SAB screw compressors (swept volumes 200–850 m^3/h)

Sabroe SAB screw compressors are ideal for a wide range of industrial and marine applications where reliability and low operating costs are crucial requirements.

These packages are engineered and manufactured to meet the exacting requirements of the refrigeration market, and can be used with all the most common refrigerants and process gases.

All the components are designed and laid out to ensure maximum reliability, accessibility and ease of service, for cost-effective maintenance.

The space-saving design has only a minimal footprint, paving the way to significant reductions in space requirements.

SAB 120 screw compressor unit

SAB 151 screw compressor unit

Significant advantages

- Fitted with an IEC flange-mounted motor as standard. Alignment is machined into the parts at the factory.
- Highly effective SuperFilter II™ oil filter captures 99% of all particles larger than 5 microns.
- Special Cold Start™ valve that ensures immediate oil pressure at start-up. This lubricates the compressor without requiring an oil pump.
- Infinite capacity control ensures that capacity is always adjusted to suit requirements.
- Patented method of matching the internal volume ratio (V_i) to the system volume ratio.
- Rotor design, combined with an internal gear drive to increase rotor tip speed, brings unprecedented efficiency to screw compressors in this size range.
- Compressor features an anti-friction bearing design for reduced power consumption, improved efficiency and reduced maintenance.
- All SAB screw compressor packages are supplied with Unisab III control systems, ready to operate.

Customer benefits

- Eliminates both cold and hot alignment. Longer service life for bearings and shaft seal.
- Efficient oil management helps ensure longer bearing life, providing maximum reliability and savings on both maintenance and replacement.
- Lower operating costs and reduced maintenance.
- Maximum part-load efficiency and lowest possible operating cost.
- Lowest possible operating costs. The automatic setting ensures optimum performance regardless of variations in operating conditions.
- Maximum efficiency reduces operating costs.
- Reduces operating costs.
- Makes efficient equipment management easy, ensuring better operating economics, less downtime and longer service life.

SABROE
BY JOHNSON CONTROLS

Standard equipment

SAB screw compressors are supplied with the following equipment as standard

- compressor block, electric motor, connecting tunnel and flexible coupling
- basic unit including oil separator with coalescing elements and oil return assembly, standstill oil heating, sight glasses and highly efficient full-flow SuperFilter II™ oil filter
- suction stop valve, suction check valve and discharge stop/check valve assembly (cold start valve)
- dual safety valves with change-over valve system
- Unisab III control system linked to sensors, transmitters and solenoid valves for best possible compressor monitoring and protection, as well as optimised control of both internal volume ratio (Vi) and compressor capacity
- oil cooler.

Options

A wide range of optional equipment is available for use with Sabroe screw compressors. This includes

- thermosyphon and water-cooled oil coolers, with 3-way oil temperature control valve
- liquid injection oil cooling (EZ Cool™)
- dual SuperFilter II™ oil filters (on SAB 151 models only)
- complete economiser systems
- demand oil pump – controlled by Unisab III
- sensors and transmitters for control by PLC systems
- tools and spare part kits
- construction and approvals according to the most common design codes and classification societies.

Capacities in kW

Model	R717		R404A		With economiser	
	High stage	Booster	High stage		R717	R404A
	-10/+35°C	-40/-10°C	-10/35°C	0/+40°C	-40/+35°C	
SAB 120 S	121	36	115	157	36	47
SAB 120 M	156	48	152	207	47	63
SAB 120 L	200	61	195	265	61	80
SAB 120 E	270	83	261	355	82	107
SAB 151 S	305	97	305	416	87	126
SAB 151 M	369	117	367	500	105	151
SAB 151 L	469	149	466	635	133	192
SAB 151 E	568	180	560	763	161	231

Based on 5K liquid subcooling and 5K suction gas superheat.

Technical data

Model	Swept volume (m^3/h)*	Dimensions in mm L x W x H	Weight **	Sound pressure level dB(A)***
SAB 120 S	204	2200 x 1300 x 1500	1171	85
SAB 120 M	255	2200 x 1300 x 1500	1171	86
SAB 120 L	316	2200 x 1300 x 1500	1273	88
SAB 120 E	413	2200 x 1300 x 1500	1273	89
SAB 151 S	484	2800 x 1300 x 1700	2279	90
SAB 151 M	571	2800 x 1300 x 1700	2279	91
SAB 151 L	708	2800 x 1300 x 1800	2339	91
SAB 151 E	847	2800 x 1300 x 1800	2339	92

* At 50 Hz power supply
** Including oil cooler and excluding drive motor, oil and refrigerant charge
*** Free field, over reflecting plane and one metre distance from the unit (values are derived from test data for similar units and are indicative of the actual noise level measured in one or more applications)
Due to variations in equipment configurations, the dimensions and weights shown here are only guidelines.
Drive motor can increase overall height.

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