

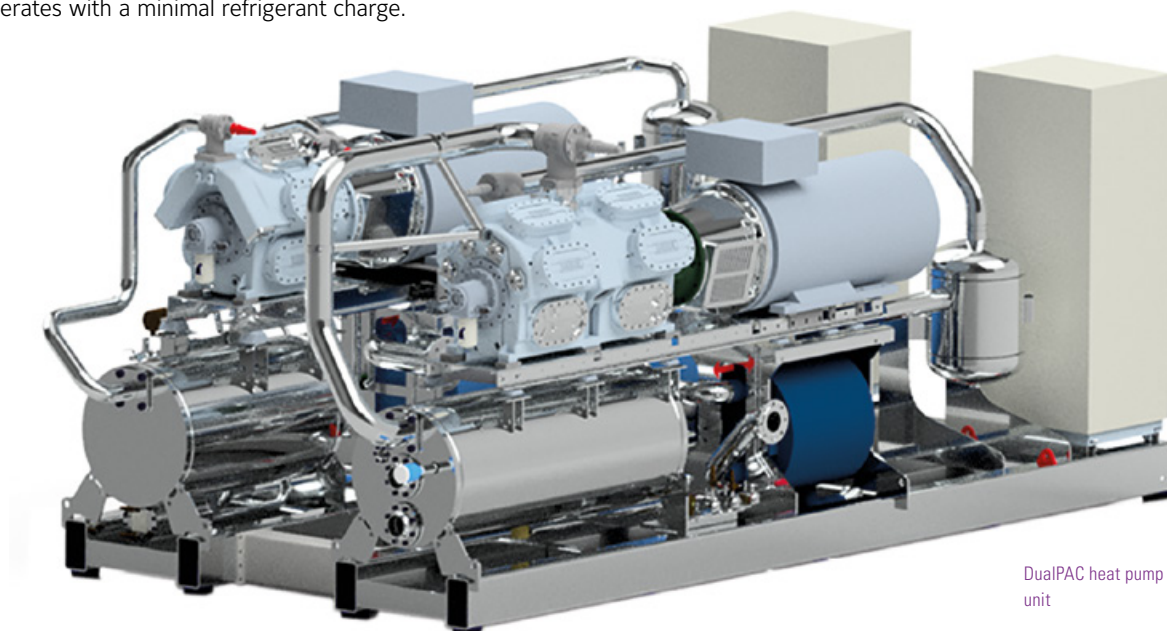
SABROE DualPAC™ heat pumps

Two-stage ammonia-based heat pumps with capacities of up to 2500 kW

SABROE DualPAC heat pumps combine ChillPAC™, HeatPAC™ and HeatPAC™ HPX units into one single heat pump, using an ingenious modular system that makes it possible to achieve high temperature lifts, with the advantages of compact design and attractive operating economics.

The DualPAC is a two-stage high-temperature heat pump configuration that uses ammonia as refrigerant, and is designed with the sole aim of best possible performance and versatile operating conditions along with the same practical benefits – including small refrigerant charges and limited footprint – as any other SABROE heat pump. This unique setup ensures maximum flexibility in both configuration and capabilities, because all standard ChillPAC and HeatPAC models can be used.

The setup is possible due to a purpose-designed open inter-stage cooler that operates with a minimal refrigerant charge.



Advantages	Benefits
Stepless, skip-free capacity control ensures that output always matches requirements	Lowest possible operating costs and maximum return on investment
Consistently high performance at both full and part load	Maximum part-load efficiency and low life cycle costs
Unique two-stage solution featuring patented technology	Makes it possible to deal with multiple sets of running conditions
Space-saving footprint, with fewer moving parts and very low vibration	Exceptional reliability and low maintenance costs
Supports Condition Based Service (CBS) schedules	Optimised service/maintenance intervals, with a minimum of unscheduled downtime



The DualPAC benefits from all of the advantages of the ChillPAC® and HeatPAC™ product ranges, based on patented SABROE evaporator and condenser designs along with the most extensive range of reciprocating compressors available anywhere in the world, and featuring configurations with HPO™/HPC™ or HPX™ compressors as the high stage and SMC compressors on the low stage.

Within the extensive portfolio of SABROE heat pumps, these dual versions are ideal wherever there is a need for big temperature lifts along with good performance in order to make the installation financially advantageous.

The DualPAC configuration is optimised for use in district heating and ground-source cooling, so that thermal energy can be put to the most cost-effective use. The water circuit on the hot side consists of a series of heat exchangers built into one single vessel that extracts the heat from de-superheating, condensing and subcooling processes. In many cases even de-superheating at the low stage is profitable, and serves to increase performance still further.

Condenser: water inlet: 50 °C, outlet 70 °C
Evaporator: water inlet 30 °C, outlet 20 °C

Type	Heating capacity kW	Cooling capacity kW	Power consumption kW (shaft)	COP heat (shaft)	R717 charge	Dry weight kg (approx.)	Unit dimensions in mm (approx.)			Sound level dB(A)
							L	W	H	
DualPAC 24-W	387	312	75	5.1	35	4020	2900	3000	2000	82
DualPAC 26-W	581	455	115	5.0	40	4460	2900	3000	2000	83
DualPAC 28-W	775	619	155	4.9	45	4840	2900	3000	2000	84
DualPAC 104-W	935	745	189	4.9	65	5500	4500	3000	2000	84
DualPAC 106-W	1388	1109	282	4.9	70	6700	5000	3000	2000	85
DualPAC 108-W	1850	1471	379	4.8	95	7890	6000	3000	2200	86
DualPAC 112-W	2777	2190	584	4.7	115	10450	7500	3000	2200	86
DualPAC 704-W	435	348	86	5.0	40	6500	3500	3000	2100	86
DualPAC 706-W	652	520	132	4.9	45	7900	3700	3000	2100	86
DualPAC 708-W	870	690	180	4.8	55	10000	4100	3000	2100	87
DualPAC 712-W	1305	1025	280	4.6	75	13500	5000	3000	2100	88
DualPAC 716-W	1740	1365	375	3.6	115	16500	6000	3000	2100	89

Condenser: water inlet: 70 °C, outlet 90 °C
Evaporator: water inlet 15 °C, outlet 5 °C

Type	Heating capacity kW	Cooling capacity kW	Power consumption kW (shaft)	COP heat (shaft)	R717 charge	Dry weight kg	Unit dimensions in mm (approx.)			Sound level dB(A)
							L	W	H	
DualPAC 704-W	444	308	140	3.1	40	6500	3500	3000	2100	86
DualPAC 706-W	666	460	212	3.3	45	7900	3700	3000	2100	86
DualPAC 708-W	888	610	287	3.0	55	10000	4100	3000	2100	87
DualPAC 712-W	1332	907	441	3.0	75	13500	5000	3000	2100	88
DualPAC 716-W	1775	1205	595	2.9	115	16500	6000	3000	2100	89

SABROE DualPAC heat pumps are available on request.

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All information is subject to change without notice.

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