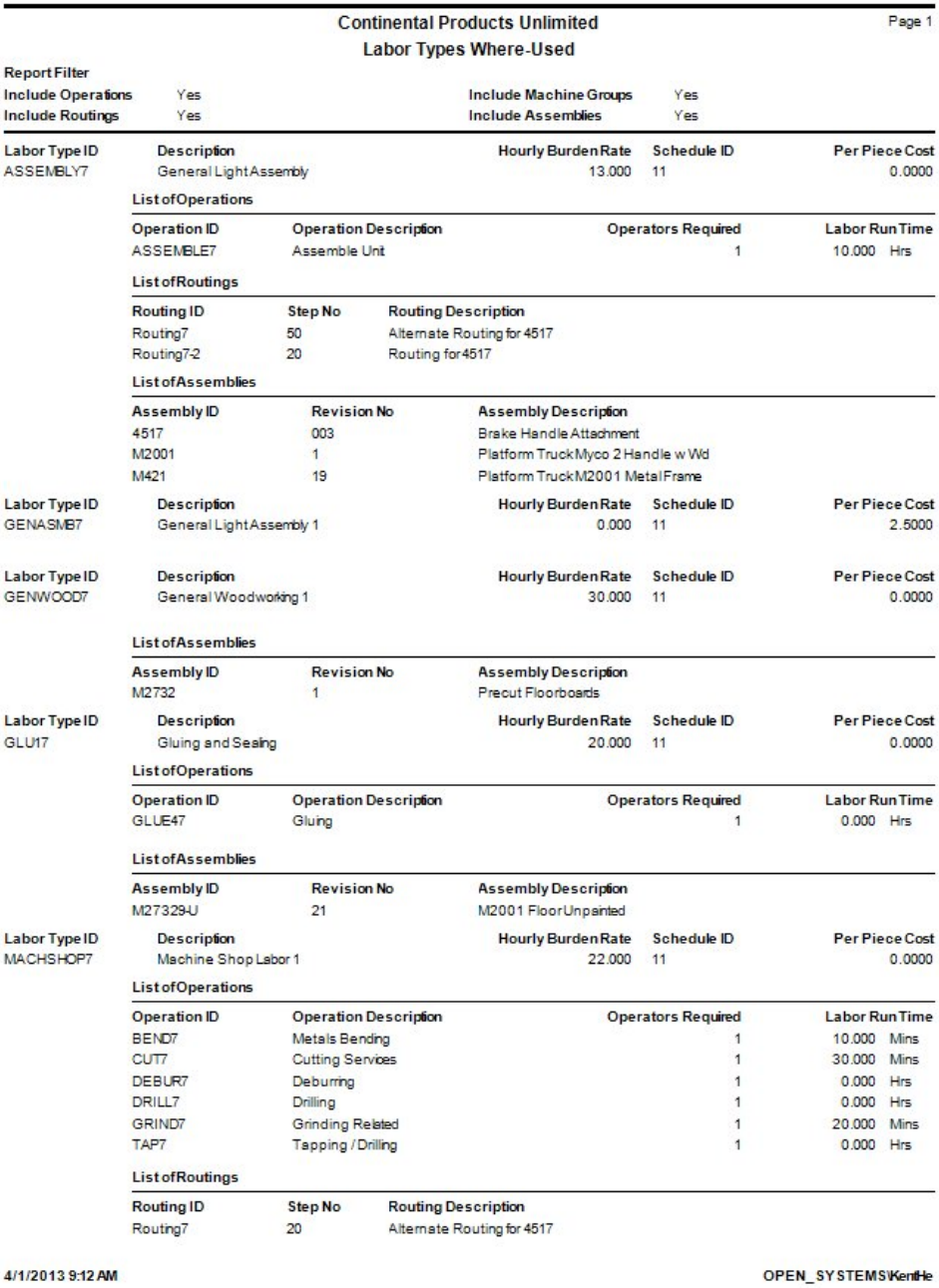
6. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **Reset** | Set all fields to their defaults. |
| **Preview** | Preview the report on your monitor. |
| **Output** | Output the report as a .pdf file and save it. |
| **Send** | Email the report with the report attached as a .pdf file. |
| **Print** | Print the report. |

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

# Labor Types Where - Used Report



Continental Products Unlimited — Page 1
Labor Types Where-Used

Report Filter
Include Operations: Yes — Include Machine Groups: Yes
Include Routings: Yes — Include Assemblies: Yes

| Labor Type ID | Description | Hourly Burden Rate | Schedule ID | Per Piece Cost |
|---|---|---|---|---|
| ASSEMBLY7 | General Light Assembly | 13.000 | 11 | 0.0000 |

List of Operations

| Operation ID | Operation Description | Operators Required | Labor Run Time |
|---|---|---|---|
| ASSEMBLE7 | Assemble Unit | 1 | 10.000 Hrs |

List of Routings

| Routing ID | Step No | Routing Description |
|---|---|---|
| Routing7 | 50 | Alternate Routing for 4517 |
| Routing7-2 | 20 | Routing for 4517 |

List of Assemblies

| Assembly ID | Revision No | Assembly Description |
|---|---|---|
| 4517 | 003 | Brake Handle Attachment |
| M2001 | 1 | Platform Truck Myco 2 Handle w Wd |
| M421 | 19 | Platform Truck M2001 Metal Frame |

| Labor Type ID | Description | Hourly Burden Rate | Schedule ID | Per Piece Cost |
|---|---|---|---|---|
| GENASMB7 | General Light Assembly 1 | 0.000 | 11 | 2.5000 |

| Labor Type ID | Description | Hourly Burden Rate | Schedule ID | Per Piece Cost |
|---|---|---|---|---|
| GENWOOD7 | General Woodworking 1 | 30.000 | 11 | 0.0000 |

List of Assemblies

| Assembly ID | Revision No | Assembly Description |
|---|---|---|
| M2732 | 1 | Precut Floorboards |

| Labor Type ID | Description | Hourly Burden Rate | Schedule ID | Per Piece Cost |
|---|---|---|---|---|
| GLU17 | Gluing and Sealing | 20.000 | 11 | 0.0000 |

List of Operations

| Operation ID | Operation Description | Operators Required | Labor Run Time |
|---|---|---|---|
| GLUE47 | Gluing | 1 | 0.000 Hrs |

List of Assemblies

| Assembly ID | Revision No | Assembly Description |
|---|---|---|
| M27329-U | 21 | M2001 Floor Unpainted |

| Labor Type ID | Description | Hourly Burden Rate | Schedule ID | Per Piece Cost |
|---|---|---|---|---|
| MACHSHOP7 | Machine Shop Labor 1 | 22.000 | 11 | 0.0000 |

List of Operations

| Operation ID | Operation Description | Operators Required | Labor Run Time |
|---|---|---|---|
| BEND7 | Metals Bending | 1 | 10.000 Mins |
| CUT7 | Cutting Services | 1 | 30.000 Mins |
| DEBUR7 | Deburring | 1 | 0.000 Hrs |
| DRILL7 | Drilling | 1 | 0.000 Hrs |
| GRIND7 | Grinding Related | 1 | 20.000 Mins |
| TAP7 | Tapping / Drilling | 1 | 0.000 Hrs |

List of Routings

| Routing ID | Step No | Routing Description |
|---|---|---|
| Routing7 | 20 | Alternate Routing for 4517 |

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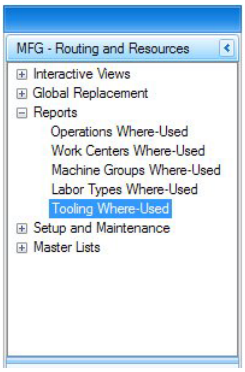
# TOOLING WHERE - USED REPORT

The **Tooling Where - Used Report** shows the Operations in which each Tooling ID is used and shows the impact of any changes in the current Tooling availability. Print this report before you perform a global replacement of Tooling items.

To produce the **Tooling Where - Used Report**, follow these steps:

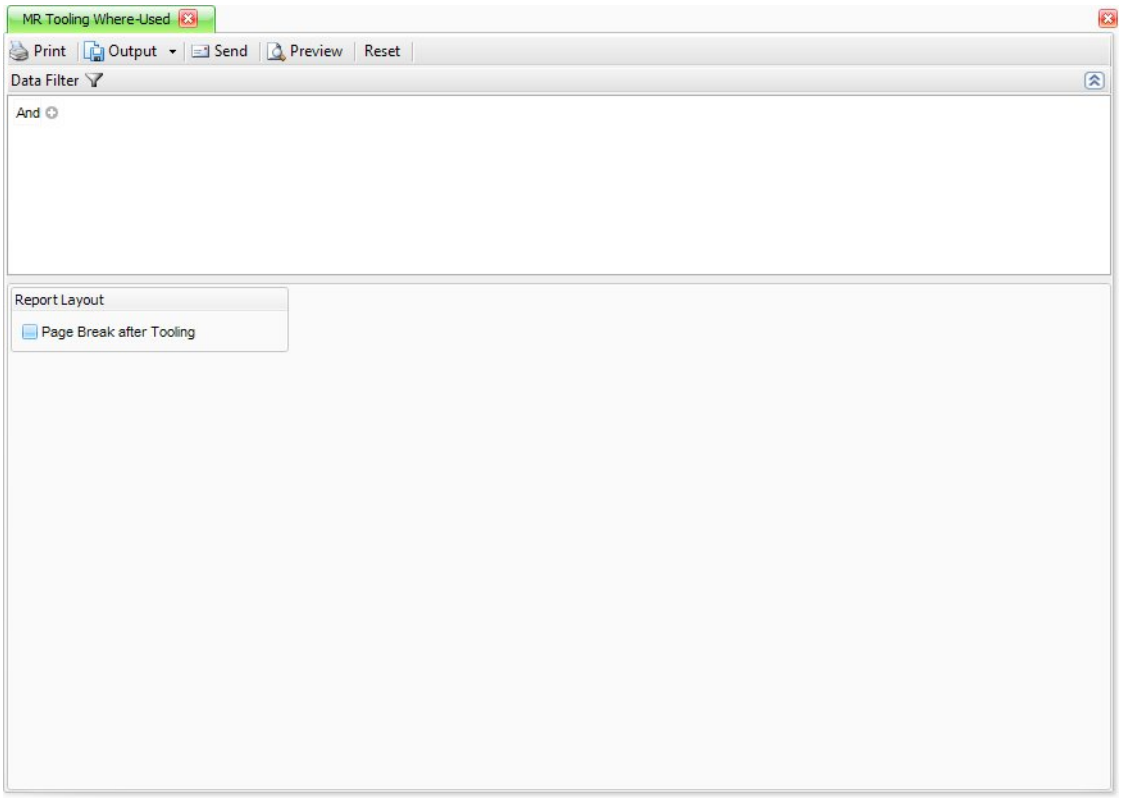
1. Select **Tooling Where - Used Report** from the **Reports** menu.

## Tooling Where - Used Report Menu



2. The **Tooling Where - Used Report** screen appears.

## Tooling Where - Used Report Screen




3. Select the range of **Filter Criteria** to include in the report. Leave this area blank to include all information in the report.
4. Select the **Report Layout**; select the box if you want to have a **Page Break after Toolings**. Leave this check box blank to have a continuous report.

5. Select a command button:

**Command Buttons**

| Name | Description |
|---|---|
| **Reset** | Set all fields to their defaults. |
| **Preview** | Preview the report on your monitor. |
| **Output** | Output the report as a .pdf file and save it. |
| **Send** | Email the report with the report attached as a .pdf file. |
| **Print** | Print the report. |

**NOTE: Refer to the Reporting section in the General Information guide for more details on print options and selections when previewing the report.**

# Tooling Where - Used Report

**Continental Products Unlimited** Page 1

**Tooling Where-Used**

**Report Filter**

| Tooling ID | Description | Storage Location | Tool Vendor | Qty Available | Unit Cost |
|---|---|---|---|---|---|
| 9-G88 | Welding Gloves | Bin 04 | Ace001 | 22.0000 | 59.0000 |

**List of Operations**

| Operation ID | Operation Description |
|---|---|
| CUT7 | Cutting Services |
| GRIND7 | Grinding Related |
| WELD7 | Welding |

| Tooling ID | Description | Storage Location | Tool Vendor | Qty Available | Unit Cost |
|---|---|---|---|---|---|
| CLAMP2 | 2" Spring Clamps | Bin 19 | Per005 | 29.0000 | 7.9500 |

**List of Operations**

| Operation ID | Operation Description |
|---|---|
| BEND7 | Metals Bending |
| CUT7 | Cutting Services |
| PAINT7 | Painting |

| Tooling ID | Description | Storage Location | Tool Vendor | Qty Available | Unit Cost |
|---|---|---|---|---|---|
| CLAMP7 | 7" C - Clamp | Bin 17 | Mic006 | 39.0000 | 10.5000 |

**List of Operations**

| Operation ID | Operation Description |
|---|---|
| BEND7 | Metals Bending |
| CUT7 | Cutting Services |
| PAINT7 | Painting |

| Tooling ID | Description | Storage Location | Tool Vendor | Qty Available | Unit Cost |
|---|---|---|---|---|---|
| J-19C | Jackson Welding Helmet | Bin 32 | Day016 | 75.0000 | 125.0000 |

**List of Operations**

| Operation ID | Operation Description |
|---|---|
| WELD7 | Welding |

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# 7

# Common Questions

# 7 COMMON QUESTIONS

# QUESTIONS

### How does the Yield Percentage field work in Operations?

The Yield Percentage field is simply a cosmetic field. There are two philosophies on the yield concept; one being to allow it to recalculate all of the quantitative fields below it and increase the raw materials requirements in production, similar to scrap, to accommodate yield loss. The other philosophy is to use it strictly as a benchmark against actual yield on a historical basis. Recalculating quantities can get very complex and doesn't allow for the built in restrictions in actual environments such as limited space capacity or other manufacturing restrictions that would prevent you from simply increasing the production plan. For example; I need 50 liters of FG XYZ, but I have a 50% yield so therefore to produce 50 liters I might need to bump up the raw materials by approximately 50%. The problem is, however that the vat only holds 50 liters? I can't put 100 liters in a 50 liter vat so increasing RM may not be feasible. Look for future versions to build on these concepts. (Routing and Resources, Operations Setup and Bills of Material Setup)

### How does the Generate Orders select and regenerate orders work?

The Generate Orders from SO is based on Customer, Sales Order, Date Range and Product. It no longer looks at PO Number. It removes any Production Orders that meet the selected criteria that are of a Planned or New status. It then regenerates those. So if I was to say that the process selects Sales Orders (or sales order line) to generate from, based on the Assembly or Product ID range, Date Range, Customer ID Range, and whether the status is PICKED. It then removes and Production Orders that have a status of PLANNED that meet the same criteria. It then replaces those Production Orders with new PLANNED status orders. If a product is found more than once on a given Sales Order, it generates multiple releases on one Production Order for those lines? No reference is made to Customer Purchase Order. (Production, Production Orders, Generate Orders from Sales)

### How does the Per Piece overhead get generated in Record Production activity?

When recording time in Production, the quantity dictates the overhead per piece. Quantity is considered as Qty Produced PLUS Qty Scrapped. (Production, Production Orders, Record Production Activity)

### How is scrap costed when I record production activity?

Scrap does not affect inventory. It is part of the quantity pulled when working with components and it is considered to be in addition to qty produced when recording finished goods, although it does not get added to Inventory. The scrap field is not part of the final costing calculation because it is technically, already included in the cost. (Production, Production Orders, Record Production Activity)

### What is the difference between the Available Start Date and the Estimated Start Date in the Start Date option?

In the Resource Availability report use Available Start Date if orders can start consecutively without regard for start date. Use Estimated Start Date to prevent orders from appearing before their start date. (Production, Reports and Worksheets, Resource Availability)

### Why don't I see my Production Orders when I go into Release Orders?

In the Release Orders you must click on the Apply button to view the available orders. Also note that Production Orders must have a status of Released or Firm Planned. The status of the Production Orders is set using the Production Orders function. (Production, Production Orders, Production Orders and Release Production Orders)

### It seems that the Summarized Bill of Material report and the Costed Bill of Material report print differently in regard to subassemblies?

The Summarized Bill of Materials report prints the cost and detail of non-stocked subassemblies as part of the report. No subassembly items will appear on the report unless they are stocked subassemblies. On the Costed Bill of Material report, subassemblies items are shown with their respective cost. Their detail is not shown. The reports should come up with the same overall assembly cost total. (Bills of Material, Reports, Costed Bills of Material and Summarized Bills of Material)

**I see there are now Operation Types in Version 11. What is the difference between version 10.5 and version 11.**

In version 10.5 TRAVERSE could handle what we call, “Per Unit” and “Subcontracted” processes. We have added two new types of processes. (Routing and Resources, Operations Setup)

The first is “Run Rate”. A “Run Rate” operation is like a “Per Unit” operation only “reversed” one might say. Instead of time per unit, the user sets up units per time. Per Unit says I can process a unit in 1.5 minutes, for example. Run Rate might state I can process 900 units in 1.5 minutes for example. Per the 900 units, I could have said I produce 1 unit in .1 seconds. It would be the exact same thing. However let's say we can process 1400 units in 1.25 minutes. I don't have to state the Per Unit time as 1 unit per .0535714 seconds. We simply say 1400 units per 1.25 minutes. So the concept is somewhat just being practical and somewhat simply a way of thinking.

The other method is Batch processing. There are some subtle complications here but more or less we are stating the time required to process a specific quantity. It involves at least two variables; the time and the quantity. Unlike Run Rate, you can't break it down for slightly smaller or larger quantities. It's like baking cookies; if the oven holds 50 cookies and they take 20 minutes to cook it won't really matter if you are cooking 10 or 50, you are probably looking at about 20 minutes. Along the same line if you are cooking 51 cookies, you will need to split them into two batches of 50 and 1 or maybe 25 and 26. Either way you are looking at about 40 minutes. This concept couldn't be handled by version 10.5. Most manufacturers know these batch sizes. They aren't going to bake 51 cookies. They are going to bake 50, or 100, or 5000.

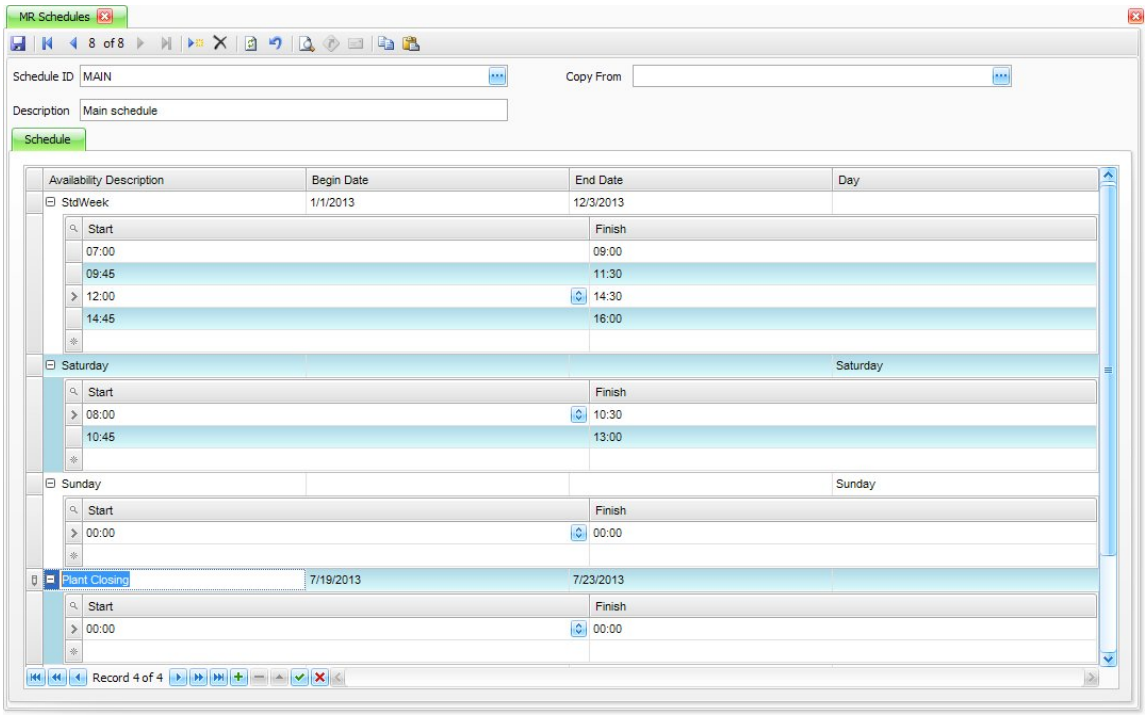
**In Routing and Resources, what does the Billing Information Rate field do?**

Special Note: Setup costs are on a per batch basis. For example; if the batch size is 50 and the setup costs are $20.00 and you run two batches, the overall setup costs would be $40.00. This may or may not be proper given the FG product. In cases where repetitive setup isn't required or additional setup are less time intensive, the setup costs should be reduced or perhaps averaged over the number of batches usually run, or build into the run costs.

The Billing Information Rate is not used at all, but. . . what it could be used for would be “pricing” process or operation costs. Let's say we want to create a price quote for a Bill of Materials; it's going to require a custom report or form of some sort. We can easily get prices for the components from Inventory, but what about the processes? What the billing information rate allows you to do is to set a percentage over cost or a flat rate per hour as a billing or chargeable rate so that if I'm writing a Customer report I could pick up this information, utilize the estimated time, and come up with a billable cost of the Operation. (Routing and Resources, Work Centers Setup)

## How do I set up a Schedule in Routing and Resources and how do they work?

Schedules are used in a couple of different areas of the TRAVERSE production modules. It is used in the explosion or “releasing” of Production Orders and it is used in the Resource Availability report. The Schedule ID is referenced in the creation of Labor Types, Machine Groups, and Work Centers and is a required field. It is also a field in the Production Business Rules. The detailed design and functionality was created to integrate with a third party or the new scheduling function, thus the setup may seem like overkill at first glance. In most cases you would want to have one simple schedule and use only that one. Below is a good example of what the simplest schedule might look like with the assumption that there are no Saturday or Sunday hours and the plant hours are the same Monday through Friday.




The schedule is used in doing a very rough calculation of how much time the processes of a production order will require so that the system can estimate process start dates. Note that without a true scheduling system this is just a very rough estimate because the system assumes no other production activity and that all resources have the same availability. What the system does is first calculate the time required to do a process, beginning with the final process. That time is divided by the hours in a day, as found in the schedule, which was assigned to the labor or machine for that process, to determine the date that final process should start. Then the next process is calculated etc. etc. (Routing and Resources, Schedules Setup, Labor Types Setup, Machine Groups Setup, and Work Centers Setup)

**Example: We have a process that requires 15 minutes of machine time per unit. The schedule used for that machine indicates it is running 15 hours a day, five days a week. We create a production order for 300 units. The system divides the 4500 minutes required by the 900 available minutes in a day to estimate a lead time of approximately 5 days.**

### What is the Master Schedule in the Requirements Planning module used for?

The Master Schedule represents the plan of production in terms of item, quantity, and date. We could achieve almost the same effect by creating production orders for finished goods items in terms of date and quantity but this would be a tremendous task, not only to create, but also to maintain. When Master Schedules are used, it is generally in conjunction with some sort of a Sales Forecast. In TRAVERSE you can create a Sales Forecast and then, by running the Master Schedule report, create and manage a Master Schedule that meets the needs of the Sales Forecast. In simple terms, meeting demand with supply. Once you are satisfied with the Master Schedule, use the various RP reports to tell you what subcomponents will be required and when, to satisfy the finished goods demand created by the Master Schedule. (Requirements Planning, Master Schedule Setup and RP Processing, Standard RP Report)

## COMMON QUESTIONS

*Questions*

# Glossary

G

**absorption costing**
An approach to Inventory valuation in which variable costs and a portion of fixed costs are assigned to each unit of production. The fixed costs are usually allocated to units of output on the basis of labor hours, machine hours, or material costs.

**account**
A storage unit of financial data in accounting, usually grouping related information under one account number or account ID.

**accounting period**
A period of time in accounting, used to provide distinct units of time you can work with. For example; you might want a report to include transactions done in a particular accounting period.

**activity**
The changes in account balances resulting from transactions (sales, purchases, payments of wages, adjustments, and other journal entries) between the business and one or more outside parties.

**activity based costing (ABC)**
The allocation of indirect costs against the activities that caused them. An accounting technique that can more accurately reflect indirect cost improvement than traditional standard costing.

**actual costing**
A cost system that collects costs historically and allocates those costs as items are sold or used in production.

**adjustment**
A type of transaction that corrects differences in quantity.

**alias**
An alternate name for an inventory item. For example, the alias for item 700873920PS might be plumbing supplies.

### alternate item
A comparable item that can be substituted when you sell an item with insufficient quantities in stock.

### alternate routing
A routing, usually less preferred than the primary routing, but resulting in an identical item.

### application
A software package made up of several related programs (functions) and files. Usually an application is named after a common accounting practice—for example, Accounts Payable, Accounts Receivable, or Payroll.

### assemble to order
A production environment where a product request can be assembled after the receipt of a Customer's order. The key components (bulk, semifinished, intermediate, subassembly, fabricated, purchased, packaging) used in the assembly or finished process are planned and possibly stocked in anticipation of the Customer order.

### asset
The resources (such as cash, investments, manufacturing materials, inventory, buildings, leases, and fixtures) owned by a business. Assets are entered as debits in asset accounts.

### audit trail
A detailed record of accounting activity used to explain the source of every dollar in the accounts.

### average cost
An inventory costing method. The average cost method calculates a weighted average cost by dividing the total cost of all units of an inventory item by the number of units on hand. See also FIFO, LIFO and standard cost.

### average price
The average selling price of an item updated each time a sale is entered.

### backflush
Automatic deduction of the parts used on an assembly from stock triggered by the release, progress, or completion of a production order. Unless there is a very high level of data accuracy and discipline, backflushing leads to inaccurate inventory records so is not recommended except when used in conjunction with KanBans.

### back up
To make a copy of data for archival purposes.

**balance**

(1) The difference between the total debit entries and the total credit entries for an account. (2) The total amount owed by a customer or owed to a vendor.

**balance sheet**

A standard financial statement that summarizes the financial status of a business at a particular time, according to the fundamental accounting equation Assets = Liabilities + Owner's Equity.

**base cost**

Cost used for calculating prices as a markup from cost.

**base currency**

In TRAVERSE, the currency selected in the System Manager Company Setup Company Information function. While TRAVERSE stores both base and foreign currencies, all other currencies are converted to base currency.

**base price**

A price assigned to each unit and used to calculate price breaks and customer level pricing in Sales Order.

**batch**

A group of items, locations, bins, product lines, and user-defined fields that are assigned an ID. Batch IDs are used in the physical count process to group similar items for counting purposes.

**bin number**

A number that identifies the location of an item.

**blow-through**

When a Phantom or Pseudo Assembly is found in the preparation of a kit picking list, the parts needed to make the Phantom or Pseudo Assembly (less any Phantom Parts found in stock) are "blown through" to the kit.

**bills of materials**

The list of the components necessary to make a part of product and the amount of each component required.

**bill of resources**

A list of some or all of the critical resources necessary to make an end item.

**bucketless**

All demands for a part keep their individual date identity and so can be traced back to their original source of demand through a Pegging Report–essential for bottom up re-planning.

**byproduct**
Material produced as a residual of a production process. Represented by negative use in the bill of material for an assembly.

**capital**
Claims on a company's assets by the owners, either the capital put up by the owners or the income earned by the business and not distributed (retained earnings).

**carrying cost percent**
The percentage of the total value of inventory. This amount is used in the EOQ calculation in the reorder process.

**COGS**
The beginning inventory plus purchases minus the ending inventory.

**component**
Part needed to make a parent item as shown on its bill of material.

**configurator**
A software tool to simplify order entry when a product may be sold with a number of features and options.

**cumulative lead time**
The total time required to make an item assuming there are is no stock of any of it's components including the time to purchase those components.

**conversion**
The process of updating existing data, programs, or applications to the current version. See also installation.

**conversion factor**
The portion of the base unit that is the alternate unit. For example; if the base unit were EACH and the alternate unit were BOX of 10, the conversion factor would be 10.

**costing method**
The method used for costing sales and inventory: FIFO, LIFO, average cost, and standard cost.

**count date**
The date when a physical count of inventory items is taken.

**counted quantity**
The quantities from the on-hand physical inventory, generally listed on tags or worksheets. See also frozen quantity.

### current liquidity ratio

The ratio of current assets to current liabilities.

### depreciation

The allocation of the cost of using up fixed assets over time in the form of a particular portion per accounting period.

### discount

An amount subtracted from the full amount of a vendor invoice in return for prompt payment.

### discrete manufacturing

Refers to the manufacturing of specific unique items to exacting specifications such as a custom-made cabinet or a new sophisticated carburetor. Discrete manufacturing is used heavily by the engineering, automotive, electronics, and aerospace industries, among others.

Unlike continuous manufacturing, this is divided into discrete stages and usually involves a wide range of finished products. The products themselves are discrete units. Depending on the variety and volume of finished products, discrete manufacturing is further sub-divided into Job Shop, Batch Production, and Repetitive manufacturing.

### distribution code

A code that indicates how amounts are to be distributed among general ledger accounts.

### Economic Order Quantity (EOQ)

An ordering method that compares the cost of placing a purchase order (and all associated receiving and invoicing costs) against the cost of carrying stock in inventory. It uses the Carrying Cost percent and Order Cost Amount fields from the locations table. If an item is particularly expensive to order (imported, for example) or expensive to stock (very large, for example), you can override these fields on an item basis. Generally, the higher the cost, the lower the purchase quantity. The traditional EOQ formula is used with Annual Use as the movement variable:

$$\sqrt{\frac{2 \times AnnualUsage \times OrderCost}{UnitValue \times CarryingCost}}$$

### effective date

The date range for which a part or assembly is considered correct and in effect.

### effectivity date

The date on which a change is due to take effect.

### Engineering Change Order (ECO)

A record of revisions to one or more items usually released by engineering.

**expense**
The cost incurred in earning revenue: cost of goods sold, wages, rent.

**explosion**
A computer process or calculation of the requirements in terms of components of an assembly based on its bill of material.

**field**
(1) A region on the screen that accepts input from the user. (2) One element of a record in a table.

**FIFO**
A costing method that uses the oldest items in your inventory as the basis for costing your sales and inventory. FIFO allocates the oldest unit costs to the cost of goods sold and the most recent unit costs to the ending inventory. When costs rise, the FIFO method yields the highest net income; when costs fall, the FIFO method yields the lowest net income. See also average cost, LIFO, and standard cost.

**finite capacity planning**
Computer controlled re-scheduling of orders based on preset capacity resource levels and fixed scheduling rules.

**firm planned order**
An order which is treated as a planned order for the MRP calculation but one that does not change, either in date or quantity, by the computer. Firm planned orders are changed manually and are used for Master production scheduling and to override the computer setting of order quantity, lead times, and safety stock, usually to overcome material or capacity problems.

**flow manufacturing**
A form of manufacturing in which machines and operators handle a standard, usually uninterrupted, material flow. Extreme examples could be process industries in the areas of chemicals, oil, paint.

**forecast**
An estimate of future demand. Generally related to the Master Production Schedule and used in MRP reporting.

**freeze**
A step in physical inventory in which inventory quantities are calculated and stored before the inventory is counted.

**frozen quantity**
The calculated inventory totals that are stored before the inventory is counted. See also counted quantity.

**function**
A menu item that leads to a full screen. Most functions have a corresponding program.

**general ledger**
A record of accounts in terms of a chart of accounts and accounting periods. The General Ledger application tracks the effects on accounts from transactions entered in General Ledger and interfaced applications, and it is updated by other applications interfaced with it.

**income statement**
A standard financial statement that shows revenues, expenses, gains, and losses for an accounting period.

**infinite planning**
Loading a work center with orders to see how much current capacity is exceeded.

**installation**
The process of adding an application to an existing system. See also conversion.

**interface**
To join to another application for the purpose of having information entered in one application update information in another application.

**inventory**
The goods a business owns at a particular time, whether held for direct sale or for use in manufacturing goods for future sale. Manufacturing inventory is usually divided into raw material, work in process, and finished goods.

**job shop environment**
Tend to be high variety and low volume factories which make to order or to Customer specifications. Their Customers are very often other factories, so they tend not to produce consumer goods. Job shops tend to be highly flexible and their workers highly skilled. The shop floor layout would consist mostly of separate functionally specialized departments. Frequent change overs from one product to another are common.

**journal**
A chronological record of transactions.

**journal entries**
Transactions recorded in a journal.

**KanBan**
A method of JIT production that uses standard lot sizes with pull cards to signal wanting to withdraw parts from a supplying operation.

## lead time

The amount of time required from the point of ordering or the point of entering the production line to the completion of the order. Each requirement of an order, be it a given raw material, subcontracted process, or labor or machine process has a point in time where it should be introduced into the flow of the order to ensure an on-time delivery of the product. If materials are made available too early, there may not be room for them and they may simply add congestion to the process. If brought in too late, delays may result. The problems are the same for labor, machine use, and subcontracting.

Lead time is in terms of hours. It assumes a perfect world in which all materials, machines, and personnel are available when needed. It indicates the number of hours after the materials are brought to the floor or the number of hours after a process begins, that the order will be finished.

Lead time is calculated by first establishing the process time of each individual process requirement, adding the queue time, setup time (uses labor setup time or machine setup time, whichever is longer), wait time, and move time.

To calculate the lead time, the system then starts at the top of the bill and works its way down calculating the hours of lead time required at each step by accruing the process time for each step. Lead time is actually only calculated for processes. It is then assigned to materials, based on which routing step the material is assigned. If the bill of material is more than one level deep, the lead times of the first level become the starting point of lead times for the second level, and so on. Overlap factors come into play here, which can complicate things considerably if being used. (See the overlap entry in the Glossary for more information.)

## LIFO

A costing method that uses the last items brought into inventory as the basis for costing your sales and inventory. When costs of your inventory items rise, the LIFO method yields the lowest net income of all the costing types; when inventory item costs fall, the LIFO method yields the highest net income. LIFO is often preferred when prices rise because it results in a lower pretax income and a lower tax obligation. See also average cost, FIFO, and standard cost.

## liquidity ratio

Ratio that indicates the amount of cash that could be available for investment after meeting short-term obligations.

## list price

The basic published price for each unit without discounts added to it.

## location

The place your inventory is stored—a van, a warehouse, etc.

**lotted items**

Items that are grouped for identification and given a lot number, such as items with the same shipping, receiving, or expiration date.

**master production schedule (MPS)**

What the company intends to produce in terms of products or end-items.

**materials requirements planning (MRP)**

A computer based technique which takes an MPS, product structure data, and inventory information, generates a report and creates planned orders for assemblies and components based on anticipated demand.

**material requisition**

A document that a business uses to record internal use of stock items from its own warehouse.

**menu**

A list of applications, functions, options, or other menus.

**miscellaneous debit**

A transaction that nullifies a purchase, resulting from a return or an adjustment to the purchase transaction. Miscellaneous debits reduce the total amount of Accounts Payable due Vendors.

**mixed model production**

Making several different parts or products in varying lot sizes that closely match the mix of products sold that day.

**move time**

The time required to move the product from one workstation to another. This could be across the plant floor or to a completely different location.

**net change MRP**

An approach in which the material requirements plan is continually retained in the computer and adjustments made only as needed.

**order point**

The quantity you want to have on hand when you place an order for an item at a location.

**ordering cost amount**

The total cost of shipping, stocking, and labor. This amount is used in the EOQ calculation in the reorder process.

**overlap**

Overlap is simply a matter of trying to attain a more realistic and accurate lead time by reducing the calculated lead time based on the assumption that in a series of sequential processes, the next process can begin before the last process is finished.

**NOTE: Each step is compared to the next step in the BOMs. The time to complete one step doesn't change, but the determination of at what point to begin a step in relation to the previous step can have a significant affect on the total time required to manufacture the BOMs.**

**overlap quantity**

The number of items that need to be run and sent to the following operation before the "overlap" operation can begin.

**pegging**

The capability to identify the sources of a given item's gross requirements.

**penalty type**

The percent or amount used to determine the price when fractional parts of a unit are sold.

**periodic inventory**

Physical inventory taken at the end of the year to establish ending inventory.

**perpetual inventory**

A continuous record of inventory maintained by keeping detailed records of purchases and sales.

**phantom bill of material**

A bill of material coding and structuring technique used primarily for transient subassemblies.

**physical inventory**

The actual on-hand inventory.

**planned order**

Generally a production order created by an MRP system.

**planning bill of material**

An artificial grouping of items or events in a bill of material format to enable the calculation of mixed components to achieve a mixture of finished product, for example, 2 blues, 2 yellows, 1 green.

**post**

To transfer information from one place to another, usually at the end of the day or at a distinct break in business.

**price break**

A price break set up by quantity, generally giving increasing discounts as the quantity of sales increase.

**price ID**

Customer-level pricing identifier that is useful for categories of items and items in particular locations.

**product line**

A category of similar items used for sorting.

**program**

A self-contained list of executable code, written and implemented to do a task. Most programs are represented by a function on a menu.

**process manufacturing**

Production that adds value by mixing, separating, forming, and /or performing chemical reactions. It can be done in either a batch or continuous mode.

**prox term**

A term of a business arrangement which specifies that the payment's due date is based on days from the beginning of the next month. See also regular terms.

**purchase price variance**

The difference between the standard cost and the actual price paid for an item in the standard costing valuation method. For example, if your standard cost for an item is $50 and you purchase the item at $60, the purchase price variance between the standard cost and what was paid for the item is $10.

**purge**

To remove from the system.

**queue time**

Used mainly as a cushion for error. Queue time is the time the materials sit in front of the workstation waiting to be processed.

**quick ratio**

The ratio of current assets less inventory to current liabilities.

**record**

A unit of information that has other pieces of information assigned to it.

**regeneration MRP**

An MRP processing approach where the requirements are totally re-exploded down through all bills of material, resulting in a totally new MRP report and plan.

### regular terms

A term of a business arrangement which specifies that the payment's due date is based on days from the discount date. See also prox terms.

### repetitive manufacturing

This type of production is characterized by low variety and high volume. It is concerned with the production of consumer goods. Production is mostly to stock. The factory floor normally consists entirely of production lines, each dedicated to a specific product. The line is designed for optimum production of that product. Changeovers are infrequent and tend to be costly in terms of time and labor.

### restore

To bring information back to its original place and condition.

### routing

Information detailing the method of manufacture of a particular item. It includes the operations to be performed, their sequence, the various work centers involved, and the standards for run and setup time. Also may include additional information such as required skill levels, tooling, testing equipment.

### safety stock

The quantity of stock in inventory to have as a safeguard against order process uncertainty and fluctuations in demand or supply.

### scrap

Materials outside of specifications and possessing characteristics that make rework impractical. For example; a raw material with a 2% scrap factor is assumed to be something in which when an assembly is put together and the material is used, about 2% is lost or scrapped. It could be that 2% of the material is defective or is lost due to the nature of the process. The reason a scrap factor is set up is to enable you to actually track these quantities in the hopes of improving your process. Scrap should be considered a variable quantity and expense.

The unexpected loss of a completed part for any reason.

### scrap factor

A percentage factor used in the product structure to increase gross needed requirements to account for anticipated scrap.

### setup time

The time it takes to adjust a machine or fit a tool to make a particular item. Part of the lead time which does not vary with the order quantity.

**shrinkage**

The anticipated loss or reduction of an item when being used. It can be related to the specific manufacturing nature but can also represent other things.

The reduction of actual quantities of items in stock, in process, or in transit. The loss may be caused by scrap, theft, deterioration, evaporation.

**serialized item**

An item that is identified by a serial number, such as an appliance, a computer, a stereo system.

**standard cost**

A costing method that is an estimate of costs you set. For example, in a manufacturing operation the standard cost is the cost of the item plus costs of raw materials, labor, and overhead. See also average cost, FIFO, and LIFO.

**subcontracting**

Sending production work outside to another manufacturer.

**superseded item ID**

An ID assigned to an item that is set up to replace an item that is no longer available for purchase or sale.

**table**

(1) A grid that holds records and is visible. (2) An object that stores data.

**tact time**

The time required between completion of successive units of an end product.

**temporary vendor**

An organization or source of supply from which your business purchases goods or services only once.

**terms code**

A code that serves as a shorthand notation for the terms of a business arrangement.

**time bucket**

A number of days of data summarized into a column display.

**transaction**

An exchange between a business and another party, leading to an accounting entry, which is recorded in the GL Journal.

**traveler**

A copy of the manufacturing order that actually moves with the work through the shop.

**UPC**

The universal price code that records the identification number for an item.

**variance amount**

The difference between frozen quantities and calculated (counted quantities times cost) quantities.

**work in process (WIP)**

Products in various stages of completion throughout the factory, including raw material that has been released for initial processing and products awaiting inspection.

**wait time**

Time required after an operation or process is complete for curing, drying, setting, cooling. This time is required after the process is complete but before the next process can begin or before it can be moved to the next step. It does not involve any trackable machine or labor time.