

# Technical documentation



## SAB 355 L screw compressor unit

YORK Refrigeration introduces a new range of Sabroe screw compressor packages.

SAB 355 L screw compressor units are engineered and manufactured to meet the exacting requirements of the industrial refrigeration market. All components have been designed and arranged to assure reliability, accessibility and servicing convenience.

The compressor has been designed using the latest technology to provide the most reliable and energy-efficient unit currently available. The rotors are manufactured from forged steel, employing asymmetric profiles. The compressor incorporates a complete antifriction bearing design for reduced power consumption. The unit has a full flow over-flow valve from the discharge to the suction side of the compressor.

### Capacity control

Capacity control is achieved by use of a slide valve that provides fully modulating capacity control from 100% to approximately 10% of full load.

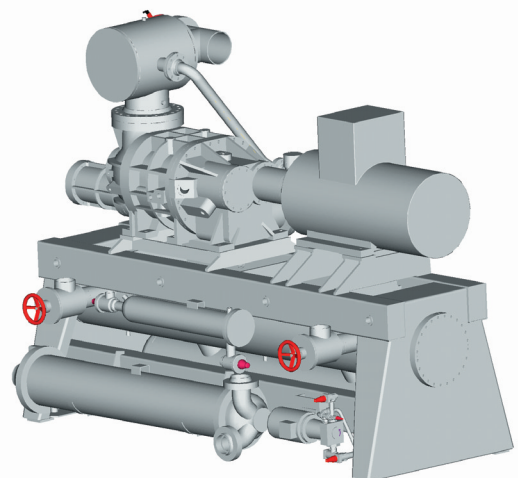
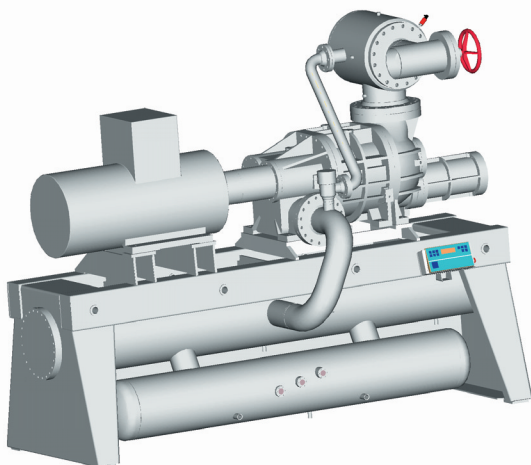
The SAB 355 L compressor includes a patented method of varying the internal volume ratio to match the system pressure ratio, eliminating the power penalty associated with over- or undercompression.

### Lubrication system

The SAB 355 L compressor is designed specifically for normal high stage operation without an oil pump. All oil required for main oil injection and lubrication is provided by positive gas differential pressure. All oil passes through the new type of filter, which is specifically designed for increased particle capture (down to less than 15 microns) and cleaner oil and compressor operation. It is furnished with isolation stop valves and drain connections for ease of servicing. The unit is equipped with a pre-lubricating pump, which is also used for booster applications and some low pressure differential high stage applications.

### Oil separator/reservoir

The oil separator is a horizontal, three-stage design. Replaceable coalescent separator elements are provided for final gas/oil separation down to less than 10 ppm.



## Oil cooling

Cooling the compressor oil can be achieved by using water-cooled or refrigerant (thermosyphon) oil cooling.

## Unisab II control and monitoring

SAB 355 L screw compressor units are supplied with Unisab II, YORK Refrigeration's microprocessor control and monitoring system. Unisab II is an advanced but extremely user-friendly control and monitoring system designed for the safe control, monitoring and optimisation of screw compressors. All necessary software and programs are included, providing immediate access to a wide range of advanced control and monitoring facilities.

The simple, functional and easy-to-operate display makes it possible to utilise all the advanced Unisab II facilities to ensure safe and highly efficient operation with a minimum of power consumption.

## Main features

- high COP
- low oil carry-over
- compact
- highly reliable
- stepless capacity control (100–10%)
- variable  $V_1$  regulation
- low maintenance costs
- full flow overflow valve
- code approvals
- microprocessor control and monitoring.

## Optional equipment

Dual oil filters, economizer, oil temperature control valve, oil coolers and vibration dampers.

### Cooling capacities \* kW at 2950 rpm

Model	R717		
	High stage -10/+35°C	Booster -40/-10°C	Economizer -40/+35°C
SAB 355 L	3820	1150	1101

\* 5°K liquid sub cooling / no line losses / 5°K suction superheat

### Technical data

Model	Swept volume <sup>(1)</sup> 2950 rpm m <sup>3</sup> /h	Dimensions <sup>(2)</sup>			Weight <sup>(3)</sup> kg	Sound pressure level <sup>(4)</sup> dB(A)
		Length mm	Width mm	Height mm		
SAB 355 L	5621	4350	2400	3300	8700	87

(1) Drive motor speed – (2) With refrigerant-cooled oil cooler – (3) Excluding electric motor – (4) Free field – one metre distance (excluding electric motor)

All data are subject to change without notice