

Microsoft Dynamics® AX 2009

BOM calculations using costing sheets

White Paper

This document describes how to set up a costing sheet that includes material and manufacturing, and how the setup affects the BOM calculation results.

June 2012

<http://www.microsoft.com/dynamics/ax>



Table of Contents

Purpose.....	4
Introduction.....	4
The costing sheet and indirect costs	5
Cost groups.....	5
Cost group types	5
Cost group behavior.....	6
Create cost groups.....	6
Assign a cost group to an item	6
Assign a cost group to a cost category.....	7
Assign cost categories to operations on a production route	7
Costing version	8
Costing version types	8
Cost price model.....	8
Explosion mode	8
Create and set up a costing version	8
Cost groups and costing versions.....	9
Set up standard cost prices for items through a costing version	9
Set up standard cost prices for cost categories through a costing version.....	10
Costing sheet	10
Create a Price node in the costing sheet	11
Create a Total node or a Cost group node in the costing sheet.....	11
Create a Rate node or a Surcharge node in the costing sheet	13
Single-level and multilevel BOM calculation	13
Costing sheet setup.....	13
Calculate a BOM by using Single level explosion	13
View the calculated cost of the single-level BOM	14
View the origin of the values in the single-level BOM calculation	15
View the costs according to the format created in the costing sheet setup	15
Calculate a BOM by using Multilevel explosion	16
View the calculated cost of the multilevel BOM	16
View the origin of the values in the multilevel BOM calculation	17
View the costs according to the format created in the costing sheet setup	17
Indirect costs.....	18
Create an indirect cost node in the costing sheet setup	19
Create and set up a surcharge node.....	20
Create and set up a rate node	21
Surcharge calculation and subtype behavior.....	22
Set up surcharges.....	22
Calculate surcharges by using the Level subtype.....	23
View the surcharge records upon BOM calculation by using the Level subtype	24

View the indirect costs upon BOM calculation by using the Level subtype	24
Calculate surcharges by using the Total subtype	25
View the indirect costs upon BOM calculation by using the Total subtype	26
Calculate surcharges by using the Sublevel subtype	26
View the indirect costs upon BOM calculation using the Sublevel subtype.....	27
Rate calculation and subtype behavior.....	28
Set up rates	28
Calculate rates by using the Process subtype	29
View the rate records upon BOM calculation by using the Process subtype	30
Calculate rates by using the Setup subtype.....	31
View the rate records upon BOM calculation by using the Setup subtype.....	31
Surcharge calculation by using the Per item parameter	32
Calculate surcharges by using the Per item parameter.....	32
View overhead per item upon BOM calculation by using the Per item parameter	33
Indirect cost calculation viewed from a production order	33
Set up the costing sheet	34
Perform a BOM calculation and associate the cost with a costing version.....	34
Create adjustment lines.....	35
Create and process a production order	36
View the results of a BOM calculation from a production order	36
Update a production order by using automatic BOM calculation	38
View the results of a BOM calculation from a production order by using automatic BOM consumption	38
Production variances	40
Production variances and the difference between actual costs and calculated costs	41
Analyze the production variances.....	41

Purpose

The purpose of this document is to describe how Microsoft Dynamics AX 2009 supports absorption costing by allowing indirect costs to be absorbed into the product cost.

Introduction

Absorption costing is one of many cost accounting methods. The purpose of applying absorption costing is to ensure that indirect costs that originate in the manufacture of finished goods are recognized and absorbed into the product cost.

Classifying resources of the material and labor types into cost groups of the **Direct materials** or **Direct manufacturing** type lets cost controllers configure a cost composition with the level that is required for financial reporting and internal analysis. The aggregation also serves as the basis for calculating absorption of indirect cost.

Inventory is evaluated by:

- **Standard cost** – The cost composition can be tracked in Microsoft Dynamics AX 2009, and the inventory value of a product can be reported by its cost composition.
 - Use the **Standard cost inventory value** report for reporting.
 - Use the **Sub ledger** option in the **Cost breakdown** field on the **Bill of materials** tab under **Inventory management > Setup > Parameters**.
- **Actual cost (FIFO, LIFO, or Weighted average)** – The cost composition cannot be tracked in Microsoft Dynamics AX 2009, and the inventory value can only be reported as **Direct material**.

Absorption of indirect cost is important for ensuring accurate product costing and valuation of inventory. In some industries, indirect cost represents a significant portion of the product cost.

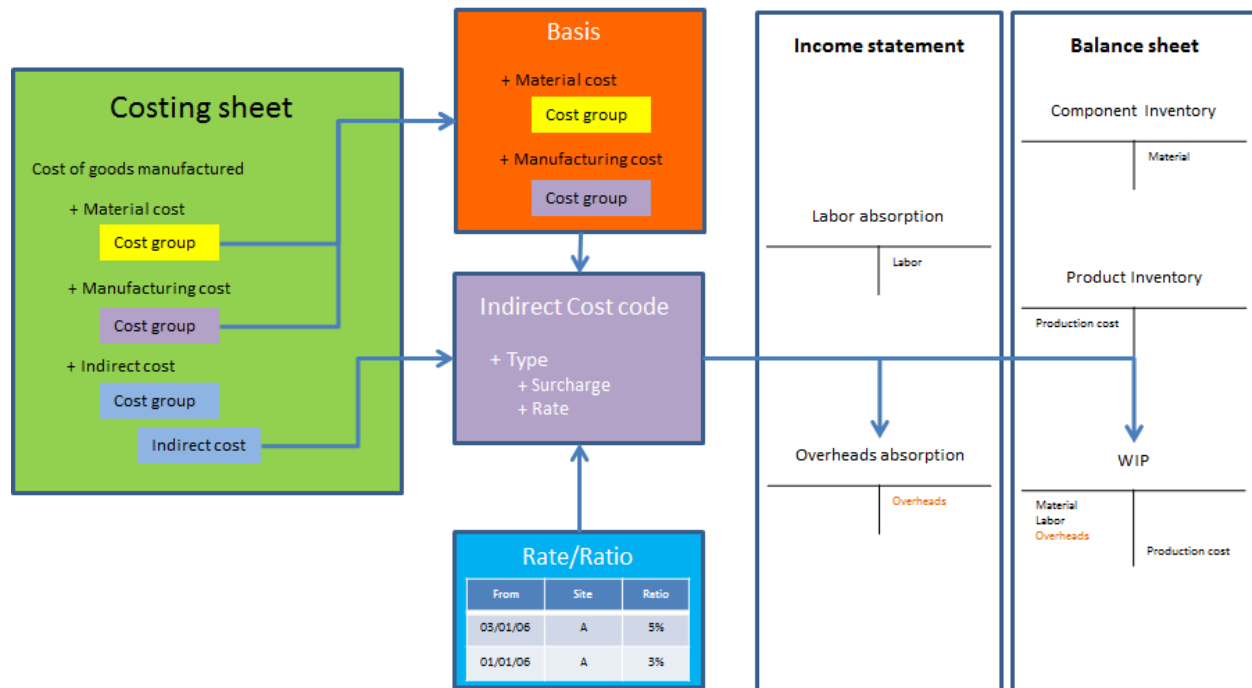
Accounting standards or Generally Accepted Accounting Principles (GAAP) may recommend or require that indirect cost be absorbed.

Examples of indirect cost include:

- Depreciations of manufacturing equipment.
- Maintenance expenses related to manufacturing equipment.
- Shop floor expenses for cleaning, rent, or insurance.

The costing sheet and indirect costs

The following illustration shows a costing sheet structure, and it also shows how indirect cost is posted to accounts in the general ledger.



Note: All examples in this document use a Microsoft Dynamics AX 2009 SP1 RU7 environment with Contoso demo data (company CEU).

Cost groups

Cost groups represent the lowest level of a cost composition. A cost group must be associated with a cost group type, which defines the nature of cost classification in Microsoft Dynamics AX 2009.

Cost group types

There are four types of cost groups:

- **Direct materials** – Can be assigned to items.
- **Direct manufacturing** – Can be assigned to cost categories.
- **Indirect cost** – Can be assigned to indirect costs for surcharges or rates
- **Undefined** – Not specific to anything. This cost group type is automatically assigned to cost groups during upgrade to Microsoft Dynamics AX 2009 from earlier versions of Microsoft Dynamics AX

At least one cost group of each cost group type must be set as the default type. If a resource is not assigned a cost group, the system automatically assigns the default cost group. You are not notified about automatic cost group assignment.

Cost group behavior

A cost group can be defined as **Fixed** or **Variable**, depending on the resources that it represents in the cost composition. This is referred to as the behavior of the cost group. The distinction is purely for reporting purposes, and it applies only when you use the **Standard cost inventory value** report and the **Standard cost** method for reporting.

Create cost groups

- Click **Inventory management > Setup > Bill of materials > Cost groups**.

Cost group	Name	Cost group type	Behavior	Default
Fix_OVH	Fixed cost overheads	Indirect	Fixed cost	<input type="checkbox"/>
HESMat	High End Speaker Material	Undefined		<input type="checkbox"/>
HTSMat	Home Theater System Material	Undefined		<input type="checkbox"/>
Lab_HE	High End speaker Labor	Direct manufacturing	Variable cost	<input checked="" type="checkbox"/>
Lab_HTS	Home Theater System labor	Direct manufacturing	Variable cost	<input type="checkbox"/>
Lab_SPS	Standard Speaker labor	Direct manufacturing	Variable cost	<input type="checkbox"/>

Cost groups are assigned to items and cost categories, and the cost categories are assigned to operations on production routes. In this way, the operations are associated with cost groups.

Assign a cost group to an item

- Click **Inventory management > Item details**.

Cost group	Name	Cost group type
HESMat	High End Speaker Material	Undefined
HTSMat	Home Theater System Material	Undefined
MAP	Material Profit	Undefined
Mat	Material	Direct materials
Prd	Product	Undefined
SDSMat	Standard Speaker Material	Undefined
Service	Services	Undefined
VNP	Vendor Profit	Undefined

Note: As the preceding illustration shows, only cost groups of the **Direct materials** and **Undefined** types are applied.

Assign a cost group to a cost category

- Click **Production > Setup > Routes > Cost categories**.

The screenshot shows the 'Cost categories' window with the following data:

Category Id	Category Name	Use in Project	Cost price	Cost group	Employee
HESpkrCut		<input type="checkbox"/>	530,45	Lab_HE	
HESpkrDrill		<input type="checkbox"/>	538,24		
HESProc		<input type="checkbox"/>	18,82		
HESQty		<input type="checkbox"/>	2,42		
HESSetup		<input type="checkbox"/>	23,39		
HTSProc		<input type="checkbox"/>	12,54		
HTSQty		<input type="checkbox"/>	1,37		
HTSSetup		<input type="checkbox"/>	12,48		

Cost group	Name	Cost group type
HESMat	High End Speaker Material	Undefined
HTSMat	Home Theater System Material	Undefined
Lab_HE	High End speaker Labor	Direct manufacturing
Lab_HTS	Home Theater System labor	Direct manufacturing
Lab_SDS	Standard Speaker labor	Direct manufacturing
MAP	Material Profit	Undefined

Note: As the preceding illustration shows, only cost groups of the **Direct manufacturing** and **Undefined** types are applied.

Assign cost categories to operations on a production route

- Click **Production > Route details > Route**.
- Click the **Setup** tab, and then, under **Cost categories**, select the cost categories.

The screenshot shows the 'Route (1) - Route number: 1001, High end speaker route ver 1 (1)' window with the following data:

Oper. No.	Priority	Operation	Scrap percentage	Accumulated	Next	Link type	Hourly rate / Piecework rate
10	Primary	Assem_Spk	0,00	1,00	20	All	
20	Primary	Insp_HESpk	0,00	1,00	30	All	
30	Primary	Pack_HESpk	0,00	1,00	0	All	

Setup tab details:

Consumption calculation: Formula: Standard, Factor: 0,00

Work center alternative: Task group: [empty], Job requirement: [empty]

Cost categories:

- Setup category: HESSetup
- Run time category: HESProc
- Quantity category: HESQty

Costing version

The primary purpose of a costing version is to contain cost records for items and cost categories. The costing version determines current active costs and the way that the bill of materials (BOM) calculation simulation is performed.

Costing version types

There are two types of costing versions:

- **Standard cost** – Used for items that are associated with an inventory model group of the **Standard cost** type. Use this costing version type to set up costs and calculate current active cost.

Note: This inventory model group supports calculation of costs only at a single level.

- **Planned cost** – Used for items that are associated with inventory model groups of types other than **Standard cost**, such as **FIFO** and **LIFO**. Use this costing version type to run different scenarios according to the setup for cost simulations.

Cost price model

In a costing version, you can select one of the following values as the cost price model:

- **Version cost price** – The cost is taken from the current costing version for items, categories, and indirect costs. This is the only available option for costing versions of the **Standard cost** type.

Tip: Pending costs are always applied in calculations. If no pending costs exist for the current costing version, the cost value is determined from the fallback principle that is selected for the costing version. For more information, see “Create and set up a costing version.”

- **Calculation group** – The cost is based on the calculation group for the items.
 - Set up calculation groups under **Inventory Management > Setup > Bill of materials**.
 - Assign the calculation group to component items on the **References** tab under **Inventory management > Item details**.

Explosion mode

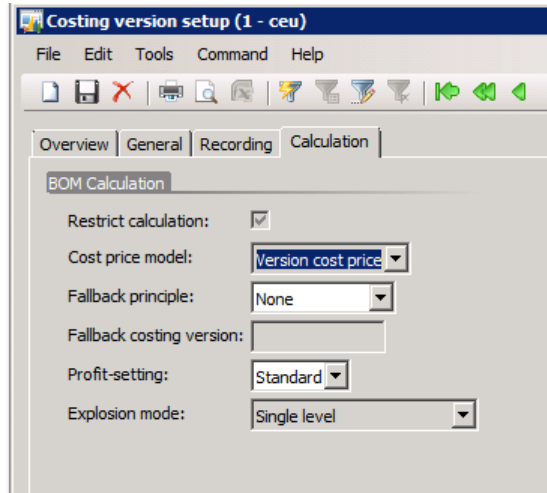
The explosion mode in a costing version determines how the levels in a BOM affect the cost calculation. You can select one of the following explosion modes:

- **Multilevel** – The calculated cost reflects a complete recalculation. Each sub-BOM is calculated instead of just taking its current cost.
- **Make to order** – Resembles **Multilevel** (a complete recalculation), except the specified quantity is used to amortize constant costs.
- **According to BOM line type** – The calculation depends on the BOM line type. For example, if the type is **Item**, the current cost is taken, and if the type is **Production**, the cost is calculated.
- **Single level** – The standard costing version is restricted to a single level. This ensures accurate and consistent calculation of standard costs. For this explosion mode, the calculated costs of first-level manufactured components are applied.

Create and set up a costing version

1. Click Inventory management > Setup > Costing versions.
2. To set up a cost price model and an explosion mode, click the **Calculation** tab.

- To specify the date when the costing version becomes valid, click the **Recording** tab. Then, in the **From date** field, enter a date.



Note: In the **Fallback principle** field on the **Calculation** tab, you can define the cost value that is applied if no cost value is retrieved for the current costing version.

Cost groups and costing versions

You associate the cost groups of items and operations with a costing version by setting up a standard cost price for the item or for the cost category of the operation.

For example, you have a BOM item that is composed of two raw material items and a partially finished product. The BOM and the sub-BOM have a route with one operation. All items are associated with an inventory model of the **Standard cost** type.

To set up standard cost prices for the components of the BOM item, you add standard cost prices to the items and to the cost categories of the routes that are associated with the BOMs.

		Cost group	Qty	Cost
BOM1				
↳	ItemA	HESMat	1	10
↳	ItemB	HESMat	1	10
↳	BOM2	Matl	1	10
↳	↳ ItemC	Matl	1	10

	Setup time	Setup cost group	Cost	Run time	Process cost group	Cost
BOM1 route						
Operation 10	1	Mnfg	5	1	Mnfg	15
BOM2 route						
Operation 10	1	Lab_HE	10	1	Lab_HE	25

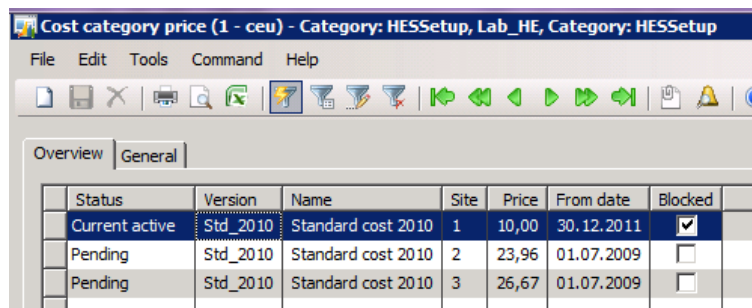
Set up standard cost prices for items through a costing version

- Click **Inventory management > Item details**.

2. Select an item, click **Price**, and then create a pending price of the **Cost** type.
3. In the **Version** field, select a costing version, and in the **Price** field, enter a price.
4. Save the record, and then click **Activate**.

Set up standard cost prices for cost categories through a costing version

1. Click **Production > Setup > Routes > Cost categories**.
2. Create a new category, and then, in the **Cost group** field, select a cost group.
3. Click **Price**, and then, in the **Version** field, select a costing version.
4. In the **Price** field, enter a price, and then click **Activate**.



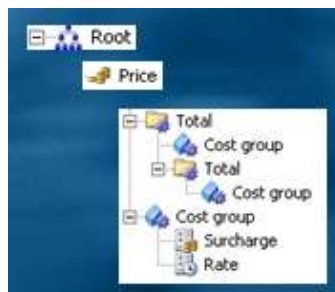
Status	Version	Name	Site	Price	From date	Blocked
Current active	Std_2010	Standard cost 2010	1	10,00	30.12.2011	<input checked="" type="checkbox"/>
Pending	Std_2010	Standard cost 2010	2	23,96	01.07.2009	<input type="checkbox"/>
Pending	Std_2010	Standard cost 2010	3	26,67	01.07.2009	<input type="checkbox"/>

Costing sheet

The costing sheet defines the format for displaying the cost information of a manufactured item and the elements to be included in the calculation of manufacturing overhead.

Each level in the costing sheet consists of a node that is composed of totals and subtotals. The totals and subtotals are based on the cost group list. There are three types of nodes:

- Root nodes
- Parent nodes of the **Price** type
- Child nodes of the **Cost group** and **Total** types

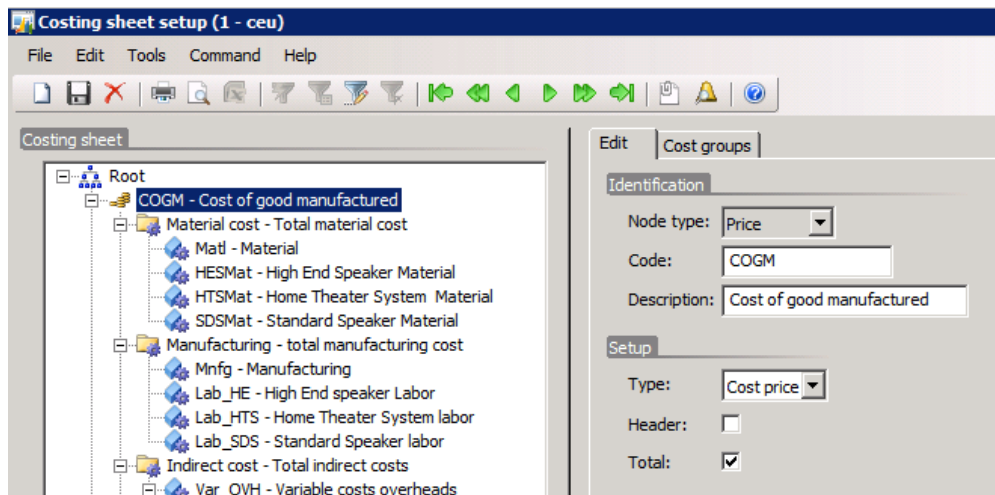


Nodes of the **Total** type are used for grouping and for subtotal amounts. **Total** nodes can contain subtotals or **Cost group** nodes.

A node of the **Cost group** type that is associated with an indirect cost group must be calculated. To nodes of this type, you can add subnodes of the **Surcharge** and **Rate** types, and define surcharge percentages and rate amounts.

Create a Price node in the costing sheet

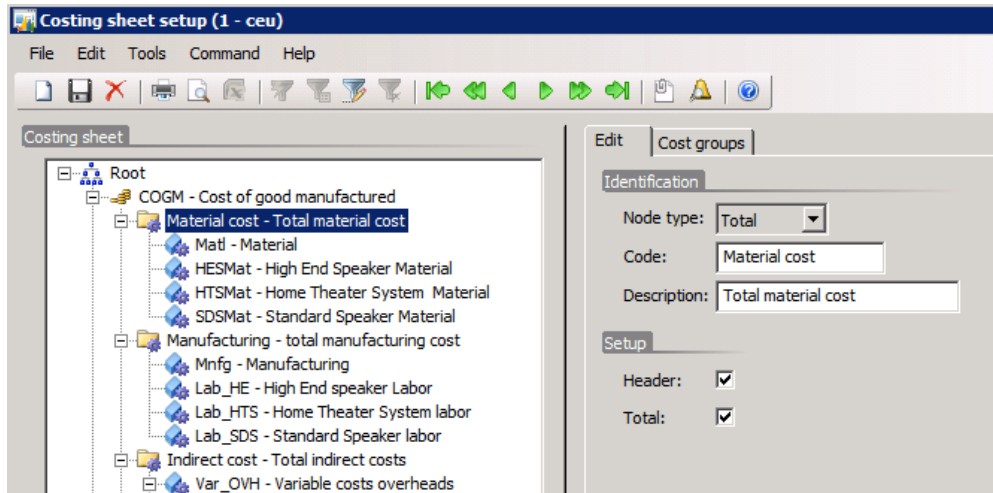
1. Click **Inventory management > Setup > Bill of materials > Costing sheet setup**.
2. Right-click the **Root** node, and then click **Create**. From the **Root** node, you can create only nodes of the **Price** type.
3. In the **Code** field, enter a code, and in the **Description** field, enter a description.
4. In the **Type** field, select **Cost price**.
5. To display a header line for the node, select the **Header** check box. To display a total line, select the **Total** check box.



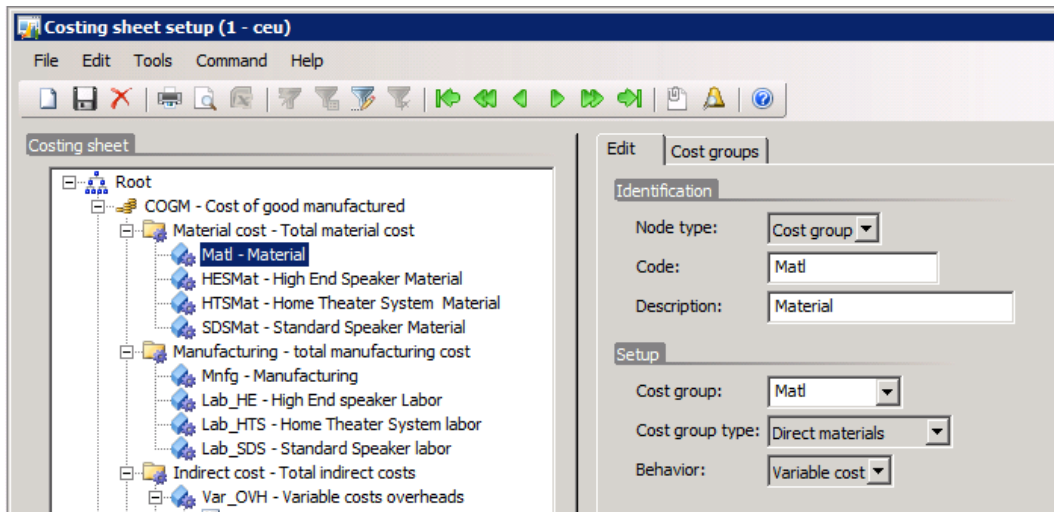
Create a Total node or a Cost group node in the costing sheet

1. Right-click the **Price** node, and then click **Create**.
2. In the **Select node type** field, select the node type. In a **Price** node, you can include a **Total** node or a **Cost group** node.

- On the **Edit** tab, in the **Code** field, enter a code, and in the **Description** field, enter a description. If you want to view a header line and a total line for the node, select the **Header** and **Total** check boxes.
 - For a node of the **Total** type, you can add another node of the **Total** type (a subtotal) or a node of the **Cost group** type.



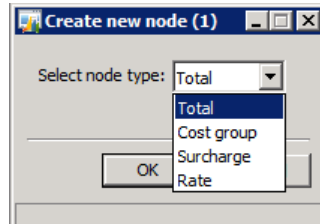
- For a node of the **Cost group** type, you can add nodes of the **Total** and **Cost group** types. You can also associate the node with a cost group for direct materials or indirect costs. In the **Cost group** field, select the cost group that is related to the node. This node will cumulate amounts for the cost group.



Create a Rate node or a Surcharge node in the costing sheet

1. Right-click a node of the **Cost group** type that is associated with an indirect cost group, and then click **Create**.
2. In the **Select node type** field, select **Rate** or **Surcharge**. The type of node that you create depends on the method to be used to calculate indirect costs.

For more information, see “Surcharge calculation and subtype behavior” and “Rate calculation and subtype behavior.”



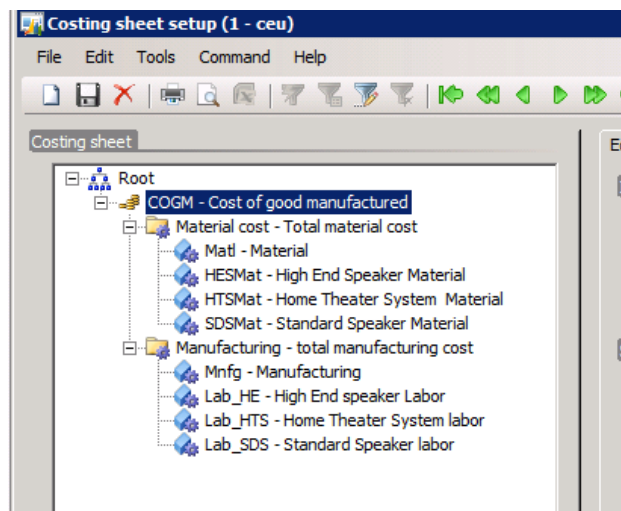
Single-level and multilevel BOM calculation

The following examples show the results of BOM calculations when the **Single level** and **Multilevel** explosion modes are used. The explosion mode is defined in the **Costing version setup** form, and the format of the cost information is defined in the **Costing sheet setup** form.

Costing sheet setup

The cost classification is divided into two nodes of the **Total** type:

- **Material cost** – Includes all cost groups related to raw material.
- **Manufacturing** – Includes all cost groups related to cost categories in the production operations.



Calculate a BOM by using Single level explosion

1. Click **Inventory management > Item details**.
2. Select an item of the **BOM** type, and then click **Price**.

3. In the **Item price** form, click **Calculation**.
4. Select a costing version that uses the **Single level** explosion mode, and then click **Yes** to insert the active version of the BOM and the route.

BOM calculation for an item (1 - ceu)

General | Price recording in version | Warnings | Batch

Item number: BOM1

General

Costing version: Std_2010

Site: 1

Calculation date: 30.12.2011

BOM: BOM_00000007

Route number: RTE_00000003

Quantity: 1,00

Profit-setting: Standard

Update/insert calculated prices: Overwrite

Calculation type

Cost price model: Version cost price

Explosion mode: Single level

Fallback

Fallback principle: None

Fallback costing version:

OK Cancel

View the calculated cost of the single-level BOM

On the **Pending prices** tab in the **Item price** form, you can see that the calculated cost amount is 50:

- **Price** field: The variable costs are 45.
- **Price misc. charges** field: The constant cost is 5.

Item price (1 - ceu) - Item number: BOM1, BOM1

File Edit Tools Command Help

Pending prices | Active prices

Overview | General | Dimension

Price type	Version	Name	Site	Price	Price unit	Price misc. charges	Price quantity	Incl. in unit price	Unit	Fro...	Blocked	Calculated	Log
Cost	Std_2010	St...	1	45,00	1,00	5,00	1,00	<input checked="" type="checkbox"/>	Pcs	30.12.2011	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

View the origin of the values in the single-level BOM calculation

On the **Tree structure** tab in the **Item price** form, you can trace the values of the BOM calculation:

- 10 is derived from ItemA, 10 from ItemB, and 10 from BOM2. The cost is derived from the cost of this subproduct, but it is not calculated, because the calculation is set up to be performed at a single level.
- 5 is derived from the setup time, which is a constant cost, and 15 is derived from the run-time operation.

Consumption	Variable cost contribution	Number of series	Constant cost contribution	Total cost price per unit
1,00	45,00	1,00	5,00	50,00
1,00	10,00	1,00	0,00	10,00
1,00	10,00	1,00	0,00	10,00
1,00	10,00	1,00	0,00	10,00
1,00	0,00	1,00	5,00	5,00
1,00	15,00	1,00	0,00	15,00
1,00	0,00	1,00	0,00	0,00

View the costs according to the format created in the costing sheet setup

On the **Costing sheet** tab in the **Item price** form, you can view the format of the costs according to the costing sheet format:

- A header and a total for the total cost of 30 that is derived from raw material. The cost is divided by cost group type, where ItemA and ItemB belong to the HESMat cost group, and BOM2 belongs to the Matl cost group.
- A header and a total for the manufacturing cost, where only one cost group shows cost.

Code	Description	Variable cost	Fixed cost	Total
Material cost				
Total material cost				
Matl	Material	10,00		10,00
HESMat	High End Speaker Material	20,00		20,00
Material cost				
Total material cost		30,00		30,00
Manufacturing				
total manufacturing cost				
Mnfg	Manufacturing	20,00		20,00
Manufacturing				
total manufacturing cost		20,00		20,00
COGM	Cost of good manufactured	50,00		50,00

Calculate a BOM by using Multilevel explosion

1. Follow steps 1 through 3 of the procedure for a single-level BOM calculation.
2. Select a costing version that uses the **Multilevel** explosion mode, and then click **Yes** to insert the active version of the BOM and the route.

Identify the site

View the calculated cost of the multilevel BOM

On the **Pending prices** tab in the **Item price** form, you can see that the calculated cost amount is 85:

- **Price** field: The variable costs are 80.
- **Price misc. charges** field: The constant cost is 5.

Price type	Version	Name	Site	Price	Price unit	Price misc. charges	Price quantity	Incl. in unit price	Unit	Fro...	Blocked	Calculated	Log
Cost	Test		1	80,00	1,00	5,00	1,00	<input type="checkbox"/>	Pcs	09.01.2012	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

View the origin of the values in the multilevel BOM calculation

On the **Tree structure** tab in the **Item price** form, you can view the following costs. The cost of BOM2 is 45, compared to 10 in the single-level calculation. The reason for the difference is that the cost has been calculated, and raw material and route operations are included in the calculation.

	Consumption	Variable cost contribution	Number of series	Constant cost contribution	Total cost price per unit
Item/ItemA	1,00	80,00	1,00	5,00	85,00
Item/ItemB	1,00	10,00	1,00	0,00	10,00
BOM/BOM2	1,00	10,00	1,00	0,00	10,00
Item/ItemC	1,00	45,00	1,00	0,00	45,00
Setup/002	1,00	10,00	1,00	0,00	10,00
Process/002	1,00	0,00	1,00	10,00	10,00
Quantity/002	1,00	25,00	1,00	0,00	25,00
Setup/001	1,00	0,00	1,00	0,00	0,00
Process/001	1,00	0,00	1,00	5,00	5,00
Quantity/001	1,00	15,00	1,00	0,00	15,00
	1,00	0,00	1,00	0,00	0,00

View the costs according to the format created in the costing sheet setup

On the **Costing sheet** tab in the **Item price** form, you can view the format of the costs according to the costing sheet format:

- In the **Level** field, select **Single**. The cost for the Matl cost group is 45, compared to 10 in the single-level calculation. The Matl cost group is associated with BOM2.

Code	Description	Variable cost	Fixed cost	Total
Material cost	Total material cost			
Matl	Material	45,00		45,00
HESMat	High End Speaker Material	20,00		20,00
Material cost	Total material cost	65,00		65,00
Manufacturing	total manufacturing cost			
Mnfg	Manufacturing	20,00		20,00
Manufacturing	total manufacturing cost	20,00		20,00
COGM	Cost of good manufactured	85,00		85,00

- In the **Level** field, select **Multi**. The costs are classified according to the composition of BOM2, where 10 is derived from the Matl cost group, and 35 is derived from the manufacturing cost group named Lab_HE.

Code	Description	Variable cost	Fixed cost	Total
Material cost				
	Total material cost			
Matl	Material	10,00		10,00
HESMat	High End Speaker Material	20,00		20,00
Material cost	Total material cost	30,00		30,00
Manufacturing				
	total manufacturing cost			
Mnfg	Manufacturing	20,00		20,00
Lab_HE	High End speaker Labor	35,00		35,00
Manufacturing	total manufacturing cost	55,00		55,00
COGM	Cost of good manufactured	85,00		85,00

Indirect costs

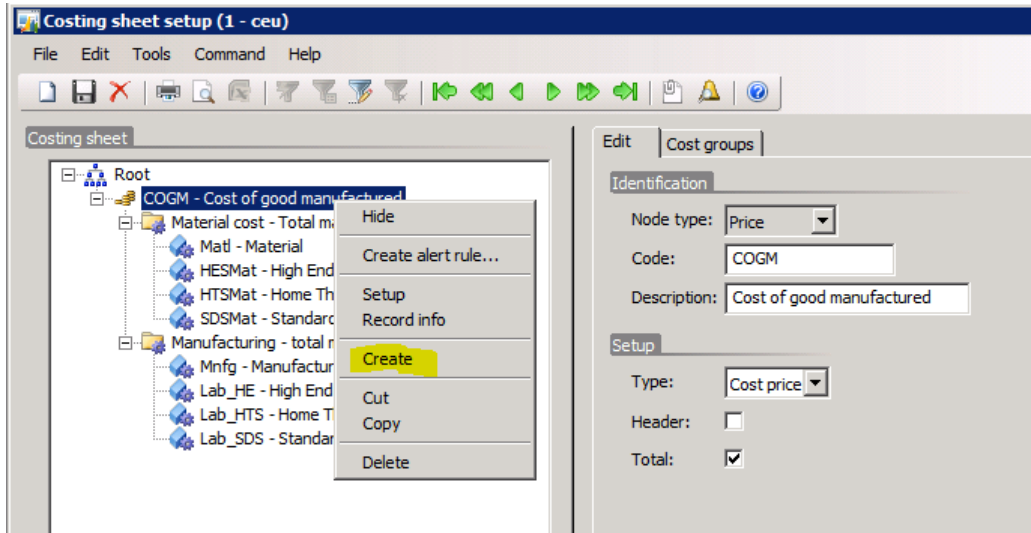
There are two types of indirect costs:

- **Surcharge** – A surcharge is an indirect cost based on a percentage that is applied over raw material or operational processes.
- **Rate** – A rate is an indirect cost calculated as a constant amount that is added to the operational process.

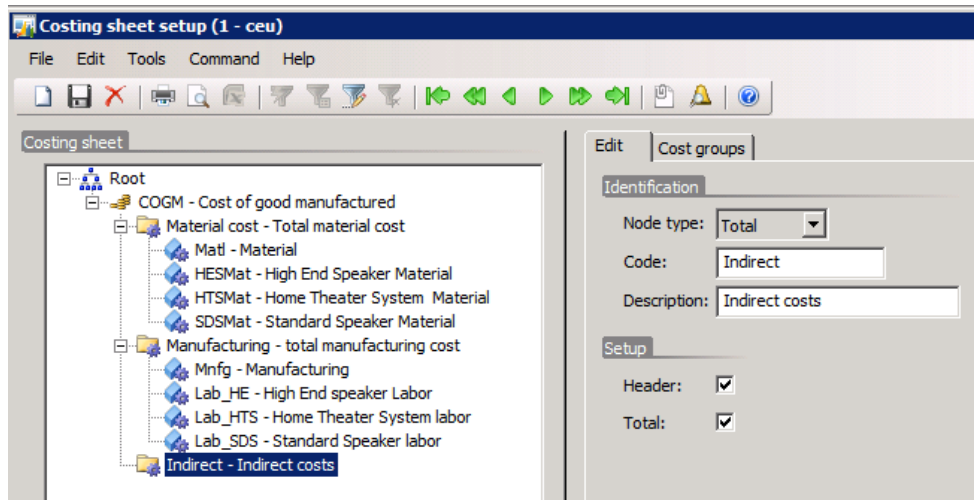
Create an indirect cost node in the costing sheet setup

To calculate indirect costs, you must add a formula in the costing sheet setup.

1. Click **Inventory management > Setup > Bill of materials > Costing sheet setup**.
2. Right-click the price node, which is named COGM - Cost of good manufactured in the following illustration, and then click **Create**.

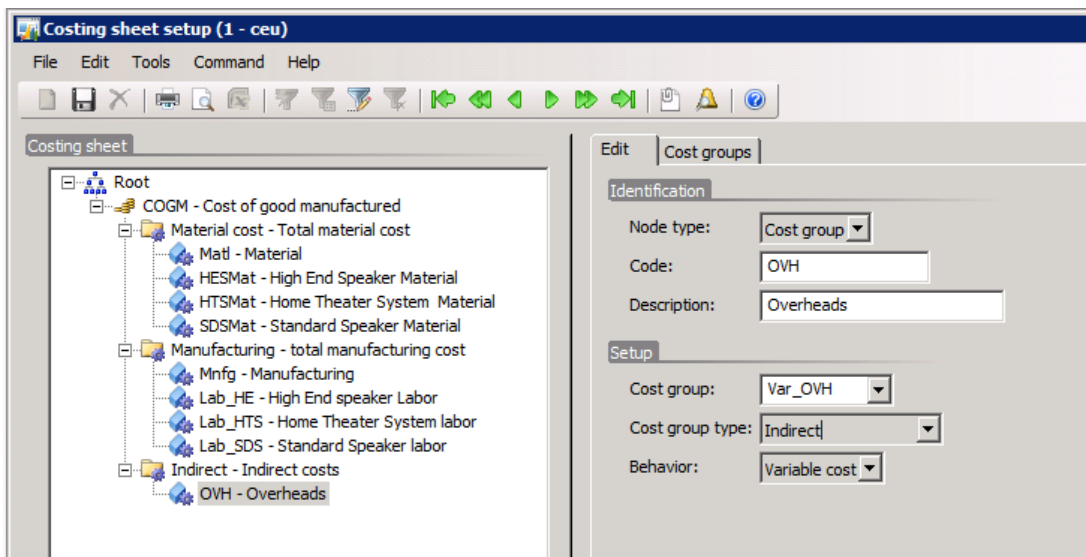


3. In the **Select node type** field, select **Total**, and then click **OK**.
4. Select the **Header** and **Total** check boxes.



5. Right-click an indirect cost node, and then click **Create**.

6. In the **Select node type** field, select **Cost group**, and then click **OK**.



A cost node for indirect costs is created. In the preceding illustration, the indirect cost node is associated with the Var_OVH cost group for indirect costs.

This node will cumulate the amounts that are calculated for indirect costs.

Create and set up a surcharge node

1. Right-click a cost group node for indirect costs, and then click **Create**.
2. Select **Surcharge**, and then click **OK**.
3. Complete the remaining options:

General tab

- In the **Subtype** field, select one of the following options:
 - **Undefined** – Applies only if your costing sheet is in a draft mode. This value has to be set to avoid errors when you validate or save the costing sheet.
 - **Level** – The calculation is performed at each level individually.
 - **Sublevel** – The calculation is performed at the second level and all lower levels.
 - **Total** – The calculation is performed at each level, and the sums are cumulated.
- If you select the **Per item** check box, you can indicate which manufactured items the overhead is calculated for. This applies only to BOM items, and totals are calculated for the BOMs that you select.

Calculation tab

- Under **Basis**, select the material or manufacturing nodes (cost totals or subtotals) for which you want to apply the surcharge.
- Under **Surcharge**, enter the formula that is linked to a costing version.

Posting tab

Set up accounts for the production accounting process. When you start a production order, indirect costs are posted to two WIP accounts: WIP issue and WIP account. When you end a production order, these accounts are cleared, and the final indirect absorption is posted to the Indirect absorption and Indirect absorption offset accounts.

Dimension tab

The dimensions that you select are set in the indirect cost postings. If you leave the dimensions blank, the production order dimensions are applied.

Create and set up a rate node

1. Right-click a cost group node for indirect costs, and then click **Create**.
2. Select **Rate**, and then click **OK**.
3. Complete the remaining options:

General tab

- In the **Subtype** field, select one of the following options:
 - **Undefined** – Applies only if your costing sheet is in a draft mode. This value has to be set to avoid errors when you validate or save the costing sheet.
 - **Process, Setup and Quantity** – The overhead applies to the total cost of the operation type that you select.
- **Per item**: See the guidelines in the procedure for the surcharge node.

Calculation tab

- Under **Basis**, select the manufacturing nodes (cost totals or subtotals) for which you want to apply the rate.
- Under **Rate**, enter the formula linked to a costing version. To enter different amounts per site or use different costing versions, for example, you can create an optional number of lines.

Posting tab

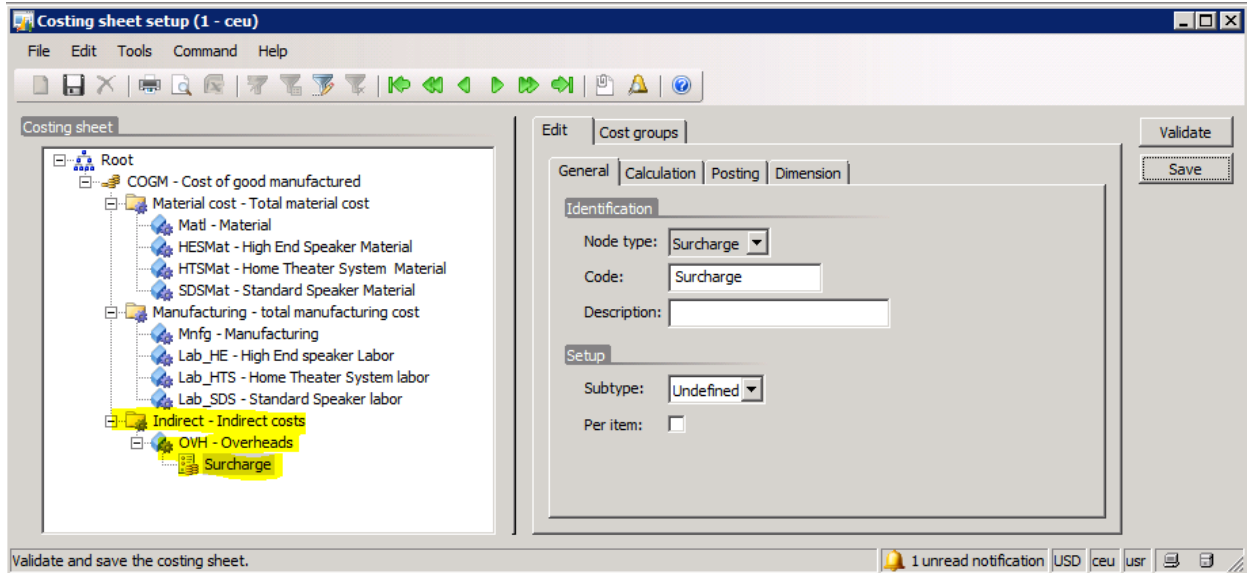
See the guidelines in the procedure for the surcharge node.

Dimension tab

See the guidelines in the procedure for the surcharge node.

Surcharge calculation and subtype behavior

The following examples show how the values in the **Subtype** field in the **Costing sheet setup** form affect the results of surcharge calculation. The calculation is based on the following setup in the **Costing sheet setup** form.



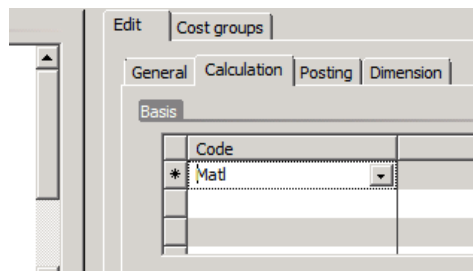
Set up surcharges

1. In the **Costing sheet setup** form, on the **Calculation** tab, in the **Code** field, select the node on which you want to calculate the surcharge.

In the following examples, the surcharge percentage is applied to the **Matl** node amount.

2. In the **Surcharge** section, select a costing version, and in the **Percent** field, enter a percentage.

In the following examples, the percentage is 10.



Calculate surcharges by using the Level subtype

1. In the **Costing sheet setup** form, on the **General** tab, in the **Subtype** field, select **Level**.
2. In the **Item details** form, on the **General** tab, in the **Cost group** field, select the cost group.

The screenshot shows a software window titled "Item (1 - ceu) - Item number: ItemA, ItemA". The window has a menu bar with "File", "Edit", "Tools", "Command", and "Help". Below the menu bar is a toolbar with various icons. The main area is divided into several tabs: "Overview", "General", "Setup", "References", "Price/Discount", "Other", and "Dimension". The "General" tab is selected. The form is organized into sections: "Identification" (Item number: ItemA), "Item" (Item name: ItemA, Search name: ItemA, Item type: Item, Text:), "Groups" (Item group: Speakers, Cost group: Matl, Inventory model group: Std Cost, Dimension group: N-N, Coverage group:, Commission group:, Batch number group:), and "Product configuration" (Default config, Configurable:, Identical:, Product Builder, Modeling enab, Hide dialog bo, Hide approval).

3. In the **Item details** form, select an item of the **BOM** type, click **Price**, and then click **Calculation**.
4. In the **BOM calculation for an item** form, in the **Costing version** field, select a costing version of the **Planned cost** type.

Note: Use the **Planned cost** costing version to see the effects of using the **Level** subtype. The Standard cost costing version is restricted to single-level calculation.

5. Click **OK**. The following cost price is calculated:
 - **Price** field: 82
 - **Price misc. charges** field: 5
6. Click **Complete**.

View the surcharge records upon BOM calculation by using the Level subtype

The two new surcharge records can be identified by the surcharge icons.

Complete BOM calculation (1 - ceu) - Item number: BOM1, Test, Item number: BOM1

File Edit Tools Command Help

Overview General Prices Tree structure Costing sheet

T..	Item/Work center	Operation	Level	Cost group	Consumption	Unit	Total cost price per unit	Total sales price per unit	Net weight per unit	L.
	BOM1		0	Matl	1,00	Pcs	87,00	92,00	0,00	
	ItemA		1	Matl	1,00	Pcs	10,00	10,00	0,00	
	ItemB		1	HESMat	1,00	Pcs	10,00	15,00	0,00	
	BOM2		1	Matl	1,00	Pcs	46,00	46,00	0,00	
	ItemC		2	Matl	1,00	Pcs	10,00	10,00	0,00	
	002	Finishing	2	Lab_HE	1,00	Hours	10,00	10,00	0,00	
	002	Finishing	2	Lab_HE	1,00	Hours	25,00	25,00	0,00	
	002	Finishing	2	Mnfg	1,00	Pcs	0,00	0,00	0,00	
	Surcharge		2	Var_OVH	1,00		1,00	1,00	0,00	
	001	Drilling	1	Mnfg	1,00	Hours	5,00	5,00	0,00	
	001	Drilling	1	Mnfg	1,00	Hours	15,00	15,00	0,00	
	001	Drilling	1	Mnfg	1,00	Pcs	0,00	0,00	0,00	
	Surcharge		1	Var_OVH	1,00		1,00	1,00	0,00	

View the indirect costs upon BOM calculation by using the Level subtype

Note that there is an indirect cost per level. In this example, ItemA and ItemC belong to a cost group for direct material. (The cost group is named Matl in the illustrations.) Each item represents a cost of 10, so 10 percent is 1 per level.

Complete BOM calculation (1 - ceu) - Item number: BOM1, Test, Item number: BOM1

File Edit Tools Command Help

Overview General Prices Tree structure Costing sheet

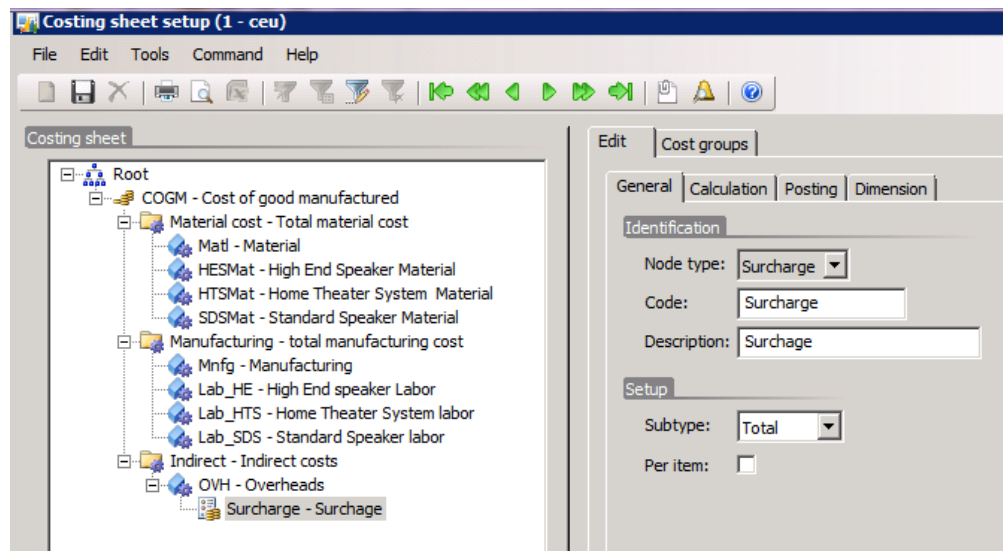
Production/BOM1

- Item/ItemA
- Item/ItemB
- BOM/BOM2
 - Item/ItemC
 - Setup/002
 - Process/002
 - Quantity/002
 - Surcharge/Surcharge
 - Setup/001
 - Process/001
 - Quantity/001
 - Surcharge/Surcharge

Consumption	Variable cost contribution	Number of series	Constant cost contribution	Total cost price per unit
1,00	82,00	1,00	5,00	87,00
1,00	10,00	1,00	0,00	10,00
1,00	10,00	1,00	0,00	10,00
1,00	46,00	1,00	0,00	46,00
1,00	10,00	1,00	0,00	10,00
1,00	0,00	1,00	10,00	10,00
1,00	25,00	1,00	0,00	25,00
1,00	0,00	1,00	0,00	0,00
1,00	1,00	1,00	0,00	1,00
1,00	0,00	1,00	5,00	5,00
1,00	15,00	1,00	0,00	15,00
1,00	0,00	1,00	0,00	0,00
1,00	1,00	1,00	0,00	1,00

Calculate surcharges by using the Total subtype

1. In the **Costing sheet setup** form, on the **General** tab, in the **Subtype** field, select **Total**.



2. Follow the steps 2 through 5 of the procedure for calculation that uses the **Level** subtype.
The following cost price is calculated:
 - **Price** field: 83
 - **Price misc. charges** field: 5
3. Click **Complete**.

View the indirect costs upon BOM calculation by using the Total subtype

An indirect cost has been calculated per level. ItemA and ItemC belong to the cost group named Matl in the illustration. However, because the subtype is **Total**, the cost is cumulated in upper levels:

- Level 2: Total cost of Matl = 10, surcharge = 10 percent, surcharge amount = 1
- Level 1: Total cost of Matl for Levels 2 and 1 = 20, surcharge = 10 percent, surcharge amount = 2

	Consumption	Variable cost contribution	Number of series	Constant cost contribution	Total cost price per unit
Item/ItemA	1,00	83,00	1,00	5,00	88,00
Item/ItemB	1,00	10,00	1,00	0,00	10,00
Item/ItemC	1,00	10,00	1,00	0,00	10,00
Setup/002	1,00	46,00	1,00	0,00	46,00
Process/002	1,00	10,00	1,00	0,00	10,00
Quantity/002	1,00	0,00	1,00	10,00	10,00
Surcharge/Su	1,00	25,00	1,00	0,00	25,00
Setup/001	1,00	0,00	1,00	0,00	0,00
Process/001	1,00	1,00	1,00	0,00	1,00
Quantity/001	1,00	0,00	1,00	5,00	5,00
Surcharge/Sur	1,00	15,00	1,00	0,00	15,00
	1,00	0,00	1,00	0,00	0,00
	1,00	2,00	1,00	0,00	2,00

Calculate surcharges by using the Sublevel subtype

1. In the **Costing sheet setup** form, on the **General** tab, in the **Subtype** field, select **Sublevel**.

Costing sheet setup (1 - ceu)

File Edit Tools Command Help

Costing sheet

Root

- COGM - Cost of good manufactured
 - Material cost - Total material cost
 - Matl - Material
 - HESMat - High End Speaker Material
 - HTSMat - Home Theater System Material
 - SDSMat - Standard Speaker Material
 - Manufacturing - total manufacturing cost
 - Mnfg - Manufacturing
 - Lab_HE - High End speaker Labor
 - Lab_HTS - Home Theater System labor
 - Lab_SDS - Standard Speaker labor
 - Indirect - Indirect costs
 - OVH - Overheads
 - Surcharge - Surcharge

Edit Cost groups

General Calculation Posting Dimension

Identification

Node type: Surcharge

Code: Surcharge

Description: Surcharge

Setup

Subtype: Sublevel

Per item:

2. Follow steps 2 through 5 of the procedure for calculation that uses the **Level** subtype.

The following cost price is calculated:

- **Price** field: 81
- **Price misc. charges** field: 5

3. Click **Complete**.

View the indirect costs upon BOM calculation using the Sublevel subtype

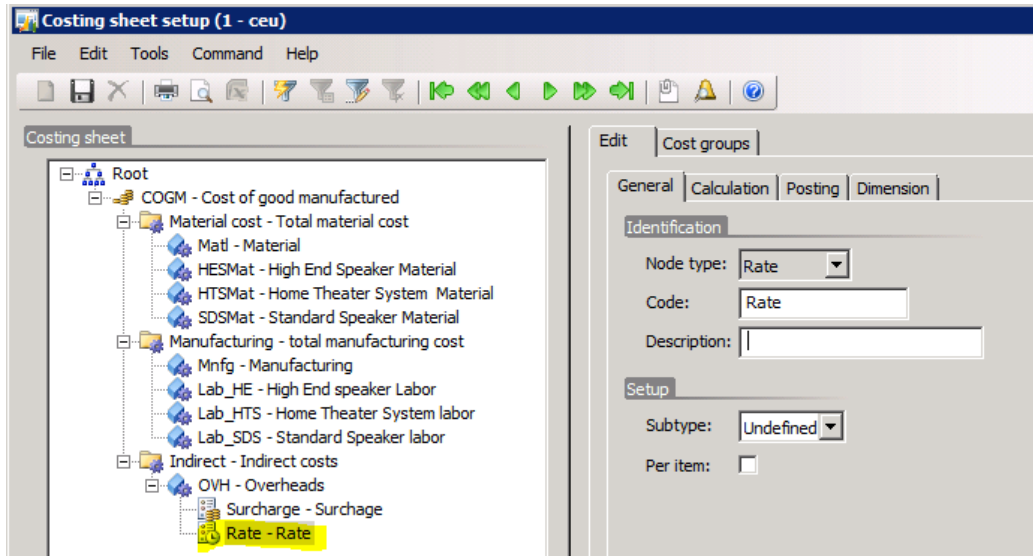
Although the surcharge record is added in the top level (Level 1), in this scenario, the application applies the surcharge from Level 2 only to any levels below that.

The calculation considers only Level 2. The total for the direct material cost group, Mat1, is 10. Therefore, the surcharge amount is 1.

27

Rate calculation and subtype behavior

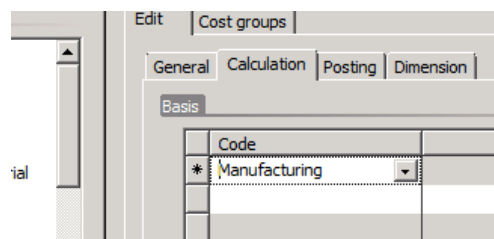
The following examples show how the values in the **Subtype** field in the **Costing sheet setup** form affect the results of rate calculation. The calculations are based on the following setup in the **Costing sheet setup** form.



Set up rates

1. In the **Costing sheet setup** form, on the **Calculation** tab, in the **Code** field, select the node on which you want to calculate the rate.

In the following examples, the rate is applied to the **Manufacturing** node amount.



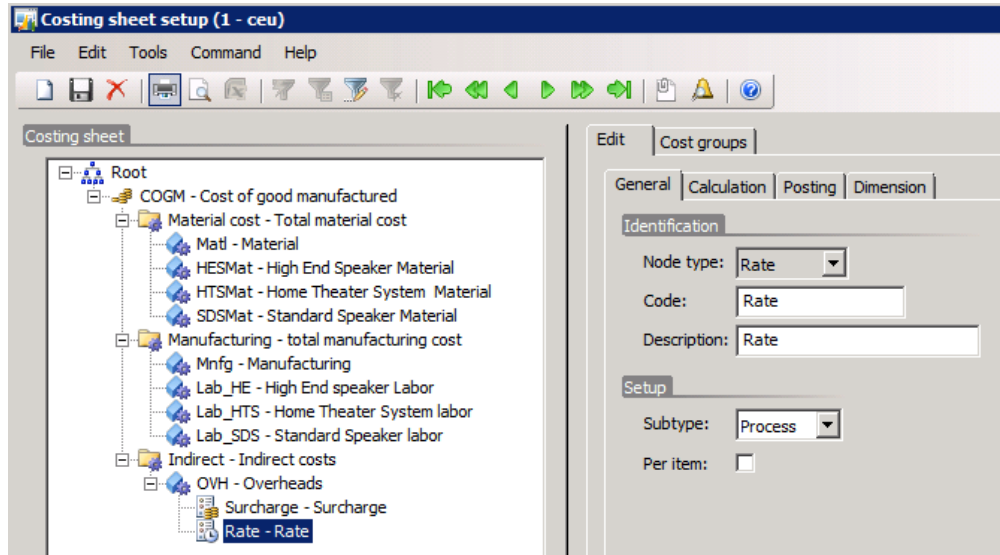
2. Under **Rate**, select a costing version, and in the **Amount** field, enter an amount.

In the following examples, the amount is 3.

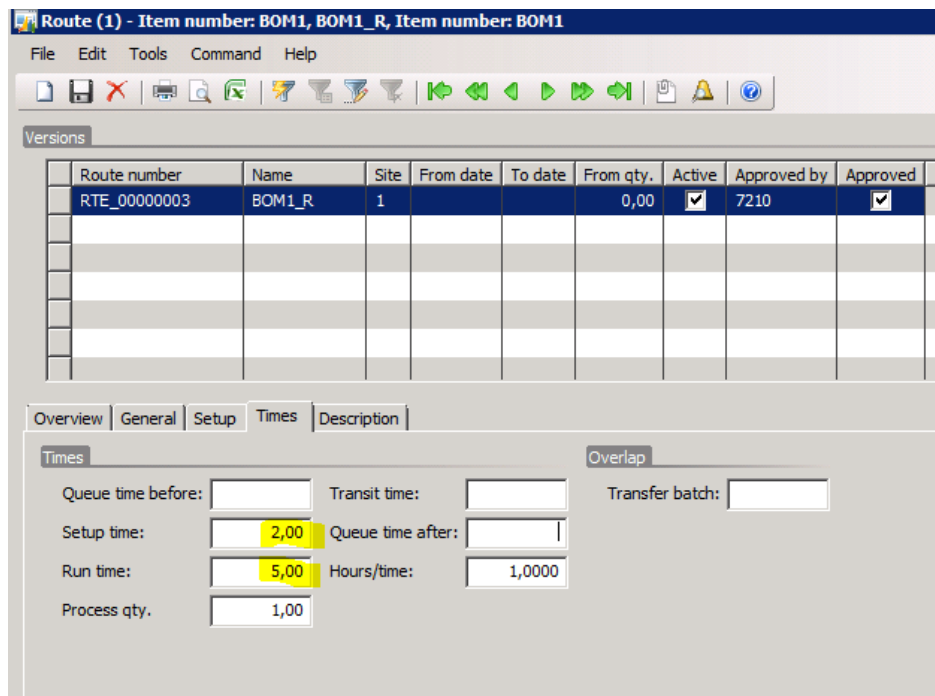
Status	Version	Version name	Site	Amount	From date	Blocked
Current active	Std_2010	Standard c	1	3,00	24.01.2012	<input checked="" type="checkbox"/>

Calculate rates by using the Process subtype

1. In the **Costing sheet setup** form, on the **General** tab, in the **Subtype** field, select **Process**.



2. In the **Item details** form, select an item of the **BOM** type, and then click **Route**.
3. In the **Route** form, on the **Times** tab, in the **Setup time** field, enter **2**. In the **Run time** field, enter **5**.



4. In the **Item details** form, click **Price**, and then click **Calculation**.

5. In the **BOM calculation for an item** form, in the **Costing version** field, select a costing version of the **Planned cost** type.
6. Click **OK**. The following cost price is calculated:
 - **Price** field: 159
 - **Price misc. charges** field: 10
7. Click **Complete**.

View the rate records upon BOM calculation by using the Process subtype

The explosion mode of the costing version is **Multilevel**, so the rate is calculated per level.

Because the subtype is set to **Process** in the **Costing sheet setup** form, an amount of 3 is added per unit of the process time (run time):

- At Level 2, the run time is 1, so the rate is 3.
- At Level 1, the run time is 5, so the rate is 15 (5 × 3).

Complete BOM calculation (1 - ceu) - Item number: BOM1, Test, Item number: BOM1

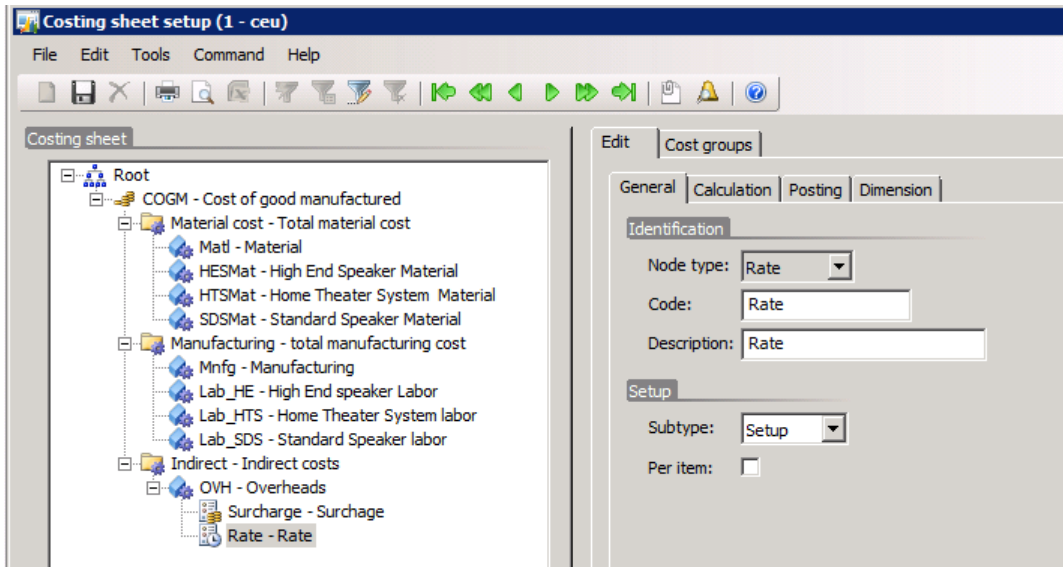
File Edit Tools Command Help

Overview | General | Prices | Tree structure | Costing sheet

T..	Item/Work center	Operation	Level	Cost group	Consumption	Unit	Total cost price per unit	Total sales price per unit	Net weight per unit	L.
	BOM1		0	Matl	1,00	Pcs	169,00	174,00	0,00	
	ItemA		1	Matl	1,00	Pcs	10,00	10,00	0,00	
	ItemB		1	HESMat	1,00	Pcs	10,00	15,00	0,00	
	BOM2		1	Matl	1,00	Pcs	48,00	48,00	0,00	
	ItemC		2	Matl	1,00	Pcs	10,00	10,00	0,00	
	002	Finishing	2	Lab_HE	1,00	Hours	10,00	10,00	0,00	
	002	Finishing	2	Lab_HE	1,00	Hours	25,00	25,00	0,00	
	002	Finishing	2	Mnfg	1,00	Pcs	0,00	0,00	0,00	
	Rate		2	Var_OVH	1,00		3,00	3,00	0,00	
	001	Drilling	1	Mnfg	2,00	Hours	10,00	10,00	0,00	
	001	Drilling	1	Mnfg	5,00	Hours	75,00	75,00	0,00	
	001	Drilling	1	Mnfg	1,00	Pcs	0,00	0,00	0,00	
	Surcharge		1	Var_OVH	1,00		1,00	1,00	0,00	
	Rate		1	Var_OVH	1,00		15,00	15,00	0,00	

Calculate rates by using the Setup subtype

1. In the **Costing sheet setup** form, on the **General** tab, in the **Subtype** field, select **Setup**.



2. Follow steps 2 through 4 of the procedure for calculation that uses the **Process** subtype.
3. In the **BOM calculation for an item** form, in the **Explosion mode** field, select **Single level**.
4. Click **OK**. The following cost price is calculated:
 - **Price** field: 105
 - **Price misc. charges** field: 16
5. Click **Complete**.

View the rate records upon BOM calculation by using the Setup subtype

The explosion mode is **Single level**, so the rate is calculated only in the top level.

The total rate amount is 6, because the calculation is based on the setup time, which is 2 ($2 \times 3 = 6$). The rate amount is a constant cost contribution that is related to the setup time.

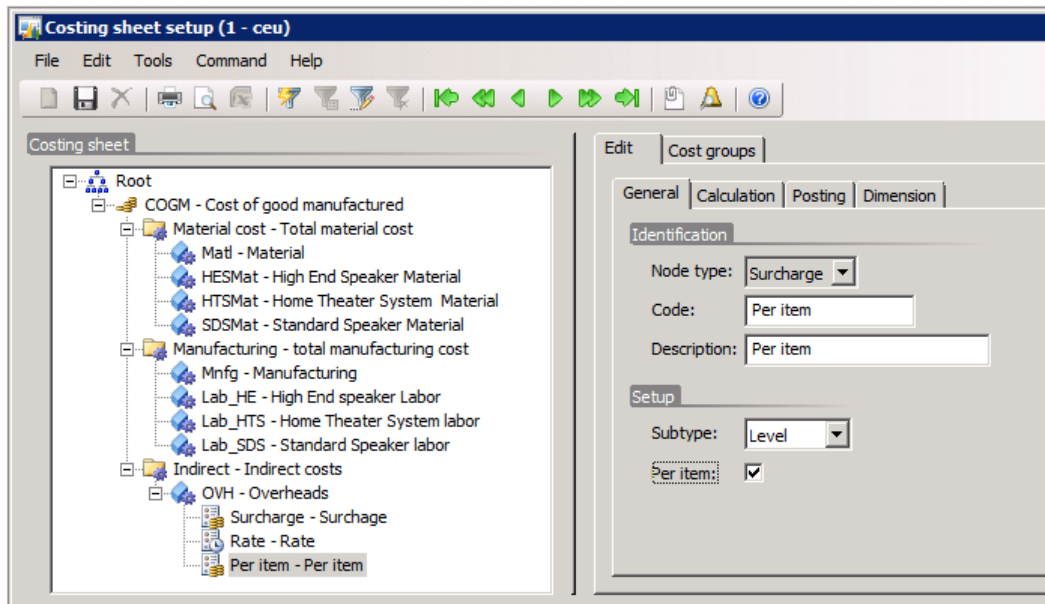
	Consumption	Variable cost contribution	Number of series	Constant cost contribution	Total cost price per unit
Item/ItemA	1,00	105,00	1,00	16,00	121,00
Item/ItemB	1,00	10,00	1,00	0,00	10,00
BOM/BOM2	1,00	10,00	1,00	0,00	10,00
Setup/001	1,00	10,00	1,00	0,00	10,00
Process/001	2,00	0,00	1,00	10,00	10,00
Quantity/001	5,00	75,00	1,00	0,00	75,00
Rate/Rate	1,00	0,00	1,00	0,00	0,00
	1,00	0,00	1,00	6,00	6,00

Surcharge calculation by using the Per item parameter

The following example shows how overhead is calculated for specific manufactured items.

Calculate surcharges by using the Per item parameter

1. In the **Costing sheet setup** form, on the **General** tab, in the **Subtype** field, select **Level**.
2. Select the **Per item** check box.



3. Click the **Calculation** tab, and then, in the **Code** field, select the node on which you want to calculate the surcharge.
4. In the **Valid for** field, select **Table**, and in the **Relation** field, select the item.

Note: When you enter a specific item, the application considers the total amount of the node for only this manufactured item. You can select any type of item, but this applies only to items of the **BOM** type.

5. In the **Percentage** field, enter a percentage. In this example, the percentage is 10.
6. In the **Item details** form, select an item of the **BOM** type, and then click **Price**.
7. Click **Calculation**, select a costing version, and then click **OK**. The following cost price is calculated:
 - **Price** field: 142
 - **Price misc. charges** field: 19
8. Click **Complete**.

View overhead per item upon BOM calculation by using the Per item parameter

In the following illustration, the surcharge percentage is calculated for the components of BOM2. Using the **Per item** parameter does not apply a percentage to the cost of BOM2.

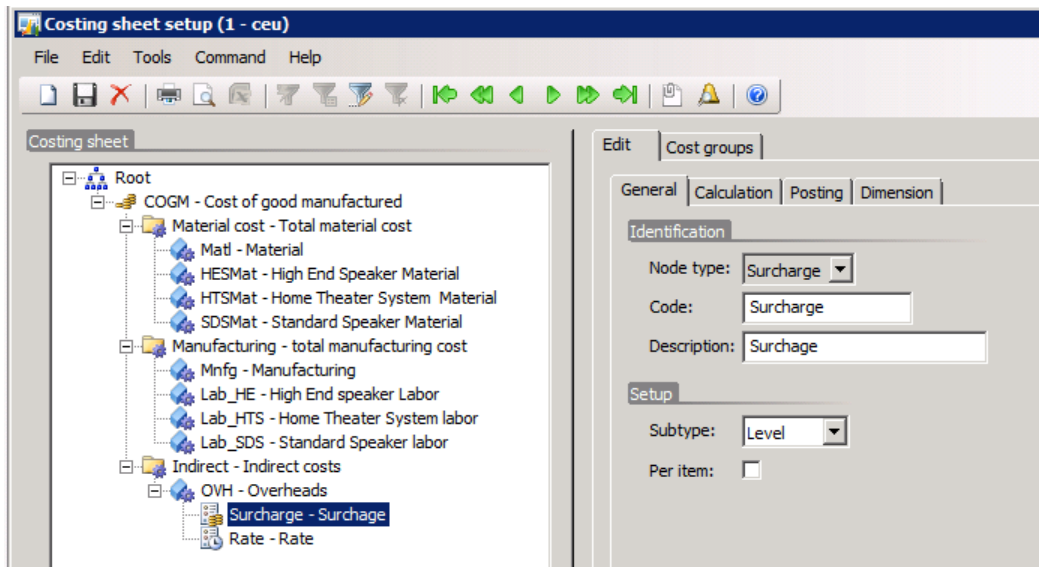
	Consumption	Variable cost contribution	Number of series	Constant cost contribution	Total cost price per unit
Production/BOM1					
Item/ItemA	1,00	142,00	1,00	19,00	161,00
Item/ItemB	1,00	10,00	1,00	0,00	10,00
BOM/BOM2	1,00	10,00	1,00	0,00	10,00
Item/ItemC	1,00	46,00	1,00	3,00	49,00
Setup/002	1,00	10,00	1,00	0,00	10,00
Process/002	1,00	0,00	1,00	10,00	10,00
Quantity/002	1,00	25,00	1,00	0,00	25,00
Rate/Rate	1,00	0,00	1,00	0,00	0,00
Surcharge/Per item	1,00	0,00	1,00	3,00	3,00
Setup/001	1,00	0,00	1,00	0,00	0,00
Process/001	1,00	1,00	1,00	0,00	1,00
Quantity/001	2,00	0,00	1,00	10,00	10,00
Surcharge/Surcharge	5,00	75,00	1,00	0,00	75,00
Rate/Rate	1,00	0,00	1,00	0,00	0,00
	1,00	1,00	1,00	0,00	1,00
	1,00	0,00	1,00	6,00	6,00

Indirect cost calculation viewed from a production order

The following example shows the results of a BOM calculation from a production order. The calculation results are based on the structure that is defined in the costing sheet setup.

Set up the costing sheet

1. Click **Inventory management > Setup > Bills of materials > Costing sheet setup**.
2. Select a surcharge node, and then, on the **General** tab, in the **Subtype** field, select **Level**.



Perform a BOM calculation and associate the cost with a costing version

1. In the **Item details** form, select an item of the **BOM** type, and then click **Price**.
2. In the **Item price** form, delete any records on the **Pending prices** tab, and then click **Calculation**.
3. In the **BOM calculation for an item** form, in the **Costing version** field, select a costing version of the **Standard cost** type, and then click **OK**.

- In the **Item price** form, click **Complete**.

T.	Item/Work center	Operation	Level	Cost group	Consumption	Unit	Total cost price per unit	Total sales price per unit	Net weight per unit	L.
	BOM1		0	Matl	1,00	Pcs	123,00	128,00	0,00	
	ItemA		1	Matl	1,00	Pcs	10,00	10,00	0,00	
	ItemB		1	HESMat	1,00	Pcs	10,00	15,00	0,00	
	BOM2		1	Matl	1,00	Pcs	10,00	10,00	0,00	
	001	Drilling	1	Mnfg	2,00	Hours	10,00	10,00	0,00	
	001	Drilling	1	Mnfg	5,00	Hours	75,00	75,00	0,00	
	001	Drilling	1	Mnfg	1,00	Pcs	0,00	0,00	0,00	
	Surcharge		1	Var_OVH	1,00		2,00	2,00	0,00	
	Rate		1	Var_OVH	1,00		6,00	6,00	0,00	

Note If no surcharge or rate records are calculated, make sure that the date of the costing version that is used is correct. Set the date in the **From date** field on the **Recording** tab in the **Costing version setup** form to the current date.

- Close the **Complete BOM calculation** form, and then, in the **Item price** form, click **Activate**.

Create adjustment lines

- Click **Inventory management > Journals > Item transaction > Profit/Loss**.
- Click **New** to create a new journal.
- Click **Lines**, and then create three new lines to register stock for two items and one BOM item. In the following example, the records ItemA, ItemB, and BOM2 are created, each with a quantity of 10.

Date	Item number	Site	Warehouse	Quantity	Cost price	Cost amount	L..
30.01.2012	ItemA	1	11	10,00	10,00	100,00	
30.01.2012	ItemB	1	11	10,00	10,00	100,00	
30.01.2012	BOM2	1	11	10,00	10,00	100,00	

- Click **Post** to post the journal.

Note: Before posting, click **General ledger > Setup > Periods > Periods**, and make sure that the ledger period is open.

Create and process a production order

1. Click **Production > Production Order Details**.
2. Create a new production order for a BOM item. In the following example, the record BOM1 is created with a quantity of 1.

The screenshot shows a software dialog box titled "Create production order (1 - ceu) - New Record". It contains several sections for data entry:

- Identification:** Production: RD_00005080; Item number: BOM1; Name: BOM1.
- BOM/route:** BOM date: 30.01.2012; BOM number: BOM_000000; Route number: RTE_000000.
- Inventory dimensions:** Site: 1; Warehouse: 11.
- Groupings:** Pool: ; Production group: .
- Production:** Type: Standard; Quantity: 1,00; Delivery: 30.01.2012; Time: 10:00.
- Setup:** Ledger: Item+Category; Reservation: Manual.

Buttons for "BOM", "Route", "OK", and "Cancel" are visible. A "Production type" label is at the bottom left.

3. Click **Update**, and then click **Estimation**.
4. In the **Estimation** form, click **OK**.

View the results of a BOM calculation from a production order

1. In the **Production orders** form, click **Inquiries**, and then click **Price calculation**.

The information in the **Calculation** form corresponds to the information in the **BOM calculation** form.

The calculation is performed at a single level, because the item is a standard cost item.

- Click the **Overview Costing** tab to view the actual and estimated costs for the production order.

T.	Prod...	Level	Item/Work center	Unit	Estimated consumption	Realized consumption	Estimated...	Realized cost amount
	PRD_0000...	0	BOM1	Pcs	1,00		123,00	
	PRD_0000...	1	ItemA	Pcs	1,00		10,00	
	PRD_0000...	1	ItemB	Pcs	1,00		10,00	
	PRD_0000...	1	BOM2	Pcs	1,00		10,00	
	PRD_0000...	1	001	Hours	2,00		10,00	
	PRD_0000...	1	001	Hours	5,00		75,00	
	PRD_0000...	1	001	Pcs	1,00		0,00	
	PRD_0000...	1	Surcharge		1,00		2,00	
	PRD_0000...	1	Rate		1,00		6,00	

- Click the **Costing sheet** tab to view the data within the costing sheet structure.

Code	Description	Variable cost	Fixed cost	Total
Material cost	Total material cost			
Matl	Material	20,00		20,00
HESMat	High End Speaker Material	10,00		10,00
Material cost	Total material cost	30,00		30,00
Manufacturing	total manufacturing cost			
Mnfg	Manufacturing	85,00		85,00
Manufacturing	total manufacturing cost	85,00		85,00
Indirect	Indirect costs			
OVH	Overheads	8,00		8,00
Indirect	Indirect costs	8,00		8,00
COGM	Cost of good manufactured	123,00		123,00

- Use the following filters to view the data:
 - In the **Mode** field, select **Estimation** to view estimated costs, or select **Costing** to view actual costs.
 - In the **Level** field, specify whether to view the cost groups in a single-level or multilevel structure.
 - In the **Per** field, specify whether to view the costs per unit, per production lot size, or per specific quantity.

Update a production order by using automatic BOM calculation

1. In the **Production orders** form, click **BOM**.
2. Select a warehouse for all BOM lines, and then close the form.
3. In the **Production orders** form, click **Update**, and then click **Start**.
4. In the **Start** form, click the **General** tab. In the **Automatic BOM consumption** field select **Always**, and then click **OK**.

Note: Before you click **OK** in the **Start** form, click **Basic** > **Setup** > **Calendar** > **Working time templates**, and make sure that working times are set up correctly in the calendar.

The screenshot shows the 'Start (1 - ceu)' form with the following details:

- Identification:** Production: RD_00005081, Name: BOM1
- Start:** Date: 30.01.2012, Quantity: 1,00, Start production: , References:
- Operations:** From Oper. No.: [dropdown], To Oper. No.: [dropdown]
- Journals:** Show journal info:
- Route card journal:** Route card: Route, Automatic route consumption: Always (highlighted), Post route card now: , End-mark route:
- Picking list journal:** Picking list: Pick, Automatic BOM consumption: Always (highlighted), Create journal per: [dropdown], Post picking list now: , End-mark picking list: , Physical reduction: , Pick negative: , Complete picking list journal: , Print picking list: (with Print Options button)

View the results of a BOM calculation from a production order by using automatic BOM consumption

1. In the **Production orders** form, click **Inquiries**, and then click **Price calculation**.
2. Click the **Costing sheet** tab, and then, in the **Mode** field, select **Costing**.

The form is now populated with data. The data corresponds to the estimation data, because no changes have been made to the BOM or route of the production order.

- In the **Production orders** form, click **Inquiries**, and then click **Indirect cost transactions**.

In the **Indirect cost transactions** form, you can view details about each indirect cost transaction that has been posted. At this stage, only WIP postings have been performed.

Cost accounted	WIP date	Costing date	Production	Code	Type	Cost amount	Posted	Canceled
<input type="checkbox"/>	30.01.2012		PRD_00005082	Surcharge	Surcharge	1,00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	30.01.2012		PRD_00005082	Surcharge	Surcharge	1,00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	30.01.2012		PRD_00005082	Rate	Rate	6,00	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- In the **Production orders** form, click **Inquiries**, and then click **Production posting**.

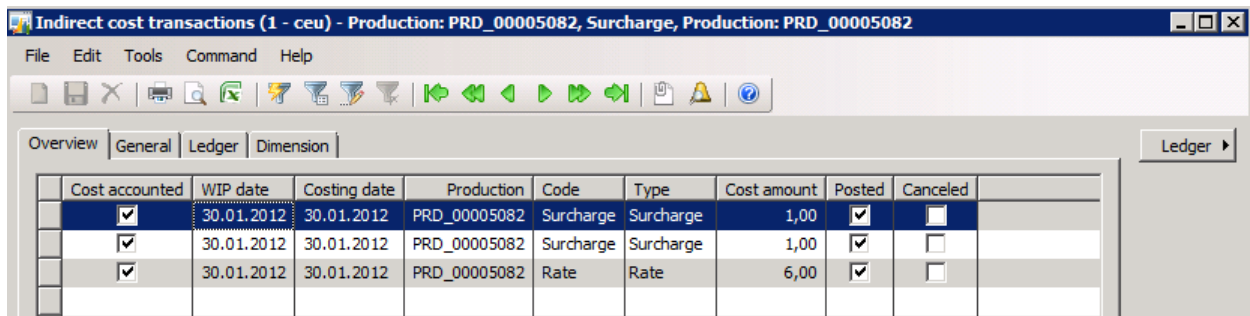
In the **Production posting** form, you can view the transactions for the indirect costs that have been added to the production:

- To view the inventory transactions for the indirect costs, click **Inventory > Voucher transactions**.
- To view the ledger transactions for the indirect costs, click **Ledger > Voucher**.

Date	Type	Good quantity	Error quantity	IIP/WIP amount	Cost accounted amount
30.01.2012	Material consumption			30,00	
30.01.2012	Route consumption			85,00	
30.01.2012	Indirect cost			6,00	
30.01.2012	Indirect cost			2,00	

- In the **Production orders** form, click **Update**, and then click **End**.
- Click **OK** to post the journal. The indirect cost transactions are now financially posted.

7. Click **Inquiries**, and then click **Indirect cost transactions**.



Cost accounted	WIP date	Costing date	Production	Code	Type	Cost amount	Posted	Canceled
<input checked="" type="checkbox"/>	30.01.2012	30.01.2012	PRD_00005082	Surcharge	Surcharge	1,00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	30.01.2012	30.01.2012	PRD_00005082	Surcharge	Surcharge	1,00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	30.01.2012	30.01.2012	PRD_00005082	Rate	Rate	6,00	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Note: The transactions appear as posted.

Production variances

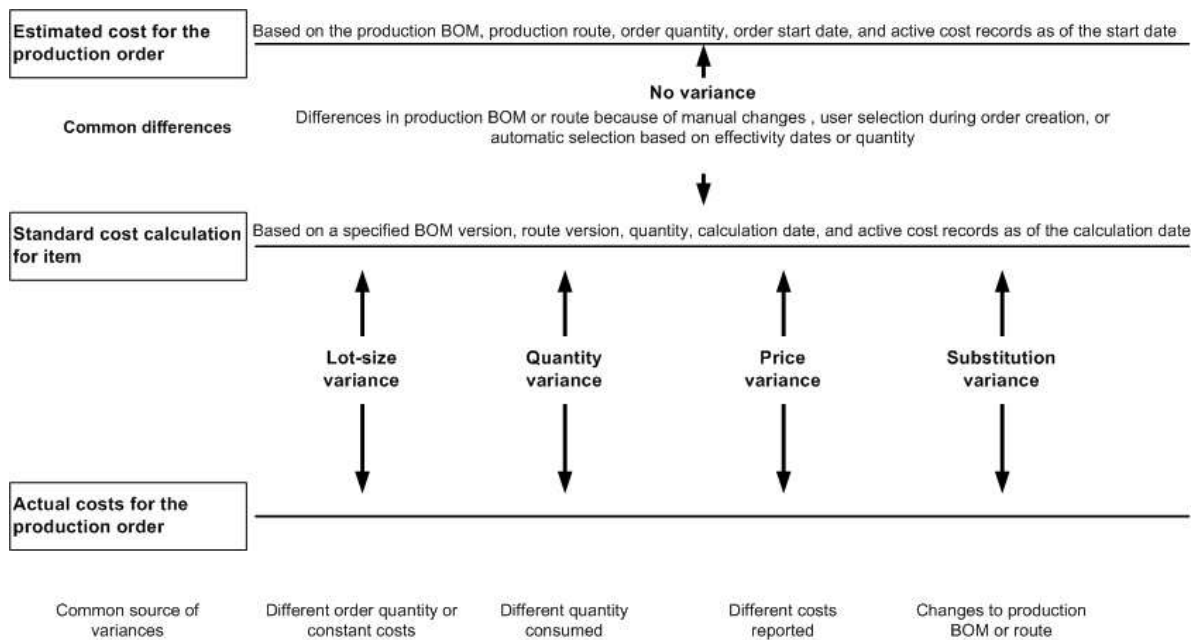
When a production order for a standard cost item has been ended, you can calculate the production variances. Variances reflect a comparison of the reported production activities and the standard costs that are calculated for the production item.

The variances do not reflect a comparison to the production order's estimated costs. The production activities that are reported include the consumption of material and routing operations, together with the associated indirect costs and the quantity that is reported as finished.

The following four types of production variances are calculated:

- Lot size variance
- Production quantity variance
- Production price variance
- Production substitution variance

Production variances and the difference between actual costs and calculated costs



The preceding illustration shows the four variances that cause the difference between a production order's actual costs and the calculated costs within the item's cost record when the production order is ended.

Analyze the production variances

Use the **Variance** form or the **Production variance** report to analyze production variances, and to identify the sources of the variances.

1. Open the **Variance** form or the **Production variance** report:
 - To open the **Variance** form, click **Production > Production Orders**. Double-click a production order to open the **Production order details** form, and then click **> Inquiries > Price calculation > Variance**.

- To open the **Production variance** report, click **Production > Reports > Analysis > Production variance**.

2. In the **Level** field, select how you want to view the detailed variances:
 - **Single** – View variances by item and operation resource.
 - **Multi** – View variances by cost group.
 - **Total** – View summarized variances without a detailed breakdown.
3. If you want the variances to be tracked by cost group, in the **Inventory parameters** form, click the **Bills of materials** tab. Then, in the **Variances to Standard** field, select **Sub ledger**.

Microsoft Dynamics is a line of integrated, adaptable business management solutions that enables you and your people to make business decisions with greater confidence. Microsoft Dynamics works like and with familiar Microsoft software, automating and streamlining financial, customer relationship and supply chain processes in a way that helps you drive business success.

U.S. and Canada Toll Free 1-888-477-7989

Worldwide +1-701-281-6500

www.microsoft.com/dynamics

This document is provided "as-is." Information and views expressed in this document, including URL and other Internet Web site references, may change without notice. You bear the risk of using it.

Some examples depicted herein are provided for illustration only and are fictitious. No real association or connection is intended or should be inferred.

This document does not provide you with any legal rights to any intellectual property in any Microsoft product. You may copy and use this document for your internal, reference purposes. You may modify this document for your internal, reference purposes.

© 2012 Microsoft Corporation. All rights reserved.

Microsoft