

# SAB screw compressors

## (swept volumes 800–10,000 m<sup>3</sup>/h)



*SAB 193 L unit*

Sabroe SAB screw compressors are ideal for a wide range of industrial and marine applications where reliability and low operating costs are crucial requirements. They can be used with all the most common refrigerants and process gases.

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

These units are designed to be extremely service-friendly. The critical components, controls, service points and openings are primarily located on the same side of the package, easy to reach for cost-effective maintenance.

Construction according to all applicable EU rules and directives.

### 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.
- Stepless 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.
- Integrated design with oil separator, compressor block, oil coolers, filters, etc.
- External oil cooling is available using high-efficiency thermosyphon or water-cooled oil cooler based on advanced plate heat exchanger technology.
- All SAB screw compressor packages are supplied with Unisab II 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 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.
- • Saves on space and reduces construction costs. The compact design also boosts reliability and extends service life. Easy access for operation and service.
- • Eliminates capacity and power penalties and thus reduces operating costs.
- • This makes efficient equipment management easy, ensuring better operating economics, less downtime and longer service life.



## 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, heating element, sight glass and highly efficient oil filter (SuperFilter II™ oil filter)
- suction stop valve, suction check valve and discharge stop/check valve assembly (cold start valve)
- Unisab II 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 ( $V_i$ ) and compressor capacity.
- oil cooler.

## Options

- 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™ oil filters)
- complete economiser systems
- demand oil pump – controlled by Unisab II
- 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<br>-10/+35°C | Booster<br>-40/-10°C | High stage<br>-10/35°C | 0/+40°C | R717<br>-40/+35°C | R404A |
| SAB 193 S        | 541                     | 164                  | 524                    | 779     | 155               | 213   |
| SAB 193 L        | 723                     | 220                  | 709                    | 1041    | 207               | 289   |
| SAB 233 S        | 974                     | 292                  | 922                    | 1404    | 271               | 379   |
| SAB 233 L        | 1220                    | 366                  | 1199                   | 1760    | 340               | 492   |
| SAB 233 E        | 1520                    | 456                  | 1472                   | 2191    | 424               | 606   |
| SAB 283 S        | 1767                    | 530                  | 1694                   | 2544    | 500               | 707   |
| SAB 283 L        | 2215                    | 664                  | 2079                   | 3190    | 627               | 874   |
| SAB 283 E        | 2667                    | 800                  | 2524                   | 3841    | 755               | 1064  |
| SAB 355 S        | 2785                    | 836                  | 2649                   | 4033    | 786               | 1116  |
| SAB 283 X        | 3033                    | 910                  | 2832                   | 4367    | 844               | 1185  |
| SAB 355 L        | 3771                    | 1131                 | 3418                   | 5459    | 1065              | 1457  |
| SAB 355 E        | 4793                    | 1438                 | 4300                   | 6940    | 1354              | 1838  |
| SAB 355 X        | 5992                    | 1796                 | 4944                   | 8676    | 1681              | 2139  |

Based on: 5K liquid subcooling, 5K superheating of suction gas

| Technical data |                                      |                                 |            |                                   |
|----------------|--------------------------------------|---------------------------------|------------|-----------------------------------|
| Model          | Swept volume<br>(m <sup>3</sup> /h)* | Dimensions in mm<br>L x W x H** | Weight *** | Sound pressure level<br>dB(A)**** |
| SAB 193 S      | 838                                  | 3191 x 1349 x 2027              | 2450       | 84                                |
| SAB 193 L      | 1118                                 | 3191 x 1349 x 2065              | 2550       | 84                                |
| SAB 233 S      | 1475                                 | 3388 x 1497 x 2317              | 3350       | 86                                |
| SAB 233 L      | 1856                                 | 3388 x 1497 x 2342              | 3450       | 86                                |
| SAB 233 E      | 2258                                 | 4118 x 1775 x 2534              | 4550       | 86                                |
| SAB 283 S      | 2640                                 | 4121 x 1858 x 2590              | 5700       | 88                                |
| SAB 283 L      | 3326                                 | 4121 x 1858 x 2647              | 5850       | 88                                |
| SAB 283 E      | 3998                                 | 4406 x 2075 x 2813              | 7650       | 88                                |
| SAB 355 S      | 4134                                 | 4832 x 2455 x 3440              | 9300       | 89                                |
| SAB 283 X      | 4516                                 | 4582 x 2075 x 2815              | 8950       | 88                                |
| SAB 355 L      | 5638                                 | 4994 x 2618 x 3675              | 9450       | 89                                |
| SAB 355 E      | 7175                                 | 5271 x 2758 x 3834              | 10250      | 89                                |
| SAB 355 X      | 9053                                 | 5271 x 2758 x 3834              | 10500      | 89                                |

\* at 50 Hz power supply  
 \*\* Due to variations in equipment configurations, the dimensions and weights shown here are only guidelines. Use only certified drawings for erection. Drive motor can increase overall height.  
 \*\*\* 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.

All information is subject to change without previous notice.

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