

# SABROE SAB high-pressure screw compressor units

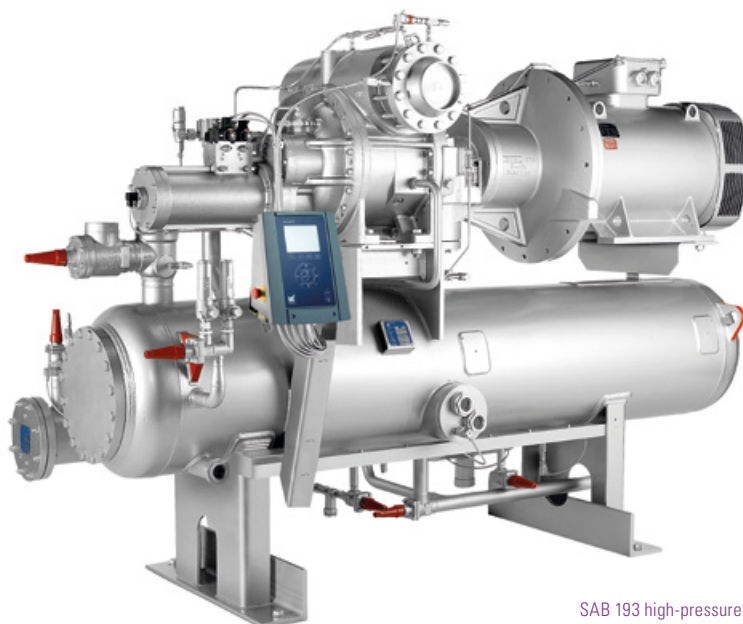
Variable-speed high-pressure screw compressor units with swept volumes of 100–4200 m<sup>3</sup>/hour, for use with ammonia or CO<sub>2</sub> as refrigerant

These unique high-pressure compressor units are ideal for large site-built ammonia heat pump installations that condense at either 90°C or 72°C. They are also the ideal choice for larger CO<sub>2</sub> systems or low-temperature two-stage freezer installations, such as carbon dioxide-ammonia (R744–R717) cascade refrigeration systems.

Using CO<sub>2</sub> as refrigerant makes it possible to make big savings on installation, piping and compressor costs because a single compressor unit can replace multiple compressors using traditional refrigerants.

SABROE SAB high-pressure screw compressors are specially designed for variable-speed operation and maximum flexibility, doing away with the traditional capacity limitations of slide-valve technology. The capacity range of all SAB models extends from 1000rpm to maximum rpm.

The SAB 193, 233, 283 and 355 high-pressure configurations, all ductile iron-cased versions of the large SABROE compressor units, provide substantial base load capacities along with providing exceptional flexibility in frequency converter operation. This ensures the robustness and reliability derived from the thousands of compressors in long-term service in refrigeration plants worldwide.



SAB 193 high-pressure screw compressor unit with Unisab III systems controller

## Advantages

High-pressure units designed specifically for applications that use CO<sub>2</sub> or ammonia as refrigerant

Stepless, skip-free capacity control ensures that output always matches requirements

Consistently high performance at both full and part load

Space-saving small footprint, with fewer moving parts and very low vibration

Supports Condition Based Service (CBS) schedules

## Benefits

Makes it possible to undertake freezing and defrosting in one single stage, or to utilise waste heat

Lowest possible operating costs and rapid return on investment

Maximum part-load efficiency and low life cycle costs

Exceptional reliability and low maintenance costs

Optimised service/maintenance intervals, with a minimum of unscheduled downtime

## Options

- Variable-speed drive
- Thermosyphon and water-cooled oil coolers, with 3-way oil temperature control valve
- Liquid injection oil cooling (EZ Cool)
- Dual external oil filters (SuperFilter II type)
- Complete economiser systems
- Demand oil pump – controlled by Unisab III systems controller
- Sensors and transmitters for control by external PLC systems.



## For R717, 40 bar

Model	Max. rpm	Swept volume at max. rpm m <sup>3</sup> /h	Capacities in kW including economiser +4/72°C R717			Capacities in kW including economiser at max. rpm +32/72°C, R717			Unit dimensions in mm L x W x H	Weight excluding motor/oil kg	Sound pressure level at max. rpm dB(A)
			Cooling	Heating	COP <sub>line</sub> Heating/cooling	Cooling	Heating	COP <sub>line</sub> Heating/cooling			
SAB 193 HP	4200	1188	1270	1797	3.41/2.41	2822	3399	5.90/4.90	3150 x 1500 x 1800	2700	90
SAB 233 HP	3800	1890	2040	2866	3.47/2.47	4576	5466	6.15/5.51	3700 x 1700 x 2100	4600	90
SAB 283 HP	3600	3211	3437	4817	3.49/2.49	7731	9229	6.16/5.16	3700 x 1800 x 2250	5500	92
SAB 355 HP	3600	5030	5273	7472	3.40/2.40	11933	14330	5.98/4.98	4600 x 2400 x 3500	10000	93

## For R717, 60 bar

Model	Swept volume at 6000 rpm m <sup>3</sup> /h	Capacities in kW at 6000 rpm R717			Unit dimensions in mm L x W x H	Weight excluding motor/oil kg	Sound pressure level dB(A)
		+40/82°C	+30/82°C	+20/82°C			
SAB 157 HR	596	1912	1503	1148	3300 x 1500 x 2100	2600	on request

## For R744

Model	Max rpm	Swept volume at max. rpm m <sup>3</sup> /h	Capacities in kW R744		Unit dimensions in mm L x W x H	Weight excluding motor/oil kg	Sound pressure level at max. rpm dB(A)
			-40/-5°C	-50/-5°C			
SAB 157 HR	6000	596	853	574	3300 x 1500 x 2100	2600	on request
SAB 193 HP	4200	1188	1711	1159	3150 x 1500 x 1800	2700	88
SAB 233 HP	3800	1890	2773	1875	3700 x 1700 x 2100	4600	88
SAB 283 HP	3600	2675	4801	3244	3700 x 1800 x 2250	5500	90
SAB 355 HP	3600	4192	7393	4987	4600 x 2400 x 3500	10000	91

All SABROE high-pressure screw compressors are available on request.

Design pressure for SAB 193 HP, SAB 233 HP, SAB 283 HP and SAB 355 HP: 40 bar.

Design pressure for SAB 157 HR: 60 bar.

Min./max. speed	R717
SAB 157	1000-6000 rpm
SAB 193	1000-4200 rpm
SAB 233	1000-3800 rpm
SAB 283	1000-3600 rpm
SAB 355	1000-3600 rpm

All information is subject to change without previous notice

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