

TWO STAGE - DESIGN
HEAT EXCHANGER: [B16x42] - [B35TH0x42x43/2S]

SWEP SSPT™
Date: 13/05/2026

Primary fluid: Water
Radiator fluid: Water
Hot water fluid: Water

UNIT : TWO STAGE

TwoStage - DESIGN
HEAT EXCHANGER: B35TH0x/2S

SSP Alias: B35TH0/2S

DUTY REQUIREMENTS

		Side 1		Side 2
Fluid		Water		Water
Flow type		Counter-Current		
Circuit		Outer		Inner
Heat load	kW		309.1	
Inlet temperature (primary/cold water)	°C	65.0		10.0
Outlet temperature (primary/hot water)	°C	20.9		55.0
Flow rate - summer	kg/s	1.678		1.649
Flow rate - winter	kg/s	0.8411		
Radiator flow rate - added (winter)	kg/s	0.0000		
Total flow rate (winter)	kg/s	0.8411		
Thermal length (After/Pre-stage)		2.25/1.96		2.30/1.99

PLATE HEAT EXCHANGER

		Side 1		Side 2
Total heat transfer area			7.52	
	m ²			
Heat flux (After/Pre-stage)			43.0/39.2	
	kW/m ²			
Mean temperature difference (After/Pre-stage)			10.2/10.7	
	K			
O.H.T.C. (available/required) - Prestage			3650/3650	
	W/m ² , °C			
O.H.T.C. (available/required) - Afterstage			4210/4210	
	W/m ² , °C			
Max. summer Pressure drop - total* (After/Pre-stage)		9.97/11.2		
	kPa			10.6/10.1
• in ports (After/Pre-stage)		0.707/0.700		
	kPa			0.679/0.674
Max. winter Pressure drop - total* (After/Pre-stage)		2.68/9.60		
	kPa			10.7/10.3
• in ports (After/Pre-stage)		0.178/0.576		
	kPa			0.677/0.673
Port diameter (up/down)		42.0/42.0		
	mm			42.0/42.0
Number of channels per pass (Afterstage + Prestage)		21 + 20		21 + 21



Number of plates (After/Pre-stage)			43/42
Oversurfacing (After/Pre-stage)			0/0
Fouling factor (After/Pre-stage)	%		0.000/0.000
Reynolds number (After/Pre-stage)	m ² , °C/kW	1300/910.7	1125/669.3
Port velocity (After/Pre-stage)	m/s	1.23/1.22	1.20/1.19
Summer return temperature	°C		20.9
Winter return temperature**	°C		11.9

*Excluding pressure drop in connections.

**Without hot water recirculation and with two stage unit in use

PHYSICAL PROPERTIES - PRESTAGE		Side 1	Side 2
Reference temperature	°C	31.4	20.7
Dynamic viscosity	cP	0.774	0.986
Density	kg/m ³	995.2	998.0
Heat capacity	kJ/kg, °C	4.178	4.182
Thermal conductivity	W/m, °C	0.6177	0.5996
Shear stress	kPa	0.0325	0.0291

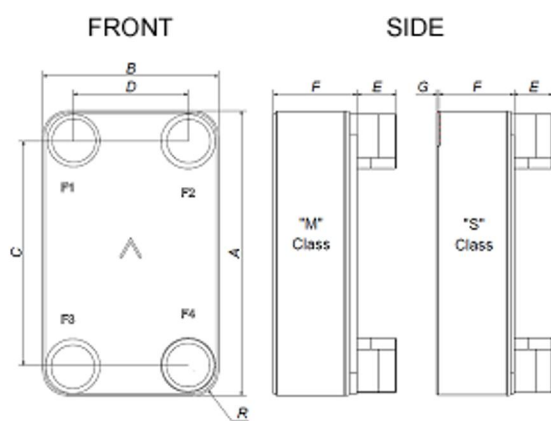
PHYSICAL PROPERTIES - AFTERSTAGE		Side 1	Side 2
Reference temperature	°C	53.5	43.3
Dynamic viscosity	cP	0.517	0.615
Density	kg/m ³	986.5	991.0
Heat capacity	kJ/kg, °C	4.182	4.179
Thermal conductivity	W/m, °C	0.6476	0.6351
Shear stress	kPa	0.0286	0.0306



TOTALS		Side 1	Side 2
Total weight (no connections)*	kg	29.03 - 37.52	
Hold-up volume (Inner Circuit)	dm ³	7.38	
Hold-up volume (Outer Circuit)	dm ³	7.56	
Port size F1/P1	mm	42	
Port size F2/P2	mm	42	
Port size F3/P3	mm	42	
Port size F4/P4	mm	42	

*Weight depends on the selected product.

DIMENSIONS



A	mm	393 ±2
B	mm	243 ±1
C	mm	324 ±1
D	mm	174 ±1
E	mm	27 (opt. 54) ±1
F*	mm	202.1 - 214.1 ±2%
G*	mm	0 - 4 ±1
R	mm	35

*Dimensions depend on the selected product.

*This is a schematic sketch. For correct drawings please use the order drawing function or contact your SWEP representative.

CARBON FOOTPRINT

	Unit	Value
Sweden - Landskrona	kg CO ₂ e	149.5 - 193.2
USA - Tulsa	kg CO ₂ e	156.8 - 202.6
Slovakia - Košice	kg CO ₂ e	170.0 - 219.7
Malaysia - Kuala Lumpur	kg CO ₂ e	236.7 - 305.9
China - Suzhou	kg CO ₂ e	406.1 - 524.8

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