CHAPTER 4: INTERNAL WAREHOUSE PROCESSES

Objectives

The objectives are:

- Move items between different zones and bins.
- Replenish bins.
- Block item movements.
- Perform internal picks and put-aways.
- Perform automatic flushing.
- Adjust items and change storage information by using warehouse journals.
- Post quantity adjustments for bins.
- Set up Warehouse physical inventory counting periods.
- Count physical inventory.
- Perform cycle counting.
- Compress warehouse entries.
- Delete warehouse documents.

Introduction

Warehouse Management Systems provides the opportunity to move items within the warehouse to optimize the use of space. Movements, internal picks and put-aways are used for that purpose.

Similarly to the Inventory module, where inventory and item ledger entries are created, changed, and counted, the Warehouse Management Systems also work with a set of journals: warehouse item journal, warehouse reclassification journal, and warehouse physical inventory journal. All these aspects are covered in this chapter.

Item Movements

Item movements are performed at a bin level. Warehouse movement can be carried out manually, if, for instance, the company wants to reallocate items elsewhere within the warehouse. It can also be performed automatically by the program as a result of bin replenishment.

The item movement from one bin to another within a warehouse location can be controlled by using the movement worksheet. On the movement worksheet lines, specify the items to move, along with the information on the current zone and bin used and the new zone and bin to which the items should be moved.

Scenario: Move Items

The warehouse manager decides to move 10 units of Loudspeaker LS-75 from the bulk zone to the pick zone for quicker handling of these items to fulfill the received shipping orders.

1. On the Activities part of the Role Center Home page, click **Edit Movement Worksheet**. Fill in the line to move 10 units of item LS-75 from the BULK zone and bin W-05-0001 to the PICK zone and bin W-04-0014.

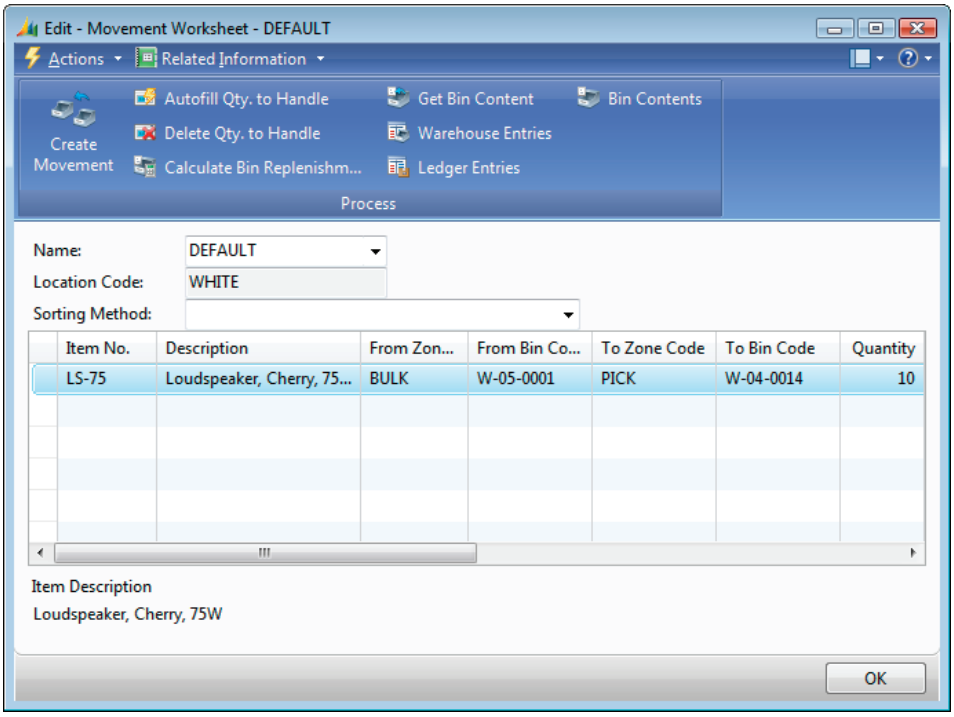

FIGURE 4.1 PLANNING THE ITEM MOVEMENT IN THE MOVEMENT WORKSHEET WINDOW

A movement must now be created from the worksheet as a request for warehouse employees to get items from their present location to their new location.

2. Fill in the **Qty. to Handle** field with the quantity for the items to be moved.
3. Click **Actions**, **Functions,** and then click **Create Movement**. The request form for the **Whse.-Source - Create Document** batch job appears which is used to create warehouse instructions for the lines in the worksheet. This is also used to specify the sorting method within the activity lines, set a breakbulk filter, choose whether to set the quantity to handle value manually, and whether to print the movement.

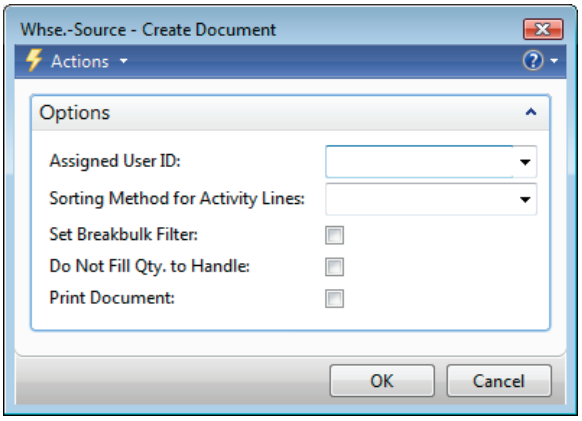

FIGURE 4.2 THE WHSE.-SOURCE - CREATE DOCUMENT BATCH JOB

***NOTE**: A new movement can be created by clicking **Create Movement** on the Action Pane.*

4. Click **OK** to create the movement.
5. On the Activities part of the Home page, click **Movements - All**. Open the movement just created.

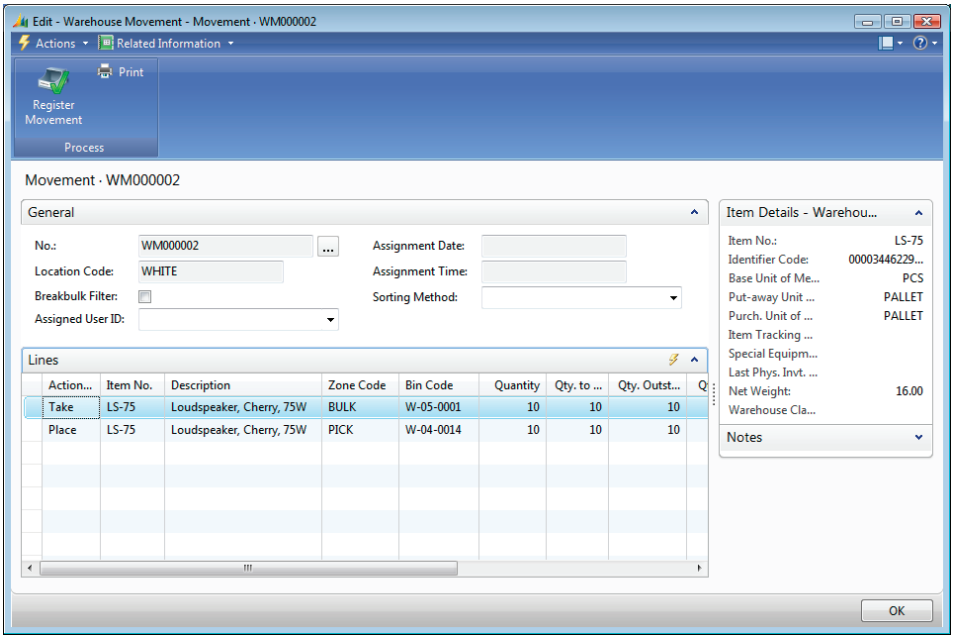

FIGURE 4.3 INSTRUCTION OF ITEMS MOVEMENT

This window contains precise instructions for warehouse employees about movements of items from one bin to another. At this stage, it is still possible to change the zone and bin specified on the Place line, and to split the lines. The split line functionality can be useful if the items are being taken from or are being placed in more than one bin.

When the items are physically moved, the warehouse employee must register the lines to complete the movement.

6. Click **Register Movement** on the Action Pane. The movement is registered, and the lines are deleted from the warehouse movement document.

***NOTE**: When moving items from the bulk zone, where they are typically stored, to the pick zone, for example, it may be preferable to store them in pieces instead of pallets. The procedure of changing the units of measure is the same as when putting items away.*

Bin Replenishment

To achieve maximum warehouse space utilization, the company needs a tool to automatically detect unused space on bins, and calculate the quantity to be filled in. At the same time, such a tool must suggest where to take these items and update the bin state. For these purposes, WMS offers the Calculate Bin Replenishment tool.

Through the replenishment process, the program searches for a bin content that needs to be replenished, whenever the bin has reached minimum quantity. The process of replenishment does not take fixed and unblocked bins into account and must be activated manually by a warehouse employee. The program tries to find bin content of the same item and item variant within the location. The bin ranking determines from where to take the items, always searching for lower ranking bins to take from. If several bins have same bin ranking and bin contents defined for the item, the calculation is made to fill fixed bins first. The program considers those fixed bins that are below minimum quantity, and the bins are replenished till the maximum quantity is reached. For this purpose, create a warehouse movement document containing the replenishment lines from the requested location, zone, or bin according to the filter options used.

To make the program suggest bin replenishment, use the following procedure:

Demonstration: Replenish Pick Bins

1. In the Navigation Pane, click **Home**, **Movement Worksheets**. In the **Movement Worksheet** window, on the Action Pane, click **Calculate Bin Replenishment**. The **Calculate Bin Replenishment** request window appears.

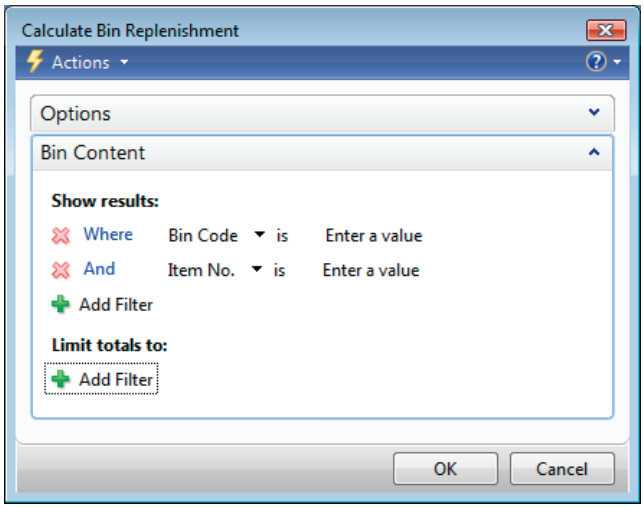

FIGURE 4.4 CALCULATING BIN REPLENISHMENT

2. In the **Item No**. field, select LS-2, and click **OK**.

The program generates this suggested replenishment:

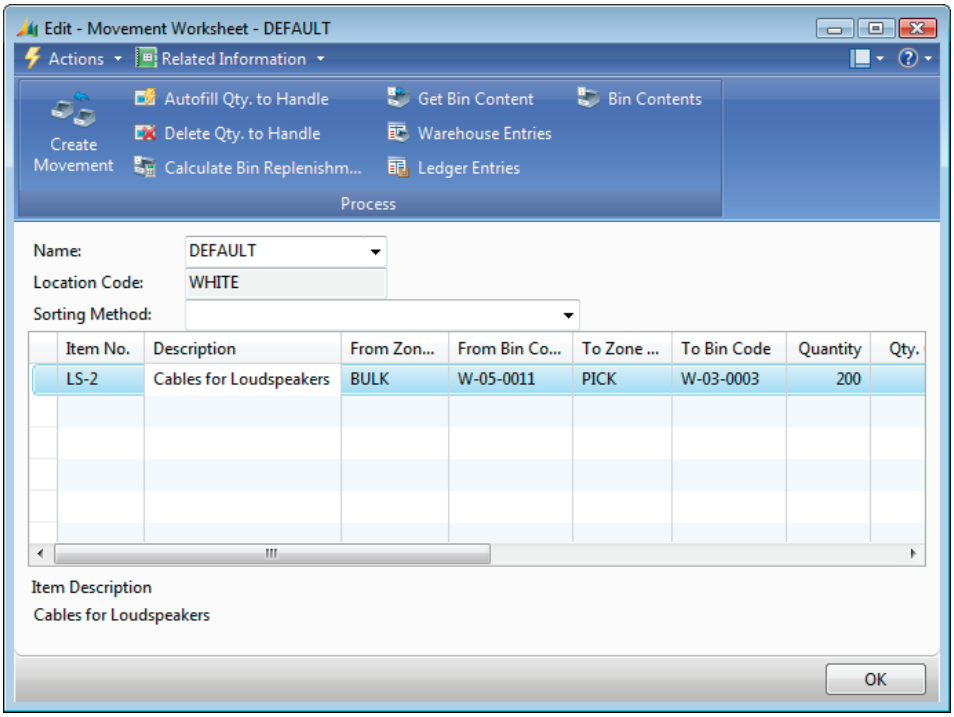

FIGURE 4.5 SUGGESTED REPLENISHMENT MOVEMENT

To find out why the program proposes to do as shown, proceed as follows:

3. Click the **AssistButton** next to the **To Bin Code** field. In the **Bin List** window, select the bin suggested by the program, W-03-0003.
4. On the menu bar, click **Related Information, Item, Bin Contents**. The **Bin Contents List** window appears:

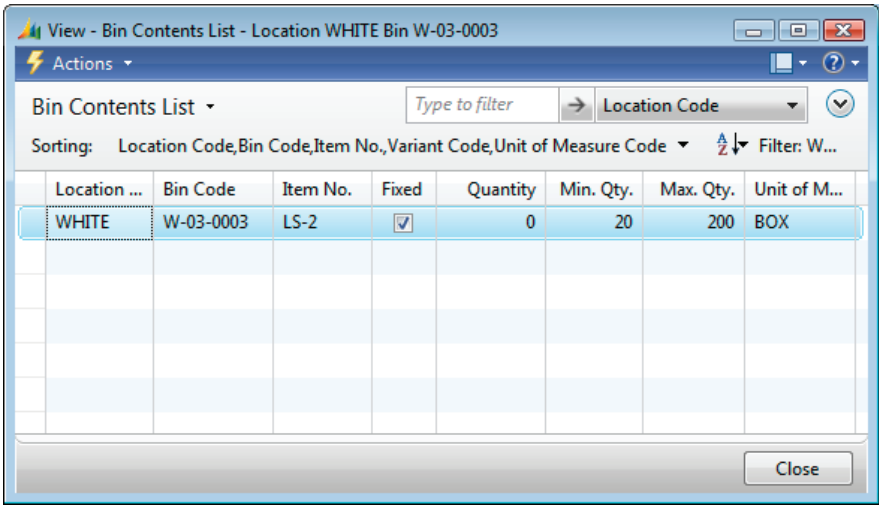

FIGURE 4.6 BIN CONTENT LIST

The bin content line shows that this bin is a fixed bin for item LS-2 and that the current quantity is below minimum quantity. The movement worksheet shows that the quantity suggested to move corresponds exactly to the maximum quantity set for this bin.

5. To complete the replenishment, go back to the **Movement Worksheet** window, and click **Create Movement** on the Action Pane.

Microsoft Dynamics NAV 2009 creates a document with movement suggestions. To accept what the program proposes, the movement must be registered.

6. On the Activities part of the Home page, click **Movements - All.** Open the movement just created.

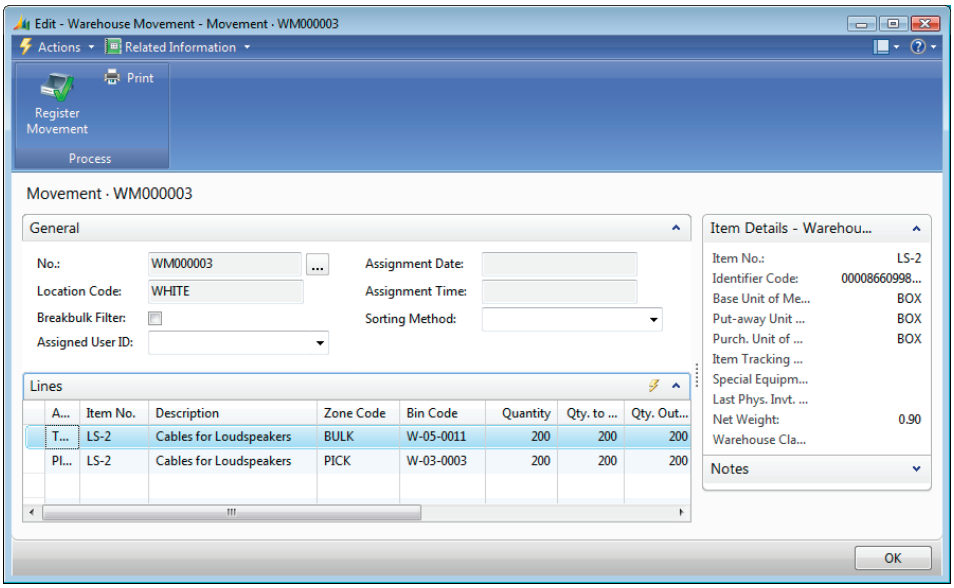

FIGURE 4.7 WAREHOUSE MOVEMENT IS READY FOR REGISTERING

7. Click **Register Movement** on the Action Pane.

Blocking Warehouse Movements

Blocking warehouse movements is carried out at a bin level. The warehouse personnel can block either bin or bin contents, so that movement from specific bins does not occur while the rest of the similar items elsewhere are moved. Blocking movements is a kind of operational quarantine functionality where the warehouse personnel can prevent the program from picking or moving items. Items allocation is invisible for sales and purchase personnel. That is why, if an item is damaged and it is stored at a bin that is blocked for movement, the adjustment procedure must be performed to eliminate the mismatch between calculation availability on item ledger entries and the quantity available at the warehouse.

To block bins:

1. In the Navigation Pane, click **Reference Data**, **Locations**.
2. Browse to the White location, click **Related Information**, **Location**, and then click **Zones**.
3. Select the PICK zone, click **Related Information**, **Zone**, then click **Bins**, and select bin W-01-0001.
4. For bin W-01-0001, select the bin blocking method in the **Block Movement** field. (The field is not visible by default, so use the Choose Column function to add it.)

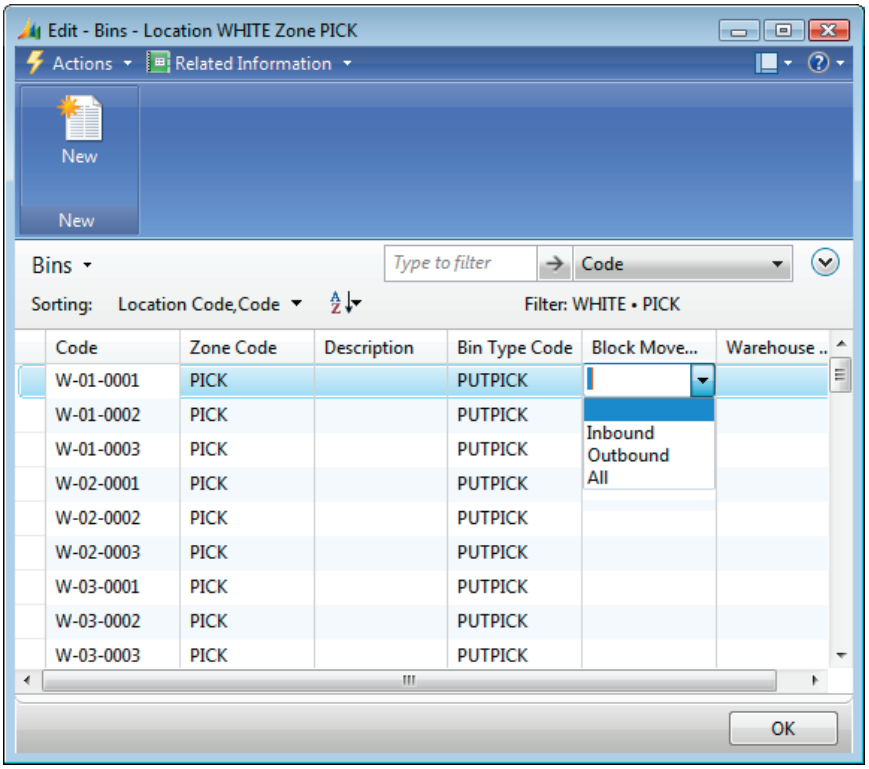

FIGURE 4.8 SELECTING THE BLOCK MOVEMENT OPTION FOR BINS

Block Movement Option	Result
Inbound	If this option is selected, then no items can be moved into the bin.
Outbound	If this option is selected, no items can be moved out of the bin. This will have an impact on the pick availability of the items stored in the blocked bins, since these items will be available for sale but not for picking.
All	If this option is selected, all movements into/from the bin will be blocked.

Alternatively, a bin can be blocked in the **Bin Content** window:

1. In the Navigation Pane, click **Departments**>**Warehouse**>**Planning & Execution**, and then in **Tasks**, click **Bin Contents**.
2. In the **Location Filter** field, select the White location and in the **Zone Filter** field, select the PICK zone. The program will list the bin contents according to the set filters.
3. For the relevant bin(s), set the blocking option in the **Block Movement** field.

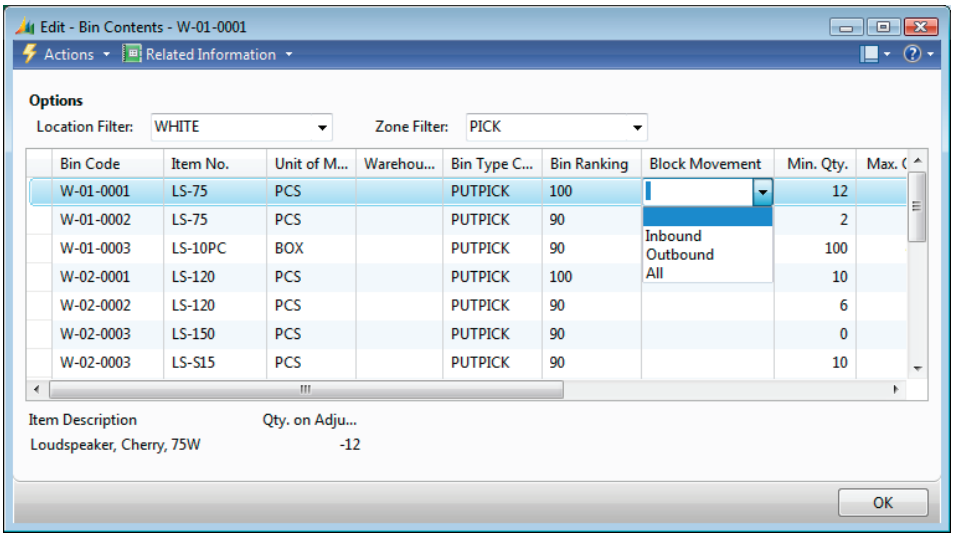

FIGURE 4.9 SELECTING THE BLOCK MOVEMENT OPTION FOR BINS

Lab 4.1 - Movement

In this lab, you will practice working with the movement functionality.

Scenario

The warehouse manager decides to move five pallets of item LS-75 from the STAGE zone on bin W-06-0003 to the PICK zone for quicker handling of these items to fulfill the received shipping orders.

Challenge Yourself!

Create a movement.

Need a Little Help?

1. Create warehouse movements using the movement worksheet.
2. Register the movement.

Step by Step

Create warehouse movements using the movement worksheet

1. On the Activities part of the Role Center Home page, click **Edit Movement Worksheet**.
2. Fill in the fields as follows:
   In the **Item No.** field, select LS-75.
   In the **From Zone Code** field, select STAGE.
   In the **From Bin Code,** select W-06-0003.
   In the **To Zone Code** field, select PICK.
   In the **To Bin Code** field, select W-01-0001.
   In the **Quantity** field, enter 5.
   In the **Unit of Measure Code** fields, select PALLET.
3. Create a movement by clicking **Create Movement**.

Register the movement

1. On the Activities part of the Home page, click **Movements - All**.
2. Open the movement just created.
3. Register it by clicking **Register**.

Internal Pick and Put-away

An internal pick or put-away can be used when items must be taken out of or returned to inventory without a source document such as a sales order, purchase order, or transfer. An example of this is a request to the warehouse from the Sales Department for items to be used in a customer demonstration. This is handled in the Internal Picks functionality available from the Warehouse menu.

Scenario: Pick Items

A salesperson from the Cronus Company is about to demonstrate the new edition of item LS-2 and, therefore, will require two pieces of this item for a short loan. To implement this scenario, do the following:

1. In the Navigation Pane, click the **Worksheet** button, and then click **Internal Picks**.
2. Click **New** to create a new internal pick. Select the White location in the **Location Code** field, and in the **To Zone Code** field, select INTERNAL. Select an empty bin to place the items in.

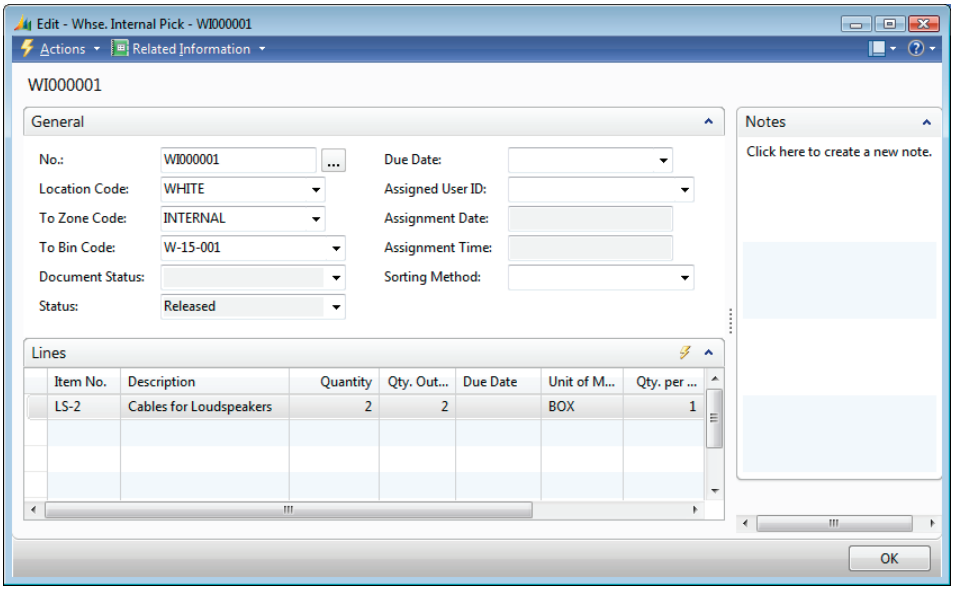

FIGURE 4.10 CREATING AN INTERNAL PICK

3. Create a line for two boxes of item LS-2 and release the document, by clicking **Actions**, **Functions**, **Release**.
4. Create a pick by clicking **Actions**, **Functions**, **Create Pick**.

Now, register the pick just created to make the items become available for sale.

5. On the Activities part of the Home page, click **Picks - All**. Open the pick just created.

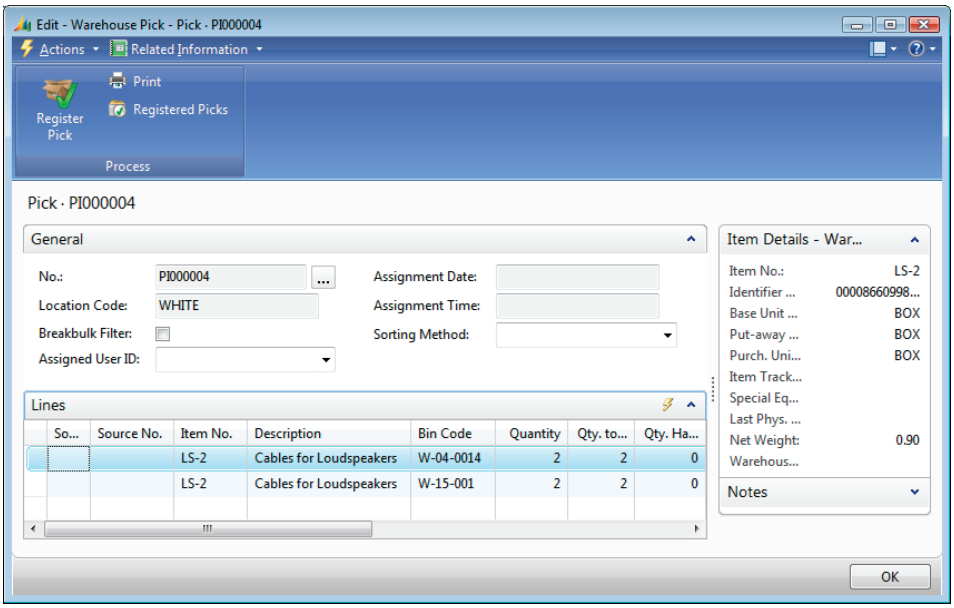

FIGURE 4.11 A PICK WITHOUT SOURCE DOCUMENTS

***NOTE**: There is no Source Document information since this pick is created directly from the **Warehouse Internal Picks** window, and there is no need to specify the source document.*

6. On the Action Pane, click **Register Pick**.

The two boxes of item LS-2 are still part of inventory but are unavailable for picking. The items can be handed to the sales personnel for demonstration.

Scenario: Register Items

The salesperson had success in his/her demonstration and has returned the items to the warehouse.

The task of the warehouse personnel is to register the returned items and make them available for picking. To fulfill this task, it is necessary to perform the following actions:

1. In the Navigation Pane, click **Worksheet, Internal Put-aways**.
2. On the Action Pane, click **New** to create a new internal put-away. In the **Location Code** field, select the White location. In the **From Zone Code** field, select a zone from which the items must be taken and then put away.

3. Click **Actions**, **Functions**, **Get Bin Content**. The **Whse. Get Bin Content** window appears.

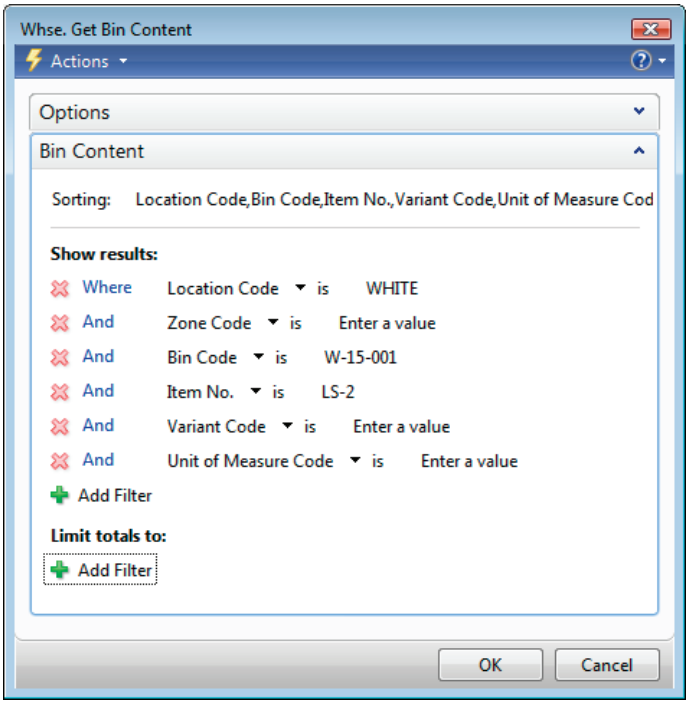

FIGURE 4.12 GETTING BIN CONTENT

4. Set the filters taking into account what is placed on the bin, and click **OK** to confirm. The program copies the bin content to the internal put-away.

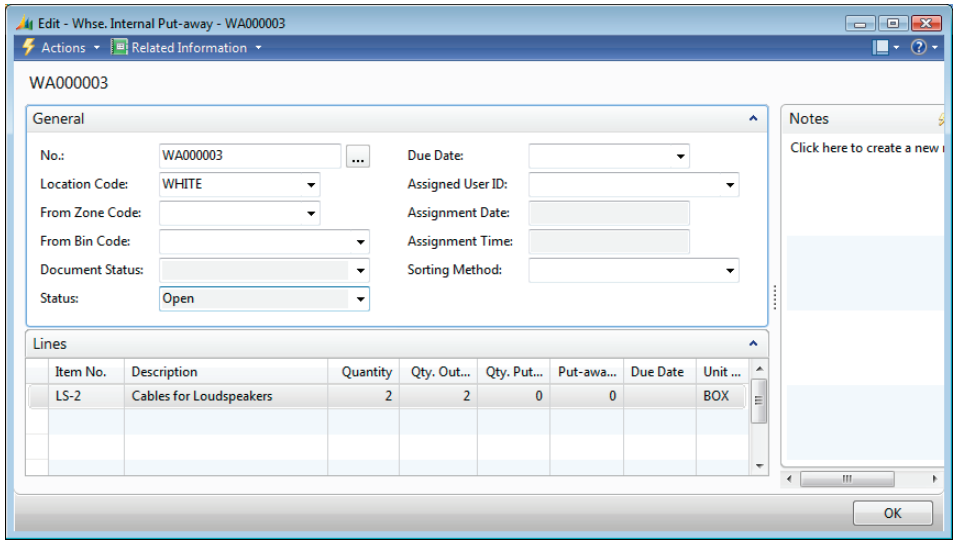

FIGURE 4.13 THE BIN CONTENT COPIED TO THE INTERNAL PUT-AWAY

5. Click **Actions**, **Functions**, **Create Put-away**. The put-away document is created.
6. On the Activities part of the Home page, click **Put-aways - All**. Open the put-away just created.

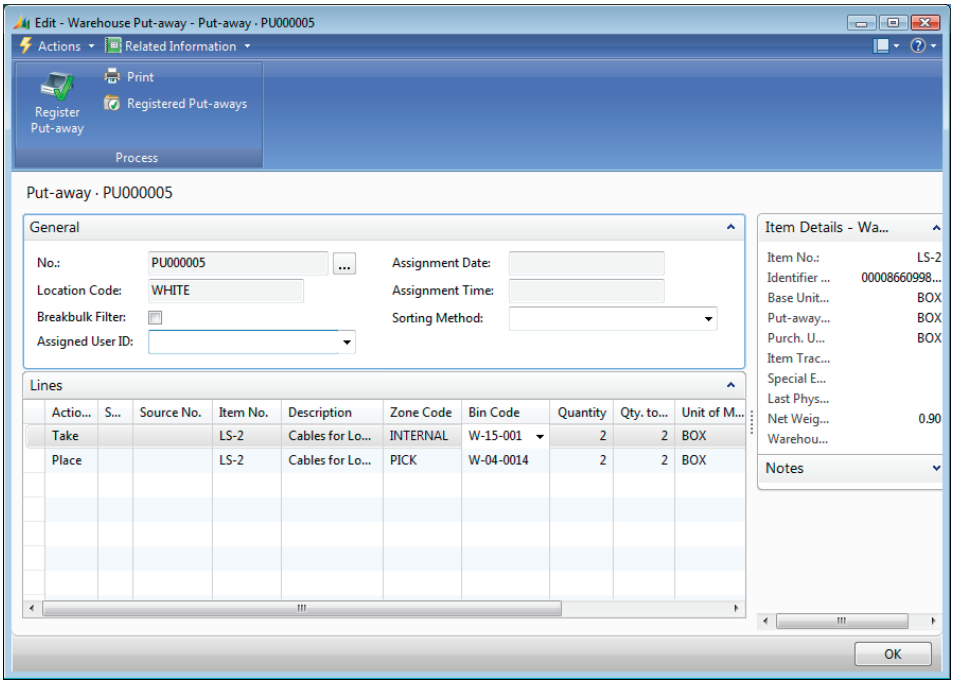

FIGURE 4.14 PUT-AWAY CREATED

Note that the put-away contains no source document information because it is created directly from the **Whse. Internal Put-aways** window.

7. Click **Register Put-away** on the Action Pane.

The items are now available to pick.

Integration with Manufacturing

WMS is integrated with Manufacturing to allow for registering item movements in the production workflow. The integration is provided through picks and put-aways, as well as through the inbound and outbound production bins, and the open shop floor bin - these are defined on the **Bins** FastTabs of the location card.

The open shop floor bin contains all items that do not require picks or put-aways but are included on the production BOM. The replenishment of the open shop floor bin is a manual process that is managed by movement or internal picks and put-aways.

The inbound production bin receives all items picked for production, and the outbound production bin receives all items “output” by the production (through the output journal).

The following scenario illustrates registering the item movements in the warehouse throughout the production workflow. This is attained through working with the consumption journal, which pertains to Manufacturing, and using the inbound production bin, where the components are stored, from the WMS side. We start from creating a sales order, and then the related production order.

Scenario: Work with Consumption Journals

Customer 60000, Blanemark Hifi Shop, orders 12 units of item LS-100. To deliver this product to the customer, the parts of this product are to be assembled at the company production assembly line.

1. On the Home page of the Role Center, click S**ales Orders**. Create a new order for 12 units of item LS-100 for customer 60000, and release the order.

Since the items are to be assembled, use the following process to create the production order for the items:

2. In the **Sales Order** window, click **Related Information**, **Order**, click **Planning**. The **Sales Order Planning** window appears. In this window, click **Actions**, **Functions**, and then click **Create Prod. Order**. Select the **Released** production order status.

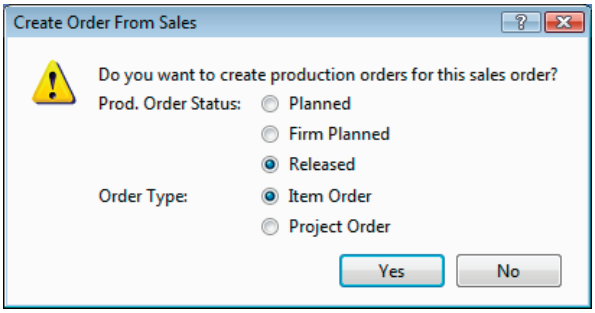

FIGURE 4.15 RELEASING A PRODUCTION ORDER

3. Click **Yes** to create the released production order.
4. In the Navigation Pane, click **Home**, **Released Production Orders**. Open the order just created.

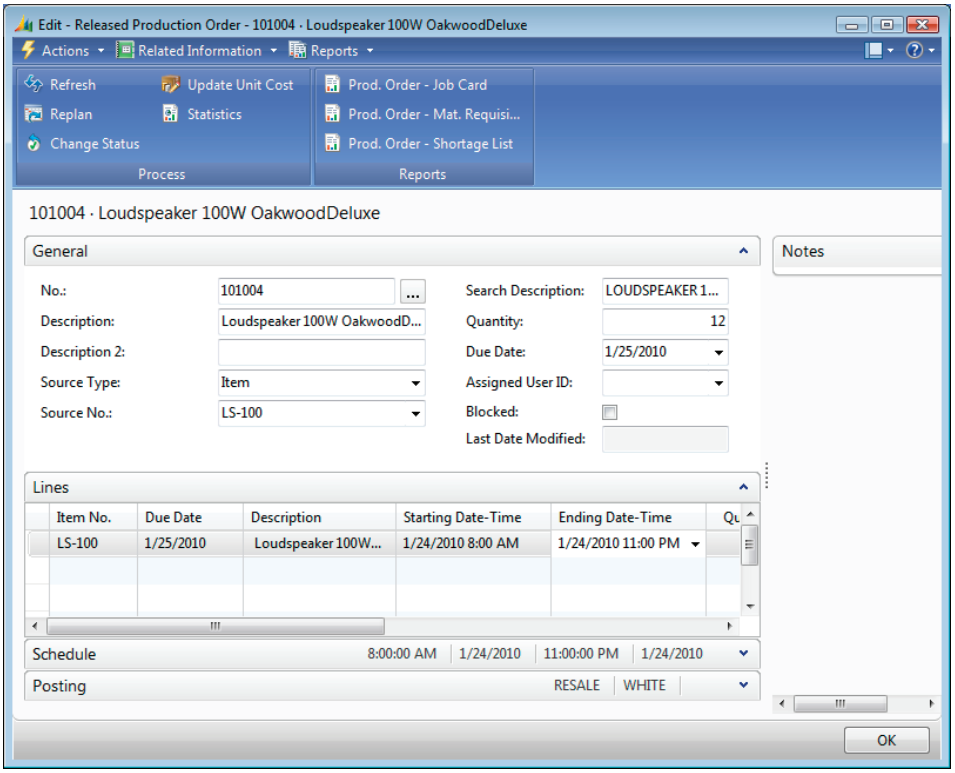

FIGURE 4.16 THE RELEASED PRODUCTION ORDER

Now it is necessary to make the warehouse personnel aware that they can pick the items needed for making the assembly. The components must be picked from the storage zone defined for picking to the inbound production bin. For this purpose, the warehouse pick is used.

5. Click **Actions**, **Functions** and then click **Create Whse. Pick** to create the pick activity.

***NOTE**: If at this point, the program displays a message stating that there is nothing to handle, this means that it cannot find any items available in bins of the pick type (that is, bins assigned the bin type with the **Pick** check box selected). However, it is possible that there may be available items in other bins. This can be handled in two ways:*

Move the items to the bin(s) that the program can pick from by creating a movement.

*Select the **Always Create Pick Line** check box on the **Bin Policies** FastTab of the relevant location card. This ensures that the program will create a pick line even if it cannot find an appropriate zone and bin from which to pick the item - then you can manually update the zone and bin accordingly.*

6. On the Activities part of the Home page, click **Picks - All**. Open the pick just created.

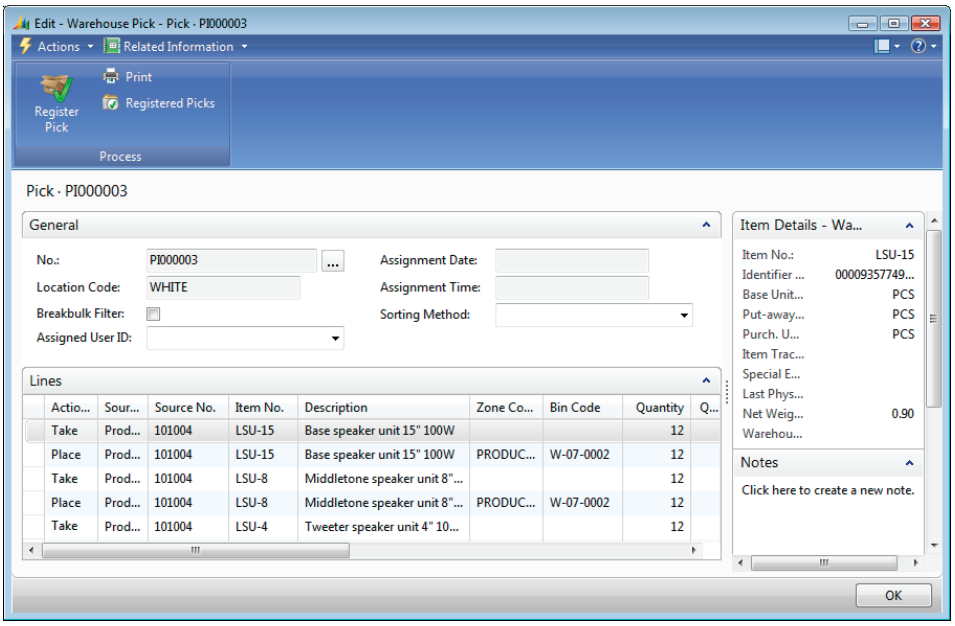

FIGURE 4.17 THE WAREHOUSE PICK

***NOTE**: The program has created lines with the **Zone Code** and **Bin Code** fields filled in. However, the program has left these fields on the Take lines empty. The reason for this is that the program failed to find any available stock to pick from. The user has to make a decision on where to pick the items from by filling in the **Zone Code** and **Bin Code** fields on the Take lines. If in doubt of where the items are stored, click the **AssistButton** next to the **Bin Code** field on the Take line. The **Bin Contents List** window shows where the items are to be found and from there select a bin to pick from.*

In this case, the items are stored in the BULK zone. The PUTAWAY bin type assigned to the bins in the zone is not set up for picking. Therefore, the program is not able to suggest that these items be picked from these bins.

7. Fill in the **Bin Code** field on the Take lines by clicking the **AssistButton** next to the **Bin Code** field and selecting the bin(s) to take from as shown in the following illustration.

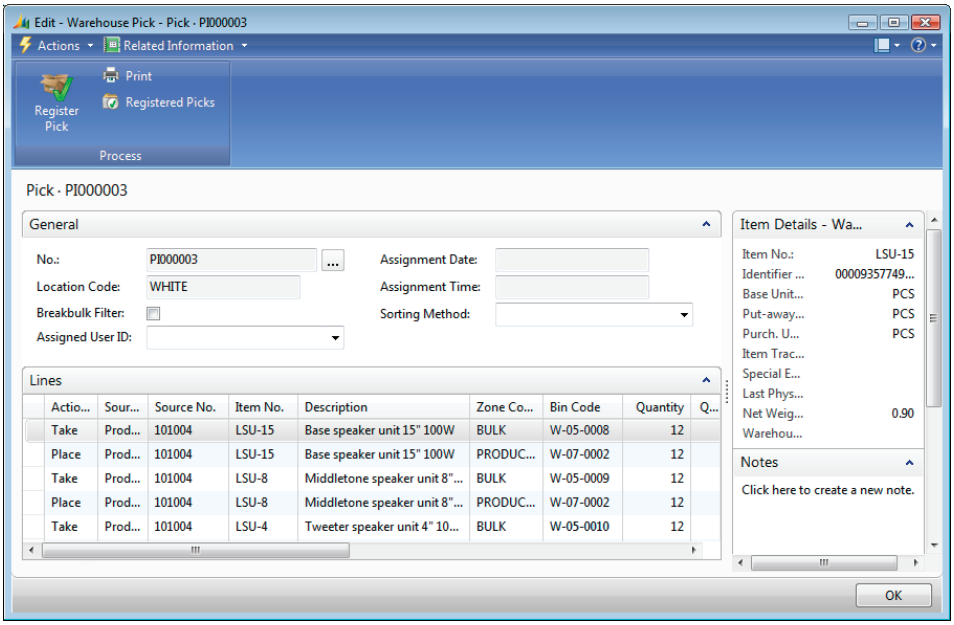

FIGURE 4.18 ZONE CODES SPECIFIED

8. Click **Register Pick** on the Action Pane to register the pick.

The items are now placed in the inbound production bin as defined on the White location card. The items are regarded as 'consumed', that is ready to be taken from the production bin by the production personnel.

Now that the items, which are components for the finished goods, are available for manufacturing, it is necessary to calculate consumption of the items, and the finished items are to be returned to the warehouse.

9. In the Navigation Pane, click **Departments**>**Manufacturing**>**Execution**, and then in **Tasks**, click **Consumption Journals**. In the **Consumption Journal** window, click **Actions, Functions**, and then click **Calc. Consumption**.
10. In the **Calc. Consumption** window that appears, enter the production order number.

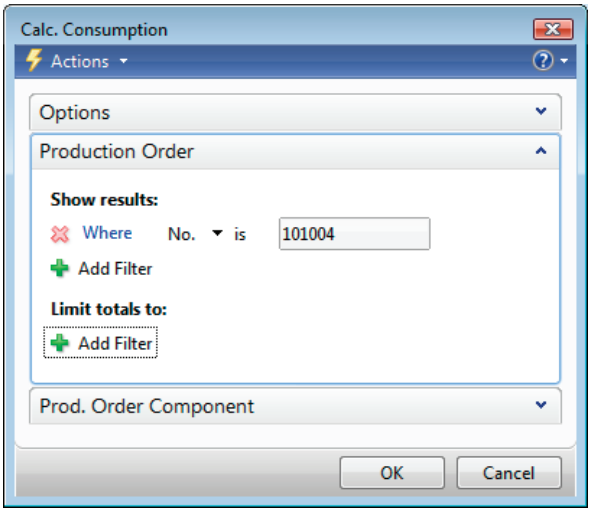

FIGURE 4.19 CALCULATING CONSUMPTION

11. Click **OK** to confirm.

The program fills in the lines in the consumption journal with the items which refer to document number 101004.

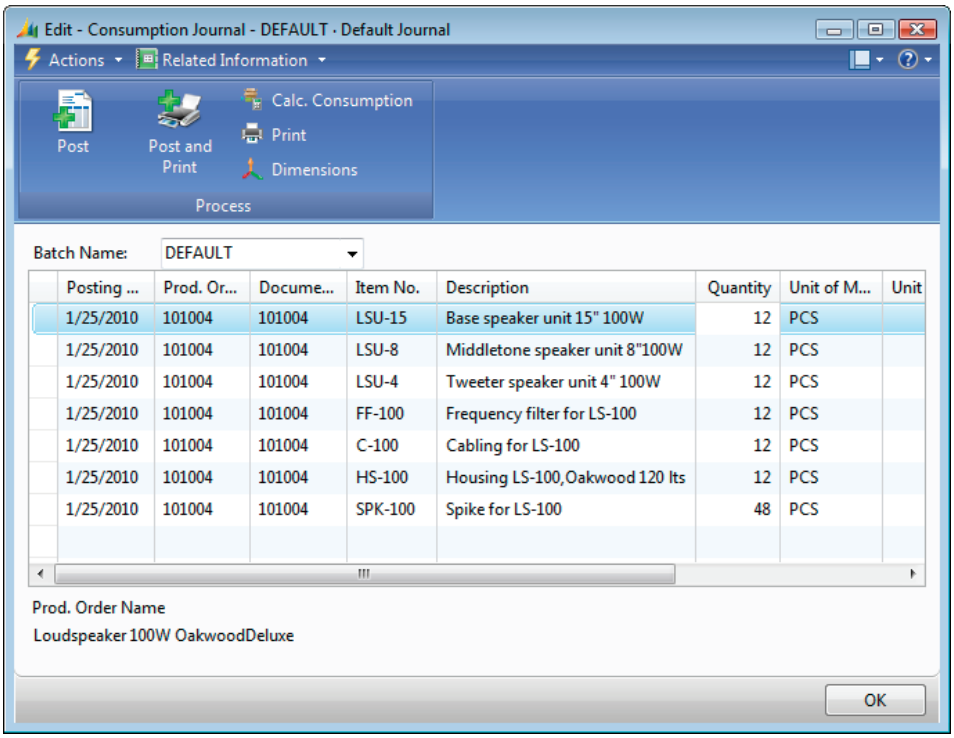

FIGURE 4.20 CONSUMPTION JOURNAL

12. On the Actions Pane, click **Post** to post the consumption journal lines.

It is necessary now to move the finished items to the outbound production bin at the warehouse.

13. From the **Manufacturing** menu, click **Execution**, and then in **Tasks**, click **Output Journals**. In the **Output Journal** window, click the **AssistButton** next to the **Prod. Order No.** field, and select the production order.
14. Click **Actions**, **Functions**, **Explode Routing**. The fields in the output journal are updated. Click **Post** on the Action Pane.

The items have been moved to the outbound production bin in the warehouse, and they now need to be moved for storage in the warehouse to be available for selling. For this purpose, use an internal put-away.

15. In the Navigation Pane, click **Worksheet**, **Internal Put-aways**.

***NOTE**: An alternative way to move the items is to use the movement worksheet based on a template that takes items from the outbound production bin.*

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16. Click **New** to create a new internal put-away, and in the **Location Code** field, select the White location.
17. Click **Actions**, **Functions**, and click **Get Bin Content**. The **Whse. Get Bin Content** window appears. In the **Zone Code** field, select Production, and in the **Bin Code** field, select W-07-0003. This is the bin defined as the outbound production bin on the card for the White location.

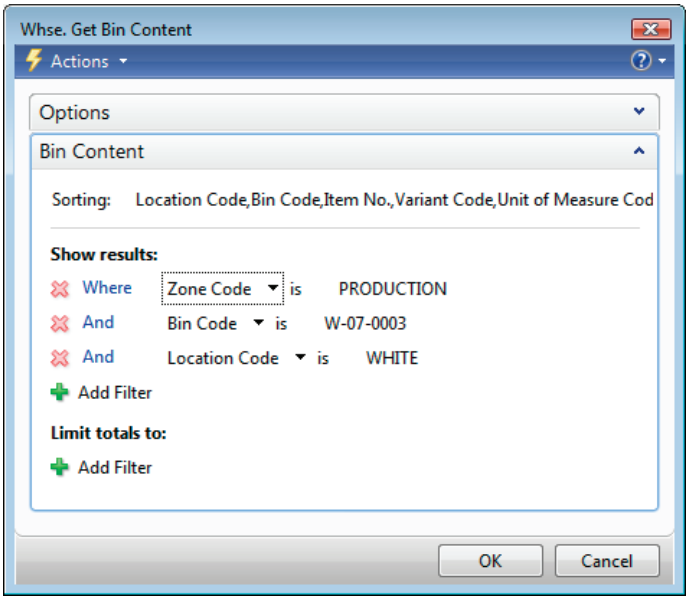

FIGURE 4.21 GETTING BIN CONTENT

18. Click **OK**, and the lines in the internal put-away are filled out.

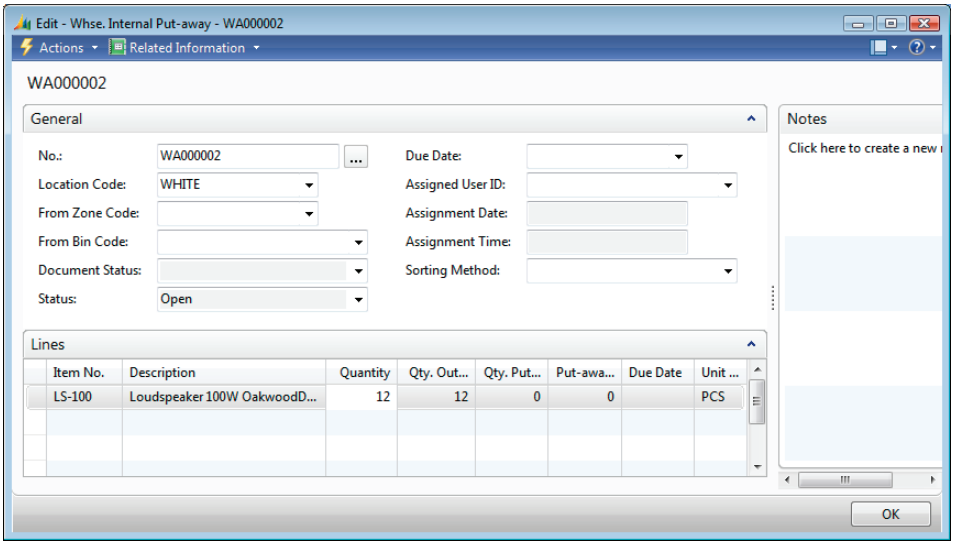

FIGURE 4.22 PUT-AWAY LINES FILLED OUT

By creating an internal put-away you are making a draft put-away. To transfer this draft into a put-away you will be able to work with later, you must use the Create Put-away function available from the **Whse. Internal Put-away** window.

19. Click **Actions**, **Functions** and then click **Create Put-away**. The new put-away is created and appears in the put-away list.
20. On the Activities part of the Home page, click **Put-aways - All**. Browse to the put-away just created and open it.

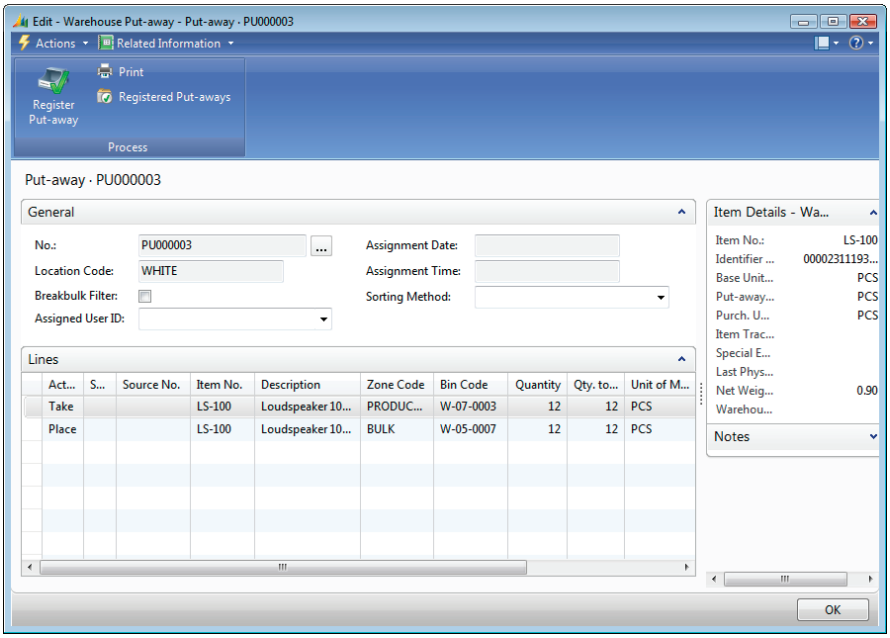

FIGURE 4.23 A WAREHOUSE PUT-AWAY WITH LINES

The put-away must be registered to make the items available for picking.

21. Click **Register Put-away** on the Action Pane.

The items are now in stock and available for picking as finished items.

Automatic Flushing

After the production order is released or finished, the flushing of materials is done either automatically or manually. The term "flushing" is understood as the:

- Principle for reporting materials used.
- Production order quantity completed.
- Time reported.

When working with WMS, only three of five possible options for defining an item's flushing method are used:

- Manual
- Pick + Forward
- Pick + Backward

When any of these flushing methods is defined for the item, the program will ensure that the item is picked in the warehouse before automatically flushing the item, either forwards with a routing link code or backwards.

***NOTE**: Routing link codes are used to link a component defined on an item's bill of material (BOM) to an operation on an item's routing. This means that users can specify at which step of a process (operation) inventory must be reduced.*

***NOTE**: The Pick + Forward and Pick + Backward settings only work for a location set up for using WMS.*

The options can be defined in two places in the program: on the **Replenishment** FastTab of the item card and in the **Prod. Order Components** window.

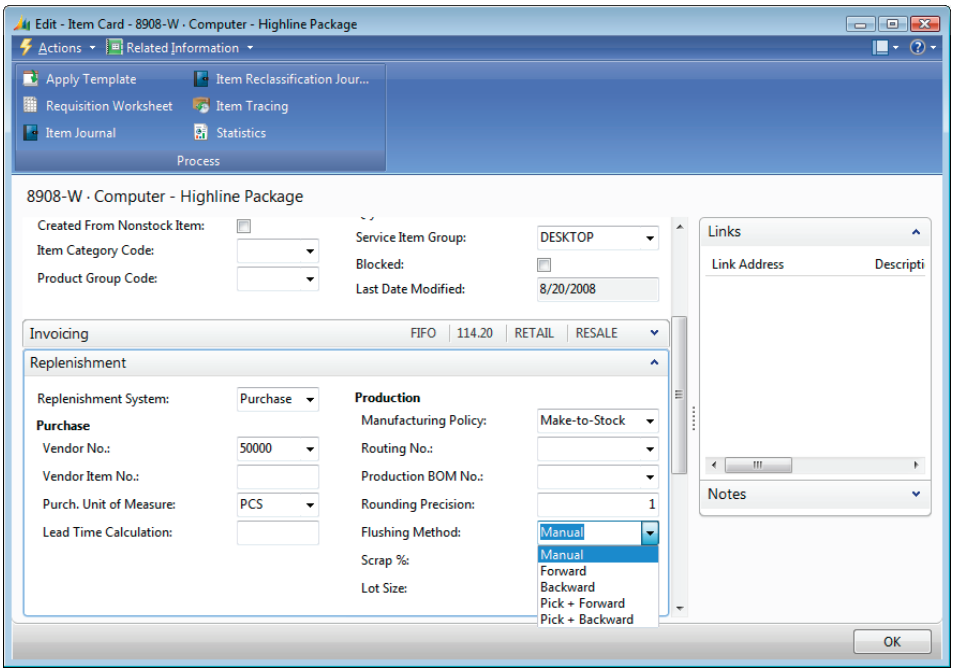

FIGURE 4.24 FLUSHING METHOD OPTIONS ON THE ITEM CARD

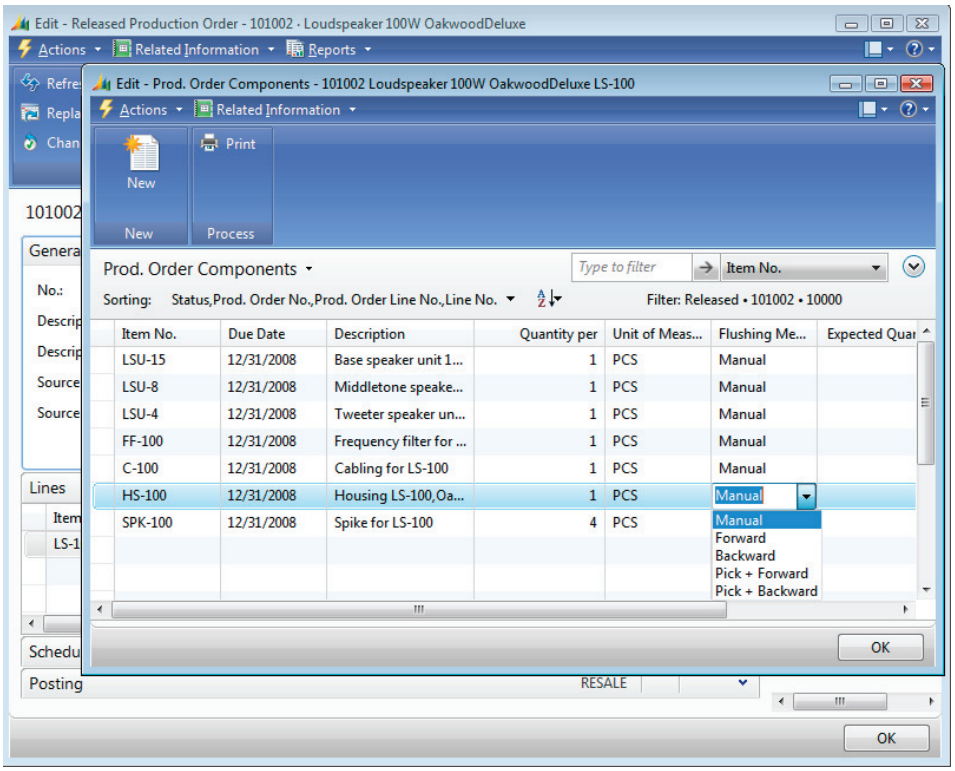

FIGURE 4.25 FLUSHING METHOD OPTIONS IN THE PROD. ORDER COMPONENTS WINDOW

These settings are considered by the program when a pick is created from the production order.

The scenario below presents an example of how automatic flushing can be used in WMS.

Scenario: Use Automatic Flushing

In the CRONUS Company, the White location that stores items for production is set up for using WMS. A production manager at the company received a production order for 15 pieces of item LS-100. Some of the items on the component list must be manually flushed, while others can be simply picked and automatically flushed backward. The items that can be automatically flushed have a flushing method of Pick + Backward.

The following steps describe in detail the actions that the user takes and how the program reacts:

1. *The production manager releases the order.* The program subtracts the inventory from the open shop floor bin for any items with the flushing method Forward that do not have a routing link code.

2. *The production manager creates a pick from the production order.* In the **Production Order** window, the manager clicks **Functions**, **Warehouse**, **Create Pick**. The program creates a warehouse pick for items with flushing methods Manual, Pick + Backward, and Pick + Forward (with a routing link code). These items will be placed in the inbound production bin.
3. *The warehouse manager assigns the pick to a warehouse.*
4. *The warehouse employee picks the items from the appropriate bins and places them in the inbound production bin*.
5. *The warehouse employee registers the pick*. The program subtracts the appropriate quantities from the pick bins and adds these appropriate quantities to the inbound production bin. The program also updates the **Qty. Picked** field on the component list for all picked items.
6. *The production employee informs the production manager that the items are finished*.
7. *The production manager uses the consumption journal to post the consumption* for the items with the Manual flushing method and for the items having the Forward flushing method with a routing link code and Pick + Forward with a routing link code.
8. *The production manager posts the output from the production order and finishes the released production order.* The program subtracts the quantities for the components with the Backward flushing method from the open shop floor bin and with the Pick + Backward flushing method from the inbound production order bin.

Lab 4.2 - Use Internal Pick

This lab is a continuation of the previous one - now you will practice in working with an internal put-away and changing the unit of measure.

Scenario

The warehouse manager decides to change the unit of measure for one pallet of this item and place it to bin W-01-0001 using the internal put-away functionality.

Challenge Yourself!

1. Create an internal put-away.
2. Change the unit f measure for the items.

Need a Little Help?

1. Create an internal put-away.
2. Change the unit of measure in the warehouse put-away and register it.

Step by Step

Create an internal put-away

1. In the Navigation Pane, click **Worksheet, Internal Put-aways**.
2. Click **New** to create a new put-away. In the **Location Code** field, select White; in the **From Zone Code**, select PICK; in the **From Bin Code** field, select W-01-0001.
3. Click **Actions**, **Functions**, then click **Get Bin Content** to retrieve a line for created document. In the **Whse. Get Bin Content** window, fill in the fields as follows:
   In the **From Zone Code** field, select PICK
   In the **From Bin Code** field, select W-01-0001
   In the **Item No.** field select LS-75
   Click **OK**.
4. In the **Quantity** field, enter 1 and then click **Actions**, **Functions**, **Create Put-away**.

Change the unit of measure in the warehouse put-away and register it

1. On the Activities part of the Home page, click **Put-aways - All**. Open the put-away just created.
2. Select the line with the Place action type, and on the lines, click **Actions**, **Functions**, **Change Unit of Measure**. On the **Whse. Change Unit of Measure** window, in the **Unit of Measure Code** field of the **To** section change the value to PCS and click **OK**.

3. In the **From Zone Code** field, select PICK.
   In the **From Bin Code** field, select W-01-0001.
4. On the Action Pane, click **Register Put-away**.

Journals

Warehouse Management Systems provides special journals to handle processes occurring inside the warehouse. When using WMS, it is necessary to use the warehouse item journal, warehouse physical inventory journal, and warehouse reclassification journal.

***NOTE**: The corresponding journals on the Inventory menu will not take zones and bins into consideration if trying to perform operations within these journals.*

Warehouse Item Journals

The **Whse. Item Journal** window is aimed at making an immediate adjustment to the quantity of an item in a particular bin or bins. For instance, there may be some items in a bin that are not registered in the program, or it may not be possible to pick the quantity needed because there are fewer items in a bin than is calculated by the program.

When the adjustment is registered, the program updates the bin quantity (to correspond to the actual quantity in the bin) and creates a balancing quantity in the adjustment bin for the quantity that is registered from the journal line.

In the **Whse. Item Journal** window, the **Item No.** and **Bin Code** fields must be filled in, and the difference in the quantity specified as, either positive (no "+" sign necessary) or negative (use a hyphen as the minus sign) in the **Quantity** field.

Scenario: Use Warehouse Item Journals

During warehouse activities, one piece of item LS-75 is damaged while moving and it must be removed from stock. The incident happened in the PICK zone and in bin W-01-0001. Do the following to fulfill the task:

1. In the Navigation Pane, click the **Journals** button, and then click **Whse. Item Journals**.

2. Enter the information from the scenario into the **Whse. Item Journal** window. Remember that the quantity must be specified as a negative because the item will be removed from stock.

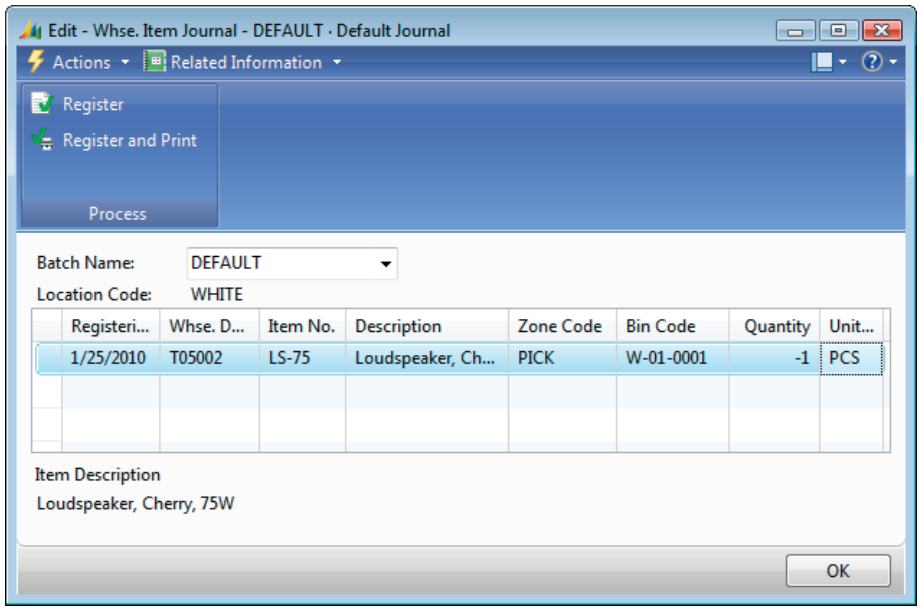

FIGURE 4.26 WAREHOUSE ITEM JOURNAL

3. On the Actions Pane, click **Register**.

Looking at the warehouse registers, you can see that the item has been removed from its original bin and placed in the adjustment bin.

4. In the Navigation Pane, click **Departments**>**Warehouse**>**History**, **Warehouse Registers** to open the warehouse registers.

5. Select the last entry in the list of registers, click **Related Information**, **Register**, and then click **Warehouse Entries**.

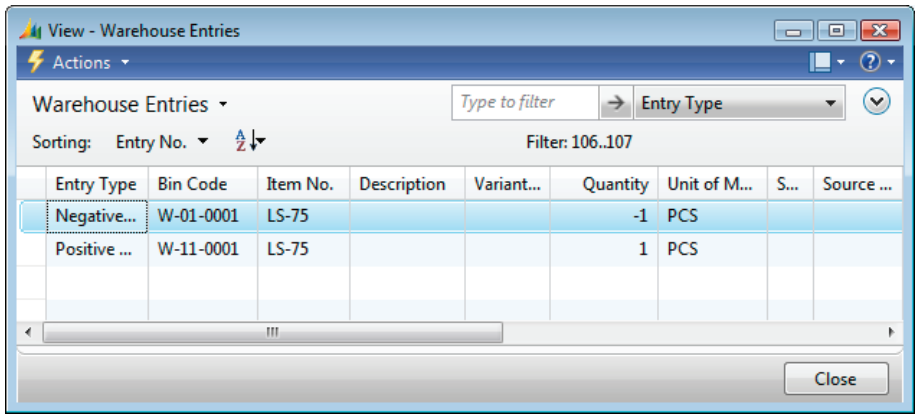

FIGURE 4.27 WAREHOUSE POSITIVE AND NEGATIVE ENTRIES

The program has created two entries. The first is the negative adjustment, to reflect removing of the item from the original bin. The second is the positive adjustment, to reflect placing of the item in the adjustment bin. The adjustment bin is a virtual bin, defined on the **Bins** FastTab of the location card.

The content of the adjustment bin can be viewed if you run the **Whse. Adjustment Bin** report. You can open it by clicking **Departments**>**Warehouse>Goods Handling Multiple Orders**, and in the **Reports** under **Reports and Analysis**, click **Whse. Adjustment Bin**.

Though the item is now removed from the warehouse ledger, it is still registered in the item inventory ledger. Step 6 below demonstrates how to also remove the item from the item inventory ledger.

When items are damaged, which is the case in our scenario, you should go directly to step 6. But if the some item quantity is missing, this difference should be registered with the warehouse item journal. Alternatively, you can wait until the lost items are found in some other place and the registration will empty the adjustment bin.

The content of the adjustment bin can be viewed at the **Whse. Adjustment Bin** report. You can open by clicking **Departments>Warehouse>Goods Handling Multiple Orders>Reports and Analysis**.

To remove the item from inventory:

6. In the Navigation Pane, click **Journals**, **Item Journals**.
7. Click **Actions**, **Functions**, **Calculate Whse. Adjustment** to fill the item journal lines with the adjustments to the warehouse adjustment bin.
8. Post the journal lines by clicking **Post.** The corresponding adjustments to the inventory are made

Reclassification Journals

In WMS, the warehouse reclassification journal is used to perform changes after the goods are moved physically. This situation may occur if the workers move items from one place to another in the warehouse and later on inform the manager of where the items moved to.

The existing item journal can be used to adjust inventory on the item ledger in accordance with an adjustment that is made to the item quantity in a warehouse bin. To create a link between the inventory and the warehouse, a default adjustment bin must be defined for each location.

This default adjustment bin is used to register items in the warehouse when posting an increase for the inventory. However, if a decrease is posted, the quantity on the default bin is also decreased. In both cases item ledger entries and warehouse entries are created. This bin is not included in the availability calculation.

To adjust the bin content, enter the item number, zone code, bin code and quantity in the warehouse item journal that needs to be adjusted.

If a positive quantity is entered and the line is posted, the inventory stored in the bin will increase and the quantity of the default adjustment bin will decrease by the same amount.

If a negative quantity is entered and the line is posted, the inventory stored in the bin is decreased and the quantity of the default adjustment bin is increased.

Demonstration: Use the Reclassification Journal

Use the following steps to register physical movement of the items using the **Whse. Reclassification Journal** window:

1. Click the **Journals** button, then click **Whse. Reclass. Journals**.
2. In the Item No. field, select item LS-S15.
   In the **Quantity** field, enter 12.
   In the **From Zone Code** field, select the PICK zone.
   In the **From Bin Code** field, select W-04-0015.

In the **To Zone Code** field, select the PICK zone.

In the **To Bin Code** field, enter W-02-0003.

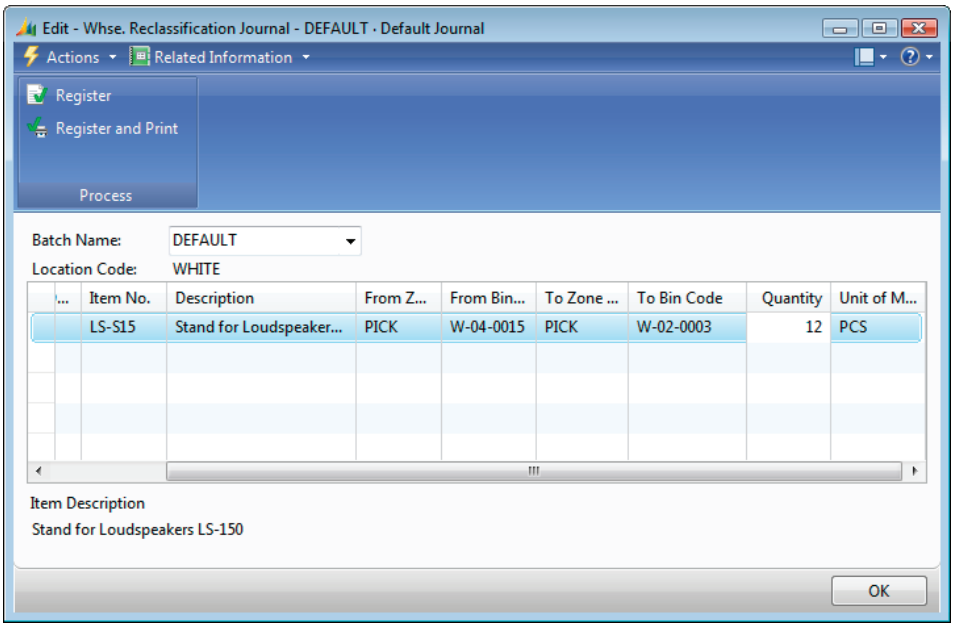

FIGURE 4.28 WAREHOUSE RECLASSIFICATION JOURNAL

3. On the Action Pane, click **Register** to register the journal lines.

The program has made a movement between two bins within the warehouse, without using the movement worksheet. This information is to be found in the warehouse entries:

4. In the Navigation Pane, click **Departments**>**Warehouse**>**History**, **Warehouse Registers** to open the warehouse registers.

5. Select the last entry in the list of registers, click **Related Information**, **Register**, and then click **Warehouse Entries**. The program opens the **Warehouse Entries** window.

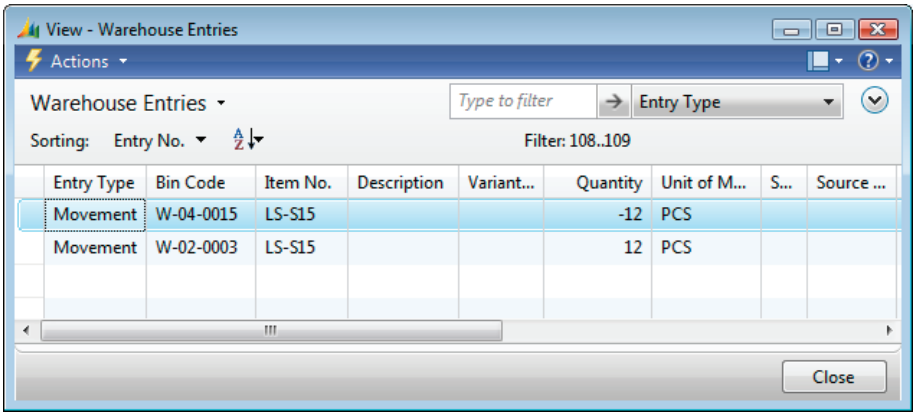

FIGURE 4.29 MOVEMENT REGISTERED IN THE WAREHOUSE ENTRIES

This window shows that a movement is performed in the program due to warehouse reclassification.

Posting Quantity Adjustment for Bins

If you use bins at a location, you will need to occasionally adjust the quantity in a bin, when the quantity recorded in the program is inaccurate because of a physical gain or loss of an item. This can be done through the warehouse item journal.

Unlike posting adjustments in the inventory item journal, using the warehouse item journal gives you an additional level of adjustment that makes your quantity records even more precise at all times. You register any observed differences in bin quantity as they occur in the warehouse item journal. To ensure that the item ledger always contains the same number of items as the warehouse, you regularly post the adjustments registered in the adjustment bin to the item ledger.

Because the White location is set up for using directed put-away and pick, you will use the warehouse item journal to register the quantity adjustment in the bin. When you register these differences, the positive and negative adjustment quantities are registered in the warehouse adjustment bin. The quantities are not automatically posted to the item ledger. The entries in the adjustment bin originate from the warehouse item journal, the warehouse physical inventory journal, the item journal, or a number of other documents that indicate changes in warehouse inventory. Item with any numeric changes are moved to the adjustment bin which is set up on the **Bins** FastTab of the location card.

At appropriate intervals as defined by company policy, you must post the warehouse adjustment bin records in the item ledger. Some companies find it appropriate to post adjustments to the item ledger every day, while others may find it adequate to reconcile less frequently.

The process for posting the warehouse adjustment bin records in the item ledger is as follows:

1. Open the **Item Journal** window by clicking **Journals**, **Item Journal**.
2. Fill in the fields on each journal line.
3. Click **Actions**, **Functions**, **Calculate Whse. Adjustment**, and fill in the filters as appropriate in the batch job request window. The program will calculate adjustments only for the entries in the adjustment bin that meet filter requirements. As in other batch job request windows, you can create many new fields by clicking the **AssistButton** in the **Field** field on a new line and selecting a new criterion.
4. On the **Options** tab, fill in the **Document No.** field with a number that you enter manually. Because no number series has been set up for this batch job, use the number scheme set up by the warehouse, or enter the date (year-month-date) followed by your initials.
5. To run the Calculate Whse. Adjustment function, click **OK**. The program totals the positive and negative adjustments for each item and creates lines in the item journal for any items where the sum is a positive or negative quantity.
6. Click **Post** to enter the quantity differences in the item ledger. The inventory in the warehouse bins now corresponds precisely to the inventory in the item ledger.

***NOTE**: When you are not using directed put-away and pick for a location, you use the inventory item journal to post, outside the context of the physical inventory, all positive and negative adjustments in item quantity that you know are real gains (for example, items previously posted as missing that show up unexpectedly) or real losses (for example, breakage of fragile items).*

Counting

Physical counts of inventory must be performed on a regular basis to keep an accurate record of inventory in the warehouse. WMS provides the ability to define the count frequency for a specific item, and to display the information that pertains to the last count performed, as well as when the next count is due.

Warehouse Physical Inventory Counting Periods Setup

The physical inventory cycles are determined on the SKU and item cards. The primary setup and definition of counting periods are made from the Warehouse menu. To view the existing counting periods set up in the program, in the Navigation Pane, click **Department**>**Warehouse**>**Inventory**, and then click **Phys. Invt. Counting Periods**.

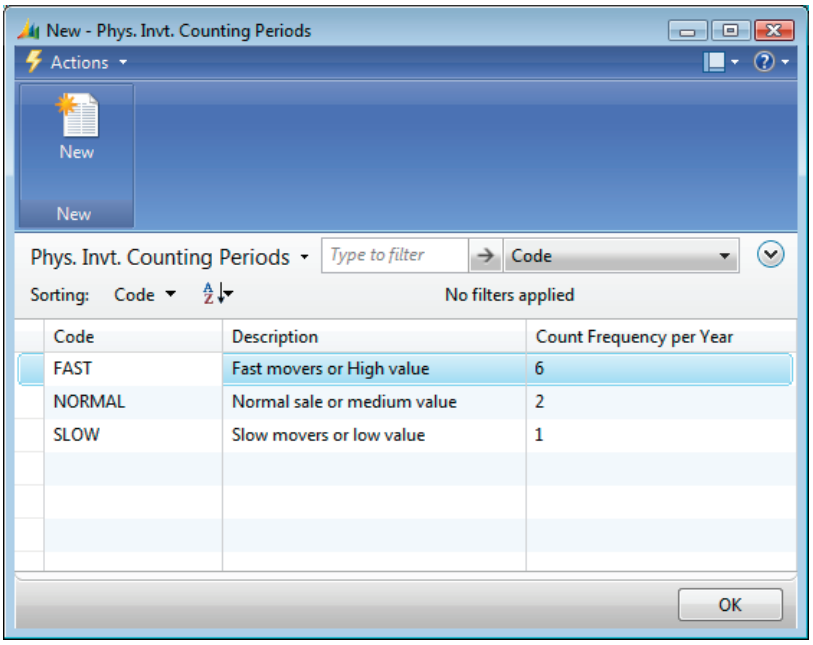

FIGURE 4.30 COUNTING PERIODS

To enter a new inventory counting period, create a new line, specify the new period code, and add the counts to be made for each year.

Physical Inventory Counting

Counting inventory can be a time-consuming procedure. Companies can use WMS to count at the zone and/or bin level which allows for dividing warehouse areas into smaller pieces and to count specific areas of the warehouse. Because of this feature, counting can be performed more regularly or be spread over a longer period or at different intervals. The blocking of bins can be a major advantage to ensure that no items are removed during the counting period.

Physical inventory counting is performed in the **Whse. Phys. Invt. Journal** window. To open this window, click **Journals**, **Whse. Phys. Invt. Journals**.

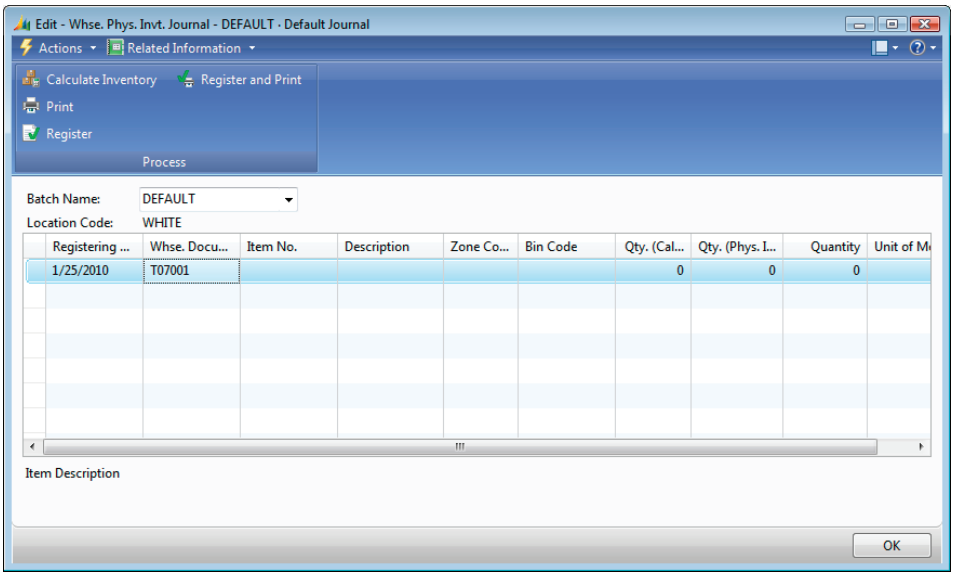

FIGURE 4.31 PHYSICAL INVENTORY JOURNAL

Scenario: Perform Physical Count

The warehouse manager suspects that an error might have occurred during the pick for an earlier order.

The pick occurred from the PICK zone and from bin W-01-0001.

The task is now to create a list for the warehouse personnel to make a physical count of items inside this specific bin and report back to the warehouse manager for corrections to be made against inventory.

1. In the Navigation Pane, click **Journals**, **Whse. Phys. Invt. Journals**.

2. Click **Actions**, **Functions**, **Calculate Inventory**, and fill in the filter fields according to the scenario.

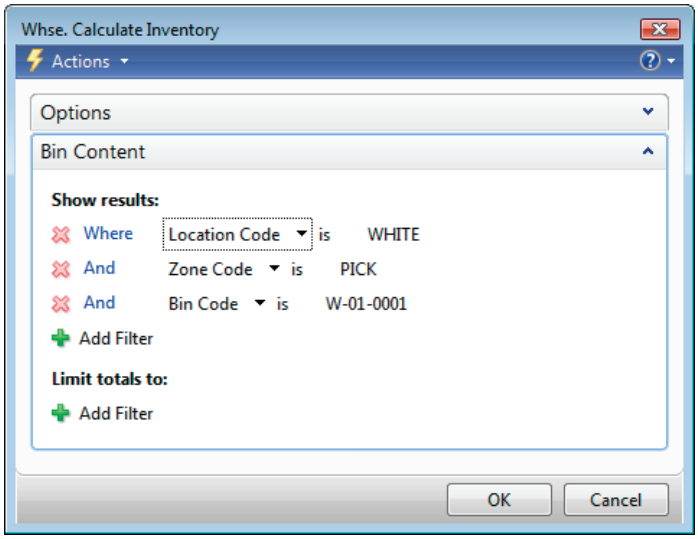

FIGURE 4.32 CALCULATING INVENTORY

3. Click **OK** to let the program fill in the lines in the **Whse. Phys. Invt. Journal** window.

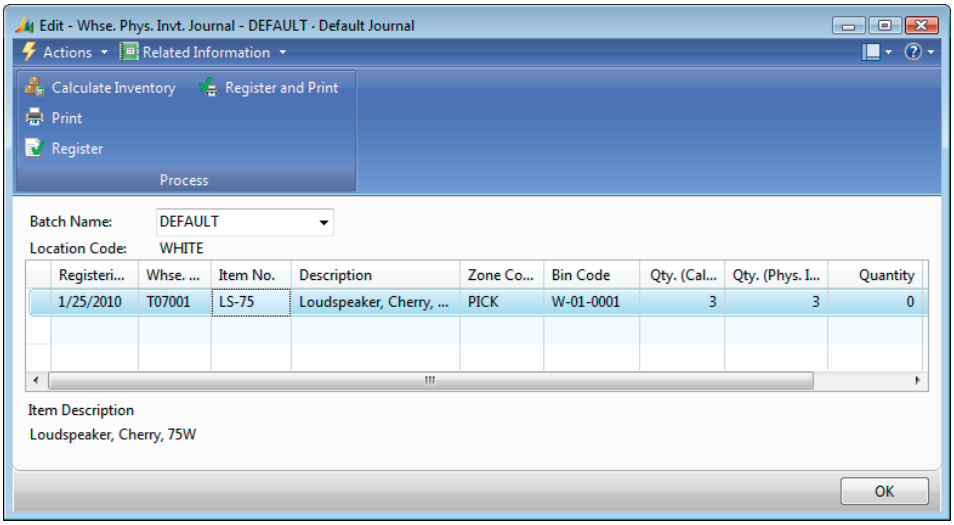

FIGURE 4.33 ITEM PROPOSED BY THE PROGRAM

The warehouse personnel must make a physical count of the bin and produce the result to be entered in the **Qty. (Phys. Inventory)** field.

To perform this task, a written copy is to be printed out and handed to the warehouse employee(s).

4. From the **Whse. Phys. Invt. Journal** window, click **Actions**, **Functions**, **Print**. Use the **Whse. Phys. Inventory List** window, to specify filters for the physical inventory journal. In this case, leave all the fields without changes, since all information is retrieved from the **Whse. Phys. Invt. Journal** window, and click **Print**.

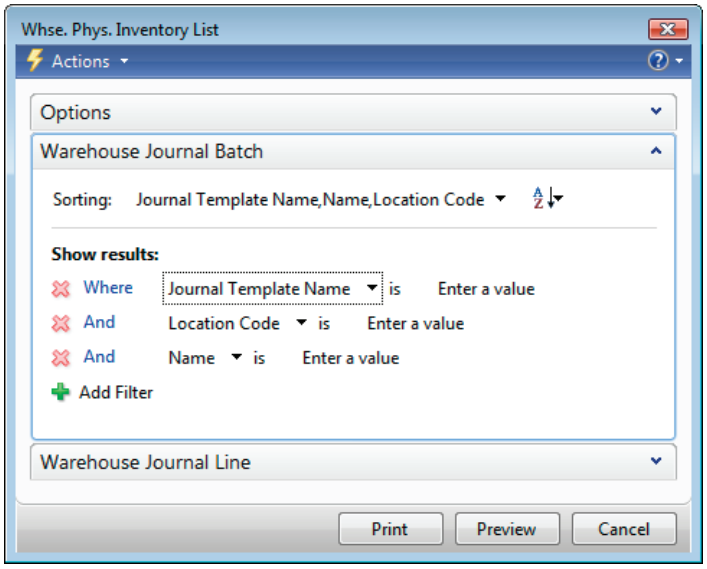

FIGURE 4.34 SPECIFYING FILTERS FOR PHYSICAL INVENTORY JOURNAL

Suppose that the result of the physical count is that the bin contains two pieces of item LS-75 and not the quantity the program indicates. Make the necessary changes in the **Qty. (Phys. Inventory)** field in the physical inventory journal.

5. Return to the **Whse. Phys. Invt. Journal** just created, and then enter the details in the **Qty. (Phys. Inventory)** field.

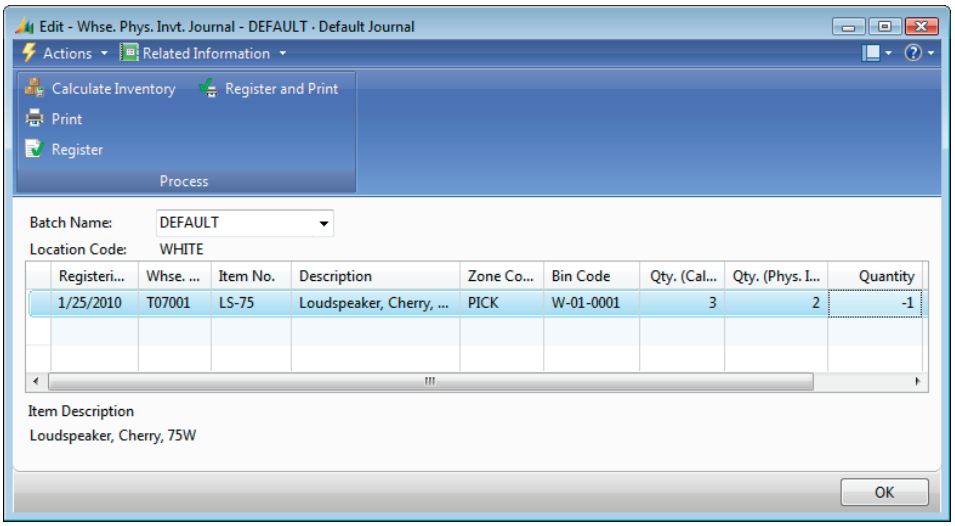

FIGURE 4.35 UPDATING THE QTY. (PHYS. INVENTORY) FIELD IN THE PHYSICAL INVENTORY JOURNAL

6. On the Action Pane, click **Register**.

7. In the Navigation pane, click **Departments**>**Warehouse**>**History**, and then in **Registers**, click **Warehouse Registers**.

8. Select the last entry in the list of registers, click **Related Information**, **Register**, and then click **Warehouse entries**.

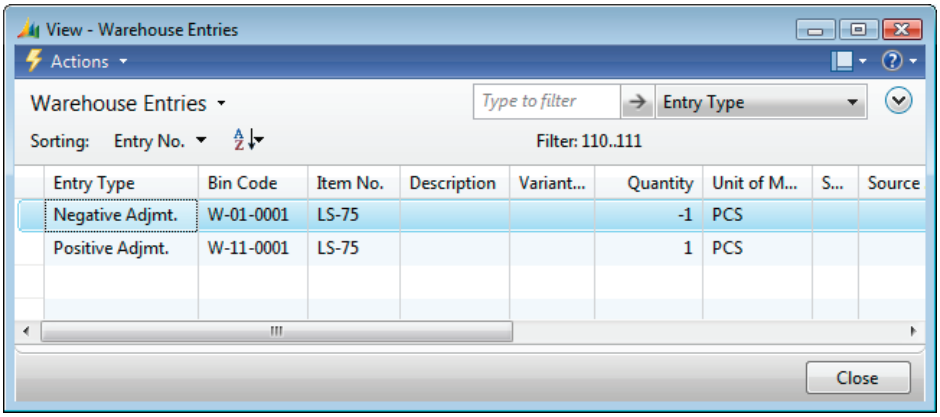

FIGURE 4.36 POSITIVE AND NEGATIVE WAREHOUSE ENTRIES

***NOTE**: The program has recorded the movement of the item to the adjustment bin. The adjustment bin is where the program stores items (records) until they are removed from inventory. Items are not available and cannot be picked from the adjustment bin.*

To remove the item from inventory, you can use the Calculate Whse. Adjustment function in the item journal.

***NOTE**: Be aware that using this function will not leave a trace in the item ledger. In fact, it is a physical inventory adjustment therefore it is recommended to use the warehouse physical inventory journal.*

When you register the warehouse physical inventory, you are not posting to the item ledger, the physical inventory ledger, or the value ledger, but the records are there for immediate reconciliation whenever necessary. If you want to keep precise records of what is happening in the warehouse, however, and you have counted all of the bins where the items were registered, you should immediately post the warehouse results as a physical inventory.

To post warehouse results as a physical inventory, follow these steps:

1. Open the **Phys. Inventory Journal** window and click **Actions**, **Functions, Calculate Inventory**.
2. Select the same items that you counted in the warehouse physical inventory, and click **OK**.
3. The program creates lines in the **Phys. Inventory Journal** window for these items. Note that the program has filled in the **Qty. (Phys. Inventory)** field with the sum of the quantities you counted and registered for the item bin by bin in the **Whse. Phys. Invt. Journal** window and has calculated the value in the **Quantity** field.
4. Post the journal without changing any quantities.

The quantities in the item ledger (item entries) and the quantities in the warehouse (warehouse entries) are now once again the same for these items, and a full physical inventory has been performed for the item.

***NOTE**: Only an employee with permissions in the Inventory area can update the item ledger and physical inventory ledger with the results of the warehouse physical inventory.*

Cycle Counting

Cycle counting is the procedure for the scheduling of physical counting of frequently counted items. These might be high valued items, fast movers, low valued items, or slow movers.

Physical inventory counting periods can be defined on the **Warehouse** FastTab of each individual SKU or item card. For example, the company might determine that an item needs to be counted six times per year. This is defined in the program by entering the number six in the **Count Frequency per Year** field on the physical inventory counting period card. To define a counting period, follow the steps below:

1. In the Navigation Pane, click **Reference Data, Items**. Open the card for item LS-120. Expand the **Warehouse** FastTab.

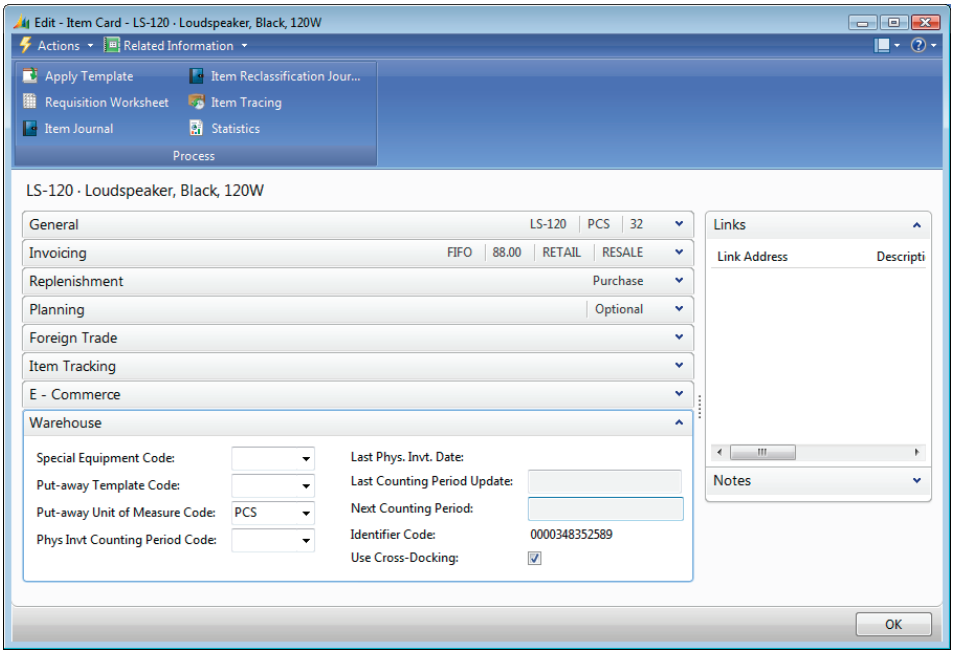

FIGURE 4.37 ITEM CARD

2. Click the **AssistButton** next to the **Phys Invt Counting Period** field, and select FAST.

The program displays a confirmation message asking whether to have the next cycle counting period suggested.

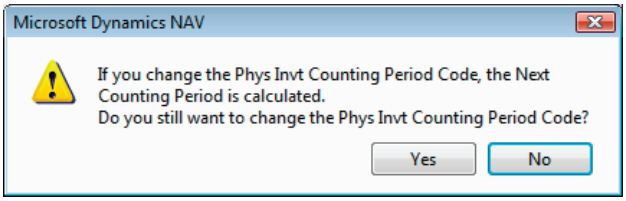

FIGURE 4.38 CONFIRM CALCULATING THE COUNTING PERIOD

3. Click **Yes** to confirm.

The **Next Counting Period** field is updated, and the counting period calculations are based on the work date.

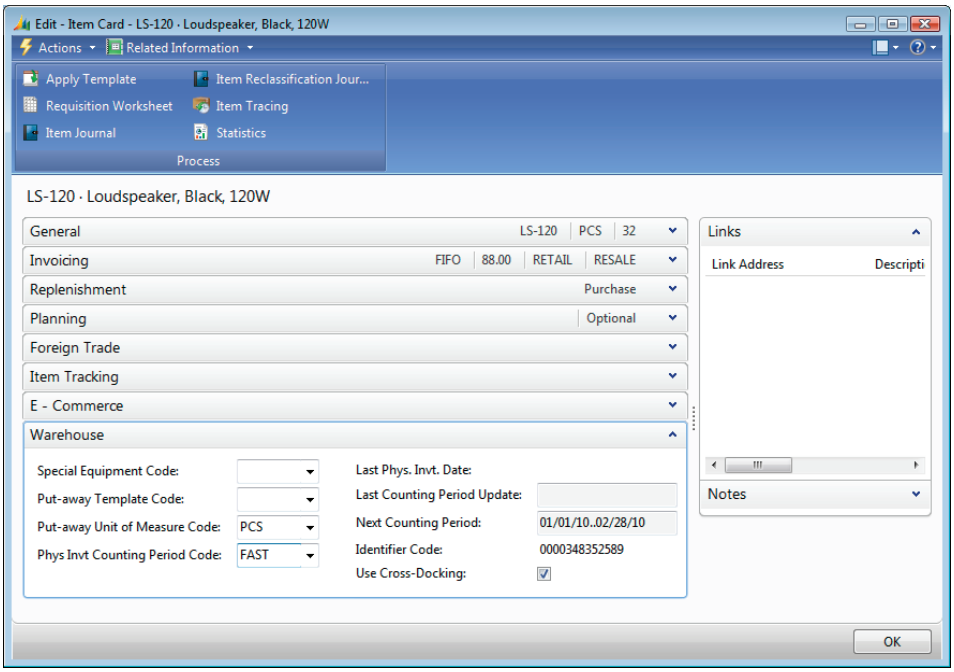

FIGURE 4.39 COUNTING PERIOD CALCULATED FOR THE ITEM

The SKU/item card also holds information on the last count, last counting period update, and when the next count is to be performed.

Demonstration: Perform Cycle Counting

In this demonstration, we will check availability of SKU LS-120 for the White location twice a year using the cycle counting functionality. To perform this task, following the steps below:

1. In the Navigation Pane, click **Reference Data**, **Items**. Open the card for item LS-120. Expand the **Warehouse** FastTab.

2. To open the SKU card by clicking **Related Information**, **Item**, **Stockkeeping Units**. The **Stockkeeping Unit List** window appears.

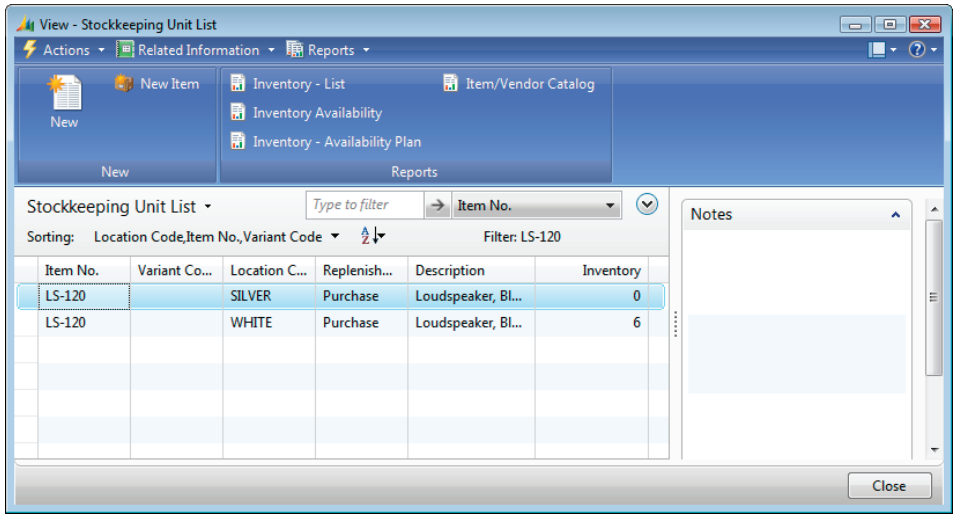

FIGURE 4.40 SELECTING THE STOCKKEEPING UNIT FOR COUNTING

3. Open the stockkeeping unit card for item LS-120 by clicking **Actions**, **Edit**.

4. Click the **AssistButton** next to the **Phys Invt Counting Period Code** field and select Normal. This option means that the unit will be checked twice a year and the next counting period is shown in the **Next Counting Period** field.

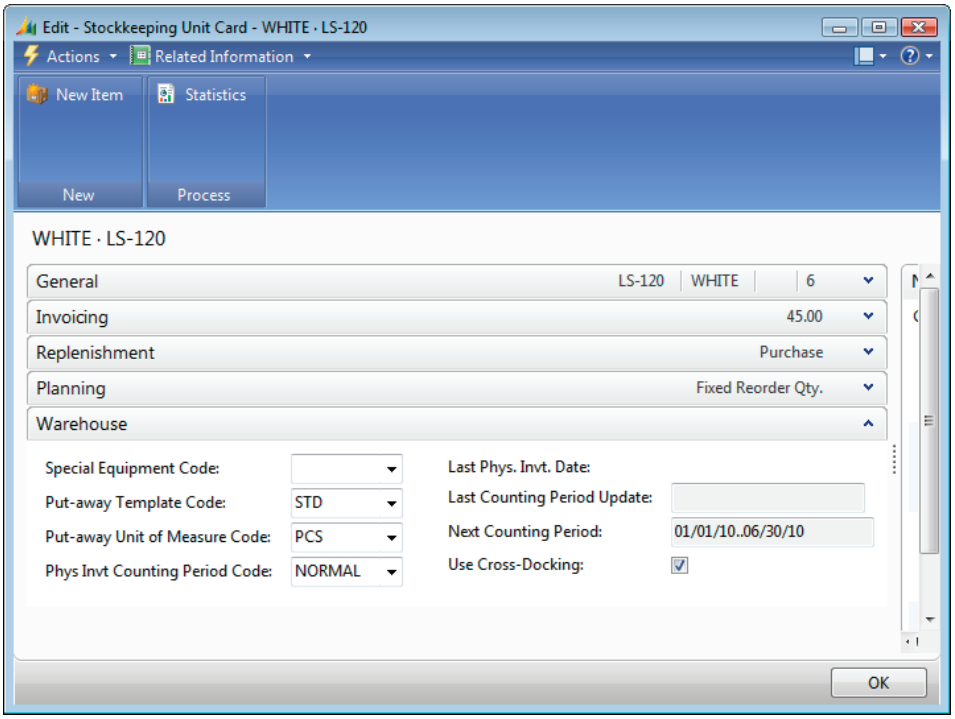

FIGURE 4.41 THE NEXT COUNTING PERIOD IS SPECIFIED

5. Close the **Stockkeeping Unit Card** window by clicking **OK**.
6. Physical inventory counting is performed in the **Whse. Phys. Invt. Journal** window. To open this window, in the Navigation Pane, click **Journals, Whse. Phys. Invt. Journals**.
7. To calculate the counting period, click **Actions**, **Functions**, **Calculate Counting Period**. The **Phys. Invt. Item Selection** window appears.
8. Select the line with item LS-120 with the White location and click **OK**.

9. The calculate **Phys. Invt. Counting** window appears. Here you can select whether to display items that are not in inventory. If you are planning to print, you can choose whether to print list, show quantity calculated and sorting method. In our case, do not select any check boxes and click **OK**. The program has counted the quantity of item LS-120 in different zones and bins.

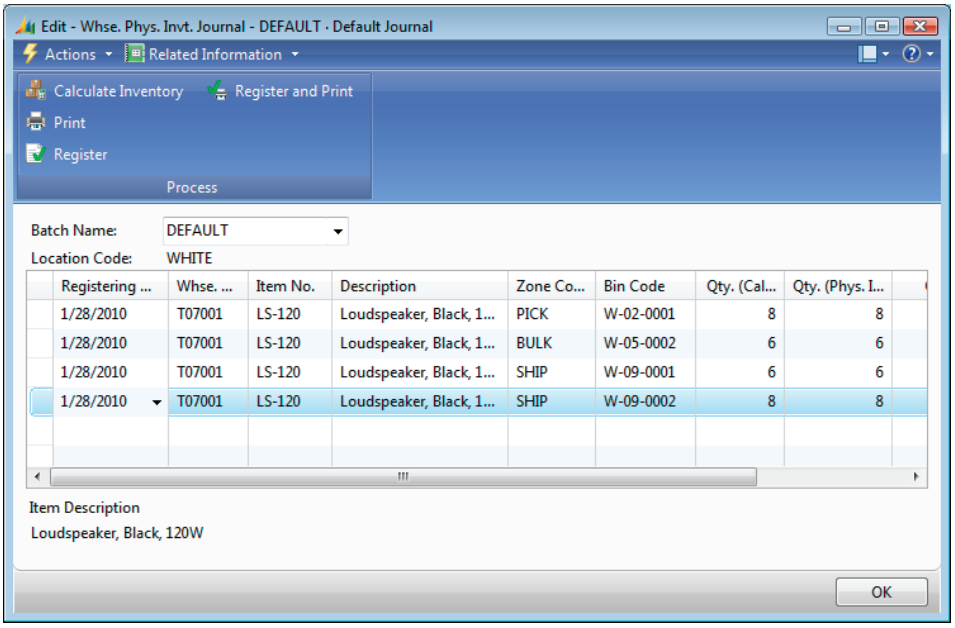

FIGURE 4.42 ITEM QUANTITY AVAILABLE IN DIFFERENT ZONES AND BINS

Then the physical inventory counting process is performed. The manager prints the counting report and check whether the item quantity on the stock is equal to that counted by the program. The physical quantity is specified in the **Qty. (Phys. Inventory)** field.

10. Click **Register**. After registering the inventory journal, information in the **Next Counting Period** field on the SKU card is updated. Another half a year is added.

***NOTE**: If the counting period in the **Next Counting Period** field on the **Warehouse** FastTab of SKU LS-120 for the White location is not updated automatically, you can update it manually by using the **Calculate Counting Period** function, available from the stockkeeping unit card. Click **Actions**, **Functions**, **Calculate Counting Period**.*

Working with Warehouse Entries

When working with WMS, you can control the size of the database and thus ensure the disk capacity is utilized efficiently. Whenever needed, you can reduce the size of the database by either compressing old warehouse entries or deleting warehouse documents.

Compressing Warehouse Entries

You can compress a big number of warehouse entries by using the Date Compress Whse. Entries batch job. To run the batch job, go to **Departments>Administration>IT Administration>Data Deletion>Date Compression**.

This batch job compresses warehouse entries, that is, combines them so that they take up less space in the database.

The compression works by combining several old entries into one new entry. For example, warehouse entries with the same location code, bin code, item number, variant code and unit of measure code can be compressed into one entry. If you specify in the request window, the serial number and lot number information can also be retained.

After compression is performed, the contents of the following fields are always retained: **Registering Date**, **Location Code**, **Zone Code**, **Bin Code**, **Item No.**, **Quantity**, **Qty. (Base)**, **Bin Type Code**, **Entry Type**, **Variant Code**, **Qty. per Unit of Measure**, **Unit of Measure Code**, **Warranty Date**, **Expiration Date**, **Cubage and Weight**. With the Retain Field Contents facility, you can also retain the contents of **Serial No.** and **Lot No.** The number of entries that result from running the compression batch job depends on how many filters you set, which fields are combined, and which period length you choose. There will always be at least one entry. When the batch job is finished, you can see the result in the **Date Compr. Registers** window.

***NOTE**: Date compression deletes entries, so you should always make a backup copy of the database before you run the batch job.*

Deleting Warehouse Documents

When your database has got a large number of warehouse documents, you may choose to delete some of them. For this purpose, you can use one of the following batch jobs:

- Delete Empty Whse. Registers (**Departments>Administration>IT Administration>Data Deletion>Delete Empty Registers**)
- Delete Registered Whse. Docs. (**Departments>Administration>IT Administration>Data Deletion>Warehouse Documents>Delete Registered Whse. Docs.**)

With the Delete Empty Whse. Registers batch job, you can delete the empty registers that result from running the Date Compress Whse. Entries batch job.

When you run the Delete Registered Whse. Docs. batch job, the program deletes registered warehouse documents according to the requirements set in the batch job request window.

Summary

Warehouse Management System allows for using the warehouse space effectively. For that purpose, items can be picked and put-away as well as moved around the warehouse.

From this chapter, you have learned the following:

- Item movement is performed at a bin level. Movements can be carried out manually or automatically.
- Internal picks and put-aways are used when items must be taken out of or returned to inventory without a source document.
- Immediate item quantity adjustments can also be made with an item journal.
- Physical counting helps to keep an accurate record of the warehouse inventory.

Test Your Knowledge

1. Ten pieces of an item from bin A-01-0001 need to be placed on bin A-02-0001. How is this achieved without using the movement worksheet?

2. True or False:
   An inbound source document must be released to use the internal put-away functionality.

3. What are the two options for defining an automatic item's flushing method?

4. What is the purpose of the warehouse item journal?

5. Where can the last physical inventory performed for item 70000 found?

Quick Interaction: Lessons Learned

Take a moment and write down three Key Points you have learned from this chapter

1.

2.

3.

Solutions

Test Your Knowledge

1. Ten pieces of an item from bin A-01-0001 need to be placed on bin A-02-0001. How is this achieved without using the movement worksheet?

   MODEL ANSWER:

   The movement can be registered in the warehouse reclassification journal by entering the item numbers, the quantity to move, the bins from which the items are taken, and the bins in which they are placed.

2. True or False:
   An inbound source document must be released to use the internal put-away functionality.

   MODEL ANSWER:

   False. There is no need for a source document when working with internal picks and put-aways.

3. What are the two options for defining an automatic item's flushing method?

   MODEL ANSWER:

   There are two options for defining an item’s flushing method: Pick + Forward and Pick + Backward.

4. What is the purpose of the warehouse item journal?

   MODEL ANSWER:

   The purpose of the warehouse item journal is to make adjustments to an item on a specific bin in a specific zone.

5. Where can the last physical inventory performed for item 70000 found?

   MODEL ANSWER:

   The value of the Last Phys. Invt. Date field is found on the Warehouse FastTab of the item card.