SE-WWUHT SERIES

SE-WWUHT-25

Water-to-water single-cycle heat pump delivering pressurised hot water to 120 °C. R245fa, three-phase. Both sides are water — there is no air coil and no fan.

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HEATING CAPACITY
27 kW
At T1 · Rated duty

PEAK COP
2.93
At T1 · Rated duty

MAX WATER TEMP
120 °C
Rated outlet

COOLING CAPACITY
17.7 kW
Simultaneous, at the rated duty

Performance

Rated output at each test condition

T1 Rated duty

Heating capacity	**27 kW**
Power input	**9.2 kW**
COP	**2.93**
Water flow	**4.5 m³/hr**

Technical specifications

SE-WWUHT-25

ELECTRICAL SUPPLY		
Power supply	—	**380~415 V / 50 Hz / 3 Ph**
Rated input power	kW	**9.2**
Rated current	A	**25.88**
REFRIGERATION CIRCUIT		
Compressor	—	**Scroll (Xecom)**
Number of compressors	Nos	**1**
Refrigerant	—	**R245fa**
Heat exchanger (condenser)	—	**Brazed plate heat exchanger**
Throttling device	—	**Electronic expansion valve**

WATER CIRCUIT		
Maximum water temperature	°C	**120**
Water flow	m³/hr	**4.5**
Water pipe size	inch	**R1-1/4**
Rated pressure	bar	**2**
Rated steam output	kg/hr	**40**
UNIT & ACOUSTICS		
Dimensions (L × W × H)	mm	**860 × 780 × 850**
Net weight	kg	**230**
Noise at 1 metre	dB(A)	**≤ 60**

TEST CONDITIONS

Rated duty — evaporator side in / out 60 / 55 °C, condenser side in / out 115 / 120 °C

INSTALLATION REQUIREMENT

Protection device and cable size are not published for this model. Confirm both with Sunniva before wiring — the rated current above is not sufficient to size them.

Maintain water flow of **4.5 m³/hr** through the unit.

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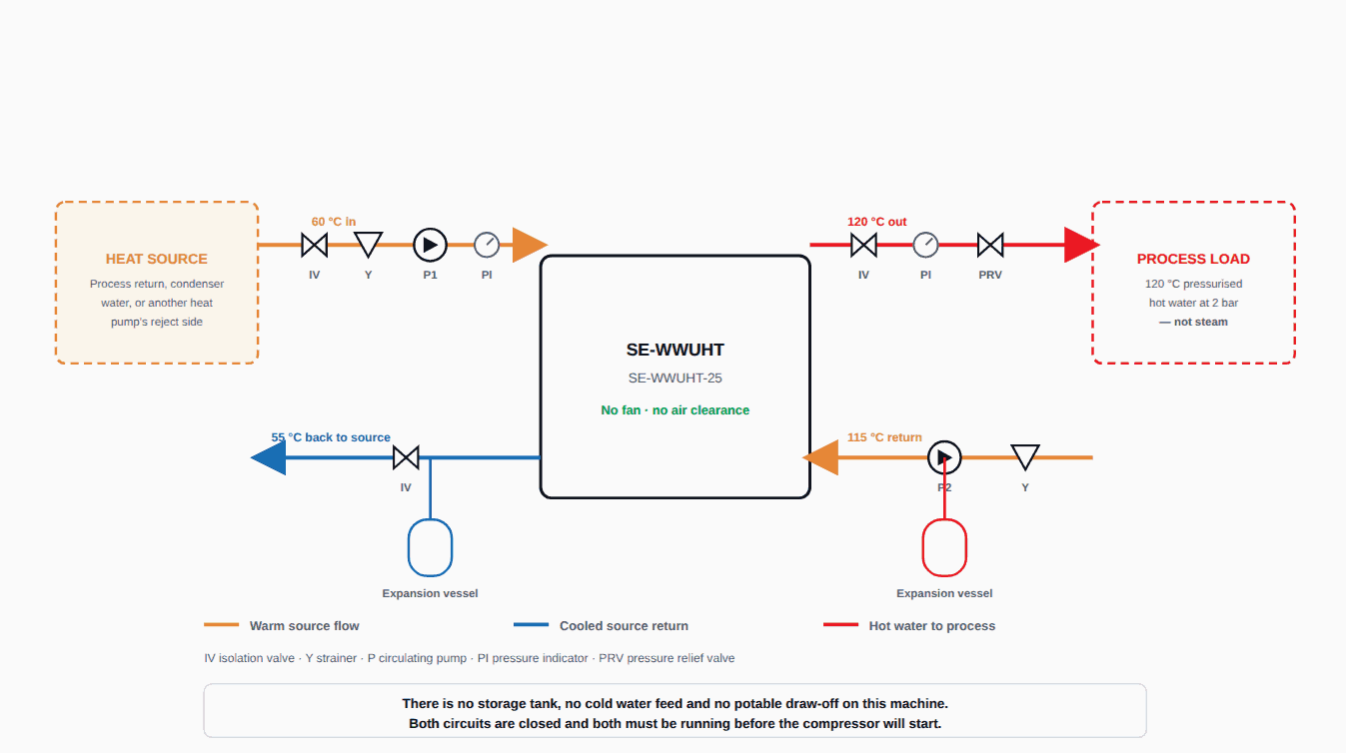
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Specifications are subject to change without prior notice.

Site installation schematic

How the source loop and the delivery loop connect on site



Indicative hookup only. Static head, draw pattern and local code may call for additional components — confirm the final scheme with Sunniva before ordering.

Selection & site preparation

Recommended sizing derived from this model's rated data

SYSTEM SIZING	
Source loop flow	**4.5 m³/hr through the evaporator**
Heat the source must give up	**17.7 kW** at the rated duty. This is not optional — if the source cannot release it, the machine makes less heat than the nameplate.
Minimum source temperature	**Confirm with Sunniva.** The R245fa compressor window starts at 22 °C evaporating; too cold a source puts the machine outside its permitted envelope, not merely off its rating.
Delivery loop flow	**4.5 m³/hr through the condenser**
Pipe size, both loops	**R1-1/4**
Line insulation	**Both loops, rated for 125 °C on the delivery side**

CIVIL & ELECTRICAL	
Unit footprint & dry weight	**860 × 780 mm · 230 kg**
Plinth	**1010 × 930 × 150 mm RCC, M20**
Plinth level	**100 mm above finished floor, ± 3 mm/m**
Clearances	**600 mm all round for service access.** No air clearance is required — there is no fan.
Electrical	**Not published for this model — confirm with Sunniva**

Installation steps

Follow in order; commission before start-up

1. Cast the plinth **1010 × 930 × 150 mm** in M20 concrete, 100 mm above finished floor. Indoor or under cover; this machine does not need to see outdoor air.
2. Set the unit on anti-vibration pads and level it to ± 3 mm/m.
3. Pipe the **source loop** from the process return through an isolation valve, a Y-strainer and the circulating pump into the evaporator, and return it to the source. Size for **4.5 m³/hr**.
4. Pipe the **delivery loop** from the condenser to the process load and back, with an isolation valve, pressure indicator and a **pressure relief valve** on the flow. The circuit is pressurised — treat it as a hot water system, not a steam one.
5. Fit an expansion vessel on each loop, sized to the loop volume and its working temperature. The delivery side runs at up to 125 °C.
6. Fit a flow switch in each loop and interlock both to the compressor. **Neither loop may be dry when the machine starts.**
7. Insulate both loops. The delivery side is a burn risk at 120 °C.
8. Confirm the protection device and cable with Sunniva before wiring — they are not published for this model.
9. On commissioning, prove the source can hold its temperature at full duty before signing off the heating output.

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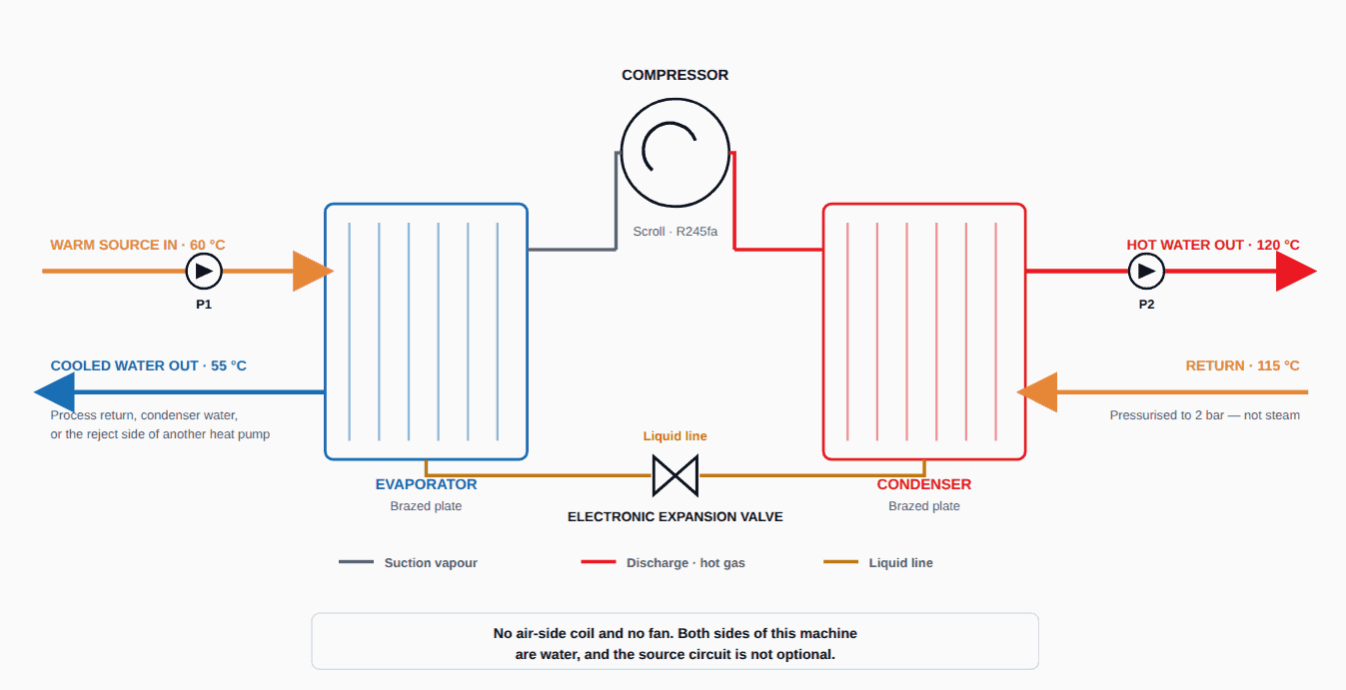
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Process & instrumentation diagram

Refrigeration circuit, instrumentation and water connections



Schematic representation of the standard circuit — not to scale. Component arrangement may vary with build option.

Instrument schedule

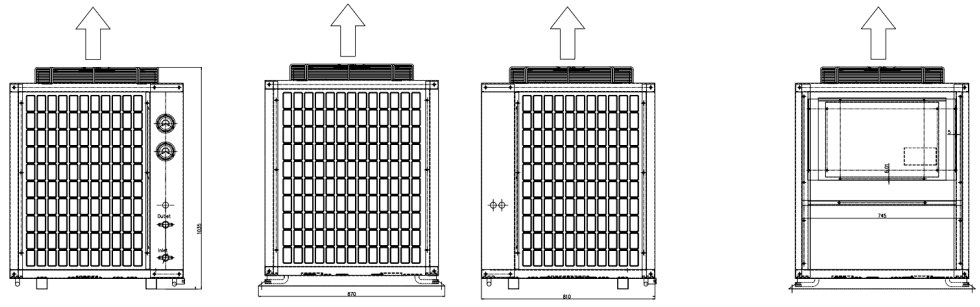
Tags as marked on the diagram above

TAG	DEVICE	FUNCTION
TT 01	Compressor discharge temperature	Discharge superheat & high-temperature cut-out
TT 02	Compressor suction temperature	Suction superheat monitoring
TT 03	Water outlet temperature	Set-point control
TT 04	Water inlet temperature	Return water sensing, ΔT calculation
PS HIGH	High-pressure switch	Discharge over-pressure cut-out

TAG	DEVICE	FUNCTION
PS LOW	Low-pressure switch	Loss-of-charge / low-suction cut-out
PI HP	High-side pressure gauge	Discharge pressure indication
PI LP	Low-side pressure gauge	Suction pressure indication
FS 01	Water flow switch	Interlock — no-flow lockout

Cabinet reference drawing

Typical general arrangement — this model's own dimensions alongside



DIMENSIONS (L × W × H)
860 × 780 × 850 mm

NET WEIGHT
230 kg

Reference arrangement only — Single-compressor cabinet, vertical discharge. Dimensions printed on the drawing are indicative; the figures above and in the specification table are the ones that apply to this model.

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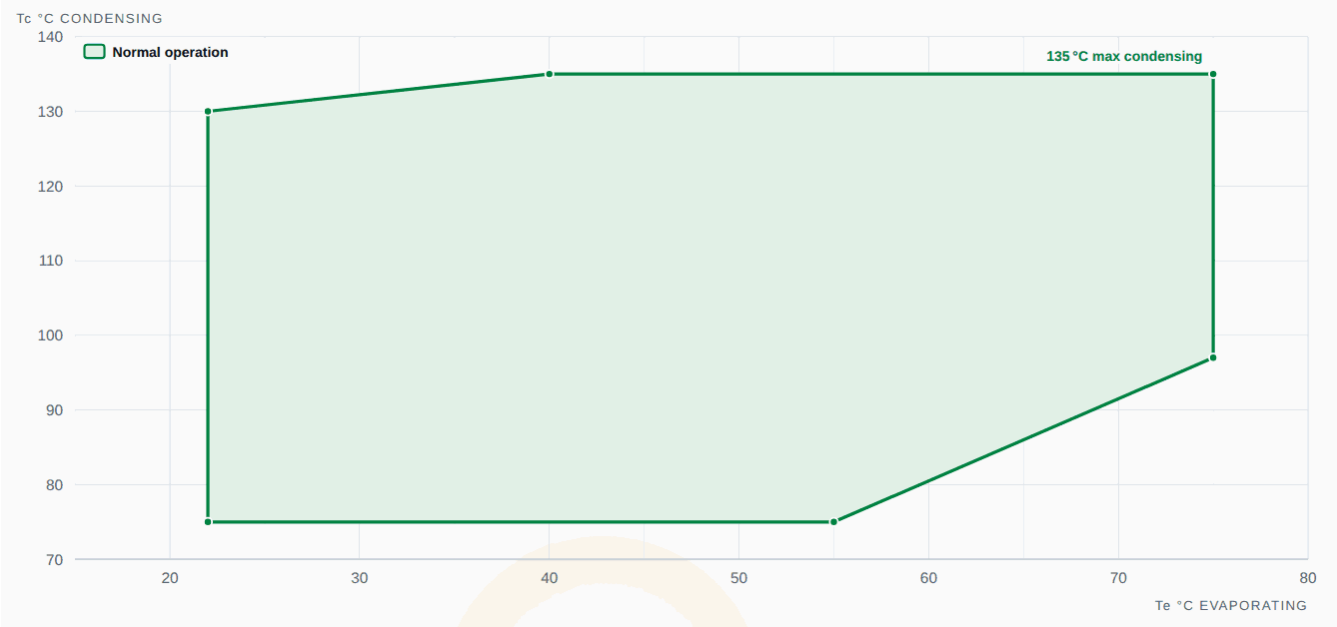
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Operating envelope

The compressor's permitted window, in refrigeration terms

Operating envelope · R245fa circuit

Condensing against evaporating temperature — the compressor's permitted operating window



ENVELOPE LIMITS	
Evaporating temperature Te	**22 °C to 75 °C**
Condensing temperature Tc	**75 °C to 135 °C**
Peak condensing	**135 °C** highest hot-water temperature the circuit can reach
Transient operation	**Not applicable** the envelope above is the continuous operating window

READING THE ENVELOPE

Te (evaporating) follows the source the unit draws heat from — the colder the air or source water, the lower Te sits.

Tc (condensing) follows the water leaving the unit — asking for 80 °C hot water puts Tc near the top of the envelope.

A duty is valid only **inside the shaded area**. A cold source combined with very hot water pushes the point towards the top-left, which is exactly where the envelope closes in — that corner is the real limit on winter performance.

Representative envelope for the R245fa circuit, redrawn from the **Xecom / Embraco Nidec** scroll compressor selection guide, "Operating Envelop", XD*G panel. Envelope limits are broadly similar across compressor makes, so treat this as a representation of the circuit's operating window. Where a duty sits close to a boundary, confirm against the compressor fitted to the unit before finalising the design.

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