



Inventory Costing in Microsoft Dynamics NAV 2013

Technical White Paper

Inventory Costing.....	1
Costing Methods.....	2
Example	4
Item Application	7
Inventory Increase	8
Inventory Decrease	8
Fixed Application	9
Transfer Application.....	12
Reapplication	13
Cost Adjustment.....	14
Detecting the Adjustment.....	14
Manual versus Automatic Cost Adjustment	15
Adjust Cost - Item Entries Batch Job	15
Automatic Cost Adjustment	17
Expected Cost Posting	19
Example	19
Average Cost.....	21
Setting Up Average Cost Calculation	21
Calculating Average Cost.....	21
Setting the Valuation Date	24
Recalculating Average Cost.....	25
Variance	27
Example	27
Determining the Standard Cost	27
Rounding	29
Example	29
Cost Components.....	31
Inventory Periods.....	32
Inventory Posting	33
Example	33
Assembly and Production Posting	35
Production Order Costing.....	36
Posting Structure	37
Capacity Posting	38
Production Order Costing	38
Assembly Order Costing.....	40
Posting Sequence	41
Cost Adjustment	42
Assembly Costs are Always Actual	43
Assemble to Order.....	44
Inventory Valuation	45
Inventory Valuation report	45
Inventory Valuation - WIP report	45

Reconciliation with the General Ledger	46
Post Inventory Cost to G/L Batch Job	46
Automatic Cost Posting	46
Account Types	46
Accounts in the General Ledger	50
From the Inventory Ledger	50
From the Capacity Ledger	51
Assembly Costs are Always Actual	52
Calculating the Amount to Post to the General Ledger	52
Revaluation	53
Calculating the Revaluable Quantity	53
Expected Cost in Revaluation	54
Determining if an Inventory Decrease Is Affected by Revaluation	55
WIP Inventory Revaluation	57

INVENTORY COSTING

This documentation provides detailed technical insight to the concepts and principles that are used within the Inventory Costing features in Microsoft Dynamics NAV 2013.

Inventory costing, also referred to as cost management, is concerned with recording and reporting business operating costs.

IN THIS SECTION

[Costing Methods](#)

[Item Application](#)

[Cost Adjustment](#)

[Expected Cost Posting](#)

[Average Cost](#)

[Variance](#)

[Rounding](#)

[Cost Components](#)

[Inventory Periods](#)

[Inventory Posting](#)

[Production Order Costing](#)

[Assembly Order Costing](#)

[Reconciliation with the General Ledger](#)

[Accounts in the General Ledger](#)

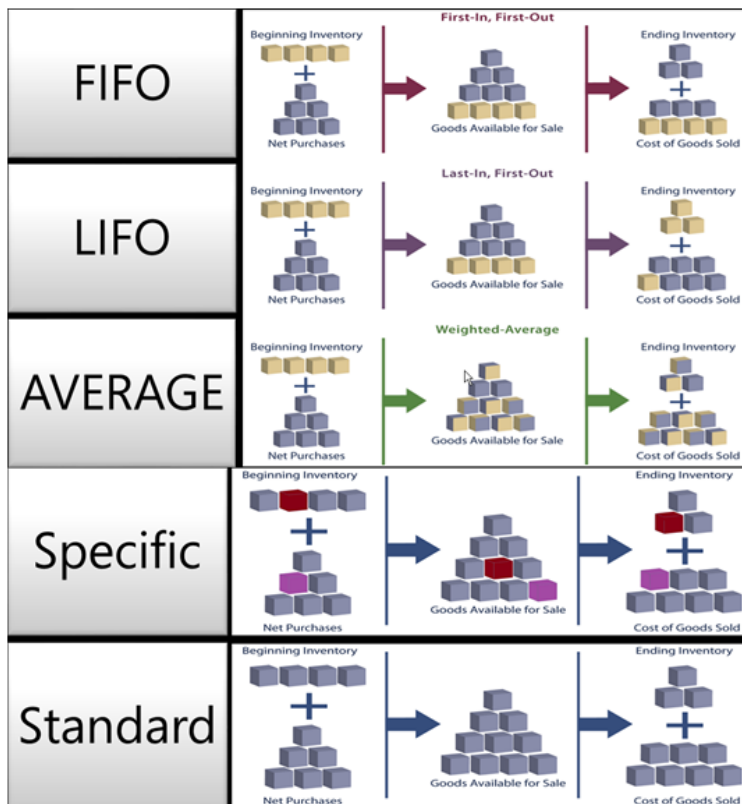
[Revaluation](#)

COSTING METHODS

The costing method determines if an actual or a budgeted value is capitalized and used in the cost calculation. Together with the posting date and sequence, the costing method also influences how the cost flow is recorded. The following methods are supported in Microsoft Dynamics NAV:

Costing method	Description	When to use
FIFO	<p>An item's unit cost is the actual value of any receipt of the item, selected by the FIFO rule.</p> <p>In inventory valuation, it is assumed that the first items placed in inventory are sold first.</p>	<p>In business environments where product cost is stable.</p> <p>(When prices are rising, the balance sheet shows greater value. This means that tax liabilities increase, but credit scores and the ability to borrow cash improve.)</p> <p>For items with a limited shelf life, because the oldest goods need to be sold before they pass their sell-by date.</p>
LIFO	<p>An item's unit cost is the actual value of any receipt of the item, selected by the LIFO rule.</p> <p>In inventory valuation, it is assumed that the last items placed in inventory are sold first.</p>	<p>Disallowed in many countries, as it can be used to depress profit.</p> <p>(When prices are rising, the value on the income statement decreases. This means that tax liabilities decrease, but the ability to borrow cash deteriorates.)</p>
Average	<p>An item's unit cost is the exact cost at which the particular unit was received.</p>	<p>In business environments where product cost is unstable.</p> <p>When inventories are piled or mixed together and cannot be differentiated, such as chemicals.</p>
Specific	<p>An item's unit cost is calculated as the average unit cost at each point in time after a purchase.</p> <p>For inventory valuation, it is assumed that all inventories are sold simultaneously.</p>	<p>In production or trade of easily identifiable items with fairly high unit costs.</p> <p>For items that are subject to regulation.</p> <p>For items with serial numbers.</p>
Standard	<p>An item's unit cost is preset based on estimated.</p> <p>When the actual cost is realized later, the standard cost must be adjusted to the actual cost through variance values.</p>	<p>Where cost control is critical.</p> <p>In repetitive manufacturing, to value the costs of direct material, direct labor, and manufacturing overhead.</p> <p>Where there is discipline and staff to maintain standards.</p>

The following image shows how costs flow through the inventory for each costing method.



Costing methods differ in the way that they value inventory decreases and if they use actual cost or standard cost as the valuation base. The following table explains the different characteristics. (The LIFO method is excluded, as it is very similar to the FIFO method.)

	FIFO	Average	Standard	Specific
General characteristic	Easy to understand	Based on period options: Day/Week/Month/Quarter/Accounting Period. Can be calculated per item or per item/location/variant.	Easy to use, but requires qualified maintenance.	Requires item tracking on both inbound and outbound transaction. Typically used for serialized items.
Application/Adjustment	Application keeps track of the remaining quantity . Adjustment forwards costs according to quantity application.	Application keeps track of the remaining quantity . Costs are calculated and forwarded per the valuation date .	Application keeps track of the remaining quantity . Application is based on FIFO.	All applications are fixed.
Revaluation	Revalues invoiced quantity only. Can be done per item or per item ledger entry. Can be done backward in time.	Revalues invoiced quantity only. Can be done per item only. Can be done backward in time.	Revalues invoiced and un-invoiced quantities. Can be done per item or per item ledger entry. Can be done backward in time.	Revalues invoiced quantity only. Can be done per item or per item ledger entry. Can be done backward in time.

	FIFO	Average	Standard	Specific
Miscellaneous	If you back-date an inventory decrease, then existing entries are NOT reapplied to provide a correct FIFO cost flow.	<p>If you back-date an inventory increase or decrease, then the average cost is recalculated, and all affected entries are adjusted.</p> <p>If you change the period or calculation type, then all affected entries must be adjusted.</p>	<p>Use the Standard Worksheet window to periodically update and roll up standard costs.</p> <p>Is NOT supported per SKU.</p> <p>No historic records exist for standard costs.</p>	You can use specific item tracking without using the Specific costing method. Then the cost will NOT follow the lot number, but the cost assumption of the selected costing method.

EXAMPLE

This section gives examples of how different costing methods affect inventory value.

The following table shows the inventory increases and decreases that the examples are based on.

Posting Date	Quantity	Entry No.
01-01-20	1	1
01-01-20	1	2
01-01-20	1	3
02-01-20	-1	4
03-01-20	-1	5
04-01-20	-1	6



Note

The resulting quantity in inventory is zero. Consequently, the inventory value must also be zero, regardless of the costing method.

EFFECT OF COSTING METHODS ON VALUING INVENTORY INCREASES

FIFO/LIFO/Average/Specific

For items with costing methods that use actual cost as the valuation base (**FIFO**, **LIFO**, **Average**, or **Specific**), inventory increases are valued at the item's acquisition cost.

The following table shows how inventory increases are valued for all costing methods except **Standard**.

Posting Date	Quantity	Cost Amount (Actual)	Entry No.
01-01-20	1	10.00	1
01-01-20	1	20.00	2
01-01-20	1	30.00	3

Standard

For items using the **Standard** costing method, inventory increases are valued at the item's current standard cost.

The following table shows how inventory increases are valued for the **Standard** costing method.

Posting Date	Quantity	Cost Amount (Actual)	Entry No.
01-01-20	1	15.00	1
01-01-20	1	15.00	2
01-01-20	1	15.00	3

EFFECT OF COSTING METHODS ON VALUING INVENTORY DECREASES

FIFO

For items using the **FIFO** costing method, items that were purchased first are always sold first (entry numbers 3, 2, and 1 in this example). Accordingly, inventory decreases are valued by taking the value of the first inventory increase.

COGS is calculated using the value of the first inventory acquisitions.

The following table shows how inventory decreases are valued for the **FIFO** costing method.

Posting Date	Quantity	Cost Amount (Actual)	Entry No.
02-01-20	-1	-10.00	4
03-01-20	-1	-20.00	5
04-01-20	-1	-30.00	6

LIFO

For items using the **LIFO** costing method, items that were purchased most recently are always sold first (entry numbers 3, 2, and 1 in this example). Accordingly, inventory decreases are valued by taking the value of the last inventory increase.

COGS is calculated using the value of the most recent inventory acquisitions.

The following table shows how inventory decreases are valued for the **LIFO** costing method.

Posting Date	Quantity	Cost Amount (Actual)	Entry No.
02-01-20	-1	-30.00	4
03-01-20	-1	-20.00	5
04-01-20	-1	-10.00	6

Average

For items using the **Average** costing method, inventory decreases are valued by calculating a weighted average of the remaining inventory on the last day of the average cost period in which the inventory decrease was posted. For more information, see [Average Cost](#).

The following table shows how inventory decreases are valued for the **Average** costing method.

Posting Date	Quantity	Cost Amount (Actual)	Entry No.
02-01-20	-1	-20.00	4
03-01-20	-1	-20.00	5
04-01-20	-1	-20.00	6

Standard

For items using the **Standard** costing method, inventory decreases are valued similar to the **FIFO** costing method, except valuation is based on a standard cost, not on the actual cost.

The following table shows how inventory decreases are valued for the **Standard** costing method.

Posting Date	Quantity	Cost Amount (Actual)	Entry No.
02-01-20	-1	-15.00	4
03-01-20	-1	-15.00	5
04-01-20	-1	-15.00	6

Specific

Costing methods make an assumption about how cost flows from an inventory increase to an inventory decrease. However, if more accurate information about the cost flow exists, then you can override this assumption by creating a fixed application between entries. A fixed application creates a link between an inventory decrease and a specific inventory increase and directs the cost flow accordingly.

For items using the **Specific** costing method, inventory decreases are valued according to the inventory increase that it is linked to by the fixed application.

The following table shows how inventory decreases are valued for the **Specific** costing method.

Posting Date	Quantity	Cost Amount (Actual)	Applies-to Entry	Entry No.
02-01-20	-1	-20.00	2	4
03-01-20	-1	-10.00	1	5
04-01-20	-1	-30.00	3	6

SEE ALSO

[Inventory Costing](#)

[Variance](#)

[Average Cost](#)

[Item Application](#)

ITEM APPLICATION



When you post an inventory transaction, the quantity posting is recorded in the item ledger entries, the value posting in the value entries. For more information, see [Inventory Posting](#).

In addition, an item application is made to link the cost recipient to its cost source to provide cost forwarding according to the costing method. For more information, see [Costing Methods](#).

Microsoft Dynamics NAV makes two types of item application.


Application type	Description
Quantity application	Created for all inventory transactions
Cost application	Created for inbound entries together with a quantity application as a result of user interaction in special processes.

Item applications can be made in the following ways.

Method	Description	Application type
Automatic	Occurs as general cost forwarding according to the costing method	Quantity application
Fixed	<p>Made by the user when:</p> <ul style="list-style-type: none"> Processing returns Posting corrections Undoing quantity postings Creating drop shipments <p> Note The fixed application can be made either manually by entering an entry number in the Appl.-from Item Entry field or by using a function, such as the Get Posted Document Lines to Reverse.</p>	<p>Quantity application</p> <p>Cost application</p> <p> Note Cost application only occurs in inbound transactions where the Appl.-from Item Entry field is filled to create a fixed application. See the next table.</p>

Whether quantity applications or cost applications are made depends on the direction of the inventory transaction and whether the item application is made automatically or fixed, in connection with special processes.

The following table shows, based on the central application fields on inventory transaction lines, how costs flow depending on the transaction direction. It also indicates when and why the item application is of type quantity or cost.

	Appl.-to Item Entry field	Appl.-from Item Entry field
Application for outbound entry	<p>The outbound entry pulls the cost from the open inbound entry.</p> <p>Quantity application</p>	Not supported
Application for inbound entry	<p>The inbound entry pushes the cost onto the open outbound entry.</p> <p>The inbound entry is the cost source.</p> <p>Quantity application</p>	<p>The inbound entry pulls the cost from the outbound entry.</p> <p> Note When making this fixed application, the inbound transaction is treated as a sales return. Therefore, the applied outbound entry remains open.</p> <p>The inbound entry is NOT the cost source.</p> <p>Cost application</p>

**Important**

A sales return is NOT considered a cost source when fixed applied.

The sales entry remains open until the real source is posted.

An item application entry records the following information.

Field	Description
Item Ledger Entry No.	The number of the item ledger entry for the transaction that this application entry is created for.
Inbound Item Entry No.	The item ledger entry number of the inventory increase to which the transaction should be linked, if applicable.
Outbound Item Entry No.	The item ledger entry number of the inventory decrease to which the transaction should be linked, if applicable.
Quantity	The quantity being applied.
Posting Date	The posting date of the transaction.

INVENTORY INCREASE

When you post an inventory increase, then a simple item application entry is recorded without an application to an outbound entry.

EXAMPLE

The following table shows the item application entry that is created when you post a purchase receipt of 10 units.

Posting Date	Inbound Item Entry No.	Outbound Item Entry No.	Quantity	Item Ledger Entry No.
01-01-20	1	0	10	1

INVENTORY DECREASE

When you post an inventory decrease, an item application entry is created that links the inventory decrease to an inventory increase. This link is created by using the item's costing method as a guideline. For items using FIFO, Standard, and Average costing methods, the linking is based on the first-in-first-out principle. The inventory decrease is applied to the inventory increase with the earliest posting date. For items using the LIFO costing method, the linking is based on the last-in-first-out principle. The inventory decrease is applied to the inventory increase with the most recent posting date.

In the **Item Ledger Entry** table, the **Remaining Quantity** field shows the quantity that has not yet been applied. If the remaining quantity is more than 0, then the **Open** check box is selected.

EXAMPLE

The following example shows the item application entry that is created when you post a sales shipment of 5 units of the items that were received in the previous example. The first item application entry is the purchase receipt. The second application entry is the sales shipment.

The following table shows the two item application entries that result from the inventory increase and the inventory decrease, respectively.

Posting Date	Inbound Item Entry No.	Outbound Item Entry No.	Quantity	Item Ledger Entry No.
01-01-20	1	0	10	1
01-03-20	1	2	-5	2

FIXED APPLICATION

You make a fixed application when you specify that the cost of an inventory increase should apply to a specific inventory decrease, or vice versa. The fixed application affects the remaining quantities of the entries, but the fixed application also reverses the exact cost of the original entry that you are applying to, or from.

To make a fixed application, you use the **Appl.-to Item Entry** field or the **Appl.-from Item Entry** field in the document lines to specify the item ledger entry that you want the transaction line to apply to, or from. For example, you might make a fixed application when you want to create a cost application that specifies that a sales return should apply to a specific sales shipment to reverse the cost of the sales shipment. In this case, Microsoft Dynamics NAV ignores the costing method and applies the inventory decrease, or increase, for a sales return, to the item ledger entry that you specify. The advantage of making a fixed application is that the cost of the original transaction is passed to the new transaction.

EXAMPLE – FIXED APPLICATION IN PURCHASE RETURN

The following example, which illustrates the effect of fixed application of a purchase return of an item using the FIFO costing method, is based on the following scenario:

1. In entry number 1, the user posts a purchase at a cost of LCY 10.00.
2. In entry number 2, the user posts a purchase at a cost of LCY 20.00.
3. In entry number 3, the user posts a purchase return. The user makes a fixed application to the second purchase by entering the item ledger entry number in the **Appl.-to Item Entry** field on the purchase return order line.

The following table shows item ledger entries resulting from the scenario.

Posting Date	Item Ledger Entry Type	Quantity	Cost Amount (Actual)	Item Ledger Entry No.
01-04-20	Purchase	10	10.00	1
01-05-20	Purchase	10	20.00	2
01-06-20	Purchase (Return)	-10	-20.00	3

Because a fixed application is made from the purchase return to the second purchase entry, the items are returned at the correct cost. If the user had not performed the fixed application, then the returned item would be incorrectly valued at LCY 10.00 because the return would have been applied to the first purchase entry according to the FIFO principle.

The following table shows the item application entry that results from the fixed application.

Posting Date	Inbound Item Entry No.	Outbound Item Entry No.	Quantity	Item Ledger Entry No.
01-06-20	1	3	10	3

The cost of the second purchase, LCY 20.00, is passed correctly to the purchase return.

EXAMPLE – FIXED APPLICATION WITH AVERAGE COST

The following example, which illustrates the effect of fixed application, is based on the following scenario for an item that uses the Average costing method:

1. In entry numbers 1 and 2, the user posts two purchase invoices. The second invoice has the incorrect direct unit cost of LCY 1000.00.
2. In entry number 3, the user posts a purchase credit memo, with a fixed application applied to the purchase entry with the wrong direct unit cost. The sum of the **Cost Amount (Actual)** field for the two fixed applied value entries becomes 0.00
3. In entry number 4, the user posts another purchase invoice with the correct direct unit cost of LCY 100.00

4. In entry number 5, the user posts a sales invoice.
5. The inventory quantity is 0, and the inventory value is also 0.00

The following table shows the result of the scenario on the item's value entries.

Posting Date	Item Ledger Entry Type	Valued Quantity	Cost Amount (Actual)	Appl.-to Item Entry	Valued by Average Cost	Item Ledger Entry No.	Entry No.
01-01-20	Purchase	1	200.00		No	1	1
01-01-20	Purchase	1	1000.00		No	2	2
01-01-20	Purchase	--1	-1000	2	No	3	3
01-01-20	Purchase	1	100.00		No	4	4
01-01-20	Sale	--2	-300.00		Yes	5	5

If the user had not made the fixed application between the purchase credit memo and the purchase with the incorrect direct unit cost (step 2 in the previous scenario), then the cost would have been adjusted differently.

The following table shows the result on the item's value entries if step 2 in the previous scenario is performed without a fixed application.

Posting Date	Item Ledger Entry Type	Valued Quantity	Cost Amount (Actual)	Appl.-to Item Entry	Valued by Average Cost	Item Ledger Entry No.	Entry No.
01-01-20	Purchase	1	200.00		No	1	1
01-01-20	Purchase	1	1000.00		No	2	2
01-01-20	Purchase	-1	433,33	2	Yes	3	3
01-01-20	Purchase	1	100.00		No	4	4
01-01-20	Sale	-2	866,67		Yes	5	5

In entry number 3, the value in the **Cost Amount (Actual)** field is valued by average and therefore includes the erroneous posting of 1000.00. Accordingly, it becomes -433,33, which is an inflated cost amount. The calculation is $1300 / 3 = .- 433,33$.

In entry number 5, the value of the **Cost Amount (Actual)** field for this entry is also inaccurate for the same reason.



Note

If you create a fixed application for an inventory decrease for an item that uses the Average costing method, then the decrease will not receive the average cost for the item as usual, but will instead receive the cost of the inventory increase that you specified. That inventory decrease is then no longer part of the average cost calculation.

EXAMPLE – FIXED APPLICATION IN SALES RETURN

Fixed applications are also a very good means of reversing cost exactly, such as with sales returns.

The following example, which illustrates how a fixed application ensures exact cost reversal, is based on the following scenario:

1. The user posts a purchase invoice.
2. The user posts a sales invoice.

3. The user posts a sales credit memo for the returned item, which applies to the sales entry, to reverse the cost correctly.
4. A freight cost, related to the purchase order that was posted earlier, arrives. The user posts it as an item charge.

The following table shows the result of scenario steps 1 through 3 on the item's value entries.

Posting Date	Item Ledger Entry Type	Valued Quantity	Cost Amount (Actual)	Appl.-from Item Entry	Item Ledger Entry No.	Entry No.
01-01-20	Purchase	1	1000.00		1	1
02-01-20	Sale	-1	1000.00		2	2
03-01-20	Sale (Credit Memo)	1	1000	2	3	3

The following table shows the value entry resulting from scenario step 4, posting the item charge.

Posting Date	Item Ledger Entry Type	Valued Quantity	Cost Amount (Actual)	Appl.-from Item Entry	Item Ledger Entry No.	Entry No.
04-01-20	(Item Charge)	1	100.00		1	4

The following table shows the effect of the exact cost reversal on the item's value entries.

Posting Date	Item Ledger Entry Type	Valued Quantity	Cost Amount (Actual)	Appl.-from Item Entry	Item Ledger Entry No.	Entry No.
01-01-20	Purchase	1	1000.00		1	1
02-01-20	Sale	-1	1100.00		2	2
03-01-20	Sale (Credit Memo)	1	1100.00	2	3	3
04-01-20	(Item Charge)	1	100.00		1	4

When you run the **Adjust Cost - Item Entries** batch job, the increased cost of the purchase entry, due to the item charge, is forwarded to the sales entry (entry number 2). The sales entry then forwards this increased cost to the sales credit entry (entry number 3). The final result is that the cost is correctly reversed.



Note

If you are working with returns or credit memos and you have set up the **Exact Cost Reversing Mandatory** field in either the **Purchases & Payables Setup** window or the **Sales & Receivables Setup** window, as appropriate for your situation, then Microsoft Dynamics NAV automatically fills the various application entry fields when you use the **Copy Document** function. If you use the **Get Posted Document Lines to Reverse** function, then the fields are always filled automatically.



Note

If you post a transaction with a fixed application, and the item ledger entry that you are applying to is closed, meaning that the remaining quantity is zero, then the old application is automatically undone and reapplies the item ledger entry using the fixed application that you specified.

TRANSFER APPLICATION

When an item is transferred from one location to another, inside the company inventory, then an application is created between the two transfer entries. Valuing a transfer entry depends on the costing method. For items using the Average costing method, valuation is made using the average cost in the average cost period in which the valuation date of the transfer occurs. For items using other costing methods, valuation is made by tracing back to the cost of the original inventory increase.

EXAMPLE – AVERAGE COSTING METHOD

The following example, which illustrates how transfer entries are applied, is based on the following scenario for an item using Average costing method and an average cost period of Day.

1. The user purchases the item at a cost of LCY 10.00.
2. The user purchases the item again at a cost of LCY 20.00.
3. The user transfers the item from BLUE to RED location.

The following table shows the effect of the transfer on the item's value entries.

Posting Date	Item Ledger Entry Type	Location Code	Valued Quantity	Cost Amount (Actual)	Entry No.
01-01-20	Purchase	BLUE	1	10.00	1
01-01-20	Purchase	BLUE	1	20.00	2
02-01-20	Transfer	BLUE	-1	15.00	3
02-01-20	Transfer	RED	1	15.00	4

EXAMPLE – STANDARD COSTING METHOD

The following example, which illustrates how transfer entries are applied, is based on the following scenario for an item using Standard costing method and an average cost period of Day.

1. The user purchases the item at a standard cost of LCY 10.00.
2. The user transfers the item from BLUE to RED location at a standard cost of LCY 12.00.

The following table shows the effect of the transfer on the item's value entries.

Posting Date	Item Ledger Entry Type	Location Code	Valued Quantity	Cost Amount (Actual)	Entry No.
01-01-20	Purchase	BLUE	1	10.00	1
02-01-20	Transfer	BLUE	-1	10.00	2
02-01-20	Transfer	RED	1	10.00	3

Since the value of the original inventory increase is LCY 10.00, the transfer is valued at that cost, not at LCY 12.00.

REAPPLICATION

Because of the way an item's unit cost is calculated, an incorrect item application could lead to a skewed average cost and unit cost. The following scenarios may cause incorrect item applications, which require that you undo item applications and reapply item ledger entries:

- You have forgotten to make a fixed application.
- You have made an incorrect fixed application.
- You want to overrule the application created automatically when posting, according to the item's costing method.
- You have to return an item to which a sale has already been manually applied, without using the **Get Posted Document Lines to Reverse** function, and you must therefore undo the application.

Microsoft Dynamics NAV offers a feature for analyzing and correcting item applications. This work is performed in the **Application Worksheet** window.

SEE ALSO

[Inventory Costing](#)

[Costing Methods](#)

[Average Cost](#)

[Cost Adjustment](#)

COST ADJUSTMENT

The main purpose of cost adjustment is to forward cost changes from cost sources to cost recipients, according to an item's costing method, to provide correct inventory valuation.

An item can be sales invoiced before it has been purchase invoiced, so that the recorded inventory value of the sale does not match the actual purchase cost. Cost adjustment updates the cost of goods sold (COGS) for historic sales entries to ensure that they match the costs of the inbound transactions to which they are applied. For more information, see [Item Application](#).

The following are secondary purposes, or functions, of cost adjustment:

- Invoice finished production orders:
 - Change the status of value entries from **Expected** to **Actual**.
 - Clear WIP accounts. For more information, see [Production Order Costing](#).
 - Post variance. For more information, see [Variance](#).
- Update the unit cost on the item card.

Inventory costs must be adjusted before the related value entries can be reconciled with the general ledger. For more information, see [Reconciliation with the General Ledger](#).

DETECTING THE ADJUSTMENT

The task of detecting if cost adjustment should occur is primarily performed by the Item Jnl.-Post Line routine, while the task of calculating and generating cost adjustment entries is performed by the **Adjust Cost – Item Entries** batch job.

To be able to forward costs, the detection mechanism determines which sources have changed in costs and to which destination these costs should be forwarded. The following three detection functions exist in Microsoft Dynamics NAV:

- Item Application Entry
- Average Cost Adjustment Entry Point
- Order Level

ITEM APPLICATION ENTRY

This detection function is used for items that use FIFO, LIFO, Standard, and Specific costing methods and for fixed applications scenarios. The function works as follows:

- Cost adjustment is detected by marking the source item ledger entries as *Applied Entry to Adjust* whenever an item ledger entry or value entry is posted.
- Cost is forwarded according to the cost chains that are recorded in the **Item Application Entry** table.

AVERAGE COST ADJUSTMENT ENTRY POINT

This detection function is used for items that use the Average costing method. The function works as follows:

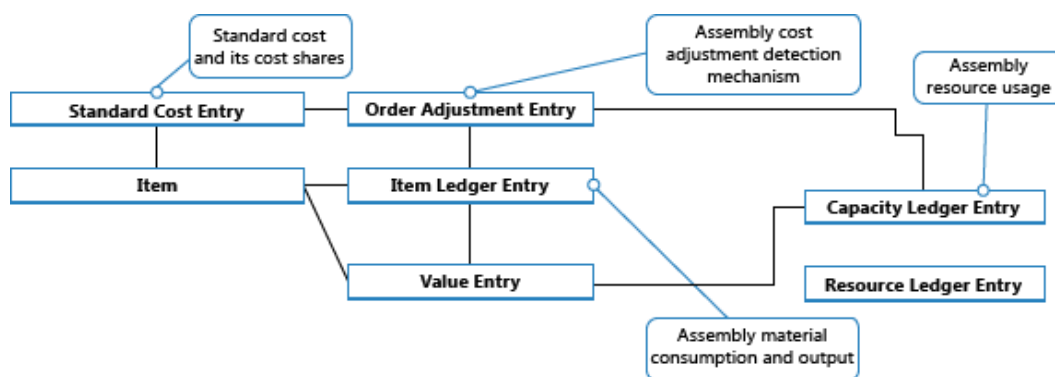
- Cost adjustment is detected by marking a record in the **Avg. Cost Adjmt. Entry Point** table whenever a value entry is posted.
- Cost is forwarded by applying the costs to value entries with a later valuation date.

ORDER LEVEL

This detection function is used in conversion scenarios, production and assembly. The function works as follows:

- Cost adjustment is detected by marking the order whenever a material/resource is posted as consumed/used.
- Cost is forwarding by applying the costs from material/resource to the output entries associated with the same order.

The Order Level function is used to detect adjustments in assembly posting. The following graphic shows the adjustment entry structure:



For more information, see [Assembly Order Costing](#).

MANUAL VERSUS AUTOMATIC COST ADJUSTMENT

Cost adjustment can be performed in two ways:

- Manually, by running the **Adjust Cost - Item Entries** batch job. You can run this batch job either for all items or for only certain items or item categories. This batch job runs a cost adjustment for the items in inventory for which an inbound transaction has been made, such as a purchase. For items that use the average costing method, the batch job also makes an adjustment if any outbound transactions are created.
- Automatically, by adjusting costs every time that you post an inventory transaction, and when you finish a production order. The cost adjustment is only run for the specific item or items affected by the posting. This is set up when you select the **Automatic Cost Adjustment** check box in the **Inventory Setup** window.

It is good practice to run the cost adjustment automatically when you post because unit costs are more frequently updated and therefore more accurate. The disadvantage is that the performance of the database can be affected by running the cost adjustment so often.

Because it is important to keep the unit cost of an item up to date, it is recommend that you run the **Adjust Cost - Item Entries** batch job as often as possible, during nonworking hours. Alternatively, use automatic cost adjustment. This ensures that the unit cost is updated for items daily.

Regardless if you run the cost adjustment manually or automatically, the adjustment process and its consequences are the same. Microsoft Dynamics NAV calculates the value of the inbound transaction and forwards that cost to any outbound transactions, such as sales or consumptions, which have been applied to the inbound transaction. The cost adjustment creates value entries that contain adjustment amounts and amounts that compensate for rounding.

The new adjustment and rounding value entries have the posting date of the related invoice. Exceptions are if the value entries fall in a closed accounting period or inventory period or if the posting date is earlier than the date in the **Allow Posting From** field in the **General Ledger Setup** window. If this occurs, the batch job assigns the posting date as the first date of the next open period.

ADJUST COST - ITEM ENTRIES BATCH JOB

When you run the **Adjust Cost - Item Entries** batch job, you have the option to run the batch job for all items or for only certain items or categories.

Note

We recommend that you always run the batch job for all items and only use the filtering option to reduce the runtime of the batch job, or to fix the cost of a certain item.

EXAMPLE

The following example shows if you post a purchased item as received and invoiced on 01-01-20. You later post the sold item as shipped and invoiced on 01-15-20. Then, you run the **Adjust Cost - Item Entries** and **Post Inventory Cost to G/L** batch jobs. The following entries are created.

Value Entries

Posting Date	Item Ledger Entry Type	Cost Amount (Actual)	Cost Posted to G/L	Invoiced Quantity	Entry No.
01-01-20	Purchase	10.00	10.00	1	1
01-15-20	Sale	-10.00	-10.00	-1	2

Relation Entries in the G/L – Item Ledger Relation Table

G/L Entry No.	Value Entry No.	G/L Register No.
1	1	1
2	1	1
3	2	1
4	2	1

General Ledger Entries

Posting Date	G/L Account	Account No. (En-US Demo)	Amount	Entry No.
01-01-20	[Inventory Account]	2130	10.00	1
01-01-20	[Direct Cost Applied Account]	7291	-10.00	2
01-15-20	[Inventory Account]	2130	-10.00	3
01-15-20	[COGS Account]	7290	10.00	4

Later, you post a related purchase item charge for 2.00 LCY invoiced on 02-10-20. You run the **Adjust Cost - Item Entries** batch job and then run the **Post Inventory Cost to G/L** batch job. The cost adjustment batch job adjusts the cost of the sale by -2.00 LCY accordingly, and the **Post Inventory Cost to G/L** batch job posts the new value entries to the general ledger. The result is as follows.

Value Entries

Posting Date	Item Ledger Entry Type	Cost Amount (Actual)	Cost Posted to G/L	Invoiced Quantity	Adjustment	Entry No.
02-10-20	Purchase	2.00	2.00	0	No	3
01-15-20	Sale	-2.00	-2.00	0	Yes	4

Relation Entries in the G/L – Item Ledger Relation Table

G/L Entry No.	Value Entry No.	G/L Register No.
5	3	2
6	3	2
7	4	2
8	4	2

General Ledger Entries

Posting Date	G/L Account	Account No. (En-US Demo)		Amount	Entry No.
02-10-20	[Inventory Account]	2130		2.00	5
02-10-20	[Direct Cost Applied Account]	7291		-2.00	6
01-15-20	[Inventory Account]	2130		-2.00	7
01-15-20	[COGS Account]	7290		2.00	8

AUTOMATIC COST ADJUSTMENT

To set up cost adjustment to run automatically when you post an inventory transaction, use the **Automatic Cost Adjustment** field in the **Inventory Setup** window. This field enables you to select how far back in time from the current work date that you want automatic cost adjustment to be performed. The following options exist.

Option	Description
Never	Costs are not adjusted when you post.
Day	Costs are adjusted if posting occurs within one day from the work date.
Week	Costs are adjusted if posting occurs within one week from the work date.
Month	Costs are adjusted if posting occurs within one month from the work date.
Quarter	Costs are adjusted if posting occurs within one quarter from the work date.
Year	Costs are adjusted if posting occurs within one year from the work date.
Always	Costs are always adjusted when you post, regardless of the posting date.

The selection that you make in the **Automatic Cost Adjustment** field is important for performance and the accuracy of your costs. Shorter time periods, such as **Day** or **Week**, affect system performance less, because they provide the stricter requirement that only costs posted in the last day or week can be automatically adjusted. This means that the automatic cost adjustment does not run as frequently and therefore affects system performance less. However, it also means that unit costs may be less accurate.

EXAMPLE

The following example shows an automatic cost adjustment scenario:

- On January 10, you post a purchased item as received and invoiced.
- On January 15, you post a sales order for the item as shipped and invoiced.
- On February 5, you receive an invoice for a freight charge on the original purchase. You post this freight charge, applying it to the original purchase invoice, which increases the cost of the original purchase.

If you have set up the automatic cost adjustment to apply to postings that occur within a month or a quarter from the current work date, then the automatic cost adjustment runs and forwards the cost of the purchase to the sale.

If you have set up the automatic cost adjustment to apply to postings that occur within a day or a week from the current work date, then the automatic cost adjustment does not run, and the cost of the purchase is not forwarded to the sale until you run the **Adjust Cost - Item Entries** batch job.

SEE ALSO

[Inventory Costing](#)

[Reconciliation with the General Ledger](#)

[Inventory Posting](#)

[Variance](#)

[Assembly Order Costing](#)

[Production Order Costing](#)

EXPECTED COST POSTING

Expected costs represent the estimation of, for example, a purchased item's cost that you record before you receive the invoice for the item.

You can post expected cost to inventory and to the general ledger. When you post a quantity that is only received or shipped but not invoiced, then a value entry is created with the expected cost. This expected cost affects the inventory value, but is not posted to the general ledger unless you set up the system up to do so.



Note

Expected costs are only managed for item transactions. Expected costs are not for immaterial transaction types, such as capacity and item charges.

If only the quantity part of an inventory increase has been posted, then the inventory value in the general ledger does not change unless you have selected the **Expected Cost Posting to G/L** check box in the **Inventory Setup** window. In that case, the expected cost is posted to interim accounts at the time of receipt. After the receipt has been fully invoiced, the interim accounts are then balanced and the actual cost is posted to the inventory account.

To support reconciliation and traceability work, the invoiced value entry shows the expected cost amount that has been posted to balance the interim accounts.

EXAMPLE

The following example shows expected cost if the **Automatic Cost Posting** check box and the **Expected Cost Posting to G/L** check box are selected in the **Inventory Setup** window.

You post a purchase order as received. The expected cost is LCY 95.00.

Value Entries

Posting Date	Entry Type	Cost Amount (Expected)	Expected Cost Posted to G/L	Expected Cost	Item Ledger Entry No.	Entry No.
01-01-20	Direct Cost	95.00	95.00	Yes	1	1

Relation Entries in the G/L – Item Ledger Relation Table

G/L Entry No.	Value Entry No.	G/L Register No.
1	1	1
2	1	1

General Ledger Entries

Posting Date	G/L Account	Account No. (En-US Demo)	Amount	Entry No.
01-01-20	Inventory Accrual Account (Interim)	5530	-95.00	2
01-01-20	Inventory Account (Interim)	2131	95.00	1

At a later date, you post the purchase order as invoiced. The invoiced cost is LCY 100.00.

Value Entries

Posting Date	Cost Amount (Actual)	Cost Amount (Expected)	Cost Posted to G/L	Expected Cost	Item Ledger Entry No.	Entry No.
01-15-20	100.00	-95.00	100.00	No	1	2

Relation Entries in the G/L – Item Ledger Relation Table

G/L Entry No.	Value Entry No.	G/L Register No.
3	2	2
4	2	2
5	2	2
6	2	2

General Ledger Entries

Posting Date	G/L Account	Account No. (En-US Demo)	Amount	Entry No.
01-15-20	Inventory Accrual Account (Interim)	5530	95.00	4
01-15-20	Inventory Account (Interim)	2131	-95.00	3
01-15-20	Direct Cost Applied Account	7291	-100	6
01-15-20	Inventory Account	2130	100	5

SEE ALSO

[Inventory Costing](#)

[Cost Adjustment](#)

[Reconciliation with the General Ledger](#)

[Inventory Posting](#)

[Variance](#)

AVERAGE COST


The average cost of an item is calculated with a periodic weighted average, based on the average cost period that is set up in Microsoft Dynamics NAV.

The valuation date is set automatically.

SETTING UP AVERAGE COST CALCULATION

The following table describes the two fields in the **Inventory Setup** window that must be filled to enable average cost calculation.


Field	Description
Average Cost Period	<p>Specifies which period the average cost is calculated in. The following options exist:</p> <ul style="list-style-type: none">• Day• Week• Month• Accounting Period <p>All inventory decreases that are posted in the average cost period receive the average cost calculated for that period.</p>
Average Cost Calc. Type	<p>Specifies how the average cost is calculated. The following options exist:</p> <ul style="list-style-type: none">• Item• Item, Variant, and Location <p>With this option, the average cost is calculated for each item, for each location, and for each variant of the item. This means that the average cost of this item depends on where it is stored and which variant of the item that you have selected, such as color.</p>

 **Note** You can only use one average cost period and one average cost calculation type in a fiscal year.

The **Accounting Periods** window shows which average cost period and which average cost calculation type is in effect during that period, for each accounting period.

CALCULATING AVERAGE COST

When you post a transaction for an item that uses the Average costing method, an entry is created in the **Avg. Cost Adjmt. Entry Point** table. This entry contains the transaction's item number, variant code, and location code. The entry also contains the **Valuation Date** field, which specifies the last date of the average cost period in which the transaction was posted.

 **Note** This field should not be confused with the **Valuation Date** field in the **Value Entry** table, which shows the date when the value takes effect and is used to determine the average cost period in which the value entry belongs.

The average cost of a transaction is calculated when the item's cost is adjusted. For more information, see [Cost Adjustment](#). A cost adjustment uses the entries in the **Avg. Cost Adjmt. Entry Point** table to identify which items (or items, locations, and variants) to calculate average costs for. For each entry with a cost that has not been adjusted, the cost adjustment uses the following to determine the average cost:

- Determines the cost of the item at the start of the average cost period.
- Adds the sum of the inbound costs that were posted during the average cost period. These include purchases, sales returns, positive adjustments, and production and assembly outputs.
- Subtracts the sum of the costs of any outbound transactions that were fixed-applied to receipts in the average cost period. These typically include purchase returns and negative outputs.

- Divides by the total inventory quantity for the end of the average cost period, excluding inventory decreases that are being valued.

The calculated average cost is then applied to the inventory decreases for the item (or item, location, and variant) with posting dates in the average cost period. If any inventory increases exist that were fixed applied to inventory decreases in the average cost period, then the calculated average cost is forwarded from the increase to the decrease.

EXAMPLE: AVERAGE COST PERIOD = DAY

The following example shows the effect of calculating the average cost based on an average cost period of one day. The **Average Cost Calc. Type** field in the **Inventory Setup** window is set to **Item**.

The following table shows item ledger entries for the sample average-cost item, ITEM1, before the **Adjust Cost - Item Entries** batch job has been run.

Posting Date	Item Ledger Entry Type	Quantity	Cost Amount (Actual)	Entry No.
01-01-20	Purchase	1	20.00	1
01-01-20	Purchase	1	40.00	2
01-01-20	Sale	-1	-20.00	3
02-01-20	Sale	-1	-40.00	4
02-02-20	Purchase	1	100.00	5
02-03-20	Sale	-1	-100.00	6



Note

Because cost adjustment has not yet occurred, the values in the **Cost Amount (Actual)** field of the inventory decreases corresponding to the inventory increases that they are applied to.

The following table shows the entries in the **Avg. Cost Adjmt. Entry Point** table that apply to value entries resulting from the item ledger entries in the preceding table.

Item No.	Variant Code	Location Code	Valuation Date	Cost is Adjusted
ITEM1		BLUE	01-01-20	No
ITEM1		BLUE	02-01-20	No
ITEM1		BLUE	02-02-20	No
ITEM1		BLUE	02-03-20	No

The following table shows the same item ledger entries after the **Adjust Cost - Item Entries** batch job has been run. The average cost per day is calculated and applied to the inventory decreases.

Posting Date	Item Ledger Entry Type	Quantity	Cost Amount (Actual)	Entry No.
01-01-20	Purchase	1	20.00	1
01-01-20	Purchase	1	40.00	2
01-01-20	Sale	-1	-30.00	3
02-01-20	Sale	-1	-30.00	4

Posting Date	Item Ledger Entry Type	Quantity	Cost Amount (Actual)	Entry No.
02-02-20	Purchase	1	100.00	5
02-03-20	Sale	-1	-100.00	6

EXAMPLE: AVERAGE COST PERIOD = MONTH

The following example shows the effect of calculating the average cost based on an average cost period of one month. The **Average Cost Calc. Type** field in the **Inventory Setup** window is set to **Item**.

If the average cost period is one month, then only one entry is created for each combination of item number, variant code, location code, and valuation date.

The following table shows item ledger entries for the sample average-cost item, ITEM1, before the **Adjust Cost - Item Entries** batch job has been run.

Posting Date	Item Ledger Entry Type	Quantity	Cost Amount (Actual)	Entry No.
01-01-20	Purchase	1	20.00	1
01-01-20	Purchase	1	40.00	2
01-01-20	Sale	-1	-20.00	3
02-01-20	Sale	-1	-40.00	4
02-02-20	Purchase	1	100.00	5
02-03-20	Sale	-1	-100.00	6



Note

Because cost adjustment has not occurred yet, the values in the **Cost Amount (Actual)** field of the inventory decreases corresponding to the inventory increases that they are applied to.

The following table shows the entries in the **Avg. Cost Adjmt. Entry Point** table that apply to value entries resulting from the item ledger entries in the preceding table.

Item No.	Variant Code	Location Code	Valuation Date	Cost is Adjusted
ITEM1		BLUE	01-31-20	No
ITEM1		BLUE	02-28-20	No



Note

The valuation date is set to the last day in the average cost period, which in this case is the last day of the month.

The following table shows the same item ledger entries after the **Adjust Cost - Item Entries** batch job has been run. The average cost per month is calculated and applied to the inventory decreases.

Posting Date	Item Ledger Entry Type	Quantity	Cost Amount (Actual)	Entry No.
01-01-20	Purchase	1	20.00	1
01-01-20	Purchase	1	40.00	2
01-01-20	Sale	-1	-30.00	3

Posting Date	Item Ledger Entry Type	Quantity	Cost Amount (Actual)	Entry No.
02-01-20	Sale	-1	-65.00	4
02-02-20	Purchase	1	100.00	5
02-03-20	Sale	-1	-65.00	6

The average cost of entry number 3 is calculated in the average cost period for January, and the average cost for entries 4 and 6 is calculated in the average cost period for February.

To get the average cost for February, the average cost of the piece received in inventory (100.00) is added to the average cost at the beginning of the period (30.00). The sum of the two (130.00) is then divided by the total quantity in inventory (2). This gives the resulting average cost of the item in the February period (65.00). The average cost is assigned to the inventory decreases in the period (entries 4 and 6).

SETTING THE VALUATION DATE

The **Valuation Date** field in the **Value Entry** table is used to determine in which average cost period an inventory decrease entry belongs. This also applies to work in process (WIP) inventory.

The following table shows the criteria that are used to set the valuation date.

Scenario	Posting Date	Valued Quantity	Revaluation	Valuation Date
1		Positive	No	Posting date of item ledger entry
2	Later than the latest valuation date of applied value entries	Negative	No	Posting date of item ledger entry
3	Earlier than the latest valuation date of applied value entries	Positive	No	Latest valuation date of the applied value entries
4		Negative	Yes	Posting date of the revaluation value entry

EXAMPLE

The following table of value entries illustrates the different scenarios.

Scenario	Posting Date	Item Ledger Entry Type	Valuation Date	Valued Quantity	Cost Amount (Actual)	Item Ledger Entry No.	Entry No.
1	01-01-20	Purchase	01-01-20	2	20.00	1	1
2	01-15-20	(Item Charge)	01-01-20	2	8.00	1	2
3	02-01-20	Sale	02-01-20	-1	-14.00	2	3
4	03-01-20	(Revaluation)	03-01-20	1	-.4.00	1	4
5	02-01-20	Sale	03-01-20	-1	-10.00	3	5



Note

In entry number 5 in the preceding table, the user has entered a sales order with a posting date (02-01-20) that comes before the latest valuation date of applied value entries (03-01-20). If the corresponding value in the **Cost Amount (Actual)** field for this date (02-01-20) were used for this entry, then it would be 14.00. This would give a situation where the quantity on inventory is zero, but the inventory value is -4.00.

To avoid such a quantity-value mismatch, the valuation date is set to equal the latest valuation date of the applied value entries (03-01-20). The value in the **Cost Amount (Actual)** field becomes 10.00 (after revaluation), which means that the quantity on inventory is zero, and the inventory value is also zero.



Caution

Because the **Inventory Valuation** report is based on posting date, the report will reflect any quantity-value mismatches in scenarios as in the above example. For more information, see [Inventory Valuation](#).

If the quantity on inventory is less than zero after posting the inventory decrease, then the valuation date is first set to the posting date of the inventory decrease. This date may be changed later, according to the rules described in the note earlier in this section, when the inventory increase is applied.

RECALCULATING AVERAGE COST

Valuing inventory decreases as a weighted average would be straightforward if purchases were always invoiced before sales are invoiced, postings were never backdated, and you never made mistakes. However, the reality is somewhat different from this ideal.

As illustrated in the examples in this topic, the valuation date is defined as the date from which the value entry is included in the average cost calculation. This gives you the flexibility to do the following for items using the Average costing method:

- Invoice the sale of an item before the purchase of the item has been invoiced.
- Backdate a posting.
- Recover an incorrect posting.



Note

Another reason for this flexibility is fixed application. For more information about fixed application, see [Item Application](#).

Because of this flexibility, you may have to recalculate the average cost after the related posting has occurred. For example, if you post an inventory increase or decrease with a valuation date that comes before one or more inventory decreases. The recalculation of the average cost will occur automatically when you run the **Adjust Cost - Item Entries** batch job, manually or automatically.

It is possible to change the inventory valuation base within an accounting period by changing the **Average Cost Period** field and the **Average Cost Calc. Type** field. However, this should be done with care and in agreement with an auditor.

EXAMPLE

The following example illustrates how the average cost is recalculated when a late posting is introduced on a date that comes before one or more inventory decreases. The example is based on an average cost period of **Day**.

The following table shows the value entries that exist for the item before the posting is introduced.

Valuation Date	Quantity	Cost Amount (Actual)	Entry No.
01-01-20	1	10.00	1
01-02-20	1	20.00	2
02-15-20	-1	-15.00	3
02-16-20	-1	-15.00	4

The user posts an inventory increase (entry number 5) with a valuation date (01-03-20) that comes before one or more inventory decreases. To balance the inventory, the average cost must be recalculated and adjusted to 17.00.

The following table shows the value entries that exist for the item after entry number 5 is introduced.

Valuation Date	Quantity	Cost Amount (Actual)	Entry No.
01-01-20	1	10.00	1
01-02-20	1	20.00	2
01-03-20	1	21.00	5
02-15-20	-1	-17.00	3
02-16-20	-1	-17.00	4

SEE ALSO

[Inventory Costing](#)

[Costing Methods](#)

[Cost Adjustment](#)

[Item Application](#)

VARIANCE

Variance is defined as the difference between the actual cost and the standard cost, as described in the following formula.

$$\text{actual cost} - \text{standard cost} = \text{variance}$$

If the actual cost changes, for example, because you post an item charge on a later date, then the variance is updated accordingly.



Note

Revaluation does not affect the variance calculation, because revaluation only changes the inventory value.

EXAMPLE

The following example illustrates how variance is calculated for purchased items. It is based on the following scenario:

1. The user purchases an item at LCY 90.00, but the standard cost is LCY 100.00. Accordingly, the purchase variance is LCY -10.00.
2. LCY 10.00 is credited to the purchase variance account.
3. The user posts an item charge of LCY 20.00. Accordingly, the actual cost is increased to LCY 110.00, and the value of the purchase variance becomes LCY 10.00.
4. LCY 20.00 is debited to the purchase variance account. Accordingly, the net purchase variance becomes LCY 10.00.
5. The user revalues the item from LCY 100.00 to LCY 70.00. This does not affect the variance calculation, only the inventory value.

The following table shows the resulting value entries.

	Inventory		Direct Cost		Purchase Variance		Inventory Adjustment	
Purchase	100			90		10		
Item Charge				20	20			
Total before revaluation	100			110	10			
Revaluation		30					30	
Total after revaluation	70			110	10		30	

DETERMINING THE STANDARD COST

The standard cost is used when calculating variance and the amount to capitalize. Since the standard cost can be changed over time because of manual update calculation, you need a point in time when the standard cost is fixed for variance calculation. This point is when the inventory increase is invoiced. For produced or assembled items, the point when standard cost is determined is when the cost is adjusted.

The following table shows how different cost shares are calculated for produced and assembled items when you use the Calculate Standard Cost function.

Cost share	Purchased item	Produced/Assembled item
Standard Cost	<i>Single-Level Material Cost + Single-Level Capacity Cost + Single-Level Subcontrd. Cost + Single-Level Cap. Ovhd. Cost + Single-Level Mfg. Ovhd. Cost</i>	
Single-Level Material Cost	Unit Cost	$\sum_{\text{components}} \text{standard cost}$
Single-Level Capacity Cost	Not applicable	$\sum_{\text{operations(not subcontrd)}} \text{direct unit cost}$
Single-Level Subcontrd. Cost	Not applicable	$\sum_{\text{operations(subcontrd)}} \text{direct unit cost}$
Single-Level Cap. Ovhd Cost	Not applicable	$\sum_{\text{Operations}} \text{direct unit cost} \times \text{indirect cost \%} / 100 + \text{overhead rate}$
Single-Level Mfg. Ovhd Cost	Not applicable	<i>(Single-Level Material Cost + Single-Level Capacity Cost + Single-Level Subcontrd. Cost) * Indirect Cost % / 100 + Overhead Rate</i>
Rolled-up Material Cost	Unit Cost	$\sum_{\text{components}} \text{rolled - up material cost}$
Rolled-up Capacity Cost	Not applicable	$\sum_{\text{components}} \text{rolled - up capacity cost} + \text{single - level capacity cost}$
Rolled-Up Subcontracted Cost	Not applicable	$\sum_{\text{components}} \text{rolled - up cap. overhead cost} + \text{single - level ovhd cost}$
Rolled-up Capacity Ovhd. Cost	Not applicable	$\sum_{\text{components}} \text{rolled - up cap. overhead cost} + \text{single - level ovhd cost}$
Rolled-up Mfg. Ovhd. Cost	Not applicable	$\sum_{\text{components}} \text{rolled - up mfg. ovhd cost} + \text{single - level mfg. ovhd cost}$

SEE ALSO

[Inventory Costing](#)

[Costing Methods](#)

ROUNDING

Rounding residuals can occur when you value the cost of an inventory decrease that is measured in a different quantity than the corresponding inventory increase. Rounding residuals are calculated for all costing methods when you run the **Adjust Cost - Item Entries** batch job.

When you use the average costing method, the rounding residual is calculated and recorded on a cumulative, entry-by-entry basis.

When you use a costing method other than Average, the rounding residual is calculated when the inventory increase has been fully applied, that is when the remaining quantity for the inventory increase is equal to zero. A separate entry is then created for the rounding residual, and the posting date on this rounding entry is the posting date of the last invoiced value entry of the inventory increase.

EXAMPLE

The following example illustrates how different rounding residuals are handled for the average costing method and non-Average costing method, respectively. In both cases, the **Adjust Cost - Item Entries** batch job has been run.

The following table shows the item ledger entries that the example is based on.

Posting Date	Quantity	Entry No.
01-01-20	3	1
02-01-20	-1	2
03-01-20	-1	3
04-01-20	-1	4

For an item using the Average costing method, the rounding residual (1/300) is calculated with the first decrease (entry number 2) and is carried forward to entry number 3. Therefore, entry number 3 is valued at -3.34.

The following table shows the resulting value entries.

Posting Date	Quantity	Cost Amount (Actual)	Item Ledger Entry No.	Entry No.
01-01-20	3	10	1	1
02-01-20	-1	-3.33	2	2
03-01-20	-1	-3.34	3	3
04-01-20	-1	-3.33	4	4

For an item using a costing method other than Average, the rounding residual (0.01) is calculated when the remaining quantity for the inventory increase is zero. The rounding residual has a separate entry (number 5).

The following table shows the resulting value entries.

Posting Date	Quantity	Cost Amount (Actual)	Item Ledger Entry No.	Entry No.
01-01-20	3	10	1	1
02-01-20	-1	-3.33	2	2
03-01-20	-1	-3.33	3	3

Posting Date	Quantity	Cost Amount (Actual)	Item Ledger Entry No.	Entry No.
04-01-20	-1	-3.33	4	4
01-01-20	0	-0.01	1	5

SEE ALSO

[Inventory Costing](#)

[Cost Adjustment](#)

[Costing Methods](#)

COST COMPONENTS

Cost components are different types of costs that make up the value of an inventory increase or decrease.

The following table shows the different cost components and any subordinate cost components that they consist of.

Cost component	Subordinate cost component	Description
Direct cost	Unit cost (direct purchase price)	Cost that can be traced to a cost object.
	Freight cost (item charge)	
	Insurance cost (item charge)	
Indirect cost		Cost that cannot be traced to a cost object.
Variance	Purchase variance	The difference between actual and standard costs, which is only posted for items using the Standard costing method.
	Material variance	
	Capacity variance	
	Subcontracted variance	
	Capacity overhead variance	
	Manufacturing overhead variance	
Revaluation		A depreciation or appreciation of the current inventory value.
Rounding		Residuals caused by the way in which valuation of inventory decreases are calculated.



Note

Freight and insurance costs are item charges that can be added to an item's cost at any time. When you run the **Adjust Cost - Item Entries** batch job, the value of any related inventory decreases are updated accordingly.

SEE ALSO

[Inventory Costing](#)

[Variance](#)

INVENTORY PERIODS

Backdated transactions or cost adjustments often affect balances and stock valuations for accounting periods that may be considered closed. This can have adverse effects on accurate reporting, especially within global corporations. The Inventory Periods feature can be used to avoid such problems by opening or closing inventory periods to limit posting in a set period of time.

An inventory period is a period of time, defined by an ending date, in which you post inventory transactions. When you close an inventory period, no value changes can be posted in the closed period. This includes new value postings, expected or invoiced postings, changes to existing values, and cost adjustments. However, you can still apply to an open item ledger entry that falls in the closed period. For more information, see [Item Application](#).

To make sure that all transaction entries in a closed period are final, the following conditions must be met before an inventory period can close:

- All outbound item ledger entries in the period must be closed (no negative inventory).
- All item costs in the period must be adjusted.
- All released and finished production orders in the period must be cost adjusted.

When you close an inventory period, an inventory period entry is created by using the number of the last item register that falls in the inventory period. In addition, the time, date, and user code of the user closing the period are recorded in the inventory period entry. By using this information with the last item register for the previous period, you can see which inventory transactions were posted in the inventory period. It is also possible to reopen inventory periods if you need to post in a closed period. When you reopen an inventory period, an inventory period entry is created.

SEE ALSO

[Inventory Costing](#)

INVENTORY POSTING

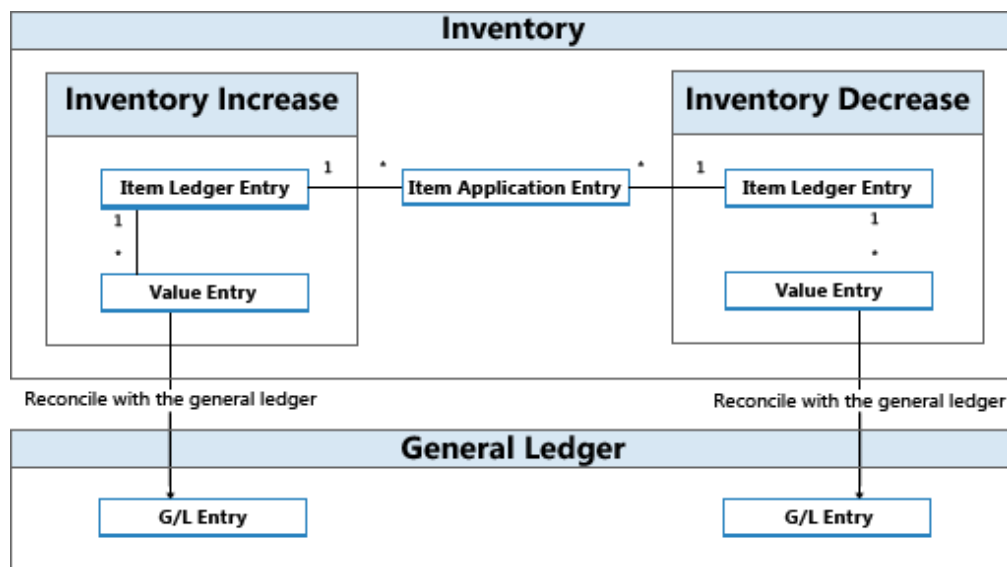
Each inventory transaction, such as a purchase receipt or a sales shipment, posts two entries of different types.

Entry type	Description
Quantity	Reflects the change of quantity in inventory. This information is stored in item ledger entries. Accompanied by item application entries.
Value	Reflects the change of inventory value. This information is stored in value entries. One or more value entries can exist for each item ledger entry or capacity ledger entry. For information about capacity value entries related to the use of production or assembly resources, see Production Order Costing .

In relation to quantity postings, item application entries exist to link inventory increase with inventory decrease. This enables the costing engine to forward costs from increases to the related decreases and vice versa. For more information, see [Item Application](#).

Item ledger entries, value entries, and item application entries are created as a result of posting an item journal line, either indirectly by posting an order line or directly in the Item Journal window.

At regular intervals of dynamically, value entries that are created in the inventory ledger are posted to the general ledger to reconcile the two ledgers for financial control reasons. For more information, see [Reconciliation with the General Ledger](#).



EXAMPLE

The following example shows how item ledger entries, value entries, and item application entries result in general ledger entries.

You post a purchase order as received and invoiced for 10 items with a direct unit cost of LCY 7 and an overhead rate of LCY 1. The posting date is 01-01-20. The following entries are created.

Item Ledger Entries

Posting Date	Entry Type	Cost Amount (Actual)	Quantity	Entry No.
01-01-20	Purchase	80.00	10	1

Value Entries

Posting Date	Entry Type	Cost Amount (Actual)	Item Ledger Entry No.	Entry No.
01-01-20	Direct Cost	70.00	1	1
01-01-20	Indirect Cost	10.00	1	2

Item Application Entries

Entry No.	Item Ledger Entry No.	Inbound Item Entry No.	Outbound Item Entry No.	Quantity
1	1	1	0	10

Next, you post a sale of 10 units of the item with a posting date of 01-15-20.

Item Ledger Entries

Posting Date	Entry Type	Cost Amount (Actual)		Quantity	Entry No.
01-15-20	Sale	-80.00		-10	2

Value Entries

Posting Date	Entry Type	Cost Amount (Actual)	Item Ledger Entry No.	Entry No.
01-15-20	Direct Cost	-80.00	2	3

Item Application Entries

Entry No.	Item Ledger Entry No.	Inbound Item Entry No.	Outbound Item Entry No.	Quantity
2	2	1	2	-10

At the end of the accounting period, you run the **Post Inventory Cost to G/L** batch job to reconcile these inventory transactions with the general ledger.

For more information, see [Reconciliation with the General Ledger](#). For information about the general ledger accounts that are mentioned in the example, see [Accounts in the General Ledger](#).

The following tables show the result of reconciling the inventory transactions in this example with the general ledger.

Value Entries

Posting Date	Entry Type	Cost Amount (Actual)	Cost Posted to G/L	Item Ledger Entry No.	Entry No.
01-01-20	Direct Cost	70.00	70.00	1	1
01-01-20	Indirect Cost	10.00	10.00	1	2
01-15-20	Direct Cost	-80.00	-80.00	2	3

General Ledger Entries

Posting Date	G/L Account	Account No. (En-US Demo)		Amount	Entry No.
01-01-20	[Inventory Account]	2130		70.00	1
01-01-20	[Direct Cost Applied Account]	7291		-70.00	2
01-01-20	[Inventory Account]	2130		10.00	3
01-01-07	[Overhead Applied Account]	7292		-10.00	4
01-15-20	[Inventory Account]	2130		-80.00	5
01-15-20	[COGS Account]	7290		80.00	6



Note

The posting date of the general ledger entries is the same as for the related value entries.

The **Cost Posted to G/L** field in the **Value Entry** table is filled.

The relation between value entries and general ledger entries is stored in the **G/L - Item Ledger Relation** table.

Relation Entries in the G/L – Item Ledger Relation table

G/L Entry No.	Value Entry No.	G/L Register No.
1	1	1
2	1	1
3	2	1
4	2	1
5	3	1
6	3	1

ASSEMBLY AND PRODUCTION POSTING

Capacity and resource ledger entries represent the time that is posted as consumed in production or assembly. These process costs are posted as value entries to the general ledger along with the involved material costs in a similar structure as described for item ledger entries in this topic.

For more information, see [Assembly Order Costing](#) and [Production Order Costing](#).

SEE ALSO

[Inventory Costing](#)

[Accounts in the General Ledger](#)

[Cost Components](#)

PRODUCTION ORDER COSTING

Similar to assembly order posting, the consumed components and the used machine time are converted and output as the produced item when the production order is finished. For more information, see [Assembly Order Costing](#). However, the cost flow for production orders is somewhat more complex, especially because Microsoft Dynamics NAV records the inventory value of production work in process.

Transactions that occur during the manufacturing process can be tracked through the following stages:

1. Purchase of materials and other manufacturing inputs.
2. Conversion into work in process.
3. Conversion into finished goods inventory.
4. Sale of finished goods.

Therefore, apart from regular inventory accounts, a manufacturing company must establish three separate inventory accounts to record transactions at various stages of production.

Inventory Account	Description
Raw Materials account	Includes the cost of raw materials that are purchased but not yet transferred to production. The balance in the Raw Materials account indicates the cost of raw materials on hand. When raw materials move into the production department, the cost of the materials is transferred from the Raw Materials account to the WIP account.
Work in Process (WIP) account	Accumulates the costs that are incurred during production in the accounting period. The WIP account is debited for the cost of raw materials that are transferred from the raw materials warehouse, the cost of direct labor performed, and the manufacturing overhead costs that are incurred. The WIP account is credited for the total manufacturing cost of units that are completed in the factory and transferred to the finished goods warehouse.
Finished Goods account	This account includes the total manufacturing cost of units that are completed but not yet sold. At the time of sale, the cost of units sold is transferred from the Finished Goods account to the Cost of Goods Sold account.

The inventory value is calculated by tracking the costs of all increases and decreases, as expressed by the following equation.

$$\text{inventory value} = \text{beginning balance of inventory} + \text{value of all increases} - \text{value of all decreases}$$

Depending on the type of inventory, increases and decreases are represented by different transactions.

	Increases	Decreases
Raw material inventory	<ul style="list-style-type: none">• Net purchases of material• Output of subassemblies• Negative consumption	Material consumption
WIP inventory	<ul style="list-style-type: none">• Material consumption• Capacity consumption• Manufacturing overhead	Output of end items (cost of goods manufactured)
Finished goods inventory	Output of end items (cost of goods manufactured)	<ul style="list-style-type: none">• Sales (cost of goods sold)• Negative output

	Increases	Decreases
Raw material inventory	<ul style="list-style-type: none"> • Net purchases of material • Output of subassemblies • Negative consumption 	Material consumption

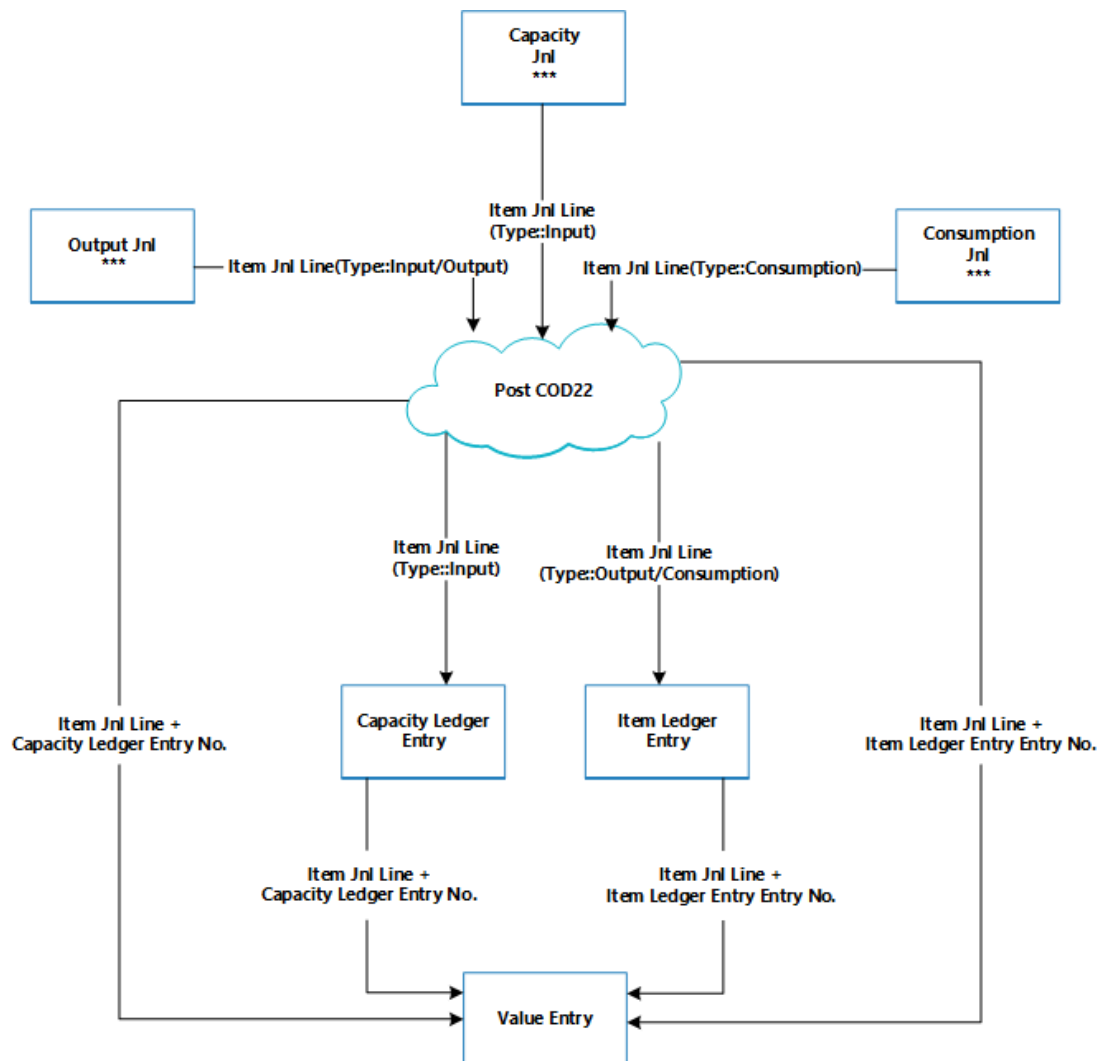
The values of increases and decreases are recorded in the different types of manufactured inventory in the same way as for purchased inventory. Every time a transaction of inventory increase or decrease takes place, an item ledger entry and a corresponding general ledger entry are created for the amount. For more information, see [Inventory Posting](#).

Although values of transactions that are related to purchased goods are posted only as item ledger entries with related value entries, transactions that are related to produced items are posted as capacity ledger entries with related value entries, in addition to the item ledger entries.

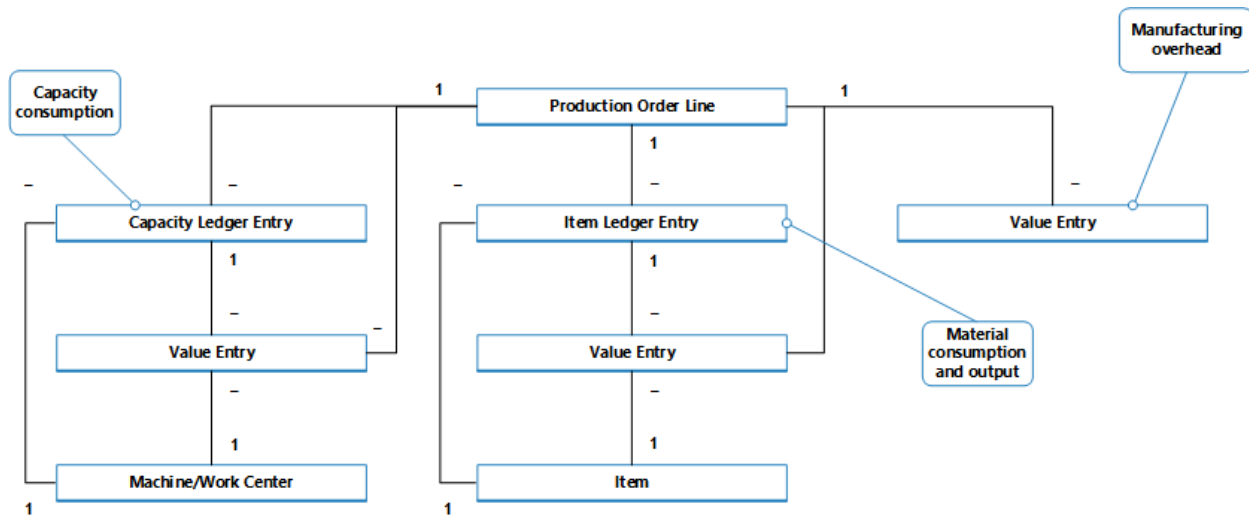
POSTING STRUCTURE

Posting production orders to WIP inventory involves output, consumption, and capacity.

The following diagram shows the involved posting routines in codeunit 22.



The following diagram shows the associations between the resulting entries and the cost objects.



The capacity ledger entry describes the capacity consumption in terms of time units, whereas the related value entry describes the value of the specific capacity consumption.

The item ledger entry describes the material consumption or output in terms of quantities, whereas the related value entry describes the value of this specific material consumption or output.

A value entry that describes WIP inventory value can be associated with one of the following combinations of cost objects:

- A production order line, a work or machine center, and a capacity ledger entry.
- A production order line, an item, and an item ledger entry.
- Only a production order line

For more information about how costs from production and assembly are posted to the general ledger, see [Inventory Posting](#).

CAPACITY POSTING

Posting output from the last production order routing line results in a capacity ledger entry for the end item, in addition to its inventory increase.

The capacity ledger entry is a record of the time that was spent to produce the item. The related value entry describes the increase of the WIP inventory value, which is the value of the conversion cost. For more information, see "From the Capacity Ledger" in [Accounts in the General Ledger](#).

PRODUCTION ORDER COSTING

To control inventory and production costs, a manufacturing company must measure the cost of production orders, because the predetermined standard cost of each produced item is capitalized in the balance sheet. For information about why produced items use the Standard costing method, see [Costing Methods](#).



Note

In environments that do not use the Standard costing method, the actual rather than the standard cost of produced items is capitalized on the balance sheet.

The actual cost of a production order consists of the following cost components:

- Actual material cost
- Actual capacity cost or subcontractor cost
- Manufacturing overhead

These actual costs are posted to the production order and compared to the standard cost to calculate variances. Variances are calculated for each of the item cost components: raw materials, capacity, subcontractor overhead, and manufacturing overhead. The variances can be analyzed to determine problems, such as excessive waste in processing.

In standard-cost environments, the costing of a production order is based on the following mechanism:

1. When the last routing operation is posted, the production order cost is posted to the item ledger and set to the expected cost.

This cost equals the output quantity that is posted in the output journal multiplied by the standard cost that is copied from the item card. The cost is treated as expected cost until the production order is invoiced. For more information, see [Expected Cost Posting](#).



Note

This differs from assembly order posting, which always posts actual costs. For more information, see [Assembly Order Costing](#).

2. When the production order is set to **Finished**, the order is invoiced by running the **Adjust Cost-Item Entries** batch job. As a result, the total cost of the order is calculated based on the standard cost of the consumed materials and capacity. The variances between the calculated standard costs and the actual production costs are calculated and posted.

SEE ALSO

[Inventory Costing](#)

[Assembly Order Costing](#)

ASSEMBLY ORDER COSTING

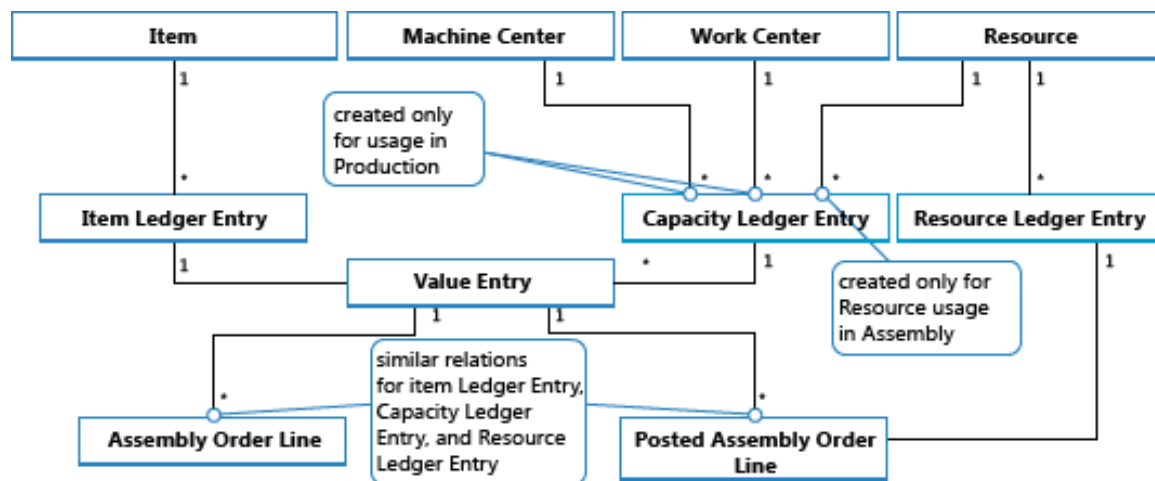
Assembly order posting is based on the same principles as when posting the similar activities of sales orders and production consumption/output. However, the principles are combined in that assembly orders have their own posting UI, like that for sales orders, while the actual entry posting happens in the background as direct item and resource journal postings, like that for production consumption, output, and capacity.

Similarly to production order posting, the consumed components and the used resources are converted and output as the assembly item when the assembly order is posted. For more information, see [Production Order Costing](#). However, the cost flow for assembly orders is less complex, especially because assembly cost posting only occurs once and therefore does not generate work-in-process inventory.

The following journal postings occur during assembly order posting:

- The item journal posts positive item ledger entries, representing output of the assembly item, from the assembly order header
- The item journal posts negative item ledger entries, representing consumption of assembly components, from the assembly order lines.
- The resource journal posts usage of assembly resources (time units), from the assembly order lines.
- The capacity journal posts value entries relating to the resource usage, from the assembly order lines.

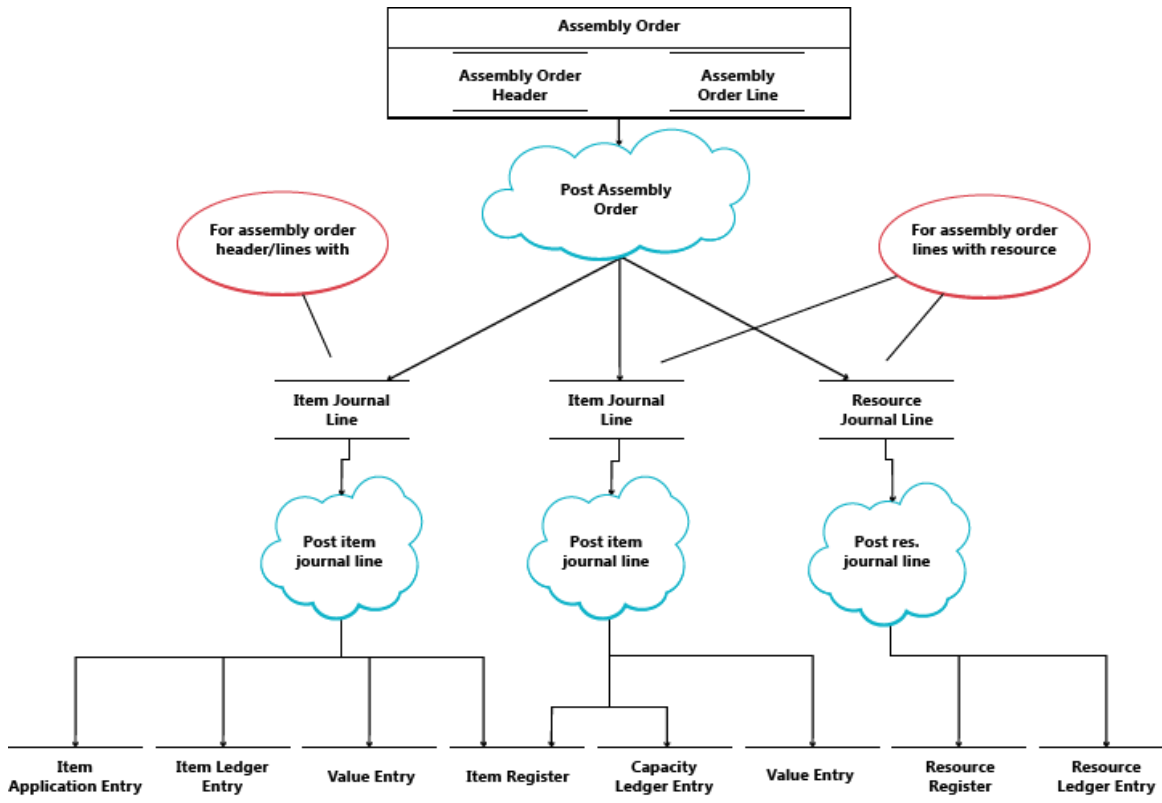
The following diagram shows the structure of item and resource ledger entries that result from assembly order posting.



Note

Machine and work centers are included to illustrate that capacity ledger entries are created from both production and assembly.

The following diagram shows how assembly data flows into ledger entries during posting:



POSTING SEQUENCE

The posting of an assembly order occurs in the following order:

1. The assembly order lines are posted.
2. The assembly order header is posted.

The following table outlines the sequence of actions.

Action	Description
Initialize Posting	<ol style="list-style-type: none"> 1. Make preliminary checks. 2. Add posting number and modify the assembly order header. 3. Release the assembly order.
Post	<ol style="list-style-type: none"> 1. Create the posted assembly order header. 2. Copy comment lines. 3. Post assembly order lines (consumption): <ol style="list-style-type: none"> a. Create a status window to calculate assembly consumption. b. Get the remaining quantity on which the item journal line will be based. c. Reset the consumed and remaining quantities. d. For assembly order lines of type Item: <ol style="list-style-type: none"> i. Populate fields on the item journal line.

Action	Description
	<ul style="list-style-type: none"> ii. Transfer reservations to the item journal line. iii. Post the item journal line to create the item ledger entries. iv. Create warehouse journal lines and post them. e. For assembly order lines of type Resource: <ul style="list-style-type: none"> i. Populate fields on the item journal line. ii. Post the item journal line. This creates capacity ledger entries. iii. Create and post resource journal line. f. Transfer field values from the assembly order line into a newly created posted assembly order line.
	<ul style="list-style-type: none"> 4. Post the assembly order header (output): <ul style="list-style-type: none"> a. Populate fields on the item journal line. b. Transfer reservations to the item journal line. c. Post the item journal line to create the item ledger entries. d. Create warehouse journal lines and post them. e. Reset the assembly quantities and remaining quantities.

Important Unlike for production output, which is posted at expected cost, assembly output is posted at actual cost.

COST ADJUSTMENT

Once an assembly order is posted, meaning that components (material) and resources are assembled into a new item, then it should be possible to determine the actual cost of that assembly item, and the actual inventory cost of the components involved. This is achieved by forwarding costs from the posted entries of the source (the components and resources) to the posted entries of the destination (the assembly item). The forwarding of costs is done by calculating and generating new entries, called adjustment entries that become associated with the destination entries.

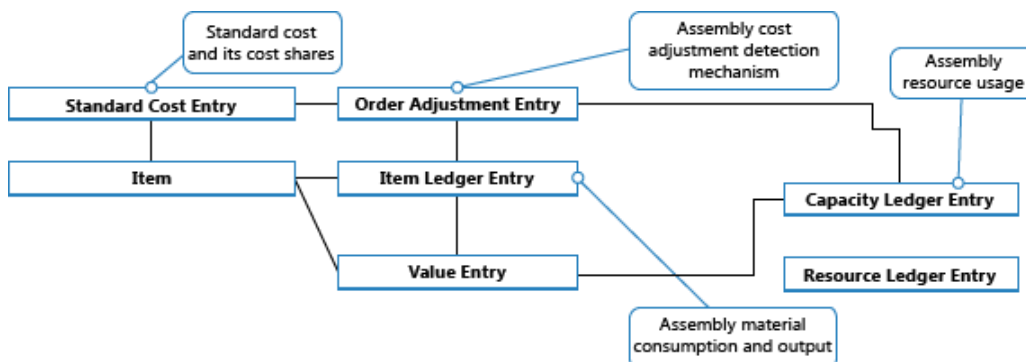
The assembly costs to be forwarded are detected with the Order Level detection mechanism. For information about other adjustment detection mechanisms, see [Cost Adjustment](#).

DETECTING THE ADJUSTMENT

The order Level detection function is used in conversion scenarios, production and assembly. The function works as follows:

- Cost adjustment is detected by marking the order whenever a material/resource is posted as consumed/used.
- Cost is forwarding by applying the costs from material/resource to the output entries associated with the same order.

The following graphic shows the adjustment entry structure and how assembly costs are adjusted.



PERFORMING THE ADJUSTMENT

The spreading of detected adjustments from material and resource costs onto the assembly output entries is performed by the **Adjust Cost – Item Entries** batch job. It contains the Make Multilevel Adjustment function, which consists of the following two elements:

- Make Assembly Order Adjustment – which forwards cost from material and resource usage to the assembly output entry. Lines 5 and 6 in the algorithm below are responsible for that.
- Make Single Level Adjustments – which forwards costs for individual items using their costing method. Lines 9 and 10 in the algorithm below are responsible for that.

Make MultiLevel Adjustment	
1.	While not Done do
2.	case TRUE of
3.	LevelExceeded:
4.	Done := TRUE;
5.	Assembly To Adjust Exists(TempOrderAdjmtEntry):
6.	Make Assembly Order Adjustments(TempOrderAdjmtEntry);
7.	WIP To Adjust Exists(TempProdOrderLine):
8.	Make WIP Adjustments(TempProdOrderLine);
9.	Inventory To Adjust Exist(TempItem):
10.	Make Single Level Adjustments(TempItem);
11.	ELSE
12.	Done := TRUE;
13.	end case



Note

The Make WIP Adjustments element, in lines 7 and 8, is responsible for forwarding production material and capacity usage to the output of unfinished production orders. This is not used when adjusting assembly order costs as the concept of WIP does not apply to assembly.

For information about how costs from assembly and production are posted to the general ledger, see [Inventory Posting](#).

ASSEMBLY COSTS ARE ALWAYS ACTUAL

The concept of work in process (WIP) does not apply in assembly order posting. Assembly costs are only posted as actual cost, never as expected cost. For more information, see [Expected Cost Posting](#).

This is enabled by the following data structure.

- In the **Type** field on item journal lines, in the **Capacity Ledger Entry** and **Value Entry** tables, *Resource* is used to identify assembly resource entries.
- In the **Item Ledger Entry Type** field on item journal lines, in the **Capacity Ledger Entry** and **Value Entry** tables, *Assembly Output* and *Assembly Consumption* are used to identify the output assembly item entries and the consumed assembly component entries respectively.

In addition, posting group fields on the assembly order header and assembly order lines are populated by default as follows.

Entity	Type	Posting Group	Gen. Prod. Posting Group
Assembly Order Header	Item	Inventory Posting Group	Gen. Prod. Posting Group
Assembly Order Line	Item	Inventory Posting Group	Gen. Prod. Posting Group
Assembly Order Line	Resource		Gen. Prod. Posting Group

Accordingly, only actual costs are posted to the general ledger, and no interim accounts are populated from assembly order posting. For more information, see [Accounts in the General Ledger](#)

ASSEMBLE TO ORDER

The item ledger entry that results from posting an assemble-to-order sale is fixed applied to the related item ledger entry for the assembly output. Accordingly, the cost of an assemble-to-order sale is derived from the assembly order that it was linked to.

Item ledger entries of type Sale that result from posting assemble-to-order quantities are marked with **Yes** in the **Assemble to Order** field.

Posting sales order lines where a part is inventory quantity and another part is assemble-to-order quantity results in separate item ledger entries, one for the inventory quantity and one for the assemble-to-order quantity.

SEE ALSO

[Inventory Costing](#)

[Production Order Costing](#)

[Costing Methods](#)

INVENTORY VALUATION

Inventory valuation is the determination of the cost that is assigned to an inventory item, as expressed by the following equation.

$$\text{Ending inventory} = \text{beginning inventory} + \text{net purchases} - \text{cost of goods sold}$$

The calculation of inventory valuation uses the **Cost Amount (Actual)** field of the value entries for the item. The entries are classified according to the entry type that corresponds to the cost components, direct cost, indirect cost, variance, revaluation, and rounding. For more information, see [Cost Components](#).

Entries are applied against each other, either by the fixed application, or according to the general cost-flow assumption defined by the costing method. One entry of inventory decrease can be applied to more than one increase entry with different posting dates and possibly different acquisition costs. For more information, see [Item Application](#). Therefore, calculation of the inventory value for a given date is based on summing up positive and negative value entries.

INVENTORY VALUATION REPORT

To calculate the inventory value in the **Inventory Valuation** report, the report begins by calculating the value of the item's inventory at a given starting date. It then adds the value of inventory increases and subtracts the value of inventory decreases up to a given ending date. The end result is the inventory value on the ending date. The report calculates these values by summing the values in the **Cost Amount (Actual)** field in the value entries, using the posting dates as filters.

The printed report always shows actual amounts, that is, the cost of entries that have been posted as invoiced. The report will also print the expected cost of entries that have posted as received or shipped, if you select the Include Expected Cost field on the Options FastTab.



Important

Values in the **Inventory Valuation** report is reconciled with the Inventory account in the general ledger, meaning the value entries in question have been posted to the general ledger.



Important

Amounts in the **Value** columns of the report are based on the posting date of transactions for an item.

INVENTORY VALUATION - WIP REPORT

A manufacturing company needs to determine the value of three types of inventory:

- Raw Materials inventory
- WIP inventory
- Finished Goods inventory

The value of WIP inventory is determined by the following equation.

$$\text{Ending WIP inventory} = \text{Beginning WIP inventory} + \text{manufacturing costs} - \text{cost of goods manufactured}$$

As for purchased inventory, the value entries provide the basis of the inventory valuation. The calculation is made using the values in the **Cost Amount (Actual)** field of the item and capacity value entries associated with a production order.

The purpose of WIP inventory valuation is to determine the value of the items whose manufacturing has not yet been completed on a given date. Therefore the WIP inventory value is based on the value entries related to the consumption and capacity ledger entries. Consumption ledger entries must be completely invoiced at the date of the valuation. Therefore, the **Inventory Valuation – WIP** report shows the costs representing the WIP inventory value in two categories: consumption and capacity.

SEE ALSO

[Reconciliation with the General Ledger](#)

[Revaluation](#)

[Production Order Costing](#)

RECONCILIATION WITH THE GENERAL LEDGER

When you post inventory transactions, such as sales shipments, production output, or negative adjustments, the quantity and value changes to the inventory are recorded in the item ledger entries and the value entries, respectively. The next step in the process is to post the inventory values to the inventory accounts in the general ledger.

There are two ways to reconcile the inventory ledger with the general ledger:

- Manually, by running the **Post Inventory Cost to G/L** batch job.
- Automatically, every time that you post an inventory transaction.

POST INVENTORY COST TO G/L BATCH JOB

When you run the **Post Inventory Cost to G/L** batch job, the general ledger entries are created based on value entries. You have the option to summarize general ledger entries for each value entry, or create general ledger entries for each combination of posting date, location code, inventory posting group, general business posting group, and general product posting group.

The posting dates of the general ledger entries are set to the posting date of the corresponding value entry, except when the value entry falls in a closed accounting period. In this case, the value entry is skipped, and you must change either the general ledger setup or the user setup to enable posting in the date range.

When you run the **Post Inventory Cost to G/L** batch job, you might receive errors because of missing setup or incompatible dimension setup. If the batch job encounters errors in the dimension setup, it overrides these errors and uses the dimensions of the value entry. For other errors, the batch job does not post the value entries and lists them at the end of the report in a section titled, **Skipped Entries**. To post these entries, you must first fix the errors. To see a list of errors before you run the batch job, you can run the **Post Invt. Cost to G/L - Test** report. This report lists all of the errors that are encountered during a test posting. You can fix the errors, and then run the inventory cost posting batch job without skipping any entries.

AUTOMATIC COST POSTING

To set up cost posting to the general ledger to run automatically when you post an inventory transaction, select the **Automatic Cost Posting** check box in the **Inventory Setup** window. The posting date of the general ledger entry is the same as the posting date of the item ledger entry.

ACCOUNT TYPES

During reconciliation, inventory values are posted to the inventory account in the balance sheet. The same amount, but with the reverse sign, is posted to the relevant balancing account. Usually the balancing account is an income statement account. However, when you post direct cost related to consumption or output, the balancing account is a balance sheet account. The type of the item ledger entry and value entry determines which general ledger account to post to.

The entry type indicates which general ledger account to post to. This is determined either by the sign of the quantity on the item ledger entry or the valued quantity on the value entry, since the quantities always have the same sign. For example, a sales entry with a positive quantity describes an inventory decrease caused by a sale, and a sales entry with a negative quantity describes an inventory increase caused by a sales return.

EXAMPLE

The following example shows a bike chain that is manufactured from purchased links. This example shows how the various general ledger account types are used in a typical scenario.

The **Expected Cost Posting to G/L** check box in the **Inventory Setup** window is selected, and the following setup is defined.

The following table shows how the link is set up on the item card.

Setup field	Value
Costing Method	Standard
Standard Cost	LCY 1.00
Overhead Rate	LCY 0.02

The following table shows how the chain is set up on the item card.

Setup field	Value
Costing Method	Standard
Standard Cost	LCY 150.00
Overhead Rate	LCY 25.00

The following table shows how the work center is set up on the work center card.

Setup field	Value
Direct Unit Cost	LCY 2.00
Indirect Cost Percentage	10

Scenario

1. The user purchases 150 links and posts the purchase order as received. (Purchase)
2. The user posts the purchase order as invoiced. This creates an overhead amount of LCY 3.00 to be allocated and a variance amount of LCY 18.00. (Purchase)
 - a. The interim accounts are cleared. (Purchase)
 - b. The direct cost is posted. (Purchase)
 - c. The indirect cost is calculated and posted. (Purchase)
 - d. The purchase variance is calculated and posted (only for standard-cost items). (Purchase)

	Inventory		Direct Cost	
7.	150			150
8a.		150	150	

	Inventory		Direct Cost		Indirect Cost		Purchase Variance	
8a.	165			165				
8a.	3					3		
8a.		18					18	

3. The user sells one chain and posts the sales order as shipped. (Sale)

4. The user posts the sales order as invoiced. (Sale)
 - a. The interim accounts are cleared. (Sale)
 - b. Cost of goods sold (COGS) is posted. (Sale)

	Inventory Interim		COGS Interim		Inventory		COGS	
3.		150	150					
4a.	150			150				12
4b.					150	150		

5. The user posts consumption of 150 links, which is the number of links used to produce one chain. (Consumption, Material)

	Inventory		Direct Cost	
5.		150	150	

6. The work center used 60 minutes to produce the chain. The user posts the conversion cost. (Consumption, Capacity)

- a. The direct costs are posted. (Consumption, Capacity)
- b. The indirect costs are calculated and posted. (Consumption, Capacity)

	Direct Cost		WIP		Indirect Cost	
6a.		120	120			
6b.			12			12

7. The user posts the expected cost of one chain. (Output)
8. The user finishes the production order and runs the **Adjust Cost - Item Entries** batch job. (Output)
 - a. The interim accounts are cleared. (Output)
 - b. The direct cost is transferred from the WIP account to the inventory account. (Output)
 - c. The indirect cost (overhead) is transferred from the indirect cost account to the inventory account. (Output)
 - d. This results in a variance amount of LCY 157.00. Variances are only calculated for standard-cost items. (Output)

	Inventory		Direct Cost	
7.		150	150	
8a.	150			150

	WIP		Inventory		Indirect Cost		Variance	
8a.		282	282					
8a.			25	157		25		
8a.							157	



Note

For the sake of simplicity, only one variance account is shown. In reality, five different accounts exist:

- Material Variance
- Capacity Variance
- Capacity Overhead Variance
- Subcontracting Variance
- Manufacturing Overhead Variance

9. The user revalues the chain from LCY 150.00 to LCY 140.00.
(Adjustment/Revaluation/Rounding/Transfer)

	Inventory		Inventory/Adjustment	
9.		10	10	

For more information about the relationship between the account types and the different types of value entries, see [Accounts in the General Ledger](#).

SEE ALSO

[Inventory Costing](#)

[Expected Cost Posting](#)

[Cost Adjustment](#)

ACCOUNTS IN THE GENERAL LEDGER

To reconcile inventory and capacity ledger entries with the general ledger, the related value entries are posted to different accounts in the general ledger. For more information, see [Reconciliation with the General Ledger](#).

FROM THE INVENTORY LEDGER

The following table shows the relationship between different types of inventory value entries and the accounts and balancing accounts in the general ledger.

Value entry				General ledger accounts	
Item ledger entry type	Value entry type	Variance type	Expected cost	Account	Balancing account
Purchase	Direct Cost		Yes	Inventory (Interim)	Invt. Accrual Acc. (Interim)
	Direct Cost		No	Inventory	Direct Cost Applied
	Indirect Cost		No	Inventory	Overhead Applied
	Variance	Purchase	No	Inventory	Purchase Variance
	Revaluation		No	Inventory	Inventory Adjmt.
	Rounding		No	Inventory	Inventory Adjmt.
Sale	Direct Cost		Yes	Inventory (Interim)	COGS (Interim)
	Direct Cost		No	Inventory	COGS
	Revaluation		No	Inventory	Inventory Adjmt.
	Rounding		No	Inventory	Inventory Adjmt.
Positive Adjmt., Negative Adjmt., Transfer	Direct Cost		No	Inventory	Inventory Adjmt.
	Revaluation		No	Inventory	Inventory Adjmt.
	Rounding		No	Inventory	Inventory Adjmt.
(Production) Consumption	Direct Cost		No	Inventory	WIP
	Revaluation		No	Inventory	Inventory Adjmt.
	Rounding		No	Inventory	Inventory Adjmt.
Assembly Consumption	Direct Cost		No	Inventory	Inventory Adjmt.
	Direct Cost		No	Direct Cost Applied	Inventory Adjmt.
	Indirect Cost		No	Overhead Applied	Inventory Adjmt.
(Production) Output	Direct Cost		Yes	Inventory (Interim)	WIP
	Direct Cost		No	Inventory	WIP

Value entry				General ledger accounts	
	Indirect Cost		No	Inventory	Overhead Applied
	Variance	Material	No	Inventory	Material Variance
	Variance	Capacity	No	Inventory	Capacity Variance
	Variance	Subcontracted	No	Inventory	Subcontracted Variance
	Variance	Capacity Overhead	No	Inventory	Cap. Overhead Variance
	Variance	Manufacturing Overhead	No	Inventory	Mfg. Overhead Variance
	Revaluation		No	Inventory	Inventory Adjmt.
	Rounding		No	Inventory	Inventory Adjmt.
Assembly Output	Direct Cost		No	Inventory	Inventory Adjmt.
	Revaluation		No	Inventory	Inventory Adjmt.
	Indirect Cost		No	Inventory	Overhead Applied
	Variance	Material	No	Inventory	Material Variance
	Variance	Capacity	No	Inventory	Capacity Variance
	Variance	Capacity Overhead	No	Inventory	Cap. Overhead Variance
	Variance	Manufacturing Overhead	No	Inventory	Mfg. Overhead Variance
	Rounding		No	Inventory	Inventory Adjmt.

FROM THE CAPACITY LEDGER

The following table shows the relationship between different types of capacity value entries and the accounts and balancing accounts in the general ledger. Capacity ledger entries represent labor time consumed in assembly or production work.

Value entry			General ledger accounts	
Work type	Capacity ledger entry type	Value entry type	Account	Balancing account
Assembly	Resource	Direct Cost	Direct Cost Applied	Inventory Adjmt.
Assembly	Resource	Indirect Cost	Overhead Applied	Inventory Adjmt.
Production	Machine Center/Work Center	Direct Cost	WIP Account	Direct Cost Applied
Production	Machine Center/Work Center	Indirect Cost	WIP Account	Overhead Applied

ASSEMBLY COSTS ARE ALWAYS ACTUAL

As shown in the table above, assembly postings are not represented in interim accounts. This is because the concept of work in process (WIP) does not apply in assembly output posting, unlike in production output posting. Assembly costs are only posted as actual cost, never as expected cost.

For more information, see [Assembly Order Costing](#).

CALCULATING THE AMOUNT TO POST TO THE GENERAL LEDGER

The following fields in the **Value Entry** table are used to calculate the expected cost amount that is posted to the general ledger:

- Cost Amount (Actual)
- Cost Posted to G/L
- Cost Amount (Expected)
- Expected Cost Posted to G/L

The following table shows how the amounts to post to the general ledger are calculated for the two different cost types.

Cost type	Calculation
Actual Cost	<i>Cost Amount (Actual) – Cost Posted to G/L</i>
Expected Cost	<i>Cost Amount (Expected) – Expected Cost Posted to G/L</i>

SEE ALSO

[Inventory Costing](#)

[Inventory Posting](#)

[Expected Cost Posting](#)

REVALUATION

You can revalue the inventory based on the valuation base that most accurately reflects the inventory value. You can also backdate a revaluation, so that the cost of goods sold (COGS) is correctly updated for items that have already been sold. Items using the Standard costing method that have not been completely invoiced can also be revalued.

In Microsoft Dynamics NAV, the following flexibility is supported regarding revaluation:

- The revaluable quantity can be calculated for any date, also back in time.
- For items using Standard costing method, expected cost entries are included in revaluation.
- Inventory decreases affected by revaluation are detected.

CALCULATING THE REVALUABLE QUANTITY

The revaluable quantity is the remaining quantity on inventory that is available for revaluation on a given date. It is calculated as the sum total of the quantities of completely invoiced item ledger entries that have a posting date equal to or earlier than the revaluation posting date.



Note

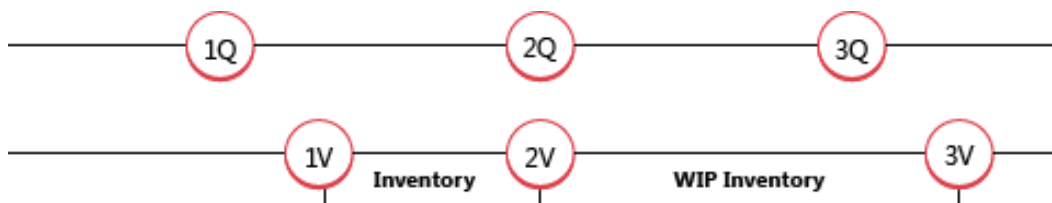
Items using the Standard costing method are treated differently when calculating the revaluable quantity per item, location, and variant. The quantities and values of item ledger entries that are not completely invoiced are included in the revaluable quantity.

After a revaluation has been posted, you can post an inventory increase or decrease with a posting date that comes before the revaluation posting date. However, this quantity will not be affected by the revaluation. To balance the inventory, only the original revaluable quantity is considered.

Because revaluation can be made on any date, you must have conventions for when an item is considered part of inventory from a financial point of view. For example, when the item is on inventory and when the item is work in process (WIP).

EXAMPLE

The following example illustrates when a WIP item transitions to become part of inventory. The example is based on the production of a chain with 150 links.



1Q: The user posts the purchased links as received. The following table shows the resulting item ledger entry.

Posting Date	Item	Entry Type	Quantity	Entry No.
01-01-20	LINK	Purchase	150	1



Note

Now an item using the Standard costing method is available for revaluation.

1V: The user posts the purchased links as invoiced and the links become part of inventory, from a financial point of view. The following table shows the resulting value entries.

Posting Date	Entry Type	Valuation Date	Cost Amount (Actual)	Item Ledger Entry No.	Entry No.
01-15-20	Direct Cost	01-01-20	150.00	1	1

2Q + 2V: The user posts the purchased links as consumed for the production of the iron chain. From a financial point of view, the links become part of WIP inventory. The following table shows the resulting item ledger entry.

Posting Date	Item	Entry Type	Quantity	Entry No.
02-01-20	LINK	Consumption	-150	1

The following table shows the resulting value entry.

Posting Date	Entry Type	Valuation Date	Cost Amount (Actual)	Item Ledger Entry No.	Entry No.
02-01-20	Direct Cost	02-01-20	-150.00	2	2

The valuation date is set to the date of the consumption posting (02-01-20), as a regular inventory decrease.

3Q: The user posts the chain as output and finishes the production order. The following table shows the resulting item ledger entry.

Posting Date	Item	Entry Type	Quantity	Entry No.
02-15-20	CHAIN	Output	1	3

3V: The user runs the **Adjust Cost - Item Entries** batch job, which posts the chain as invoiced to indicate that all material consumption has been completely invoiced. From a financial point of view, the links are no longer part of WIP inventory when the output is completely invoiced and adjusted. The following table shows the resulting value entries.

Posting Date	Entry Type	Valuation Date	Cost Amount (Actual)	Item Ledger Entry No.	Entry No.
01-15-20	Direct Cost	01-01-20	150.00	2	2
02-01-20	Direct Cost	02-01-20	-150.00	2	2
02-15-20	Direct Cost	02-15-20	150.00	3	3

EXPECTED COST IN REVALUATION

The revaluable quantity is calculated as the sum of quantity for completely invoiced item ledger entries with a posting date equal to or earlier than the revaluation date. This means that when some items are received/shipped but not invoiced, their inventory value cannot be calculated. Items using the Standard costing method are not limited in this respect.



Note

Another type of expected cost that can be revalued is WIP inventory, within certain rules. For more information, see the "WIP Inventory Revaluation" section in this topic.

When calculating the revaluable quantity for items using the Standard costing method, item ledger entries that have not been completely invoiced are included in the calculation. These entries are then revalued when you post the revaluation. When you invoice the revalued entry, the following value entries are created:

- The usual invoiced value entry with an entry type of **Direct Cost**. The cost amount on this entry is the direct cost from the source line.
- A value entry with an entry type of **Variance**. This entry records the difference between the invoiced cost and the revalued standard cost.
- A value entry with an entry type of **Revaluation**. This entry records the reversal of the revaluation of the expected cost.

EXAMPLE

The following example, which is based on the production of the chain in the previous example, illustrates how the three types of entries are created. It is based on the following scenario:

1. The user posts the purchased links as received with a unit cost of LCY 2.00.
2. The user then posts a revaluation of the links with a new unit cost of LCY 3.00, updating the standard cost to LCY 3.00.
3. The user posts the original purchase of the links as invoiced, which creates the following:
 - a. An invoiced value entry with an entry type of **Direct Cost**.
 - b. A value entry with an entry type of **Revaluation** to record the reversal of the revaluation of the expected cost.
 - c. A value entry with an entry type of **Variance**, recording the difference between the invoiced cost and the revalued standard cost.

The following table shows the resulting value entries.

Step	Posting Date	Entry Type	Valuation Date	Cost Amount (Expected)	Cost Amount (Actual)	Item Ledger Entry No.	Entry No.
1.	01-15-20	Direct Cost	01-15-20	300.00	0.00	1	1
2.	01-20-20	Revaluation	01-20-20	150.00	0.00	1	2
3.a.	01-15-20	Direct Cost	01-15-20	-300.00	0.00	1	3
3.b.	01-15-20	Revaluation	01-20-20	-150.00	0.00	1	4
3.c.	01-15-20	Variance	01-15-20	0.00	450.00	1	5

DETERMINING IF AN INVENTORY DECREASE IS AFFECTED BY REVALUATION

The date of the posting or the revaluation is used to determine if an inventory decrease is affected by a revaluation.

The following table shows the criteria that is used for an item that does not use the Average costing method.

Scenario	Entry No.	Timing	Affected by revaluation
A	Earlier than revaluation entry number	Earlier than revaluation posting date	No
B	Earlier than revaluation entry no.	Equal to revaluation posting date	No
C	Earlier than revaluation entry no.	Later than revaluation posting date	Yes
D	Later than revaluation entry no.	Earlier than revaluation posting date	Yes
E	Later than revaluation entry no.	Equal to revaluation posting date	Yes
F	Later than revaluation entry no.	Later than revaluation posting date	Yes

EXAMPLE

The following example, which illustrates revaluation of an item that uses the FIFO costing method, is based on the following scenario:

1. On 01-01-20, the user posts a purchase of 6 units.
2. On 02-01-20, the user posts a sale of 1 unit.
3. On 03-01-20, the user posts a sale of 1 unit.
4. On 04-01-20, the user posts a sale of 1 unit.
5. On 03-01-20, the user calculates the inventory value for the item, and posts a revaluation of the item's unit cost from LCY 10.00 to LCY 8.00.
6. On 02-01-20, the user posts a sale of 1 unit.
7. On 03-01-20, the user posts a sale of 1 unit.
8. On 04-01-20, the user posts a sale of 1 unit.
9. The user runs the **Adjust Cost - Item Entries** batch job.

The following table shows the resulting value entries.

Scenario	Posting Date	Entry Type	Valuation Date	Valued Quantity	Cost Amount (Actual)	Item Ledger Entry No.	Entry No.
	01-01-20	Purchase	01-01-20	6	60.00	1	1
	03-01-20	Revaluation	03-01-20	4	-8.00	1	5
A	02-01-20	Sale	02-01-20	-1	-10.00	2	2
B	03-01-20	Sale	03-01-20	-1	-10.00	3	3
C	04-01-20	Sale	04-01-20	-1	-10.00	4	4
	04-01-20	Sale	04-01-20	-1	2.00	4	9
D	02-01-20	Sale	03-01-20	-1	-10.00	5	6
	02-01-20	Sale	03-01-20	-1	2.00	5	10
E	03-01-20	Sale	03-01-20	-1	-10.00	6	7
	03-01-20	Sale	03-01-20	-1	2.00	6	11
F	04-01-20	Sale	04-01-20	-1	-10.00	7	8
	04-01-20	Sale	04-01-20	-1	2.00	7	12

WIP INVENTORY REVALUATION

Revaluation of WIP inventory implies revaluing components that are registered as part of WIP inventory at the time of the revaluation.

With this in mind, it is important to establish conventions as to when an item is considered part of the WIP inventory from a financial point of view. In Microsoft Dynamics NAV, the following conventions exist:

- A purchased component becomes part of the raw material inventory from the time of posting a purchase as invoiced.
- A purchased/subassembled component becomes part of the WIP inventory from the time of posting its consumption in connection with a production order.
- A purchased/subassembled component remains part of the WIP inventory until the time when a production order (manufactured item) is invoiced.

The way the valuation date for the value entry of consumption is set, follows the same rules as for non-WIP inventory. For more information, see the “Determining if an Inventory Decrease Is Affected by Revaluation” section in this topic.

WIP inventory can be revalued as long as the revaluation date is not later than the posting date of the corresponding item ledger entries of type Consumption and as long as the corresponding production order has not been invoiced yet.



Caution

The **Inventory Valuation - WIP** report shows the value of posted production order entries and may therefore be a little confusing for WIP items that have been revalued.

SEE ALSO

[Inventory Costing](#)

[Costing Methods](#)

[Inventory Valuation](#)

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