

PAC chillers with screw compressors

Sabroe packaged ammonia chillers (PAC) based on screw compressors provide notable benefits when indirect cooling using a secondary refrigerant is required.

The advanced technology used in Sabroe PAC chillers means they are so energy efficient that their low running costs make them the cheapest option over the lifetime of a refrigeration plant.

In addition, ammonia – because of its environmental friendliness – is the only suitable refrigerant that will still be in use in the foreseeable future.

Comprehensive series of chillers

The standard range of Sabroe packaged ammonia chillers comprises more than 40 models that have been optimised to meet the requirements experienced in the great majority of situations.

Individually customised solutions are also available for remote air-cooled or evaporative condensers and for twin or multi-packages, designed for large capacity requirements.

All the chillers used in these packages are supplied with PED approval (European Pressure Equipment Directive). Other approvals on request.



PAC 233

Significant advantages

The Sabroe PAC chiller design features the following advantages

- The standard Sabroe PAC chiller range is factory-assembled, based on world-renowned screw compressor products.
- Sole use of natural ammonia (R717) as refrigerant.
- The Sabroe PAC chiller design is based on the flooded evaporator system, which is a relatively simple construction.
- All Sabroe chiller units are operationally tested with refrigerant at the specialist End Of Line (EOL) Test Centre before dispatch. A capacity test is also available as an option.

Customer benefits

The Sabroe PAC chiller design provides customers with the following benefits

- ▶ Full advantage of well-tested Sabroe standard solutions that feature top-quality industrial components. This improves safety, ensures maximum reliability and provides easy access to service and parts worldwide.
- ▶ Ammonia has the highest COP (coefficient of performance) available for chillers. It is also the most environmentally friendly and future compatible refrigerant currently available.
- ▶ The most reliable operation with maximum energy efficiency and a very low operating cost.
- ▶ Factory testing ensures trouble-free on-site start-up and operation as soon as the refrigerant charge has been added and water and electricity connections made. Shorter, safer start-up and commissioning periods reduce overall costs significantly.

Sabroe product description

Selection guide – packaged ammonia chillers

Water: inlet 12°C, outlet 7°C

Type	Capacity	E-motor	R717 charge	Operational	Dimensions			Sound level **)
	kW	kW	kg	weight kg	L mm	W mm	H mm	
PAC 120 S-A	197	55	38	4000	4310	1870	2260	82
PAC 120 M-A	254	75	40	4150	4310	1870	2260	83
PAC 120 L-A	326	75	50	4550	4310	1870	2260	84
PAC 120 E-A	441	110	54	4800	4560	1870	2360	86
PAC 151 S-A	496	132	55	5600	3800	2070	2360	88
PAC 151 M-A	600	132	59	5700	5700	2070	2360	89
PAC 128 HR-A*)	669	160	73	4550	4200	2050	2450	82
PAC 151 L-A	761	200	75	6200	3940	2090	2450	89
PAC 193 S-A	885	200	81	6400	4600	2350	2450	82
PAC 151 E-A	921	200	80	6350	4600	2090	2450	90
PAC 193 L-A	1180	250	91	7000	5300	2350	2450	82
PAC 163 HR-A*)	1437	315	172	8500	5200	2350	3200	82
PAC 233 S-A	1595	355	169	11500	5500	2900	3200	83
PAC 233 L-A	2009	400	184	12500	6700	3000	3200	83
PAC 233 E-A	2481	500	211	15200	6700	3050	3400	84
PAC 283 S-A	2859	630	230	17000	7500	3400	3400	85
NSPAC 283 L-A	3596	800	350	20500	7300	3700	4500	83
NSPAC 283 E-A	4367	900	391	25500	8500	3700	4700	83
NSPAC 355 S-A	4516	1000	410	28000	8500	4000	4700	83
NSPAC 283 X-A	4939	1000	450	30000	9100	4000	4700	83
NSPAC 355 L-A	6180	1250	700	40000	10000	4000	6000	83

Ethylene glycol 30%: inlet -4°C, outlet -8°C

Type	Capacity	E-motor	R717 charge	Operational	Dimensions			Sound level **)
	kW	kW	kg	weight kg	L mm	W mm	H mm	
PAC 120 S-C	109	55	38	4000	4310	1870	2260	82
PAC 120 M-C	141	75	39	4150	4310	1870	2260	83
PAC 120 L-C	180	75	49	4500	4310	1870	2360	84
PAC 120 E-C	243	110	53	4700	4310	1870	2360	86
PAC 151 S-C	275	110	54	5550	3940	2070	2360	88
PAC 151 M-C	333	132	57	5600	3940	2070	2360	89
PAC 128 HR-C*)	377	132	72	4450	4000	2050	2450	84
PAC 151 L-C	422	160	73	6100	3940	2090	2450	89
PAC 193 S-C	489	200	78	6250	4600	2350	2450	82
PAC 151 E-C	512	200	77	6200	4290	2090	2450	90
PAC 193 L-C	653	250	87	6750	5000	2350	2450	82
PAC 163 HR-C*)	798	315	89	8800	5440	2080	2450	84
PAC 233 S-C	880	315	161	11250	5200	2750	3200	84
PAC 233 L-C	1103	400	175	12100	5800	2750	3200	84
PAC 233 E-C	1373	500	198	14700	6500	2800	3400	84
PAC 283 S-C	1597	560	211	16350	6700	3150	3400	86
PAC 283 L-C	1995	710	230	19000	7100	3700	3400	88
NSPAC 283 E-C	2412	900	374	24500	7300	3700	4500	84
NSPAC 355 S-C	2525	900	380	26000	8000	4000	4700	84
NSPAC 283 X-C	2752	1000	400	28000	8500	4000	4700	84
NSPAC 355 L-C	3418	1200	600	38000	9500	4000	6000	84

Condenser: water inlet 30°C, outlet 35°C

Motor: 3 x 400V, 50 Hz, 2960 rpm

The above data are only valid for the stated temperatures and operating conditions.

Capacities are nominal.

A = Outlet temperature above 0°C

C = Outlet temperature below 0°C

*) at 6000 rpm

**) Sound pressure levels in free field. All sound measuring has been carried out according to ISO 9614-2 at a distance of 1 m.

All information is subject to change without previous notice