



The Machine module measures, records and plans the capacity of the manufacturing facility. The capacity of manufacturing may be defined as the highest reasonable output rate that can be achieved with the facility's work force, equipment and vendors.

Various factors affect capacity on a day to day basis. These include the number of hours a day each work center is available for work, the training and motivation of the workforce, the number of interruptions expected from machines requiring repair or maintenance, and the dates the facility is closed for holidays, vacations, etc.

In the Order module, work orders tell the manufacturing facility what work needs to be done, while the Machine module provides the resources to do it.

The following are components of the Machine module:

### Work Center

A work center can be defined as a specific production area consisting of one or more people and/or machines that can be considered as one unit for purposes of capacity planning. It may also be an outside vendor or even an area that is used for activities not requiring an actual machine or person, such as paint drying.

ALERE measures and schedules manufacturing capacity based on a technique called "finite loading". Finite loading means putting no more work into a work center than the work center can be expected to handle. In order to do this, work centers are established with the days they work, the number of hours they work each day and the alternate work centers that can be used to perform a task.

### Closed Dates

Most manufacturing facilities will have dates that their facilities are closed, such as holidays, vacation, etc. Several areas within manufacturing need to know these dates so closed dates are defined.

### Group Definition

The scheduler in manufacturing is a single-constraint finite system. In some cases it would be useful to identify areas in the schedule where a second constraint has been exceeded. Group definitions are created so that certain "thresholds" cannot be exceeded during scheduling.

**Work Center**

Work Center:  Serial:   Infinite

Description:

Efficiency:

Date Online:

Overhead Rate:

	Starting	Available
Sunday	<input type="text" value="0"/>	<input type="text" value="0"/>
Monday	<input type="text" value="7"/>	<input type="text" value="8"/>
Tuesday	<input type="text" value="7"/>	<input type="text" value="8"/>
Wednesday	<input type="text" value="7"/>	<input type="text" value="8"/>
Thursday	<input type="text" value="7"/>	<input type="text" value="8"/>
Friday	<input type="text" value="7"/>	<input type="text" value="8"/>
Saturday	<input type="text" value="0"/>	<input type="text" value="0"/>

Alternates:

Exit Save F9 Del Bwd Get F8 Fwd Add F7

## Change Work Centers

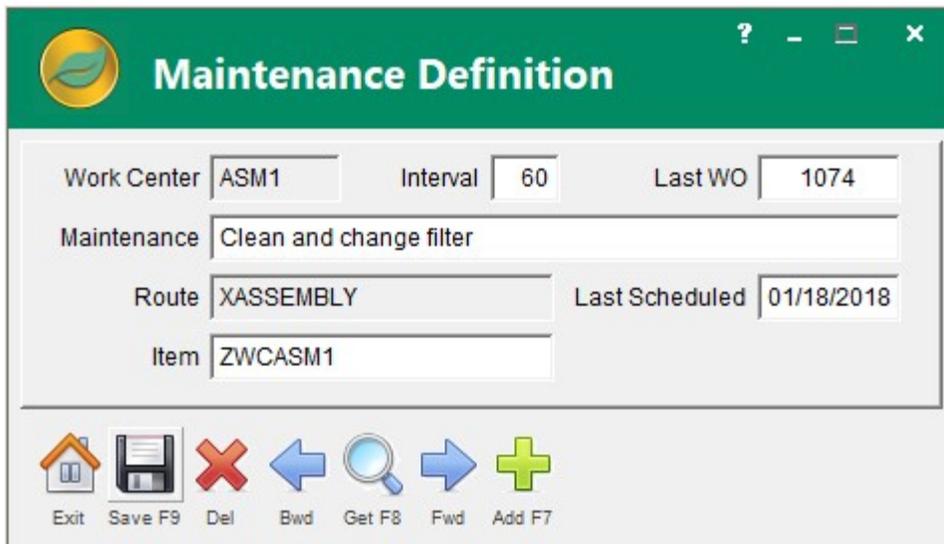
On many occasions it may become necessary to change the hours of operation, the percent on-line, etc., for all or multiple work centers. This can be a very time consuming job if the work centers have to be individually edited. A function called "Change Work Centers" provides a shortcut to making mass changes over a range of work centers.

## Delete Old Closed Dates

As closed date records age, they will, at some point, no longer be useful. A utility is provided to delete all records older than a user defined date.

## Maintenance Definition

A maintenance definition for a work center describes the maintenance work to be performed, prescribes how often the maintenance is to be done, and recommends what route to use. It can have an inventory item number assigned to it so that costs can be tracked in general ledger and a bill of materials associated with it.



A work center may have as many different maintenance definitions as required with different routes and item numbers.

## Generate Maintenance Orders

Once maintenance definitions have been established for work centers, work orders can automatically be generated as maintenance comes due. These work orders are treated like any other work order and can be automatically generated with materials required to do the maintenance. The scheduler will incorporate the maintenance work order into the shop

floor schedule plan and the materials into MRP planning.

Transactions can be posted against the maintenance work order and their costs accrued but will not count the costs as part of the WIP (work-in-process) costs. The maintenance work orders are completed as normal and the costs posted to general ledger.

## Downtime

When a work center is not producing for reasons such as repair, maintenance or relocation, it is recorded in a downtime log. ALERE records and analyzes breakdowns and tells the scheduler when work centers should be back on-line.

The schedule relies upon the downtime log for work center availability. It is therefore equally important to know when a work center went off-line as it is to know when to expect it to be available again. The scheduler plans around the work center and reports any work orders which will have their schedules broken. The downtime log also provides the manufacturing manager with a quantitative record of machine problems.

## Delete Old Downtime

As the records in the downtime file age, they will, at some point, no longer be useful. A utility is provided so that they may be deleted.

## Machine Reports

A wide range of reports are readily available. There are control reports to list closed dates and work centers. Others to show work centers that are off-line or require maintenance.

There are also activity reports to print maintenance work orders, analyze the usage of work centers and why they were not available to production, along with the problems they had.

All these reports may be viewed on a screen, printed, exported to a spreadsheet, or turned into a PDF file for distribution.