SMC 100 single-stage reciprocating compressors

Sabroe SMC 100 reciprocating compressors are ideal for use in medium-size industrial and marine refrigeration installations. They are the most robust, reliable and economical option for a wide range of heavy-duty applications of this particular size. The well-proven Sabroe SMC 100 range consists of fifteen different models covering capacities of between 226 and 1357 m³/h swept volume at 1500 rpm maximum speed. They can be used with almost all refrigerants, and in high-stage or booster operation.

All SMC 100 compressors can be fitted with variable-speed drive (Rotatune) for stepless capacity control and improved coefficient of performance at part load. More details about this are provided in the special Sabroe product description for Rotatune compressors.

Compatible and upgradable
Sabroe SMC 100 compressor units are designed to be future-compatible. Ongoing changes and improvements are configured to make sure they can also be implemented on earlier SMC 100 models. This makes it easy to upgrade and retrofit older compressors to the latest standard.

Standard equipment
Sabroe SMC 100 compressors are supplied with the following equipment as standard
- compressor block with oil pump and oil filter
- solenoid valves for capacity control
- suction and discharge stop valves
- safety valve
- oil-charging valve
- suction filter
- oil-level sight glass
- electric immersion heater in crankcase
- evacuation valve
- pre-lubrication valve.

Significant advantages
The advantages of the Sabroe SMC 100 compressor design include
- High coefficient of performance (COP), with excellent part-load characteristics.
- Excellent accessibility and few requirements for spare parts.
- Any necessary repairs can normally be undertaken without having to remove the compressor.
- Chromium piston rings, gas-dampened discharge valves and hardened cylinder liner surfaces.
- Spring-loaded safety heads, balanced refrigerant-tight shaft seal, asbestos-free gaskets and an internal bypass valve to prevent excessive pressure.

Customer benefits
For the customer, the benefits of the Sabroe SMC 100 compressor design include
- Lower power consumption, especially when operating at part load. This greatly reduces operating costs.
- Easy maintenance, resulting in low service costs and minimal downtime.
- All repairs can be carried out on site at the customer’s own premises, reducing both repair costs and downtime.
- Extended service life for all moving parts.
- The special design ensures low noise and low vibration levels, with safe, environmentally friendly operation.
Optional equipment
A wide range of optional equipment is also available on Sabroe SMC 100 compressors. This includes:
- gauges, thermometers and temperature/pressure control switches
- Sabroe Unisab III microprocessor control with temperature/pressure sensors
- extended single-cylinder capacity control or standard capacity control with full unloading
- oil level regulator for parallel systems
- explosion-proof equipment
- base frame with coupling and guard for direct-drive unit
- base frame with pulleys, belts and guard for V-belt drive unit
- motors (standard or variable-speed)
- oil separators with solenoid valve and TLT valve for oil return
- oil charging pump
- vibration dampers and foundation bolts
- tool sets
- sets of genuine Sabroe spare parts.

Compressor and oil cooling
Depending on specific refrigerant and operating conditions, it can be necessary to supplement basic air convection cooling to make sure the compressor and the lubricating oil are cooled efficiently. This can be done with one of the following options:
- water-cooled head covers
- water-cooled side covers for oil cooling
- refrigerant-based oil cooling
- thermo-pump system (for use with R717 only).

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### SMC 108 with gauges

#### Nominal capacities are based on 5°C subcooling and max. rpm

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of cylinders</th>
<th>Bore x stroke mm</th>
<th>Max. rpm</th>
<th>Swept volume at max. rpm m³/h</th>
<th>Normal capacities kW R717</th>
<th>Normal capacities kW R404A</th>
<th>Dimensions Direct coupled unit mm</th>
<th>Weight excl. motor kg</th>
<th>Sound pressure level dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMC 104 S</td>
<td>4</td>
<td>100 x 80</td>
<td>1500</td>
<td>226</td>
<td>129: 209</td>
<td>205: 132</td>
<td>1800-2500 995 1055</td>
<td>810</td>
<td>80</td>
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<tr>
<td>SMC 104 L</td>
<td>4</td>
<td>100 x 100</td>
<td>1500</td>
<td>283</td>
<td>167: 266</td>
<td>208: 225</td>
<td>1800-2500 995 1095</td>
<td>830</td>
<td>81</td>
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<tr>
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<td>100 x 120</td>
<td>1500</td>
<td>339</td>
<td>206: 324</td>
<td>N/A</td>
<td>1800-2500 995 1095</td>
<td>830</td>
<td>81</td>
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<tr>
<td>SMC 106 S</td>
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<td>100 x 80</td>
<td>1500</td>
<td>339</td>
<td>194: 313</td>
<td>308: 197</td>
<td>1850-2500 1005 1130</td>
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<td>81</td>
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<tr>
<td>SMC 106 L</td>
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<td>1500</td>
<td>424</td>
<td>251: 398</td>
<td>312: 202</td>
<td>1850-2500 1005 1130</td>
<td>925</td>
<td>82</td>
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<tr>
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<td>1500</td>
<td>452</td>
<td>259: 417</td>
<td>410: 263</td>
<td>1900-2500 1005 1125</td>
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<td>1500</td>
<td>665</td>
<td>335: 531</td>
<td>416: 270</td>
<td>1900-2500 1005 1125</td>
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<td>388: 626</td>
<td>616: 395</td>
<td>2425-3000 1095 1335</td>
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Nominal capacities are based on 5°C subcooling and max. rpm

*) SMC 100 S: max. rpm 1500 for R404A
   SMC 100 L: max. rpm 1200 for R404A

All information is subject to change without previous notice.

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