MANUAL

Visual Production Scheduler Version 1.4 for Microsoft Dynamics NAV

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April 2017

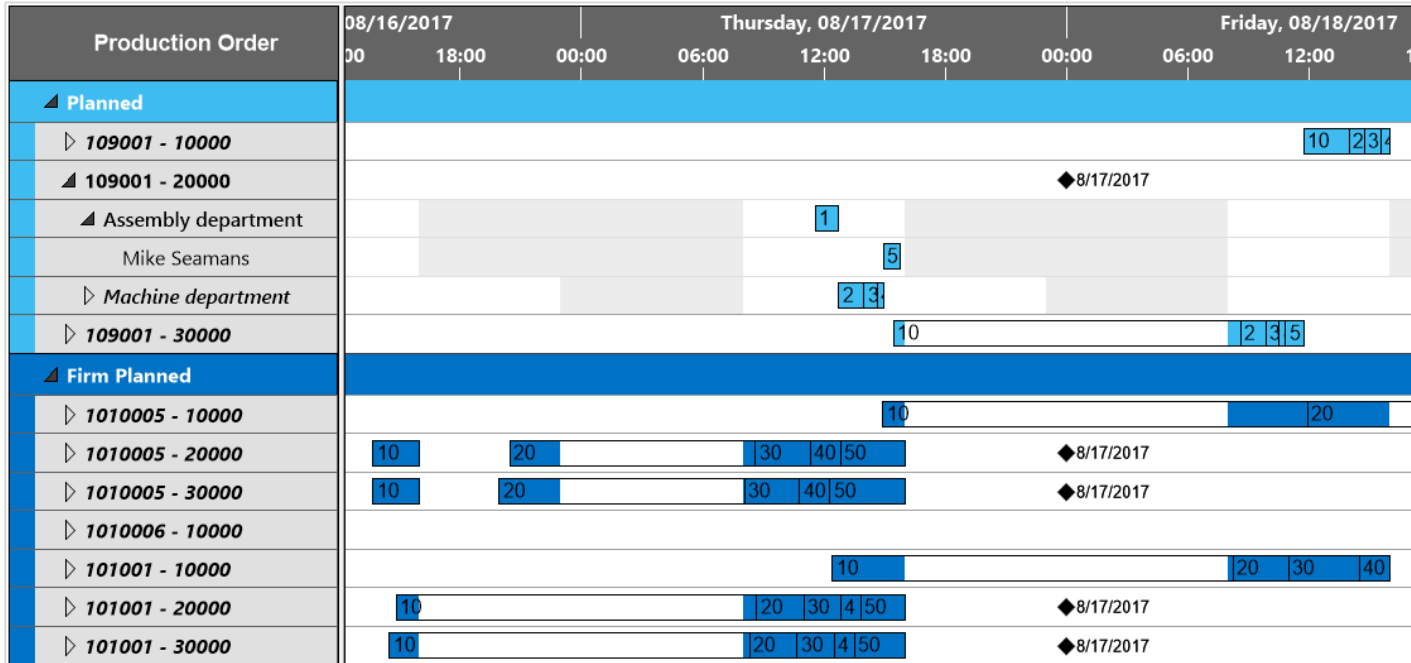Tweet this document!

Starting the VPS

FIRST OPTION

By Departments > Manufacturing > Planning > Lists > Visual Production Scheduler

SECOND OPTION

Or customize your role center to display the VPS button in the role center menu

The VPS at First Glance

The VPS is a Gantt chart with a time scale at the top. At the left hand side, a table displays either production orders (in the Production Order view) or work/machine centers (in the Resource View). On the right below the time scale, you see the chart of the production schedule.

Production Order	08/16/2017			Thursday, 08/17/2017				Friday, 08/18/2017	
	00 18:00	00:00	06:00	12:00	18:00	00:00	06:00	12:00	
◢ Planned									
▷ 109001 - 10000								10 2 3 4	
◢ 109001 - 20000						◆8/17/2017			
◢ Assembly department				1					
Mike Seamans				5					
▷ Machine department				2 3					
▷ 109001 - 30000				10				2 3 5	
◢ Firm Planned									
▷ 1010005 - 10000				10				20	
▷ 1010005 - 20000	10	20		30 40 50		◆8/17/2017			
▷ 1010005 - 30000	10	20		30 40 50		◆8/17/2017			
▷ 1010006 - 10000									
▷ 101001 - 10000				10				20 30 40	
▷ 101001 - 20000	10			20 30 4 50		◆8/17/2017			
▷ 101001 - 30000	10			20 30 4 50		◆8/17/2017			

The Working Area
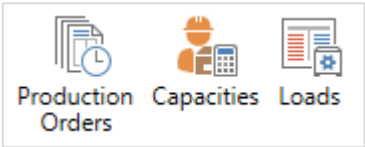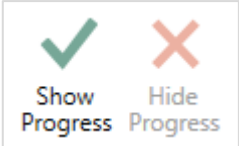
THE MENU BAR
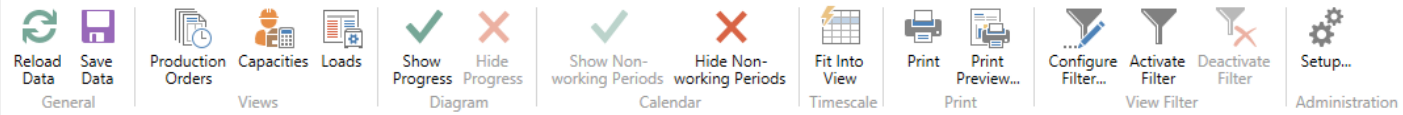
Situated above the diagram, the menu bar offers comprehensive functionality:
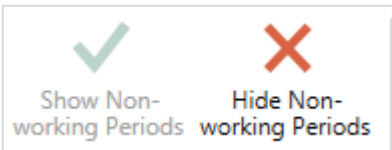

After modifications you might have to reload or save the data

Switch views depending on which aspects of your data you want to emphasize

Show/ hide progress

Show/hide the work free periods in the chart
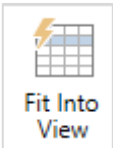
The timescale gets minimized/maximized so that the chart shows the complete timespan as defined in the "Settings" dialog.
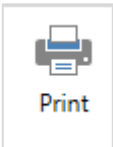
Opens the "Print" dialog
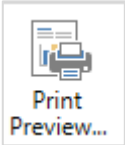
Opens the "Print Preview"
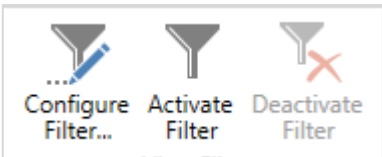
In the "View Filter" dialog you can make filter settings. By clicking the according button, you can apply these settings to your current view or deactivate them.
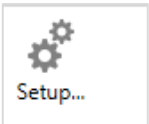
Opens the "Setup" dialog where you can make basic settings for the VPS.

THE GANTT CHART

In the background of the Gantt chart, a calendar is displayed: non-working times are highlighted in grey, contrasting with the plain white of working times. The bars of the operations are colored during working times and just white during non-working times.
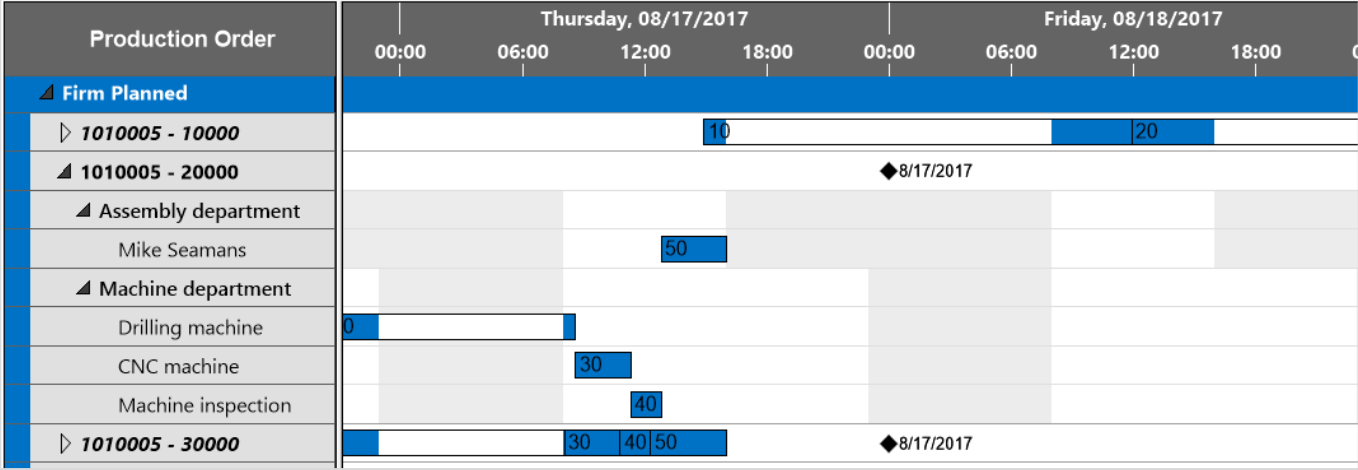
THREE DIFFERENT VIEWS

There are three different views in the VPS: the Production Order View, the Resource View and the Histogram View. You can switch views by clicking the according buttons.

The Production Order View

- The production orders are categorized by status, the categories being indicated by different colors:

- Within a category, order numbers are sorted in ascending numerical order by default. This sorting order can be changed by a context menu being called by a right-click on the category name in the table area.
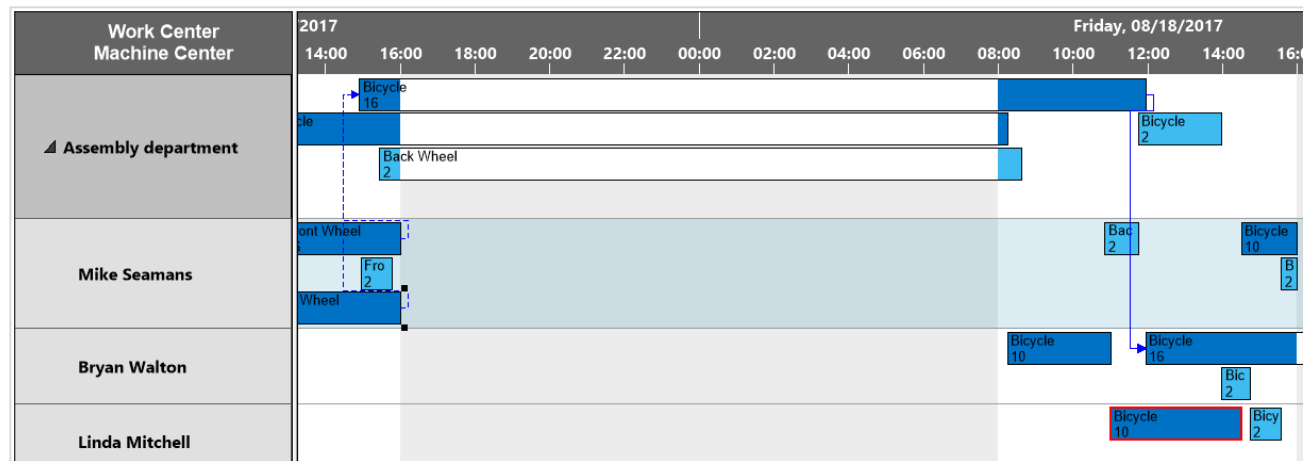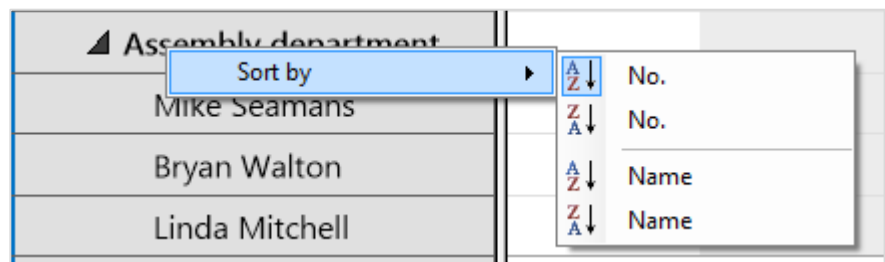
The Capacity View

- Shows capacity loads by work centers and machine centers.
- Capacity bottlenecks and conflicts concerning delivery dates are visualized.
- The bars get different colors according to the different categories of the Production Order View.

Sorting

Both in the Production Order View and in the Capacity View you can call a context menu with sorting options by right-clicking in the table area. According to the cursor position before clicking, the options of this menu differ.

Histograms

A histogram offers visual decision support by showing impending capacity problems. Both in the Production Order View and in the Capacity View, a histogram below the Gantt chart displays the capacity load of the according work center/machine center. When moving the mouse onto a work or a machine center in the Capacity View or an operation in the Production Order View, its row will temporarily be marked by a bluish-grey background thus being selected to be visualized in the histogram.
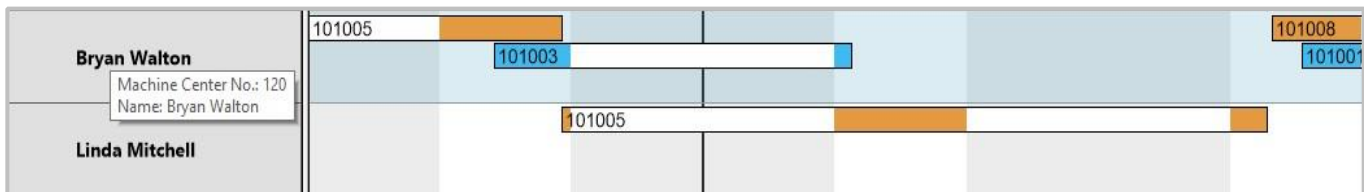
Simultaneously, a histogram below the Gantt chart displays the workload of the corresponding work or machine center: The sections highlighted in red indicate a capacity problem at the machine center „Bryan Walton" that ought to be solved by rescheduling.

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The Loads View

In the Loads View, histograms of the work centers and their respective machine centers are displayed
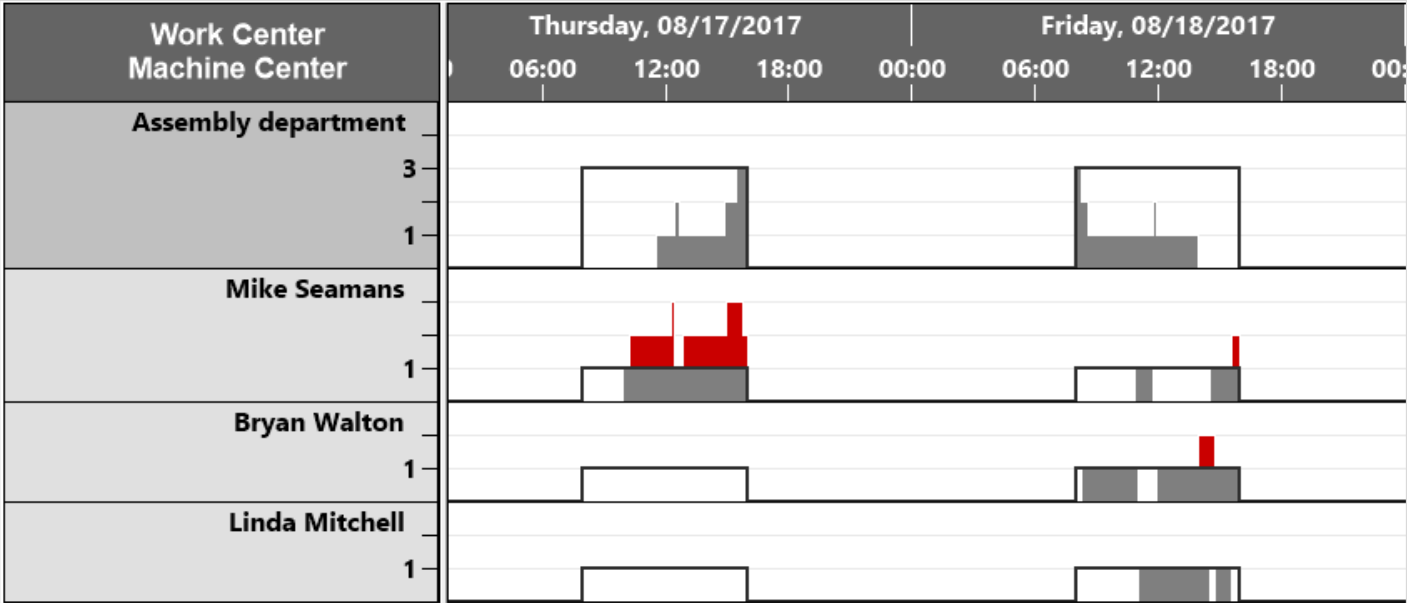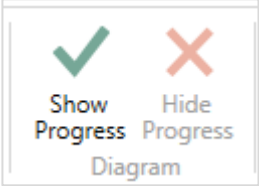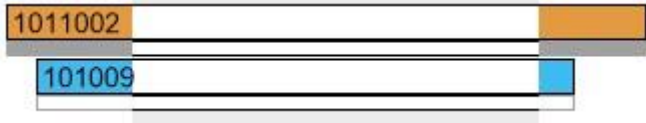
COLLAPSING AND EXPANDING

The symbols ▷ ◢ in the table allow to collapse and expand orders, work and machine centers, thus hiding details or rendering them visible.

OBSERVING AN OPERATION'S PROGRESS

You can see the progress of an operation by a progress bar displayed below the operation bar. You can switch it on or off by the "Diagram" buttons. The dark grey section on the light grey background of the progress bar displays the percentage of completion.

CUSTOMIZE THE WORKING AREA

Adjusting the Time Scale

In case you have modified the resolution of the time scale and you want to regain an overview, you can use the "Fit Into View" button to fit the diagram completely into the present view.

Adjusting the Numeric Scale of the Histogram

If you wish to modify the resolution of the numeric scale in the histogram, please place the mouse cursor on the numeric scale and drag it either upward (enlarging) or downward (reducing).
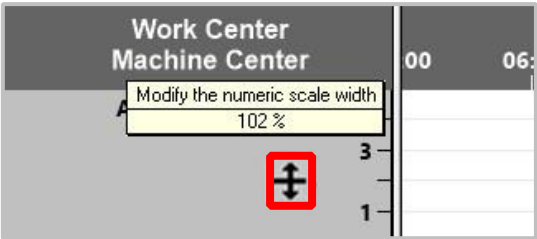
Adjusting the Height of the Histogram

Accordingly, you can modify the height of the histogram. Drag the horizontal splitter bar between histogram and table/diagram area upward or downward.
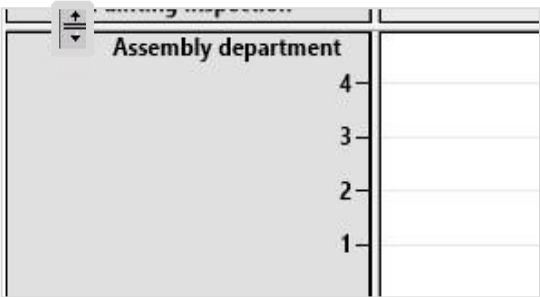
Note: The modifications in the histogram area will always be set back and hence are not permanent.

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Adjusting the Width Ratio between Table and Diagram

You can modify the width ratio between the table and the diagram by moving the vertical splitter bar between them.
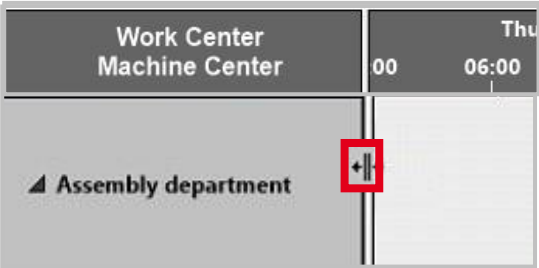
ZOOMING AND SCROLLING

Increase/reduce time scale resolution:
(depending on how much detail or summarization is required

Fit Into View

- Mouse within the time scale: mouse wheel

- Mouse outside of time scale: <Shift> + mouse wheel)
  If you have modified the time scale solution and want to gain the overview back again, click the icon and the time range will be completely shown again.
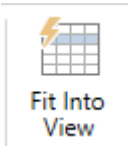
Shift time scale   By mouse

Enlarge/reduce diagram   <Ctrl> + mouse wheel

How to See More Details

You can show data details of a production order in the Production Order View by hovering with the mouse above its number in the table:

The same applies to an operation in the diagram.
After an operation was moved (indicated by a red frame), the operation's original data are displayed along with the current data.

THE CONTEXT MENU OPTIONS

Displaying Links

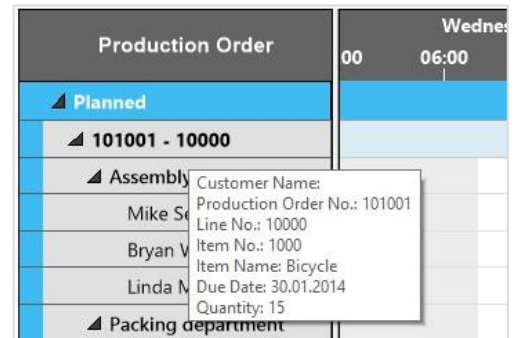Links between operations can be displayed by a left-click on an operation, or by the context menu that pops up after a right-click on an operation.
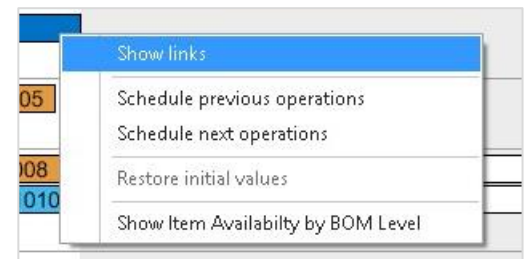
Scheduling Previous and Next Operations

Tick the according boxes if moving an operation shall also affect its linked preceding and/or succeeding operations to the effect that they are moved accordingly.
If the options "Autoschedule with zero buffer time" "Predecessors" and or "Successor" (Scheduling area) have been ticked in the **Setup** dialog, the corresponding action selected in the context menu will be carried out automatically when an operation is moved.
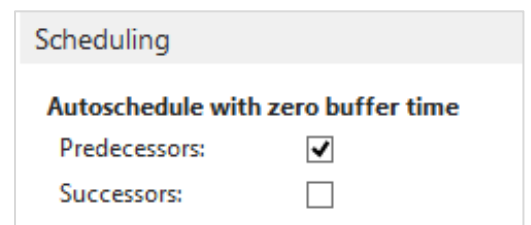
Restore initial values

In case you have not yet saved your modifications, you can restore the original values of the selected operation.

Show Item Availability by BOM Level (as of NAV 2013)

Moreover, the context menu allows to display the item availability by BOM level for the items of a production order line for the start date of the production order.

A tree chart displays the bill of materials of a production order line, meaning a listing of materials by quantity needed for manufacturing another part

Click on the chart for the changed date to take effect. For zooming in or out, use CTRL + mouse wheel.
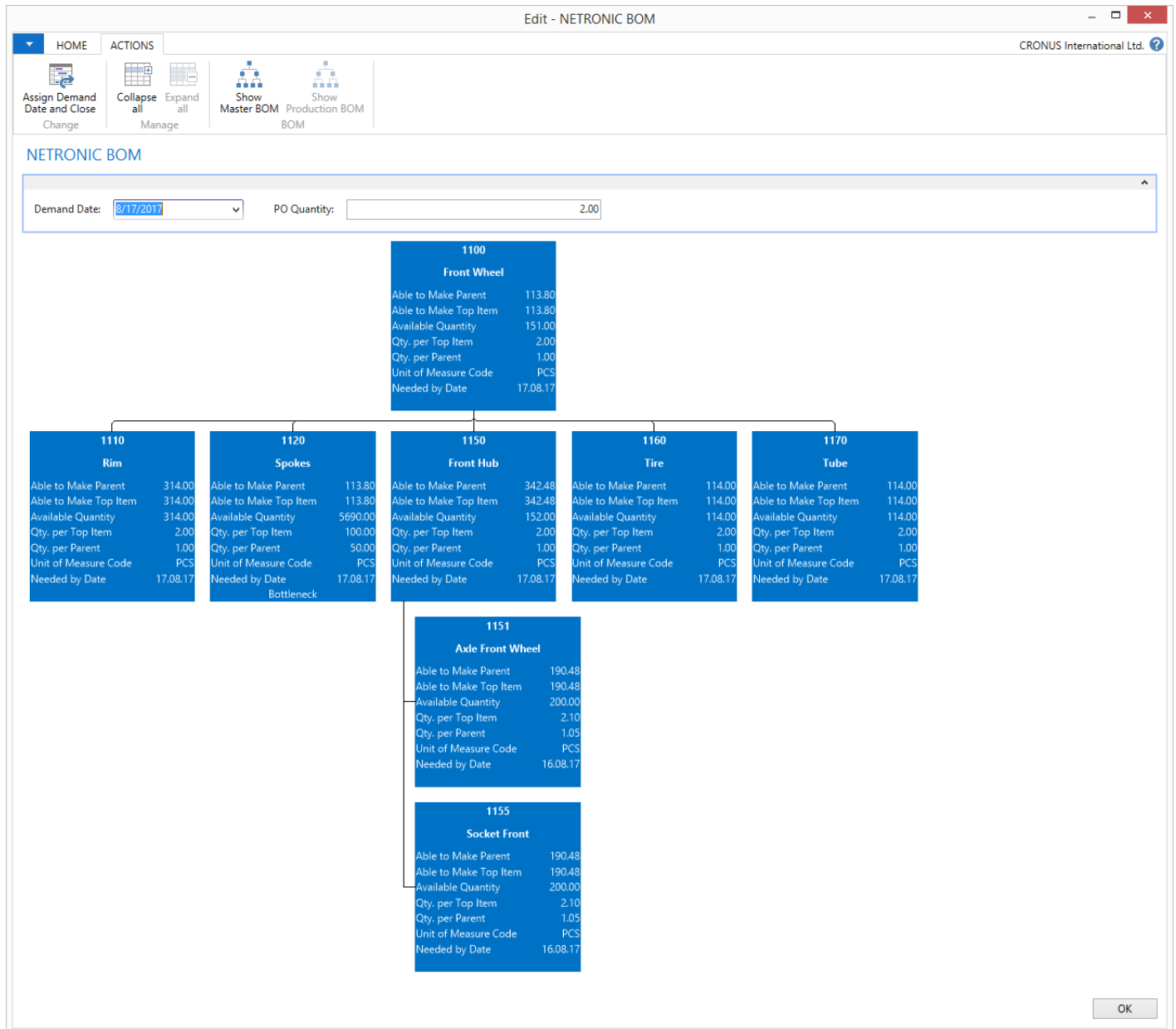
The following fields are displayed:

- No
- Description
- Able to make Parent
- Able to make Top Item
- Available Quantity

- Qty. per Top Item
- Qty. per Parent
- Unit
- Needed by Date
- Bottleneck

The demand date allows to simulate the materials'availability for this production order by a specified date and or a specified quantity. Thus the planner can check whether he can give priority to a manufacturing order.
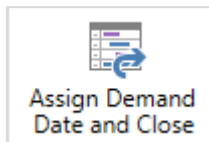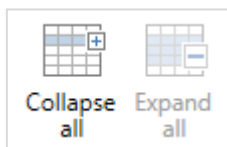The modified date will be applied after having confirmed by <Enter> or by clicking the diagram, the modified quantity has to be confirmed by <Enter>.

The field „Able to make Top Item" will be highlighted in red, if this (sub) item can't be made available in the needed quantity.

The BOM options in detail:

Assign Demand Date and Close	Closes the BOM view and assigns the modified demand date.
Collapse all / Expand all	All levels are collapsed/expanded
Show Master BOM / Show Production BOM	Toggles between the first version of the BOM having been created in NAV and the current one with the changes you have made so far to the original BOM.
Demand Date: 8/17/2017	Enter the demand date. Confirm by <Enter> or by clicking in the diagram.
PO Quantity: 2.00	Modify the quantity of the production order. Confirm by <Enter>
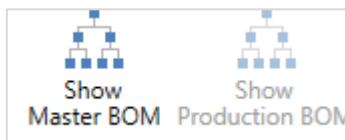
ACCESSING NAV DIALOGS

The VPS has been fully integrated into Microsoft Dynamics NAV. By double-clicking on an operation of the VPS, the production card will be invoked where you can, for instance, modify dates manually. Alternatively, you can close the sheet and move the operation in the Gantt chart (graphical modification).


The same applies to work centers and machine centers – by double-click you can get to the work (machine) center card where data can be edited manually.

User Interactions

## MODIFYING DATES HORIZONTALLY BY DRAG & DROP

To schedule an operation, you can move it horizontally along the time scale either in the Production Order View as in the Resource View: As a consequence, the operation will be worked off at a different time.
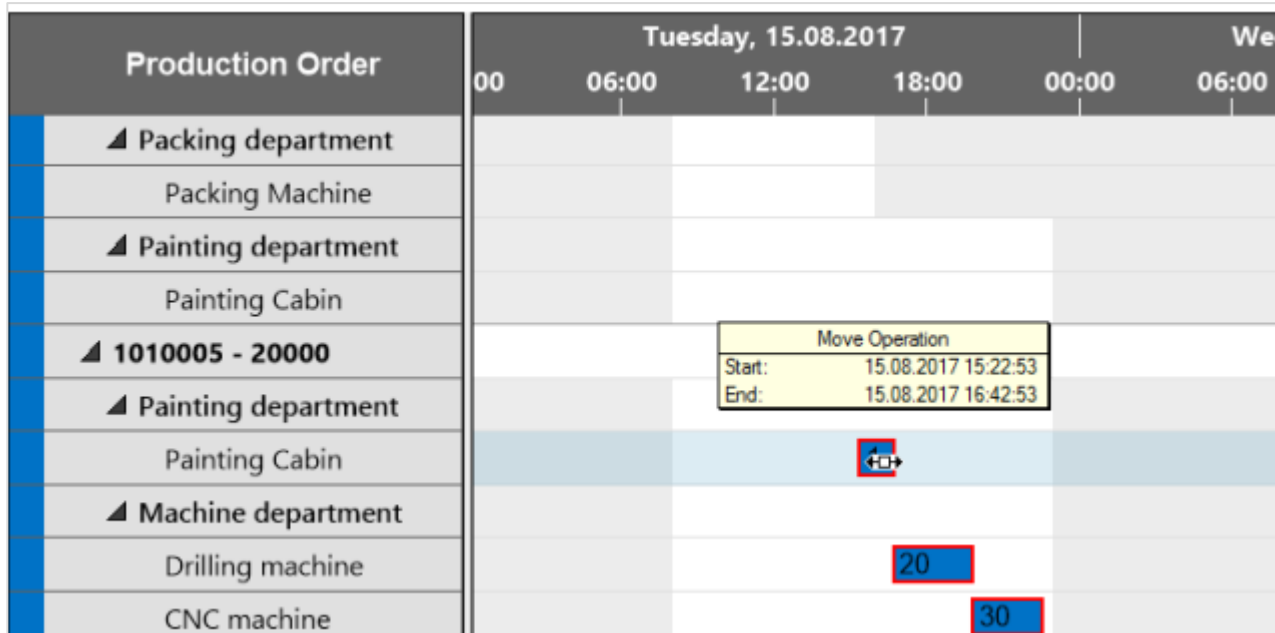
ASSIGNING AN OPERATION TO A DIFFERENT WORK OR MACHINE CENTER

In the Capacities View, an operation can also be moved vertically when scheduled – to a different work or machine center. As a consequence, the operation will be worked off by the work or machine center it was moved to. In the sketch below, operation No 50 of the production order 101001 is moved from the machine center "Mike Seamans to the machine center "Bryan Walton", while an info window displays the details of the data:
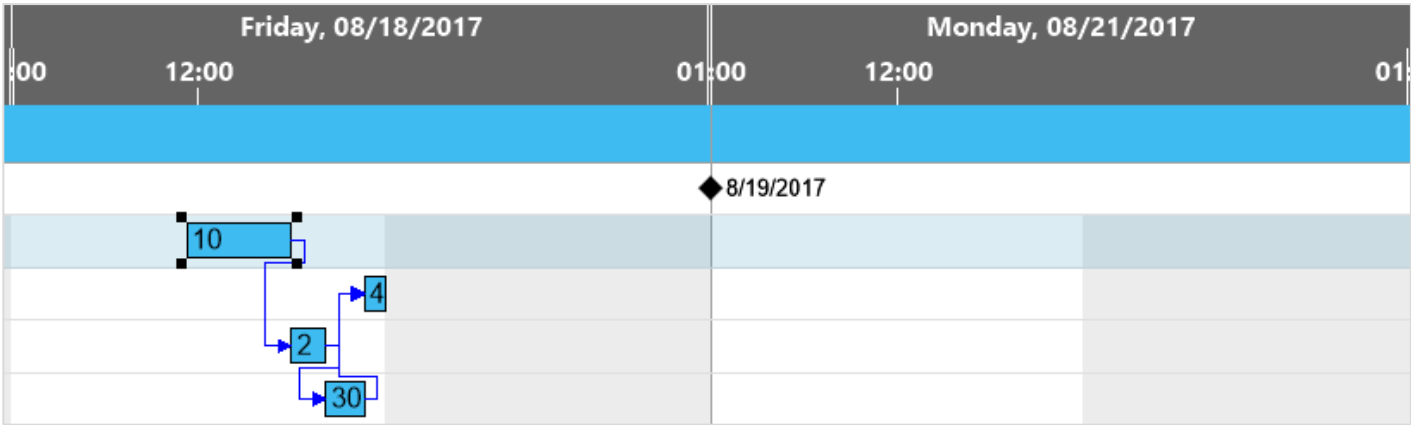

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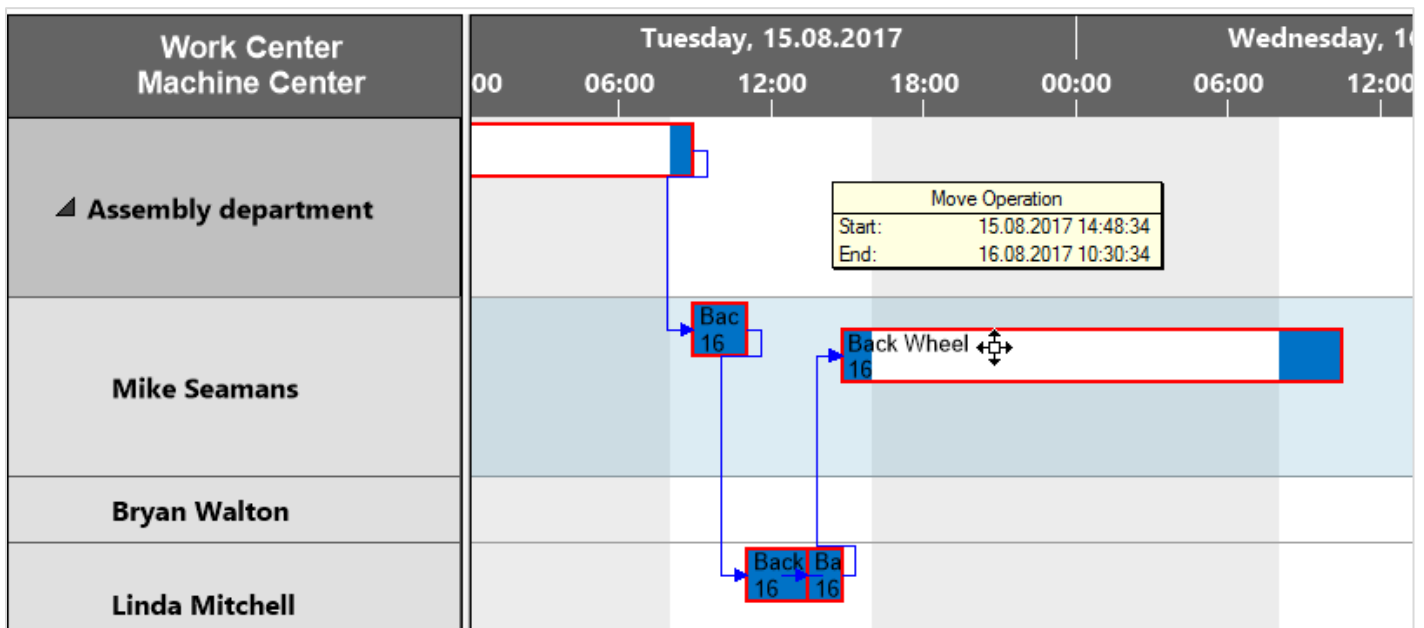
Work free periods: Summary or Details


The "Calendar" buttons let you switch on or off the display of work free periods in the diagram

When work-free periods are switched off, the work-free periods that are shared by all calendars will not be displayed and the timescale gets collapsed at these periods:

Switching the work free periods on means that the work free periods that are common to all calendars will be displayed:
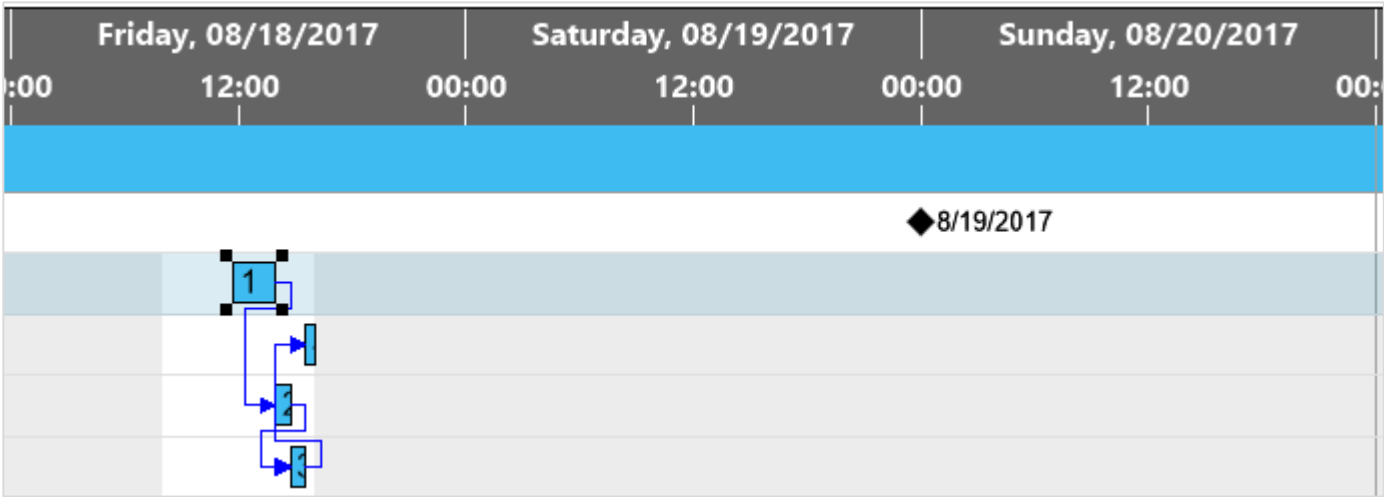
The Setup Dialog

The "Setup" button in the "Administration" area of the menu bar allows to customize basic settings of the Visual Production Scheduler.

You can:

- Configure **data filters** (see also chapter "Using filters")
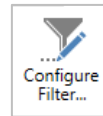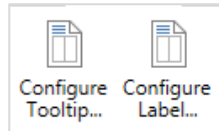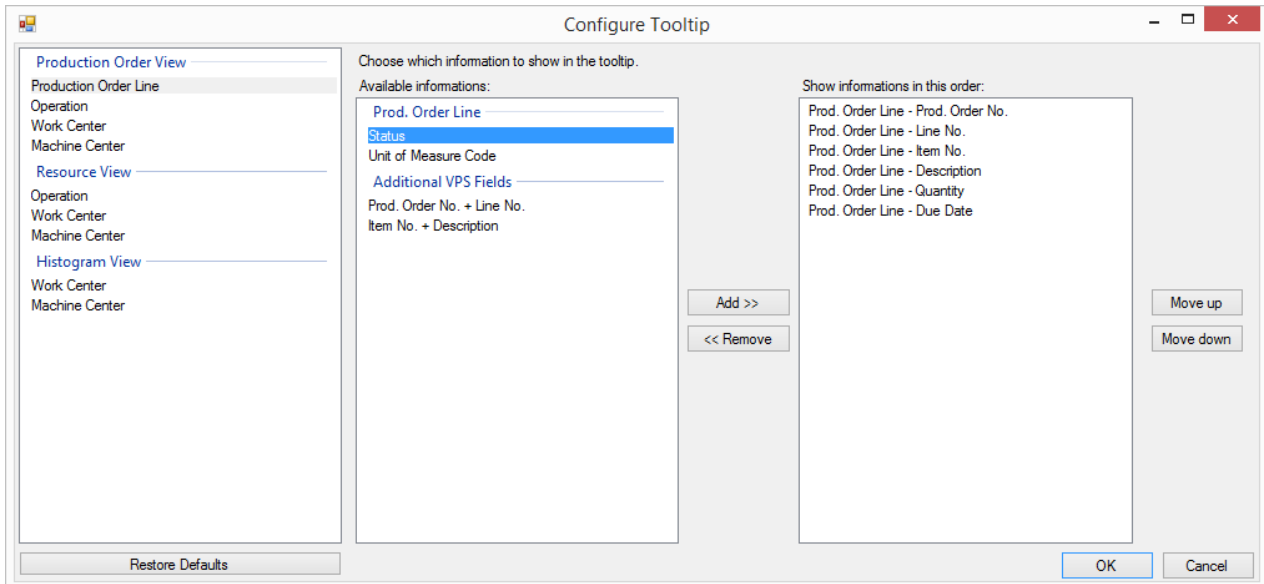

The settings of the data filter that are applied when the VPS is started allow to reduce the amount of loaded data.

- Configure T**ooltips**/Configure **Labels**

In both cases a dialog allows to specify the text to be shown in the tooltip or as label by selecting the desired NAV data from a list, either to add or remove them.

Timespan

- Set the **starting** and **ending date** of the time scale depending of the working date: "-2D" in the Starting Date field will prepone the star date of the time scale by two days to the work date calculated by NAV, whereas "2W" in the Ending Date field will postpone the end date of the time scale by two weeks after the work date (for the definition of the start and end dates of the NAV calendar, see chapter below).

General

- Progress calculation: Select the **mode** defining the way how the **progress** in progress bars is to be **calculated**. It may either be based on the quantity produced or on the production time passed.
- Hide **work-free capacities: Capacities that are** completely free of workload in the period displayed, can be hidden.
- Show links between Prod. Order Lines (for production mode "Made to order"):
  - o Specify whether dependencies are illustrated by **links** in Production Orders with more than one **Production Order Lines** .
  - o Tick the **Schedule across Production Order Lines** option to make sure that these links are considered in case of automatic scheduling.

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Scheduling

- Whether or not predecessor operations should automatically be re-scheduled when an operation is modified.
- Whether or not successor operations should automatically be re-scheduled when an operation is modified.
- Schedule across Prod. Order Lines: Dependencies between several production order lines of a manufacturing order can be taken into account for the automatic planning.

Data filter

- Filter by work centers, machine centers and manufacturing orders. The criteria set in this dialog work as NAV filter on reading the data so that they are already effective at the data interface to make sure that only filtered data are handed over from NAV to the VPS. If the VPS Web Client is used in addition, the filtered data are used as well so that the Clients' view always remain identical.

Please note: For your settings to take effect, the data needs to be re-loaded. So after storing the above dialog, the opposite dialog will appear:
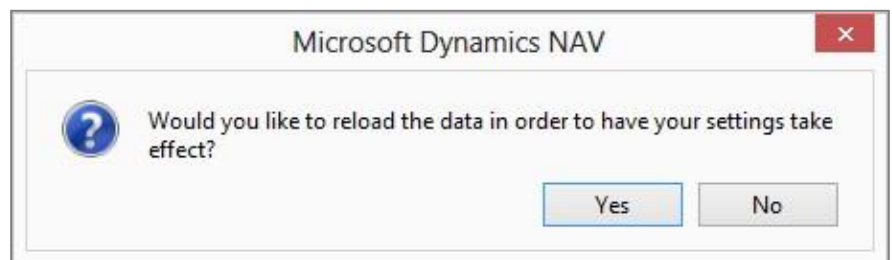
How the Start and End Dates of the Time Scale Are Defined

Start and end date of the time scale are calculated by adding the intervals that were provided for start and end date in the date formula to the working date.
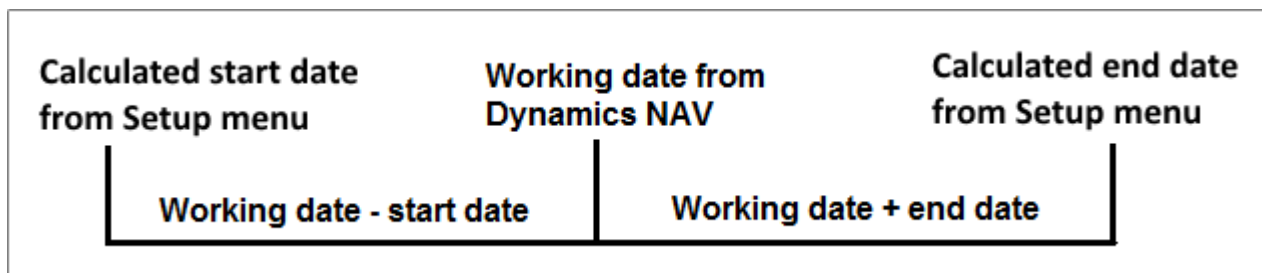
Using Filters

The VPS offers a View Filter with three options:

- Filter definition, will open the dialog shown below
- Activating the filter
- Deactivating the filter

This filter is used to show/hide the VPS data according to the specified conditions.

In addition, the "Setup" dialog offers a data filter which takes effect already at the data interface so that only the filtered data of NAV are passed to the VPS. If the VPS web client is used in addition, the same filtered amount of data is used so that the views in both clients will be identical.

Reloading and Saving Data
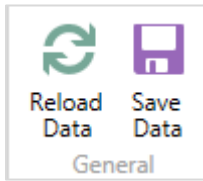
In case you wish to discard your modifications after modifying the diagram (provided you didn't store them) you can simply reload the data of the diagram. The "General" buttons allow to reload the former values or, alternatively, to store your modifications.

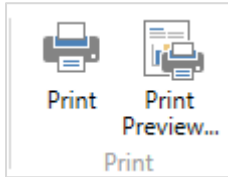# Printing in the VPS

The VPS allows to immediately print a diagram as displayed on the screen. If you want to make use of several printing options, like paging, page numbers, recurrence of time scale, table and legend on printed pages etc. open the "Print"dialog by clicking the corresponding button in the "Print Preview" dialog.
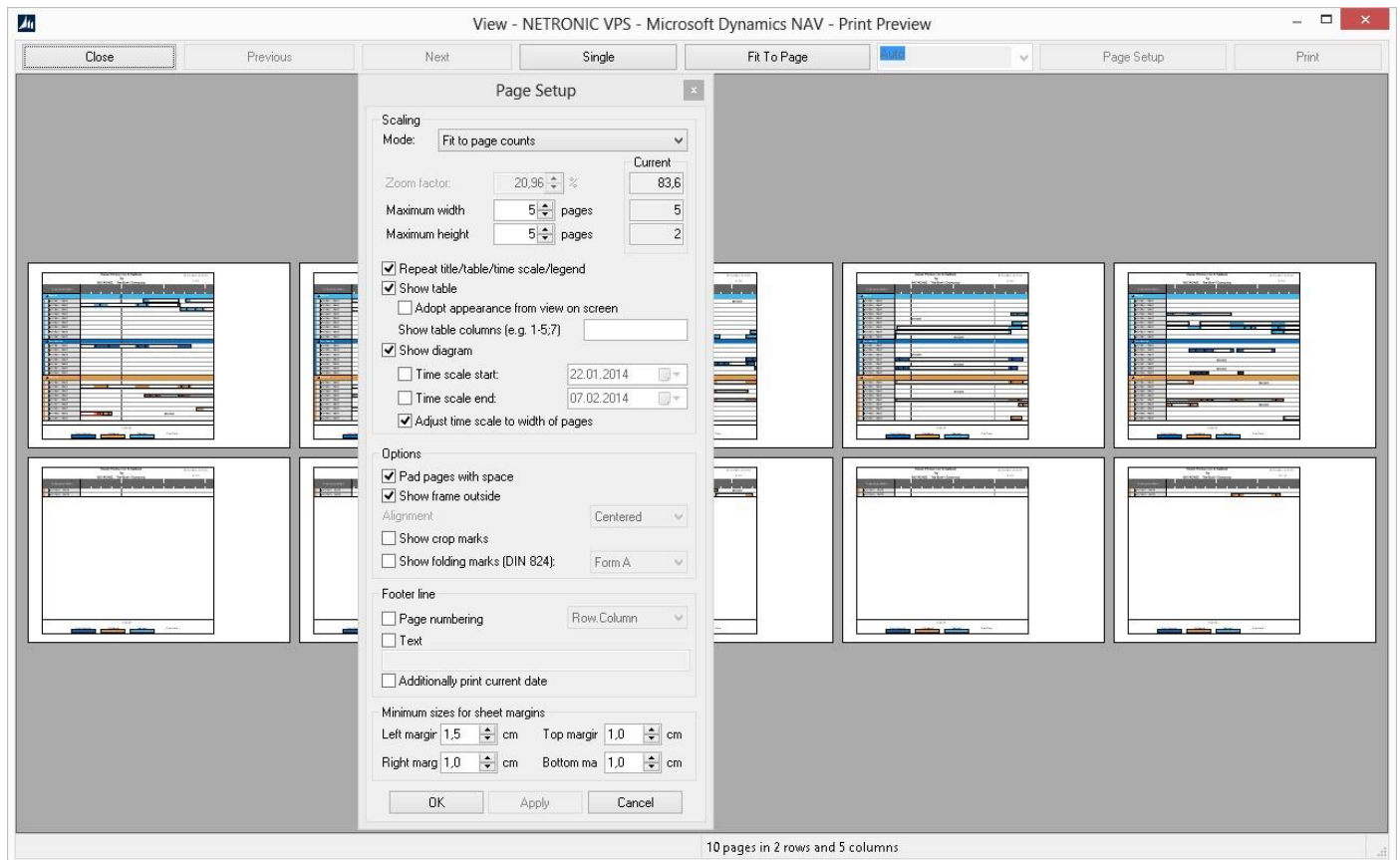
Warnings and Visual Indications

RED HATCHING

Operations exceeding the due date display a red hatching pattern to call attention to the conflict:
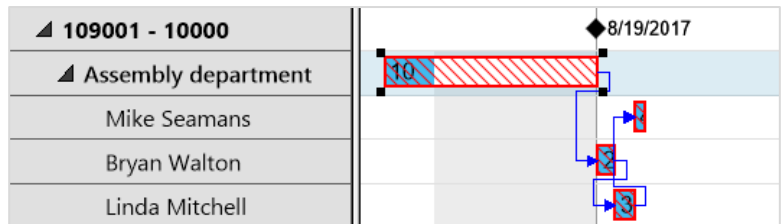
WORK/MACHINE CENTER OVERLOAD

Conflicts such as overloads of machine centers or work centers can be identified very quickly by the histogram. Red sections indicate that operations need to be assigned to different resources or require a different distribution over time.
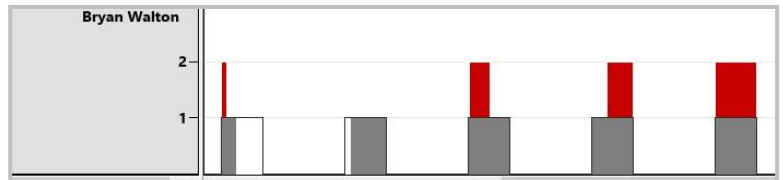
WARNING ON VIOLATING THE OPERATION SEQUENCE

When moving operations, a warning may occur to call attention to implausible order of operations:
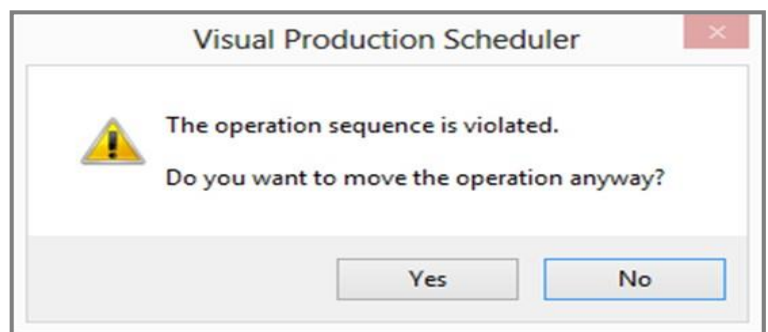
WARNING ON FORBIDDEN MOVEMENT OF OPERATIONS

If an operation is already finished but it is still attempted to be moved, a warning will inform you:

CONFIRMATION ON RESTORING INITIAL VALUES

On wishing to restore the original values after having modified an operation, a confirmation is prompted that requires an answer.

SAVING CONFIRMATION

When leaving the VPS, you are prompted to answer whether your changes are to be stored to Dynamics NAV.

CONTROL ADD-IN ERROR

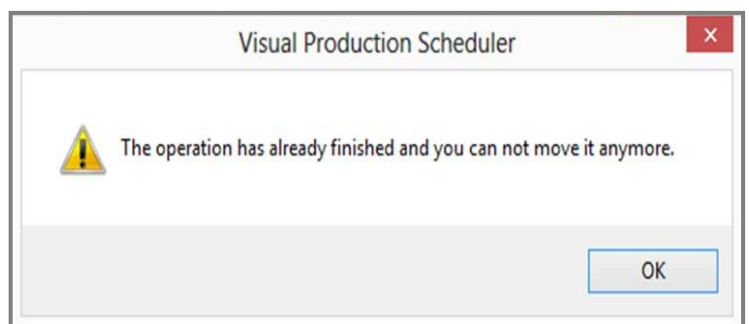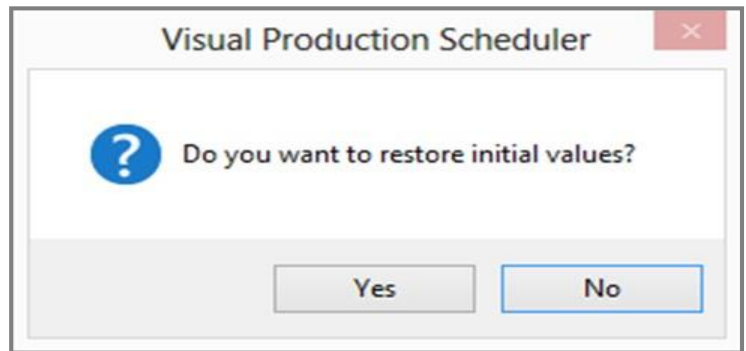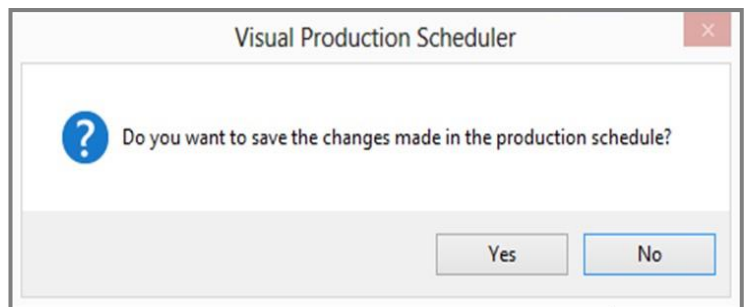⊗ **Control Add-in Error**

An error occurred when initializing the Control Add-in "Visual Production Scheduler;PublicKeyToken=f498861764c381bd". Error message: Mixed mode assembly is built against version 'v2.0.50727' of the runtime and cannot be loaded in the 4.0 runtime without additional configuration information..

This message may occur if the VPS has failed to automatically edit the file "Microsoft.Dynamics.Nav.Client.exe. config" inside the NAV "RoleTailored Client" subdirectory during the setup procedure. After the installation, you should see the below tags at the end of the file:

```
    <startup 'useLegacyV2RuntimeActivationPolicy="true">

        <supportedRuntime version="v4.0"
sku=".NETFramework,Version=v4.0,Profile=Client"/>

    </startup>

</configuration>
```

The red text has to be added if it is missing.

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Further Resources

This Quick Start Guide introduces the fundamental functions of the Visual Production Scheduler for Microsoft Dynamics NAV (2017, 2016, 2015, 2013 R2, 2013 and 2009 R2). Please find more details on our Website http://www.netronic.com/vps.

Feel free to contact us if you have questions, ideas or suggestions - we will be happy to answer your call or mail: +49-(0)2408-141-0

support@netronic.com

About NETRONIC—The Gantt Company

The Aachen (Germany) based NETRONIC is "The Gantt Company". Interactive Gantt charts add transparency to production, project and process data and improve planning and scheduling of resources, jobs and workflows. For decades, the Gantt chart has been our core competence – resulting in three business lines:

- With the Gantt chart controls VARCHART XGantt and VARCHART JGantt, we address software vendors who typically develop industry-specific scheduling solutions.
- The Visual Production Scheduler has been designed for partners and customers of Microsoft Dynamics NAV and provides a fully integrated, intuitive graphical production scheduling support.
- Based on our Gantt know-how, we also develop custom-made scheduling applications for end customers who want to improve their short-term production scheduling.

For further information, please

- Visit our Website
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