# Production Setup

Produmex Manufacturing extends the Production module of SAP Business One with the concept of manufacturing resources such as work centers, employees, tools and constraints. In order to define the available capacities, a shift plan can be set for each resource.

The production setup module can be reached via: Administration > Setup > Production

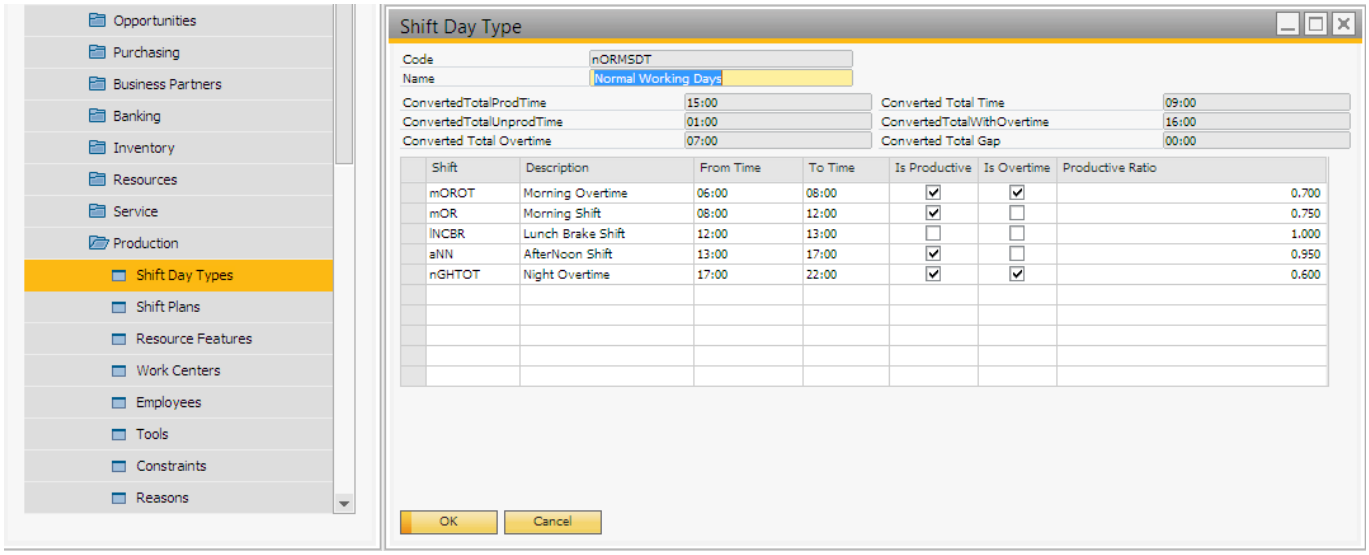
## 1. Shift Day Type

The shift day types are used when shift plans are defined for resources.

In this example the shift day type is defined with five shifts. Each shift has a code, a name and a duration defined with the 'From Time' and 'To Time' values.

For documentation purposes overtime and nonproductive shifts can be added as well. These shifts will be never used by the resource scheduling logic.

The productive ratio specifies the available capacity in the shift. For more information about how the productive ratio affects the capacity please see: Change productive ratio for a shift day type




The system automatically calculates various total times to give a better overview of the shift day.

- Converted Total Prod Time: Total time marked as productive.
- Converted Total Unprod Time: Total time marked as unproductive.
- Converted Total Overtime: Total time marked as overtime.
- Converted Total Time: Total length of the shift without the overtime.
- Converted Total With Overtime: Total length of the shift with the overtime.
- Converted Total Gap: Total length of gaps between shifts.

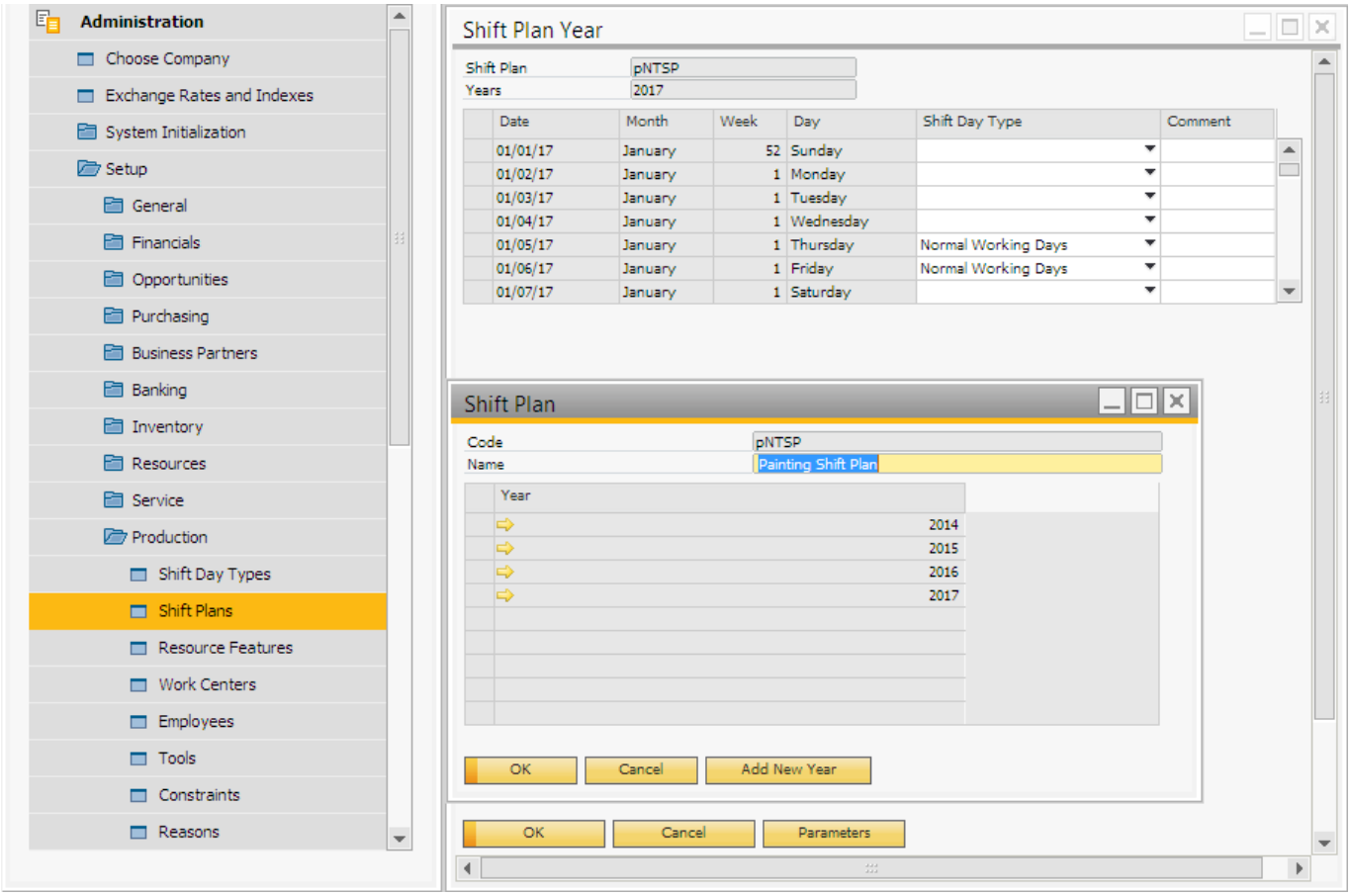
# 2. Shift Plans

With shift plans yearly work center capacities can be defined. On the ‘Shift Plan’ screen add the code and description of the shift plan. Click on the ‘Add New Year’ button to add a new yearly shift plan.

On the ‘Shift Plan Year’ form a shift day type can be determined for each day in the year. Select the year from the dropdown list. After the year has been selected, the Date, Month, Week and Day fields are automatically filled. Select the shift day type for each day or click on the ‘Parameters’ button to define the shift day types based on weeks or periods.

On the opening ‘Shift Plan Days Parameters’ form assign a shift day type for each day. Tick the ‘Different Odd/Even Weeks checkbox to differentiate odd and even weeks. Tick the ‘Time Period’ checkbox to apply these setting to a selected period only. Define the period on the ‘From Day’ and ‘To Day’ fields.

The shift plan can be modified any time after it has been created.




# 3. Work Center/Resource Features

A feature is a kind of capability a work center has and it is used by the resource scheduling logic to find the appropriate resource for a manufacturing operation.

1. Define the work center features on this form by adding the feature code and a description to *Code*

and *Name* columns of the grid.

2. To see which work centers are assigned for a feature, select the line of the feature and click on the `Resources` button. To define cost amounts for a feature, select the line of the feature then click on the `Cost Amounts` button. Select the cost type then specify the amount of each phrase.

3. It is also possible to define SAP time-based resources for the features in the *SAP Resource* column. For more information on defining SAP time-based resources please consult with section Using Time-Based Resources in Work Centers and PDC.

4. If the multi-dimensional allocation strategy is enabled on the MRP tab of Produmex Manufacturing settings, features for supplementary resources can be defined too. The form title will be changed to 'Resource Features' and an additional *Resource Type* column will be displayed. On this column you can select the resource type of the feature.

# 4. Resources

With default settings only work center resources can be defined.

When using the multi-dimensional allocation strategy, an operation can be scheduled for supplementary resources, such as employees, tools and constraints, in addition to a work center. Work centers remain the primary manufacturing resources, if a company had only human resources and no machines, the workers should be modeled as work centers. Employees are needed only when the company would like to manage the capacity of human workers and machines separately.

Manufacturing costs can only be assigned for work centers; no costs can be defined for Employees, Tools and Constraints. The supplementary resources are used only for the job scheduling not for cost calculations.

To schedule maintenance and other planned periods of resource unavailability, use the 'Resource Unavailability' form.

## 4.1. Work Center

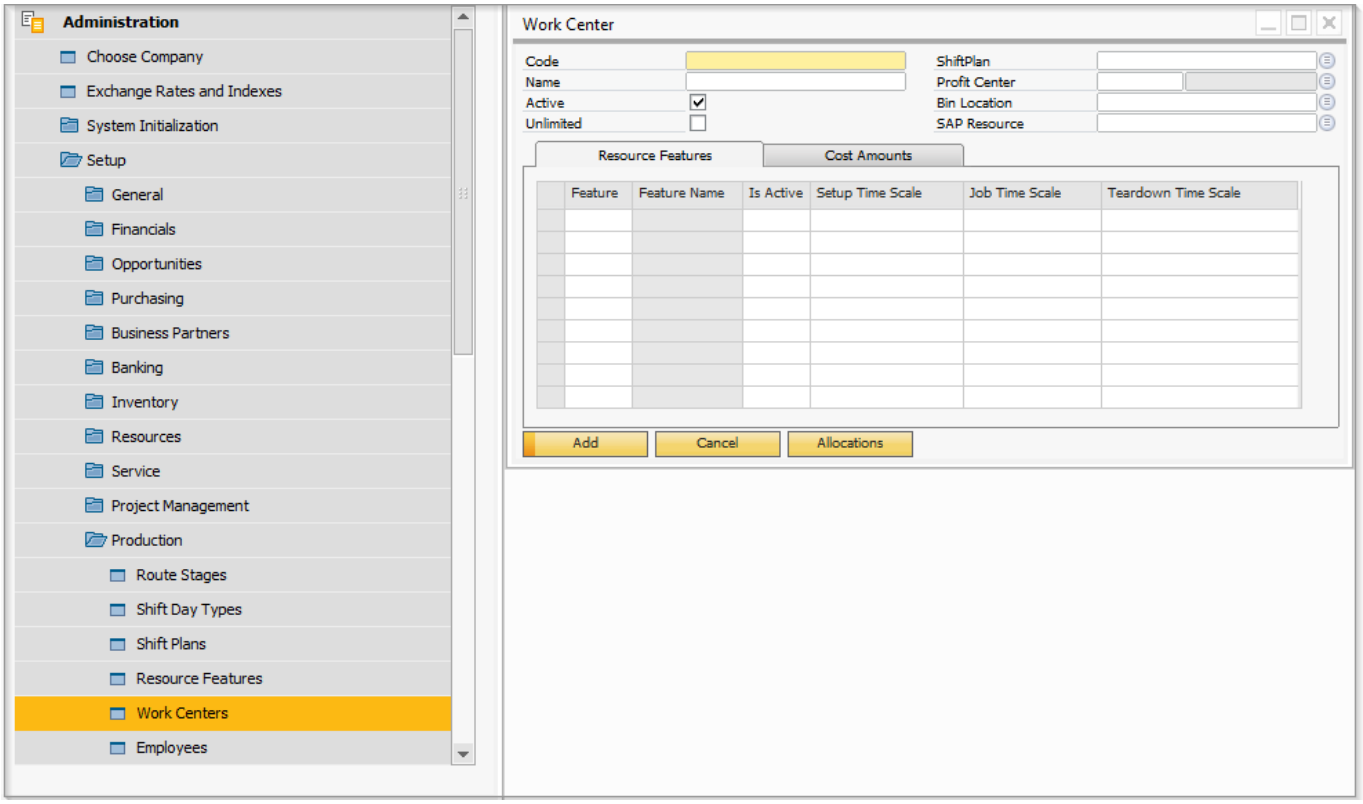
A work center is an individual production area. It is a section of a production facility where all tasks associated with a particular process (such as assembling, painting, welding) are performed. A work center may represent a single machine, a group of machines, a single person, a group of persons.

1. Define the available shifts/capacity slots for the work center by selecting a Shift Plan for it.
2. Defining a profit center for the work center is optional.

3. The selected bin location will be the default bin for material issues and product receipts during PDC bookings.
4. It is also possible to define SAP time-based resources for work centers in the *SAP Resource* column. For more information on defining SAP time-based resources please consult with section Using Time-Based Resources in Work Centers and PDC.

The job scheduler will only take into account work centers marked as 'Active'.

Work centers marked as *'Unlimited'* have boundless capacities. Since there is no capacity constraint, multiple operations can be scheduled to the same time.




### *Resource Feature*

A work center must support at least one feature. Features can be switched off individually by unticking the 'Is Active' box. Only 'Work Center' type features can be added to a work center.

Time Scales for manufacturing steps define the efficiency of the work center when performing the feature. The default value is one. When a work center is twice as fast in performing a feature, it requires half the job time for scheduling.

For more information about how the time scale and the shift productivity affects the capacity please see: Change the time scale for a work center

### *Cost Amounts*

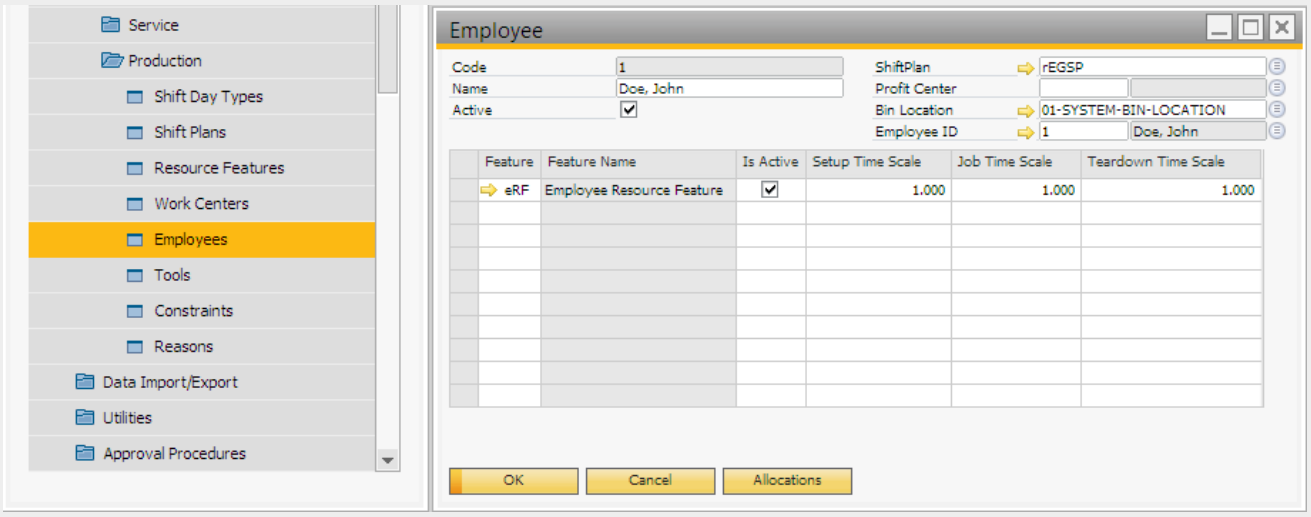
Define the cost types and amounts for cost calculation reasons on this tab.

Click on the *'Allocations'* button to review the open allocations of the work center on the 'Resource Allocations' form.

## 4.2. Employees

The settings of an employee resource are similar to the *work center settings*, except an employee resource cannot be unlimited and no cost amounts can be defined for it.

Add the feature to the employee on the grid. Only ‘Employee’ type features can be added.



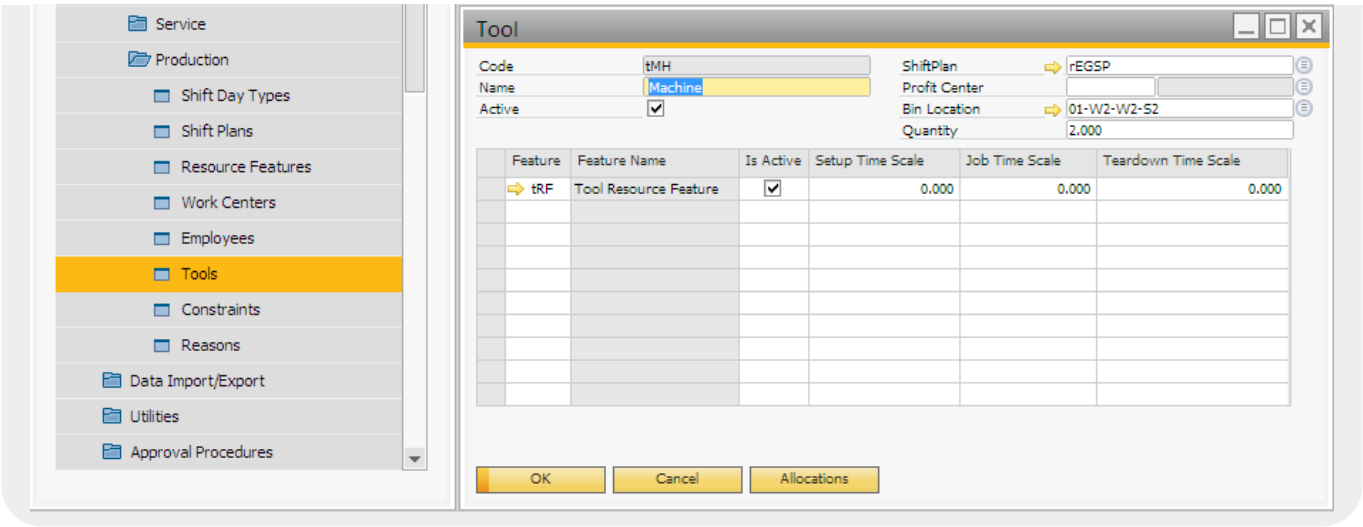

The ‘Employee’ resource might be linked to an employee who has an Employee Master Data defined in SAP Business One. Add the ‘Employee No.’ as the ‘Employee ID’ on this form. The ‘Name’ will be filled accordingly, but it can be adjusted.

## 4.3. Tools

The tool resource represent manufacturing tools and machines. The settings of a tool resource are similar to the *work center settings*, except a tool resource cannot be unlimited and cannot have cost amounts.

Add the feature to the tool on the grid. Only ‘Tool’ type features can be added.

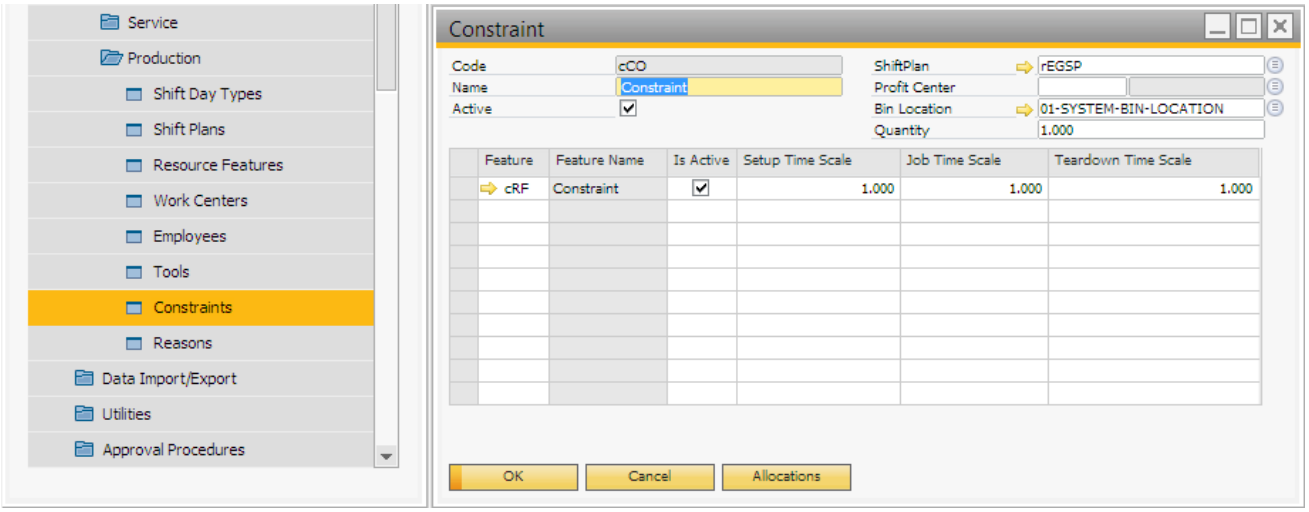
Add the number of the available tools to the ‘Quantity’ field. When the quantity of a tool resource is two, it means that there are two available tools that can be used simultaneously in two operations.




## 4.4. Constraints

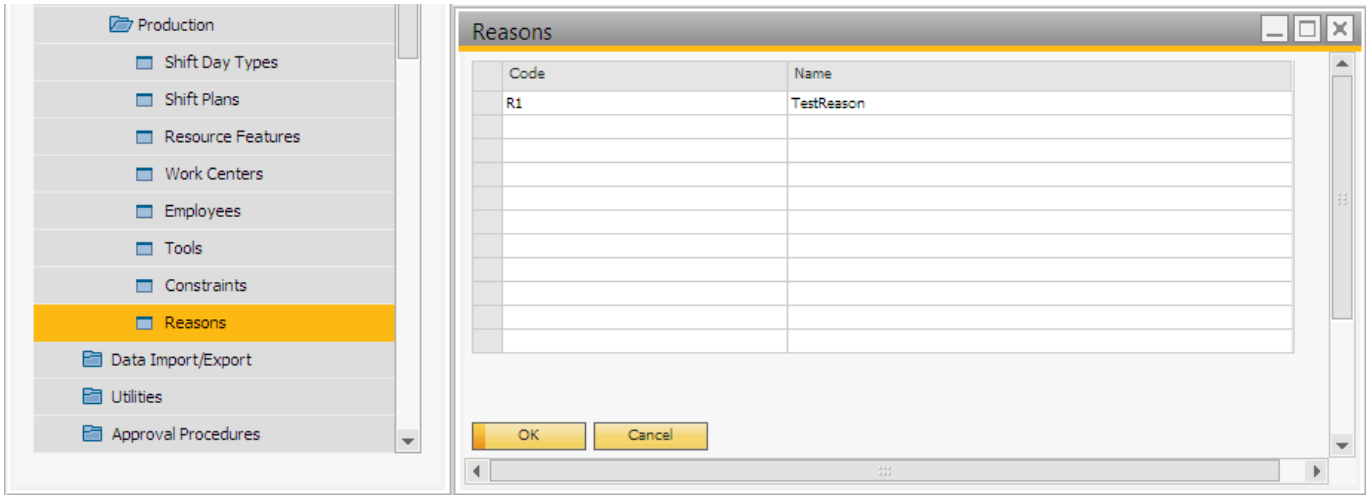
Constraints represent general resources such as electricity that can be a limitation during manufacturing. The settings of a constraint are similar to the work center configurations, but a constraint cannot be unlimited. No cost amounts can be defined for constraints.

By defining the *'Quantity'* of the constraint, you can set up the amount of this resource that can be used simultaneously.




## 5. Reasons

On this form resource unavailability reasons can be defined. Add the reason code and name on the grid then click on 'Update'.

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