Siemens MagiCAD Plugin

User guide

12/04/2022

MagiCAD

Content

General

About this document

This document contains instructions on using Siemens MagiCAD plugin.

Siemens MagiCAD plugin allows user to insert, copy, update, recalculate and view the technical data of the shunt units with MagiCAD.

Plugin supports the Siemens VARISHUNT and EasyShunt products.

Installing the software

Required third-party software

Siemens MagiCAD plugin works with the following MagiCAD and AutoCAD versions

- MagiCAD 2022 and AutoCAD 2017-2022
- MagiCAD 2023 and AutoCAD 2019-2023

Before installation

1. Workstation administrator privileges are recommended for installation.

2. Notice if you have several AutoCAD versions on your workstation. Before you run the plugin installer, start MagiCAD to make sure that Siemens MagiCAD Plugin installs on the same AutoCAD platform as MagiCAD.

Installation

1. Download the installer file from MagiCAD portal to your workstation:

   https://portal.magicad.com/Download/ProductSearch?searchStr=Siemens&categoryId=3

2. Run the Siemens MagiCAD plugin installer on your workstation.

Starting the program

The plugin is automatically loaded and is ready to be used once MagiCAD is started next time after the plugin is installed.

Before you start using the Siemens MagiCAD plugin, (re)start the MagiCAD and open a Heating and piping project.

Locate the MagiCAD plugins tab from the AutoCAD ribbon. Once the Siemens MagiCAD plugin is loaded its ribbon panel can be found from the MagiCAD plugins tab. When the drop-down button is clicked the list of available operations will be shown.
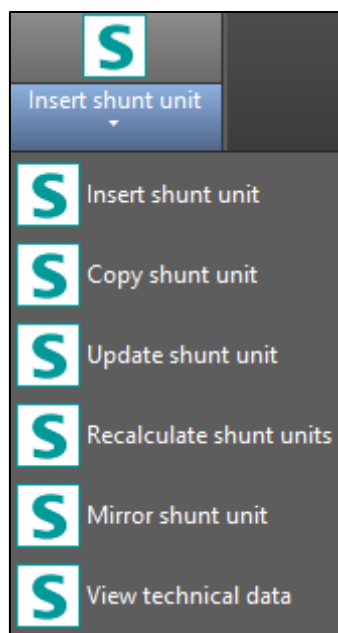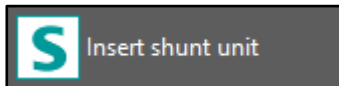

Figure 1 Plugin ribbon panel operations
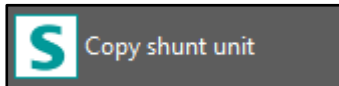
Functions

Siemens MagiCAD plugin UI overview

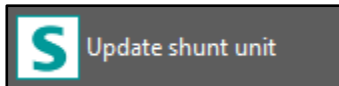Plugin contains the following operations:

Insert operation

This command inserts a new shunt unit to MagiCAD with ProSHUNT dimensioning program.
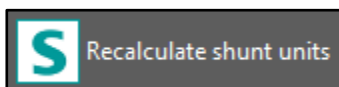
Copy operation

This command makes shunt unit inserting faster in MagiCAD without going through the ProSHUNT dimensioning program.
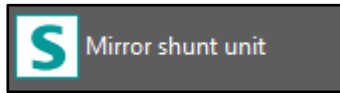
Update operation

This command updates one shunt unit with the ProSHUNT dimensioning program and finally updates the data to shunt unit in MagiCAD.
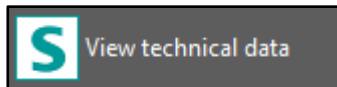
Recalculate operation

This command recalculates one or multiple shunt units with Siemens web service recalculation program and finally updates the data to shunt units in MagiCAD.
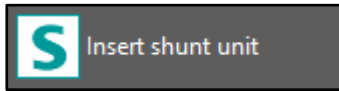
Mirror operation

This command mirrors the selected shunt unit in MagiCAD.

View technical data operation

This command is for viewing the ProSHUNT dimensioning program generated technical data of the shunt unit in MagiCAD.

Detailed insert operation

![S Insert shunt unit]

Follow these steps to insert Siemens shunt unit to MagiCAD drawing:

1. Draw and balance the secondary circuit in MagiCAD. This is important because Siemens MagiCAD plugin sends the secondary circuit flow and pressure drop data to the ProSHUNT dimensioning program. These values are input parameters for ProSHUNT calculation.

2. Click the "Insert shunt unit" button from Siemens MagiCAD plugin ribbon panel or give the "SIE_INSERT" command.

3. Once the operation is started, user is first prompted to select the MagiCAD system for the shunt primary circuit. The selected system will be set for the shunt unit that is exported to the MagiCAD via plugin.
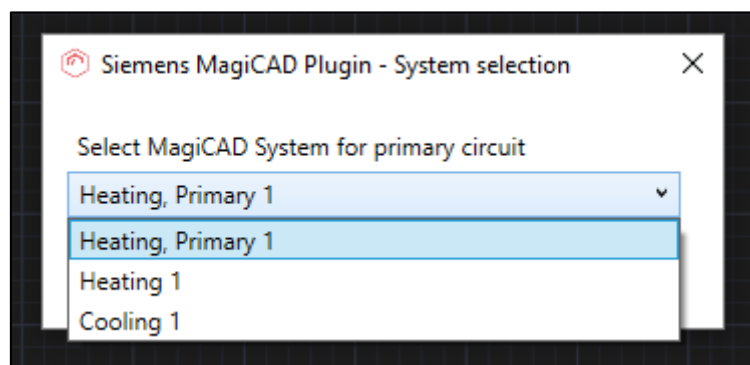

Figure 2 Selecting the primary circuit for the shunt unit

4. User is prompted to select the supply and return pipes of the secondary circuit. It is important to select that part (or near end) of the pipe that should be connected to the shunt unit. Reason for this is that plugin sends flow and pressure drop information data from the selected pipes to ProSHUNT dimensioning.
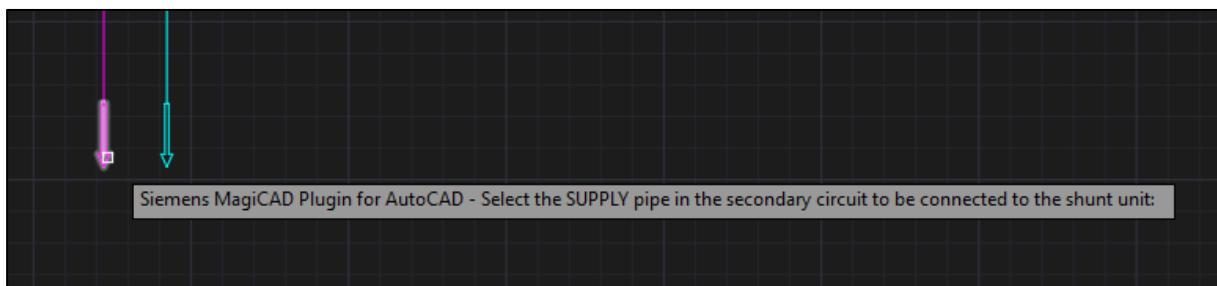

Figure 3 Selecting the supply pipe from the secondary circuit for the shunt unit

5. After secondary circuit pipe selections the ProSHUNT dimensioning program is started. In this step user fills the <u>facility, position number and user code information</u> and proceeds to the next step. This information is not mandatory and user may proceed without filling these fields. If user code is left empty, plugin will generate a random user code for the shunt unit.
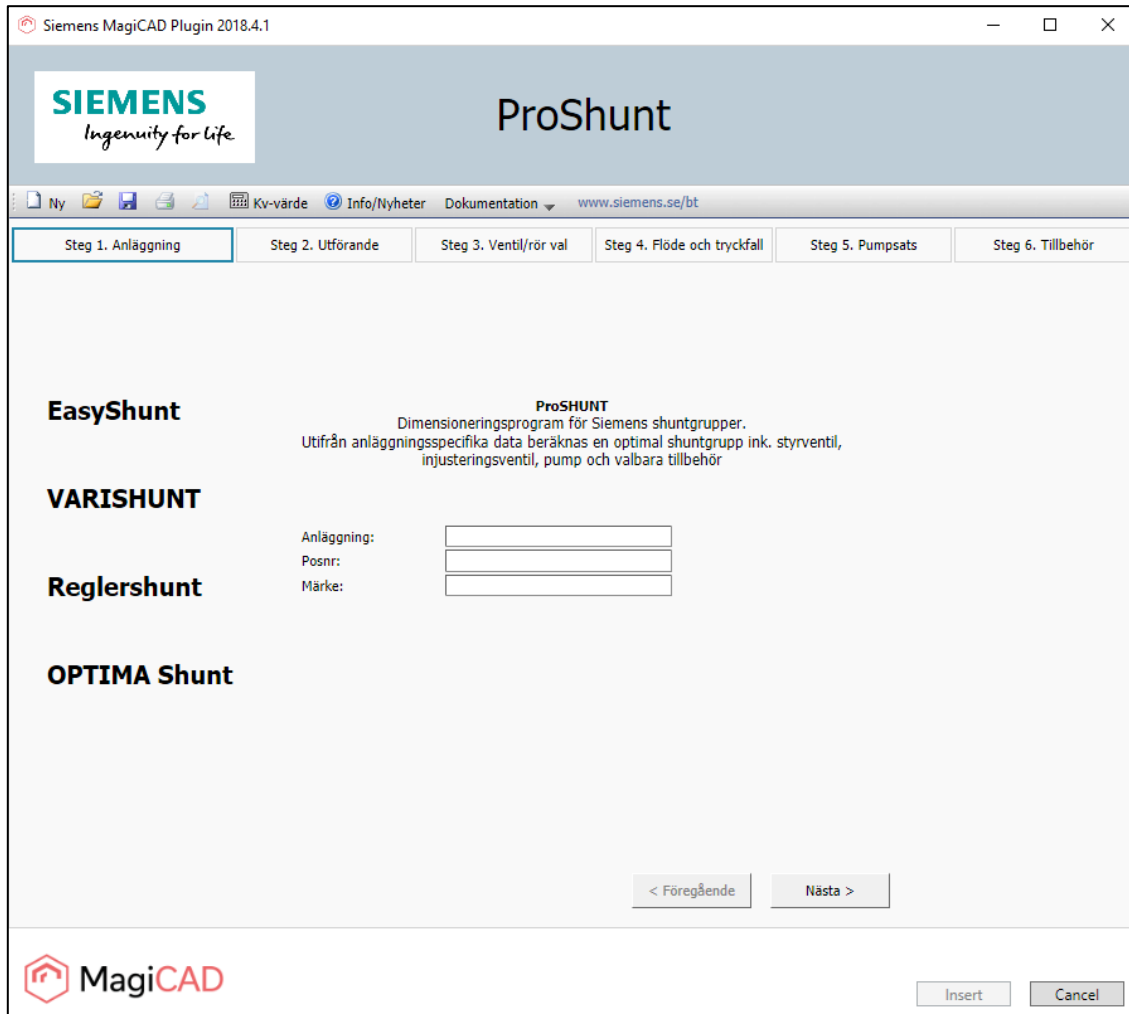

Figure 4 Step 1/6 – ProSHUNT dimensioning starts

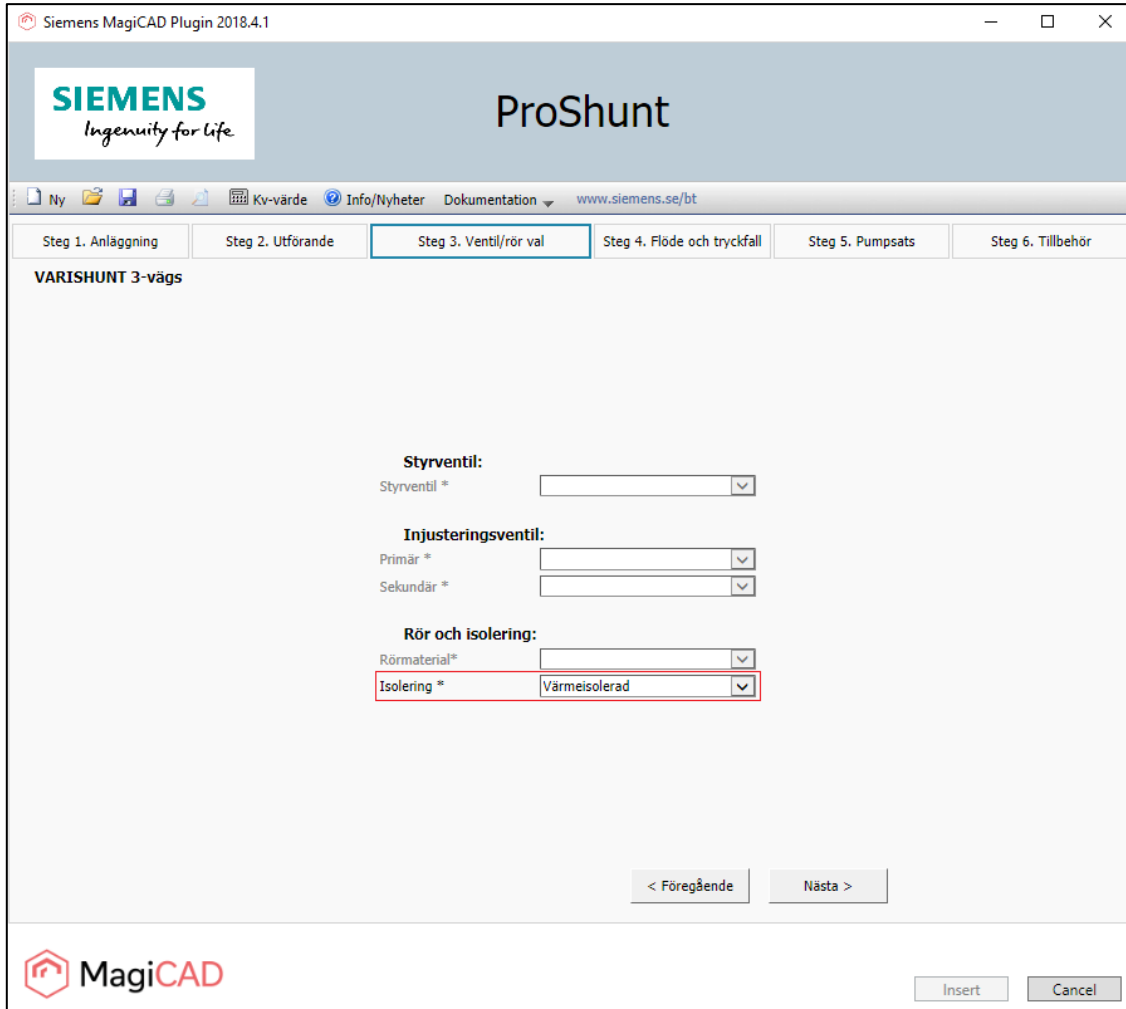6. In this step user selects <u>the type of the shunt</u> and proceeds to the next step.
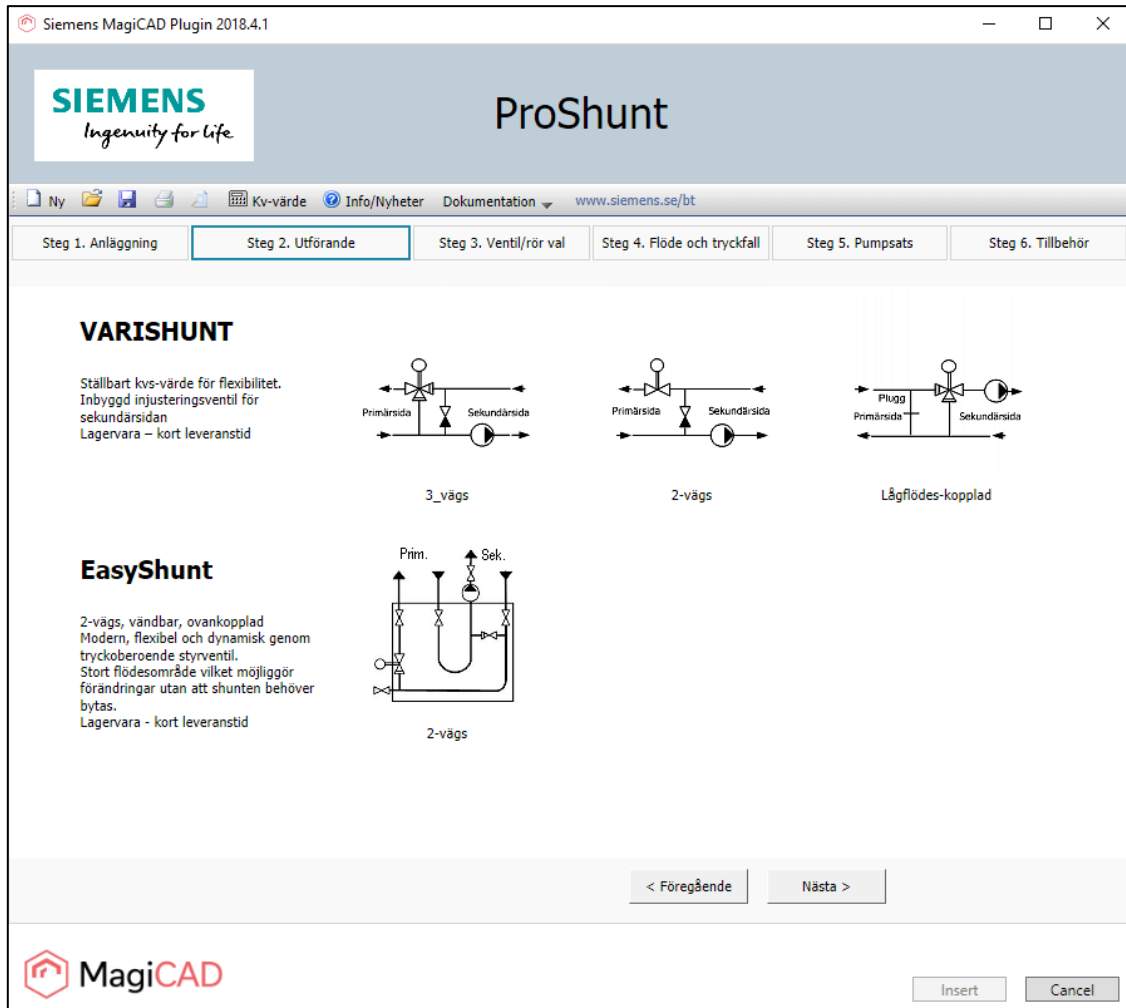
Figure 5 Step 2/6 - Shunt type selection

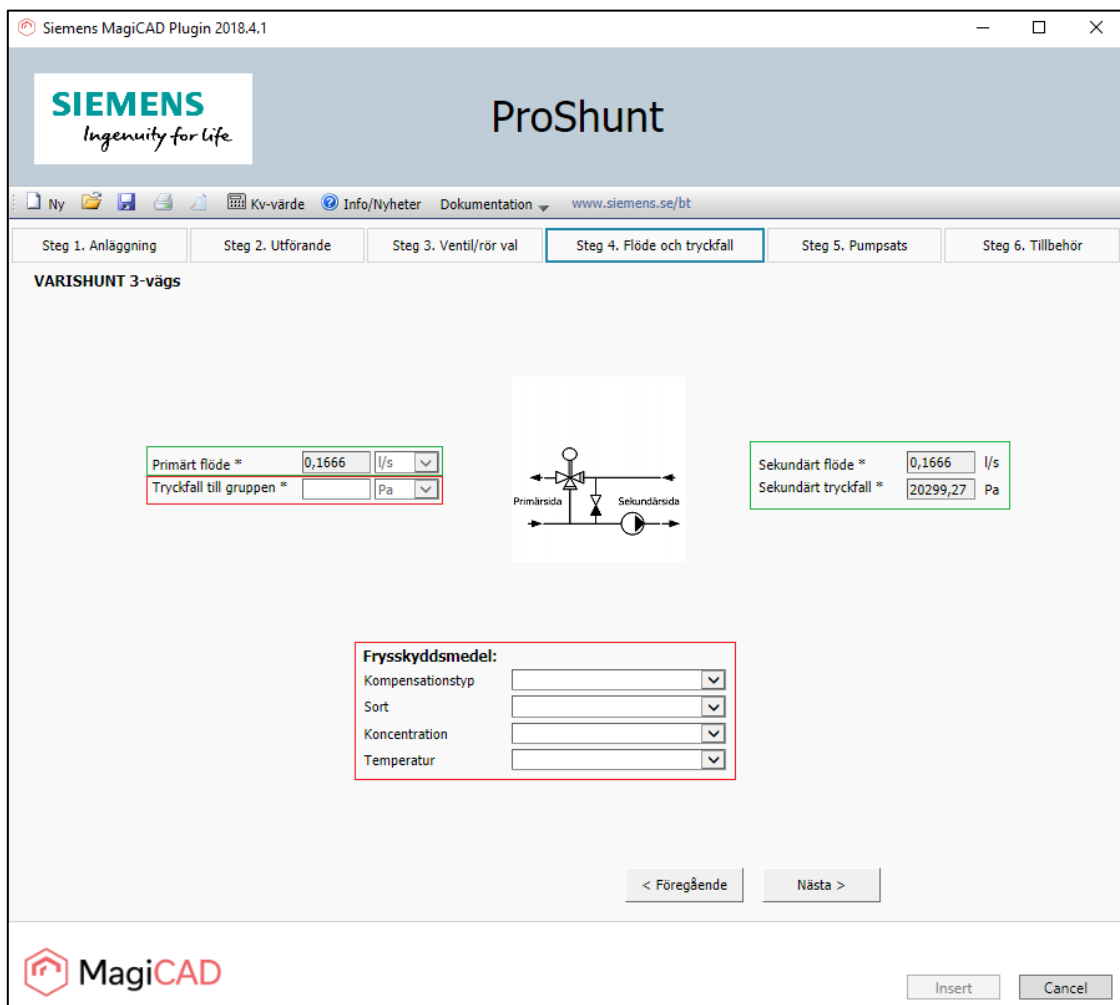7. In this step user sets the type of isolation and proceeds to the next step.

Figure 6 Step 3/6 - Shunt isolation selection

8. In this step user inserts <u>the primary system shunt group pressure drop and refrigerant</u> (highlighted with red). The driving pressure of the main pump is not available at this point. This is because MagiCAD primary system balancing calculation can't be accomplished before ALL shunt units in the primary circuit have been inserted into it. At this point user needs to input sophisticated guess of the main pumps driving pressure into this field.

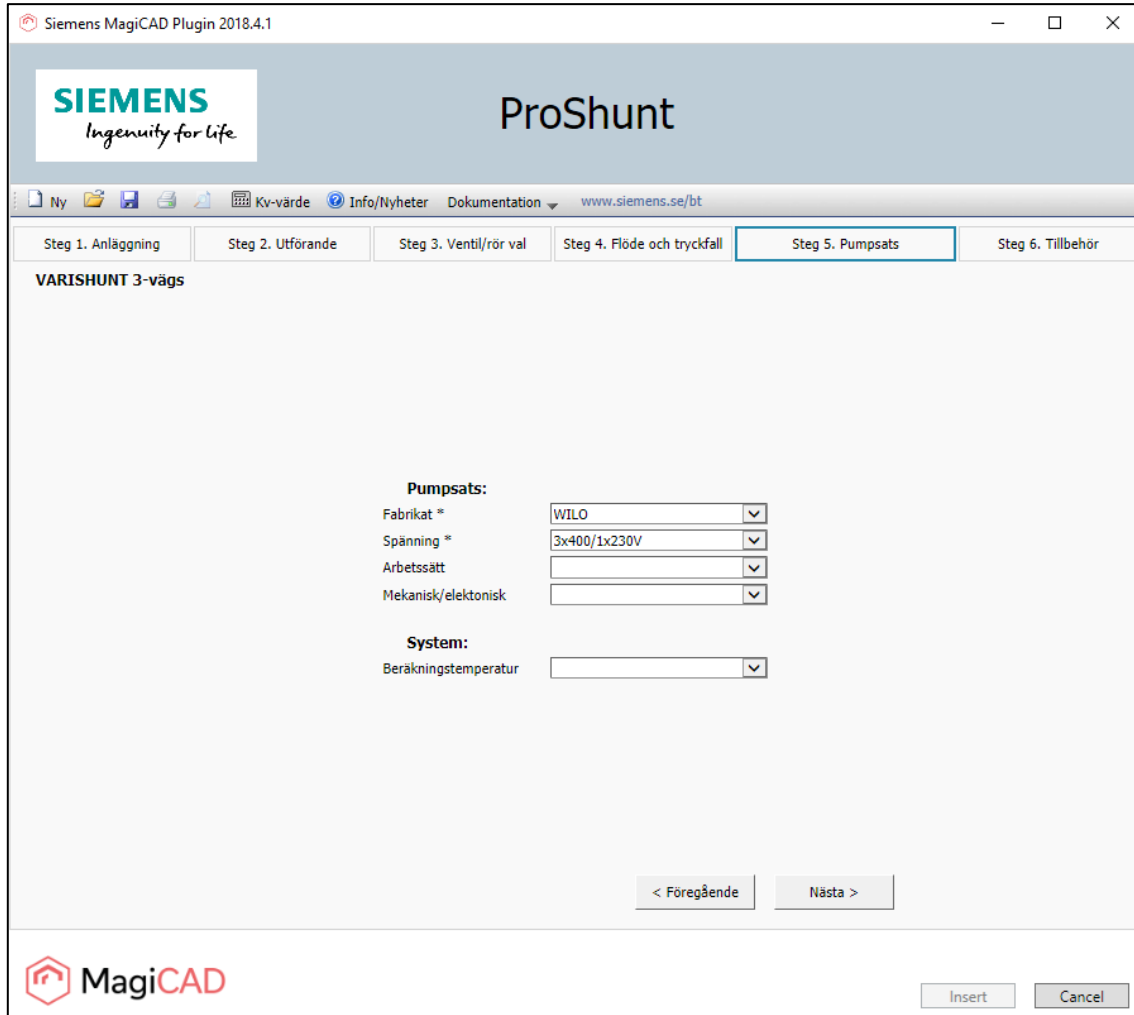The primary / secondary system flow and pressure drop (highlighted with green) are passed from MagiCAD plugin into ProSHUNT and disabled for editing.

Figure 7 Step 4/6 - Shunt flow, pressure and refrigerant selections

9. In this step user selects the pump for shunt unit and proceeds to the next step.
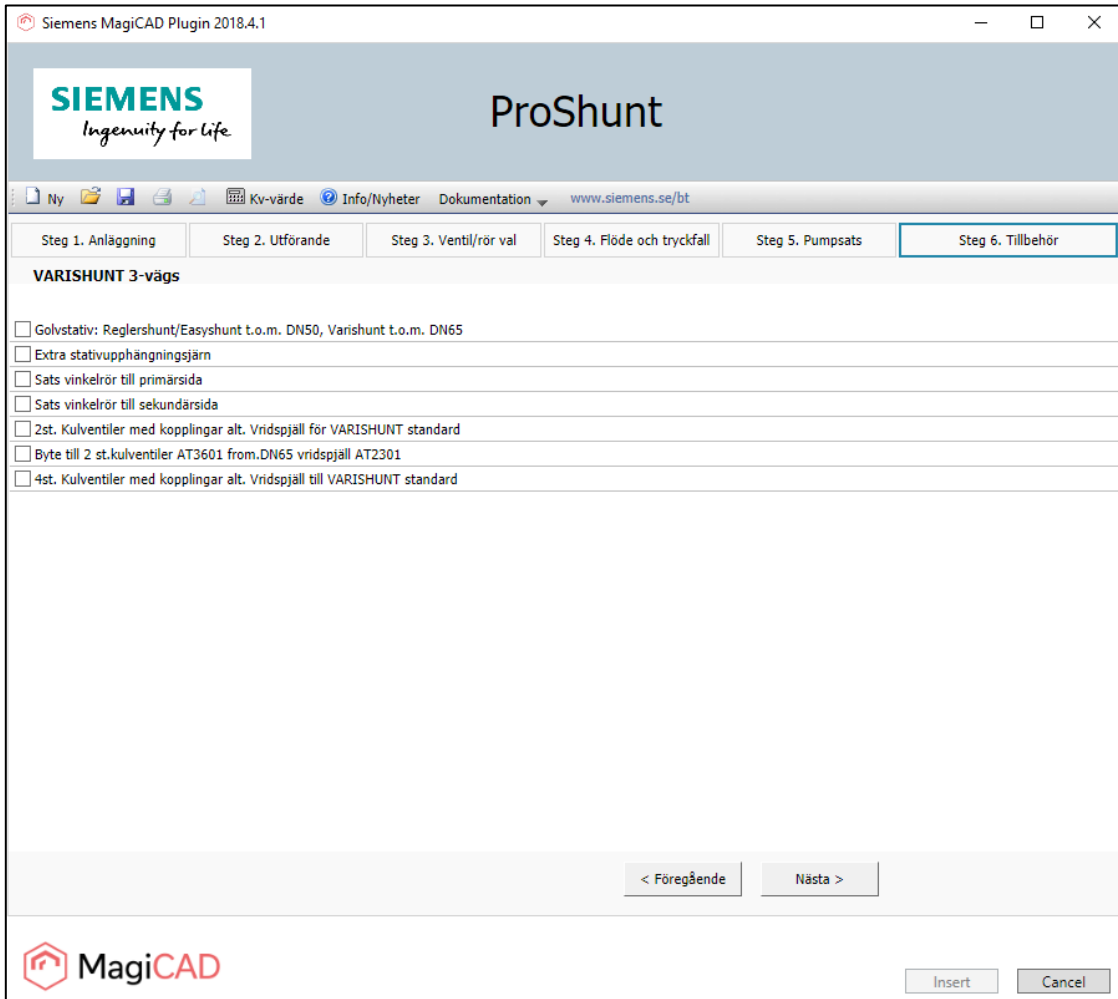

Figure 8 Step 5/6 - Shunt pump selection

10. In this step user selects <u>the accessories for the shunt</u> unit and then proceeds to the shunt unit calculation.

Figure 9 Step 6/6 - Shunt accessories page

11. In final page user sees the plugin input values as well as dimension and calculation results of the shunt unit. User inserts the shunt unit to the MagiCAD project.

Figure 10 Shunt dimension results page and insert shunt to the MagiCAD project

12. Shunt unit is inserted to the MagiCAD project.
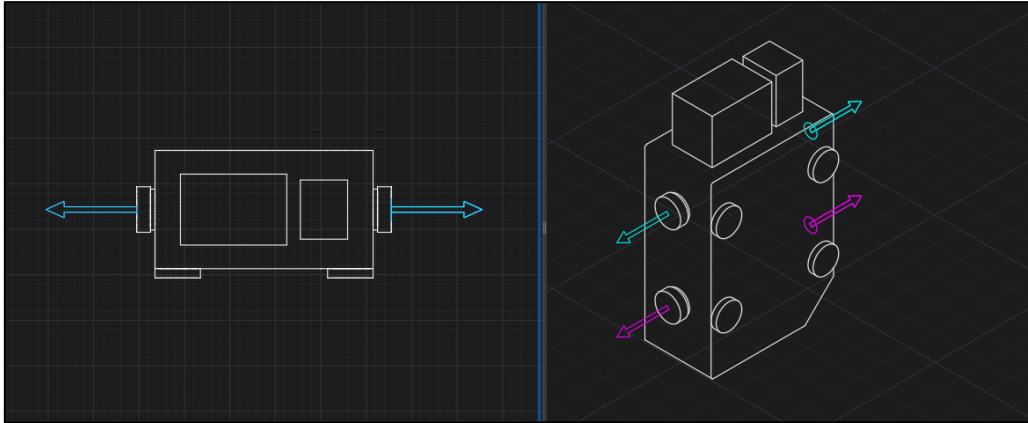
Figure 11 Shunt unit inserted in to MagiCAD project

13. Finally user connects the shunt unit to the primary and secondary circuits and proceeds to the MagiCAD balancing calculation for the necessary primary and secondary circuits.
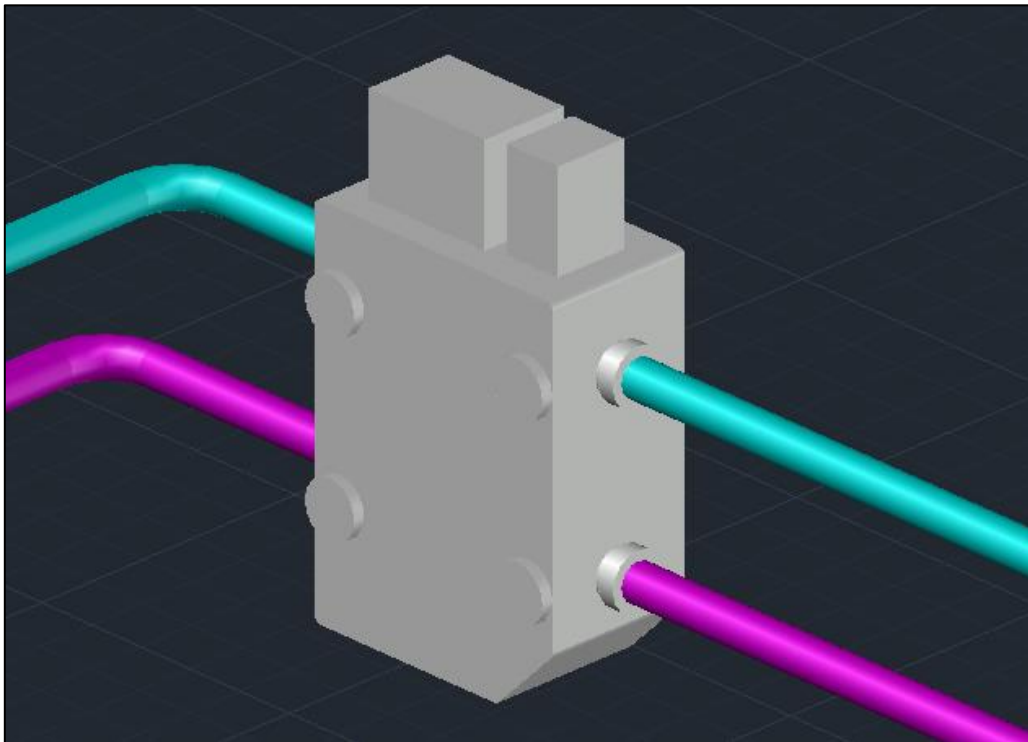
Figure 12 Shunt unit connected to pipework and ready for MagiCAD balancing calculation

Detailed copy operation
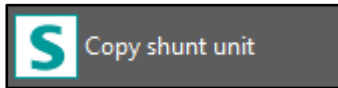
This operation allows user to copy an existing Siemens shunt unit within the drawing. The copied shunt unit can be pasted single or multiple times into the drawing.

1. Click the "Copy shunt unit" button from Siemens MagiCAD plugin ribbon panel or give the "SIE_COPY" command.

2. User is then asked to select the shunt unit to be copied.
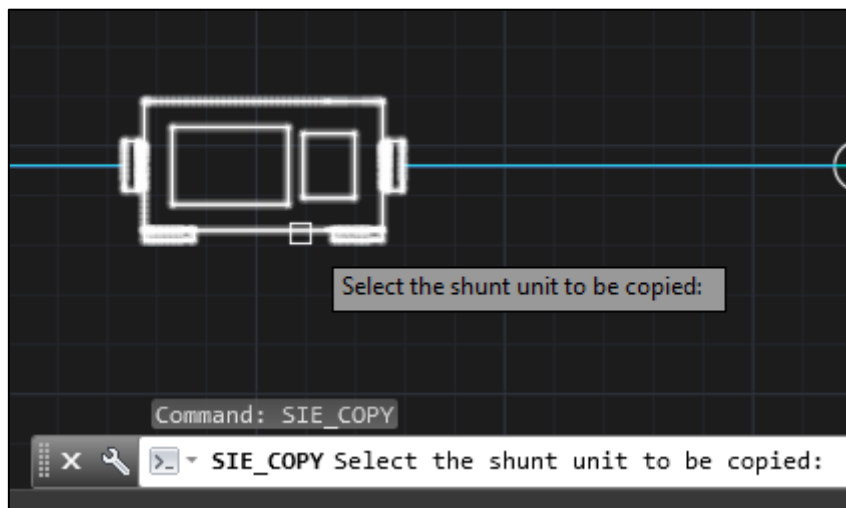
Figure 13 Copy command and prompts for selecting the shunt unit

3. After selecting an existing valid shunt unit from the drawing user is prompted with a dialog to select a secondary system for the new shunt unit copy from a dropdown list. Plugin generates a new random user code but user may also write the new user code for the shunt unit.
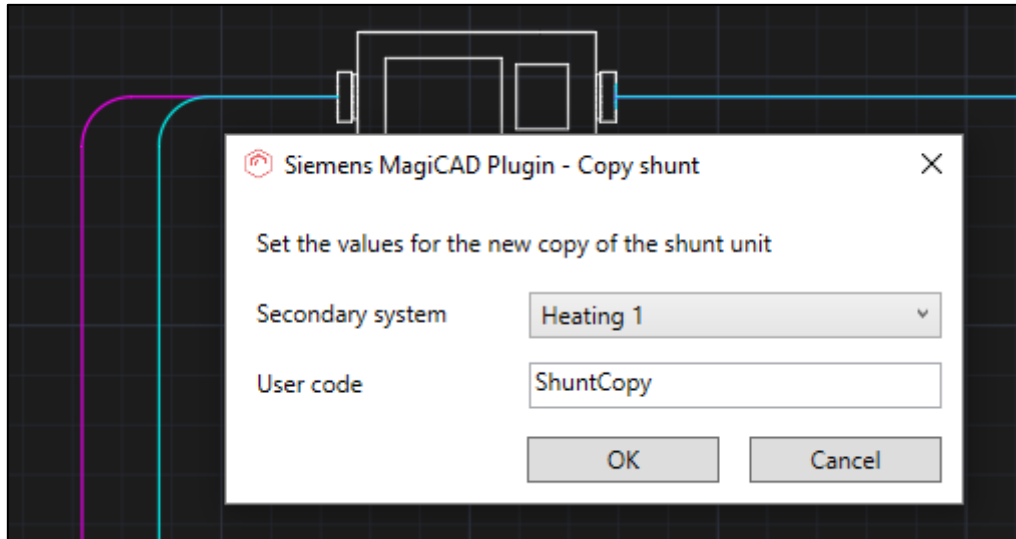
4. After pressing OK user can paste the newly copied shunt unit into the drawing. This is done with the same principle as the insert of the shunt unit after dimension.

5. When user has positioned the shunt unit into the drawing, the copy shunt dialog is opened again asking if the user wants to paste another copy of the selected shunt unit. User can add a new copy of the original by filling the required information and pressing OK. This can be repeated multiple times.

6. After inserting the last copy of shunt unit user will press cancel from the dialog and connect all the inserted shunt copies to the necessary circuits.

Detailed update operation
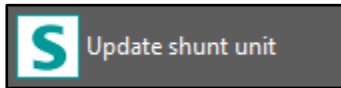
Shunt(s) should be updated after the primary circuit is finished. The reason for this is that the ProSHUNT dimensioning calculation will now get the accurate driving pressure value straight from the MagiCAD instead of an estimation value from the user.

Before updating the shunts make sure that the shunts are connected to the pipework and the MagiCAD balancing calculation has been done for the systems to which the updated shunts are connected to.

After updating the shunts make sure that the shunts are connected to the pipework in case of changed geometry. Run the MagiCAD balancing again to make sure that the pipework and shunts are up to date.

During the shunt unit update operation user can make some changes to shunt unit details like changing the refrigerant, pump details or accessories.

1. Click the "Update shunt unit" button from Siemens MagiCAD plugin ribbon panel or give the "SIE_UPDATE" command.

2. When update shunt unit operation is started, user is first prompted to select the shunt unit to be updated. User selects only one shunt unit for update. In case of need to update multiple shunt units user should use the recalculate operation.
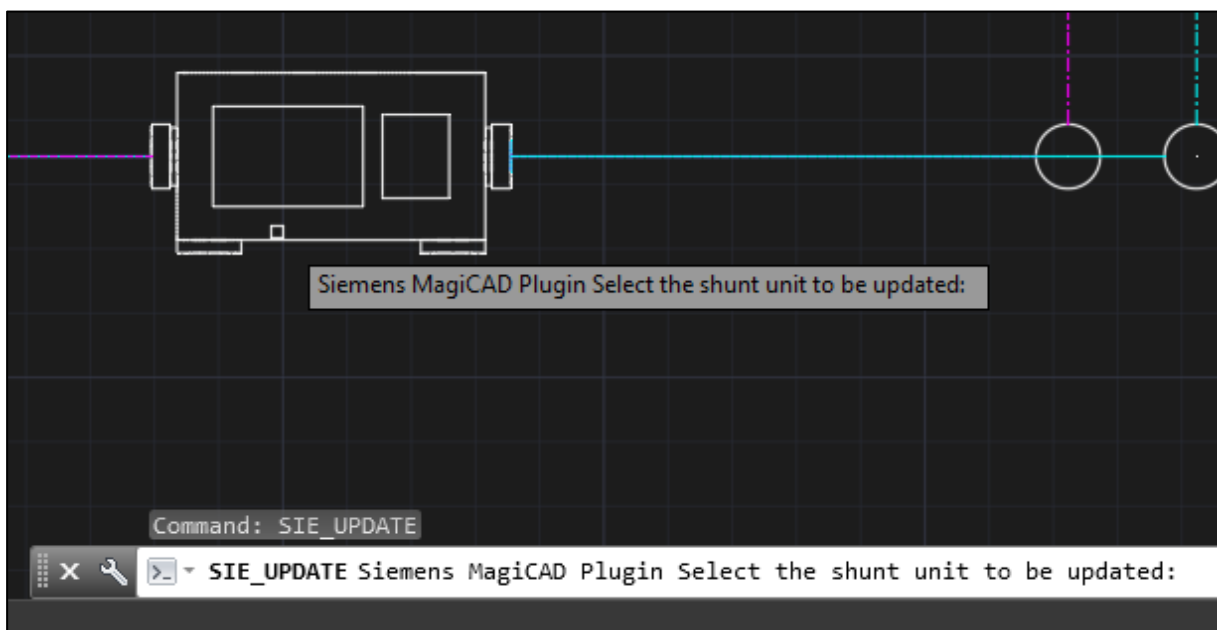
Figure 14 Prompt for selecting the shunt unit for update

3. After the selection is done ProSHUNT dimensioning program is opened and user may do some dimension changes in there. Plugin sends the shunt and circuits data to ProSHUNT dimension program and they can be seen prefilled in the program. Values which are not greyed are user editable values.

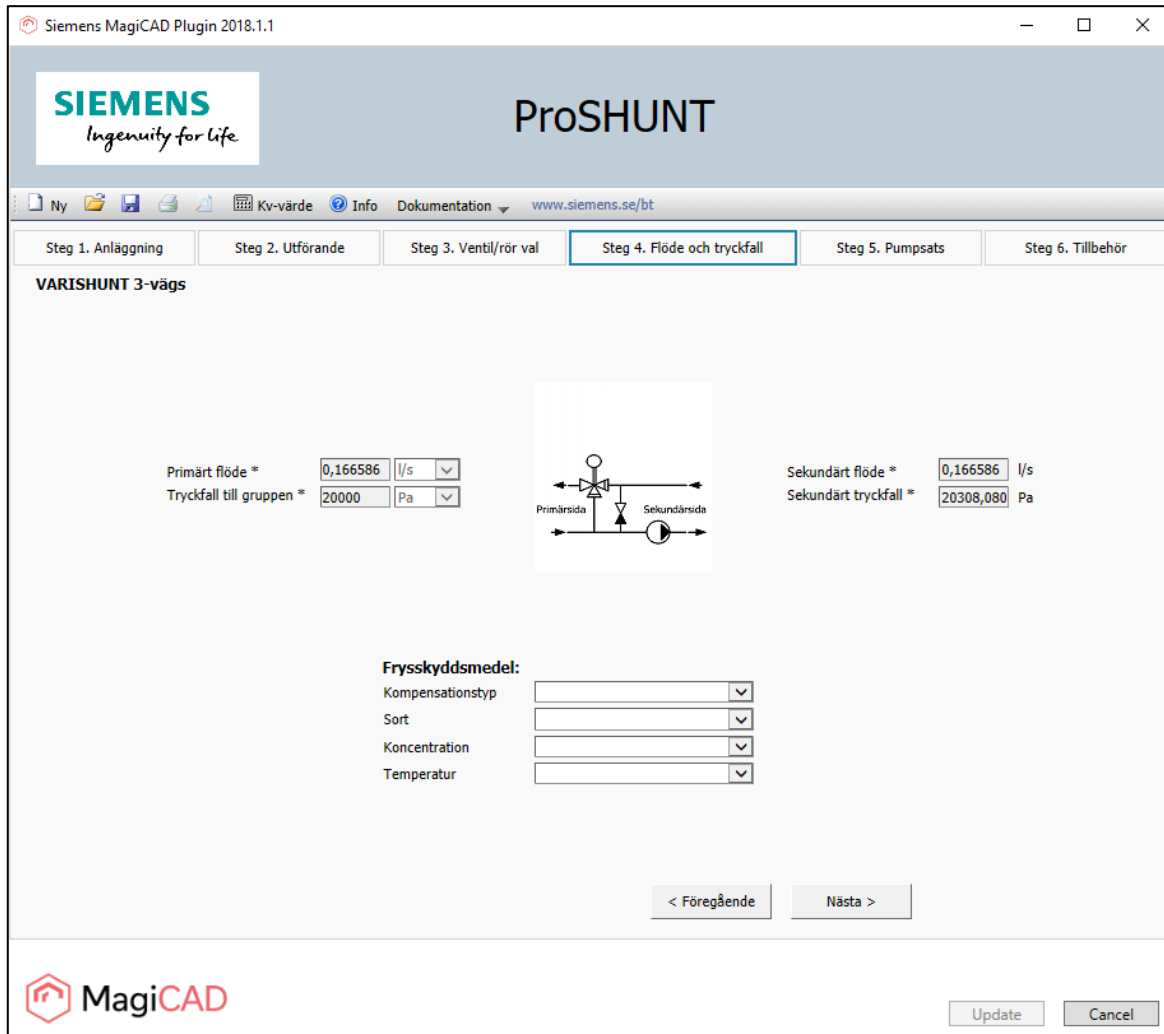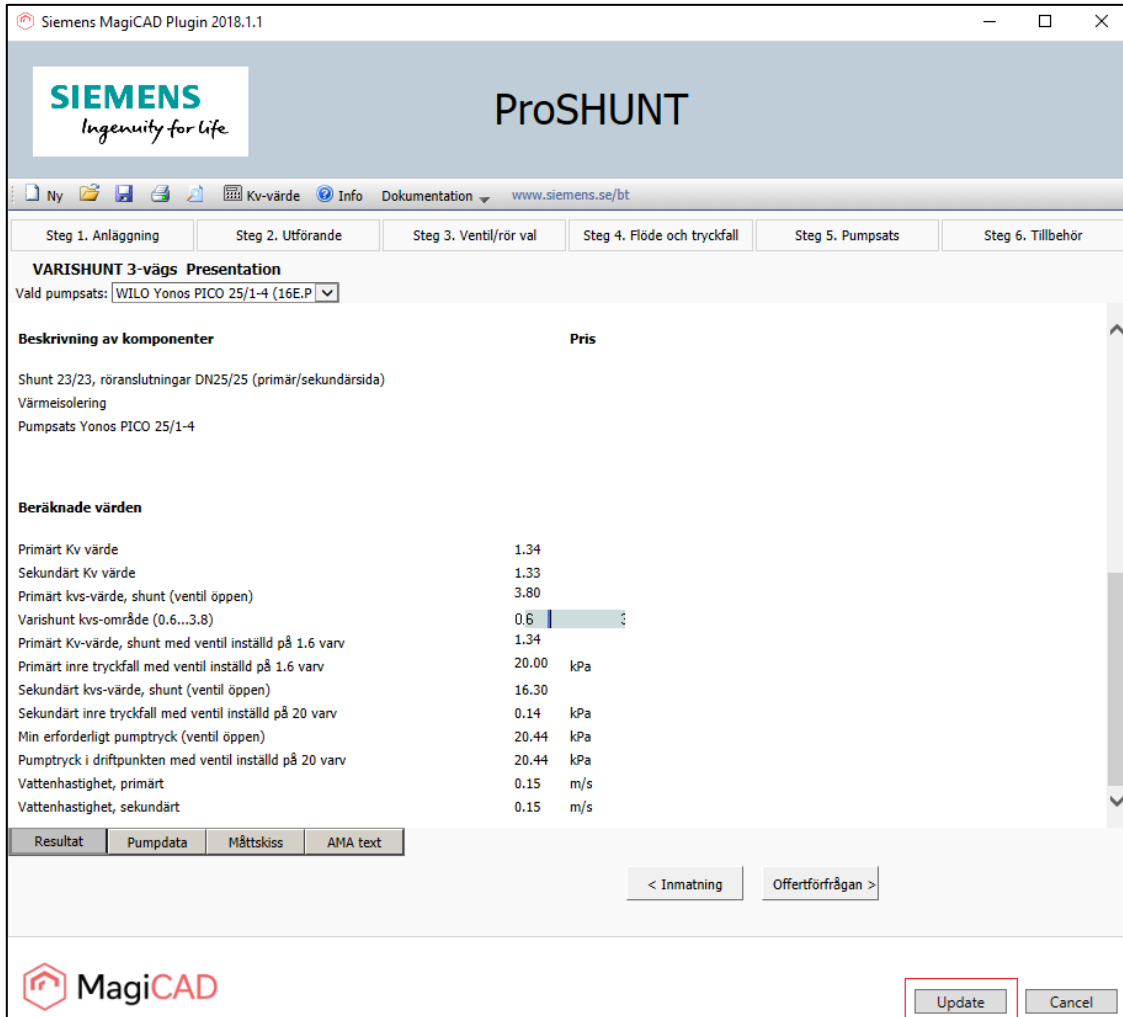*Figure 15 Step 4/6 - ProSHUNT dimension program in shunt update mode with prefilled values*

4. After user has gone through the dimensioning and made the needed changes to the shunt unit it can be exported to MagiCAD from final page of the ProSHUNT dimensioning program. User clicks the update button (highlighted with red) to insert the updated shunt unit to MagiCAD.

Figure 16 Inserting updated shunt unit in to MagiCAD

5. After pressing the update button, the dialog informs user that shunt unit has been updated. It also informs if the unit geometry has been changed or not. If the shunt geometry is changed then user should make sure that the shunt is still connected to the circuits intended.
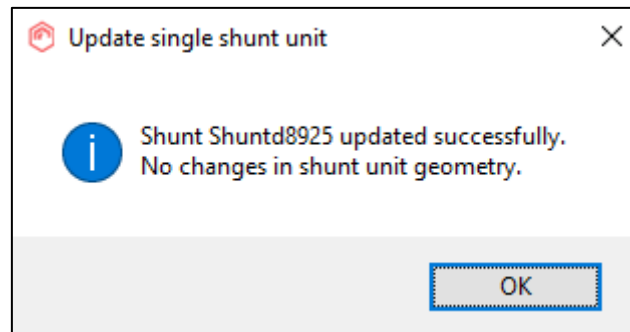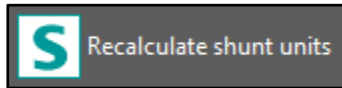

Figure 17 Shunt unit update information dialog

Detailed recalculate operation

Shunt(s) should be recalculated after the primary circuit is finished. The reason for this is that the ProSHUNT dimensioning calculation will now get the accurate driving pressure value straight from MagiCAD instead of an estimation from the user. MagiCAD balancing might also give a warning and then user can to use the shunt(s) recalculate operation.

Before recalculating the shunts make sure that the shunts are connected to the pipework and the MagiCAD balancing calculation has been done for the systems to which the shunts are connected to.

After recalculating the shunts make sure that the shunts are connected to the pipework in case of changed geometry. Run the MagiCAD balancing again to make sure that the systems can now be properly balanced.

During the recalculate shunt units operation the user can't make any changes to unit details like changing the refrigerant, pump details or accessories.

1. Click the "Recalculate shunt units" button from Siemens MagiCAD plugin ribbon panel or give the "SIE_RECALC" command.

2. When recalculate shunt units operation is started, user is first prompted to select the shunt units to be recalculated. User may select one or multiple shunt units for recalculation.
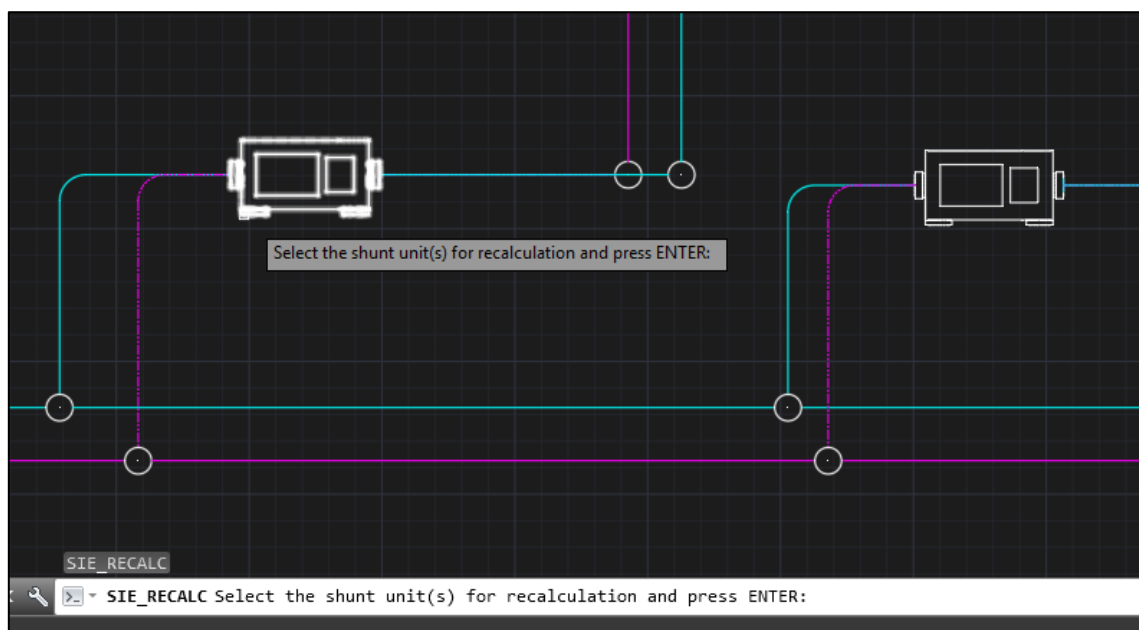

Figure 18 User prompted to select shunt units for recalculation

3. After the selection is done plugin informs user how many units was selected and Siemens web service recalculation program is opened. Plugin sends the shunt(s) data to program and user sees the cursor wait symbol during the recalculation process.
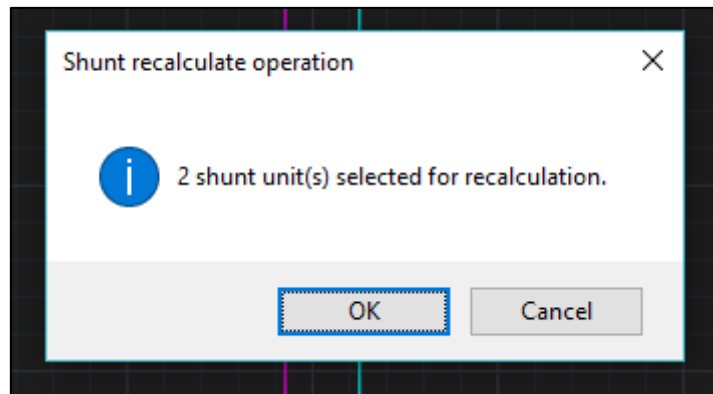

Figure 19 Dialog informing user that how many shunt units selected

4. After the recalculation is done plugin shows to user the results of the recalculation: "Calculation status" and the "Operation type" (highlighted in red). Operation type indicates the type of operation which will be made to the shunt unit if user updates the drawing.

If status is "Success" then the operation will be "Unit data update" or "Unit replacement". In case of "Unit data update" only the data of unit is changed and no geometrical changes are made to the shunt unit. In case of "Unit replacement", shunt unit data and geometry is changed. In this case user should re-connect the shunt unit to the circuits intended.

If status is error then shunt unit update operation is recommended. Operation column guides user to do that. In update operation user can more easily see what has caused the error in calculation.

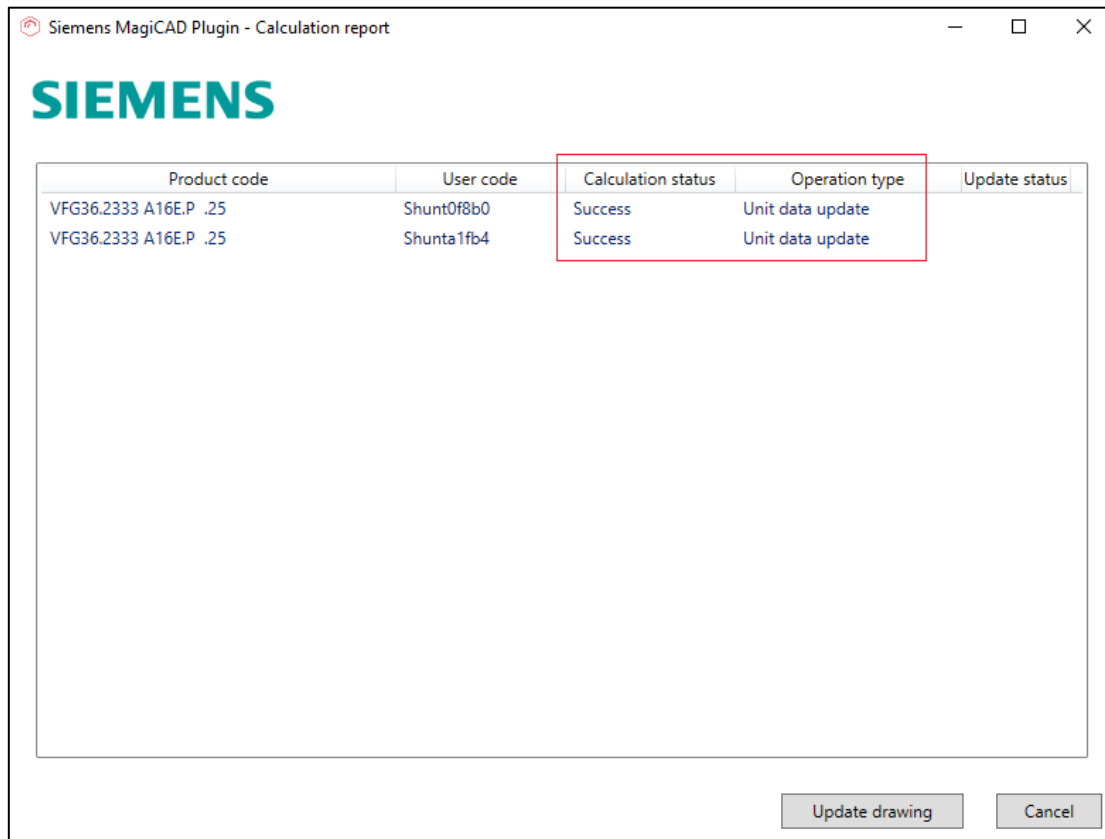User can make a final decision to update the results to drawing or cancel them.

Product code	User code	Calculation status	Operation type	Update status
VFG36.2333 A16E.P .25	Shunt0f8b0	Success	Unit data update	
VFG36.2333 A16E.P .25	Shunta1fb4	Success	Unit data update	

Figure 20 Shunt unit calculation report dialog before units updated to MagiCAD

5. When user selects to update the drawing then the results will be shown in the dialog "Update status" column (highlighted in red). If calculation is failed for certain shunt unit then the drawing will not be updated at all by that shunt. The status column stays empty for that shunt.

In case of "Unit data update" operation type "Updated" status will be shown. In case of unit replacement "Replaced" status will be shown.

In case of failure in updating the drawing the "Failed" status is shown.

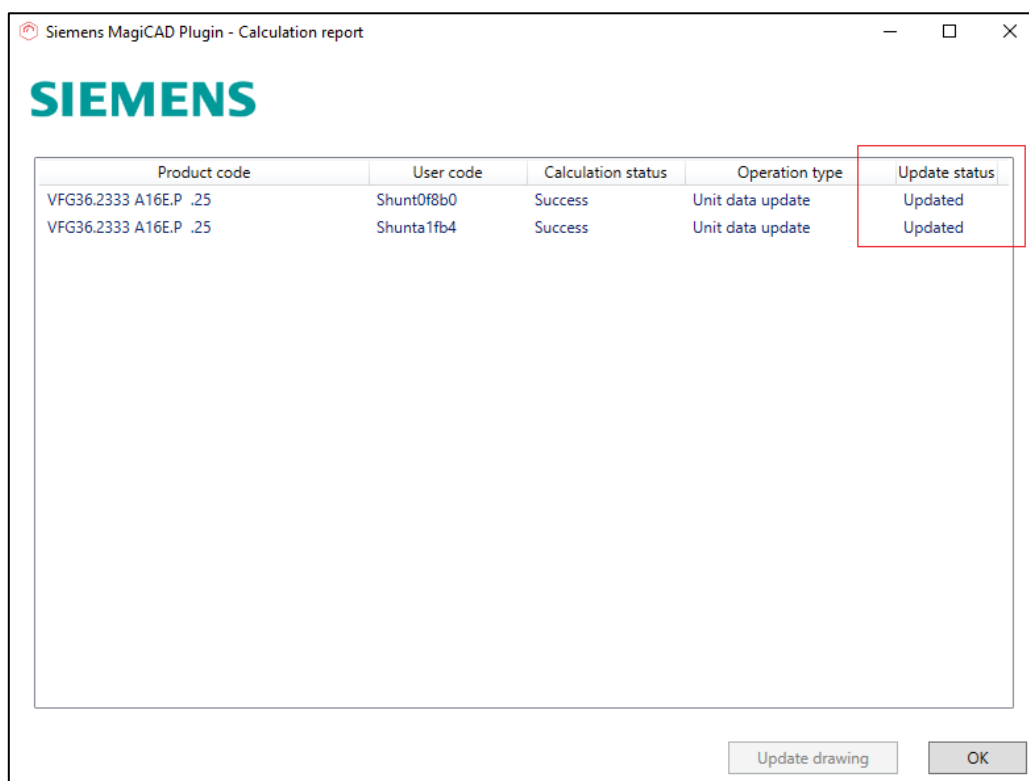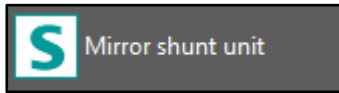Close the dialog from OK button.

Figure 21 Shunt unit calculation report dialog after units updated to MagiCAD

Detailed mirror operation

1. Click the "Mirror shunt unit" button from Siemens MagiCAD plugin ribbon panel or give the "SIE_MIRROR" command.

2. When mirror shunt unit operation is started user is prompted to select the shunt unit which will be mirrored.
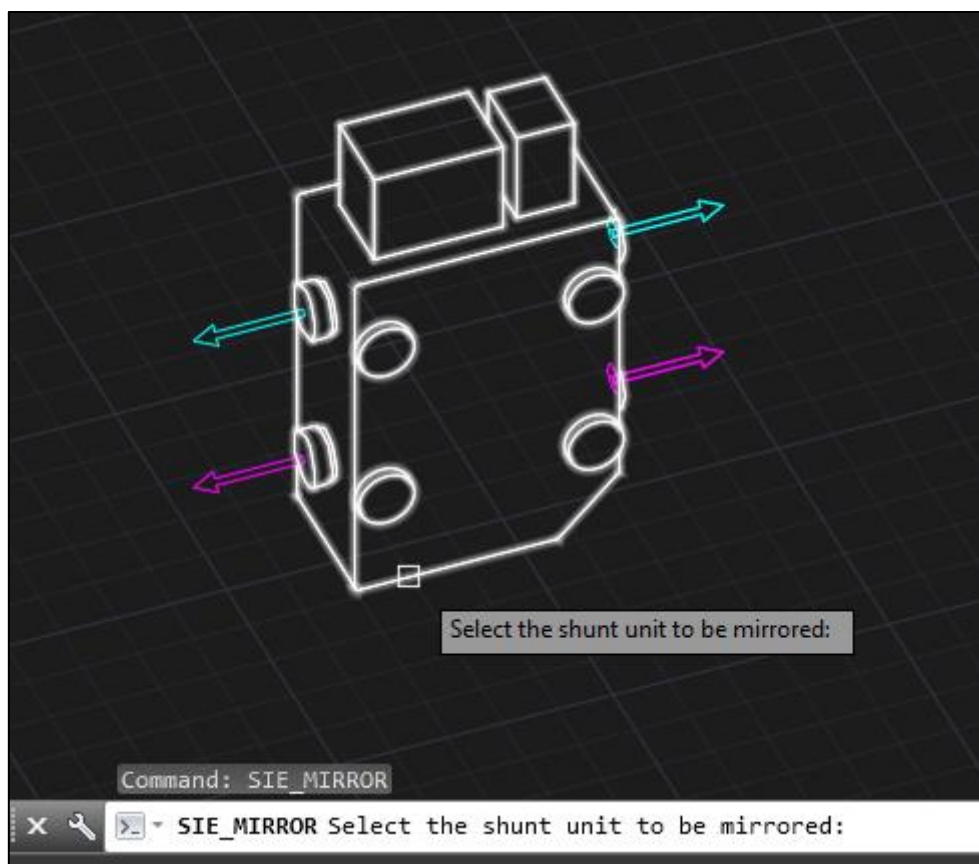

Figure 22 Plugin guides user to select a shunt, which is mirrored

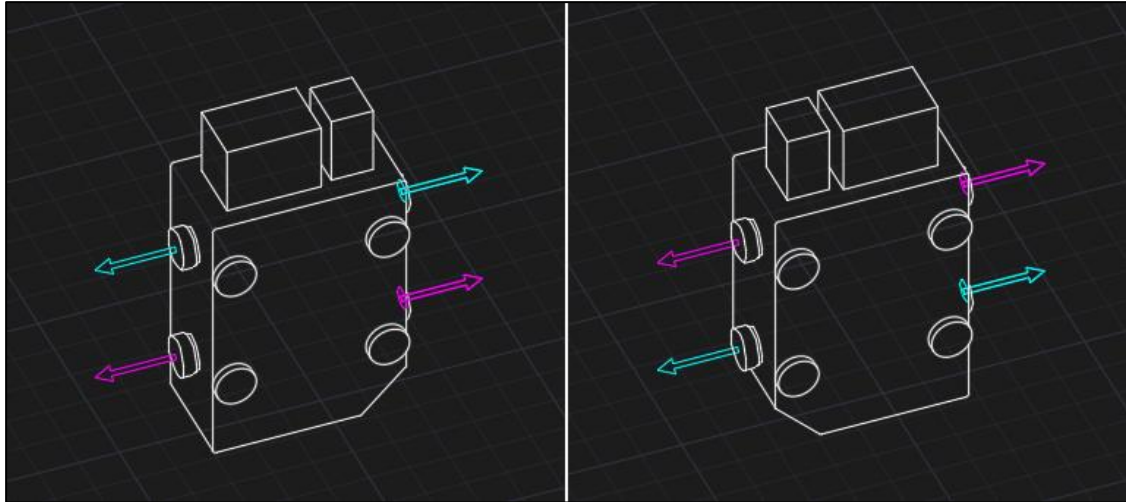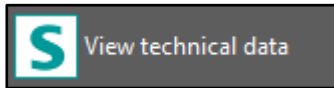3. After the user selection the shunt unit will be mirrored.

Figure 23 Shunt unit before and after mirroring

Detailed view technical data operation

1. Click the "View technical data" button from Siemens MagiCAD plugin ribbon panel or give the "SIE_VIEW" command.

2. When view technical data operation is started user is prompted to select the shunt unit which technical data is wanted to view.
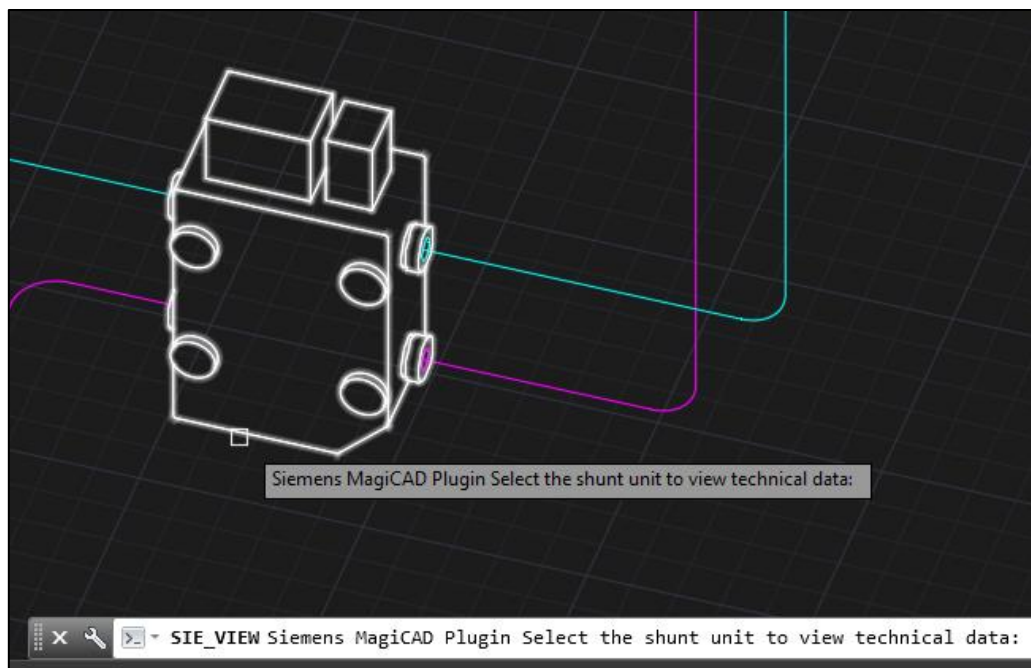

Figure 24 Plugin guides user to select shunt unit which technical data is viewed

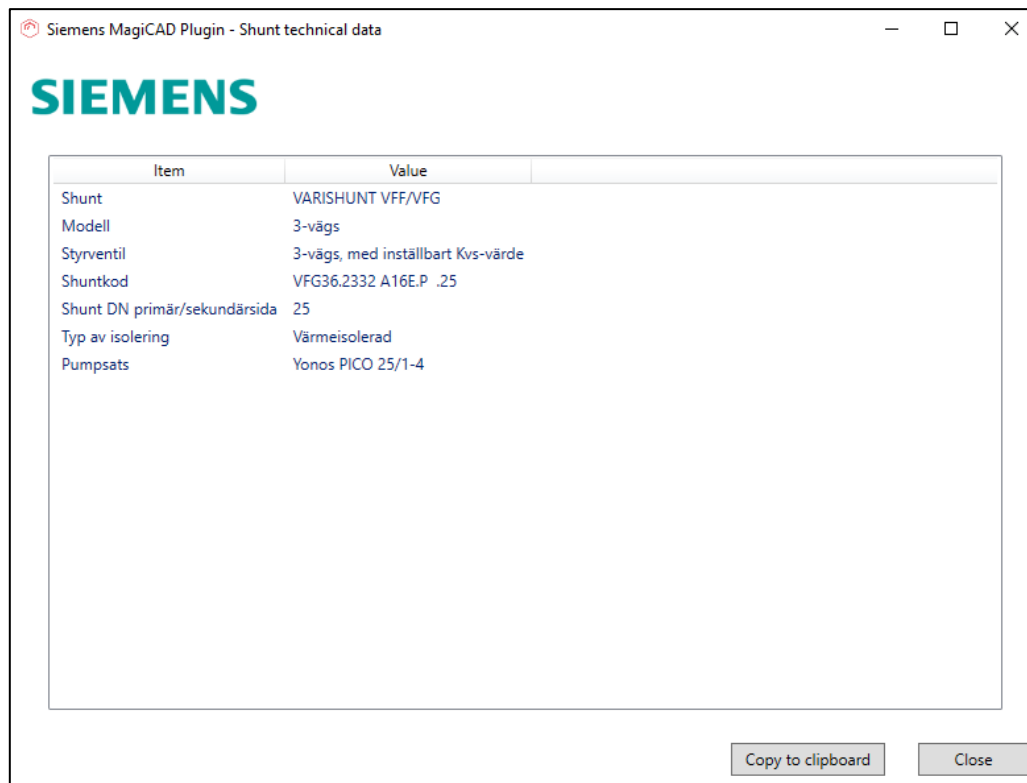3. After the user selection the following dialog will be shown:

Figure 25 Shunt unit technical data dialog

Copy to clipboard functionality copies the content of the listview to the clipboard. This allows shunt unit technical data transfer to user's own documentation.