CHAPTER 5: PRODUCTION ORDERS

Objectives

The objectives are:

- Examine the structure and makeup of a production order
- Review the purpose of a production order
- Define the five statuses of a production order
- Create a new production order
- View the routing and components of a production order
- Reserve components for a production order
- View actual against expected costs, and capacity of a production order
- Make changes to the production order due date
- Make changes to the production order quantity required
- Make changes to the production order components required
- Use item substitution for components
- Make changes to the production order routing
- Examine the reports printed directly from a production order
- Access the Production Schedule from a production order
- Review the standard reports available for production order reporting
- Review the purpose of the Replan Production Order batch job
- Examine how the Replan Production Order batch job operates
- Explain the effects of scheduling a production order with a phantom BOM
- Calculate a manufacturing batch unit of measure
- Identify the two methods of changing the status of a production order

Introduction

This chapter examines the purpose of the production order in Microsoft Dynamics™ NAV.

Production orders are used to manage the conversion of purchased materials into manufactured items. Production orders (job or work orders) route work through various facilities (work or machine centers) on the shop floor.

Production orders are the central components of the Microsoft Dynamics NAV’s manufacturing functionality and they contain the following information:
• Products planned for manufacturing
• Materials required for the planned production orders
• Products that have just been manufactured
• Materials that have already been selected
• Products that have been manufactured in the past
• Materials that were used in previous manufacturing

Production orders are the starting points for:

• Planning future manufacturing
• Controlling current manufacturing
• Tracking of finished manufacturing

Production orders go through five different statuses in their life time. The next chapter will go into details with this.

Production Order Status

Production orders are displayed in different windows according to their status. It is not possible to change the status of a production order manually. Click the **Functions** button on the Production order and then click the Change Status button to change the status.

A production order can have one of the following status codes:

• Simulated
• Planned
• Firm Planned
• Released
• Finished

These five different codes will be explained further in the following five sections.

**Simulated Production Order - SPO**

The Simulated Production Order (SPO) is the only production order located in the Planning folder of the Microsoft Dynamics NAV Manufacturing menu and is unique based on the following characteristics:

• It is not real.
• It does not influence order planning.

As its name implies, it is not real and the main purpose is for quoting and costing, such as when the Research and Development department wants to get a cost estimate on a proposed item. An SPO serves as an example of a production order.
SPO does not influence the planning of orders. Planning (MPS and MRP, discussed in other chapters) neither considers nor is affected by simulated production orders. Also, a simulated production order cannot be used as a template because it disappears when its status changes.

**Planned Production Order - PPO**

The Planned Production Order (PPO) is located in the Execution folder of the Microsoft Dynamics NAV Manufacturing menu and is unique because of the following characteristics:

- PPOs affect capacity requirements.
- PPOs serve as good workload estimates.
- PPOs need careful planning.

PPOs are like released production orders and provide input to capacity requirements planning by showing the total capacity requirements by work center or machine center.

A PPO represents the best estimate of the future work center or machine center load based on available information. Typically, they are generated from planning, but can also be created manually. Because they are erased during subsequent planning generations, manual creation is not practical.

The PPOs’ generation in planning results in a suggested “planned order release” that includes quantity, release date, and due date. The planning system logic is based on the replenishment system, reorder policies, and order modifiers that it encounters in the net requirements planning process.

*NOTE:* To view the PPOs’ impact in Microsoft Dynamics NAV, look at the load for each work center or machine center on the planned production order’s routing.

**Firm Planned Production Order - FPPO**

The Firm Planned Production Order (FPPO) is located in the Execution folder of the Microsoft Dynamics NAV Manufacturing menu and is unique by the following characteristics:

- FPPOs can be manually changed.
- FPPOs are placeholders.
- FPPOs are created from planning, manual creation, or sales orders.
- FPPO creation results in a “planned order release.”

Planning cannot change an FPPO, but the Production Planner can make changes manually to the production order. The Production Planner can automatically create an FPPO from a sales order.
An FPPO acts as a placeholder in the planning schedule for some future job released to the floor.

An FPPO can be generated from planning or created manually or from sales orders; they are not erased during subsequent planning.

An FPPO's generation in planning results in a suggested “planned order release” that includes quantity, release date, and due date. The planning system logic is based on the replenishment system, reorder policies, and order modifiers that it encounters in the net requirements planning process.
Firm Planned Production Order - FPPO (Part 2)

To view an FPPO's impact in Microsoft Dynamics NAV, look at the load for each work center or machine center on the firm planned production order's routing.

1. From a work or machine center, go to **Work Ctr./Mach Ctr. button** > **Load**.

Check the production order capacity need (load) including start time and end times for each work center and machine center.

1. To do this, select a period (ex: July) that has a load.
2. Click on the number in the Allocated field. A down arrow will appear.
3. Click the down arrow. The Prod. Order Capacity Need dialog box appears.

![Prod. Order Capacity Need](image)

**FIGURE 5.1**

More information on this is available in the Capacities chapter in this training manual.

Released Production Order - RPO

The Released Production Order (RPO) is located in the Execution folder of the Microsoft Dynamics NAV Manufacturing menu and is unique by the following characteristics:

- RPOs do not indicate product removal.
- RPOs are not always created immediately after a sales order.
- RPOs can record material consumption from a product output.

When a production order has been released, it does not necessarily mean that materials have been picked or the job has physically moved to its first operation.
In an MTO (Make-to-Order) environment, it is not unusual to create a released production order immediately after the entry of the sales order.

Actual material consumption and product output can be recorded manually with an RPO. In addition, automatic flushing of consumption and product output only occurs for RPOs.

**NOTE:** Consumption (automatic flushing) and output is covered in greater detail in chapter 6: Finishing Orders and Auto Reporting.

---

**Finished Production Order - FPO**

The Finished Production Order (FPO) is located in the History folder of the Microsoft Dynamics NAV Manufacturing menu and is unique by the following characteristics:

- FPOs are terminal. An FPO is an order that, for some reason, has been terminated. Usually, the order has been manufactured.
- FPOs can track back to other orders. FPOs are used for statistical reporting and to maintain the ability to track back to other orders (sales, production, and purchase, for example).
- FPOs can never be changed. The ability to track back to a finished production order allows you to review the detailed history.

**NOTE:** Finished Production Orders cannot be posted to or deleted.

**NOTE:** The status of a production order is changed to Finished to maintain historical information and to complete accounting and/or automatic flushing entries.
Manual Production Orders

New Order Entry

This section examines the creation of a new Production Order in addition to viewing the Routing and Components of the Production Order.

Demonstration 1

Perform the following steps to create a firm planned production order.

1. Manufacturing > Execution > Firm planned prod. orders
2. Press F3 to create a new order.
3. Create a new production order number.
4. Enter Source Type = Item.

Source Types

Note that the Source Type for this order is Item. Three Source Types are available for a production order:

- Item
- Family
- Sales Header

Item. An item production order is wanted when one production order for each individual line of a sales order is appropriate.

Family. A Family production order is needed when a group of items always needs to be manufactured together. This type is discussed in more detail in a later chapter.

Sales header. A sales header production order is appropriate when you want to produce all items of a sales order from one production order. This is useful in a large project environment where there is a relatively long manufacturing lead-time.

NOTE: Notice that the inventory and product posting groups default from the item card. This information is used for general ledger postings. If needed, department, project, and location codes may be entered.

Source Types (Part 2)

This demonstration shows how the scheduling of a production order works.

1. Click the Posting tab
2. Enter the Global Dimension values if necessary.
3. Click the **Functions** button and select **Refresh**. The **Refresh** function simultaneously plans and schedules the production order, allowing both the needed components and the detailed routing to be scheduled at the same time. This feature is referred to as simultaneous planning.

4. Click the **Options** tab of the Refresh Production Order window.

5. Select Scheduling Direction = Back.

**Source Types (Part 3)**

Backward scheduling begins from the ending date and proceeds backward to the required starting date.

Forward scheduling begins at the starting date and proceeds forward to the finishing date.

6. Select the **Lines**, **Routings**, and **Component Need** fields. This recalculates the production order lines and copies the routing steps and components from the Routing and Production BOM.

7. **Calculate**. You can also determine whether to calculate the routings and components for each line. Remember that you can have more than one line on a production order. When you run the Refresh function, existing detail lines are erased and new lines are created based on the standard production BOM and routing for each item. To reschedule, you may need to refresh the production order, but you may not want the program to erase the lines. This is because you will lose any changes you entered on the line (Production BOM) or you might lose order tracking information (components reserved). In this case, clear the **Lines** field.

8. Click **OK**.

9. Click on the **Schedule** tab.
**NOTE:** The program automatically schedules the order to be completed one day before the due date.

### Source Types (Part 4)

![Diagram showing elements of the lead time in production scheduling process.](image)

The figure above shows the elements of the lead time that are taken into account in the production scheduling process. The system calculates as follows:

- Starting and ending dates and times have been calculated based on the standard routing.
- The lot number assigned is based on the planning lot number series entered in the Manufacturing Setup window. It is reviewed how this number can be used when changes to production orders are discussed.

### View Production Order Routing

To view the detailed routing for the production order created, do the following:

1. From the Production order, click the **Line** button, then select **Routing**.

The starting and ending dates and times for each operation are based on scheduling back from the end day prior to the production order due date.
Using each machine (work) center calendar, the program calculates the schedule using the setup, run, wait, and move times for each operation. While queue time is not included in the determination of the starting or ending dates and times for an operation, it is calculated as the time between the end of one operation and the start of the next.

The figure shows for production order number 101001 the routing for item 1000, the bicycle.

![FIGURE 5.4](image)

**View Production Order Components**

To view the list of production order components for the production order 101001 of item 1000:

1. Click the Line button.
2. Select Components.

![FIGURE 5.5](image)
NOTE: The due date for each component is based on the lead-time calculation for purchased items and the routing for production items, along with any routing link code. If there are no routings, then it is based on lead-time calculation only.

Routing Link Codes

Routing link codes can be set up to link a component defined on an item's BOM to an operation on an item's routing. Users can specify at which operation in a routing the material is used.

Routing link codes allow for greater just-in-time functionality because it gives you the flexibility to flush the material at a specific operational step rather than all at the beginning or all at the end of the production order.

Remember that using the JIT functionality facilitates reduced inventories, which results in a lower cash requirement or higher working capital.

Inventory Reservation

By the end of this section, users may be able to reserve components for a production order.

In some cases it is necessary to reserve components for a production order. This can be done manually for a specific production order, or you can set it up to occur automatically. For detailed information inventory reservations, please refer to the Microsoft Dynamics NAV Inventory Management training manual.

Inventory Reservation (Part 2)

Demonstration 1

To reserve a component for a production order:

1. From the Prod. Order Component window select an item.
2. Click the Functions button and then select Reserve.
3. Select a line, for example Summary Type = Item Ledger Entry, in the Reservation window.
4. Select a line, for example Summary Type = Item Ledger Entry, in the Reservation window.
5. Click the Functions button and then select Reserve from Current Line.
The Total Reserved Quantity is updated.

![FIGURE 5.6](image)

The reservation can be viewed by selecting the Order Tracking selection from the **Function** menu button.

**Production Order Statistics**

**View Production Order Statistics**

This chapter examines actual cost against expected costs, and capacity of a production order.

In addition to the detailed routing and components, view actual against expected costs and capacity. To do this, go to **Manufacturing>Firm Planned Prod. Orders>Order>Statistics**.

![FIGURE 5.7](image)
The fields in the **Statistics** window include:

<table>
<thead>
<tr>
<th>Field</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Material Cost</strong></td>
<td>This field shows the material costs of all lines in the production order. These include:</td>
</tr>
<tr>
<td></td>
<td>• Standard cost of materials based on a standard production BOM.</td>
</tr>
<tr>
<td></td>
<td>• Expected cost of materials based on any changes made to material components for this production order.</td>
</tr>
<tr>
<td></td>
<td>• Actual cost of materials based on recording consumption for the production order.</td>
</tr>
<tr>
<td></td>
<td>• Production order variance, calculated as follows:</td>
</tr>
<tr>
<td></td>
<td>• Actual cost - standard cost = variance</td>
</tr>
<tr>
<td></td>
<td>• Dev % (deviation percentage), calculated as follows:</td>
</tr>
<tr>
<td></td>
<td>• Variance/standard cost = deviation %</td>
</tr>
<tr>
<td><strong>Capacity Cost</strong></td>
<td>This field shows the capacity cost amount of all lines in the production order. This includes:</td>
</tr>
<tr>
<td></td>
<td>• Standard capacity costs (based on a standard routing)</td>
</tr>
<tr>
<td></td>
<td>• Expected capacity costs (based on any changes made to the internal operations on the routing for this production order)</td>
</tr>
<tr>
<td></td>
<td>• Actual capacity costs (based on recorded output for the production order)</td>
</tr>
<tr>
<td></td>
<td>• Deviation in percent</td>
</tr>
<tr>
<td></td>
<td>• Variance</td>
</tr>
<tr>
<td><strong>Subcontracted Cost</strong></td>
<td>This field shows the subcontracted cost amount of all lines in the production order. This includes:</td>
</tr>
<tr>
<td></td>
<td>• Standard subcontractor costs (based on a standard routing)</td>
</tr>
<tr>
<td></td>
<td>• Expected subcontractor costs (based on any changes made to external operations on the routing for this production order)</td>
</tr>
<tr>
<td></td>
<td>• Actual subcontractor costs (based on subcontractor purchase order receipts for the production order)</td>
</tr>
<tr>
<td></td>
<td>• Deviation in percent</td>
</tr>
<tr>
<td></td>
<td>• Variance</td>
</tr>
<tr>
<td>Field</td>
<td>Information</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Capacity Overhead   | This field shows the capacity overhead cost amount of all lines in the production order. Capacity overhead includes indirect overhead costs, such as:  
  - Factory supervision  
  - Factory fixed expenses  
  - Subcontractor overhead expenses  
  - Refer to the Microsoft Dynamics NAV training manual, Manufacturing Costing, for more details.  
  - This includes:  
    - Standard capacity overhead costs (based on a standard routing)  
    - Expected capacity overhead costs (based on any changes made to the internal or external operations on the routing for this production order)  
    - Actual capacity overhead costs (based on recorded output for the production order)  
    - Deviation in percent  
    - Variance |
| Manufacturing Overhead | This field shows the manufacturing overhead amount of all lines in the production order. Manufacturing overhead may be indirect costs, such as freight or material handling charges. Refer to the Microsoft Dynamics NAV training manual, Manufacturing Costing, for more details.  
  - This includes:  
    - Standard manufacturing overhead costs (based on a standard production BOM)  
    - Expected manufacturing overhead costs (based on any changes made to material components for this production order)  
    - Actual manufacturing overhead costs (based on recorded consumption for the production order)  
    - Deviation in percent  
    - Variance |
### Field Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Cost</strong></td>
<td>This field shows the total cost amount of all lines in the production order.</td>
</tr>
<tr>
<td></td>
<td>This includes:</td>
</tr>
<tr>
<td></td>
<td>• The standard costs (based on a standard production BOM and routing)</td>
</tr>
<tr>
<td></td>
<td>• Expected total costs (based on any changes made to the components or routing for this production order)</td>
</tr>
<tr>
<td></td>
<td>• Actual total costs (based on recording consumption or output for the production order)</td>
</tr>
<tr>
<td></td>
<td>• The deviation in percent</td>
</tr>
<tr>
<td></td>
<td>• Variance</td>
</tr>
<tr>
<td><strong>Capacity Need</strong></td>
<td>This field shows the total amount of capacity required (in minutes, hours, or days) of all lines in the production order.</td>
</tr>
<tr>
<td></td>
<td>This includes:</td>
</tr>
<tr>
<td></td>
<td>• Expected capacity (based on changes to the routing for the production order)</td>
</tr>
<tr>
<td></td>
<td>• Actual capacity (based on recording output for the production order)</td>
</tr>
<tr>
<td></td>
<td>• Deviation</td>
</tr>
</tbody>
</table>

### Production Order Changes

There might be various types of anticipated changes that need to be made to a production order prior to it being released to the shop floor. There may also be a need to make changes to a production order after work has begun. This is typically the responsibility of the Production Planner because this person has the overview of the entire pool of production orders.

### Due Date Changes

The Starting date and Ending date fields on the Schedule tab of the Production order is automatically amended if the Due date is changed in the heading of a production order.

*NOTE*: Changes to the Due Date causes a change in the scheduling tab and routing lines.
The Starting and Ending date field values are updated based on the most recent settings of the Refresh Production Order batch job and Routing criteria of the production order.

FIGURE 5.8

**Quantity Changes**

If a production order has a Source type of Item or Family, and the Production Planner makes a change to the *Quantity* field in the heading, or to the *Quantity* field on the line, then the Production Planner must run the Refresh Production Order batch job to reschedule the production order lines.

**NOTE:** If ledger entries have been posted for the order, then the quantity on the production order header or lines cannot be changed, nor can the dates and time on the *Schedule* tab.

FIGURE 5.9
Changes to Required Components

Components may often need to be changed to manufacture an item. This is usually the case in an MTO company, where items are produced to customer specifications. A production order may be created for an MTO item with components from a standard template production BOM. The operations are then modified as needed.

Changes to Required Components (Part 2)

**Demonstration 2**

This demonstration shows how to make a change to a production order component:

1. From the Prod. Order Component window select the component/item to be changed.
2. Press F4 to delete the component.
3. Click the Yes button in the Delete Prod. Order Component confirmation window.
4. Press F3 to insert a new component in the BOM and complete the required fields.

**Item Substitution**

Production Order Components can use substitutions, similar to sales order substitution. Setting up item substitution is done similarly for both sales and production. Do this by going to: Manufacturing>Product Design>Items>Item>Substitutions.

From a production order, choose Line> Components to see the list of components. Use show column to add the field Substitution Available. If a check mark is in the field, a substitution is available. You can then choose Line> Select Item Substitution.

**Order Planning**

One reason users might choose to substitute a component is because the usual item is out of stock. A quick check of component availability is available through reports (shown later in the chapter) and Order Planning.
Demonstration 3

This demonstration shows how to check components through Order Planning:

1. From a production order, choose Order > Planning then go to Functions > Calculate Plan.
2. If components are not available for this production order, a planning line is displayed for the production order header and any unfulfilled demand lines are expanded under it.
3. If all demand is met for the current production order, a message appears saying that all items are available and no planning line was created for it; one line (collapsed) for each production order of unplanned demand.

Routing Changes

Similar to the components, production order routing may require modification. In an MTO company, this is usually the case where items are produced to customer specifications. A production order may be created for an MTO item with operations from a standard template routing. The operations are then modified as needed.

In order to recalculate the routing when operations have been changed, you have to utilize Function - Replan. Later in this chapter, the Replan function is discussed in greater detail.

Demonstration 4

This demonstration shows how to make a change to a production order routing:

1. From the Prod. Order Routing window select the operation to be changed.
2. Press F4 to delete the operation.
3. Click the Yes button in the Delete Prod. Order Routing Line confirmation window.
4. Press F3 to insert a new routing line and complete the required fields.
5. Run the Replan Production Order batch job.

Printing from a Production Order

There are four reports available to be printed directly from a Firm Planned or Released Production Order. Those reports are:

- Prod Order. - Job Card
- Prod Order. - Mat. Requisition
Chapter 5: Production Orders

- Prod Order. - Shortage List
- Prod Order. - Gantt Chart

FIGURE 5.10

The four different reports are introduced in the following four sections.

**Prod. Order - Job Card**

The Job Card report can be used to record actual operating times for an order and provides a list of the work in progress of a production order. Output, Scrapped Quantity, and Production Lead Time are shown or printed, depending on the operation. In addition, the report displays material components required at each operation based on the routing link code and can be used in a Just-in-Time environment. To print the report from a Firm Planned or Released production order, first click the **Print** menu button, and then select Job Card.

**Prod. Order - Mat. Requisition**

The Material Requisition report shows component requirements for an order. The report shows the status of the production order, the quantity of end items, and components with the corresponding required quantity. The Due Date and Location Code of each component can be viewed. To print the report from a Firm Planned or Released production order, first click the **Print** menu button, and then select Mat.Requisition.

**Prod. Order - Shortage List**

The Shortage List report shows any component items with insufficient quantities to produce the item(s) on the order. The list shows how the inventory development is planned from today until the set day, for example if orders are still open. To print this report from a Firm Planned or Released production order, first click the **Print** menu button, and then select Shortage List.
Prod. Order Gantt Chart

The Prod. Order Gantt Chart report provides a routing schedule for an order, based on time periods and Start Date defined on the Options tab of the Request form. To print the report from a Firm Planned or Released production order, first click the Print menu button, and then select Gantt Chart.

Production Schedule (Gantt Chart)

A Gantt chart view of production schedule planning and resource planning is available.

From a planned, firm planned, or released production order, click Functions > Production schedule.

The Production Schedule window opens showing all existing production orders (except simulated and finished). The operations for the relevant production order are highlighted with blue color. Each status of production order has its own section. A tool tip text displays all relevant information when you place the cursor over an operation.

Production Order Reports

Microsoft Dynamics NAV offers the following standard production order reports found in the Execution and Costing folders (Reports folder) of the Manufacturing menu:

<table>
<thead>
<tr>
<th>Report</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prod. Order -Calculation</td>
<td>This report shows a summarization of total operation and component costs.</td>
</tr>
<tr>
<td>Prod. Order -Detailed Calc.</td>
<td>This report shows a detailed listing of the costs for each operation and component for production orders selected in the order filters.</td>
</tr>
<tr>
<td>Prod. Order -List</td>
<td>This report can be used to review the status (Due Date, Quantity Completed, and so on) of production orders selected in the order filters.</td>
</tr>
<tr>
<td>Prod. Order -Picking List</td>
<td>This report can be used for material picking purposes.</td>
</tr>
<tr>
<td>Prod. Order -Precalc. Time</td>
<td>This report is a detailed listing (both routing and components) of the production order requirements.</td>
</tr>
<tr>
<td>Prod. Order -Routing List</td>
<td>This report can be used to record completed and scrapped quantities at each operation.</td>
</tr>
</tbody>
</table>
Replan Production Order Batch Job

The Replan Production Order batch job is used to reschedule production orders, such as when you want to make changes to a production order routing. It is also used to create and plan production orders for lower level assemblies, as required by the current parent production order. When clicking the Functions menu button and then selecting Replan, the Production Planner can not only select the scheduling direction, but also the number of levels for the planning process.

The Replan Production Order batch job is not meant to be a substitute for the more advanced calculations of planning. While it can create orders for required lower level assemblies, it does not include time phasing, which is integral to planning calculations. A good use of this batch job is for a multi-level production order in which the parent and sub-assemblies are on the same production order and the Ending date is adjusted for the parent item. In this situation, the batch job enables you to adjust the dates for the lower level assemblies.

Replan Production Order Batch Job (Part 2)

There are three different levels that can be used when replanning:

- No Levels
- One Level
- All Levels

![FIGURE 5.11](image)

No Levels. The No Levels option is used to calculate a multi-level or multi-line production order. In this case, all of the items and subassemblies must be Make-to-Order and new requirements are added to the existing production order as additional line items.

One Level. The One Level option is used to create and plan production orders one level down. If the current production order is for an item that is Make-to-Order, but the first level subassemblies are Make-to-Stock, then the program creates new and separate production orders for that level.
All Levels. This option is used to create separate production orders for all level requirements of the current production order. By using the order tracking functionality, you can easily view which parent production order is the source of demand for a lower-level production order(s).

Furthermore, when lower level production orders are created, the planning lot number is copied from the parent production order heading to the lower level production order headings. This is another link or connection between production orders. To illustrate, calculate the production requirements for the first level down. Item 1000 is set up as Make-to-Order, while lower level subassemblies are set up as Make-to-Stock.

Replan Production Order Batch Job (Part 3)

This demonstration shows how to track from a production order to the production order of a parent item. This is done by calculating the production requirements for the first level down:

1. Set up the Item on a Firm Planned Production Order as Make-to-Order.
2. Set the lower level subassemblies as Make-to-Stock.
3. Set the Order Tracking Policy field to Tracking Only on the Item card.
5. Press F5 to display a list of production orders.
6. Select the firm planned production order for the item set up above.
7. Click the Functions menu button and select Replan.
8. Click the Options tab, select the Back and One Level options.
9. Click OK.
10. Press F5 to display a list of production orders.

NOTE: Production orders are created for all subassemblies.

11. Select the firm planned production order for a subassembly.
12. Click the Functions menu button and select Order Tracking.
13. Click the Show button to view the source of the demand - the parent item.
Production Orders with Phantom BOMs

Phantom BOMs are used to reduce the number of levels in the product structure, which significantly reduces the overall complexity of the manufacturing process.

When a production order with a Phantom BOM assembly component is created and the Refresh Production Order batch job is run, Microsoft Dynamics NAV displays the phantom BOM's components instead of the Phantom BOM assembly.

For example, if a firm planned order is created for a bicycle with a Phantom BOM pedal assembly that is made up of a pedal and a pedal screw, once the Refresh Production Order batch job is run, the pedal and pedal screw is displayed as Level 1 components of the bicycle.

NOTE: Phantom BOMs are discussed in detail in the Production Bill of Materials chapter of this training manual.

Production Orders with Manufacturing Batch Unit of Measure

If an item is stocked in one unit of measure, but produced in another, Microsoft Dynamics NAV can create a production order that uses a manufacturing batch unit of measure to calculate the correct quantity of the components during the Refresh Production Order batch job.

Demonstration 5

This demonstration shows how to calculate a manufacturing batch unit of measure:

1. Go to Manufacturing > Execution > Firm Planned Prod. Orders
2. Create a production order (Quantity = 5) for an Item stocked in “pieces.”
3. Create a Unit of Measure equal to 12 “pieces” and name it DOZ.
4. Enter the production order line manually using the same Item number and quantity=5. The Unit of Measure is set to DOZ.
5. Click the Functions menu button and select Refresh.
6. Click Options tab and clear the Lines field.
7. Click OK.
8. Click the Lines menu button and select Components.
Based on the standard production BOM to build a dozen, the program calculates the correct quantity of the components.

![FIGURE 5.12](image)

**Changing Production Order Status**

There are two methods to change the production order status.

The first method of changing the production order status is to change the status in the current production order itself by selecting the *Functions* menu button and selecting Change Status.

![FIGURE 5.13](image)

The appearing window, shown in the figure, allows users to select the status which this production order is to be assigned. Enter the appropriate *Posting Date* and select whether the unit costs of this production order are updated by placing a check mark in the *Update Unit Cost* field.

The second method is to utilize the Change Production Order Status batch job. Multiple orders can be changed simultaneously using this batch job.
To run this batch job perform the following steps:

1. Go to **Manufacturing menu > Execution > Change production order status**
2. Select the Status of the production orders to define a filter on the lines of the form to view in the **Status filter** field.
3. To define the filter on the lines, enter dates in the **Must Start Before** and **Ends Before** fields.
4. Select the production orders you want to update by highlighting each order or pressing **Ctrl+F1** on each order line.
5. Click the **Functions** menu button and select Change Status.
6. Enter the appropriate Posting Date.
7. Place a check mark in the **Update Unit Cost** field if you want the unit cost of this production order updated.
8. Select the **Yes** button.

![FIGURE 5.14](image)
Lab 5.1 - Production Orders

Scenario

Create Firm Planned Order

- Create a firm planned production order for five pieces of item 1001, Touring Bicycle, due 11/15/08.
- Refresh the production order-backward schedule and calculate lines, routings and component need-noting the changed starting and ending dates

Step by Step

Answer

2. Hit F3 and enter to create a new production order header and number.
3. In the Source No. field, enter 1001.
4. In the quantity field, enter 5.
5. In the Due Date field, enter 01/24/08.
6. Click on the Schedule tab and note the starting and ending dates.
7. Choose Functions button > Refresh.
8. Accept all default information and choose OK button.
9. Click on the tab and note the starting and ending dates.

Change Dates

1. Change the Due date of the production order header to 11/20/08. Do the starting and ending dates change? Review the routing. Has this changed as well?
2. On the Schedule tab of the production order, change the ending date to 11/20/08. What happens to the routing for the order?

Step by Step

Answer

2. Hit F5 to make a list.
3. Choose the production order created in the previous exercise.
4. Put your cursor in the header or on the production order line.
5. Go to Line > Routing.
6. Note the start and end times.
7. Press Esc to go back to the production order.
8. Click on the Schedule tab.
9. Note the start and end times.
10. Go to the General tab and change the due date to 11/20.04.
11. Go to Schedule tab and note the changed start and end times.
12. Put your cursor in the header or on the production order line.
13. Go to Line > Routing and note the changed start and end times.
14. Press Esc to go back to the production order.
15. Click on the Schedule tab.
16. Change the End Date to 02/23/08.
17. Go to Line > Routing.
18. Note the start and end times in the routing lines are the same.
19. Escape back to the production order.
20. Put your cursor in the header or on the production order line.
22. Put the cursor on the row with item number 1850.
23. Choose F4 to delete the row.
24. Choose Yes to delete the row.
25. Put the cursor on the row with item number 2000.
26. Choose F4 to delete the row.
27. Put your cursor on a blank row.
28. In the Item No. field, choose 1100.
29. In the Quantity Per field, enter 1.
30. Press escape button to return to the production order.