

# IFO

## **Bosch Rexroth Interactive Fluid Office**

### **Version 2.0**

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## **User Manual** Internal Version

DC/ESP51, 2016-10-26

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## 1 Basics

## Graphic Driver

The program IFO (Interactive Fluid Office) runs together with the 2D-CAD System AutoCAD<sup>®</sup> (full version tested up to version AutoCAD 2013, no LT; tested together with Windows 7<sup>®</sup>).

### 1.1 Start IFO

Please start AutoCAD, before calling IFO, via the windows start menu:

C:\Program Files (x86)\IFO → IFO → IFO\_ACAD.EXE

While starting the IFO-program, a connection is built up to an already running AutoCAD. IFO stops with an appropriate message when AutoCAD cannot be found.

## 1.2 Circuit diagrams, material and symbols

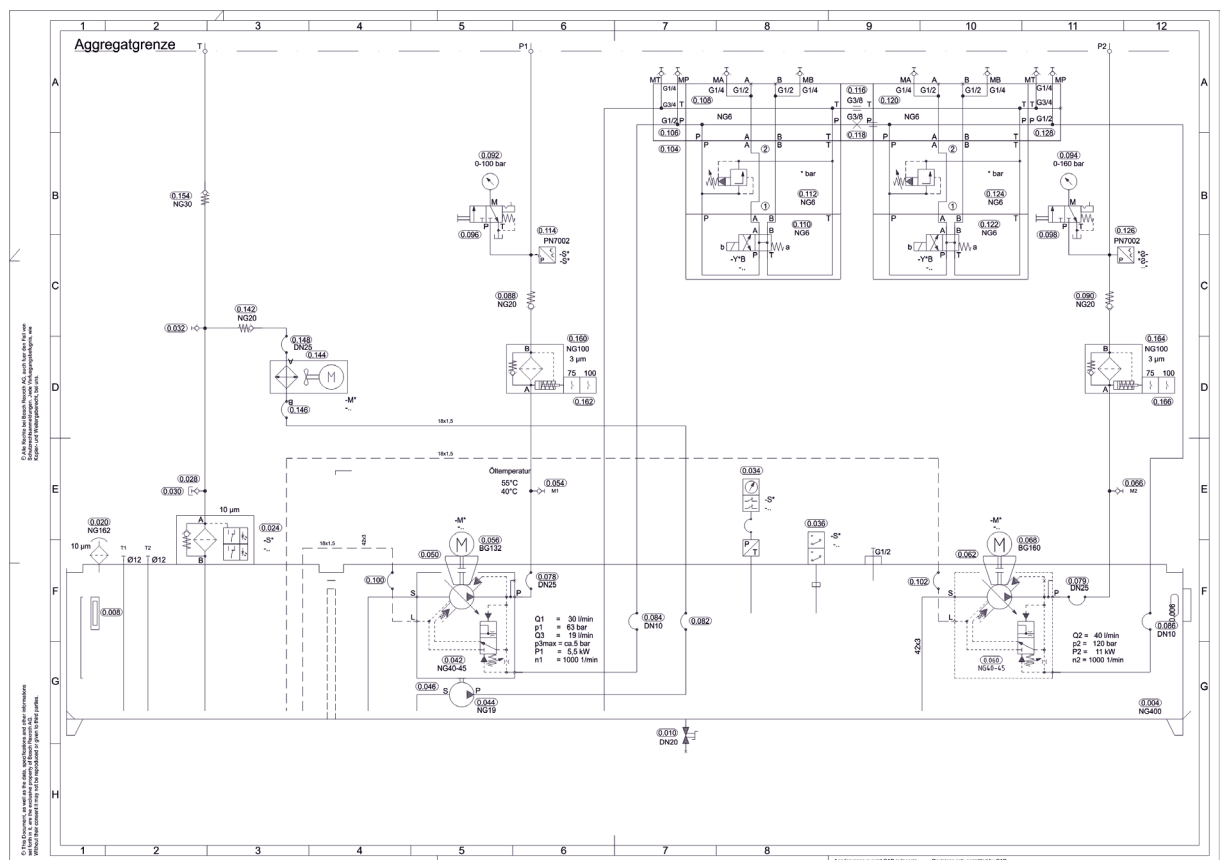


Figure 1 Sample: Hydraulic Circuit

## Material and Symbols

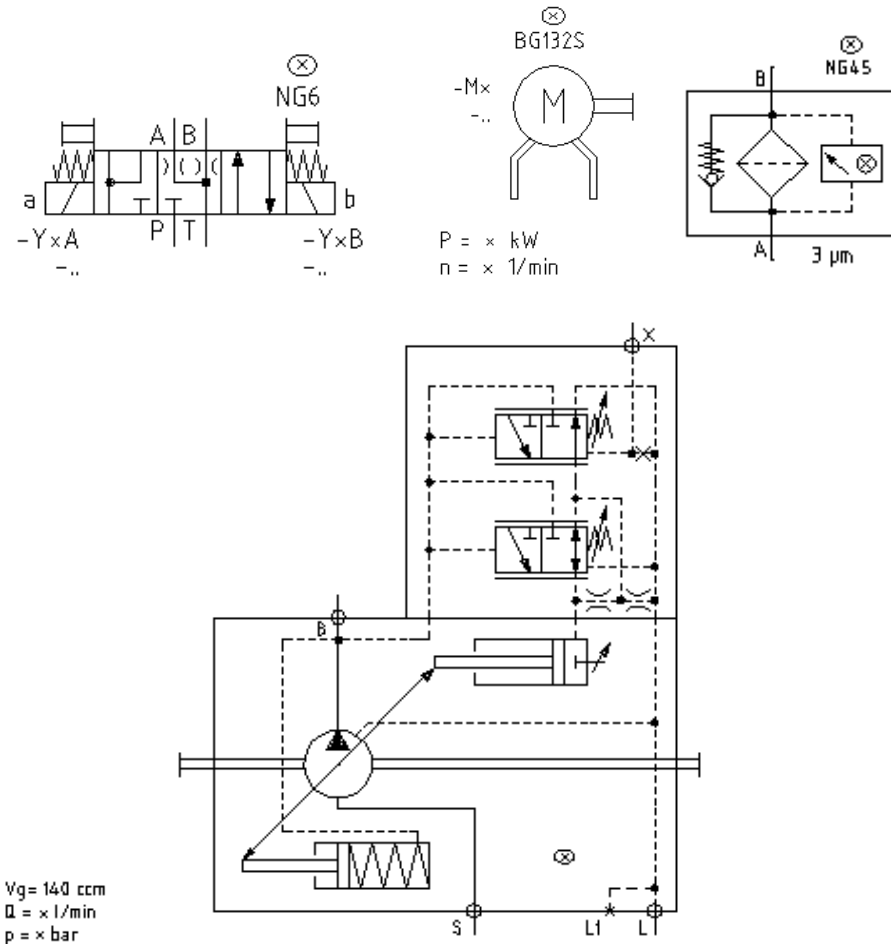
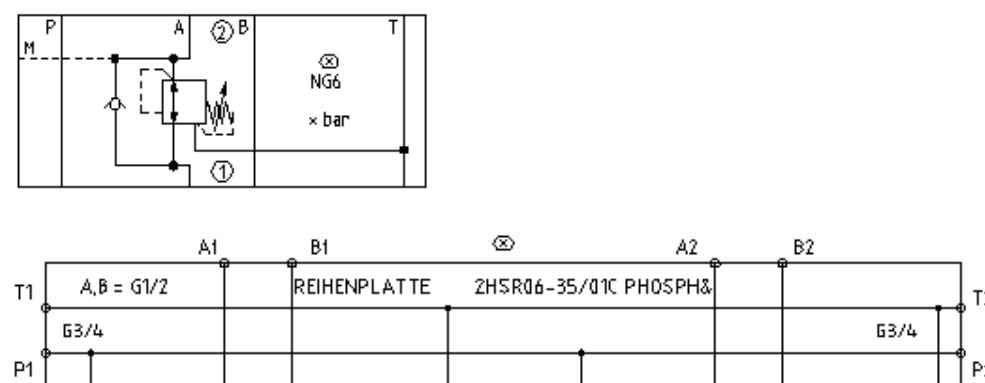
Inserting symbols into an AutoCAD drawing starts with the search and the selection of a material. A material comprises of a material number and a type code. Both sets of data are definite, e.g.:

Mat. No.: R901042097    Type code: 4WRDE 25 V1-220L-5X/6L24K9/M

A material may have none, one or more symboltypes (e.g. HYD, ZWI) whereas each symboltype is allocated to a CAD symbol. A symboltype may have more than one CAD symbol (opened/closed valves, meter-in/meter-out valves).

## Symbol types

The following symbol types are available in the IFO-program:

<p><b>HYD</b></p>	<p>Hydraulic Symbol</p>  <p> <math>P = \times \text{ kW}</math>  <math>n = \times \text{ 1/min}</math> </p> <p> <math>V_g = 140 \text{ ccm}</math>  <math>Q = \times \text{ l/min}</math>  <math>p = \times \text{ bar}</math> </p>
<p><b>ZWI</b></p>	<p>Sandwich Plate Symbol</p>  <p> <math>\text{NG6}</math>  <math>\times \text{ bar}</math> </p> <p> <math>A, B = G1/2</math>  <math>G3/4</math>  <math>REIHENPLATTE</math>  <math>ZHSR06-35/01C \text{ PHOSPH\&amp;}</math>  <math>G3/4</math> </p>

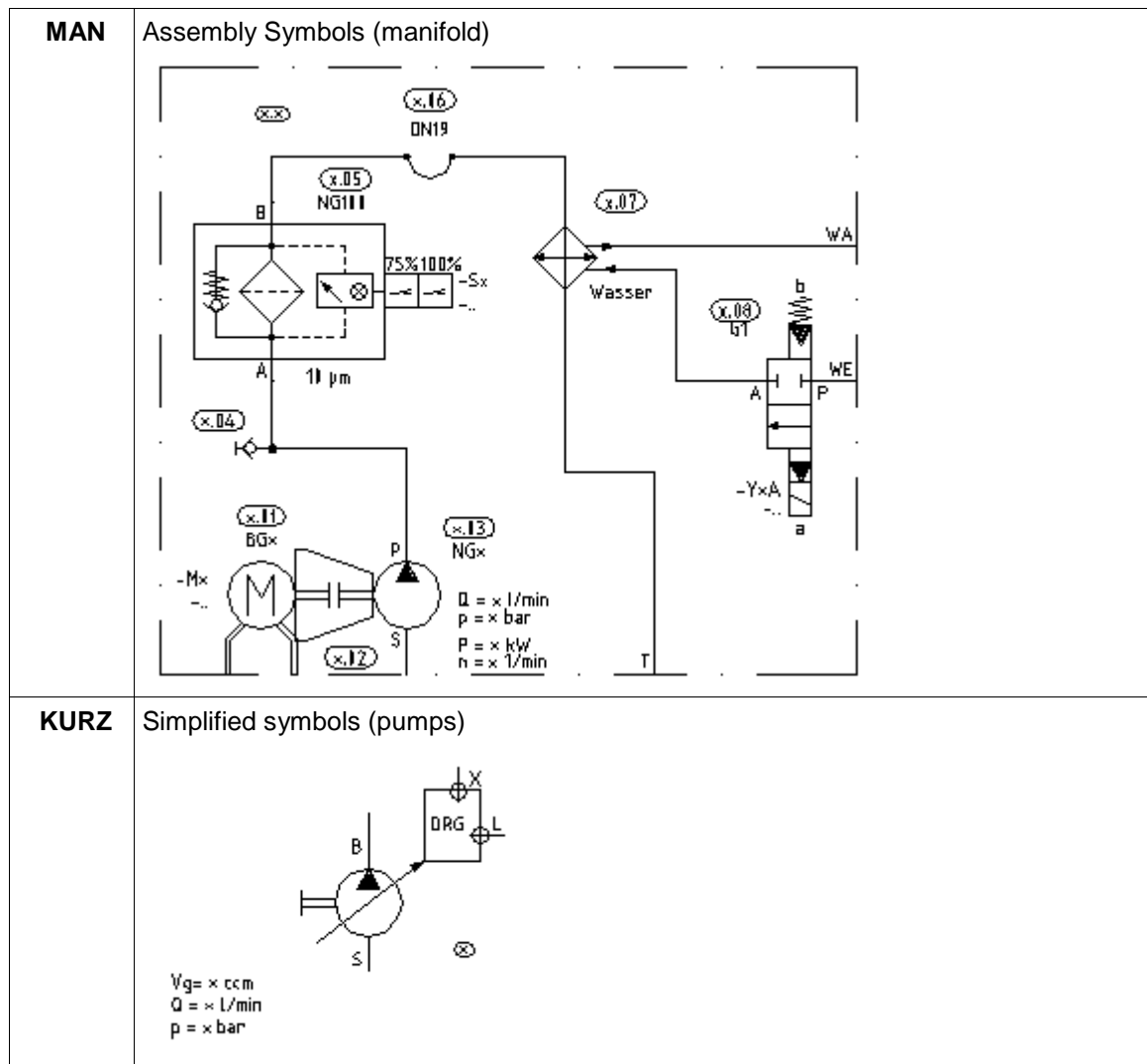


Figure 2 A list of the IFO symbol types

## Material numbers

The material number is a 10-digit alpha numerical code.

z.B.: R901034642, 0811404977

## 2 IFO-Command Bar

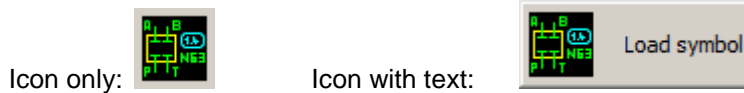
- 3 The command bar is the IFO control centre. All IFO commands can be invoked via this menu.



Figure 3 The IFO-Command Bar

The characteristics of the IFO command bar relate to the Windows task bar. It can be fixed left, right and on top of the desktop as well as being positioned as an individual window. In the docked status the command bar can be automatically pushed into the background.

For the push button a descriptive text can also be shown next to the Icon. The text is displayed, depending on the position of the command bar next to the Icon.



The individual commands are:

	Load a schematic symbol into the current drawing
	Functional lines and common texts
	Load common symbols (plugs, orifices)
	Load functional texts (pipe sizes, standardised texts)
	Move selected items in a grid offset
	Move attributes from motors and pumps
	Create a BOM (Bill of Material)
	Edit the attributes of block
	Edit the attributes of a sub-assembly block

















	Open flyout menu for editing the technical item numbers.
	Submenu: Actualise the frames of the technical item numbers
	Submenu: Search for duplicated technical item numbers
	Submenu: Search for specified technical item numbers
	Submenu: Increment technical item numbers
	Submenu: One step back in menu
	Close sub-menu
	Rotate symbols with gondola effect
	Mirror symbols
	Link to the configurator of manifolds and plates
	Edit the IFO preferences
	Open IFO user documentation (PDF)
	Show IFO-Information (Version)
	Exit IFO

Figure 4 Command buttons of the IFO Toolbar

### 3 IFO-Load symbols

By means of the „Load symbol“ dialog, the user can insert schematic symbols into the current drawing. For material or symbol selection IFO offers the following four possibilities:

1. All Rexroth hydraulic/pneumatic units with a material-number
2. Sketch symbols without material-number (sketch)
3. User material/user symbols that have been modified by the user or self-generated symbols
4. Loading items by means of a BOM (Bill Of Material)

If a symbol is to be loaded, whose symbol drawing does not exist or cannot be found, then a so called Dummy symbol (space holding symbol) is loaded. This symbol can be defined by the user. Pre-set is a Dummy symbol that only has an attribute for the technical item number.

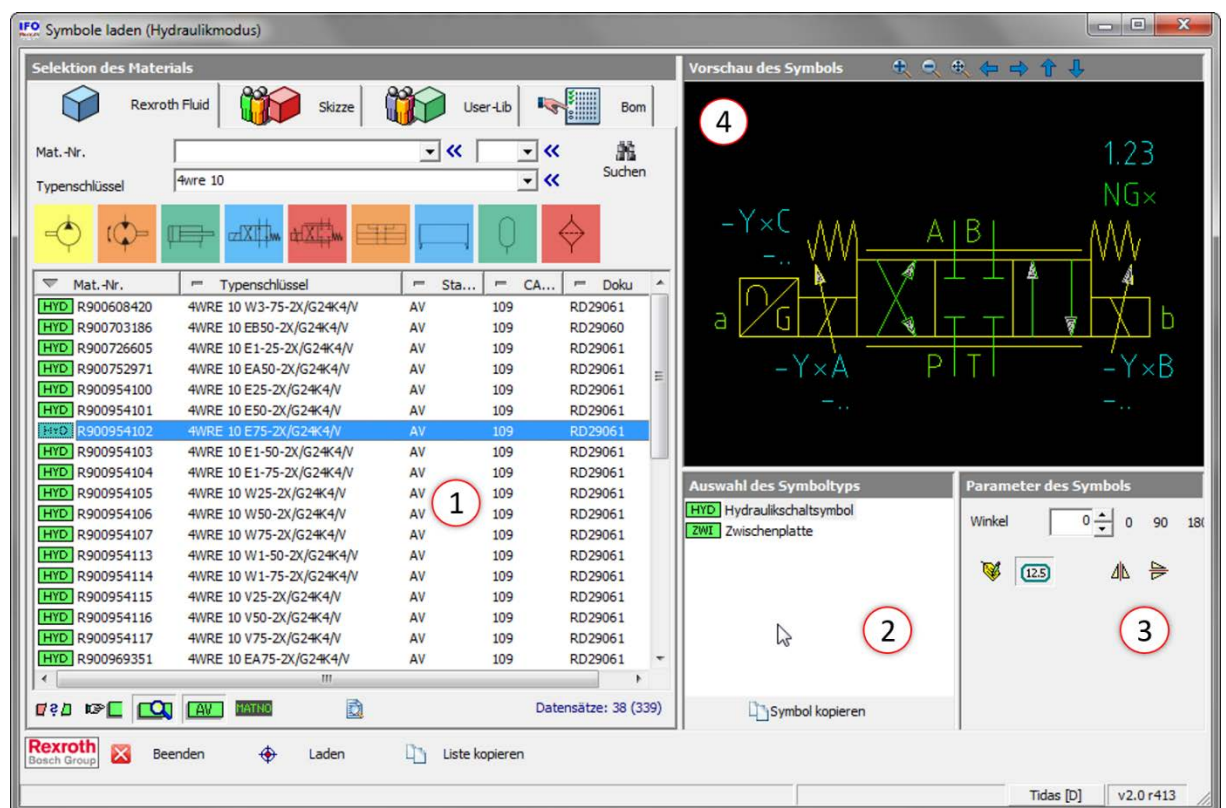


Figure 5 „Load symbol“ dialog ranges

The load symbol dialog generally comprises of the following ranges that are exactly described within the following paragraphs:

1. Searching for and selecting a material (from the Rexroth hydraulic materials, the user materials or from the parts list)
2. Selecting a symbol type
3. Enter a symbol parameter
4. Preview of the selected symbol

The size of the individual dialog ranges is adjustable with the aid of the mouse.

### 3.1 Selection of material

Within this range the user is shown the functions for the search and selection of Rexroth hydraulic/pneumatic materials and user materials, as well as the loading and processing of a bill of material (BOM). The selection is made on the appropriate tab.

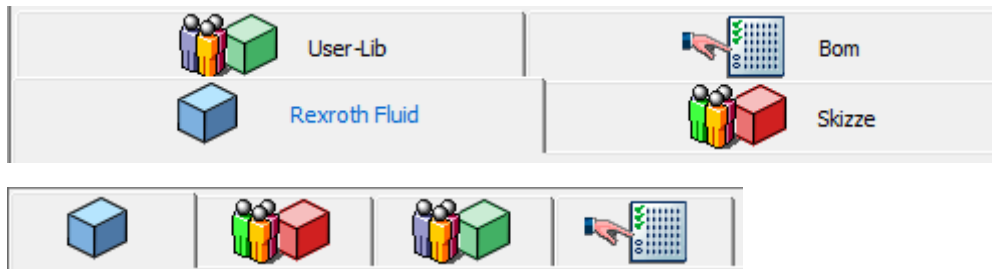


Figure 6 Range: material selection and parts lists

### 3.1.1 Selection of Rexroth Fluid-Material

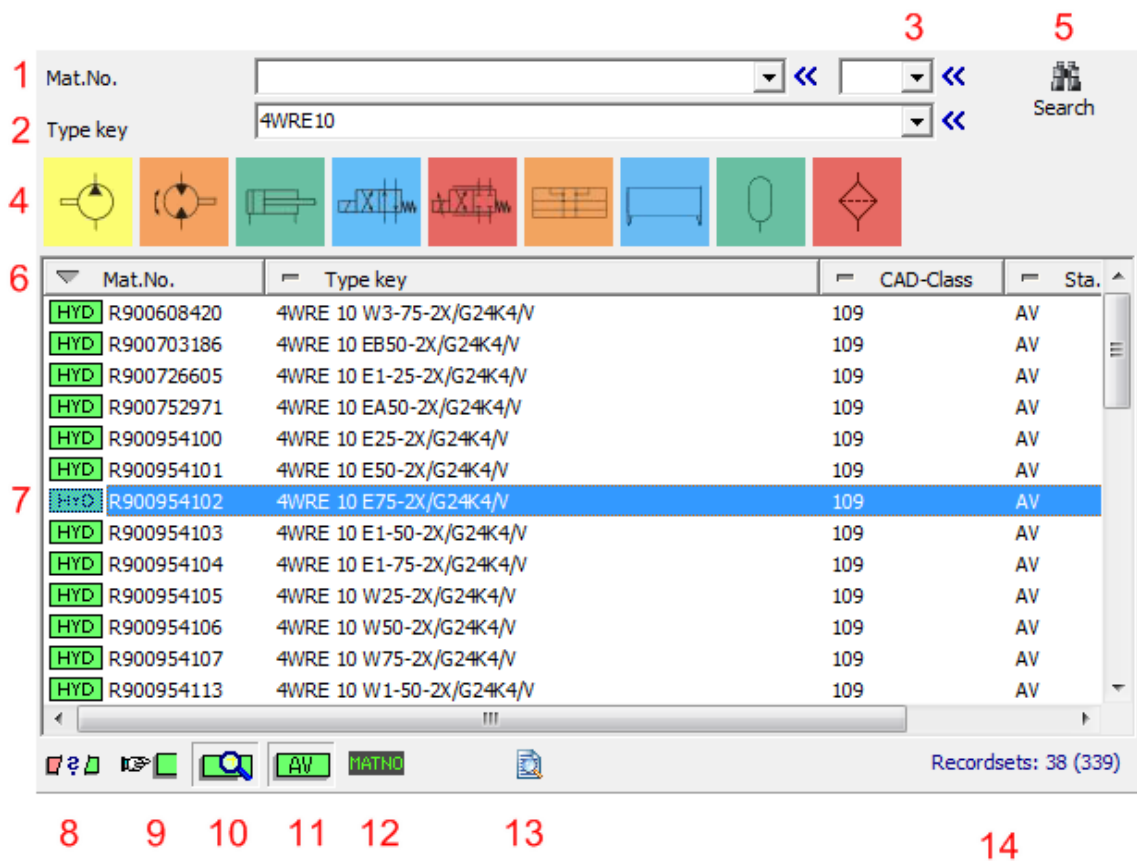


Figure 7 Selection of Rexroth material

- 1 Input box for searching via the material number (place holder is %)
- 2 Input box für searching via type key (place holder is %)
- 3 Transfer of the type key of the selected material in the input field „Type key“ or “Mat.No..”
- 4 Search via Mat-Classes
- 5 Button to start search
- 6 Column titles with sort capabilities
- 7 List of found materials
- 8 Check for the symbol existence
- 9 Select default-symbol type (HYD, ZWI ...)
- 10 Hide material numbers without symbols
- 11 Sales status: Hide/show materials which are salable
- 12 Load symbols with or without the material number
- 13 Show documentation for the chosen material number
- 14 Display the found material data sets

## Search for a material

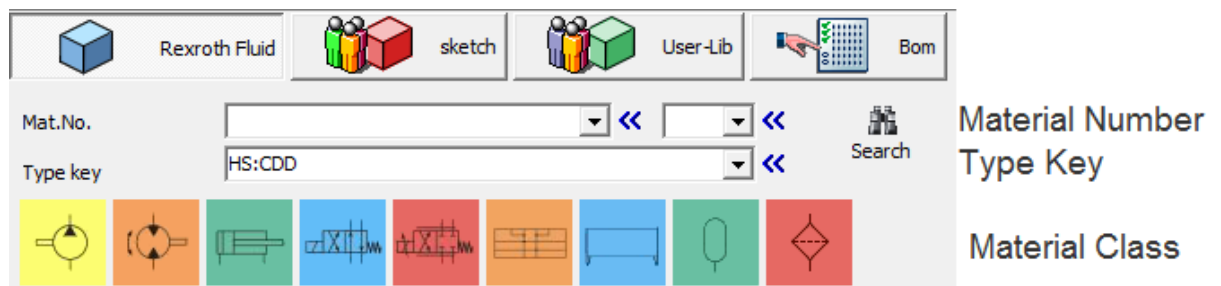


Figure 8 Start searching

The material search can be performed via a known material number or part of a number (1) or part of the type code (2). A simultaneous search via both parameters is not possible. Opening the input field opens a list of the last used search parameters.

The place holder symbol for such a search parameter is a \*. When searching via the type key, place holder symbols are automatically attached to the end of the input.

An additional search criteria according the following key words by material classes:

- pumps.
- motors.
- cylinders.
- switching valves.
- proportional valves.
- manifold blocks and subplates.
- power units and accessories (e-motor, heating, cooler, ...).
- accumulators and accessories.
- filters.

A search is started by means of a click on the „Search“ button (5). With the input of the search key the search can be directly started by means of the „Return“ key (when the cursor is still located within the input fields (1 an 2)).

All of the data sets found are displayed in the material list (7). This list can be sorted in an ascending or descending order with the help of the column titles (6). The widths of the column titles are drawable, as well as the sequence. If the number of data sets found exceeds the set maximum number of data sets then the excess are not displayed. An appropriate info window brings this limitation to the attention of the user.

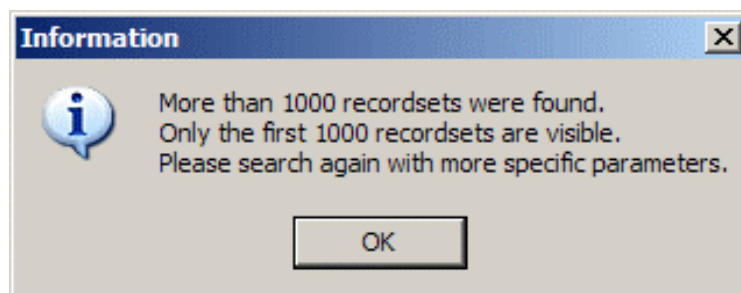


Figure 9 Maximum number of data sets exceeded

## Material list

The material list (7) displays all of the found material. Next to the material no. and the modelcode the symboltype will be shown:




	The existence of a HYD symbol was not checked or material is not assigned to an SAP class
	The material has a HYD symbol
	The material doesn't have a HYD symbol

Figure 10 Information regarding the symbol icons

Using the „Symbol exists“ button (8), the existence of a symbol for all of the material is checked. The symbol color changes from blue to green or red. This check can also be carried out automatically after the settings have been calibrated. With the aid of the switch „do not display material without a symbol“ (10) all material that does not possess a symbol will not be displayed. In this case also the „number of found data sets“ (11) will be adjusted accordingly (e.g. data sets: 58(100), as from the 100 data sets found only the 58 that possess a symbol are displayed).

The symbol type displayed within the list can be selected via the „Default symbol type“ button (9). If the user wants to load, for example, HYD symbols, then the default symbol type HYD is selected and thereby obtains information regarding which material possesses a HYD symbol.

## Load a symbol

The „Load“ button (in the main window) or a double click on the required material starts the load sequence for the current symbol type. The dialog is placed into the background, AutoCAD will be put into the foreground and the user can position the symbol which is attached to the cross-hairs.

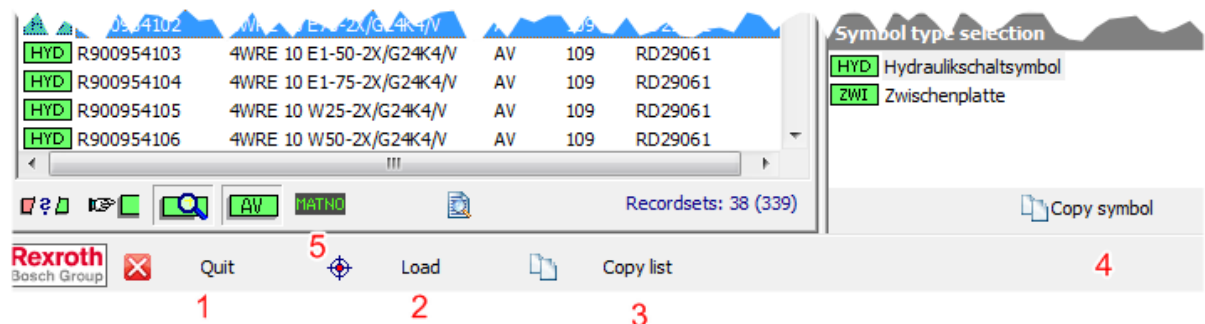


Figure 11 Load symbols

1. Close „Load“ dialog.
2. Load chosen symbol into AutoCAD.
3. Copy „found data“ into clipboard.
4. Copy chosen data into User-Library (see 3.1.2).
5. Load symbols with or without the material number

### 3.1.2 Symbol selection from DC-sketch-library

Sketch-symbols are meant to show a function in the schematic design, whereas the device is not finally clarified or the CAD symbol doesn't exist yet.

Sketch-symbols can be searched and loaded via the tab „sketch“. It also can be searched via the tab „Rexroth Fluid“ by entering „HS:“ in the model-code column.

The Sketch-symbols are given a Dummy-material number, without an underlying device

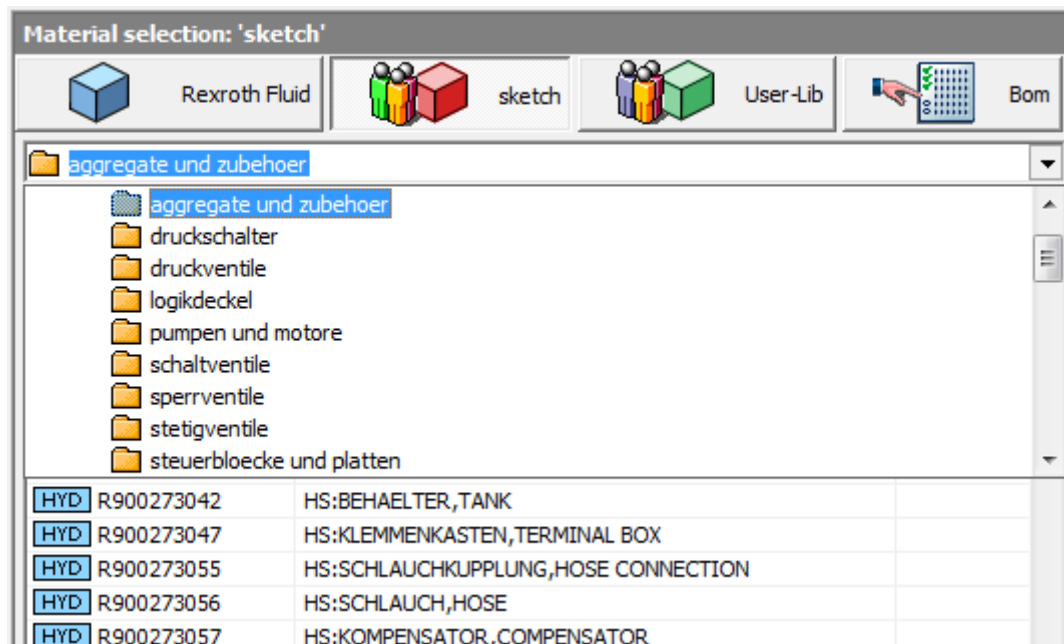


Figure 12 Symbol selection from DC-sketch-lib

### 3.1.3 Select User Material

An own symbol library can be created by the user itself. This can either be filled with newly created symbols or with adapted existing symbols. User materials are generated by copying an existing Rexroth material with the selected symbol. Each user material can have any user symbol attached to it. These user symbols can be opened in AutoCAD and can be modified by the user.

The user material data and files are saved locally on the hard disk in the user material archive. This folder is defined within the settings. For structuring of the user material sub-folders can be optionally added to this folder.



Figure 13 Selection of user material

- 1 File selection
- 2 Input field search for „own material number“
- 3 Input field search for description
- 4 Start the material search
- 5 Column titles with sort capabilities
- 6 List of material found
- 7 Select the default symbol type
- 8 Material without a symbol are not displayed
- 9 Edit user material data and user symbol data
- 10 Delete user material or user symbols
- 11 Open user symbols in AutoCAD/Bricscad, edit
- 12 Import drawing as a user symbol
- 13 Load a symbol with or without the material number
- 14 No. of data sets found



### Search a material

Material search only takes place within the selected folder of the user material (1). The folder list makes all of the archive folders available for selection.

The material number or the description can be input as the search parameter (not both). Placeholder symbols do not have to be stated.

### User material list

The material list (5) displays all of the user material found. In addition to the material number and the description a specific symbol icon is also displayed. In addition to the symbol type, which is displayed in an abbreviated form, the icon color describes the following conditions:



	The user material owns a HYD symbol
	The user material does not own a HYD symbol

Figure 14 User symbol icon information

By means of the „Do not display material without a symbol“ switch (8), all user material that does not have a symbol, for the default symbol type, will not be displayed. In this case the details regarding the „Number of data sets found“ (13) are adjusted accordingly (e.g. data sets: 12(41), from the 41 user materials found only the 12 are displayed that possess a symbol).

The symbol type shown in the list is selected via the „Select default symbol type“ button (7). If the user wishes, e.g. to load HYD symbols, then the default symbol type HYD is selected and thereby obtains information regarding which user materials possesses HYD symbols.

The user material list can via a click be sorted in accordance with the titles. The column width can also be adjusted with the aid of the mouse.

### Edit user material data

Within this dialogue the user material data and the associated user symbols can be edited. In addition to the material number and description (own type keys) the user symbol description can also be edited.

For user material that was created from a Rexroth symbol, the material no. and the type code of the initial symbol are displayed. For imported symbols the type code is shown as „IMPORTED“ and the Dummy material no. as „R999999999“.

Description	Rexroth Mat.No.	Rexroth type key	DWG file
<span style="background-color: green; color: white;">HYD</span> Hydraulikschaftsymbol	R900272945	HS:Z2DB.VD,DRUCKVENTIL,P...	G:\#rexroth#\#REXROTH#\ac
<span style="background-color: green; color: white;">ZWI</span> Zwischenplatte	R900272945	HS:Z2DB.VD,DRUCKVENTIL,P...	G:\#rexroth#\#REXROTH#\ac

Figure 15 Edit user material and user symbol data

### Edit user symbols

This command opens the selected user symbol in AutoCAD. A small window also opens in the top right hand corner of the screen. After the user has carried out the required symbol changes, the changes can be saved via the „Save“ button contained within the window. If the changes are not required then select the „Re-set“ button. The „Ok“ button saves the changes.

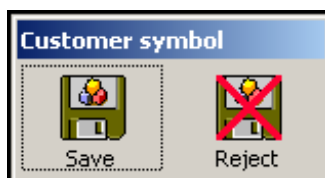


Figure 16 Edit user symbols – save/reject

## Import symbols

The command symbol „Import“ allows the user attaching any AutoCAD drawing to an user material as a user symbol.

Personal Mat.No.	Description	Symbols
300945	Basisplatte	7
1746002	Druckventil - A	1
29836	Druckventil - B	2
209306	Rückschlagventil	1

Figure 17 Import a user defined symbol

After selecting the DWG file of the symbol that is to be imported, the user material has to be defined to which the new symbol is to be attached. This can be carried out by either selecting an existing user material from the list or by defining a new user material by filling in the input fields. For the new user symbol the symbol type and a description has to be defined.

The „Ok“ button saves the inputs and generates a new user symbol and if required a new user material.

## Load user symbol

The „Load“ button (in the main window) or via a double click on the user material starts the insert process for the actual default symbol type. The dialogue is placed into the background and AutoCAD is put into the foreground letting the user position the symbol by means of the cross-hairs.

### 3.1.4 Bill Of Material

From a quotation system, a Bill of Material can be exported

1. line = command line = constant (10)

One line per device (Tech. Pos.)

Line with 5 values:

Value 1: command sign

Value 2: material number

Value 3: type key

Value 4: quantity

Value 5: tech. item number

Example:

10				
20R900423721	DBDS 6 G1X/400	1.000	121	0
20R900025998	KUGELHAHN AB21-34/G11/2-25	1.000	131	0
20R900756174	TEMPERATURSCHALTER ETS 388-5-150-000	1.000	151	0
20R901007565	SCHWIMMERSCHALTER FTL260-1020	2.000	165	0
20R900545638	RUECKSCHLAGVENTIL AB21-11/16-100-1-1X/M	2.000	185	0
20R902404894	A A4VSO 125 DP /30R-PPB13N00	5.000	101	0
20R900712085	DBAW 30 BH2-2X/350Z6EG24N9K4	5.000	241	0
20R901022978	HEDE10A1-2X/400/K41G24/1/V	5.000	150	0
20R900420519	S 30 A1.0/	5.000	182	0

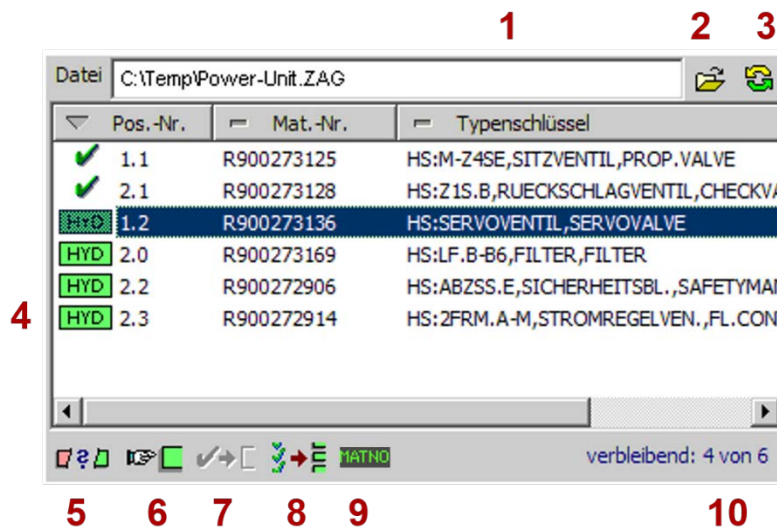


Figure 18 Carry out BOM

- 1 The parts list path input field
- 2 Open Bill Of Material
- 3 Re-load BOM (resets the status of all of the items)
- 4 Parts list item list
- 5 Check for the existence of a symbol
- 6 Select default symbol type
- 7 Reset item status and delete the symbol
- 8 Reset the status of all items
- 9 Load a symbol with or without the material number
- 10 Number of remaining parts list items

A bill of material is loaded either by entering the complete path of the BOM parts list file in the input field (1) or select with the aid of the „Open parts list“ button (2). With the „Re-load and reset all items“ button the stated parts list file is re-loaded, whereby all items are reset to „Not loaded“.

The status of the individual items is described in the following table.





	Item not yet loaded. The existence of the HYD symbol has not yet been checked
	Item not yet loaded. The material owns a HYD symbol
	Item not yet loaded. The material does not own a HYD symbol
	Item has been loaded

Figure 19 Information regarding the parts list items

### Parts list item list

This material list (4) contains all of the parts list items. In addition to the material number and the type code the technical position number – when available – is also displayed. The number of not built-in and built-in items are shown under the list (9).

With the aid of the „Symbol existence check“ button (5), the presence of the symbol types for all material is checked. The symbol color changes from blue to green or red. This check can be carried out automatically after the settings have been adapted.

The symbol type shown in the list is selected via the „Select default symbol type“ (6) button. If the user wishes to load, for example HYD symbols, then you select the HYD default symbol type and thereby obtain the information stating which items have a HYD symbol.

The „Reset item status and delete symbol“ button (7) resets an individual, already inserted item. The symbol for this item is also deleted from the drawing.

The „Reset the status of all items“ button (8) resets the status of all of the items of the loaded parts list. The symbols of the items already built-in are not deleted.

### Load items

The „Load“ button (in the main window) or a double click on the required material starts the insert process for the actual selected default symbol type. After loading the symbol the dialogue is redisplayed and the next item in the list is selected. By pressing the return key repeatable the entire parts list can be processed.

### 3.2 Area: Symbol selection

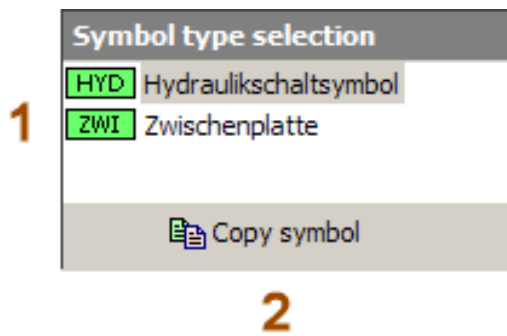


Figure 20 type selection

- 1 Symbol list of the selection items
- 2 Copy the symbol as a user symbol

The symbol list (1) shows all symbols that exist for the currently selected material in the material list. Symbols that possess a symbol drawing are shown in green. When the symbol file is not found then a red symbol is shown.



	Hyd-symbol exists
	Hyd-symbol does not exist

Figure 21 Symbol icons

Each material number may have more than one symbol type (HYD, ZWI, ...). This is normally to be found with symbols that can have more than one special form (e.g. meter out and meter in, open and closed ball valve, ...)

The currently selected Rexroth symbol can be saved as a user symbol by the „Symbol copy“ button . This function is only possible for Rexroth material.

**New customer material and/or new customer symbol**

**Add to the following customer material**

Personal Mat.No.

Personal type key

Existing customer materials

Personal Mat.No.	Personal type key		
300945	Basisplatte	7	
1746002	Druckventil - A	1	
29836	Druckventil - B	2	
209306	Rückschlagventil	1	

**New customer symbol**

Description

Symboltype

Rexroth : R900272892 - HS:Z1S.D,RUECKSCHLAGVENTIL,CHECKVALVE

**Rexroth** Bosch Group X Cancel ✓ Ok

Figure 22 Save Rexroth symbol as a user symbol

The user must define the user material to which the new symbol is to be allocated to. This takes place by either selecting an existing user material from the list, or via the input fields to define a new user material. Further, the new user symbol must be allocated a symbol type and a description.

The „Ok“ button saves the details and generates the new user symbol and if required a new user material.

### 3.3 Area: *Symbolparameter*

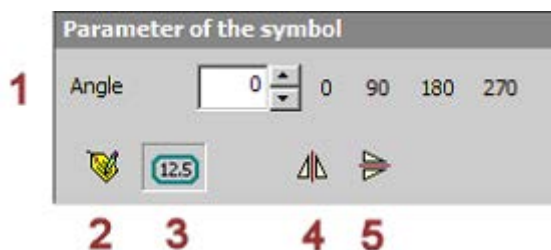


Figure 23 Symbol parameter input

- 1 Rotation angle input
- 2 Edit the symbol attributes after insertion
- 3 Generate the technical position frame after insertion
- 4 Vertical mirroring
- 5 Horizontal mirroring

The rotation angle (1) can either be entered manually in 15° steps with the „increase“ and „decrease“ switches or via the four default values of „0°“, „90°“, „180°“ and „270°“.

The mirroring of the symbol (4,5) is always done before the rotation to the selected angle.

The selected mirroring and rotation angle is immediately displayed in the symbol pre-view.

After the symbol has been inserted the technical position number, framed, (3) and also the dialogue for editing the symbol attribute (2) can be automatically opened.

### 3.4 Symbol-preview

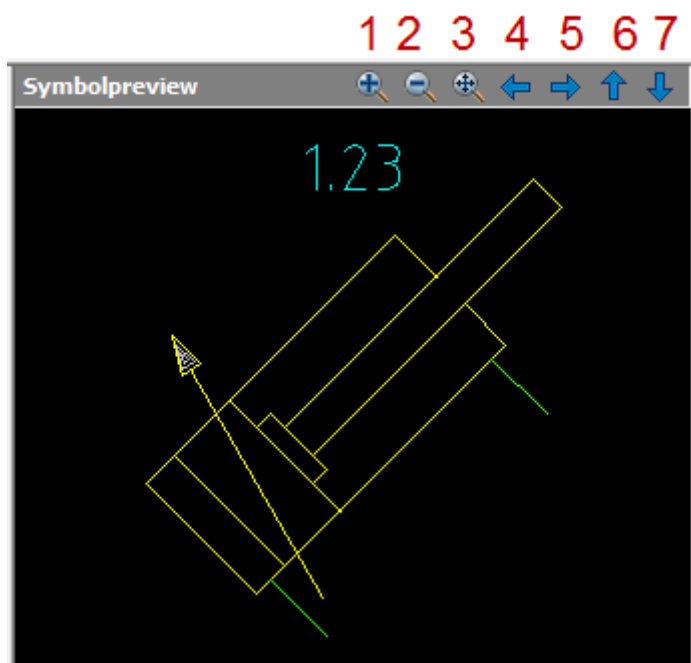


Figure 24 Symbol preview

- 1 Zoom in
- 2 Zoom out
- 3 Zoom to the symbol borders – displays the entire symbol
- 4 Move the symbol to the left
- 5 Move the symbol to the right
- 6 Move the symbol upwards
- 7 Move the symbol downwards



### 3.5 Positioning the symbol in the drawing

While loading a CAD symbol into the current drawing AutoCAD is brought into the foreground. The symbol is inserted at position 0,0 and attached to the cursor for moving. The user can position the symbol within the drawing now.

As soon as the command will be stopped with the „ESC“ key, the symbol will stay at position 0,0. (DWG origin)

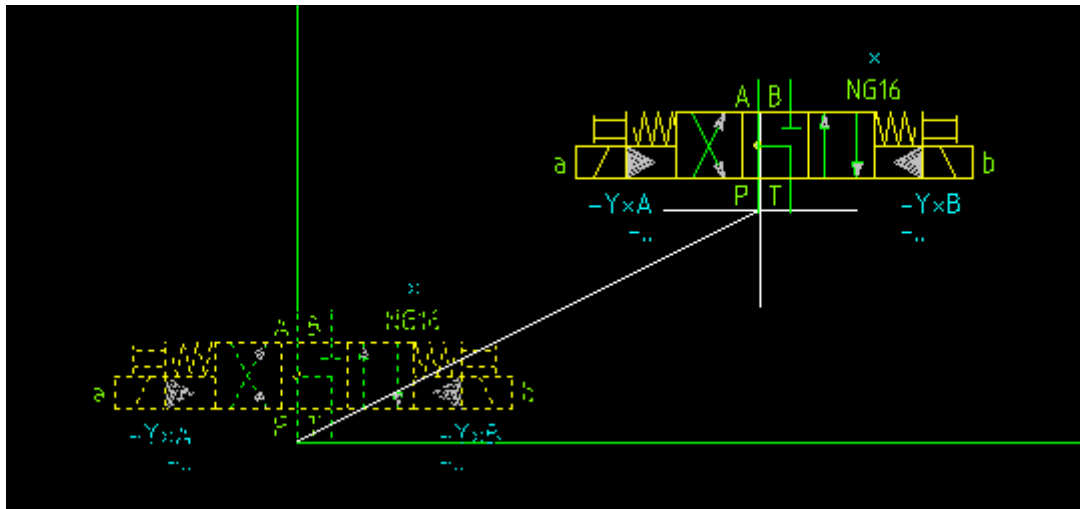


Figure 25 Positioning of a symbol within the drawing

This command shows the material numbers, belonging to a schematic symbol. For a parts-list creation another materialnumber can be tagged to an existing symbol. The graphic symbol will stay unmodified.

## 4 Edit symbols

The following chapter describes the functions contained within the IFO for actualisation and the manipulation of symbols contained with the actual AutoCADdrawing. CAD-Symbols are handled within AutoCAD as blocks with attributes.

### 4.1 Edit attributes

The „Edit attribute“ makes it possible for the use to see and change symbol attributes. Principally symbols with two differing internal structures can be selected:

- Symbols, that do not possess a sub-symbol (HYD, ZWI, KURZ)
- Symbols, that contain a number of symbols (MAN)

IFO offers for both possibilities the associated dialogue. These are described in the following.

#### 4.1.1 Standard blocks

After the required symbol has been selected one of the following dialogues opens. Which dialogue is used is defined within the settings.

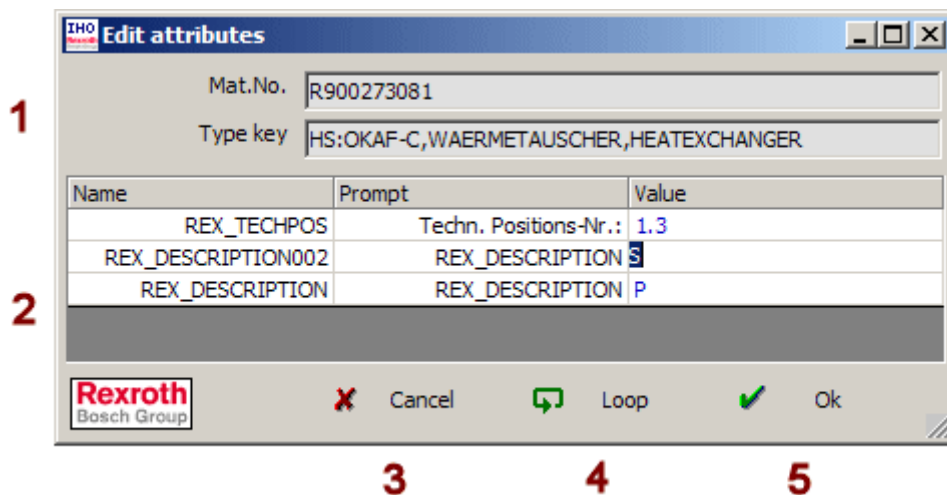


Figure 26 Edit the attributes for a standard block

- 1 Material number and typed key of the selected symbols
- 2 Attribute list
- 3 Cancel
- 4 Save changes and select a new symbol
- 5 Save changes and exit

The material number and the type key are of the selected symbol are displayed (1). All of the attributes (2) are displayed in a list. Constant attributes are also taken into account, these however cannot be changed.

With the buttons „Ok“ (5) and „Loop“ (4) all of the changed values are written into the attributes of the symbol. By the selection of „Loop“ the user, after closing the dialogue, can select a new symbol within the drawing for „Editing the attributes“.

## 4.2 Assembly blocks

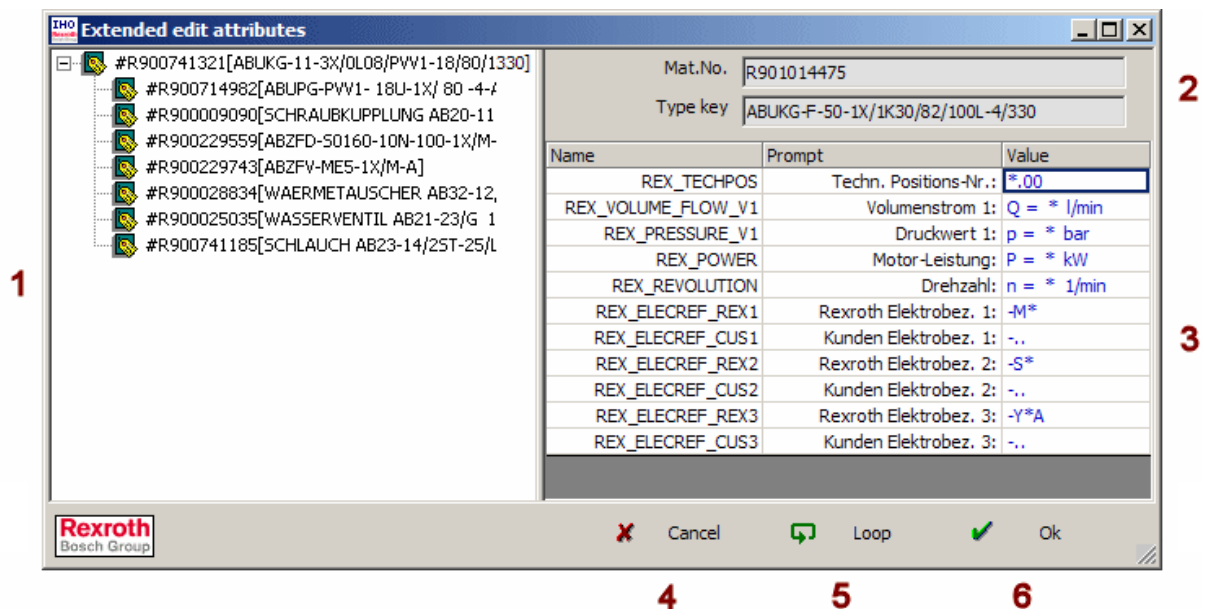


Figure 27 Edit the attributes for sub-assembly blocks

- 1 A tree view of the symbol structure
- 2 Material number and type key of the selected symbols
- 3 Attribute list
- 4 Cancel
- 5 Save changes and select a new symbol
- 6 Save changes and exit

After the block structure has been analyzed for symbols the structure found is displayed in the form of a tree (1). For each symbol contained in the tree, the attribute data can be displayed and changed.

The material number and the type key are of the selected symbol are displayed (2). All of the attributes (3) are displayed in a list. Constant attributes are also taken into account, these however cannot be changed.

With the aid of the buttons „Ok“ (6) and „Loop“ (5) all of the changed values are written into the attributes of the symbol. By the selection of „Loop“ the user, after closing the dialogue, can select a new symbol within the drawing for „Editing the attributes“.

## 4.3 Move attributes from motors and pumps

With “move attributes from motors and pumps”, the user can move all attributes of motors and pumps together.

The symbols for the pump, the motor and a loading point should be selected.

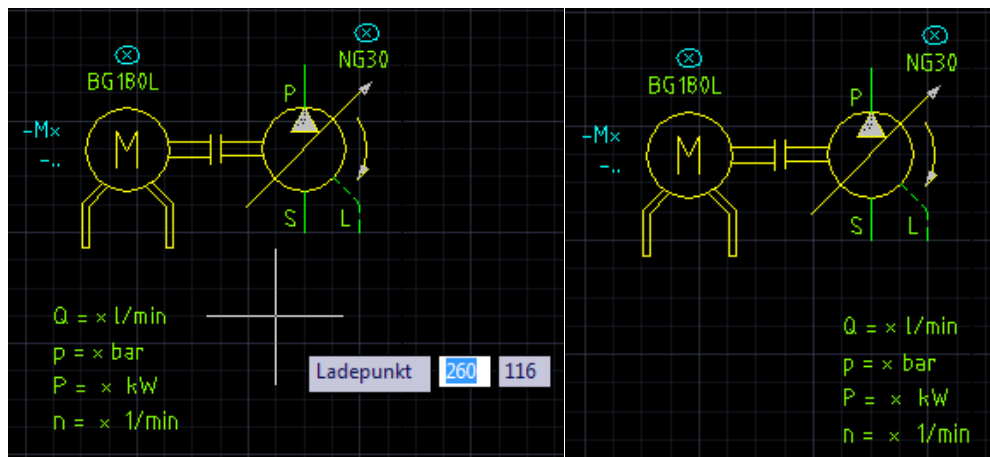


Figure 28 Move attributes from motor and pump (before – after)

#### 4.4 Updating the frames of the technical item numbers

This function browses the current drawing and updates the frames of all attributes of the attribute's tag "technical position number".

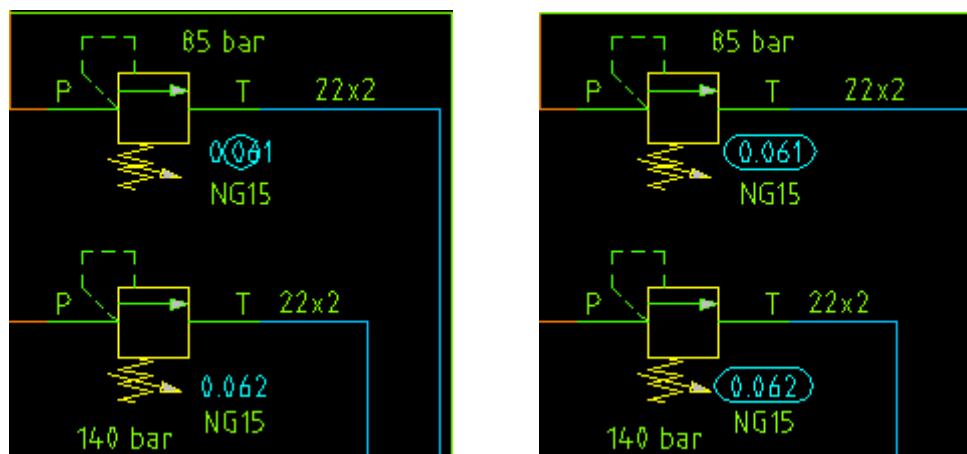


Figure 29 Framing the technical position number (before – after)

## 4.5 Rotate symbols

Symbols are rotated with a „Gondola-effect“. Thereby all symbol texts and symbol attributes remain horizontal and are thereby readable. Two CAD-symbols rotated around their insert points and around one common point:

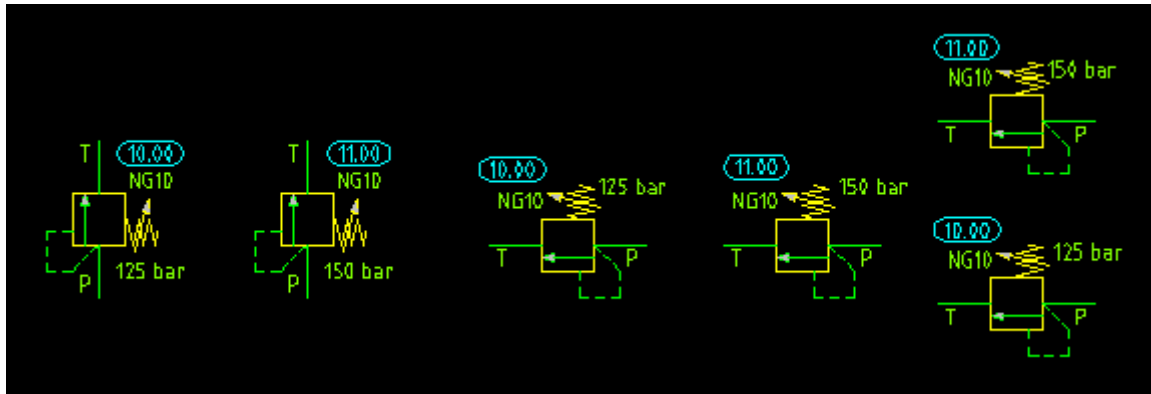


Figure 30 Symbol rotation with gondola effect

The rotation commences by the selection of one or more symbols contained within the drawing. The following dialogue enables the user to define the required parameters.

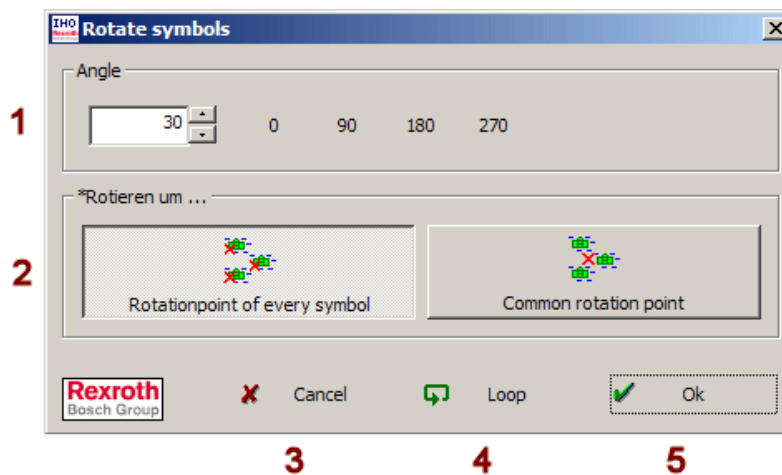


Figure 31 Rotation parameter

- 1 Input the rotation angle
- 2 Defining the rotation point
- 3 Cancel
- 4 Rotate the symbol(s) and start a new selection
- 5 Rotate the symbol(s) and exit

## 4.6 Mirror symbols

Symbols are mirrored with a „Gondola effect“. Thereby all of the symbol texts and symbol attributes remain horizontal and are thereby readable.

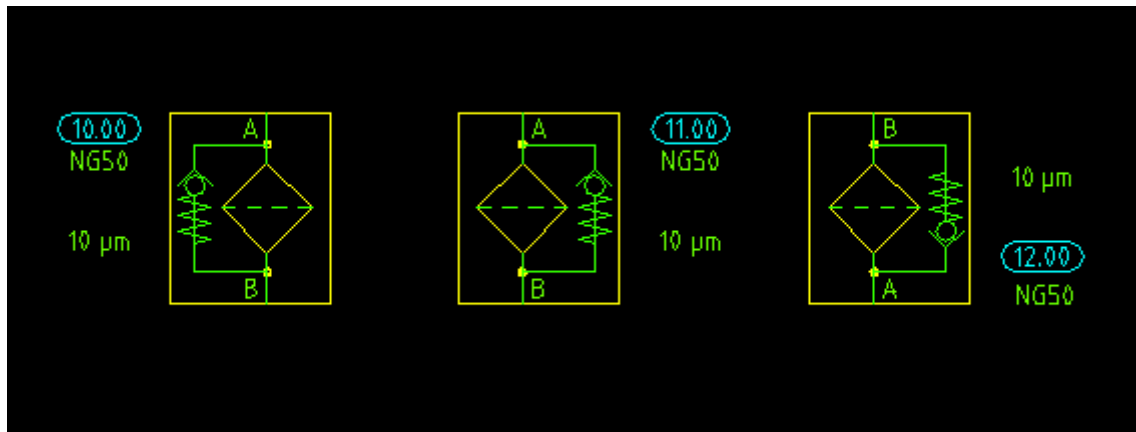


Figure 32 Mirroring a symbol with gondola effect

Mirroring commences by the selection of one or more symbols contained within the drawing. The following dialogue enables the user to define the required parameters..

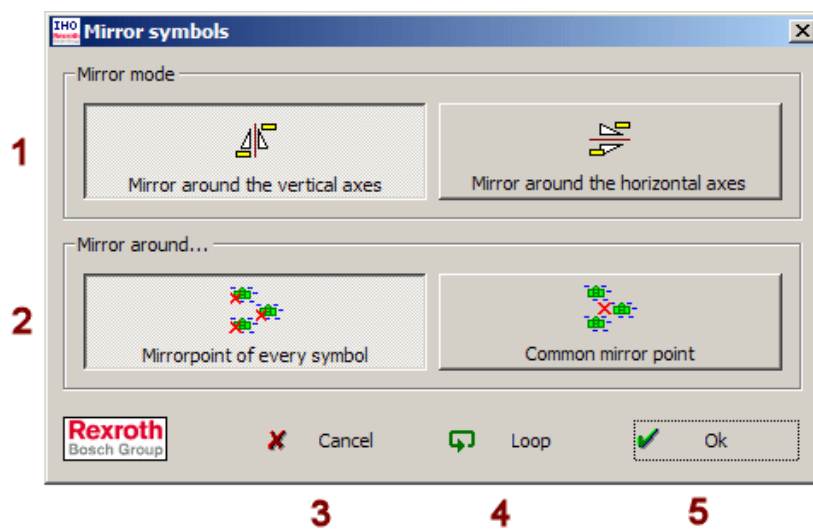


Figure 33 Mirror parameters

- 1 Defining the mirror axis (horizontal, vertical)
- 2 Defining the mirror point on the mirror axis
- 3 Cancel
- 4 Mirror symbol(s) and start a new selection
- 5 Mirror symbol(s) and exit

## **5 Generate multistation manifold blocks**

The multistation manifold blocks (HSR) generator is replaced in version 2.0 by the web configurator for multistation manifolds. The button of HSR generator refers to the website:

<http://www.boschrexroth.com/ics/Vornavigation/VorNavi.cfm?PageID=p537406&Language=EN>

## 6 Additional features

### 6.1 Edit technical item numbers

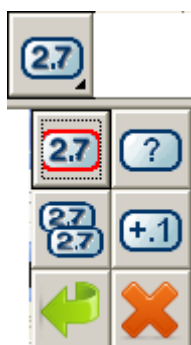


Figure 34 Edit techn. Item numbers

#### 6.1.1 Update technical item numbers

This feature searches for all tech. item numbers and updates the frames around the attributes.

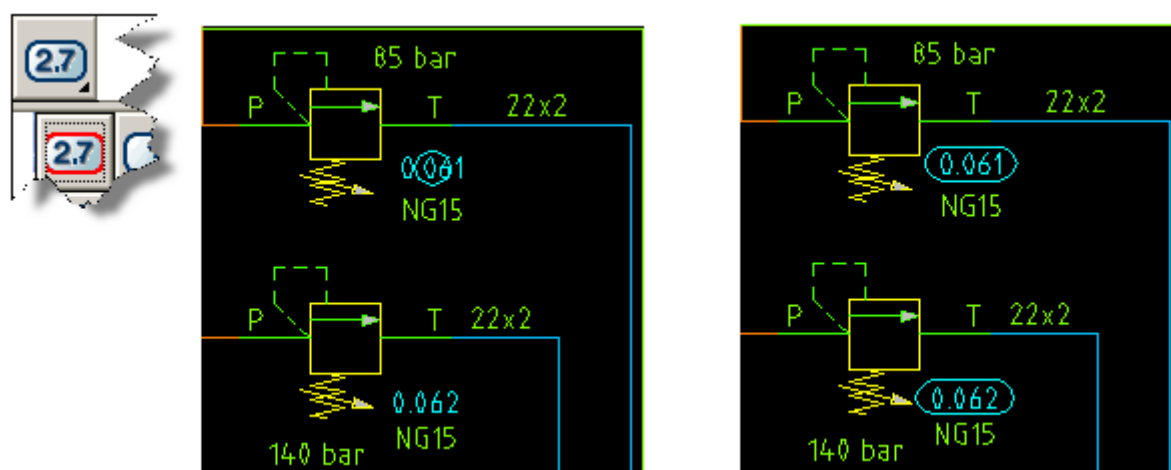


Figure 35 Bordering the techn. item numbers (before - afterwards)



### 6.1.2 Search for techn. item numbers

This feature searches for a certain techn. item number. If the given numbers cannot be found a message will be shown.

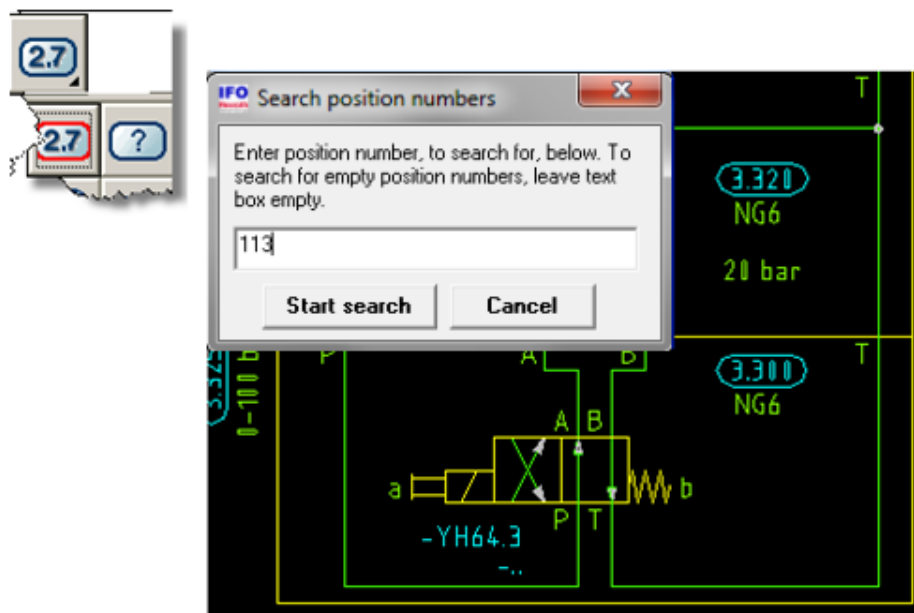


Figure 36 Search for a techn. Item number

### 6.1.3 Search for duplicate technical item number

The function searches in the current drawing for all techn. item numbers and lists all the found, as well as any duplicate in a table. A sequential control of multiple sheets is possible.

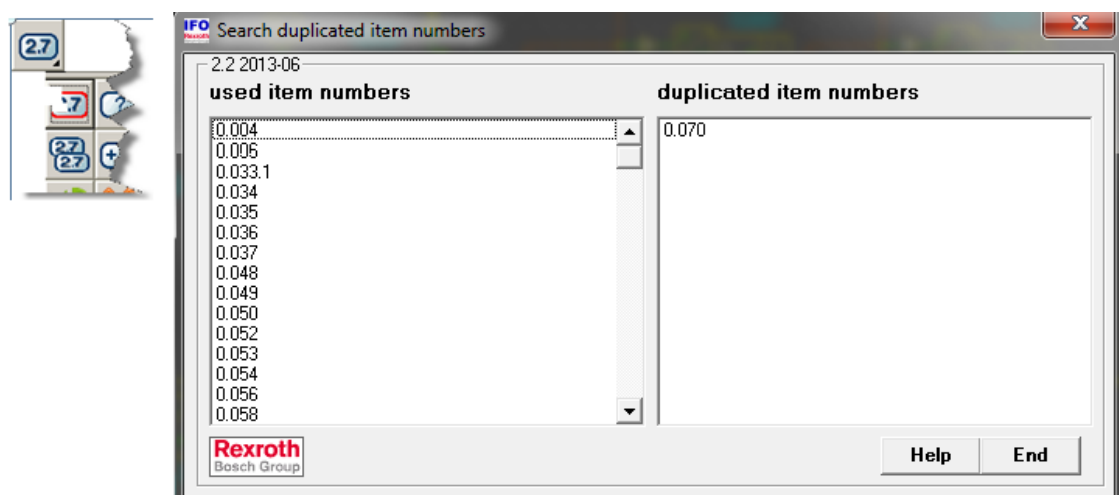


Figure 37 Search for duplicate techn. item numbers

### 6.1.4 Increment techn. item numbers

The function increments the item numbers in the current drawing corresponding to the technical settings of the mask.

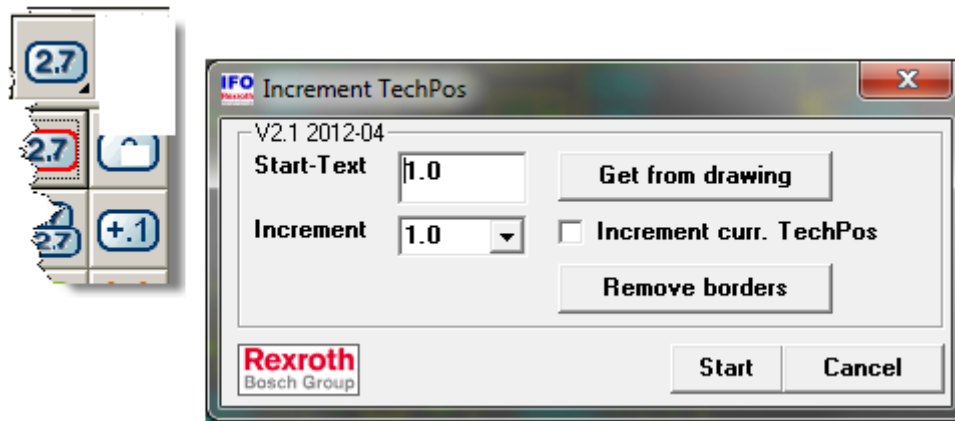


Figure 38 Increment techn. item numbers

## 6.2 Common symbols

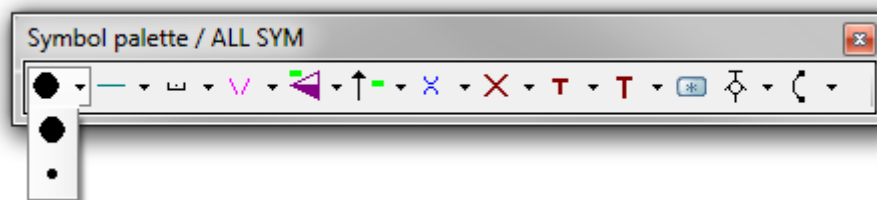


Figure 39 Common symbols

Inserting common symbols into a schematic circuit.

The buttons have the following meanings (from left to right):

- Connection points (small, large).
- Connection ports.
- Tank, (small, large)
- Reducers.
- Jump address.
- Moving direction
- Orifice (small, large).
- Plug inside (small, large).
- Plug outside small
- Plug outside large
- Empty position number

- Measuring port.
- Hose

### 6.3 Description fields

With these texts and description fields schematic circuits can be complemented and filled.

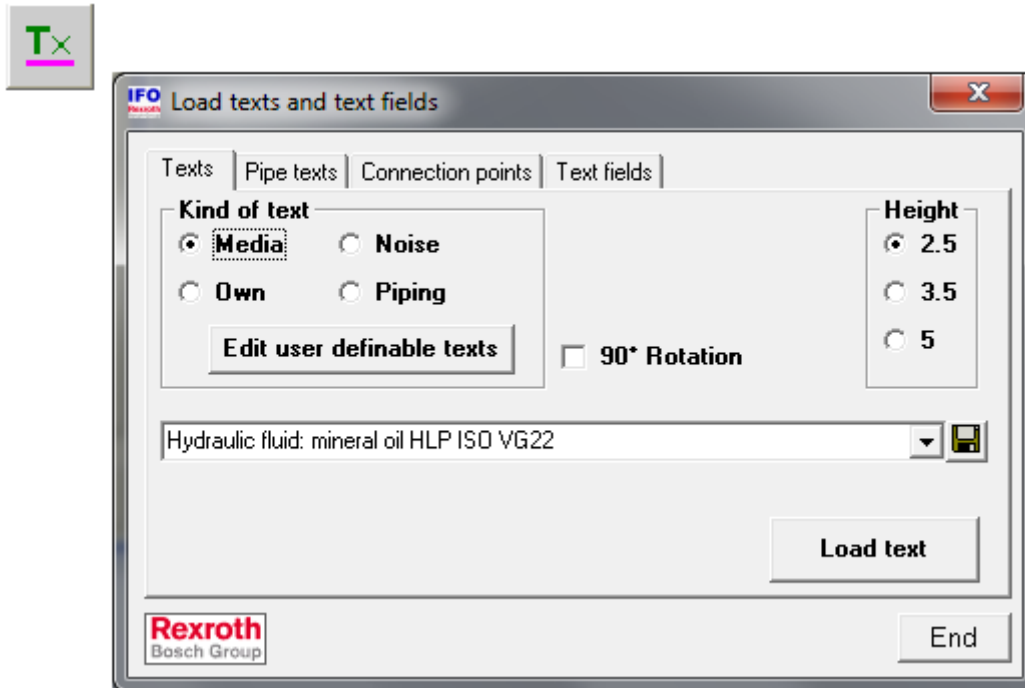


Figure 40 standardized texts

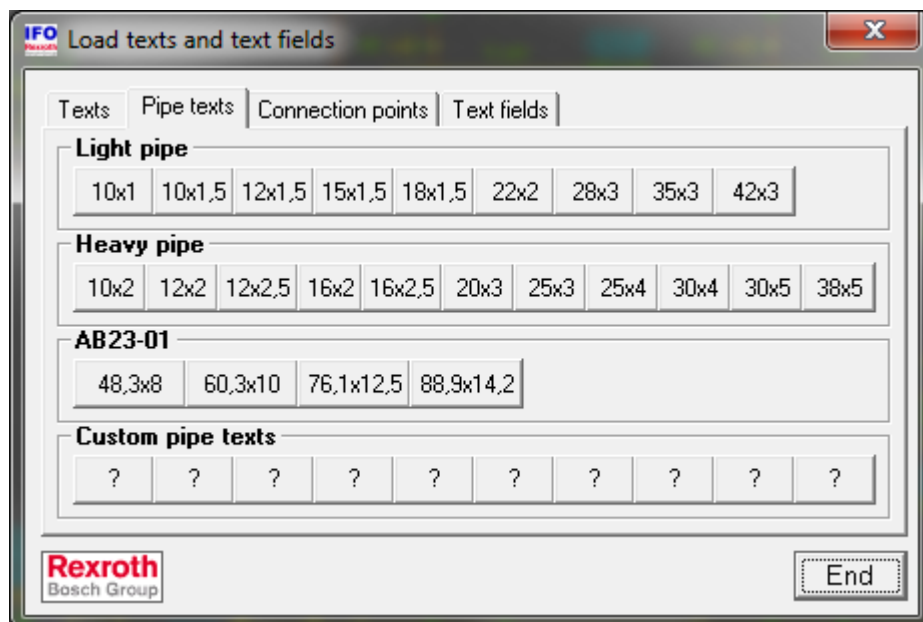


Figure 41 Piping sizes

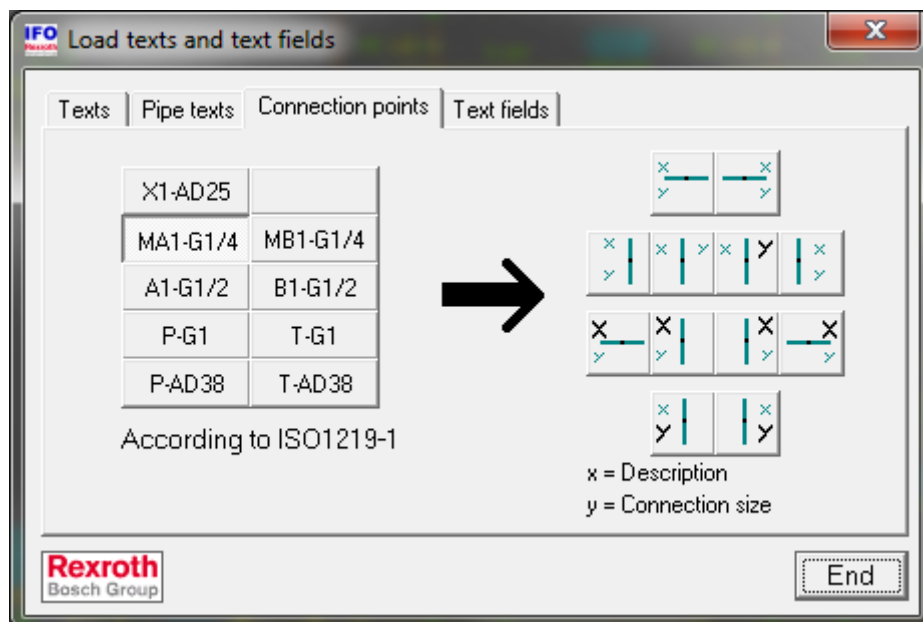


Figure 42 connection descriptions and sizes

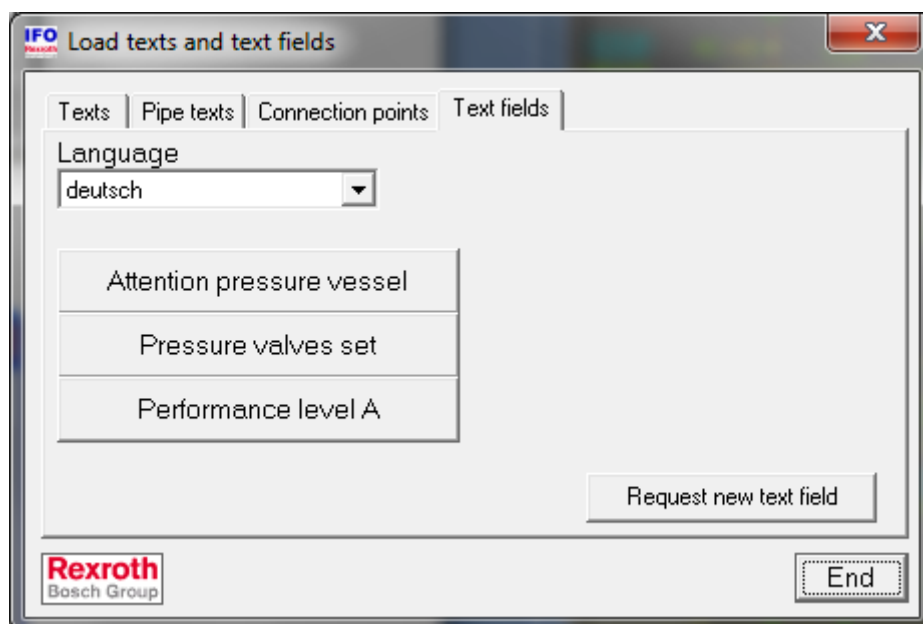


Figure 43 text fields

#### 6.4 Draw funktionlines and texts

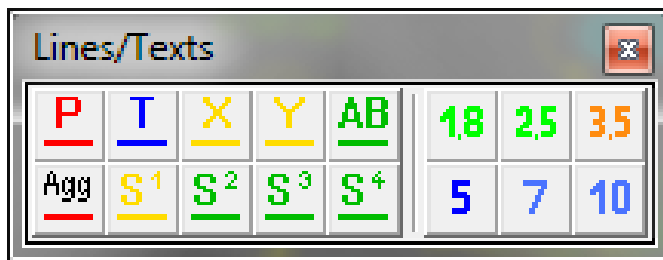


Figure 44 draw line, function-lines and texts

The individual buttons allow to draw function lines, power unit limit lines, symbol lines and texts withing the circuit diagram. For this, the layers assigned is activated according to the selection in each case automatically and starts the "line" command in AutoCAD.

#### 6.5 Move Symbols in a Grid-Offset

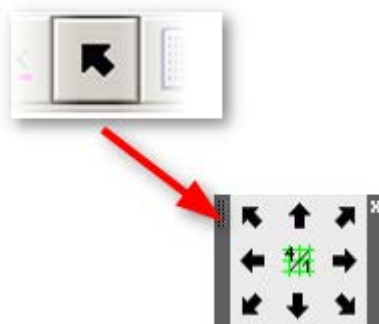


Figure 45 Menü Move selected items in grid

Via the icon „Move selected items in grid“ „Move“- menu will be opened.

Via the centre menu field the snap/grid offset can be changed from 1, 2 to 4 mm.

Moving in the offset of the snap/grid via the arrow icons.

## 7 Settings

### 7.1 General

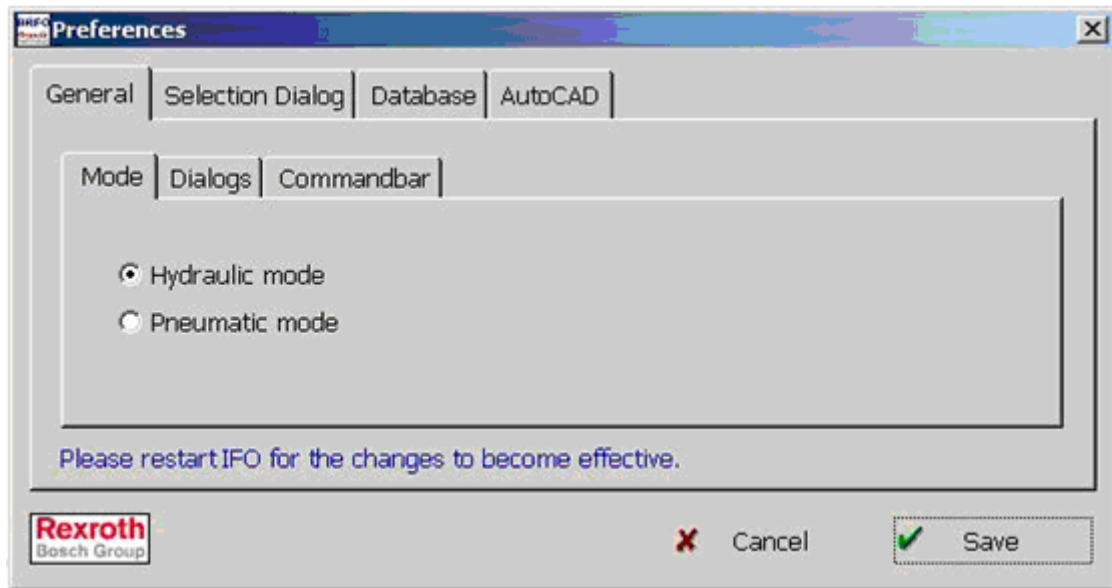


Figure 46 General settings mode

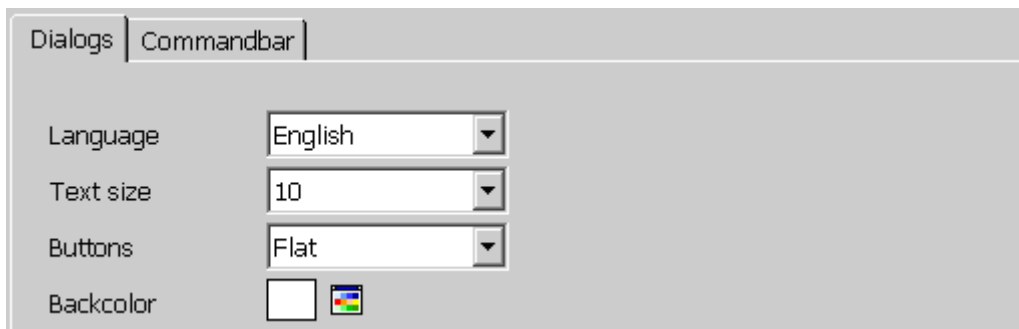


Figure 47 General settings dialogue

<i>Language</i>	Languages contained in the IFO (German, English, French, Spanish, Portuguese, Italian).
<i>Font size</i>	Dialog text font size (8,9,10).
<i>Button appearance</i>	Switching surface depiction (flat, 3D).
<i>Background color</i>	The background color for lists, input fields, etc. via the „Change“ button, a selection window opens for color selection.

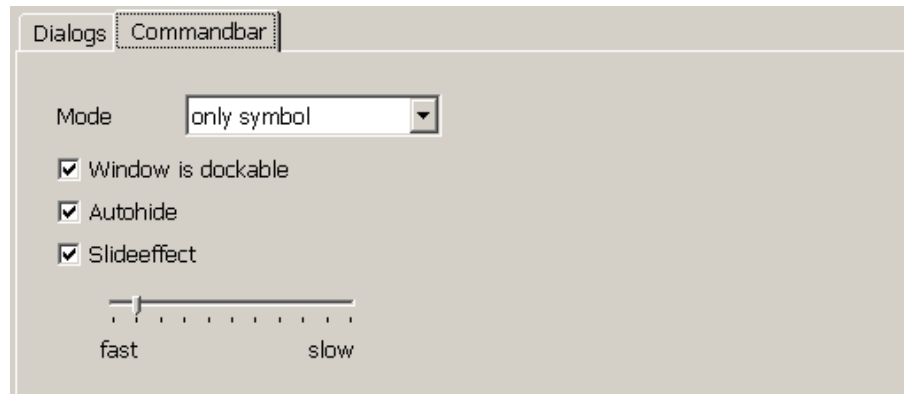


Figure 48 General settings command bar

<i>Mode</i>	Switching surface display mode (only symbols or symbols and text).
<i>Window is dockable</i>	Switching on/off the capability of the command bar, being able to attach itself to the edge of the screen.
<i>Automatically in the background</i>	Automatic hiding of the command bar in the docked condition (relates to the characteristics of the Windows task bar).
<i>Movement effect</i>	Automatic hiding with a movement effect, the speed however can be adjusted. (Relates to the characteristics of the Windows task bar, only when this is supported by Windows).

## 7.2 Selection dialog

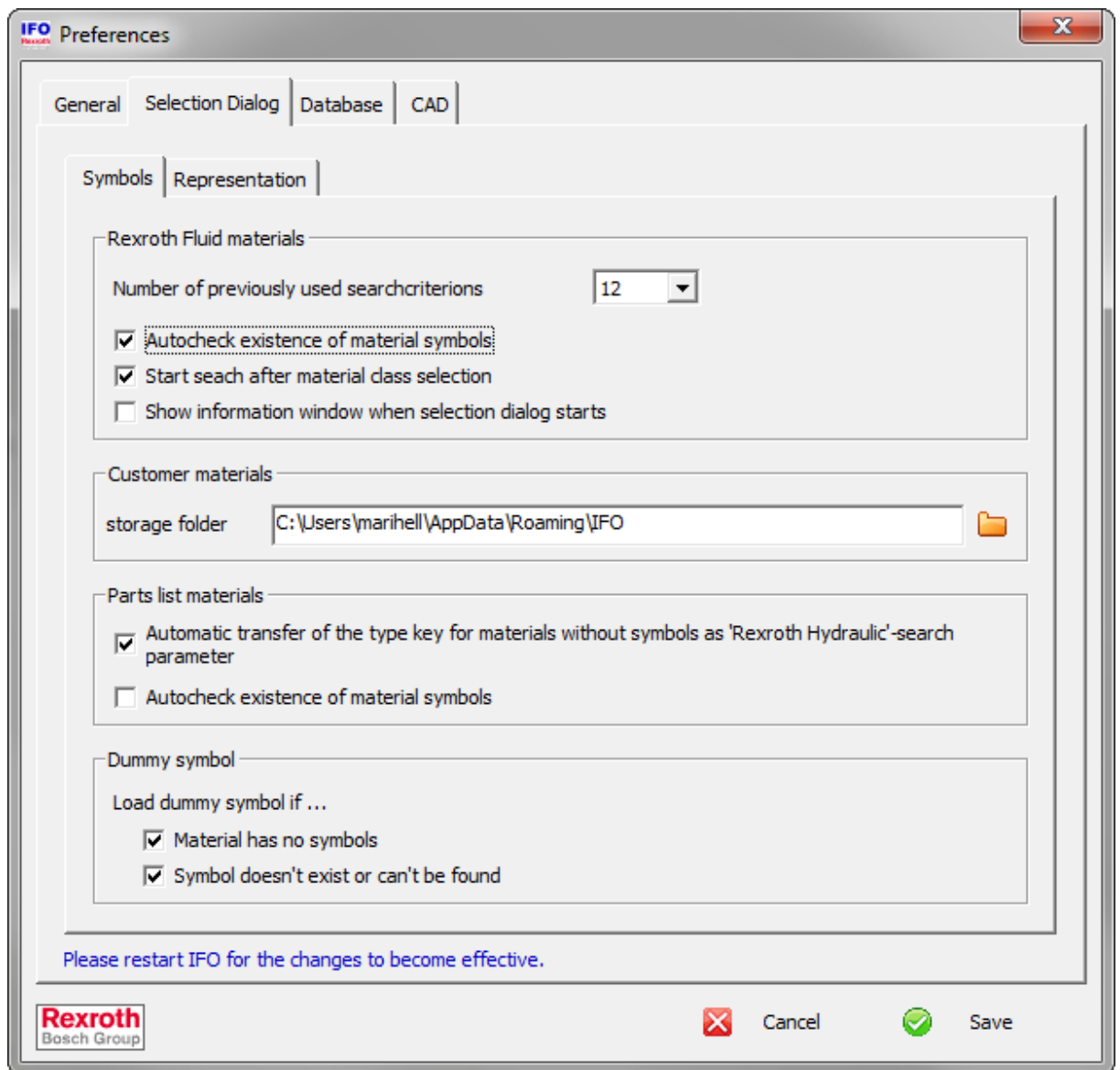


Figure 49 Settings selection dialogue, symbols

### Rexroth Fluid Materials

*The number of last used search terms*

The number of search terms that were saved and can be re-selected from the list.

*Start search after material class selection*

After the material search, the material is automatically checked for the existence of symbols.

*Automatic check for the existence of a symbol*

After selecting the material class, the search is started automatically for materials

*Information window when starting the ....*

Display of an information window for material selection when starting the selection dialogue. Provides information when starting the IFO for the first time.



## User Material

*Archive folder* The basis folder in the file system, under which the user material and user symbols are saved.

## Parts list material

*Automatic acceptance of the type key ...* By selecting a material position in the parts list the type key is written into the input field for the search for Rexroth Hydraulics symbols, when the material does not have a symbol (simplifies the search).

*Automatic check for the existence of a symbol* After the material search all of the material is checked for the existence of a symbol.

## Dummy symbol

*... The material does not have a symbol* The Dummy symbol is inserted when the material does not have a symbol.

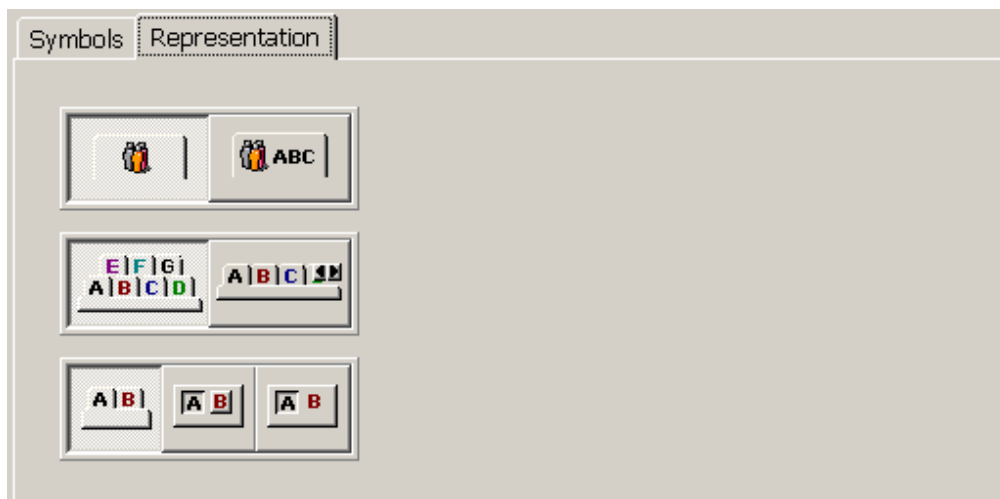


Figure 50 Settings selection dialogue, representation

- First row - Display on/off for the icon text.
- Second row - One or more rows for the icon display.
- Third row - Icon display mode (icon, normal buttons, flat buttons).

## 7.3 Database

### 7.3.1 IFO network connection

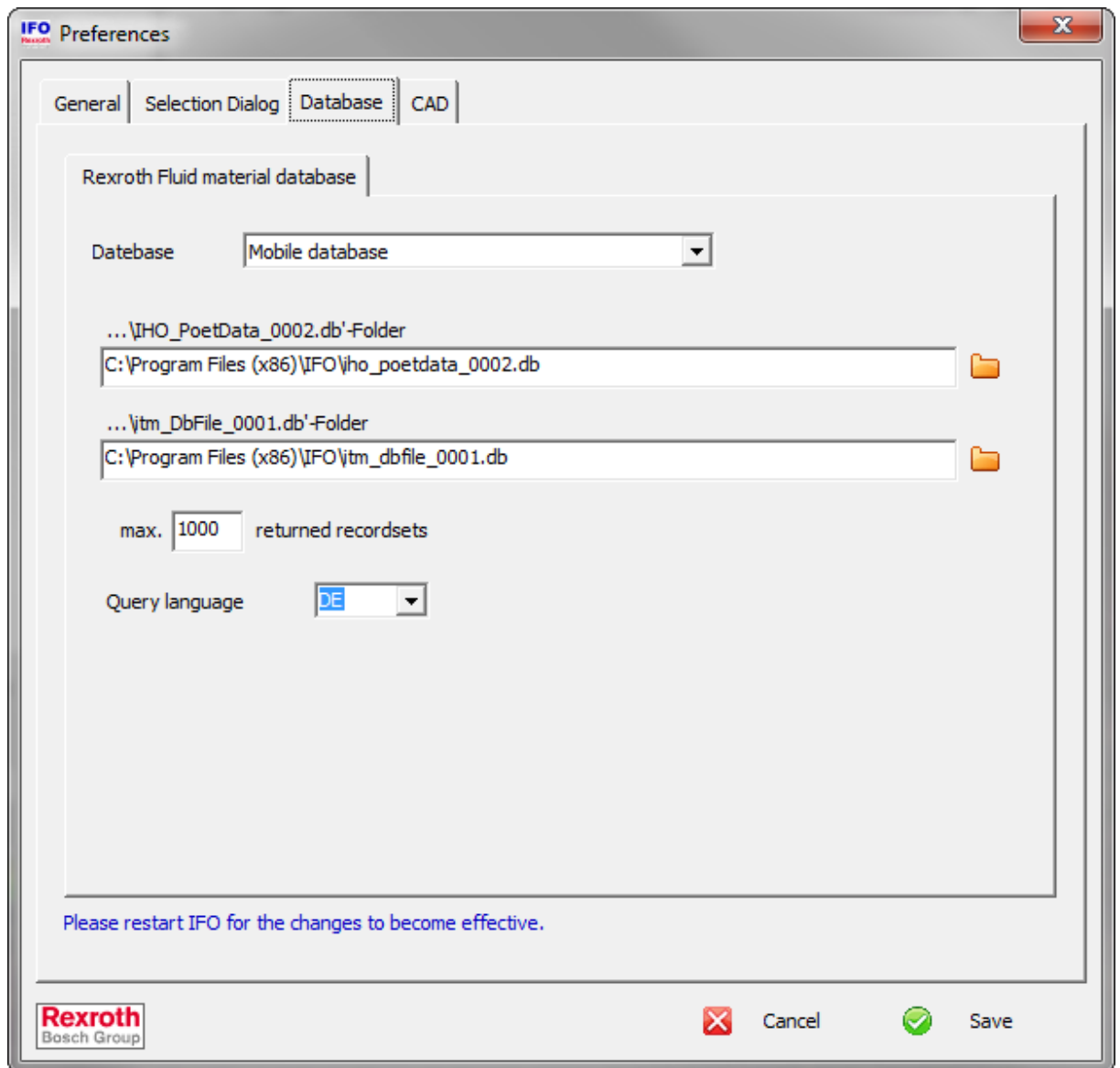


Figure 51 Settings for using the database network connection

<i>Database</i>	Connection to the tech. database TIDAS via ODBC
<i>User and password</i>	→no changes to be made
<i>2D-Symbol path</i>	M:\cad_lib\ifo\i2dsyn
<i>3D-Symbol path</i>	M:\cad_lib\ifo\i3dsyn

### 7.3.2 IFO connection without network

A Das Arbeiten ohne Netzwerkanbindung wird durch die Verwendung der POET-Datenbank ermöglicht.

Figure 52 Settings for the access to the Rexroth material data base

<i>..\IFO_PoetData_0002.db</i>	Path to the relevant file (IFO_PoetData_0002.db) in the data system (CDROM or hard disk).
<i>..\itm_DbFile_0001.db</i>	Path to the relevant file (itm_DbFile_0001.db) in the data system (CDROM or hard disk).
<i>Max. no. of returned data sets</i>	The max. number of data sets that are displayed in the material selection. When during the search more data sets are found, only this number of data sets are displayed. The user is informed via a relevant message.

## 7.4 AutoCAD

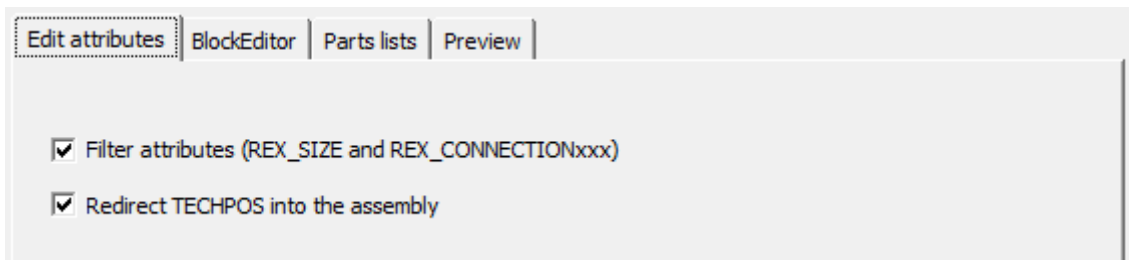


Figure 53 AutoCAD settings – Edit attributes

<i>Filtering the ,REX_CONNECTIONxxx' attribute</i>	All attributes for the connection information in the symbol (REX_CONNECTIONxxx) are not displayed in the attribute dialogues.
<i>Transfer the TECHPOS contained within the assembly</i>	Applying a TECHPOS to an assembly also transfers the number to the sub-attributes (e.g. assembly with 24.8 → sub-assemblies with 24.8.1, 24.8.2, ...).

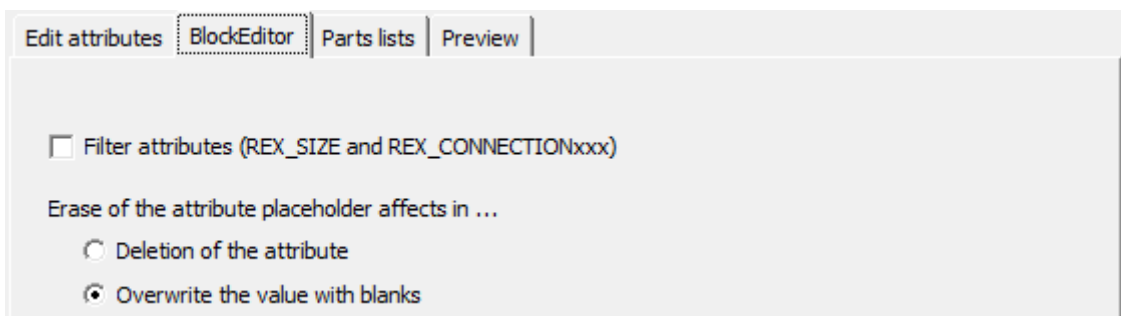


Figure 54 AutoCAD settings – Block Editor

<i>Filtering the ,REX_CONNECTIONxxx' attribute</i>	All attributes for the connection information in the symbol (REX_CONNECTIONxxx) are not displayed when the block is broken up
<i>Deleting the attribute space holder text result in ...</i>	When editing a block, the block is broken up whereby the attributes are shown by means of relevant text. Deleting this text can either delete the associated attribute or over- write the attribute value with blanks.

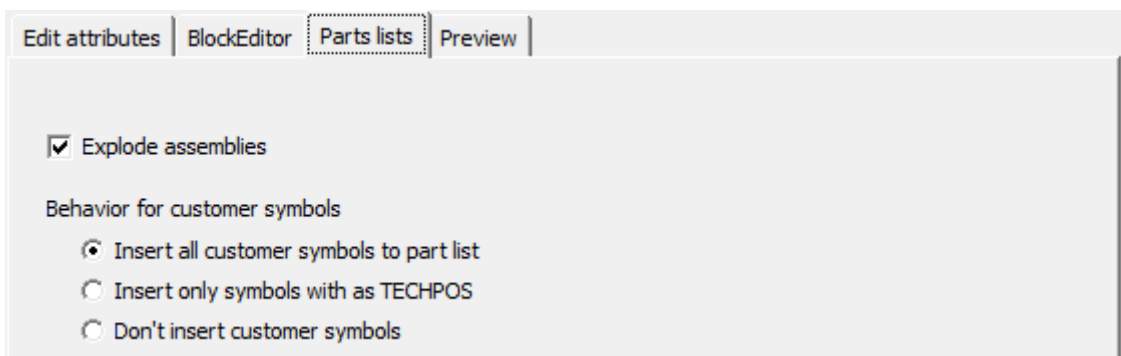


Figure 55 AutoCAD Settings – Parts lists

### *Explode an assembly*

When creating a parts list the assemblies are analyzed and any sub-assemblies are also incorporated into the parts list.

### *Action concerning user symbols*

If user symbols are found in the drawings, then these can always be ignored, always inserted or only inserted when the user symbol possesses a TECHPOS.

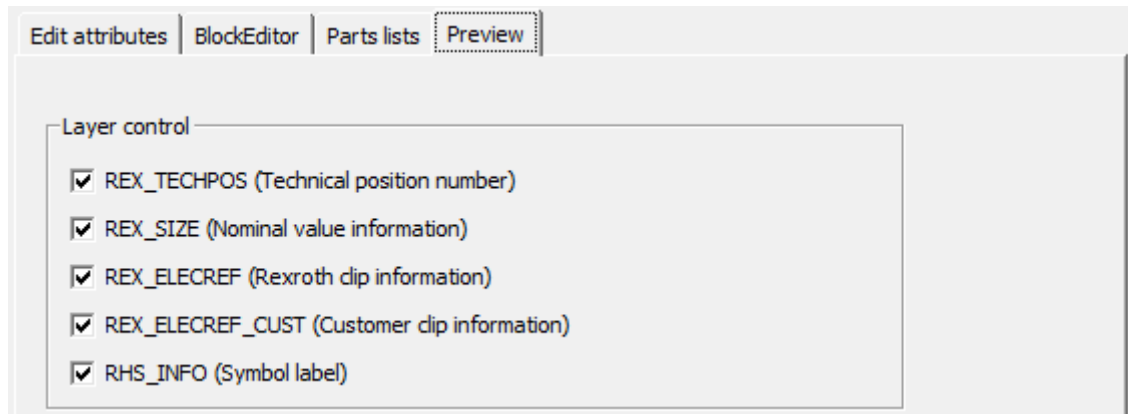


Figure 56 AutoCAD Settings preview

Technical position number	Switching on/off of the associated layer.
Nominal size information	Switching on/off of the associated layer.
Rexroth terminal information	Switching on/off of the associated layer.
Customer terminal information	Switching on/off of the associated layer.
Symbol texts	Switching on/off of the associated layer.

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