

SWEP SSP™

Introduction package - 2026



Content

1. OVERVIEW
2. GENERAL HOW TO CALCULATE
3. SPECIFIC CALCULATION WINDOWS
4. TOOLS
5. SETTINGS

How to access SWEP SSP™ and register

1. The start page can be reached at:
<https://ssp.swepgroup.com/login>
2. If you have an account you can login by using e-mail and password. Otherwise you need to register by pressing the “register” button.
3. Fill in the necessary information and at the bottom of the registration, read and approve the terms of conditions.
4. It is important that you state an authentic e-mail address that you have access to.
5. You will receive a link sent in an e-mail in which you need to activate your account.
6. If you register with same e-mail that has been used for SSP G8 the license information will be retrieved.
7. Now you should be able to login to SWEP SSP™
8. With Demo license you have very limited functionality. To upgrade your license follow below steps.
9. Verify your e-mail address within 7 days by clicking on the received link to your e-mail account.
10. Your SWEP representative will handle your inquire and grant you the applicable license.
11. If you have used SSP G8 with the same e-mail as you registered with, you will retain the former license level.

Register

Work email

Password

Re-type password

First name

Second name

Company

Country

Phone

[License terms acceptance](#)

Register

[Sign in](#) [Forgotten password](#)

Register or Sign in

Email

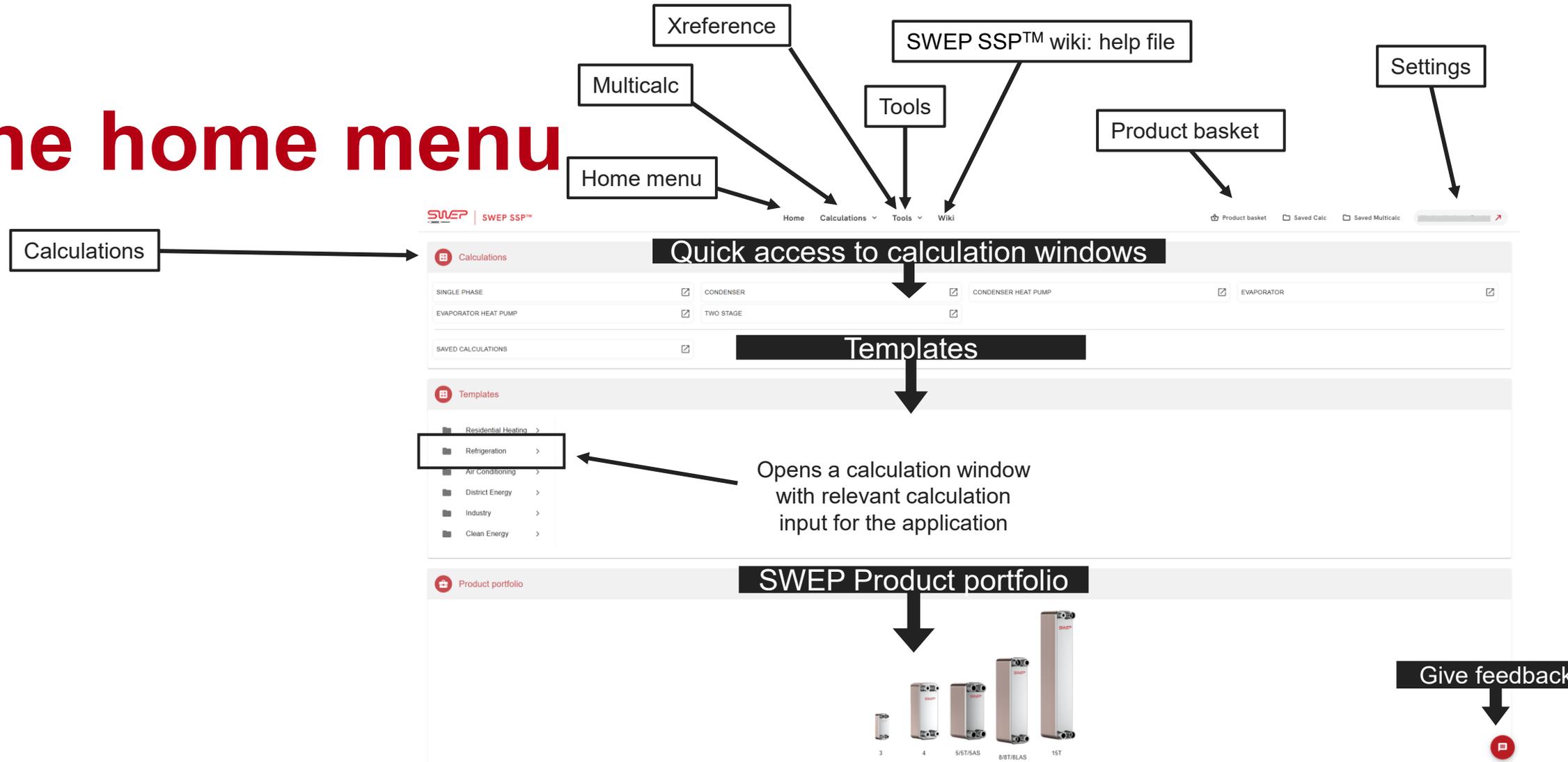
Password

Login

[Forgotten password](#) [Register](#)

SWEP SSP™

The home menu



Installing SWEP SSP™ as a desktop app

The image shows a web browser window displaying the SWEP SSP website. The address bar shows the URL `ssp.swepgroup.com`. A black box highlights the download icon in the browser's address bar. The website content includes a navigation menu with 'Home', 'Calculations', 'Tools', and 'Wiki'. Below the navigation, there are sections for 'Calculations' (with checkboxes for SINGLE PHASE, CONDENSER, CONDENSER HEAT PUMP, EVAPORATOR HEAT PUMP, TWO STAGE, and SAVED CALCULATIONS), 'Templates' (with a list of categories: Residential Heating, Refrigeration, Air Conditioning, District Energy, Industry, and Clean Energy), and 'Product portfolio' (with images of various SWEP SSP units labeled 3, 4, 5/5T/5AS, 8/8T/8AS, and 15T, and a legend for E-SERIES, S-SERIES, M-SERIES, L-SERIES, XL-SERIES, and XXL-SERIES). At the bottom of the browser window, a Windows taskbar is visible with the Start button, a search bar, and the SWEP logo.



Product portfolio

- The product portfolio by sizes is presented per range.
- Clicking on the heat exchangers leads you to the product range page on swepgroup.com



How to reach calculation

- After deciding which kind of calculation window that should be used the user will be presented with a window showing input parameters for calculating the performance for chosen heat exchangers. The input data vary depending on what window has been selected.

The screenshot shows the SWEP SSP™ website navigation menu. The top navigation bar includes 'Home', 'Calculations', 'Tools', and 'Wiki'. Below this, there are links for 'Product basket', 'Saved Calc', and 'Saved Multicalc'. The main navigation area is divided into 'Single phase' and 'Multicalc'. Under 'Single phase', there are options for 'Condenser', 'Evaporator', and 'Others'. Under 'Multicalc', there is a red arrow icon. A large black arrow points from the 'Multicalc' section towards the right, indicating the next step in the process.

The screenshot shows the SWEP calculation interface. The top navigation bar includes 'DESIGN', 'PERFORMANCE', and 'RATING'. The 'DESIGN' tab is active. The interface is divided into several sections:

- Fluid Side 1**: Water
- Fluid Side 2**: Water
- Flow type**: COUNTER CURRENT (selected), CO-CURRENT
- Exchangers**: B-Types

	Side 1	Side 2
Heat load	1500 kW	
Inlet temperature	80.0 °C	20.0 °C
Outlet temperature	40.0 °C	50.0 °C
Flow	kg/s	kg/s
Max pressure drop	20.0 kPa	20.0 kPa

Below the table, there are input fields for:

- Number of passes
- Number of plates
- Number of plates stack 1
- Number of plates stack 2
- Oversurfacing (%)
- Allow port switch (checked)
- Auto performance (unchecked)
- Input units: METRIC (selected), US

The 'Filters' section is highlighted with a red box and a callout arrow pointing to the 'Open/close filter' text. The filters include:

- Factories: All factories
- Materials: All materials
- Pressures: All pressures
- Warehouses: (empty)

A large red 'CALCULATE' button is at the bottom of the interface. The SWEP logo is in the bottom right corner.



Content

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Calculation window

Input field

Result field

Open in multicalc

Clone calculation

- Keyboard shortcut to calculate: alt + C or

DESIGN PERFORMANCE RATING

Fluid Side 1: R32

Fluid Side 2: Water

Flow type: COUNTER CURRENT

Exchangers: F-Types, Pi-Types, V-Types, P-Types, F-Types

	Side 1	Side 2
Heat load	25.00 kW	
Subcooled liq. temp.	43.0 °C	
Inlet vapor quality		
Outlet vapor quality	1	
Inlet temperature		12.0 °C
Evaporation temp.	4.5 °C	
Superheating	5.0 K	
Outlet temperature		7.0 °C
Flow	kg/s	kg/s
Max pressure drop	50.0 kPa	50.0 kPa
Number of plates		
Diversurfacing	%	
Auto performance		
Input units	METRIC	US
Filters		

CALCULATE

Calculation - Evaporator

PRODUCT SELECTOR CONNECTION IMPACT TECHNICAL PRINTOUT

NoUnits	BPHE	A [m ²]	DP1 [kPa]	DP2 [kPa]	OS [%]	Weight [kg]	In Stock	PF rating
1	FI22ASMx58	1.76	13.0	41.8	0	5.68		100
1	F85ASx32	1.80	23.4	50.0	5	6.04 - 7.46		67
1	F85x36	2.04	13.7	48.8	13	6.64 - 7.46		63
1	P85ASx36	2.04	19.9	40.5	0	7.46		63
1	V26x66	2.62	24.3	10.5	0	8.79 - 9.06		60
1	FI22ASHx128	3.97	6.47	14.9	0	11.4		55
1	V26Fx80	3.20	22.1	8.36	0	10.3		62

Heat exchanger: FI22ASMx58

Pressure drop in distribution device is 4.2 - 5.7 bar

TECHNICAL DATA DIMENSIONAL INFO TOTALS CARBON FOOTPRINT

DUTY REQUIREMENTS	UNIT	SIDE 1	SIDE 2
Fluid		R32	Water
Flow Type		Counter-Current	
Circuit		Inner	Outer
Channel		Narrow	Wide
Heat load	kW	25.00	
Subcooled liq. temp.	°C	43.0	
Inlet vapor quality		0.252	
Outlet vapor quality		1.000	
Inlet temperature	°C	4.9	12.0
Evaporation temperature (dew)	°C	4.5	
Superheating	K	5.0	
Outlet temperature	°C	9.5	7.0
Flow rate	kg/s	0.1065	1.192
- Inlet vapor	kg/s	0.02674	
Fluid vaporized	kg/s	0.07955	
Pressure drop (Design PD)	kPa	13.0 (50.0)	41.8 (50.0)

PLATE HEAT EXCHANGER

	UNIT	SIDE 1	SIDE 2
Total heat transfer area	m ²	1.76	

Calculation window

Input field

Open in new tab

Save function

The screenshot shows a software interface for calculating heat exchanger performance. It features a top navigation bar with 'DESIGN', 'PERFORMANCE', and 'RATING' tabs. Below this, there are several input fields for fluid types (R32, Water), flow type (COUNTER CURRENT), and exchanger types. A central table displays parameters for Side 1 and Side 2, including heat load, temperatures, and flow rates. At the bottom, there is a 'CALCULATE' button.

	Side 1	Side 2
Heat load	25.00 kW	
Subcooled liq. temp.	43.0 °C	
Inlet vapor quality		
Outlet vapor quality	1	
Inlet temperature		12.0 °C
Evaporation temp.	4.5 °C	
Superheating	5.0 K	
Outlet temperature		7.0 °C
Flow	kg/s	kg/s
Max pressure drop	50.0 kPa	50.0 kPa
Number of plates		
Oversurfacing	%	
Auto performance		
Input units	METRIC	US

Calculation inputs actions

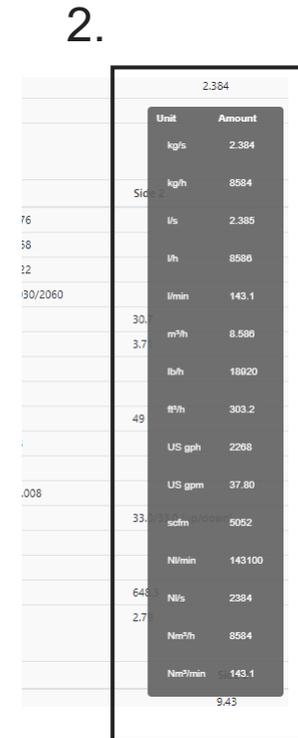
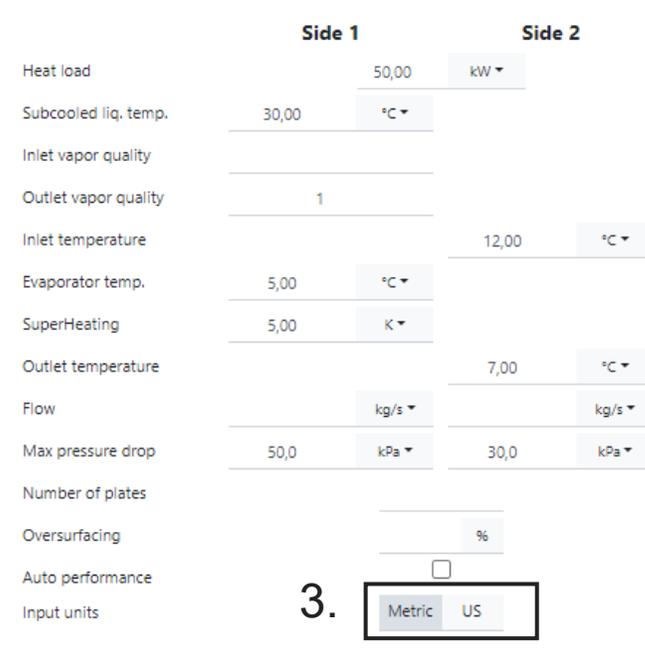
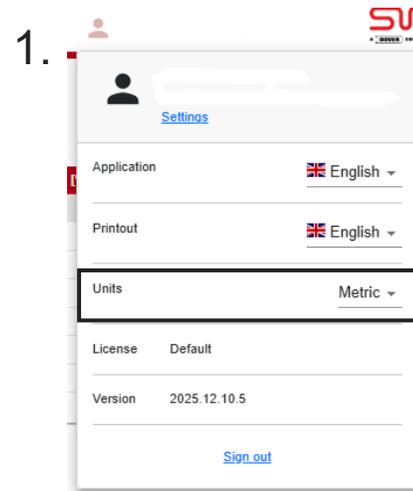
- Save to my calculations
- Save calculation parameters as default
- Reset calculation parameters to default
- Reset all calculation parameters to default

Filters actions

- Save for this calculation type
- Reset for this calculation type
- Save for all calculation types
- Reset for all calculation types

Units

- Overall units are changed in “Settings”
 - This affects the result values and values used in printouts
- Input units can be specifically switched using the button in input window.
 - This does not affect the result values. They will still be according to “Settings”.
- To see a specific unit conversion, it is possible to hover the numbers in results and all possible units will be shown.



Enter input values

Click on the value to place cursor on specific place.

	Side 1	Side 2
Heat load	1500 kW	
Inlet temperature	80,00 °C	20,00 °C
Outlet temperature	40,00 °C	50,00 °C
Flow	kg/s	kg/s
Max pressure drop	20,0 kPa	20,0 kPa

Double click outside the value to mark entire input field.

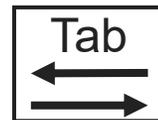
	Side 1	Side 2
Heat load	1500 kW	
Inlet temperature	80,00 °C	20,00 °C
Outlet temperature	40,00 °C	50,00 °C
Flow	kg/s	kg/s
Max pressure drop	20,0 kPa	20,0 kPa

Enter input values

Use toggle buttons or arrow keys to increase or decrease value.

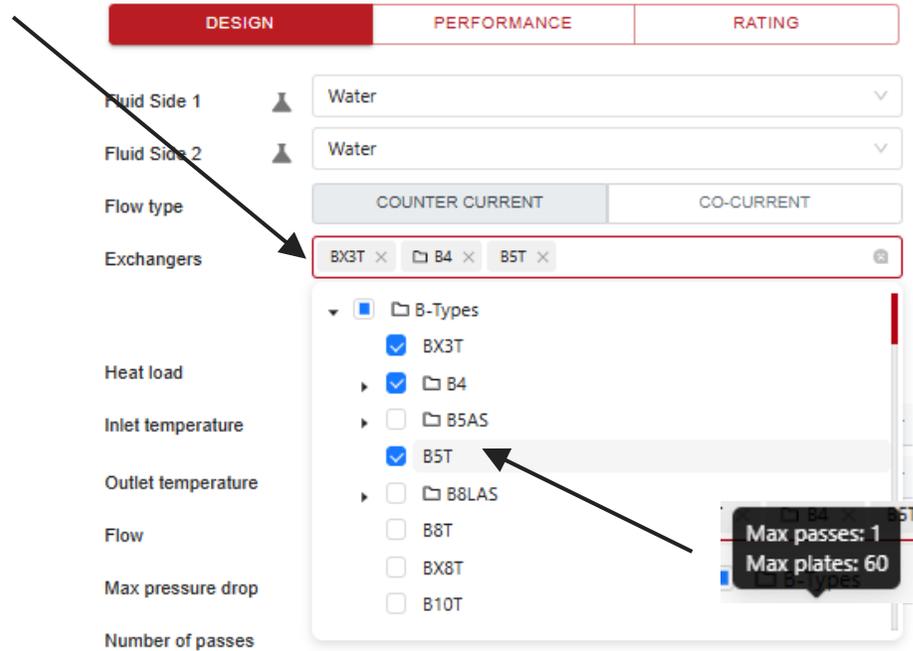
	Side 1		Side 2	
Heat load	1500			kW ▼
Inlet temperature	80,00	▲ ▼	20,00	°C ▼
Outlet temperature	40,00	▲	50,00	°C ▼
Flow				kg/s ▼
Max pressure drop	20,0		20,0	kPa ▼

Switch between selected fields by using Tab-button

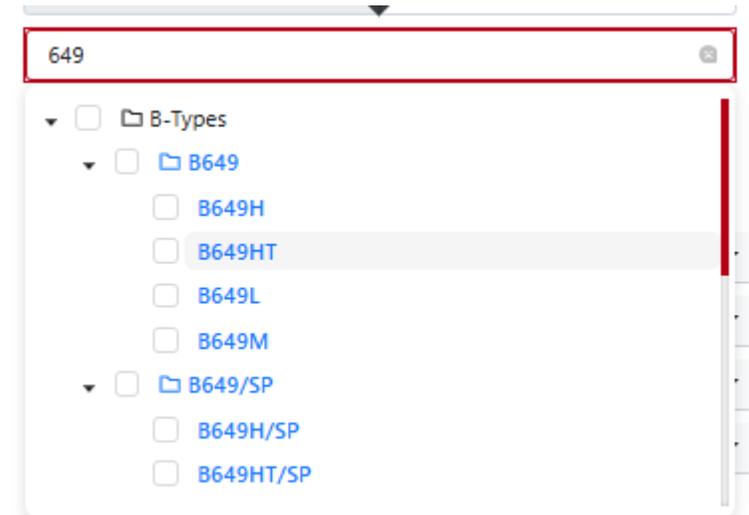


Choosing Heat Exchangers

Choose exchangers from the drop down list by simply pressing the Exchangers field



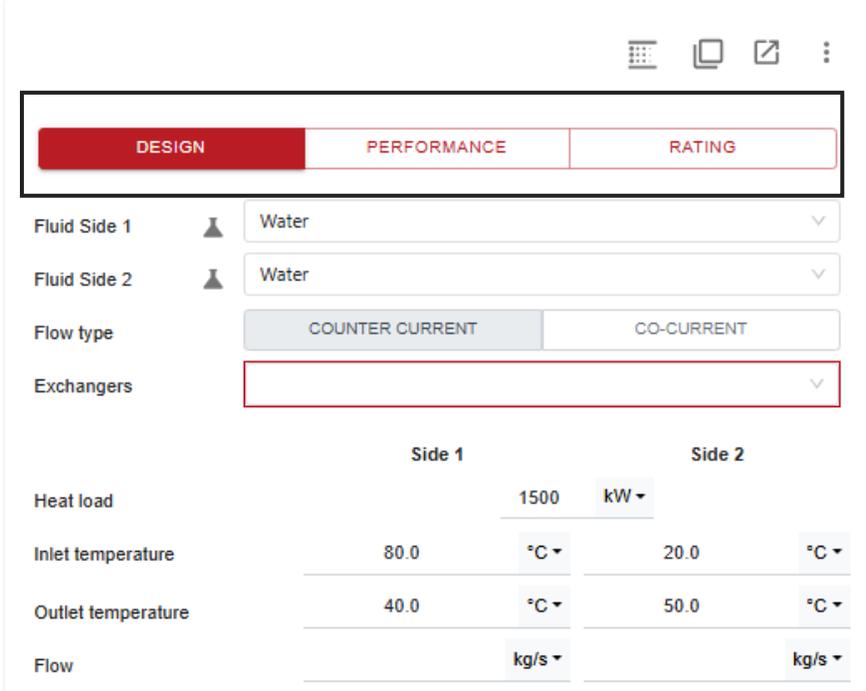
By entering letters the selection can be filtered and the exchanger on top is selected when pressing Enter-button



By hovering above the exchanger a pop up showing information about the unit will be displayed

The 3 calculation modes

- Design
 - Gives best solution based on parameters given
 - Max pressure drop considered (OS% possible)
 - Several BPHE evaluated simultaneously
- Performance
 - Calculates specific unit under given inlet conditions.
 - Number of passes and number of plates must be specified
 - Result show last temperature to fulfil the heat balance
 - In two-phase it calculates the resulting dew temperature
- Rating
 - Calculates OS% of specific unit for given design case
 - Number of passes and number of plates must be specified



DESIGN PERFORMANCE RATING

Fluid Side 1 Water

Fluid Side 2 Water

Flow type COUNTER CURRENT CO-CURRENT

Exchangers

	Side 1		Side 2
Heat load	1500	kW	
Inlet temperature	80.0	°C	20.0 °C
Outlet temperature	40.0	°C	50.0 °C
Flow		kg/s	kg/s

DESIGN PERFORMANCE RATING

Fluid Side 1 Water

Fluid Side 2 Water

Flow type COUNTER CURRENT CO-CURRENT

Exchangers B-Types

Side 1 Side 2

Heat load 100 kW

Inlet temperature 20.0 °C

Outlet temperature 50.0 °C

Flow 1 kg/s

Max pressure drop 20.0 kPa

Number of passes

Number of plates

Number of plates stack 1

Number of plates stack 2

Oversurfacing %

NoUnits	BPHE	A [m²]	DP1 [kPa]	DP2 [kPa]	OS [%]	Weight [kg]	In Stock	PF rating
1	F1190x90	9.06	12.4	39.9	0	32.5		100
1	PI190x104	10.5	9.95	32.4	0	36.5		92
1	F250ASx62	7.79	16.0	49.7	3	30.1		90
1	P250ASx84	10.6	10.8	29.1	0	37.8		78
1	V250ASx126	16.1	6.15	14.7	0	52.4 - 54.7		62
1	F120Tx170	22.2	7.47	21.3	0	80.4 - 84.5		44
1	F200Tx196	25.0	2.78	9.05	0	91.8 - 103		39

Design mode

- Fill out required data for the temperature case.
- You can combine temperatures, mass flows and heat load as long as the case specifies a unique heat balance.
- If you over specify the case, the box will turn red and can not be calculated.
- If you hold the pointer at the red box you will be given an explanation on why the system is over determined.
- Press Calculate or alt+c to receive results.
- Based on the input, SSP will propose the most cost-efficient solution available
- To help the user evaluate the selection SSP uses “Warnings” and “Notifications” markings to remind the user that there might be things to consider. To receive more information about the warning the arrow can be clicked.

Heat exchanger: V250ASx126

Pressure drop in distribution device is 0.6 - 0.6 bar .

The selected heat exchanger has a low pressure drop in the distribution device. There is a risk that the predicted performance will not be reached.
There is a risk that the predicted performance will not be reached due to low pressure drop in the distribution device.

Evaporator performance is dependent of the distribution of refrigerant between the different channels. This can be improved by maintaining high enough pressure drop in the distribution device. SWEP recommend a pressure drop of at least 1 bar in the distribution device. Try modifying the number of plates, the thermal or hydraulic requirements or selecting another BPHE. If no possible solution is found please contact your SWEP sales representative.

Performance mode

- Specify one (1) BPHE+NoP that you want to evaluate.
- SSP will calculate the performance based on the thermal case and BPHE.
- Max pressure drop will not be considered.
- In two-phase calculation windows SSP will retrieve the condensing or evaporation temperature.
- In single phase it is possible to calculate any of the inlet/outlet temperatures as long as the rest of the heat balance is specified.

The screenshot shows the 'PERFORMANCE' tab of the software interface. On the left, design parameters are set: Fluid Side 1 is R290 (Propane), Fluid Side 2 is Water, Flow type is COUNTER CURRENT, and Exchangers is B85AS. The performance table shows a Heat load of 20.00 kW, Inlet temperature of 70.0 °C, and Outlet temperature of 35.0 °C. The Number of plates is 100. On the right, the 'Heat exchanger: B85ASx100' technical data table is displayed, with a dashed box highlighting the Condensation temperature (dew) of 34.7 °C and the Inlet temperature of 70.0 °C.

NoUnits	BPHE	A [m ²]	DP1 [kPa]	DP2 [kPa]	OS [%]	Weight [kg]	In Stock	PF rating
1	B85ASx100	5.88	0.193	4.37	14	14.9 - 15.8		100

DUTY REQUIREMENTS		UNIT	SIDE 1	SIDE 2
Fluid			R290 (Propane)	Water
Flow Type			Counter-Current	
Circuit			Inner	Outer
Channel			Narrow	Wide
Heat load	kW		20.00	
Inlet vapor quality			1.000	
Outlet vapor quality			0.000	
Inlet temperature	°C		70.0	30.0
Condensation temperature (dew)	°C		34.7	
Subcooling	K		3.0	
Actual Subcooling	K		3.0	
Outlet temperature	°C		31.7	35.0
Flow rate	kg/s		0.04989	0.9573
Fluid condensed	kg/s		0.04989	

The screenshot shows the 'PERFORMANCE' tab of the software interface. On the left, design parameters are set: Fluid Side 1 is Water, Fluid Side 2 is Water, Flow type is COUNTER CURRENT, and Exchangers is B85. The performance table shows a Heat load of 80.00 kW, Inlet temperature of 80.0 °C, and Outlet temperature of 50.0 °C. The Number of plates is 26. On the right, the 'Heat exchanger: B85x26' technical data table is displayed, with a dashed box highlighting the Condensation temperature (dew) of 21.8 °C and the Inlet temperature of 80.0 °C.

NoUnits	BPHE	A [m ²]	DP1 [kPa]	DP2 [kPa]	OS [%]	Weight [kg]	In Stock	PF rating
1	B85x26	1.44	8.37	25.2	0	4.82 - 5.64		100

DUTY REQUIREMENTS		UNIT	SIDE 1	SIDE 2
Fluid			Water	Water
Flow Type			Counter-Current	
Circuit			Inner	Outer
Heat load	kW		80.00	
Inlet temperature	°C		80.0	20.0
Outlet temperature	°C		21.8	50.0
Flow rate	kg/s		0.3288	0.6382
Pressure drop (Design PD)	kPa		8.37 (20.0)	25.2 (20.0)
Thermal length			5.80	2.99

PLATE HEAT EXCHANGER		UNIT	SIDE 1	SIDE 2
Total heat transfer area		m ²	1.44	
Heat flux		kW/m ²	55.6	

Rating mode

PRODUCT SELECTOR
CONNECTION IMPACT
TECHNICAL PRINTOUT

NoUnits	BPHE	A [m ²]	DP1 [kPa]	DP2 [kPa]	OS [%]	Weight [kg]	In Stock	PF rating
1	B85ASx80	4.68	1.88	27.6	6	12.2 - 13.0		100

Heat exchanger: B85ASx80

DESIGN | PERFORMANCE | **RATING**

Fluid Side 1: R290 (Propane)

Fluid Side 2: Water

Flow type: COUNTER CURRENT | CO-CURRENT

Exchangers: B85AS

	Side 1	Side 2
Heat load	45.00 kW	
Inlet vapor quality	1	
Outlet vapor quality	0	
Inlet temperature	70.0 °C	30.0 °C
Cond. temp. (dew)	37.0 °C	
Subcooling	3.0 K	
Outlet temperature		35.0 °C
Flow	kg/s	kg/s
Max pressure drop	50.0 kPa	50.0 kPa
Number of plates	80	
Oversurfacing	%	

TECHNICAL DATA | DIMENSIONAL INFO | TOTALS | CARBON FOOTPRINT

DUTY REQUIREMENTS	UNIT	SIDE 1	SIDE 2
Fluid		R290 (Propane)	Water
Flow Type		Counter-Current	
Circuit		Inner	Outer
Channel		Narrow	Wide
Heat load	kW	45.00	
Inlet vapor quality		1.000	
Outlet vapor quality		0.000	
Inlet temperature	°C	70.0	30.0
Condensation temperature (dew)	°C	37.0	
Subcooling	K	3.0	
Actual Subcooling	K	3.0	
Outlet temperature	°C	34.0	35.0
Flow rate	kg/s	0.1147	2.154
Fluid condensed	kg/s	0.1147	
Pressure drop (Design PD)	kPa	1.88 (50.0)	27.6 (50.0)

- The thermal case must be specified as in design mode. You can combine temperatures, mass flows and heat load as long as the case specifies a unique heat balance.
- Specify one (1) BPHE+NoP that you want to evaluate.
- SSP will calculate the oversurface (OS) based on the thermal case and BPHE.
- Oversurface is a fictive value and will result in another outlet temperatures and thus other resulting heat load than in the inputs (for OS ≠ 0).
- Oversurface is defined as OHTC (Overall Heat Transfer Coefficient) available/required.
- The resulting OS is not to be mixed up with "Extra area".



Content

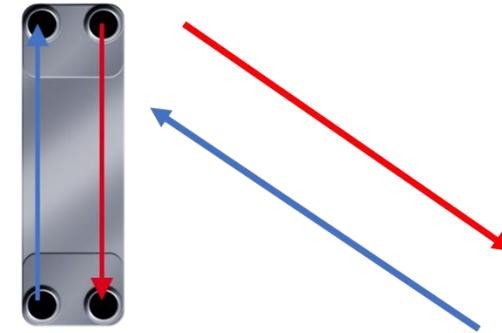
1. OVERVIEW
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Single phase

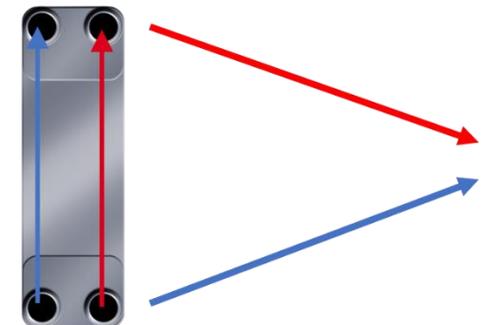
- For applications where none of the fluids in the heat exchanger go through any phase change it is required to use the “Single phase” calculation window.
- In single phase calculations, energy is transferred by changing temperature (sensible heat).
- No phase change occurs and thus entering liquid leaves as liquid and entering gas leaves as gas.
- Available heat exchanger models are B-types, E-types and Minex.

DESIGN	PERFORMANCE	RATING
Fluid Side 1	Water	
Fluid Side 2	Water	
Flow type	COUNTER CURRENT	
Exchangers	B-Types X	
	Side 1	Side 2
Heat load	1500	kW
Inlet temperature	80.0 °C	20.0 °C
Outlet temperature	40.0 °C	50.0 °C
Flow	kg/s	kg/s
Max pressure drop	20.0 kPa	20.0 kPa
Number of passes		
Number of plates		
Number of plates stack 1		
Number of plates stack 2		
Oversurfacing	% -	
Allow port switch	<input checked="" type="checkbox"/>	
Auto performance	<input type="checkbox"/>	
Input units	METRIC US	
Filters		
CALCULATE		

Counter current



Co current



Condenser

Counter current



Co current



DESIGN	PERFORMANCE	RATING
Fluid Side 1	R290 (Propane)	
Fluid Side 2	Water	
Flow type	COUNTER CURRENT	
Exchangers	<input type="checkbox"/> B-types <input type="checkbox"/> I-types <input type="checkbox"/> PI-types	
Heat load	20.00	kW
Inlet vapor quality	1	
Outlet vapor quality	0	
Inlet temperature	70.0 °C	30.0 °C
Cond. temp.(dew)	37.0 °C	
Subcooling	3.0 K	
Outlet temperature	35.0 °C	
Flow	kg/s	kg/s
Max pressure drop	50.0 kPa	50.0 kPa
Number of plates		
Oversurfacing	%	
Auto performance	<input type="checkbox"/>	
Input units	<input type="button" value="METRIC"/> <input type="button" value="US"/>	
Filters		
<input type="button" value="CALCULATE"/>		

Dew point

Subcooling from bubble point

- Condensers reject latent heat to the secondary fluid by the phase change from vapor to liquid.
- The secondary fluid is heated up by the rejected heat from the condensing fluid.
- Available heat exchanger models are B-types.
- In reversible systems, where a BPHE with distribution device is physically installed, the condenser shall be calculated as a B-type unless the unit has an integrated distribution device, these are unit with a name containing an I, such as F!22AS.
- For example, a P80 shall be calculated as a B80 in the condenser window.

Evaporator

- Evaporators gain heat from the secondary fluid in order to achieve phase change on evaporator side from liquid to vapor.
- The secondary fluid is cooled down by the absorbed heat from the evaporating fluid.
- Available heat exchanger models are B-types and BPHE types with distribution device (V, P, F, S, VH, Q, FI, PI).
- Distribution device is recommended when inlet vapor content is >0 and plate count is >30 .

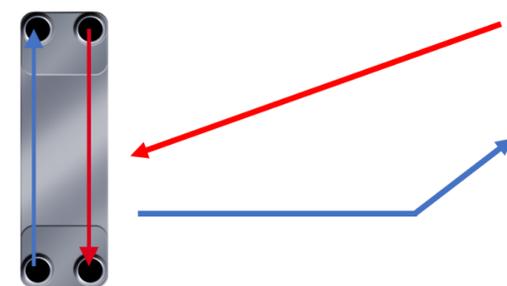
DESIGN	PERFORMANCE	RATING
Fluid Side 1	R32	
Fluid Side 2	Water	
Flow type	COUNTER CURRENT	
Exchangers	<input type="checkbox"/> B-types <input type="checkbox"/> PI-types <input type="checkbox"/> V-types <input type="checkbox"/> P-types <input type="checkbox"/> F-types	
Heat load	25.00	kW
Subcooled liq. temp.	43.0	°C
Inlet vapor quality	1	
Outlet vapor quality		
Inlet temperature		12.0 °C
Evaporation temp.	4.5	°C
Superheating	5.0	K
Outlet temperature		7.0 °C
Flow		kg/s
Max pressure drop	50.0	kPa
Number of plates		
Oversurfacing		%
Auto performance		<input type="checkbox"/>
Input units		METRIC US
Filters		
<input type="button" value="CALCULATE"/>		

Fill in either liquid temperature before exp. valve or inlet vapor quality

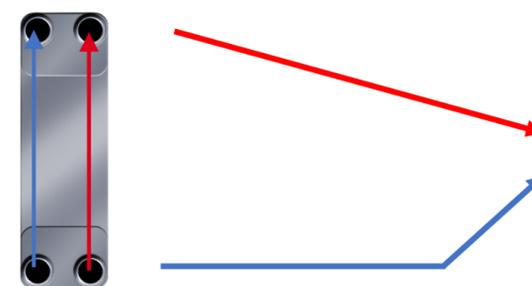
Dew point

Superheating from dew point

Counter current



Co current



Cascade – Requires special license to access

Counter current



Condensation

Evaporation

	Side 1	Side 2
Heat load	5.000	kW
Subcooled liq. temp.		°C
Inlet vapor quality	0.3	1
Outlet vapor quality	1	0
Inlet temperature		70.0 °C
Evaporator temp.	-20.0	°C
Superheating	5.0	K
Cond. temp. (dew)		-10.0 °C
Subcooling		3.0 K
Flow		kg/s
Max pressure drop	50.0	kPa
Number of plates		
Oversurfacing		%
Auto performance	<input type="checkbox"/>	<input type="checkbox"/>
Input units	METRIC US	
Filters		

- Cascade calculation enables phase change on both sides in shape of condensing and evaporation.
- Available heat exchanger models are B-types and BPHE types with distribution device (V, P, F, S, VH, Q, FI, PI).
- Distribution device is recommended when inlet vapor content on evaporator side is >0 and plate count is >30.

Fill in either liquid temperature before exp. valve or inlet vapor quality

Dew point

Superheating from dew point

Dew point

Subcooling from bubble point

Liquid evaporator - Requires special license to access

- Evaporators gains heat from the secondary fluid in order to achieve phase change on evaporator side from liquid to vapor.
- Liquid Evaporator allows subcooled liquid enter the evaporator to be preheated before the evaporation.
- Available heat exchangers are B-types.
- No distribution device is needed since inlet is pure liquid.

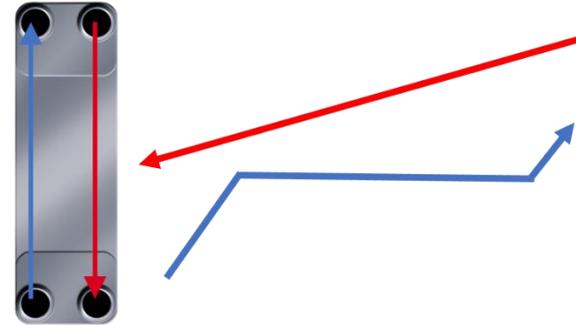
Fill in either inlet liquid temperature before evaporator or inlet vapor quality

Dew point

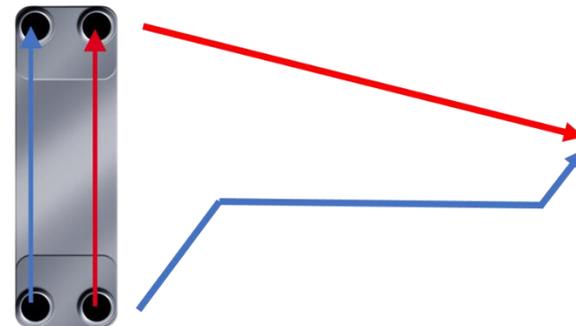
Superheating from dew point

DESIGN	PERFORMANCE	RATING
Fluid Side 1	R245fa	
Fluid Side 2	Water	
Flow type	COUNTER CURRENT	
Exchangers	B12 B65 B351 B328	
Heat load	50.00	KW
Subcooled liq. temp.	50.0	°C
Inlet vapor quality		
Outlet vapor quality	1	
Inlet temperature		120.0 °C
Evaporator temp.	90.0	°C
SuperHeating	5.0	K
Outlet temperature		100.0 °C
Flow		kg/s
Max pressure drop	20.0	kPa
Number of plates		
Oversurfacing		%
Auto performance		<input type="checkbox"/>
Input units	METRIC US	
Filters		
CALCULATE		

Counter current



Co current



Heat pump calculations

The screenshot displays a software interface for heat pump calculations. It is divided into two main sections: Condenser and Evaporator.

Condenser Section:

- Single phase
- Condenser (selected)
- Evaporator
- Others
- Multicalc (with a red arrow icon)

Condenser >
Calculation for phase change from vapor to liquid by rejecting latent heat to a secondary cooling medium.

Condenser Heat Pump >
Condenser calculation using NHP models, tested with EN14511 standard to provide dedicated thermal correlations for heat pump applications.

Evaporator Section:

- Single phase
- Condenser
- Evaporator (selected)
- Others
- Multicalc (with a red arrow icon)

Evaporator >
Identify the optimal evaporator where refrigerant absorbs heat from a secondary fluid to transition from a liquid mixture to vapor.

Evaporator Heat Pump >
Evaporator calculation using NHP models, tested with EN14511 standard to provide dedicated thermal correlations for heat pump applications.

Configuration Panel:

- Fluid Side 1: R32
- Fluid Side 2: Water
- Flow type: COUNTER CURRENT (selected), CO-CURRENT
- Exchangers: NHP (selected)
- Heat load
- Inlet vapor quality
- Outlet vapor quality
- Inlet temperature

Exchangers List:

- NHP
 - B8LAS-NHP
 - B20-NHP
 - FI22AS-NHP
 - B26-NHP
 - B80AS-NHP
 - B85-NHP
 - B86-NHP

- Heat pump calculations differ in the sense that correlations have been implemented altering the input based on standard heat pump data to reach more accurate results.

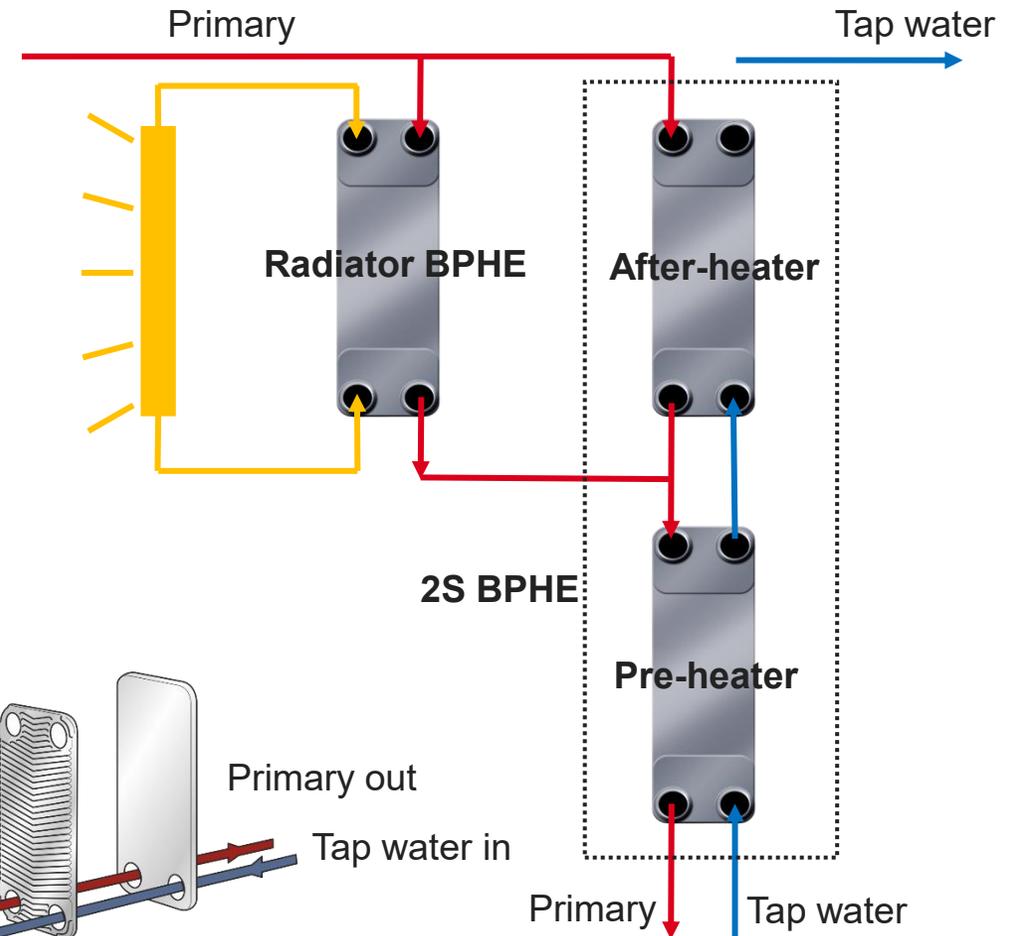
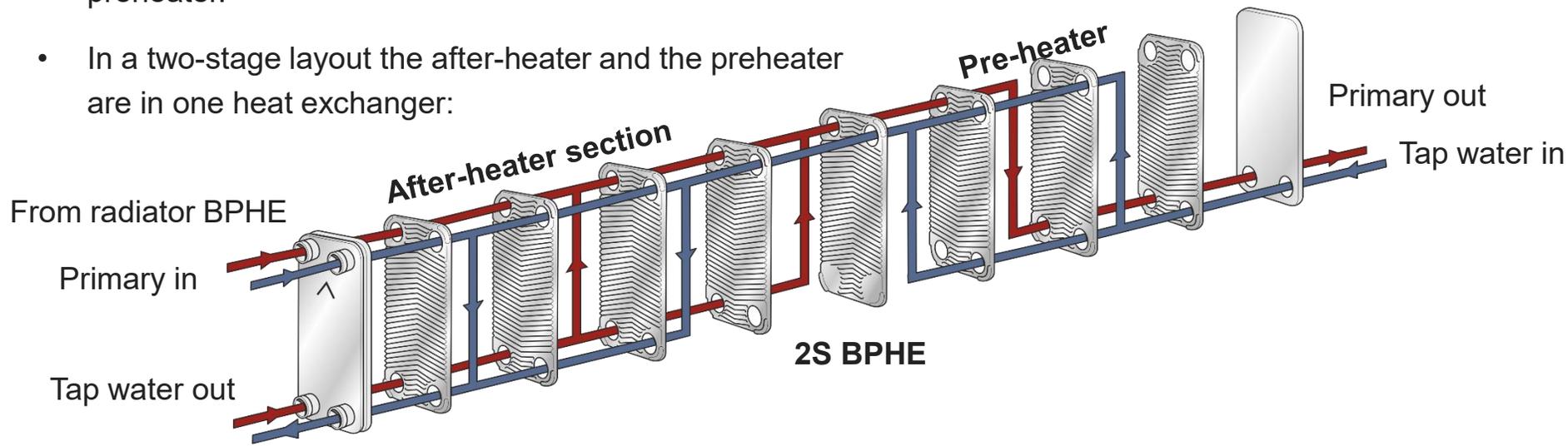
- Parameters that are optimized are e.g. tighter temperature approach as a result from lower heat fluxes.
- This results in slightly different selections in the dedicated heat pump window as compared to Condenser/Evaporator window.
- Use the heat pump calculation windows if temperature approach is $\leq 2\text{K}$ or when you see this information in the standard Condenser/Evaporator calculation window:

 Temperature approach is below 1K. SWEP recommend to calculate this case with B85-NHP in Heat Pump Condenser window instead.

- The BPHE are **exactly the same** but are equipped with the suffix “NHP” in order to distinguish them from the ones based on normal data.

Two stage

- In a two-stage layout the space and tap water heating are combined in order to making use of the energy in space heating return flow for tap water heating.
- The primary return flow from the radiator heat exchanger is mixed with primary flow from the so-called after-heater.
- The mixed flow then enters a third heat exchanger, the preheater.
- In a two-stage layout the after-heater and the preheater are in one heat exchanger:





Content

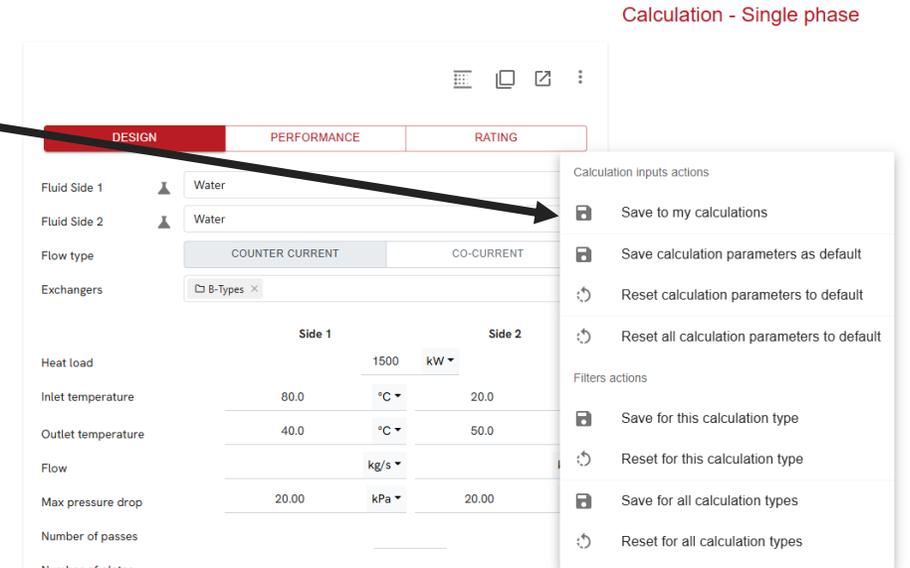
1. OVERVIEW
2. GENERAL HOW TO CALCULATE
3. SPECIFIC CALCULATION WINDOWS
- 4. TOOLS**
5. SETTINGS

Save and share calculation

- To save a calculation    
- The saved calculations will end up in “Saved calculations” which is found under the navigation toolbar



- Upon save it is possible to give the calculation a name, comment and custom tags to make easy to remember. The calculation type is always added as a tag automatically.
- By pressing enter a tag is created



Calculation - Single phase

DESIGN PERFORMANCE RATING

Fluid Side 1 Water

Fluid Side 2 Water

Flow type COUNTER CURRENT CO-CURRENT

Exchangers B-Types x

	Side 1	Side 2
Heat load	1500 kW	
Inlet temperature	80.0 °C	20.0
Outlet temperature	40.0 °C	50.0
Flow	kg/s	
Max pressure drop	20.00 kPa	20.00
Number of passes		
Number of plates		

Calculation inputs actions

- Save to my calculations
- Save calculation parameters as default
- Reset calculation parameters to default
- Reset all calculation parameters to default

Filters actions

- Save for this calculation type
- Reset for this calculation type
- Save for all calculation types
- Reset for all calculation types

Save calculation

Please enter custom calculation name

Name

Comment

Custom tags

Single phase x Enter tags

SUBMIT CANCEL

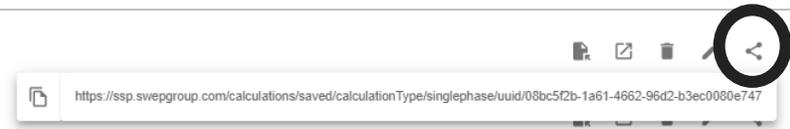
Save and share calculation

- Saved SWEPP SSP™ calculations are easily accessible and can be shared through a unique link.

UPLOAD CALCULATION FILE

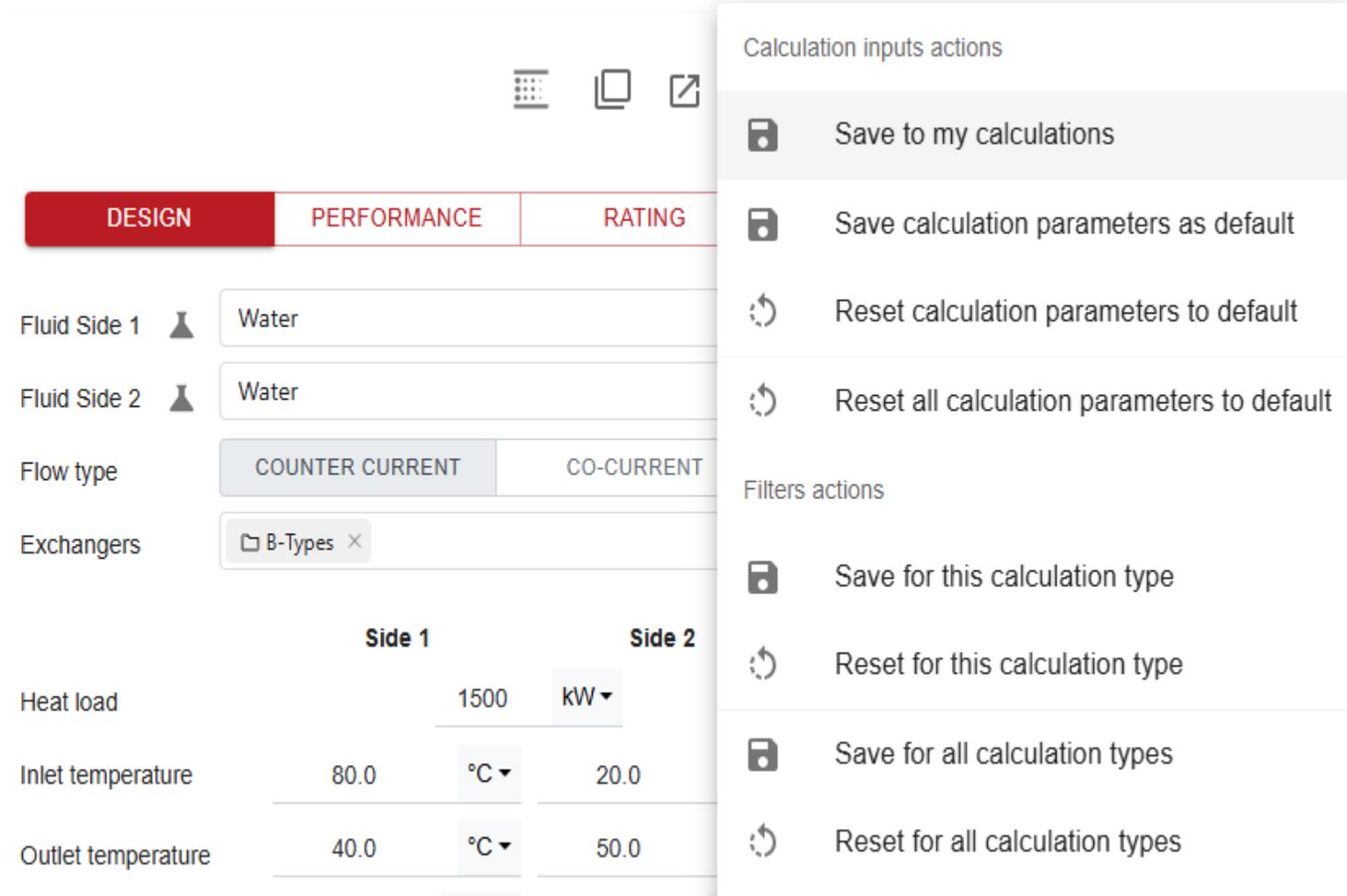
Custom tags

- test
9/2/2026 8:49 test (Single phase)
- test 2
23/2/2026 16:50 comment testing (test)



Save calculation settings as default

- By using the save calculation parameters as default you enter the data you want to be presented as default when starting.
- Calculation settings are saved per calculation window and can be reseted by pressing the “Reset calculation parameters to default”
- If you instead want to reset the settings in all windows at once you can select the “Reset all calculation parameters to default”



The screenshot shows a software interface for calculation settings. The interface has three tabs: DESIGN (selected), PERFORMANCE, and RATING. Below the tabs, there are input fields for Fluid Side 1 (Water), Fluid Side 2 (Water), Flow type (COUNTER CURRENT selected, CO-CURRENT available), and Exchangers (B-Types). A table below shows calculation parameters for Side 1 and Side 2.

	Side 1	Side 2
Heat load	1500	kW
Inlet temperature	80.0 °C	20.0
Outlet temperature	40.0 °C	50.0

On the right, a dropdown menu titled "Calculation inputs actions" is open, showing the following options:

- Save to my calculations
- Save calculation parameters as default
- Reset calculation parameters to default
- Reset all calculation parameters to default

Below this, a section titled "Filters actions" shows:

- Save for this calculation type
- Reset for this calculation type
- Save for all calculation types
- Reset for all calculation types

Upload previously saved SSP G8 files

- Under the “saved calculation tab” one can find a button to upload SSP G8 files to SWEPSST™

 **UPLOAD CALCULATION FILE**

Custom tags

 Test 1
8/7/2025 13:43 Evaporator



 Test 2
25/8/2025 16:57 Evaporator dual



Technical printout

- Printout language is set in settings or quick settings bar
- Technical printout contain thermal data from your calculation and dimensions of the BPHE.
- A printout on article number with more detailed data can be created from the product selector.

The image shows a screenshot of the 'Settings' page in a web application. The page title is 'Settings' and it has several tabs: 'GENERAL SETTINGS', 'CHANGE PASSWORD', 'MULTICALC EXPORT CONFIGURATION', and 'LICENSE'. The 'GENERAL SETTINGS' tab is active. Under this tab, there are several settings: 'Working Language' set to 'English', 'Printout Language' set to 'Italiano', 'Units' set to 'Metric', and two toggle switches for 'Do not show welcome dialog' and 'Allow sending usage statistics', both of which are turned off. A red 'SAVE' button is at the bottom. On the right side, there is a user profile dropdown menu. The user is identified as '@swepgroup.com'. The dropdown menu shows 'Application' set to 'English' and 'Printout' set to 'Italiano'. The 'Printout' dropdown is highlighted with a black box. Below the 'Printout' dropdown, there are sections for 'Units' (Metric), 'License' (Default), and 'Version' (2025.12.10.5). A 'Sign out' link is at the bottom of the dropdown menu.

Technical printout

- Choose between opening the printout as a pdf in a new tab in the browser or saving it on your computer into the folder of your choosing.

Your printout is ready

DOWNLOAD  SAVE AS 

Calculation - Single phase

PRODUCT SELECTOR CONNECTION IMPACT TECHNICAL PRINTOUT

...	NoUnits	BPHE	A [m²]	DP1 [kPa]	DP2 [kPa]	OS [%]	Weight [kg]	In Stock	PF rating
	1	B35TM4x166	15.4	12.0	21.0	12	48.0 - 56.1		<input checked="" type="checkbox"/>
	1	B35TH4x256	23.9	12.0	21.0	67	70.2 - 78.3		<input type="checkbox"/>
	1	B320LTHx174	21.3	12.1	20.9	70	84.6 - 88.3		<input type="checkbox"/>



SWEP International AB
P O Box 105
Järvgratan 3B
SE-261 44 Landskrona, Sweden
www.swepgroup.com

MONOFASE - DISEGNO SCAMBIATORE DI CALORE: B35TM4x166/1P

SWEP DThermX
Data: 23/12/2025

Alias SSP:	B35TM4		
DATI DI PROGETTO	LATO 1	LATO 2	
Fluido	Water	Water	
Tipo di flusso	Controcorrente		
Circuito	Interno	Esterno	
Resa termica		1500	
Temperatura entrata	°C	80.0	20.0
Temperatura uscita	°C	40.0	50.0
Portata	kg/s	8.960	11.97
Perdita di carico (PdC di progetto)	kPa	12.0 (20.00)	21.0 (20.00)
Lunghezza termica		1.62	1.22
DATI SCAMBIATORE	LATO 1	LATO 2	
Superficie di scambio	m²	15.4	
Flusso termico	kW/m²	97.3	
Salto termico medio logaritmico	K	24.7	
Overall heat transfer coefficient necessario	W/m²,°C	3950	
Perdita di carico - totale*	kPa	12.0	21.0
- sulla porta	kPa	4.71	8.31
Diametro della porta (sotto/sopra)	mm	61.0/61.0	61.0/61.0
Numero di canali per passo		82	83
Numero di piastre		166	
Sovradimensionamento	%	12	
Fattore di sporcamento	m²,°C/kW	0.027	
Numero di Reynolds		1967	1683
Velocità nella porta (sotto/sopra)	m/s	3.12/3.12	4.12/4.12



Filters

- Selections can be made with applied filters.
- With applied filters, the calculation result is restricted to fulfill the filter parameters.
- Filters can also be saved to be applied by default.
- Hide the filters by pressing on the arrow

Save/reset this filter as default to current calculation window / all calculation windows



Filters

Factories

Materials

Pressures

Warehouses

Search for models available at certain geographic regions

Search for models available in certain materials

Search for models available in a certain pressure classes

Search for models currently on stock



CALCULATE

Calculation inputs actions

- Save to my calculations
 - Save calculation parameters as default
 - Reset calculation parameters to default
 - Reset all calculation parameters to default
- ## Filters actions
- Save for this calculation type
 - Reset for this calculation type
 - Save for all calculation types
 - Reset for all calculation types

Product selector

- Product selector lists information about available article numbers for the selected model.
- There are filters to sort out certain properties for both the heat exchanger and the connections.

Calculation - Single phase

PRODUCT SELECTOR CONNECTION IMPACT TECHNICAL DATA

...	NoUnits	BPHE	A [m²]	DP1 [kPa]	DP2 [kPa]
1		B80x40	2.28	11.8	19.4

Heat exchanger: B80x40

TECHNICAL DATA DIMENSIONAL INFO TOTAL

DUTY REQUIREMENTS	UNIT	SIDE 1
Fluid		Water
Flow Type		
Circuit		Inner
Heat load	kW	
Inlet temperature	°C	80.0

Product selector

- Connection types

Type	Sub type
AD Adapter	DC Compact flange
C Connection plate	G ISO-G Male (external)
CB Combination connection	GF ISO-G Female (internal)
FL Flange connection	GH ISO-G HEX
HS Hose, Solder hose	IB Induction brazing
O Connection O-ring	M Metric thread
SD Solder	N NPT thread Male (external)
SD Solder (coned)	NF NPT thread Female (internal)
TH Thread	QA Q-pipe A
TH Thread UHP approved	QB Q-pipe B
VC Victaulic	QD Q-pipe D
W Weld, Counter connection with	QN Q-pipe N
D welding neck	R ISO 7/1-R
	RC ISO7/1 Rc
	S SAE connection
	SO SAE O-ring
	U Ultra pressure
	UN Unified National Fine Thread
	F Thread
	UR Rotalock

Product selector

Go back to calculation

ARTICLES XPCS

1 Select article

2 Add extras Optional

3 Add to basket

Filter options

Show only item numbers

Factory: All factories

Material: All materials

Pressure: All pressures

Warehouse:

F1: All

F2: All

F3: All

F4: All

F5: All

F6: All

P1: All

P2: All

P3: All

P4: All

Showing 231 of 231

BPHE Art. No	Config number	Denomination	PF Rating	Plates	WHS	Stock	Material	pressure	Factories
18588-		B80H/1P-NC-S 4xCOPL SAE 1 1/4"+SAE 1" NON PED		122			NC	S	SCN
<p>Port info F1 F2 F3 F4</p> <p>Art. No. 36864 36864 36864 36864</p> <p>Denomination COPL SAE 1 1/4"+SAE 1" NON PED COPL SAE 1 1/4"+SAE 1" NON PED COPL SAE 1 1/4"+SAE 1" NON PED COPL SAE 1 1/4"+SAE 1" NON PED</p> <p>Height (mm) 20 20 20 20</p> <p>Material 304 304 304 304</p> <p>In-Diameter 25,000 25,000 25,000 25,000</p> <p>NND (mm) 36 36 36 36</p> <p>Type C2P C2P C2P C2P</p> <p>Subtype S S S S</p>									
18591-		B80H/1P-SC-S 4xCOPL SAE 1 1/4"+SAE 1" NON PED		122			SC	S	SCN
14531-		B80H/1P-NC-S 4x1 1/4" (304)		122			NC	S	SI*SCN
16028-		B80H/1P-NC-S 22U+3x28U		122			NC	S	SI*SNA*SCN
19181-		B80H/1P-NC-S 2x1 1/4"+2x1 1/2"		122			NC	S	SI*SCN
14251-		B80H/1P-NC-S / 2x22U+2x28U		122			NC	S	SI*SNA*SCN
16150-		B80H/1P-NC-M 2x28U+2x1*8x22U		122			NC	M	SI
17301-		B80H/1P-NC-M 9.6+16+2x1"		122			NC	M	SI*SCN
15905-		B80H/1P-NC-M 9.6+16+2x1"		122			NC	M	SI*SCN
17671-		B80H/1P-NC-M 2x35.1+2x22U		122			NC	M	SI*SNA*SCN
16984-		B80H/1P-NC-M 16+9.65+2x1"		122			NC	M	SI*SCN
14524-		B80H/1P-NC-S 4x1 1/4"		122			NC	S	SI*SCN
14977-		B80H/1P-NC-S 16+35.1+2x1 1/4"		122			NC	S	SI*SCN

CONNECTION IMPACT

Auto load to connection impact tool

Details about the connections

Go back one step

Continue towards adding accessories

Go back to calculation

BACK TO CALCULATION

SUPER

Connections impact tool

- Pressure drop in connections are not included in the output from the calculation windows but shown in the connection impact tool
- Connection impact tool can be reached from the top menu or from product selector. From product selector all connections will be automatically loaded.

Use filters

Select port configuration

Warnings and info

Pressure drop and velocity

Printout including connection pressure drop can be made from here

For evaporators, the inlet flow regime is presented

Calculation - Single phase

PRODUCT SELECTOR CONNECTION IMPACT TECHNICAL PRINTOUT

NoUnits	BPHE	A [m ²]	DP1 [kPa]	DP2 [kPa]	OS [%]	Weight [kg]
1	B80x40	2.28	11.8	19.4	127	8.65 - 12.

BPHE Art. No. Conf. number Denomination PF Rating Plates WIS Stock Material pressure Filter

5000099

83STM4/1P-SC-S
CONN PLATE 2x60
(F3/F4)-2xCOPL
2xSAE 1"-CONN
PLATE 2x60 (F3/F4)

166 SC S

CONNECTION IMPACT

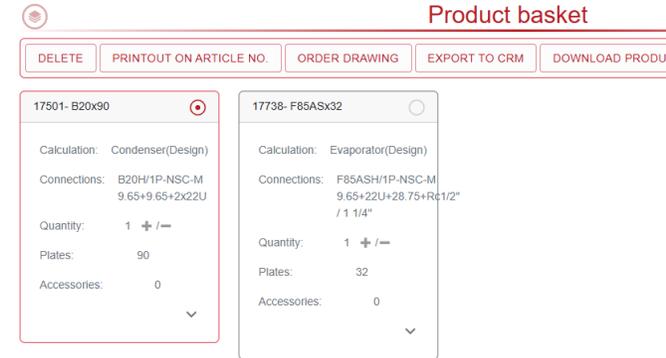
Port info	F1	F2	F3	F4
Art. No.	60181	60181	60183	60183
Denomination	COPL 2xSAE 1"	COPL 2xSAE 1"	CONN PLATE 2x60 (F3/F4)	CONN PLATE 2x60 (F3/F4)
Height (mm)	20	20	20	20
Material	304	304	304	304
In-Diameter	60,000	60,000	60,000	60,000
NNO (mm)	65	65	65	65
Type	C2P	C2P	C2P	C2P
Subtype				

Front side

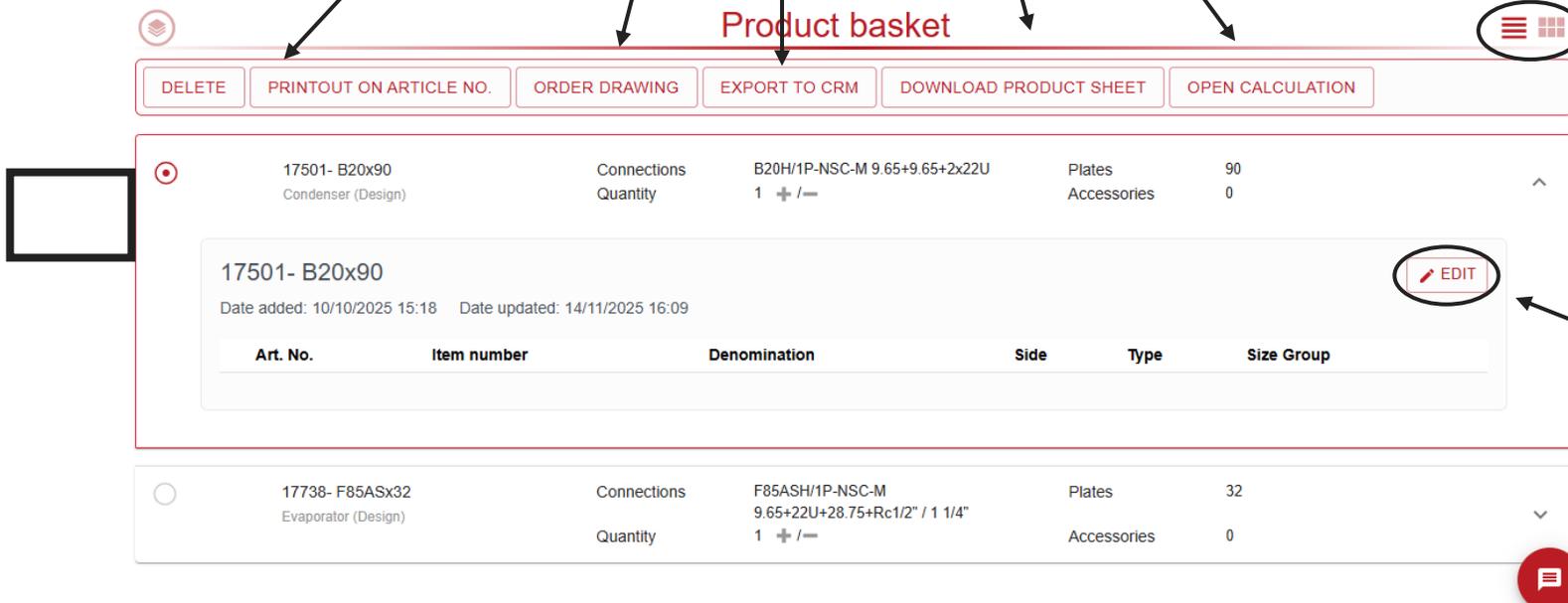
Back side

Product basket

- In Product basket you can handle the products you have added to basket from product selector
- When selecting an item in your basket multiple options present themselves:



You can switch between list view and tile view.



Edit your basket item

Pressure drop tool

- Use the integrated Pressure drop tool for easy calculation of pressure drop vs. flow or flow vs. pressure drop.
- Plotting the behaviour for several conditions.
- The result can deviate a bit from the calculation windows due to some simplifications.

Choose input, either flow or pressure drop

Pressure drop tool

Pressure drop [kPa]	0.07075	0.1722	0.4161	1.036	2.066	5.117	10.24
Flow [kg/s]	0.01330	0.02180	0.03530	0.05810	0.08470	0.1390	0.2030

The results are plotted in an interactive graph.

Print the result as a .pdf

FLOW | PRESSURE DROP

Exchangers: B10T

Fluid: Water

Number of passes: 1

Number of plates: 10

Side: Side 1 | Side 2

Ref. temperature: 25.0 °C

Input units: METRIC | US

Input Flow unit: kg/s

Output Pressure drop unit: kPa

0.01330

0.02180

0.03530

0.05810

0.08470

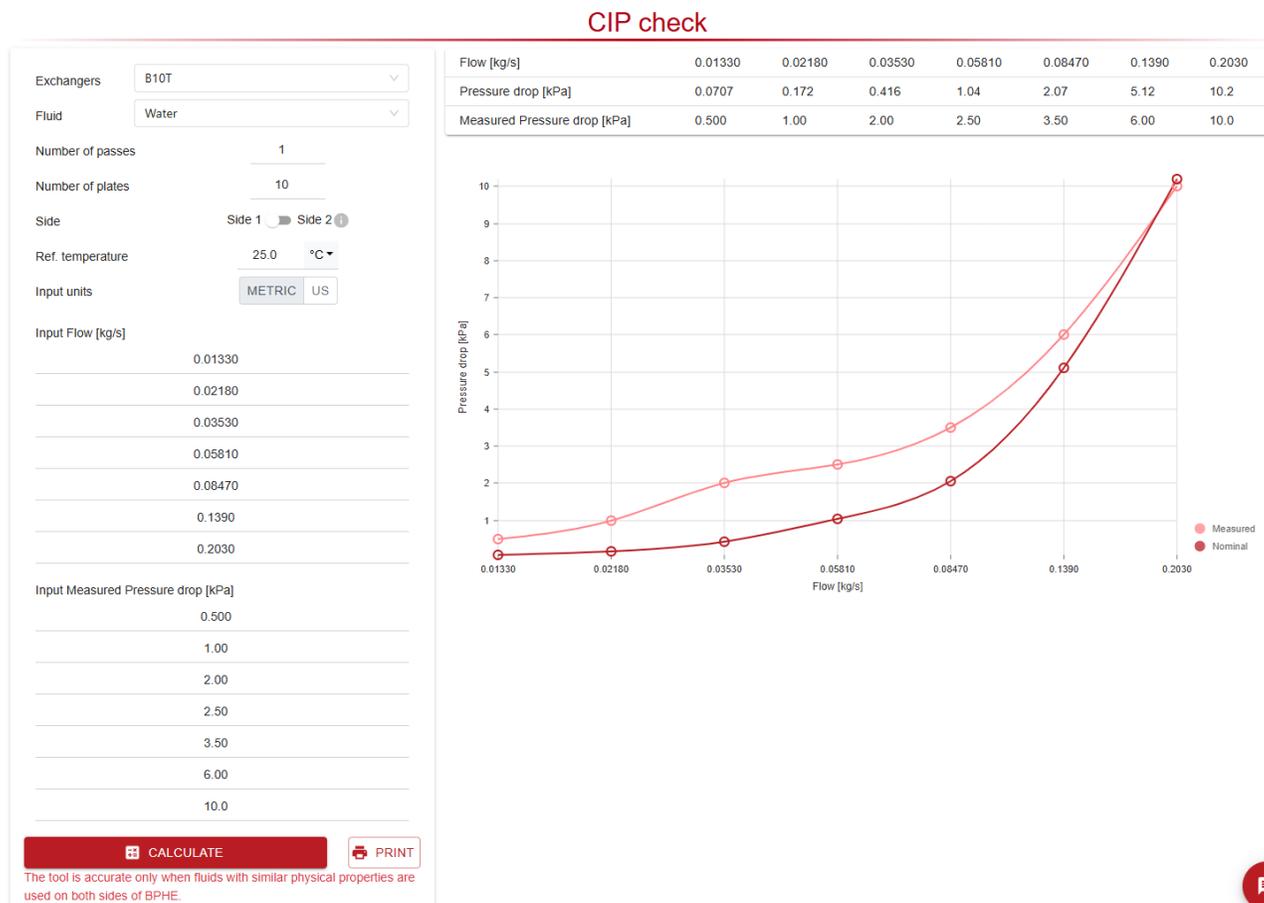
0.1390

0.2030

CALCULATE | PRINT

The tool is accurate only when fluids with similar physical properties are used on both sides of BPHE.

CIP check tool

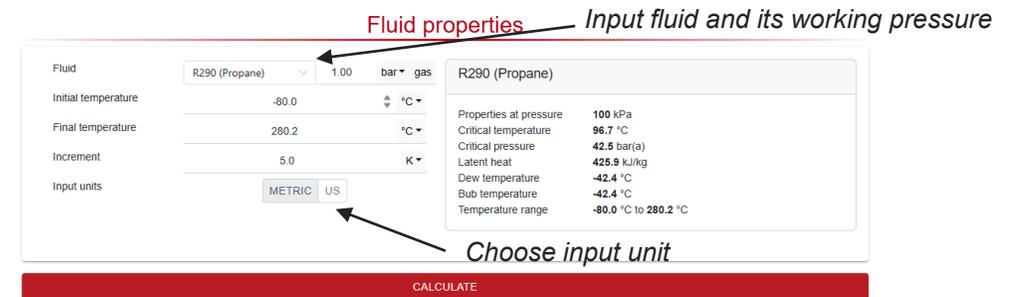
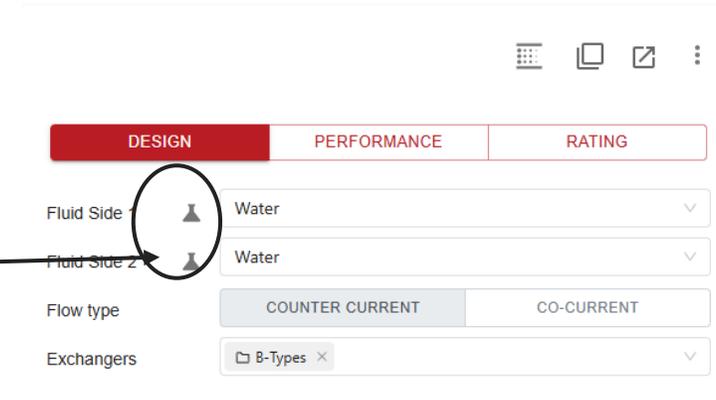


- Similar to the pressure drop tool the CIP tool can be used to evaluate if a unit need to be cleaned.
- By adding real measured pressure drop and comparing it to the nominal pressure drop it can be clear if a cleaning in place (CIP) should be done.



Fluid properties tool

- The fluid properties can be accessed by clicking on tools in the menu bar or by clicking on the test tube in the calculation window
- It is used to find thermal properties of all fluids that are available in SWEP SSP™.
- By using the table it is possible to visualise the properties of some properties for a given temperature range.



Fluid properties — Input fluid and its working pressure

Choose input unit

DATA CHARTS — Show parameters in a chart

Select unit displayed



Blue = Liquid state

Red = Gaseous state

State	Temperature °C	Density kg/m³	Heat capacity kJ/kg, °C	Conductivity W/m, °C	Viscosity cP
Blue	-80.0	622.8	2.106	0.1521	0.316
Blue	-75.0	617.5	2.119	0.1491	0.295
Blue	-70.0	612.1	2.136	0.1460	0.276
Blue	-65.0	606.7	2.154	0.1429	0.258
Blue	-60.0	601.1	2.171	0.1399	0.243
Blue	-55.0	595.6	2.190	0.1369	0.228
Blue	-50.0	589.9	2.211	0.1339	0.215
Blue	-45.0	584.2	2.233	0.1309	0.203
Red	-40.0	2.360	1.446	0.01176	6.34e-3
Red	-35.0	2.304	1.461	0.01222	6.48e-3
Red	-30.0	2.250	1.477	0.01269	6.62e-3

Multicalc

- Import your excel multicalc from SSP G8 directly into SWEP SSPTM
- Create your multicalc
 1. Select calculation type
 2. Input parameters
 3. Select moving parameters or number of duplication of the calculation (iteration)
 4. Press add calculation

Multi calculation

Select a calculation ▾ Calculate Clear Save to my calculations Import ▾ Chart

- Single phase
- Condenser
- Condenser heat pump
- Evaporator
- Evaporator heat pump
- Hypertwain

Add calculation

DESIGN PERFORMANCE RATING

Fluid Side 1 Water

Fluid Side 2 Water

Flow type COUNTER CURRENT CO-CURRENT

Exchangers B-Types

	Side 1		Side 2	
Heat load	1500	kW		
Inlet temperature	80.0	°C	20.0	°C
Outlet temperature	40.0	°C	50.0	°C
Flow		kg/s		kg/s
Max pressure drop	20.0	kPa	20.0	kPa
Number of passes				
Number of plates				
Number of plates stack 1				
Number of plates stack 2				
Oversurfacing		%		
		<input checked="" type="checkbox"/>		
		<input type="checkbox"/>		
		METRIC US		

Heat load

Inlet temperature 1

Inlet temperature 2

Outlet temperature 1

Outlet temperature 2

Flow 1

Flow 2

Max pressure drop 1

Max pressure drop 2

Number of plates

No plate stack 1

No plate stack 2

Moving parameters ▾

Heat load From 1500 to Iterations Step Num. of calcs 0

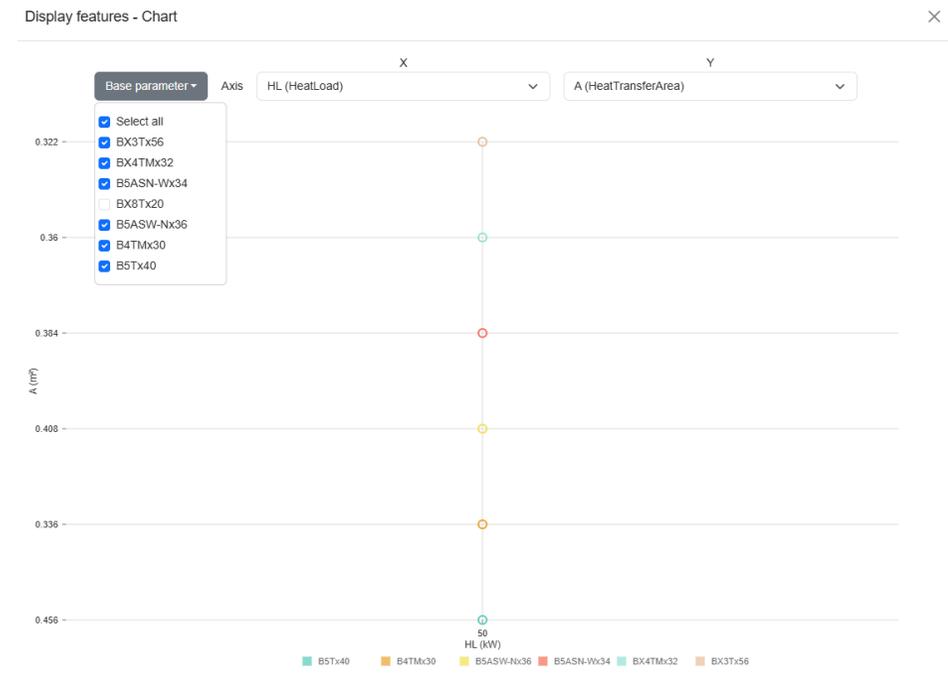
1 calculation(s) set for MultiCalc (Max. 50 calculations)

Close Add calculations

Multicalc

- Once you have created or uploaded your multicalc you can:
 - calculate it
 - save it
 - export it to excel
 - edit it
 - remove it
 - create charts within SWEP SSP™

Single phase																
	Actions	Method	Fluid #1	Fluid #2	Flow type	HX	Heat load	In temp 1	In temp #2	Out temp #1	Out temp #2	Flow #1	Flow #2	MPD #1	MPD #2	No passes
1. v	 	Design	Water	Water		B-Types	50 kW	80 °C	20 °C	40 °C	50 °C			20 kPa	20 kPa	
2. v	 	Design	Water	Water		B-Types	53 kW	80 °C	20 °C	40 °C	50 °C			20 kPa	20 kPa	
3. v	 	Design	Water	Water		B-Types	56 kW	80 °C	20 °C	40 °C	50 °C			20 kPa	20 kPa	
4. v	 	Design	Water	Water		B-Types	59 kW	80 °C	20 °C	40 °C	50 °C			20 kPa	20 kPa	
5. v	 	Design	Water	Water		B-Types	62 kW	80 °C	20 °C	40 °C	50 °C			20 kPa	20 kPa	

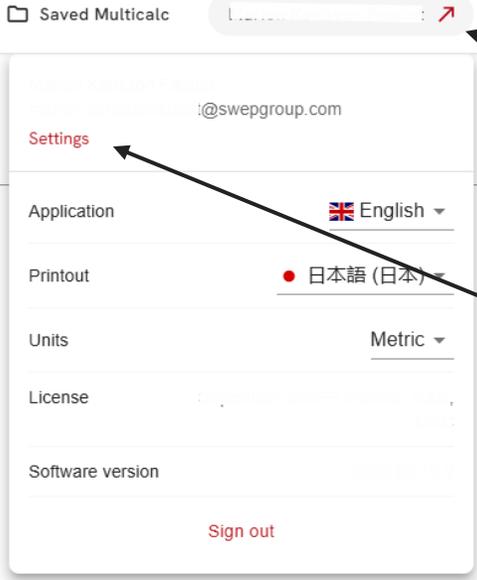




Content

1. OVERVIEW
2. GENERAL HOW TO CALCULATE
3. SPECIFIC CALCULATION WINDOWS
4. TOOLS
- 5. SETTINGS**

Settings



Quick settings and sign out

Accessing settings pane

Settings



Use the navigation menu to find what setting you wish to change

Working Language : English

Printout Language : Italiano

Units : Metric

Do not show welcome dialog:

Allow sending usage statistics:

SAVE

NoUnits	BPHE	A [m²]	[kPa]	[kPa]	[%]	[kg]	In Stock	rating
1	FI22ASMx58	1.76	13.0	41.8	0	5.68		100
1	F85ASx32	1.80	23.4	50.0	5	6.04 - 7.46		67
1	F85x36	2.04	13.7	48.8	13	6.64 - 7.46		63
1	P85ASx36	2.04	19.9	40.5	0	7.46		63
1	V26x66	2.62	24.3	10.5	0	8.79 - 9.06		60
1	FI22ASHx128	3.97	6.47	14.9	0	11.4		55
1	V26Fx80	3.20	22.1	8.36	0	10.3		52

Heat exchanger: FI22ASMx58

Pressure drop in distribution device is 4.2 - 5.7 bar.
 Pressure drop in distribution device is X.X - Y.Y bar
 There is an additional pressure drop in the fluid distribution system. The pressure drop is displayed as an approximate min and max value and varies depending on the dynamic operating conditions. Please note that the pressure drop through the distribution device is before the heat transfer area and will therefore not affect the evaporation temperature. This information is given to facilitate selection of appropriate size of expansion valve. SWEP recommend that the pressure drop is above 1 bar in order to get proper distribution. The pressure drop is generally recommended to not exceed 1/3 of the total expansion pressure drop with thermostatic expansion valves and 1/2 with electronic expansion valves.

Help menu - Wiki

- Contains Information about, calculation windows, Xreference, multicalc
- Contains a log of the release notes with information about latest updates.
- Some warnings and information have an explanatory message; this can be opened by clicking on the arrow beside the warning

- Calculations
 - Single phase
 - Liquid evaporator
 - Two stage
- Apps
 - XReference
 - Multicalc
- Tools
 - Fluid properties
 - Fluid editor
 - Connection impact
 - Pressure drop
- Info & Warnings
 - Single phase warnings
 - Evaporator warnings
 - Condenser warnings
 - Product specific warnings
 - Release notes

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LAST EDITED BY

Administrator
Today at 11:08 AM

Home

SWEP SSP™ Wiki

Welcome to the wiki page for SWEP SSP™, an online software for the selection of SWEP brazed plate heat exchangers.

More information regarding SWEP and our products can be found on swepgroup.com

Thank you