PREMA MagiCAD Plugin User guide

26/05/2023





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1 Chapter 1. General

1.1 About this document

This document contains instructions on using PREMA MagiCAD plugin.

PREMA MagiCAD plugin allows to insert, copy, update and view technical data of PREMA shunt units with MagiCAD. Plugin supports the following Premablock product lines:

- Premablock
- Premablock green
- Premablock flex

1.2 Installing the software

1.2.1 Required third-party software

PREMA MagiCAD plugin works with the following MagiCAD for AutoCAD versions

- MagiCAD 2023 and AutoCAD 2019-2023
- MagiCAD 2024 and AutoCAD 2021-2024

Before installation

- 1. 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 PREMA MagiCAD Plugin installs on the same AutoCAD platform as MagiCAD.

1.2.2 Installation

1. Download the plugin setup file from MagiCAD portal:

https://portal.magicad.com/download/ProductSearch?searchStr=Prema&categoryId=3

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



1.3 Starting the program

Before you start using *PREMA MagiCAD plugin*, (re)-start MagiCAD and open or create a Ventilation and piping project.

The plugin is automatically loaded and is ready to be used once AutoCAD is started next time after installing the plugin. If for some reason the plugin is not loaded in AutoCAD CUI file needs to be loaded manually.

Run **CUILOAD** in AutoCAD, and browse the customization file from following directory:

Directory for cui/cuix file is by default for

XP:	C:\Documents and Settings\All Users\Application Data\Prema MagiCAD
	plugin
Win7:	C:\Users\All Users\Prema MagiCAD plugin or
	C:\ProgramData\Prema MagiCAD plugin
Win8 / Win8.1 / Win10:	C:\ProgramData\Prema MagiCAD plugin

The CUILOAD steps are required only if customizations in AutoCAD are not loaded automatically.

A Load/Unload Customizations		×
Loaded Customization Groups: FEATUREDAPPS MAGICAD MAGICIRCUITDESIGNER MAGIPLUGINMANAGER MAGISYSTEMDESIGNER MODELDOC PREMAMAGI	<u>U</u> nload	
<u>F</u> ile Name: mData\Prema MagiCAD plugin\P <mark>\</mark> emaMagi.cuix	Load Bro <u>w</u> se	
	Close	<u>H</u> elp











2 Chapter 2. Functions

2.1 PREMA MagiCAD Plugin UI

Plugin contains following functions:



Insert shunt unit

• Starts the PREMA dimensioning program and inserts new shunt unit to MagiCAD.



Copy Shunt Unit

• Starts PREMA copy shunt unit -operation.



Update shunt unit(s)

• Starts PREMA update shunt unit(s) -operation.



Technical data

• Starts Technical data dialog for selected shunt unit.



• Opens PREMA plugin's user guide document.



2.1.1 Insert Shunt Unit



Follow these steps for Inserting PREMA shunt unit to MagiCAD drawing:

- 1. Draw and balance the secondary circuit. This is important because PREMA MagiCAD plugin sends flow and pressure drop data to the dimensioning program.
- 2. Click Insert shunt unit -button from PREMA MagiCAD plugin.
- Once operation is started, user is first prompted to select the MagiCAD system for the primary circuit. The selected system will be set for the shunt unit that is exported to the MagiCAD via plugin.

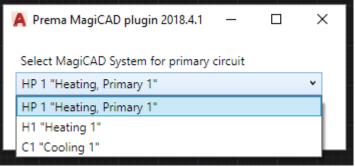
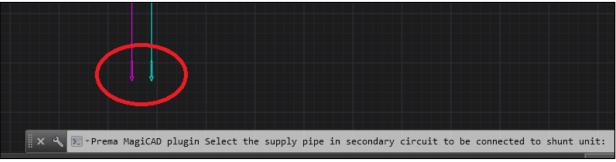


Figure 3 Primary system selection

4. Next user is prompted to select the supply and return pipes of the secondary circuit. It is important to select that part of the pipe that should be connected to the shunt unit. Reason for this is that plugin sends flow and pressure drop information read from the selected pipes to shunt unit calculation.







- A Prema MagiCAD plugin 2018.4.1 _ X **PREMA** ShuntLogik® Θ ß Ver 1.3 1. Start 2. Kopplingsprincip 3. Parametrar 4. Utförande 5. Pumpval 6. Doku entation Ange Välkommen till PREMA ShuntLogik® ShuntLogik® är PREMAs web-baserade programvara för dimensionering och konfigurering av konventionella shuntgrupper för kyla, värme och/eller värmeåtervinning. Verktyget kan även användas för att kontrollera befintliga shuntgruppers tolerans för ändringar av driftsparametrar i anläggningen. Anläggning Projektnummer Kom igång genom att läsa vår <u>introduktionsanvisning</u> eller gå direkt till start på meny-raden på denna sida. I programmet finns förklaringstext i anslutning till samtliga inmatningsfält. Det finns också en generell hjälpfunktion att tillgå. Om du har frågor utöver detta är du välkommen att kontakta vår kundsupport. PREMA AB (Huvudkontor) • Franska vägen 17, 393 56 Kalmar • Tel: +46 480 560 90 • Fax: +46 480 41 13 07 • E-mail: kundservice@prema.se Prema Stockholm • Box 12852, 112 98 Stockholm • Tel: +46 8 704 28 82 • Fax: +46 8 650 05 24 • E-mail: winge@prema.se ema Stockholm • Prema Göteborg • Kronhusgatan 11, 411 05 Göteborg • Tel: +46 31 724 43 85 • E-mail: goteborg@prema.se © Copyright 2017 PREMA AB Insert Cancel
- 5. After secondary circuit pipe selections PREMA dimensioning program is started:

Figure 5 ShuntLogik dimension program in plugin view

If you notice any problems in displaying the PREMA dimensioning program, please confirm that you have Internet Explorer 9 or later installated on your workstation.



6. After user has selected the installation name and project number the Premablock product is selected.



Figure 6 Premablock product selection



7. Calculation parameters are set based on selected MagiCAD system and selected secondary circuit pipes. The user has to input an estimation of the primary circuit minimum driving pressure, designation and position in order to complete the calculations. Marked with red in the picture below.

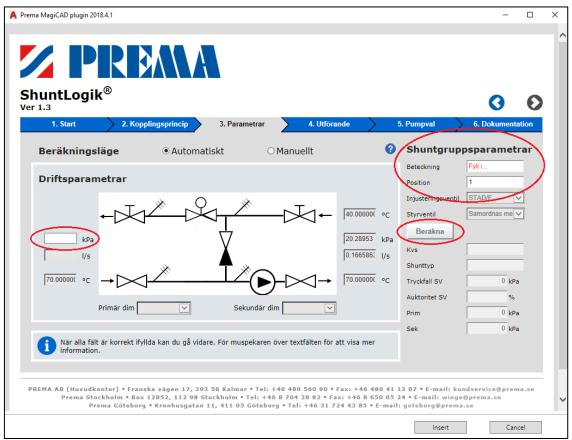


Figure 7 Premablock parameter selection and calculation



8. Selected product is exported to MagiCAD from final page of the dimensioning program. User clicks the insert button (highlighted with red) to insert the selected shunt unit to MagiCAD. Please note that insert operation is not functional before the last page of the dimensioning program is reached.

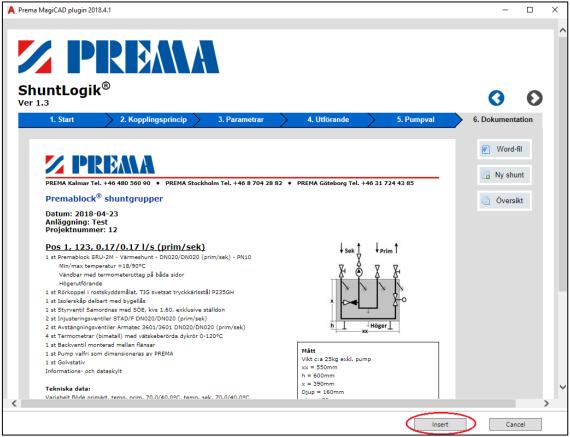


Figure 8 Premablock final step and insert to MagiCAD operation

Once product is inserted in to MagiCAD it should be connected to primary and secondary circuits.





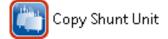
Figure 9 Shunt unit inserted to MagiCAD and connected to primary and secondary circuits

	Va			. 4			
Property				1 6	N 1 🕂		
Part type	Shu	-			┟╺┷╸╺┷╸		
System		-supply "Heating, Primary 1"		TI			
Storey	Stor						
Center of part	H =			• •			
Product		"SRU-2-20-20"					
Manufacturer	Pren						
Primary system temperatures		40 °C		Prema	bleck		
Secondary system temperatures		40 °C					
			>				
			View r	mode	Rendered		
roduct data General					hendered		
Primary system			Valv	e configuration			
System	HP 1 Heat	ng, Primary 1	~ Туре	ə:	Control valve and	balancing valve	~
Minimum driving pressure	20.000	kPa	Cont	trol Valve	kv	1.6000000	
Sizing flow	0.1666	l/s			dp	14.051	kPa
Temperature difference:			Bala	incing Valve	kv for min dp	2.5328329	
OdT by difference between pri	imary and secondary	side temperatures T1-T4			min dp	5.607	kPa
◯ dT by system, T1-T2					kv for max dp	2.3332996	
It dT by part, T1-T2	30	°C			max dp	6.607	kPa
Secondary system							
System	H1 Heat	ng 1	~				

Figure 10 Shunt part properties dialog in MagiCAD



2.1.2 Copy Shunt Unit



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

- 1. The feature is initialized by clicking on the "Copy Shunt Unit" button on the PREMA ribbon.
- 2. User is then asked to select a shunt unit to be copied. The selected shunt should be updated beforehand and be connected to pipework.

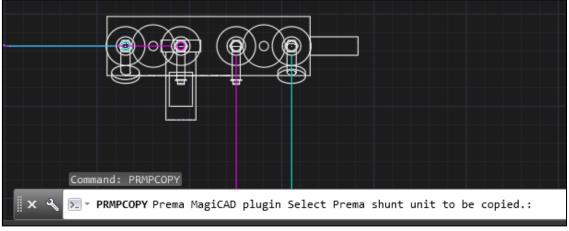


Figure 11 Shunt copy operation

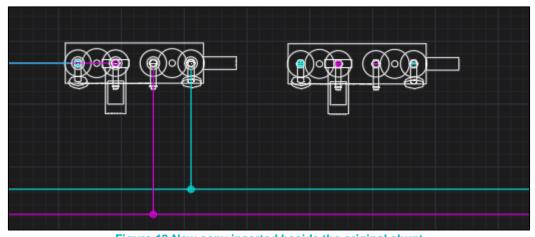
3. After selecting an existing valid shunt unit from the drawing user is prompted with a dialog asking user to select a secondary system for the new shunt unit copy, from a dropdown selection box. User is also asked to write a new user code for the product before continuing. The prefilled values in the dialog are from the original shunt.

🛕 Prema MagiCAD plugin 2018.4.1 - Copy Shunt	Х
Set the values for new shunt copy.	
Secondary System	
H1 "Heating 1"	~
User Code Shunt-copy OK Cancel	

Figure 12 Copy shunt dialog







4. After pressing OK user can paste the newly copied shunt unit into the drawing.

Figure 13 New copy inserted beside the original shunt

- 5. When user has positioned the shunt unit into the drawing, the same dialog as before 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. User will press cancel from the dialog and connect all the inserted shunt copies to the pipework. After the shunt units are connected and the balancing calculations have been completed they should be updated using the plugins update feature.



2.1.3 Update Shunt Unit(s)

Update shunt unit(s)

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

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

When *update shunt unit(s)* –operation is started, user is first prompted to select shunt unit(s) to be updated. User can select a single shunt unit or multiple shunt units for the update.

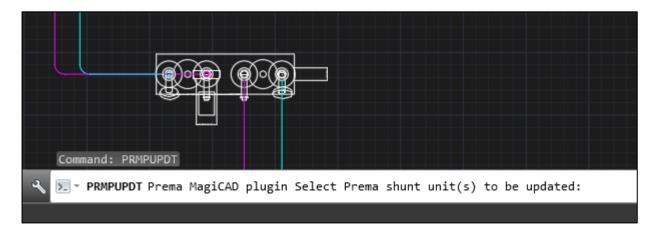


Figure 14 Shunt update operation

After the selection is done, depending on how many shunts where selected the dimensioning program is opened in either single shunt unit update mode or in batch update mode.

NOTICE: The batch update shouldn't be done for shunts which have changes on the secondary circuit's driving pressure, temperature or flow. Also shunts with changes on primary system temperatures should be excluded from the batch update. In these cases the shunts should be updated separately because there might be changes to the shunts' components, configuration and price which user should be aware of.



Single Shunt Update

1. If only a single shunt unit is selected for the update then the single shunt update mode is chosen. The single shunt update will bring user to the 3 step of the application where all the previous values are prefilled to the fields.

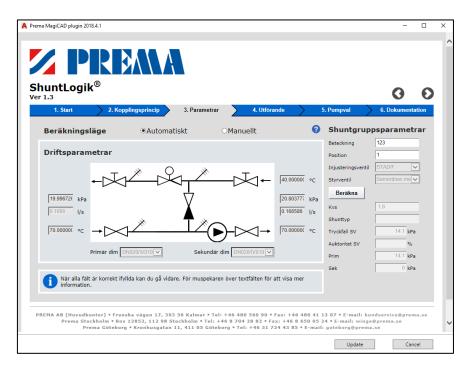


Figure 15 Shunt update operation in parameters

2. Pre-selections on configuration page is made based on the original shunt unit configuration:





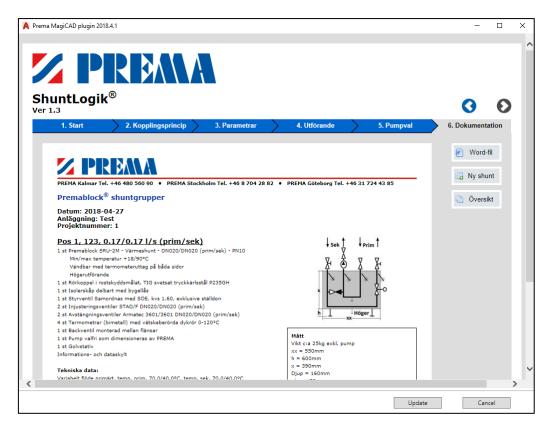
> 2. Kopplingsprincip	3. Parametrar	4. Utförande	5. Pumpval	6. Dokumen	tation
nde		^	↓ sek	, ↓ _{Prim} †	
			Z é		
ativ			× 🖂		
			<u>b_1</u>	Höger	
				xkl. pump	
vddsmålat, TIG svetsat tryckkär etsat rostfritt stål EN 1.4436	lsstål P235GH		h = 600mm x = 390mm		
			c/c = 150mm		
			matt extr. pum	p och ventiler	
	ide RL tiv ddsmålat, TIG svetsat tryckkar	ide iRL ttv ddsmålat, TIG svetsat tryckkarlsstål P235GH	de RL tiv ddsmålat, TIG svetsat tryckkarisstål P235GH	de IRL tiv tiv ddsmålat, TIG svetsat tryckkärlsstål P235GH tstat rostfritt stål EN 1.4436 Vis 1.4436	de IRL tiv ddsmålat, TIG svetsat tryckkarlsstål P235GH etsat rostfritt stål EN 1.4435

Figure 16 Shunt update operation accomplishment





3. Update to MagiCAD is done from final page of the dimensioning program like in the insert operation:





Batch Update

 If multiple shunt units where selected for the update then the batch update mode is chosen. The batch update will bring the user to the overview page. The user can either recalculate all the selected shunts one by one or all at once by clicking on the recalculate button. If user wishes to recalculate them one by one user can click on the step 3 buttons and go through the steps 3– 6 for each of the selected shunts.

						<u>_</u>	0 0
	1. Start	> 2. Koppling	gsprincip	3. Parametrar	4. Utförande	5. Pumpval	6. Dokumentation
	n: 2018-04-27 gning: Test						
rojel	dnummer: 1						
	Position	SHG	Modell	Shunttyp		Gå till	ງ Startsida
	Shuntar kvar					\frown	
	1	123	SRU-2	Värmeshunt	📑 Ta bort	Steg 3	Ny shunt
	2	123b	SRU-2	Värmeshunt	📑 Ta bort	Steg 3	Beräkna om
						\sim	Bordania oni
							Word-fil
							w word-in

2. If user decides to recalculate the shunt units one by one, after each recalculation user must return to the overview page by clicking on the overview button.



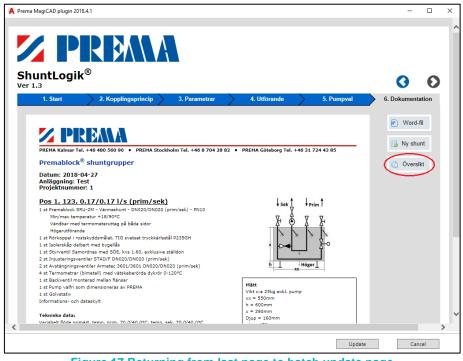


Figure 17 Returning from last page to batch update page

3. After all the shunt units are recalculated, the update button can be clicked in order t return updated products into MagiCAD:



.3 1. Start	2. Корр	lingsprincip	3. Parametrar	4. Utförande	5. Pumpva	I 6. Dokum
<i>um: 2018-04-2</i> äggning: Test jektnummer: 1						
Position	SHG	Modell	Shunttyp		Gå till	Startsid
1	123	SRU-2	Värmeshunt	📑 Ta bort	Steg 3 Spec.	
2	123b	SRU-2	Värmeshunt	📑 Ta bort	Steg 3 Spec.	🔂 Ny shu

Figure 18 Batch update finished



4. If none of the shunt units have changed or alterated geometry then the plugin will inform the user of the successful update with the following message:

	🍘 Prema MagiCAD plugin 20 🗙	
	Update successful!	
	01	
	ОК	
Fig	gure 19 Plugin update status dial	og

5. If any of the shunt units have changes in their geometry the following window is shown. Only the shunts with changes in the geometry are listed in this window. This window prompts user to reconnect all the listed shunt units back to the pipework.

🖣 Prema Ma	giCAD plugin 2018.4.1 - Re	placed Shunts		_		×
Following shu	unts have been replaced. Pl	ease connect ne	ew shunt units to pipework.			
Previous Use	er Code Previous Product C	ode New User (Code New Product Code			
123	SRU-2-20-20	123	SRH-2-20-20			
					OK	

Figure 20 Plugin geometry change update status window



2.1.4 Technical Data



When technical data operation is started, user is prompted to select the shunt unit which technical data is wanted to view. After that following dialog is displayed:

	PREMA		
Count	Description	\sim	Copy to clipboard
1	Premablock SRU-2M - Värmeshunt - DN020.6/DN020.6 (prim/sek) - PN10		
1	Rörkoppel i rostskyddsmålat, TIG svetsat tryckkärlsstål P235GH		Close
1	lsolerskåp delbart med bygellås		
1	Styrventil Samordnas med SÖE, kvs 1, exklusive ställdon		
1	STAD/F DN020		
1	STAD/F DN020		
1	Armatec 3601 DN020.6		
1	Armatec 3601 DN020.6		
4	Termometrar (bimetall) med vätskeberörda dykrör 0-120°C		
1	Backventil monterad mellan flänsar		
1	Pump valfri som dimensioneras av PREMA		
1	Golvstativ		
	Technical Data		
	Variabelt flöde primärt, temp. prim. 70.000000/40.000000°C, sek. 70.000000/40.000000°C		
	Tryckfall primärt i shuntgruppen = 37.4 kPa varav i SV 36 kPa		
	Tryckfall sekundärt i shuntgruppen = 2 kPa		

Figure 21 Shunt technical data dialog

Copy to cliboard functionality copies the content of the listview to clipboard allowing user the copy and paste shunt units bill of materials to users own documentation.



2.1.5 Help



This feature is initialized by clicking on the Help button at PREMA ribbon. The plugin will open the *PREMA MagiCAD plugin - Users guide.pdf* located at *C:\ProgramData\Prema MagiCAD plugin*. User needs to have a PDF compatible reader installed.



