

## Introduction

This section will give you an introduction to bills of material in the PM System. You will learn:

- what bills of material are
- how bills of material are structured
- how bills of material are used

### Bills of Material in Plant Maintenance

## ⌘ Bills of Material in Plant Maintenance

### What are Bills of Material?

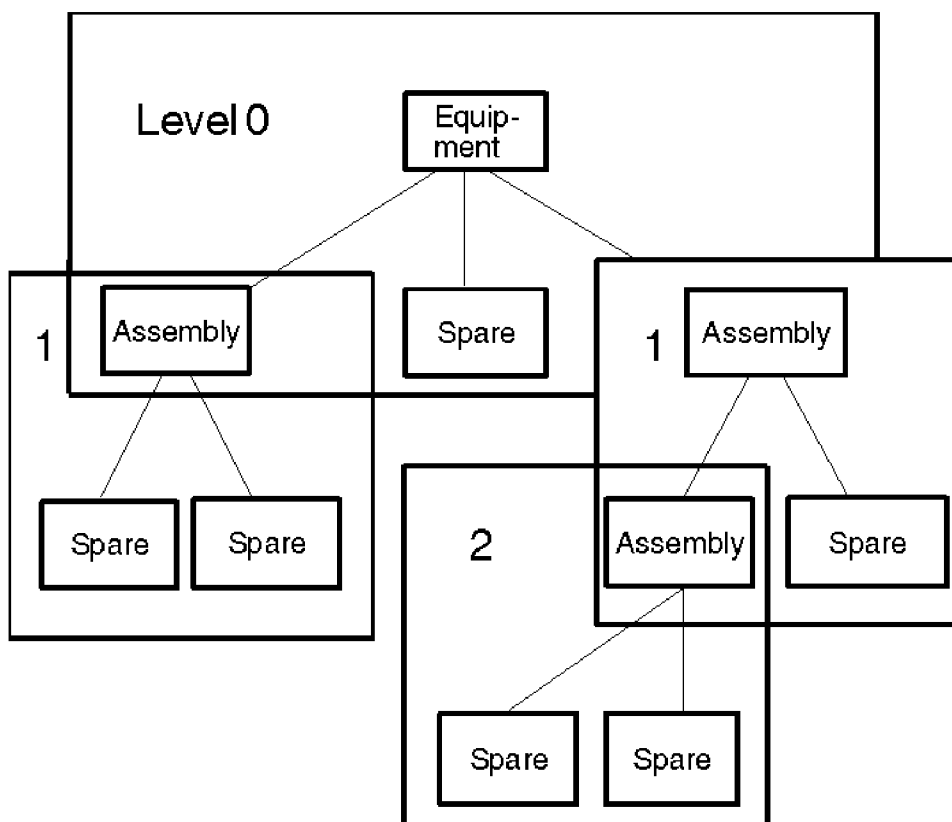
A bill of material (BOM) is a complete, formally structured list of the components making up a technical object or assembly. The list contains the object number of each component together with the quantity and the unit of measure. The components can be stock or non-stock spares or assemblies, which in turn can be described by BOMs.

BOMs contain important master data used in many organizational areas, such as:

- material requirements planning
- provision of materials for production
- product costing
- plant maintenance

### How are Bills of Material Structured?

In plant maintenance, BOMs are usually multi-level bills of material. They can have as many levels as required. The highest level (Level 0 in the figure below) depicts, for example, a piece of equipment or material as a complete technical object. The lower levels of the BOM (Levels 1 and 2 in the figure below) depict the components making up the piece of equipment or material, and their components.



The BOM structure is reflected in the different technical types of BOM offered in the PM System:

- simple

The first BOM you create for a piece of equipment or material has no defined technical type and a simple structure. It is known as a simple BOM.

- variant

Variant BOMs have a more complex structure. They are used to group together several BOMs to describe different objects that have a high proportion of identical parts.

- multiple

Multiple BOMs have the most complex structure. They are used to group together several BOMs to describe one object with different combinations of materials for processing methods. Multiple BOMs are usually used in production planning and are of little or no use to plant maintenance. For more information on multiple BOMs, see *PP Bills of Material Guide*.

### How are Bills of Material Used?

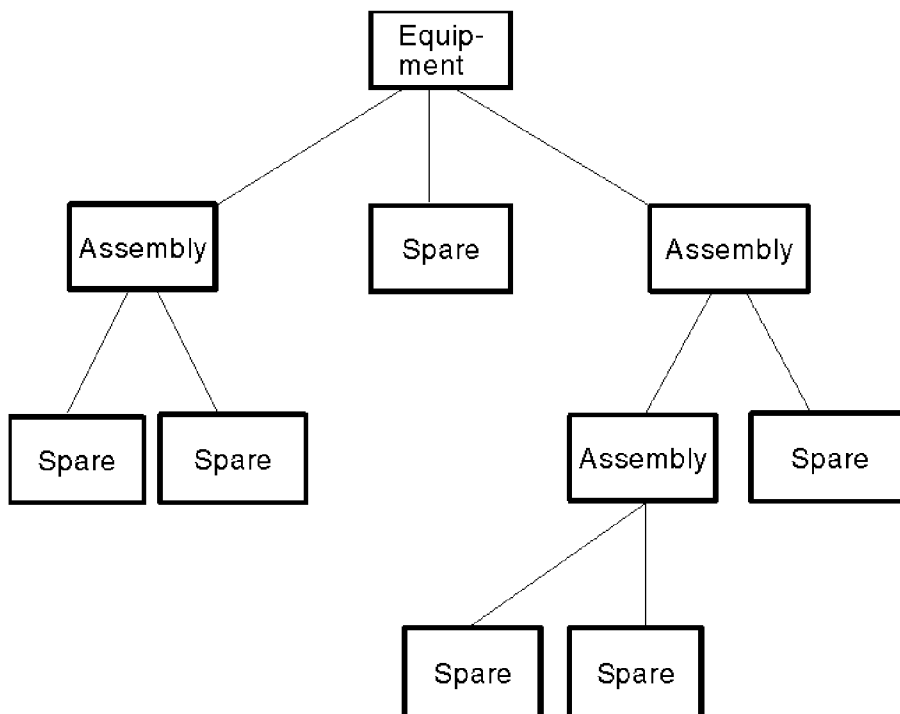
The BOMs used in plant maintenance are known as maintenance bills of material. Within plant maintenance, maintenance BOMs have two main uses:

- structure description

A maintenance BOM describes the way a piece of equipment or material is structured.

- spares allocation

A maintenance BOM is used to allocate spares to a piece of equipment or assembly for maintenance purposes. This is shown in the figure below.



### Advantages of Using Bills of Material

The use of maintenance BOMs brings you many advantages in maintenance planning. Three main advantages are evident in

- materials planning (using maintenance task lists)

The use of maintenance BOMs is advantageous for material planning, because you can carry out material planning when creating a maintenance task list. The reference to a BOM is created via

- an equipment BOM for equipment task lists
- the assembly allocated in the header for general task lists

This reference to the BOM enables you to allocate materials to the individual operations in a maintenance task list using a structure list or structure graphic representation of the BOM. As this representation offers a detailed overview of all the materials, materials planning is considerably easier.

For more information on maintenance task lists, see *PM Managing Maintenance Task Lists*.

- materials/spares planning (using maintenance orders)

The use of maintenance BOMs is advantageous in materials/spares planning because you can use the structure list or structure graphic representation of the BOM to give you an overview of all the materials/spares which may be required in a maintenance order. This enables you to allocate all the materials you require to the order and makes materials/spares planning considerably easier.

For more information on maintenance orders, see *PM Maintenance Orders*.

- locating malfunctions (using maintenance notifications)

The use of maintenance BOMs in locating malfunctions is advantageous because you can use the structure list or structure graphic representation of the BOM to give you an overview of all the components making up a technical object. From this overview you can easily select the object for which you want to create a maintenance notification. This enables you to locate the malfunction in the piece of equipment more precisely.

For more information on maintenance notifications, see *PM Maintenance Notifications*.

## Defining BOM Usage

Many companies have only one universally applicable standard BOM structure for all areas of their company. However, other companies need parallel BOMs for the different areas within the company. The parallel BOMs are needed to process the different item data resulting from the different tasks performed by the individual areas. For example, the costing BOM is used as a basis for automatically determining the costs of materials required for a technical object, whereas the maintenance BOM includes all the parts of a technical object from a structural point of view and contains all location data. Parallel BOMs contain area-specific data and include data from selected areas in the company.

In the PM System you can define the BOM usage required in your company via the *Application*. The *Application* of plant maintenance can be defined using the Customizing function. The BOM usage defined in this way determines the valid item status indicators, which in turn determine whether data can be maintained or not. The following table shows how the item status indicators could be set for plant maintenance.

<b>Item relevant to</b>	<b>Maintenance</b>
<i>Production</i>	not allowed
<i>Engineering</i>	not allowed
<i>Spares</i>	optional
<i>Plant maintenance</i>	obligatory
<i>Sales</i>	not allowed

*Costing*

optional

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