



HOME

User Manual

DELMIA Process Engineer®

Finder – Application



Foreword

This manual provides an introduction to the Process Engineer Finder operations and functions.

While developing these functions we have made every effort to create a clearly organized, easy-to-understand program structure.

A user-friendly interface as well as a clear menu guide will enable you to quickly learn how to operate the program and to get familiar with its functions so that you can carry out your planning tasks in a quick and reliable way.

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1. Introduction

This manual explains how to use the Process Engineer search functions for your planning purposes.

1.1 How to Use this Manual

This manual enables you to get familiar with the operation and functions of the Process Engineer. This manual briefly describes:

- How to use the General Finder.
- How to use the different search function variants: i.e. project search, find in tree search, or component finder search.



Note

When handling the Finder functions, please also refer to the general introduction to Process Engineer in the General Introduction Manual.



Click [General Introduction](#) to access the manual.

1.2 Documentation Conventions and Symbols

The symbols used in this manual are intended to provide you with keys to the contents in an immediately understandable manner.



This symbol is used to introduce key concepts that are covered in the sections immediately following this symbol. As a result, this symbol most frequently appears at the beginning of chapters or sections.



Note

*This symbol is used to mark notes, which provide you with additional information you need to have for further work. You will either find the Note sign at the beginning of a chapter or in a particular text passage in the chapter. Texts bearing this sign are additionally marked with **Note**. The text is always in italics.*







Caution

*This symbol indicates that the text that follows describes particular circumstances that you must avoid to avoid potential errors with the operation of the program or harm to data. You will either find the Caution sign at the beginning of a chapter or near a particular text passage in the chapter. Texts that are introduced by this sign are additionally marked with **Caution**. The text is always in italics.*

Example

This symbol marks examples which serve to illustrate a certain situation.

-  This symbol marks the individual operational steps involved in a particular operating instruction. Operating instructions describe operational steps, for example, how to open a menu or execute a function.
-  This symbol marks listed subjects. The symbol for listed subjects can be either used to structure a continuous text or to list main subject keywords.
-  This symbol marks list inside a bulleted or numbered list.
-  This symbol marks cross reference information that is available in another manual.

1.3 New Functions in Finder

No new functionality has been added for this release.

2. Overview

Most Process Engineer applications include search functions that are customized to the specific functions of the respective Process Engineer application programs. This Finder user manual provides you with a general overview of all basic functions for the object search in the Process Engineer. In addition to these descriptions, further detailed information on how to use a search function in a specific application is provided in the respective user manuals of the applications.

This manual describes all important search functions. You can also use this manual as an introduction into the search functions. However, you should always use it when working with the Finder.

2.1 Finder Categories

Three kinds of finder are available:


- **General Finder:** This Finder provides information about all object components irrespective of project levels.
- **Project Finder:** This finder allows to do search for object components at project levels.
- **Component Finder:** This finder allows to search components from the selected node in tree.

3. General Finder

This section provides description about the General Finder.

3.1 Opening the General Finder

There are three ways to open the General Finder:

- 1) Open the **Edit** menu and click **Find**.
- 2) Activate **Finder**  icon in the tool bar.
- 3) Press **Ctrl + F** buttons.
- 4) The **General Finder** dialog opens.
The dialog is divided into different coordinated areas.

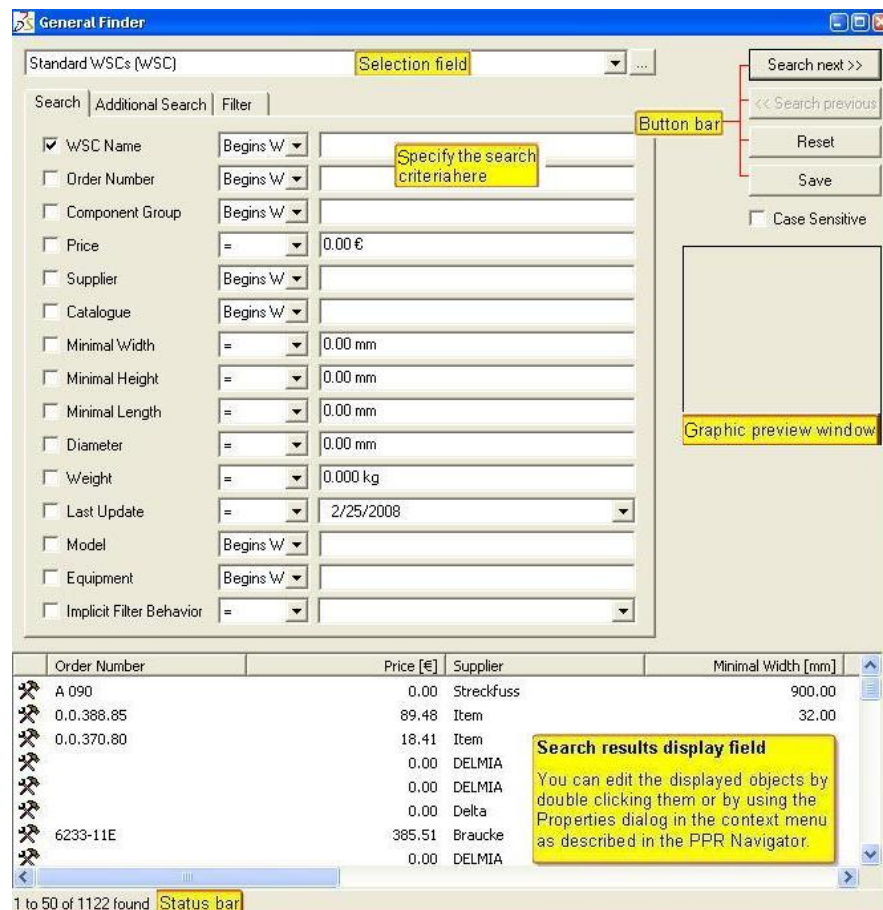


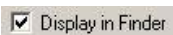
Figure 1: General Finder Dialog Box

- You can select the object type you want to search for in the **selection field**. The structure of this selection field differs according to the type selected.
- Use the **button bar** to start, continue, or reset the search.

- In the **search term specification area**, you can use three tabs, [Search](#), [Additional Search](#), and [Filter](#), to specify the attributes (search criteria) of the object type selected above.
- The Graphic **preview window** is only activated while searching for system elements. You can move the graphic in the window while holding the left mouse button down.
- The search results are displayed in the **display field** at the bottom of the Finder.
- The current state of the search and the search result are displayed in the Finder **status bar**. *Please refer to the [Figure 1](#).*

The search terms can be entered in three different tabs:

- **Search:** On the first tab, you can search for terms. The search terms corresponding to the attribute designations are linked by AND.
 - **Additional Search:** The second tab is used for the additional search. Here, you can use OR as well as AND links. A single search term might therefore be used twice. The first and second page are linked by an AND link.
 - **Filter:** The third tab serves as the layout selection for the first page. Here, you can select the search terms for the first page.
- The General Finder displays all types in the selection list for which the **Is searchable** option" has been enabled.
- To display single attributes of this type in the Finder, activate these attributes in the configuration via the **Display in Finder** option as well.



The example [Configuring Finder](#) at the end of this manual shows how to configure search types and attributes. You can search for attributes, plantypes, system items, and relations.



For more information on the Configuration manager and the attribute configuration, *Please refer to the [Administration Manual](#).*

3.2 Starting the Search

- 1) Press **Search** to start the general search for all objects.
- 2) The button **Search Next>>** is activated after the search has been started for the first time with the button **search**. **Search next** turns a page forward in the display field.
- 3) The button **<<Search Previous** is activated when further pages are shown in the display field by use of the **Search next** button (as a rule when the second page is displayed).
- 4) Press **Reset** button to return to the beginning of the search.
- 5) Reusable search criteria are saved with the **Save** button. *Please refer to the [Saving and Loading Search Criteria](#).*

3.2.1 Defining Search Results

You can specify the layout and the number of search results in the **Settings** dialog.

- 1) Click **Tools < Settings < Change**. The **Settings** dialog appears.



For more information, *Please refer to the [Settings Manual](#).*

The following settings affect the appearance of Finder.

- The settings: Finder: Load Last Search Properties; Finder: Number of search criteria (if load last search properties is not checked); Finder: Show Preview Window; and Finder: No. of Searchcriteria (if load last search properties is not checked). The last search criteria of the first page is automatically entered if the Finder (General Search) is started.
- The settings: Finder (General Search): Cancel is possible at more than. You can specify the maximum number of elements required to cancel the search. A dialog with a progression bar and a **Cancel** button appear if a higher number of objects are found in one step. If you select **Cancel**, all objects you have found so far are displayed. To search for these objects again, start the search once more. *Please refer to the [Canceling Search](#).*
- Use the Finder: Observe upper and lower cases" and "Finder: Filtered Search to control the search results.

3.2.2 Specifying Search Objects

In the top part of **General Finder** dialog box (*Please refer to the [Figure 1](#)*) the type of objects to be searched for can be specified.

- 1) Click the arrow button to the right of the required input field.
- 2) A selection menu opens in which all the object types are listed. You can select the required type of object by clicking it. The required type of object appears in the input field.

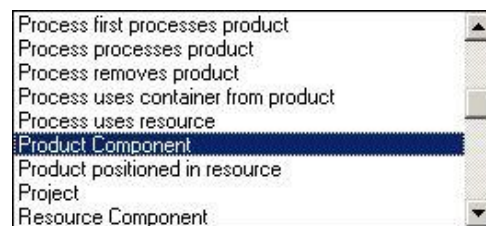


Figure 2: Specifying Search Criteria

If you search for relations, a second selection window opens. With an unambiguous relation type, only the relation name in the second selection window is displayed. With an ambiguous relation type, you get a selection list that you can use to further restrict the search. *Please refer to the [Searching for Relations](#).*



Figure 3: Specifying Search Criteria with the Search for Relations

The lower area of the dialog box (*Please refer to the [Figure 2](#)*) is used to specify the search criteria that limits the number of objects found and reduces the search length. Using the tabs, you can select between the pages “Search”, “Additional Search”, and “Filter”.

3.2.2.1 Using a Registry Entry to Search for Objects

If you want to search for attributes that have an entry present, you can restore this setting with the help of a Registration Entry.

- 1) You can make an entry under

```
HKEY_LOCAL_MACHINE\SOFTWARE\DELMIA\IPDSERVER
> RegardMandatoryForQuery.
```

- 2) Two values can be given for the entry:

- **value = 0:** If the value equals zero, attributes that do not have an entry are not displayed in the search.
- **value = 1:** If the value equals one, attributes that do not have an entry are also displayed in the search, as long as this attribute is not marked as the mandatory value.

3.2.3 Specifying Search Criteria

To specify search criteria for a search, select the **Search** tab. To the left is a list of possible search criteria (which is different for the different object types). Use the **Filter** tab and the configuration to control the search criteria that appear on the list. *Please refer to the [Filter Function](#).*

The criteria offered can be switched on or off by left clicking the corresponding identification field. The current search criteria can be identified by a small checkmark in the identification field.

Only marked criteria, which are assigned an entry in the corresponding input field, are taken into account during the search. Unchecked Criteria are ignored in the search.

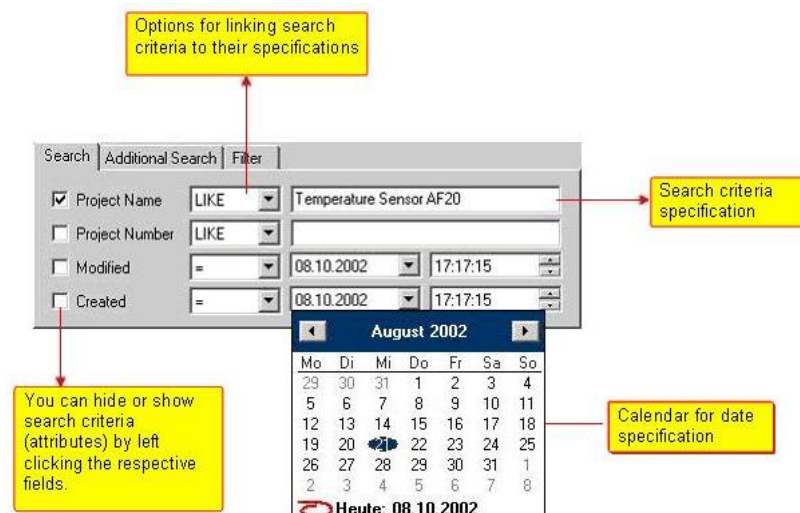


Figure 4: Search Criteria in the General Finder Dialog Box

Checked criteria are not included unless they are precisely specified in the adjacent line. In this line, you can enter any combination of letters, numbers, and special characters.

In the result list, only those objects are shown where the corresponding feature (such as the name or code) contains the combination of characters entered.

You are also allowed to use the wildcards * and ?. A question mark (?) replaces just one character, and an asterisk (*) replaces all of the following characters. For instance, if you enter "*sensor" as a search criterion, you find objects with the "outdoor temperature sensor" and "temperature sensor project" designations.

The individual search criteria are linked with a logical AND in normal search. This means that only those objects that fulfill all of the specified criteria are found and displayed.

Entering the Date

You have two options for entering a date (such as "created on" or "modified on"):

- You can either enter the date directly in the corresponding input field.
- You can use a calendar to select a date.
- The calendar opens with a left-click on the arrow button to the right of the input field. You can page through successive individual months by clicking the arrow button in the calendar, and can select the required day with a left click. You can set the time in the rotating field box to the right of the data input. Corresponding selection menus also open in all other input fields that include an arrow button.

3.2.3.1 Link Types

The Finder knows the possible data type of an attribute (search criterion) and therefore only offers the respective operators.

Logical Links

If you have to specify numbers as search criteria (for example, attributes like length, width, or data entries), you can select between the =, <, <=, >, >=, and >=.

- The option **=** means that the entered value must be exactly matched.
- When the option **<** or **>** is selected, all objects are displayed as hits where the corresponding numeric value is lower or higher than the entered value.
- When the option **<=** or **>=** is selected, all objects are displayed as hits where the corresponding numeric value is lower than/equal to or higher than/equal to the entered value.

For example, such an instruction can be important when you are looking for objects that were created on, before, or after a certain date. The required option is selected to the left of the input field for the relevant criterion. To do this, click the arrow button to the right of this field and select the corresponding condition from the selection field.

Links with Character Combinations

- The **!=** option displays all objects which do **not** match this entry **exactly**.
- The **=** option displays all objects which match this entry **exactly**. The wildcards formerly described can be used.
- The “BEGINS WITH” and “ENDS WITH”, allows to set the search criteria for attributes whose value begins with or ends with some characters.
- The **HOW** option enables you to find all objects, which correspond to the entry regardless of their place within the character combination.
- The **!HOW** option enables you to find all objects that do not correspond to the entry regardless of their place within the character combination.

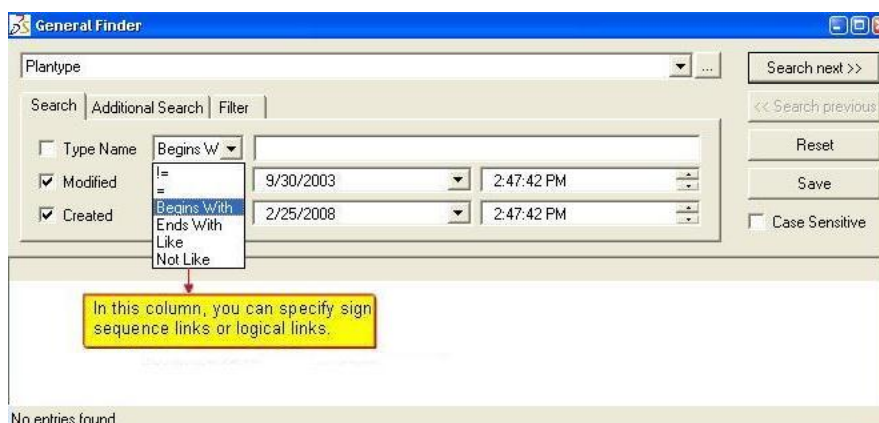


Figure 5: General Finder View with Logical Search Criteria



Note

*If you search for properties with a check box attribute, you can only use the **How** option.*

The attribute value can either be

True = enabled

False = disabled

The objects found are listed in a display area below the “General Finder” dialog box.



Some of the display functions in this field correspond to the display in the object list. You can manipulate the display correspondingly (width and column order). With the context menu "Properties" entry, you can edit the search result objects.



Note

Relation information is not displayed in properties dialog, when it is opened from finder search result objects.

3.2.3.2 Use the != Option to Search for Objects

Starting with the version PE 5.16 SP4, objects in the Finder can be displayed as the search result with the help of the != option (unequal to search criterion). This option can be used when no attribute has been entered for the object, provided the attribute in the configuration is not marked as a mandatory value.

Prior to this version, the only objects that were displayed as the search result, were those with an attribute entered that matched the search criterion – regardless of whether the attribute was marked as the mandatory value.

Example

Example

Two cases are considered in this example. In both cases Plantype Process flow (Process) and Process Name are the search criteria. The != search option is the logical operator set in the Project Finder.

In case one, the attribute is **not** marked as the mandatory value.

With the help of the != Option, the attribute Process Name can be searched for.



Figure 6: Process Name

As the result of your search all objects are displayed where the attribute entered for the **Properties** dialog of the Process is unequal to A. This also includes all objects where an entry for the Process Name attribute is not found.

In case two, the attribute is marked as the **mandatory value**.

As the result of your search, all objects are displayed where the attribute entered for the **Properties** dialog of the Process is unequal to A. Objects where an entry for the Process Name attribute is not found, are **not** displayed.



Note

Due to the fact that not all available ORACLE-Indices are used for a search of these attributes, searching for empty entries can be very time consuming. You can eliminate the problem of searching empty entries by marking the attribute as the mandatory value.

3.2.3.3 Canceling Search

You can stop a search in progress with the **Cancel** button. Only those objects are displayed that are found before the search was cancelled.

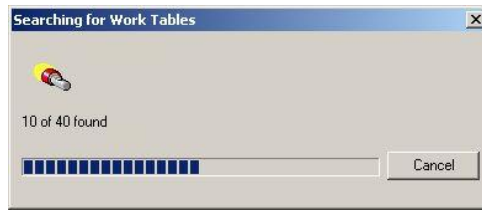


Figure 7: Re-setting Current Search using the Cancel Button

3.2.3.4 Reset Button

Use the **Reset** button to reset all settings for the selected search object in the “General Finder” dialog box to a system default basic setting. This also applies to settings that were set for the additional search and on the filter page. A list of results currently displayed disappears while resetting.

If you are searching for product components and press **Reset** button, only the product component settings are reset. This does not apply to all other settings such as projects, relations, etc.

3.2.3.5 Saving and Loading Search Criteria

In Version PE 5.12, you can save and reuse search criteria. The search term is saved along with the selected search criteria – such as system element name, order number, additional search criteria (i.e. tables, version number, amount in Euros), or mathematical operators.

The display is always updated in this case. For example, newly generated system elements, which correspond to one of the search criteria, are displayed. The search criteria are saved in the database under a key name.

3.2.3.6 Saving Search Criteria

- 1) Set the search term and the search criteria before saving search criteria.
- 2) After this entry, click **Search**. The result is shown in the display field.

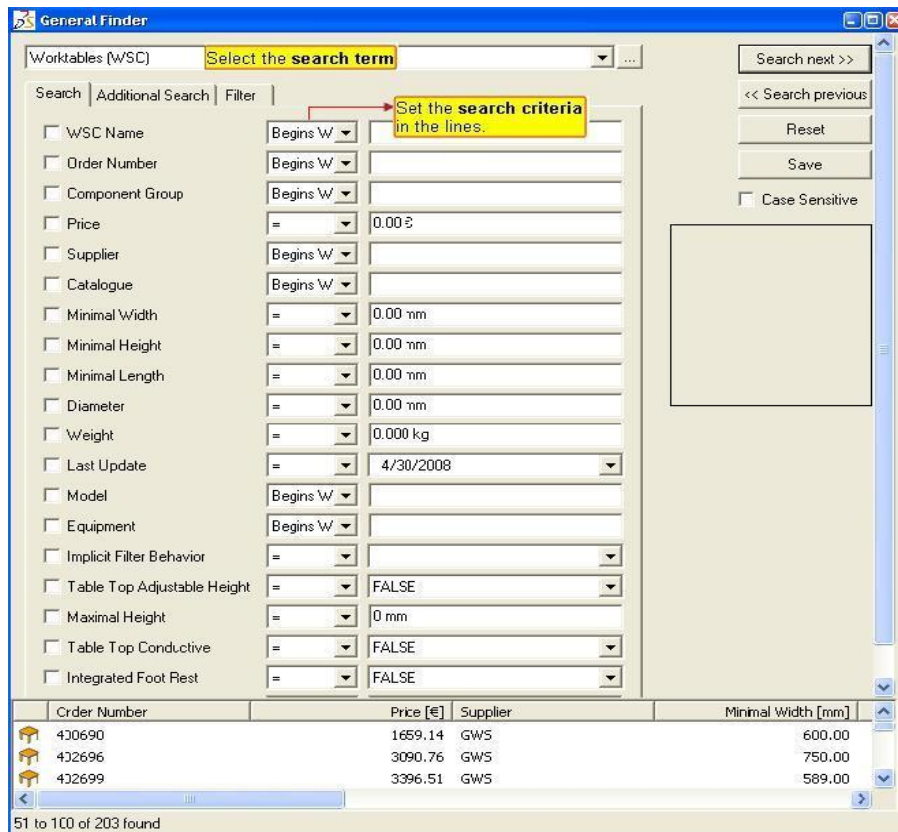


Figure 8: Determining the Search Term and Search Criteria

- 3) Click **Save** to open the **Save search criteria** dialog.



Note

If names for search criteria have already been assigned, you can decide whether these names are written over – for example, if you want to save other criteria under the same name.



Figure 9: Dialog - Enter the Name for the Search Criteria

- 4) Save the search criteria with a name in order to be able to use it again.
- 5) After entering the name, click **OK**.

3.2.3.7 Loading Search Criteria

You can find all saved search criteria in the **Load search criteria** dialog.


- 1) Click  button to open the **Load Search Criteria** dialog. *Please refer to the [Figure 8](#).*
- 2) Select the search criteria in the dialog and click **OK**.



Figure 10: Load Search Criteria Dialog

- 3) The set search criteria are shown in the finder. Click **Search** in order to see the display. *Please refer to the [Figure 8](#).*



Figure 11: Set Search Criteria

- 4) You can delete search criteria from the **Load search criteria** dialog by selecting the search criteria and clicking **Delete**.

3.2.3.8 Search Criteria at Plantype Level

Earlier finder search criteria can be loaded to the object on which the search criterion is stored. Now you can load the finder search criteria to other objects which are of same plantype.

- 1) Go to **Tools > Settings > Change > Miscellaneous** tab in **Settings** dialog. *Please refer to the [Settings Manual](#).*
- 2) Check the option "**Finder: Load search profiles on types**"
By default "**Finder: Load search profiles on types**" option is unchecked.
- 3) Open project and open finder on a plantype (example **Operation (general)**).
- 4) Set the search criteria and click **Save**.
The **Search Criteria** dialog box appears. Specify the search criteria name and click **Save**.

- 5) In the project, open finder on any component which is of plantype "Operation (general)" and **Load** the defined search criteria. *Please refer to the [Saving and Loading Search Criteria](#).*
- 6) The search criteria stored on component is available to load on all the components which are of same plantype.

If the component on which the search criteria is stored are deleted, all the profiles associated to the component gets deleted and they are not available to load even though the option "**Finder: Load search profiles on types**" is checked in **Settings** dialog.

To Save Finder Search Profiles into Global Database:

- 1) Go to **Tools > Database Utilities > User Management > User > New User > Rights**.
- 2) Select "**access finder global profiles**" function.
- 3) Click **OK**.
With this function right you can save finder search profiles into global database instead of user database.
- 4) Open project and open finder on a process component.
- 5) Set the search criteria and click **Save**.
The **Search Criteria** dialog box appears. Specify the search criteria name and click **Save**. *Please refer to the [Saving and Loading Search Criteria](#).*
- 6) Check box "**Global**" is enabled if you have set "**access finder global profiles**" function rights.
If you select **Global** checkbox in **Search Criteria** dialog box, you can save profile in global database else it get saved in user database.
- 7) Click **Save**.
- 8) Load the saved search criteria. *Please refer to the [Saving and Loading Search Criteria](#).*



Note

Even if you do not have set function right "access finder global profiles" finder allows to load profiles saved in global database, but finder does not allow to delete the profiles in "Load Search Criteria" dialog box. When you try to delete the profile a message box is displayed stating that "you have no function rights to delete the profile".

3.2.4 Additional Search Function

In an **Additional Search** you can link any number of search criteria either with a logical AND (all search criteria have to be met) or with a logical OR (at least one search criterion has to be met). In the left input field, select the object types to be linked (left-click the arrow button, make your selection from a pop-up menu). In the second field, you can indicate whether an entered numeric value needs to be precisely met or whether the searched value has to be lower or higher. The third input field is used for entering any required character sequence for the search. In the fourth field, by selecting from a pop-up menu, you can specify whether the search criterion is to be linked to the following criterion by a logical **AND** or by a logical **OR**. After specifying this link, new input fields open automatically in the next line for the following search criterion.

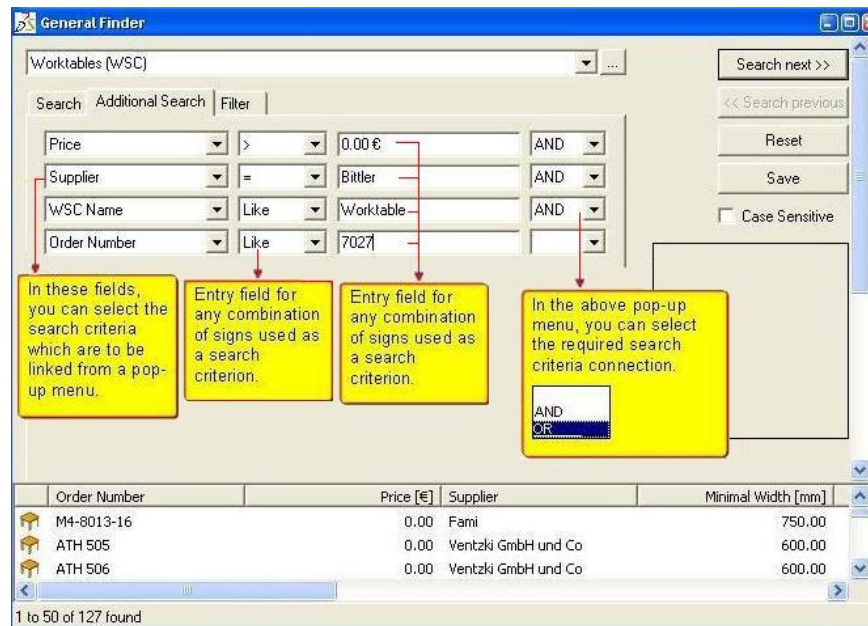


Figure 12: General Finder Additional Search Tab

The **Additional Search** is linked to the **Search** page by an AND. Hence, search criteria of both sides are taken into consideration. The **Additional Search** is not available with the relation search.

3.2.5 Filter Function

In the **Filter** tab you can define which of the possible search criteria are offered in the search screen (**Search** tab) for the object type currently selected. This setting is made by left-clicking the corresponding identification field: Search criteria marked with a checkmark are offered, the others are not. When the “General Finder” dialog box is closed, DELMIA Industrial Engineer saves the filter settings; they are retained even if the dialog box is reopened later. When pressing the **Reset** button the filter settings are deleted and replaced by system default settings.

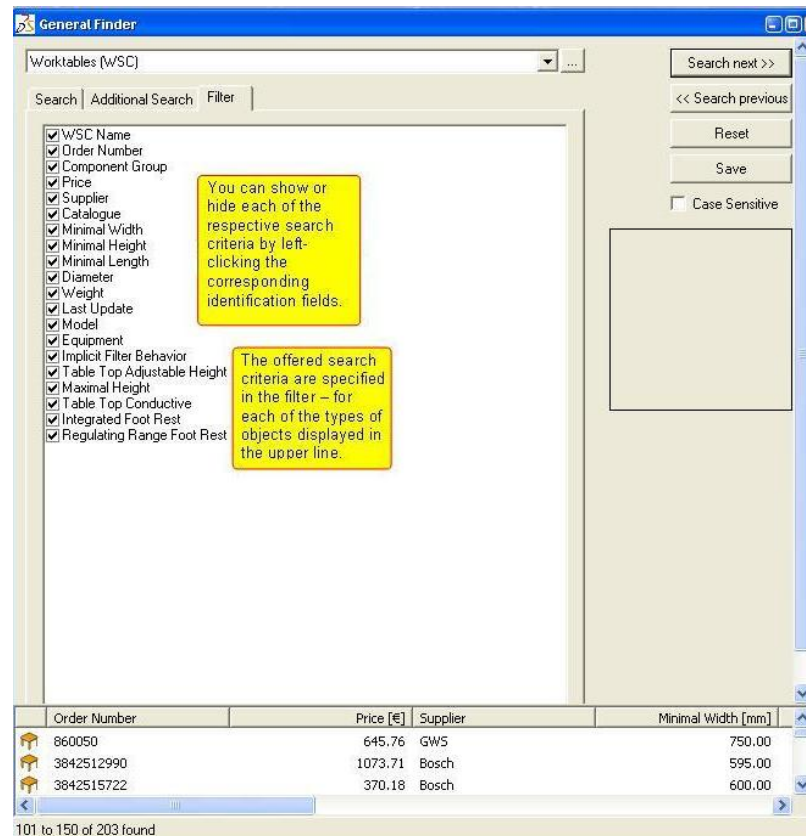


Figure 13: General Finder Filter Tab

3.3 System Items Finder

Open a system item for editing to open General Finder:

- 1) Select a self-generated system item in the system library.
- 2) Open properties in the context menu.
- 3) Press the **Edit graphics** button.
- 4) Inserting either by using the "Insert primitively" pictogram or by directly calling up the context menu in the graphics window and selecting **Insert**.
- 5) Enable the **Components** tab in the window that opens. The system items Finder opens up.

You can only search for system items with this Finder. However, you have several possibilities here to select the position of a system item in a graphic (context menu or via the **Insert** button and the selection of the position).

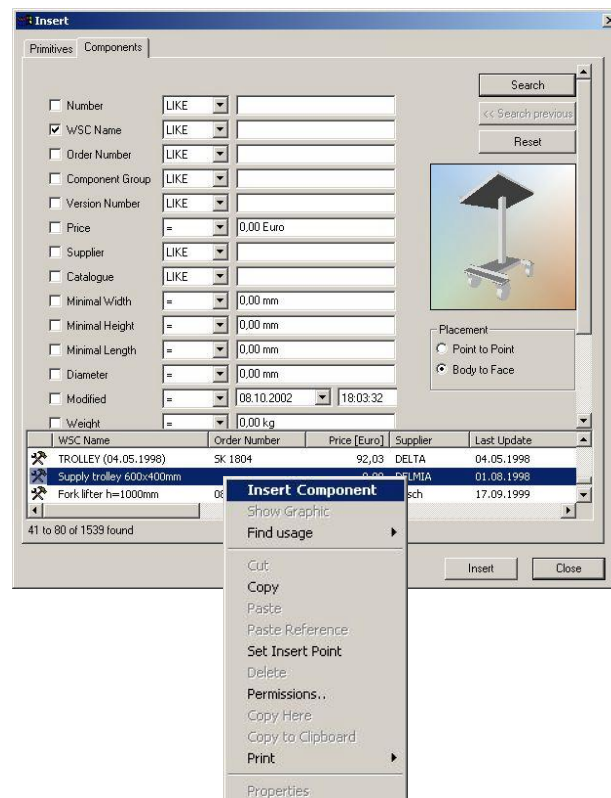


Figure 14: System Item Finder

3.4 Replace Finder

You can start the Replace Finder in the structure tree (on the left) or in the list view (on the right) of the PPR-Navigator or one of its views via the context menu.

With this Finder, you can search for system items with which you can replace the selected item in the structure tree or in the list view.

You can replace an existing graphic in the bill of materials by a new graphic.

To Start the Replace Function

- 1) Select the **Replace** function in the context menu.

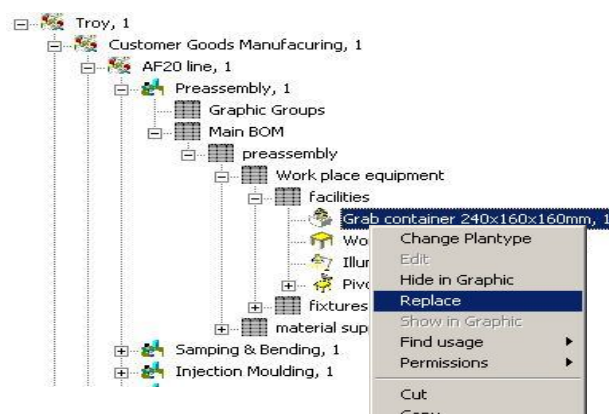


Figure 15: Replace Function – Context Menu

- 2) The Finder with the Replace function opens. Once you have found the objects (system item) you are looking for, select the required object.
- 3) Confirm your selection with **Replace**. Please refer to the [Figure 16](#).

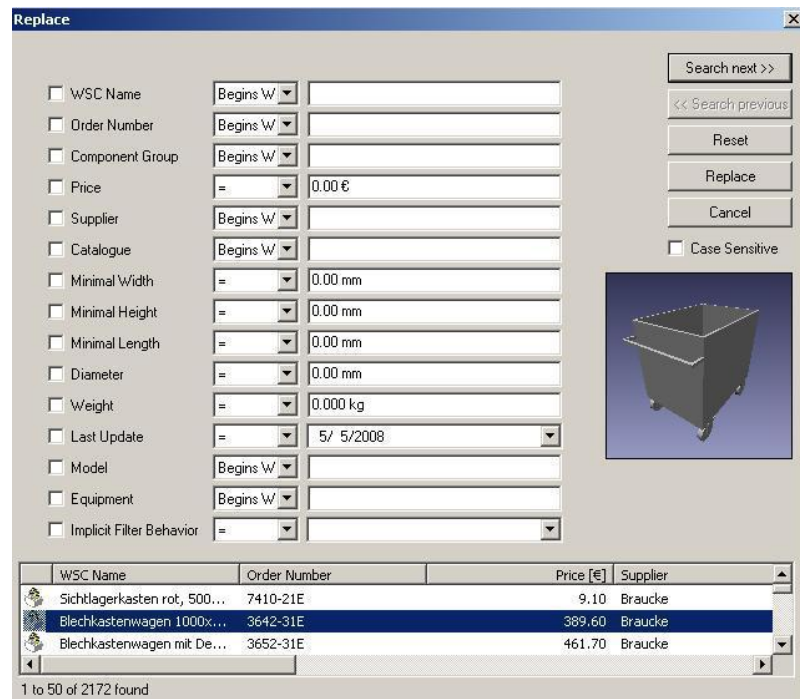


Figure 16: Replace System Item

- 4) The new system item is displayed in the bill of materials. The old system item is no longer be included in the bill of materials.
- The spatial position, possible filters set, and other properties of the replaced system item are retained in the replacement process.

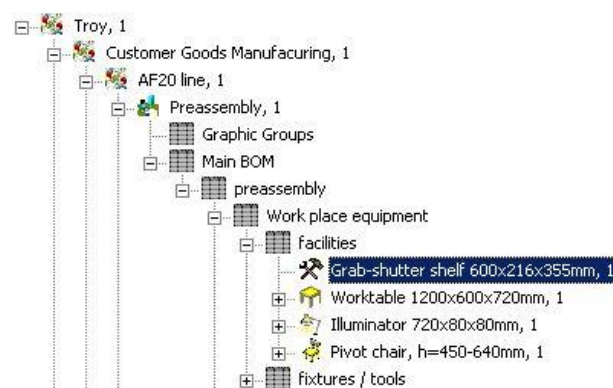


Figure 17: Replaced System Item in the Bill of Materials

4. Project Finder

This section provides description about the Project Finder.

4.1 Opening the Project Finder

You can start this Finder only via the **Search** entry in the context menu project node.

The search is performed in the project where the Finder is opened. After closing the project, the Finder is closed. The Search in Finder selection field is filled with all plantypes belonging to this project.

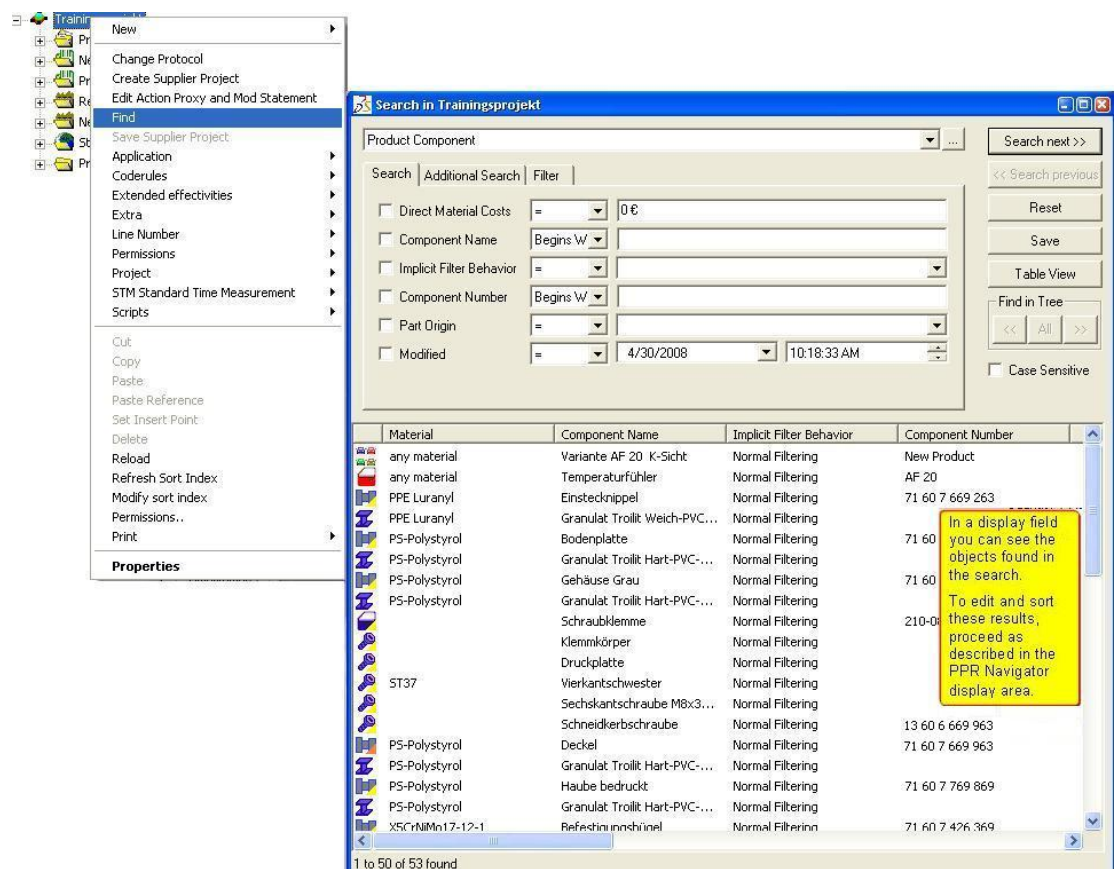


Figure 18: Starting Search on the Project Level and View of found Objects in Project Related Search



Note

You cannot search for projects and system items in the Project Finder.

In a project-related search, you can move or copy the objects from the General Finder result list to the object structure using drag and drop.

4.2 Starting the Search

4.2.1 Searching for Plantypes

All project plantypes are requested first when searching within the project. The plantypes found are displayed in the selection list of the selection field.

4.2.2 Searching for Objects in the Browser

You can search for objects in the browser using the function **Find in Tree**. Please refer to the [Figure 18](#).

Only objects, which are defined as bill of materials entries, are shown. Bill of materials entries are, for example, all products, resources, or process components. The search is followed by a display of the found objects in the browser.

- You can either search for a single object or search for several selected objects at the same time. Please refer to the [Figure 21](#).



Caution

*After starting the function **Find in Tree – All** you receive the desired result shown in the tree of PPR-Navigator. Please make sure that you do not close the tree manually while running the function, otherwise it could happen that in the next search not all matching objects are shown.*

*If you activate the option **Collapse tree on executing ‘Find in tree – All’** under tab **Browser and Menu Items** of Settings, you can also close the tree manually while searching.*

You can limit your search in tree for locating all occurrence of the objects in tree, expanding relation object that are only nodes, and expanding relation objects other than nodes.



For more information, Please refer to the Browser and Menu Items Tab in - Expand mode for “Find in tree [Settings Manual](#).


A usage list is created internally whenever objects are searched for. The single steps as to how the search finds the objects in the browser are registered in this usage list. In this way you can access single objects which have been found in the browser.

You can imagine the usage list as a closed circle on which the single objects are held at certain points. On this circle, you can move in two directions and individually access the objects in the forward and backward directions. The movement of the cursor in the browser also follows this principle if you are working with both buttons for the forward and backward direction.

In this regard, there is no continual movement of the cursor in the browser, which searches through the structure **upward** and **downward** for objects, but rather the search is conducted according to the objects registered in the usage list. Please refer to the [Figure 19](#).

You can use the three buttons for **Find in Tree** for the search. Please refer to the [Figure 18](#).

With both buttons for the forward  and backward  directions you can access and display objects in the browser in single steps.

Clicking the button **All**  displays all objects searched for in the browser, i.e. all found objects and object references in the project. Copied objects are not found and displayed in this search. Please refer to the [Figure 21](#).

Example

Behavior in the Browser as Opposed to in the Usage List

This example shows you the principle behavior of the cursor in the browser whenever you individually access objects in the browser with the two buttons for the forward and backward directions.

The blue arrow marks the sequence in which the objects are registered in the usage list: i.e. from object 1 (**O1**) to object 4 (**O4**).

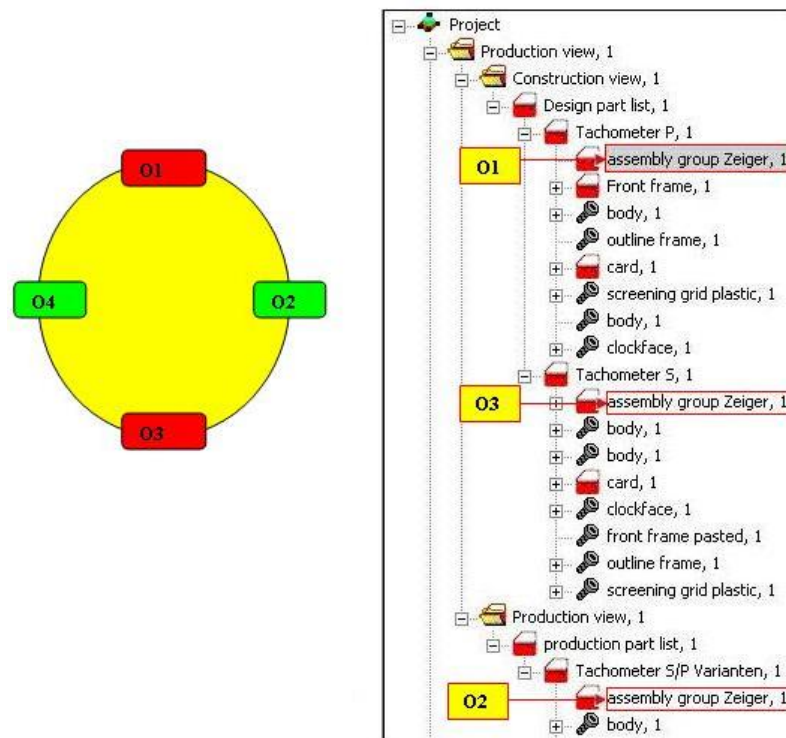



Figure 19: Diagram of Registration in the Usage List – Movement in the Browser

- All of the structures in the browser with the four found objects should be opened (**All button**) after the search.
- Furthermore, the cursor should be located by **Object 1** in the **first** structure in the browser after the search.
- You want to jump to the next found object, which according to the registration in the usage list is **Object 2**, with the **forward button** . **Object 2** is arranged in the browser in the **third** structure.
- Objects **three** and **four** are located in the **second** and **fourth** structure.
- In moving forward in the browser, the cursor jumps directly to the third structure and to **Object 2**. If the movement in the browser were continuous, the cursor would first jump to the second structure to **Object 3** and then to **Object 2**, etc.
- In moving backward in the browser, the individual objects are accessed in the reverse sequence of the registered objects in the usage list. Please refer to the [Figure 19](#).




To Start the Search for Objects

- 1) In order to start the search for objects, open the project search via the context menu on the project node. *Please refer to the [Figure 18](#).*
- 2) Select the bill of materials entry that you want to find from the combobox in the project search. In the example, it is product components.
- 3) Click **Search next** button. All objects in the product are shown in the result list.

Language ID

If you store the string attribute with different language ID (Language1 and Language2) Project finder and General finder can find the component with the stored name in specific language. For more information, *please refer to the Multilingual Support in [General Introduction Manual](#).*

If the **Is Multilingual** attribute is set on the Plantype level then you cannot have General finder to find the component with the attribute value. To manage this you should customize the attribute on type level.

- 4) You can select single objects in the result list as well as several at the same time. In the example, all objects of the **pointer subassembly** are searched for.
 - 5) If you click **All**  button, all structures in which the object and referenced objects are used are opened. The cursor in the browser is in this case located by the last object found (red box).
 - 6) You can individually access further found objects (blue box) with the buttons for the forward  and backward  directions.
- You can also start the search directly with these buttons; in this case, only one object is searched for and displayed in the browser.

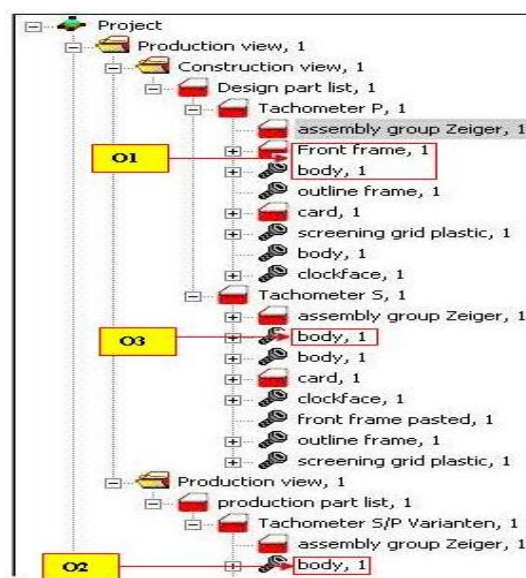


Figure 20: Search Directory

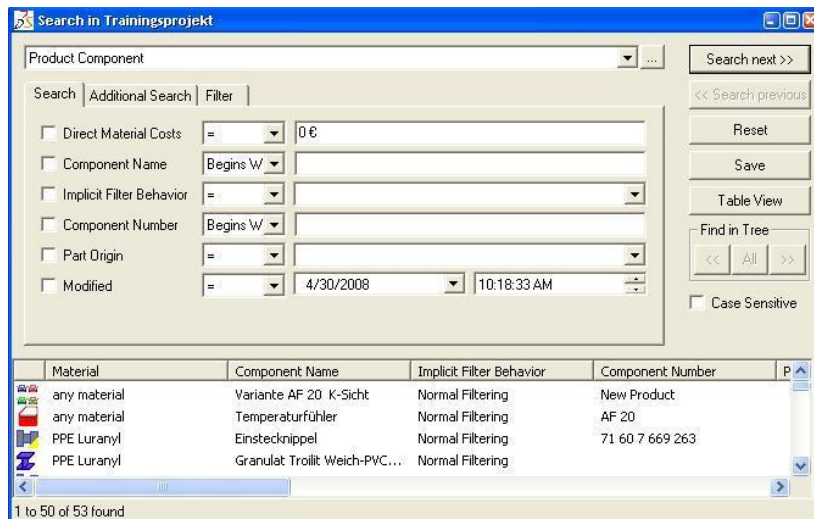


Figure 21: Objects Shown in Several Structures in the Browser

4.3 Find in Tree Function

4.3.1 Find in Tree Function using the Context Menu

You can execute the Find in Tree function for all PPR-Components using the **Context Menus** < **Find Usage** < **Find in Tree**:

- In the PPR-Navigator
- In Resources – Process View
- In the General Finder
- In the Project Finder
- In Listviews that are created through a script

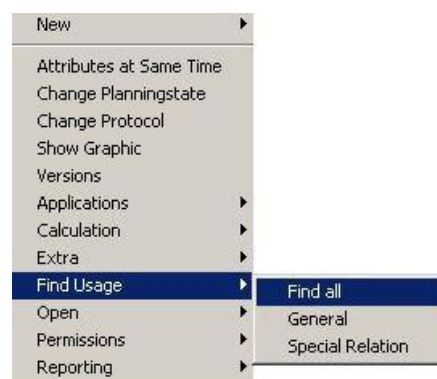


Figure 22: Context Menu – Find in Tree

An additional button for the **Find in Tree** search function can be configured for the dialog properties of PPR-components. *Please refer to the [Figure 23](#).*



For more information, *Please refer to the [Administration Manual](#).*

Assembly <Assembly blue, 1>

General | Matter Properties | Simulation | Graphic | Notes | Versi

Component Name: Assembly blue

Component Number: blue 001

Position: 0

Quantity: 1,00

Allowance Set:

Premises:

PoT-Curve:

Planning Variant:

Write Change Protocol: ☐

Part Origin: Unspecified

Find all

Figure 23: Properties Dialog PPR-Components – Find in Tree

4.3.1.1 Finding PPR-Components

The procedure is clarified in the following example.

- 1) Select a PPR-component.
- 2) Open the context menu by right-clicking the mouse.
- 3) Select **Find Usage < Find in Tree** in the context menu. *Please refer to the [Figure 22](#).*
- 4) The results of the search are displayed exclusively in the PPR-Navigator. *Please refer to the [Searching for Objects in the Browser](#).*

Example

Example – PPR-component being Selected in the Tree Structure

In this example, the search is for the product **Carton green**.

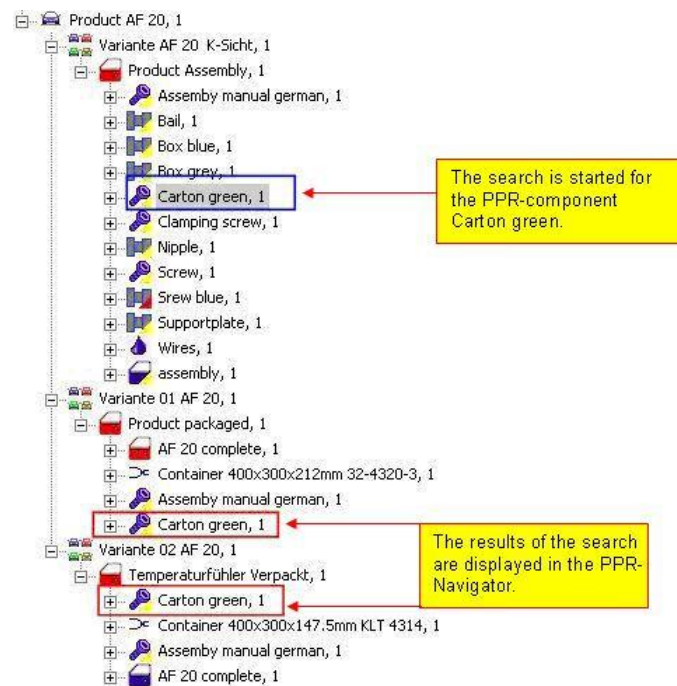


Figure 24: Example – to Start a Tree Structure Search

Example

Example – PPR-Component is Selected from the Listview

In this example, a search in the Listview is executed. Again, the search is for the product **Carton green**.

The result is the same as if you had started the search in the tree structure. Please refer to the [Figure 24](#).

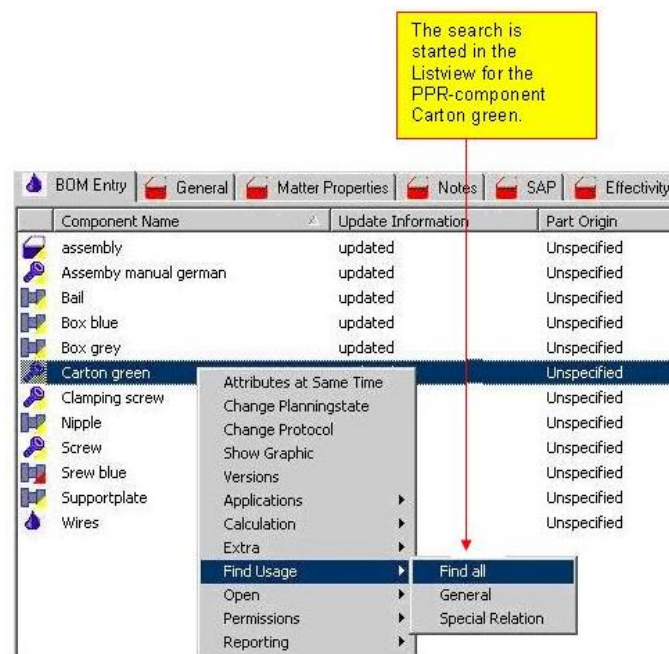


Figure 25: Example – Starting a Search in the Listview

Example

Example – PPR-component is Selected from the Listview of the Project Finder

In this example, the search is executed from the Listview of the Project Finder. Again, the search is for the product **Carton green**.

The result is the same as if you started the search in the tree structure. *Please refer to the Figure 24.*

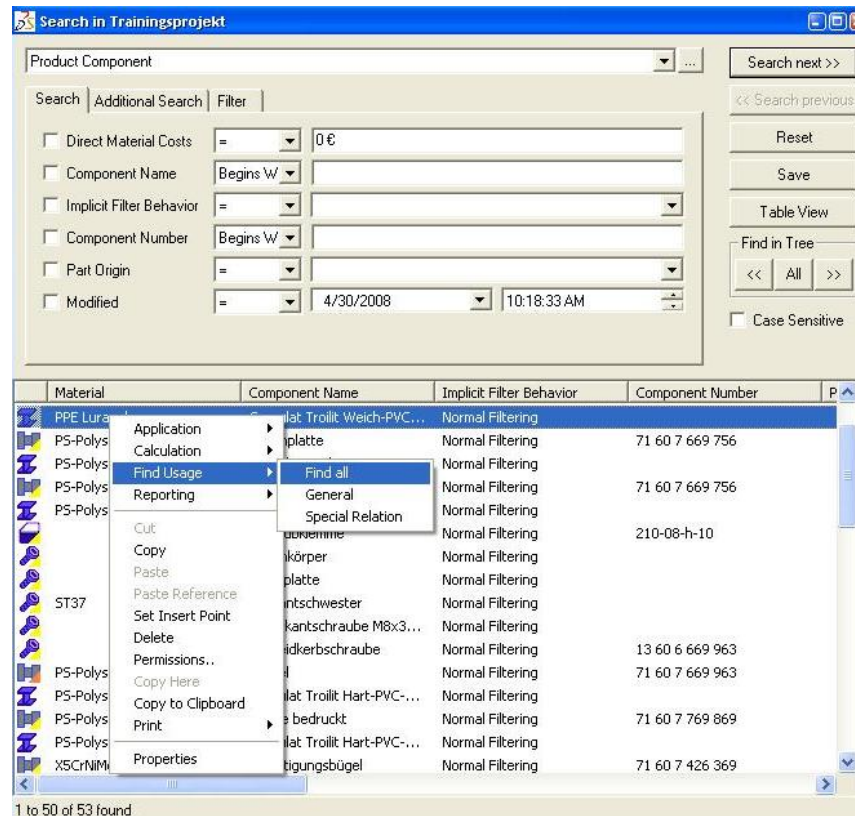


Figure 26: Example – of Starting a Search in the Listview of the Project Finder

Example

Example – the PPR-Component is Selected from the Resource View

- 1) Open the Resource View in PPR-Navigator via the context menu **Open in** < **Process Engineer**.
- 2) In the example the search is started for the PPR-component **Assembly station 01**.

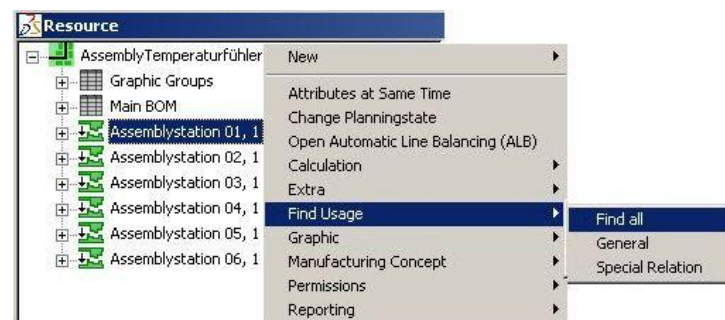


Figure 27: Example – of Starting a Search in the Resource View

The result in turn is displayed in PPR-Navigator. *Please refer to the Figure 28*

Search for Result: Display of the PPR-Component Assembly Station 01 in the PPR-Navigator

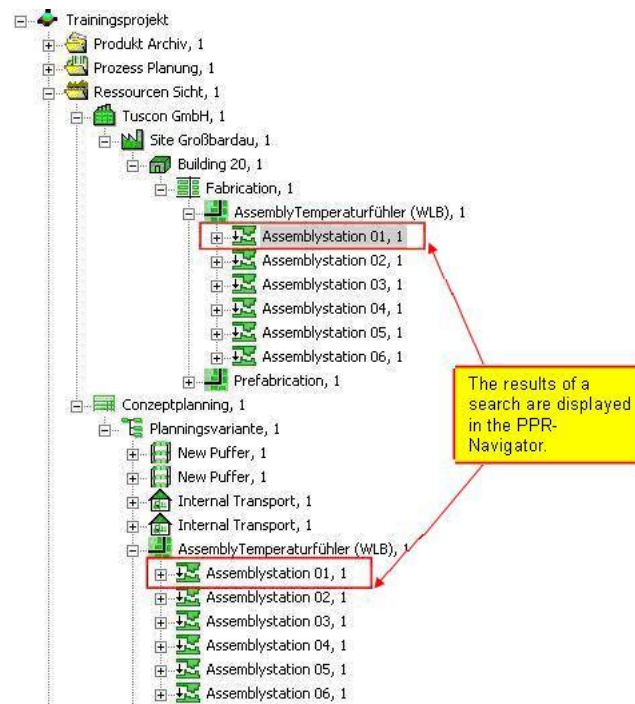


Figure 28: Example – Result PPR-Component Assembly Station 01

4.3.2 Find in Tree Function – using the Relations Display

The **Find in Tree** function gives you the possibility of displaying PPR-components that are linked by means of relations to the object being searched for. You can enter PPR-components and relations as search criteria in the Project Finder. The results are always displayed in the tree structure of the PPR-Navigator.

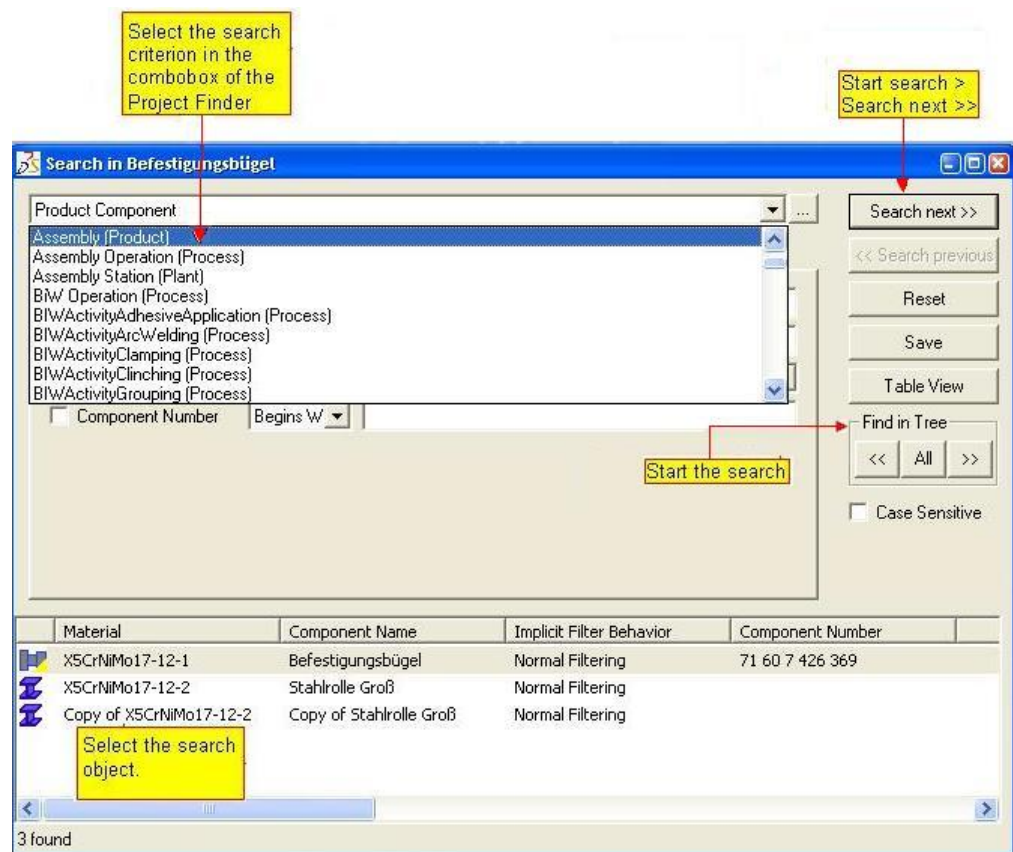


Figure 29: Starting the Search in Project Finder

4.3.2.1 Criteria for Finding Relations

The relations search is an extension of the current **Search in Tree** function in use. Up until now, it was only possible to display bill of materials entries as the result of a search. Bill of materials entries are PPR-components in the tree structure, product, process, and resources structure. They are directly linked to one another through so-called parent-child relations. The result, all structures are opened within the tree structure of search objects that are present as bill of materials entries.

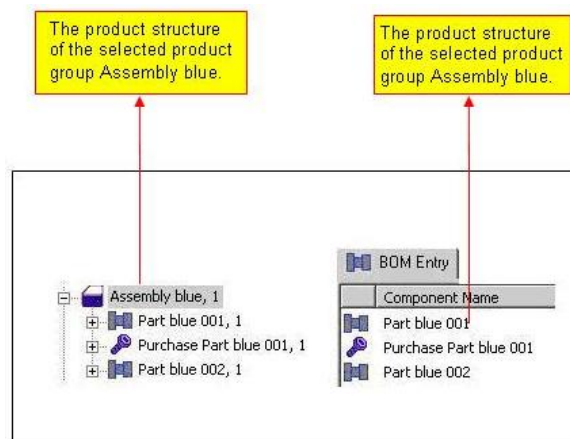


Figure 30: Example of the Parent-Child Relation in the Tree Structure



Note

All relations are called up for the search object only. Starting with the first parent level only bill of materials entries are searched for.

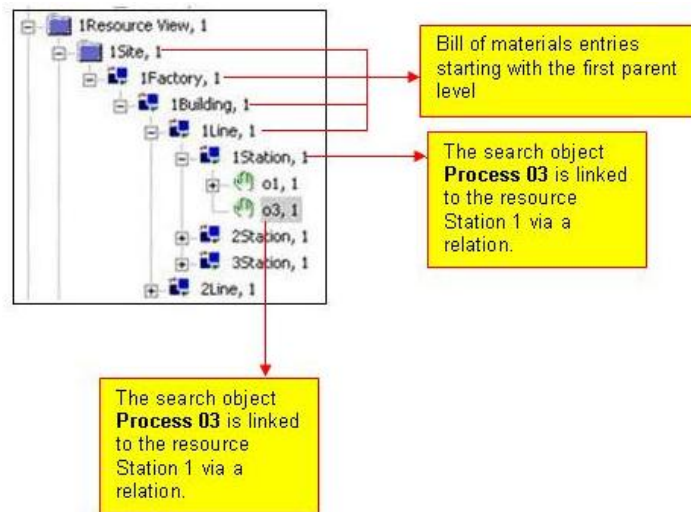


Figure 31: Bill of Materials Entries Starting with the First Parent Level

4.3.3 Examples of Searching for Relations

During a search for relations, the tree structure is opened until the PPR-components that are linked via those relations are found.

4.3.3.1 Example – Search Object Process

This example shows how the search object process **Assembly Operation blue 001** is used.

Objects are linked on the one hand to the product structure and on the other hand to the resource structure:

- The relation to the product structure: **Process creates product**
- The relation to the resource structure: **Process running on Resource**

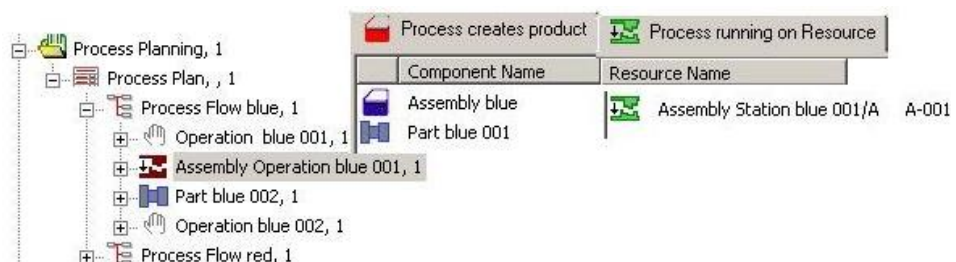


Figure 32: Process with Relations to the Product and Resource Structures
To Start the Search

Assembly Operation (Process) Search next >>

Search | Additional Search | Filter | Link << Search previous

☐ Manual Time (ttb) = 0.00000

☐ Time Analysis =

☐ Process Name Begins W

☐ Implicit Filter Behavior =

Reset

Save

Table View

Find in Tree

<< All >>

☐ Case Sensitive

Process Name	Process Number	Implicit Filter Beha
Assembly Operation blue 001	blue 001	Normal Filtering
Assembly Operation red 001	red 001	Normal Filtering

Figure 33: Start the Search – Example for the Search Object Process

To Display the Search Result for – Process

The result is displayed in the tree structure. The result must match the objects linked to the Product and Resource structures. *Please refer to the Figure 32.*

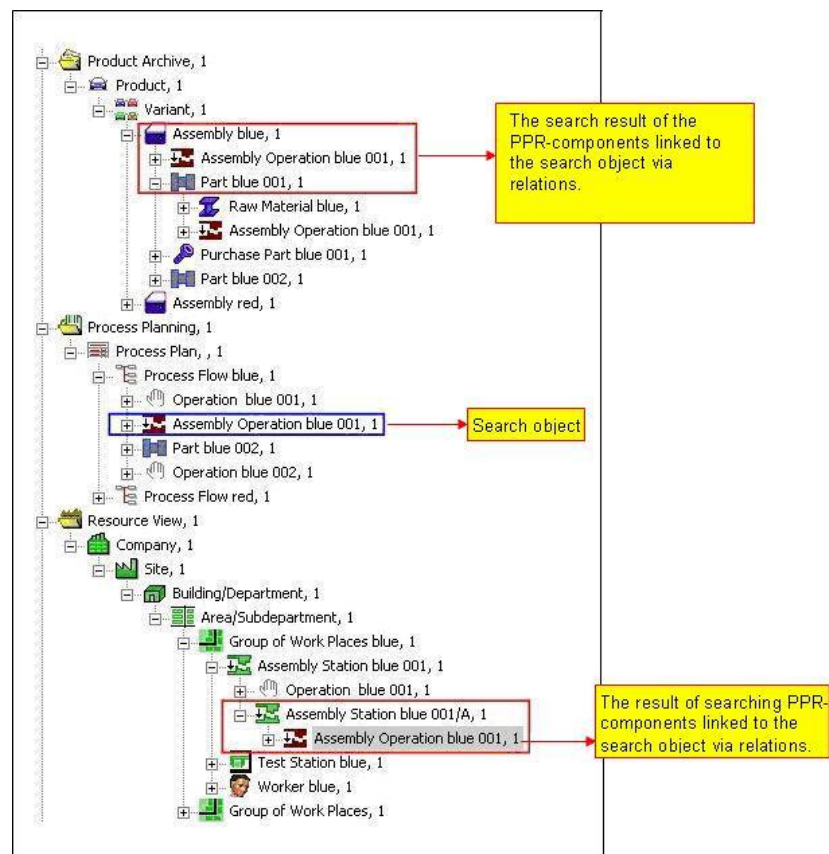


Figure 34: Display the Search Result of Relations for the Process

4.3.3.2 Example – Search Object Product

This example shows how the search object **Product Assembly blue** is used.

Links exist to the Process structure only:

- The relation of the Process structure: **Product is created by Process**

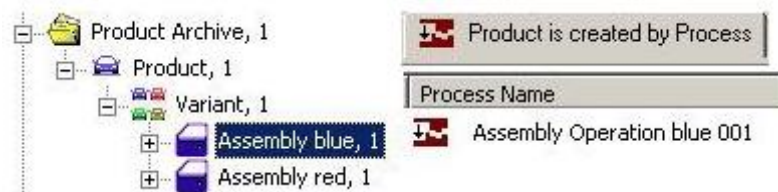


Figure 35: Product with Relations to the Process Structure

To Start the Search

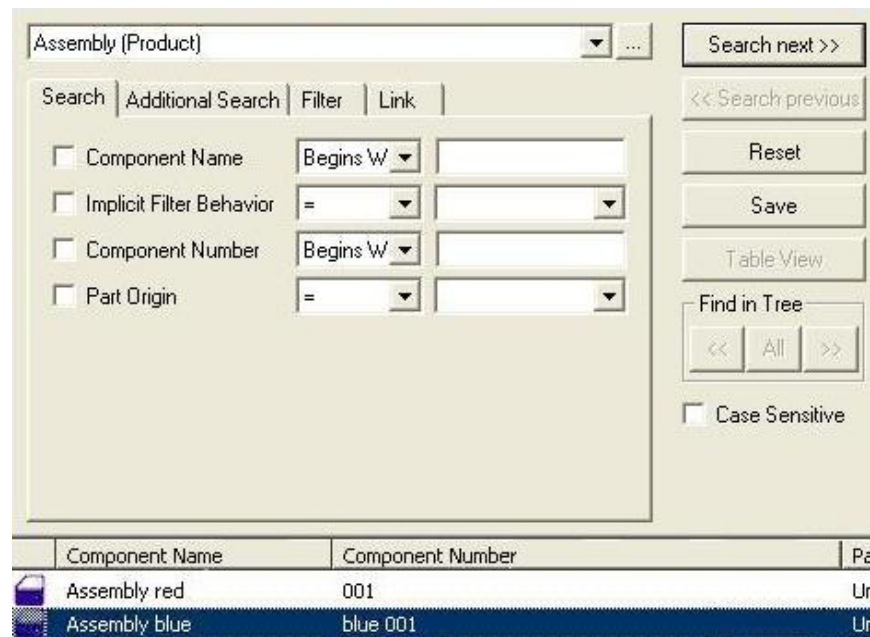


Figure 36: Start the Search - Example of the Search Object Product

To Display the Result of the Search - Product

The result is displayed in the tree structure. The result must match the link to the Product structure. Please refer to the [Figure 35](#).

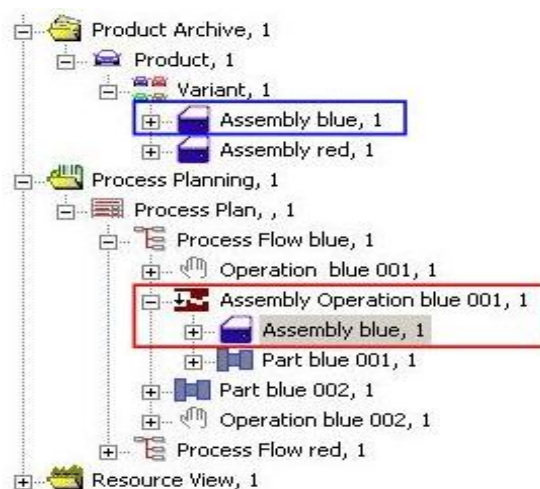


Figure 37: Display the Search Result for Relations to the Product

4.3.3.3 Example – Search object Resource

This example shows how the search object **Resource Assembly Station blue 001/A** can be used.

Links exist to the Process structure only:

- The relation to the Process structure: **Resource runs Process**

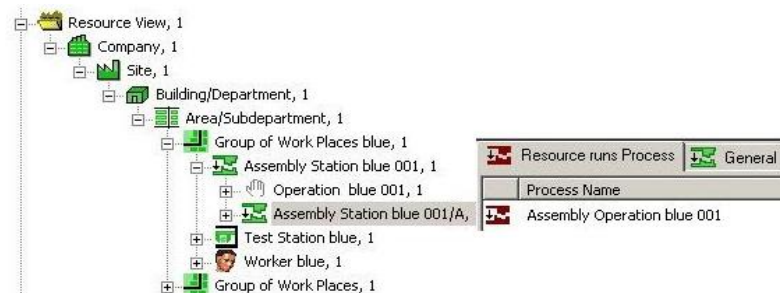


Figure 38: The Resource with Relations for the Process Structure To Start Search

Resource Name	Implicit Filter Behavior	Resource Number
Assembly Station blue 001	Normal Filtering	blue 001
Assembly Station blue 001/A	Normal Filtering	A-001
Assembly Station red 001	Normal Filtering	red001

Figure 39: Start search - Example Search Object Resource

To Display Search Result - Resource

The result is displayed in the tree structure. The result must match the link to the resource structure. Please refer to the [Figure 38](#).

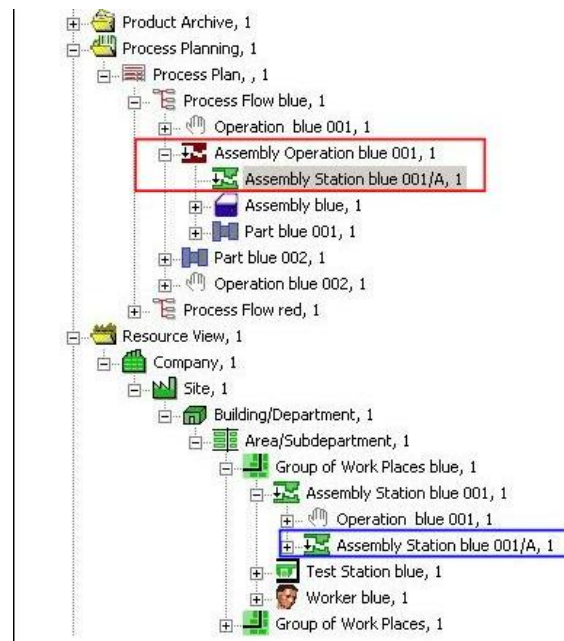


Figure 40: Display the Search Result of Relations to the Process

4.3.3.4 Example – Search Object Relations

This example shows how the search object **Process Operation red 002** can be used for the search criterion **Process uses resource**.

Links exist for the Product- and Resource structures:

- Relation to Product structure: **Process processes Product**
- Relation to the Resource structure: **Process uses resource**

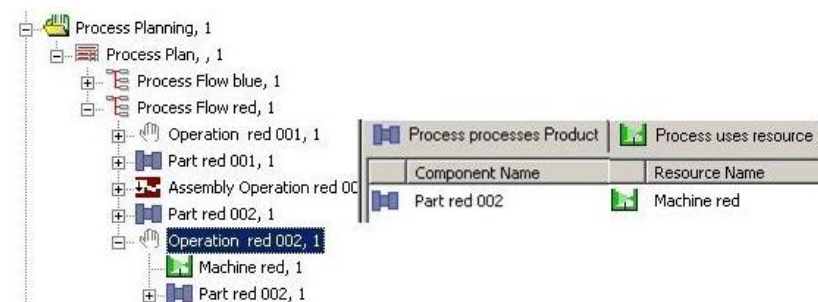


Figure 41: Relation Process Uses Resource is the Search Criterion
To Start the Search

The screenshot shows the 'Project Finder' search interface. At the top, a dropdown menu is set to 'Process uses resource'. Below it, a text box contains 'process component / resource component'. The interface has tabs for 'Search', 'Additional Search', 'Filter', and 'Link'. Under the 'Search' tab, there are two sections: 'Process Component' and 'Resource Component'. Each section has checkboxes for 'Time Analysis', 'Process Name', 'Implicit Filter Behavior', and 'Process Number'. The 'Process Name' and 'Process Number' fields have a 'Begins W' dropdown. To the right of the search criteria are buttons for 'Search next >>', '<< Search previous', 'Reset', 'Save', 'Table View', 'Find in Tree' (with '<<', 'All', '>>' buttons), and 'Case Sensitive'. At the bottom, a table shows the search results with columns 'Process Name (ProcessComponent)' and 'Process Number (ProcessComponent)'. The first row shows 'Operation red 002' and 'red 002'.

Figure 42: Start the Search: Process Uses Resource

To Display the Search Result – Relation

The result is displayed in the tree structure. The result must match the link to the Process structure. *Please refer to the [Figure 41](#).*

This search is different from the previous examples. In the first step, the PPR-components are found via the search criterion relation **Process uses resource**. The PPR-components must be linked via this type of relation and must be usable as search objects.

In the second step, the usage can be determined for these PPR-components, as before. As the result of the search all PPR-components linked via relations to the search object are displayed.

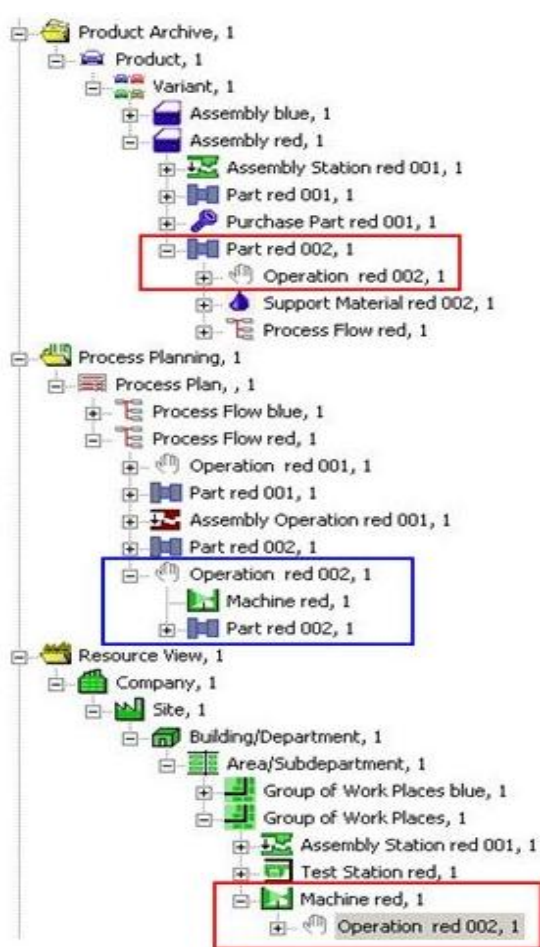


Figure 43: Display the Search Result of Relations to the Process

5. Component Finder

This section provides description about the Component Finder.

5.1 Starting the Component Finder

You can start this Finder via the **Search** entry in the context menu of PPR Components.

5.2 Setting Search Options

The component finder improves the usability by allowing to set search options.

You can search for components with attribute search criteria, search for string, and search condition value. In [Figure 44](#), the finder is opened on Process Planning Component.

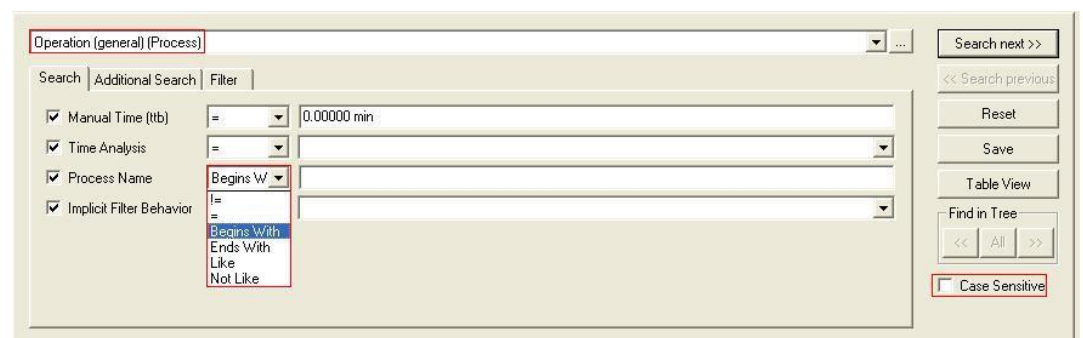


Figure 44: Search Options

- **Search Condition Value:** Select the casesensitive checkbox to enter the value that matches the search result.
- **Attribute Search Criteria:** Enter few letters of the string in attribute combo box, plantype combo box, and value list combo to select an entry.
- **Search for String:** Select Begins with or End with query. BEGINS WITH Operator is selected by default.
 - BEGINSWITH: with the use of this option the string to be searched is post-fixed with "*" (Wild character).
 - ENDSWITH: with the use of this option the string to be searched is pre-fixed with "*" (Wild character).

5.2.1 Searching for Linked Objects

You can also search explicitly for objects linked or not linked to other objects or to a certain number of objects.

- 1) Open the Component finder on an object in the project tree.

The screenshot shows the 'Search in Variante 01 AF 20' dialog box. Yellow callout boxes provide the following information:

- Relationship Yes/No:** Points to the 'Link' dropdown menu.
- Possible search paths, defined in configuration:** Points to the 'Searchpath' dropdown menu.
- Linked to Plantypes:** Points to the 'Plantype' dropdown menu.
- Values: WHERE Additional search attributes for the plantype:** Points to the 'Where' dropdown menu.
- Possible Values:** (Two boxes) Points to the 'Attribute' and 'Value' input fields, listing:
 - AND relation to a additional plantype with the search object.
 - OR relation to a additional plantype with the search object.
 - IN create a sub query for the plantype

The dialog box includes tabs for 'Search', 'Additional Search', 'Filter', and 'Link'. The 'Link' tab is active, showing the 'Link' dropdown set to 'Yes', 'Searchpath' set to 'epfinder-findintree', 'Plantype' set to 'Assembly (Product)', and 'Where' set to 'Where'. Below these are 'Attribute' and 'Value' input fields. On the right, there are buttons for 'Search next >>', '<< Search previous', 'Reset', 'Save', 'Table View', 'Find in Tree', and a 'Case Sensitive' checkbox. At the bottom, a table displays search results:

Material	Component Name	Implicit Filter Behavior	Component Number	Planr
any material	Variante 01 AF 20	Normal Filtering	New Product:	

A 'Result List' label points to the table. Below the table, it says '1 found'.

Figure 45: Component Finder Dialog with Linked Objects and Result List



Note

For a simple query “where” entry must be selected from the combo box and it is not mandatory to specify attribute search criteria.

For an “IN” query (nested query) it is mandatory to specify attribute search criteria.

Combo Box “Link”

If “YES” is selected, finder look for all those objects matching the user selected search criteria (in the “Search” and “Additional Search” pages) and display, within this result, only those objects that also have a link with an object matching with the given characteristics in the “Link” page.

if “NO” is selected, finder look for all those objects matching the user selected search criteria (in the “Search” and “Additional Search” pages) and display as result only those objects that do NOT have a link with an object matching with the given characteristics in the “Link” page

If “” is selected, the result set obtained from Common Search and additional search are displayed.

Combo box “Search path”

The combo box containing possible paths display all browsers defined by the administrator in the configuration, beginning with: “epfinder-find...” e.g: “epfinder-findintree”.

Example

Example

You search for all parts, which are processed in “Spritzgießen” processes.



Note

Project Finder Search

- 1) The scope of project finder search is at project level (i.e. all the components which are in Project Library).
- 2) Project finder uses IEP_Query interface methods to find components from the project library.

Component Finder Search

- 1) The structure finder search searches components under the selected node.
- 2) Structure finder uses FindInTree API which traverses the tree under the selected node and checks the searching object type against the found object in tree, and then calls getattribute() and compares with the value of attribute for the given search criteria.
- 3) The performance depends on dimension (number of objects) and the form (levels) of the structure. The technical reason is that it is not possible to use the query mechanism any longer. The structure must be traversed. In some cases (e.g. search in the complete process view) the search time can be longer as by a normal search on the project node.

It is not recommended to use Find in Tree search (component finder search) functionality at top level nodes in a project (i.e. Process View), but rather it is recommended to use in isolated (small) trees where only the children below the top node are considered.

When the entire process tree is considered for the find in tree search (component finder search), it is recommended to use the Project Finder and search there for all processes.”

5.2.2 Search in Sub-tree with Advanced Search Criteria Related Links to Other Objects

- 1) Create link between operation and station as shown below.
Link **Operation 1** to **Station 1** and **Operation I** to **Station 5** with relation “process is attached by resource”.

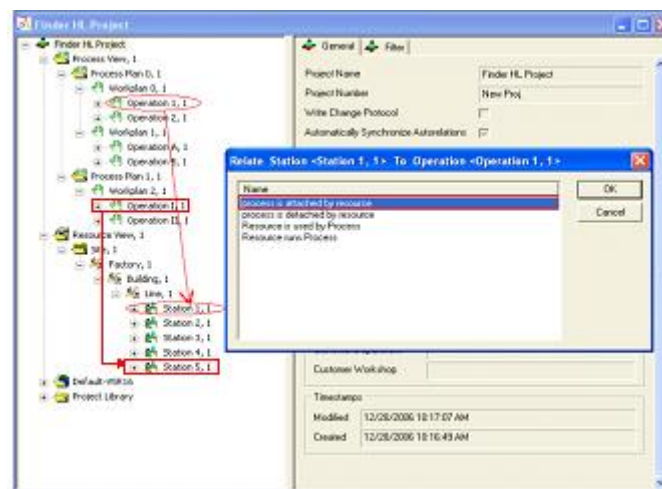


Figure 46: Link between Operation and Station

- 2) Create browser in configtool beginning with efinder-finder.

The below is an example for efinder-findbrowserid1 (for the relation process is attached by resource)

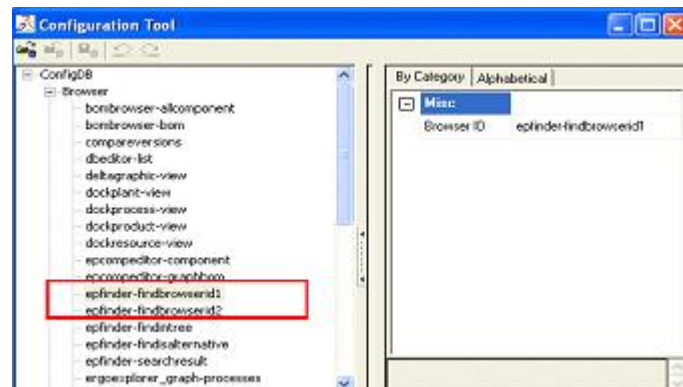


Figure 47: Creating Browser in Configtool

- 3) Define efinder-findbrowserid1 for the relation “process_attaches_resource” as well as for “process_attaches_resource_reverse”.



Note

It is not necessary to define the browser for both the relations process_attaches_resource as well as for process_attaches_resource_reverse based on relationship type, you have to define the browser for the particular relation.)

- 4) Define efinder-findbrowserid1 for relation as shown below. (Set “Is in treeview” to Yes)

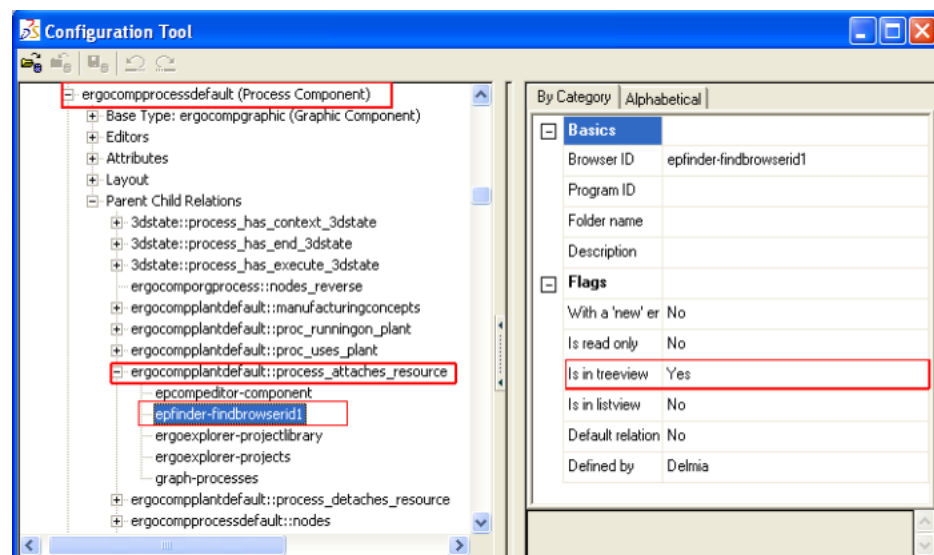


Figure 48: Defining efinder-findbrowserid1 for Relation

- 5) Similarly define efinder-findbrowserid1 for the reverse relation as shown below.

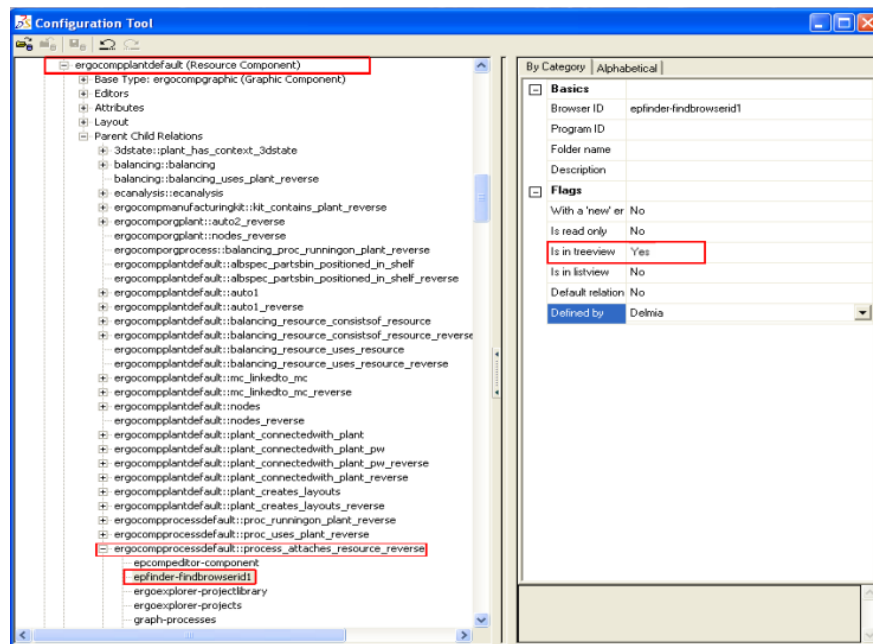
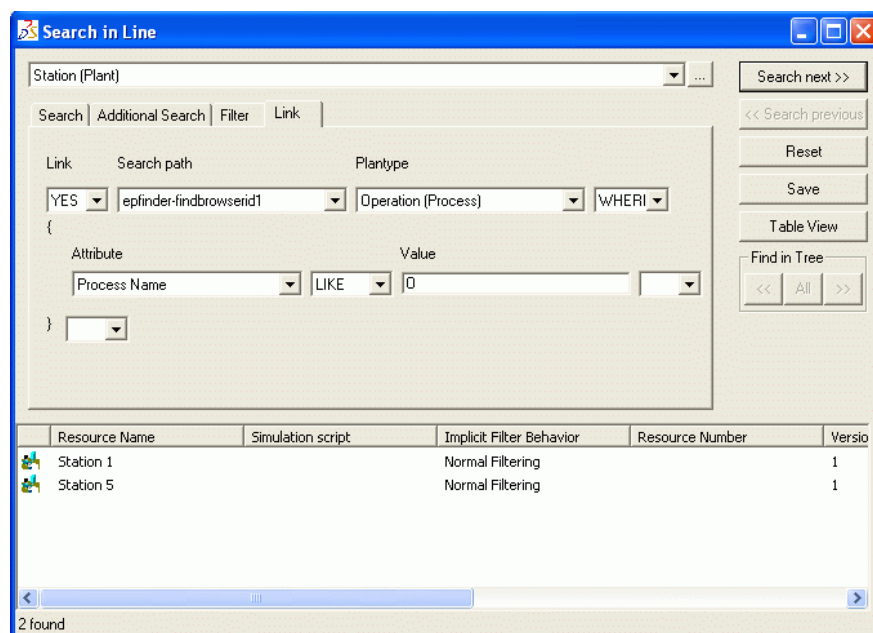


Figure 49: Defining epfinder-findbrowserid1 for the Reverse Relation

- 6) Open Finder from “Line” node.
- 7) Go to the new page “Link” and verify that follow is displayed properly.
 - **Search path** combo box contains all possible paths defined in the configuration.
 - **PlanType** Combo box contains all possible Plan Types.
 - All other combo boxes are displayed with their corresponding values.
 - Verify that controls are dynamically created by nested sentences.

Executing a Simple query where link = “YES”





Note

Station 1 and Station 5 having a link with operation with relation “process_attaches_resource”.

Executing a simple query where link = “NO”

Search in Line

Station (Plant) [dropdown] ... [Search next >>] [Search previous <<]

Search | Additional Search | Filter | Link

Link: [NO] Search path: [epfinder-findbrowserid1] Plantype: [Operation (Process)] [WHERE]

{ Attribute: [Process Name] Value: [LIKE] [0] }

[Reset] [Save] [Table View] [Find in Tree] [All]

Resource Name	Simulation script	Implicit Filter Behavior	Resource Number	Version
Station 2		Normal Filtering		1
Station 3		Normal Filtering		1
Station 4		Normal Filtering		1

3 found



Note

Station 2, Station 3, and Station 4 having no link with operation with relation “process_attaches_resource”.

6. Examples for Particular Search Procedures

6.1 Searching for Relations

In DELMIA Process Engineer[®], relations are objects to which validities can be assigned. It is therefore possible to search for relations.

In this case, the user interface looks slightly different: You notice two selection fields and the area of search criteria are displayed in a different structure according to the relation type.

- In the first selection field, the relation is displayed.
- In the second selection field, you can filter and specify the search for the relation type.

The **Additional search** is not available.

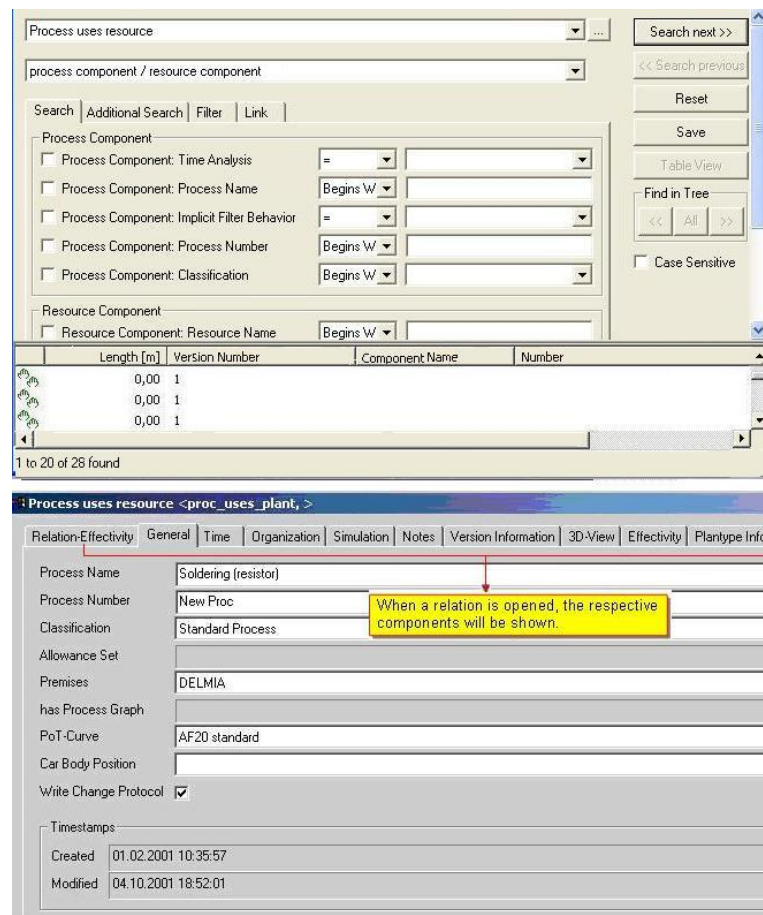


Figure 50: Search for Relations on the Project Level

6.2 Searching for Code Rules

Searching for components with a certain code rule

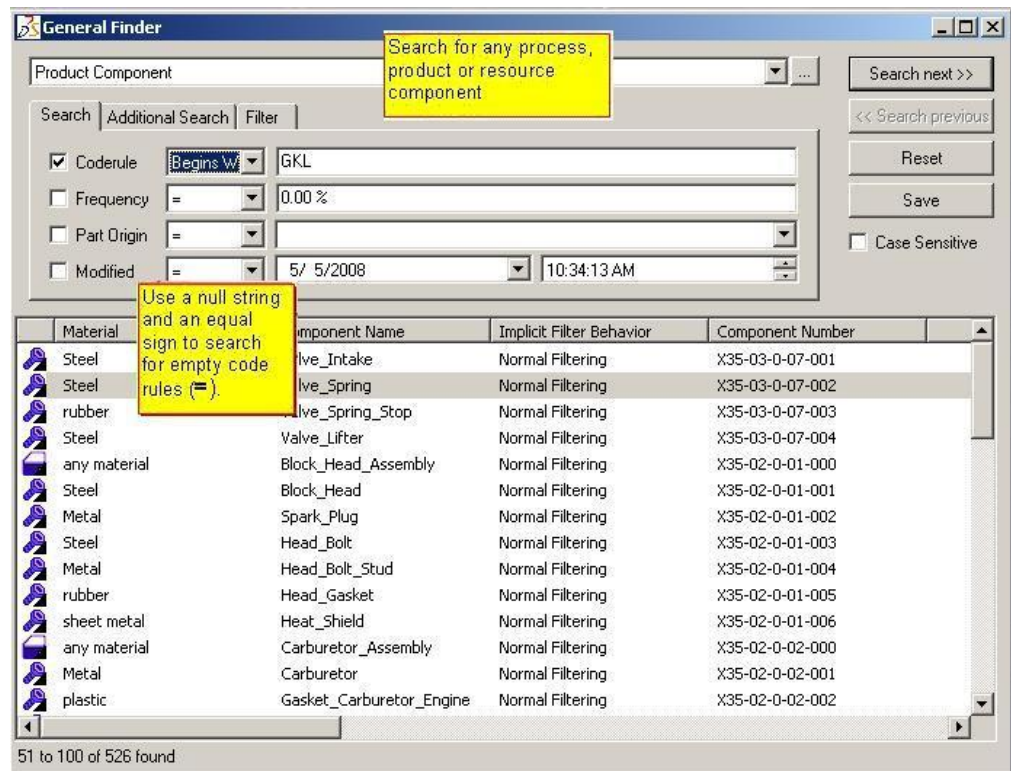


Figure 51: Group Properties

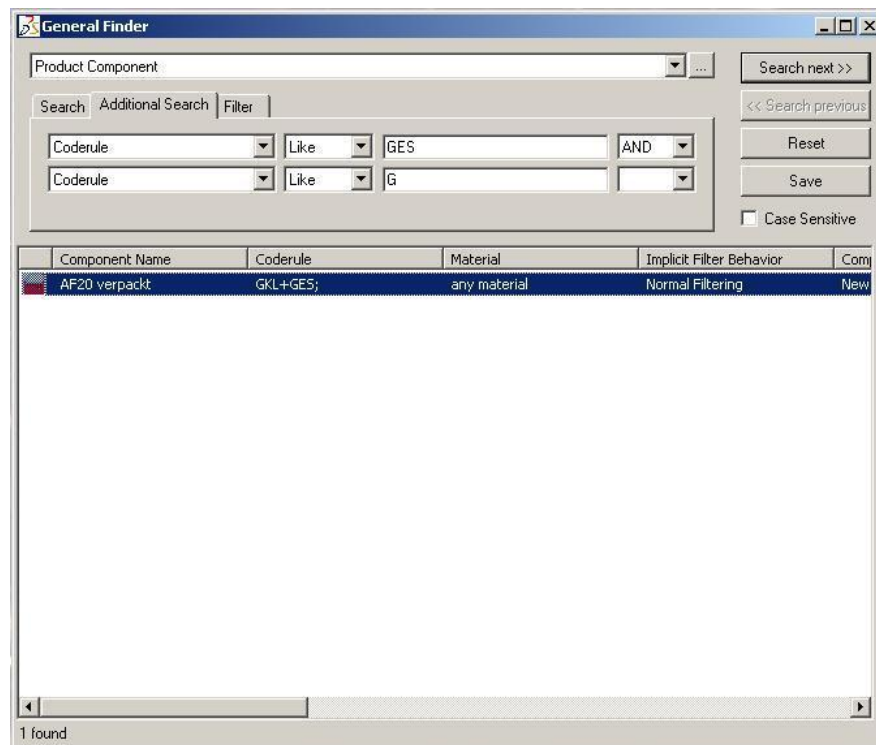


Figure 52: Additional Search for Code Rules

Component-independent search for code rules.

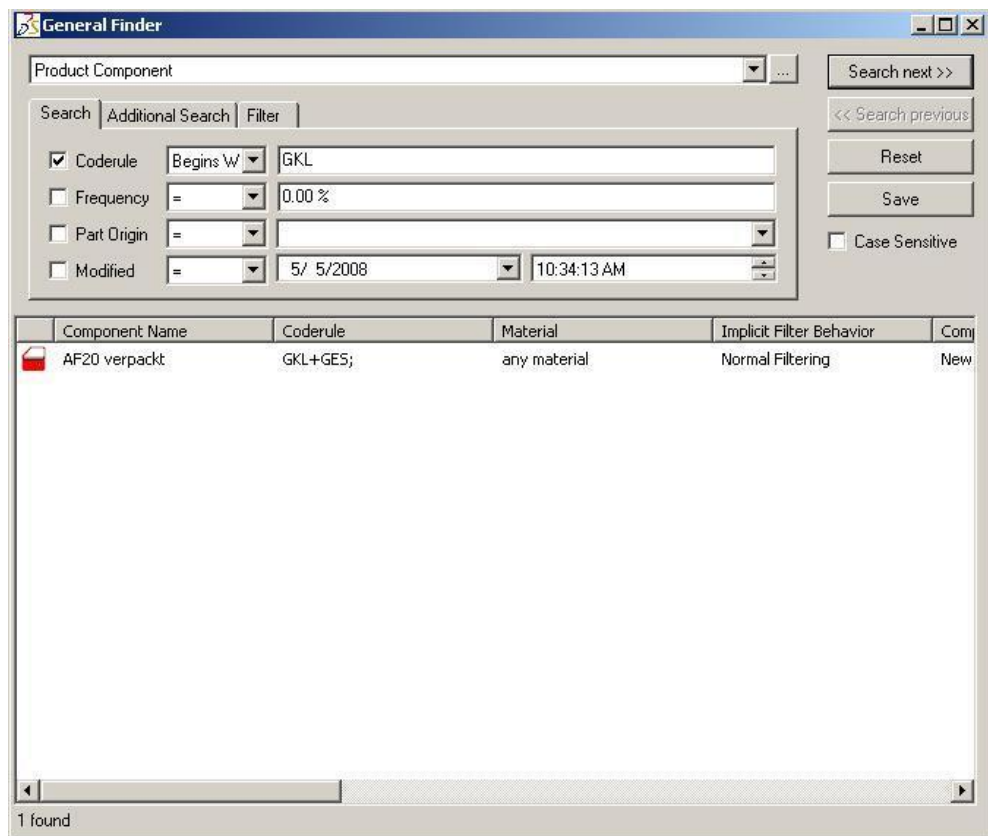


Figure 53: Component-Independent Search for Code Rules

6.3 Configuring Finder

The Finder is able to search for objects with particular attributes directly in the database. To enable this search, the attributes must be set for this in the configuration manager, i.e. the Finder is configured accordingly.

6.3.1 Setting the Finder via the Configuration Manager

The attribute setting is explained with the help of an example: All processes assigned to the "Manufacturing" department, which are therefore labeled OrgID No. 1 "FB F", are to be searched for. Proceed as follows:

Example

Example

You first have to ensure the OrgID No. 1 is "searchable".

- 1) Open the Configuration Manager via **Tools < Database Tools < Configuration Tool**.
- 2) Select the type **ergocompprocessdefault** in the browser of the configuration tool under types.
- 3) Check whether **yes** is set in the field search possible under the properties of **ergocompprocessdefault**: The setting **yes** means that this plantype is displayed in the finder. If this is not the case set the value in this field to **yes**.

- 4) Open the directory attribute under **ergocomprocessdefault**. Select the attribute **orgid_1**.

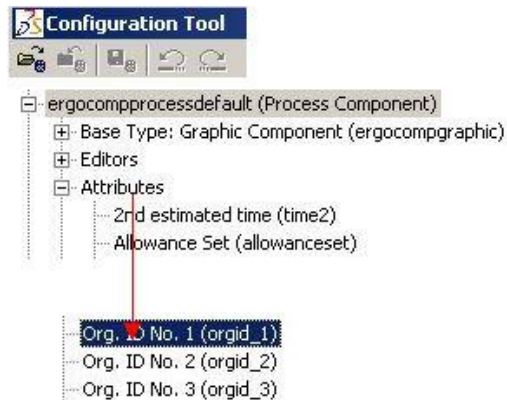



Figure 54: Selection of Attribute Orgid_1

- 5) Select the properties window of the attribute **orgid_1**.
- 6) Set the value **yes** for Display in **finder**.
- 7) Set the value **Combobox** for the **Control** type.
- 8) Set the value **XDOergoCompOrgProcess.orgid_1** for the **Type Attribute Name**. To do this, click  button in the line and select the attribute **orgid_1** by double-clicking on it under **XDOergoCompOrgProcess**.
- 9) Set the area of validity under **Value scope**.
- You can select from global (spanning several projects), parent (part of the tree view structure), and project (only within a single project). In the example, a search spanning several projects is executed, therefore **global** is selected.

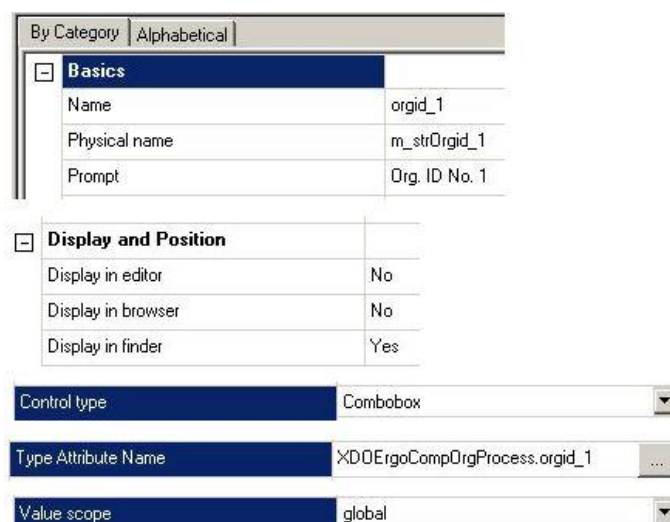


Figure 55: Setting Properties for Attribute

- 10) Saving and closing the configuration tool.

- 11) Test the OrgID no. 1 search option by calling the General Finder and selecting "Process Component" as a search criterion. You can now select or enter an OrgID no. 1 here, enable the Org. ID no. 1 and enter "FB F" to be able to search for the "Manufacturing" department.

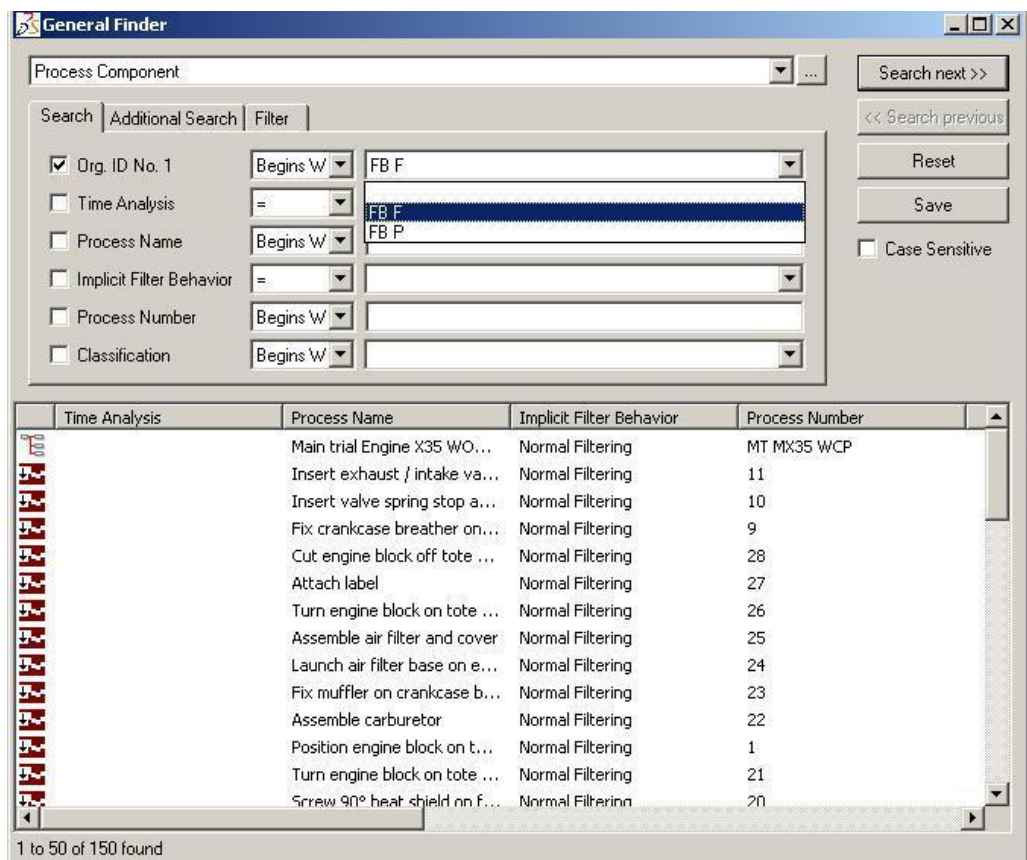


Figure 56: config.d Finder

6.3.2 Displaying Attributes in the Finder

You can easily display additional attributes in the finder, i.e. standard attributes that are not otherwise available in the finder. You can configure attributes for all plantypes of a plantype set to be displayed in the finder by using the function attribute **Overwrite**, as is shown in the following example.

Example

Example

Let us assume, for example, you want to search for a certain width for the plantype **assembly station**. In order to make this search possible, the attribute **Width** for the plantype assembly station must be displayed in the finder dialog. Proceed as follows:

- 1) Select the plantype assembly station in the project plantype set the of the system library – in the example the assembly station can be found under the plantypes **Resource Plantypes < Group of Work Places**.
- 2) In order to open the configuration tool, open the context menu on the assembly station by right clicking the mouse and select **Edit**.

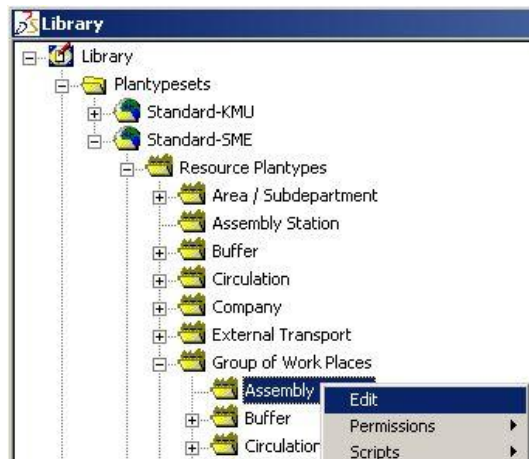


Figure 57: Opening the Configuration Tool in the System Library

The function overwrite is available only for base types of the respective types in the context menu – in the example, for the type **assembly station**.

In order to ensure that the attribute **Width** is displayed only for the plantype assembly station in the finder, you must first directly assign the attribute **Width** to the **type assembly station** by overwriting. After you have done this, set the value to **yes** in the field **Display in finder** in the properties of this attribute (Width).

- 3) Search for the attribute **Width** in the directory attributes for the base types – in the example you can find the attribute **Width** for base type Ergocomplant (ErgoCompPlant).
- 4) Open the context menu on the attribute **Width**. Select **Overwrite**

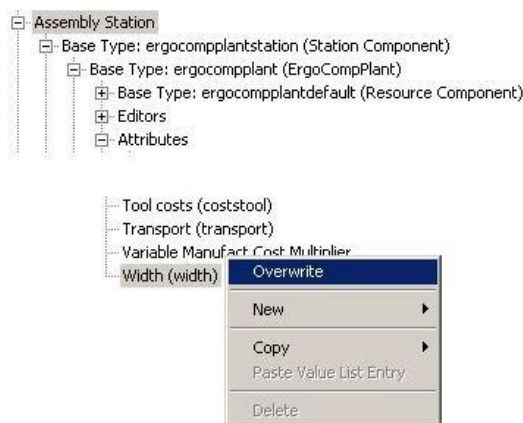


Figure 58: Overwriting the Attribute Width for the Base Type

The attribute **Width** is displayed under type assembly station in the directory attributes after the overwriting, i.e. it has been assigned. You should set the value to **yes** in **Search in Finder only** for this attribute.

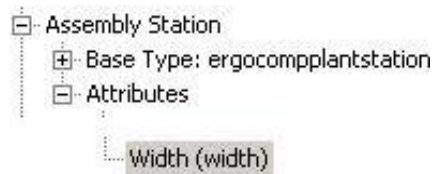


Figure 59: Attribute Width Type Assembly Station Assigned

- 5) Select the attribute **Width** and set the value to **yes** in the field **Display in finder** in the properties.
- 6) Here you can determine in which area the search can be undertaken: In our example, it is **Project**.
- 7) Set the value **project** in the Value scope field.

By Category Alphabetical	
Change in integrate state	No
Change in release state	No
Constraint[09AZ]	No
Control type	Edit
Copy prefix	
Data Type	Float
Default value	3000.0000000000000000
Defined by	Customer
Description	
Display in browser	No
Display in editor	No
Display in finder	Yes

Figure 60: Properties Setting Attribute Width

- 8) Save the **settings** and close the configuration tool.
 - 9) Open the **project** finder. Select Overwrite.
- You can search now for any widths for assembly stations – in the example, assembly stations in the project with a width larger than 3m are searched for. The results indicate three assembly stations found.

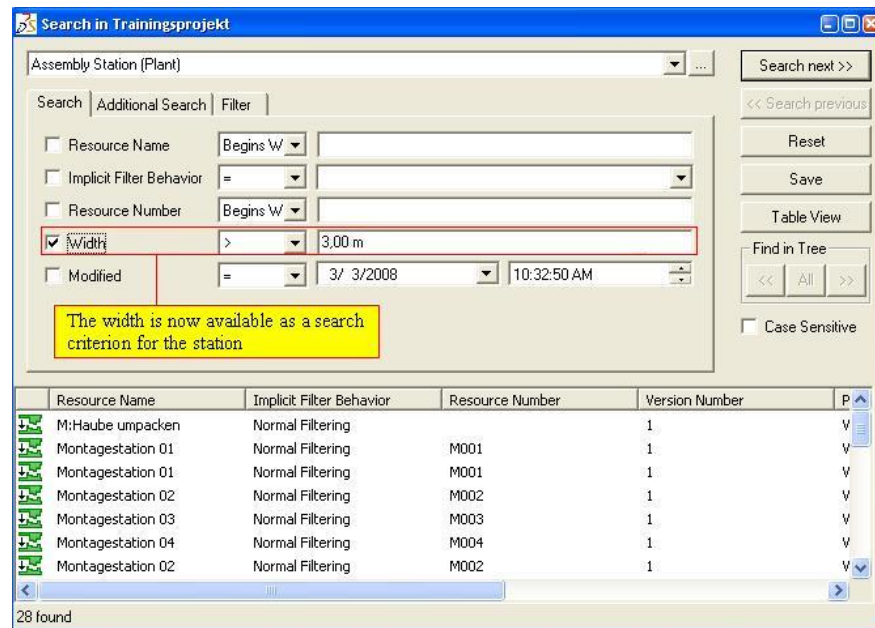


Figure 61: Finder for "Width" of a Station

6.3.3 Filtered Search

In the following, the prerequisites for filtered search are listed:

Filtered search must be enabled in the **Settings** dialog.



Figure 62: Finder: Filtered Search

The project must be opened with set filters

The Project Finder does not allow you to search for objects that do not correspond to these filter criteria.



Figure 63: Set Filters

6.3.4 Searching for your own Attributes

This example shows the generation of a new attribute as well as the search for this attribute.



For more information on how to generate attributes, *Please refer to the [Administration Manual](#).*

The following is the basic procedure for generating attributes:

- 1) Open the general library and search for the planttype set of your project.
- 2) Search for the planttype and the type you want the new attribute to be created in.

- 3) Open the **Attributes & Groups & Pages** dialog by selecting the Edit entry in the context menu of the type or by double-clicking the type. Generate a new attribute here and assign it to a page or group.



Note

The default value of a new attribute is not saved in the database. Therefore, you cannot search for this value. Consequently, you have to assign a value to a new attribute.

After generating an attribute, saving changes and assigning a value to an attribute, the attribute is now shown on the Project Finder filter page. The attribute can now be used like a “normal” attribute.

6.3.5 Searching for Master/Slave Objects

You can specify multiple usage manufacturing concepts. This is why the source manufacturing concept is defined Master and the multiple usage is defined Slave. Changes made in the Master are immediately visible in multiple usages. This not only applies to attributes that have been enabled in the Configuration Manager Properties dialog by check-marking **“Use master”**.

There are some prerequisites for the multiple usage attribute search:

- 1) Attributes, which are to be searched for, must be marked in the Configuration Manager or in the plantype set configuration: To do this, checkmark the “Use Master” option for all attributes that have the same value as the source manufacturing concept and which are to be changed according to changes in the Master.



For more information on how to generate and edit attributes, *Please refer to the [Administration Manual](#).*

- 2) You can only search for Master/Slave attributes if there is a multiple usage.



For more information on how to generate a multiple usage, *Please refer to the [Manufacturing Concept Manual](#).*

Searching for Master/Slave Properties

Start the Project Finder to search for Master/Slave objects.

If, with the configuration of types, you have not released all attributes for multiple usages, you can now search for attributes, Master, or Slave components.

If you find several equal components, you know that these components have a multiple usage. The distinctive feature is made up of those attributes that are not enabled “Use as Master”. In [Figure 64](#) the distinctive feature consists of the version number and the height.

Search in Trainingsprojekt Motor X35

Assembly Station (Plant) [v] ...

Search | Additional Search | Filter

☒ Resource Name Begins w/ Insel

☐ Implicit Filter Behavior =

☐ Resource Number Begins w/

☐ Length = 0.00 m

☐ Width = 0.00 m

☐ Height = 0.00 m

☐ Modified = 5/ 5/2008 11:22:01 AM

Search next >>

<< Search previous

Reset

Save

Table View

Find in Tree

<< All >>

☐ Case Sensitive

	Resource Name	Resource Number	Length [m]	Width [m]	Height [m]	Version Number	Modified
	Insel 5	I 05	6.00	2.00	4.50	1	5/5/2008
	Insel 5	I 05	6.00	2.00	3.50	2	5/5/2008
	Insel 3	I 03	6.00	2.00	9.00	1	5/5/2008
	Insel 1	I 01	5.00	5.00	3.50	1	10/2/2008
	Insel 2	I 02	6.00	6.00	3.50	1	10/2/2008
	Insel 6	I 06	5.00	5.00	3.50	1	10/2/2008

6 found

Figure 64: Example of a Search for Master/Slave Objects

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