Rotary Screw Compressors
BSD Series

With the world-renowned SIGMA PROFILE

Free air delivery 1.12 to 8.19 m³/min, Pressure 5.5 – 15 bar
BSD Series

BSD – Setting the standard
KAESER KOMPRESSOREN pushes the boundaries of compressed air efficiency once again with its latest generation of BSD series rotary screw compressors. Not only do they deliver more compressed air for less power consumption, but they also combine ease of use and maintenance with exceptional versatility and environmentally responsible design.

BSD – Multiple savings
The new BSD compressors save energy in multiple ways: The compressor airends are equipped with flow-optimised SIGMA PROFILE rotors and are controlled and monitored via the industrial PC-based SIGMA CONTROL 2 compressor controller. This enables free air delivery to be precisely matched to meet actual compressed air demand and ensures maximum energy efficiency. Last, but not least, the use of Super Premium Efficiency IE4 motors boosts energy efficiency even further.

Ease of maintenance ensures savings
The distinctive and eye-catching design of these systems from the outside is complemented by intelligent component layout on the inside for even greater energy efficiency: All service and maintenance points are within easy reach and directly accessible. This saves both time and money when it comes to servicing.

Perfect partners
BSD series rotary screw compressors are perfect partners for high efficiency industrial compressed air systems. The internal SIGMA CONTROL 2 compressor controller offers multiple communication channels, which allows seamless communication with advanced master controllers, such as KAESER’s SIGMA AIR MANAGER, and in-house centralised control systems. This enables simple setup and achieves unprecedented levels of efficiency.

Electronic Thermo Management (ETM)
Powered via an electric motor, the sensor-controlled temperature control valve integrated into the cooling circuit is the heart of the innovative Electronic Thermo Management (ETM) system. The new SIGMA CONTROL 2 compressor controller monitors intake and compressor temperature in order to prevent condensate formation, even with differing air humidity conditions. ETM dynamically controls the fluid temperature – low fluid temperature increases energy efficiency. This system also enables the end user to better adapt heat recovery systems to suit his or her specific needs.
BSD series

Uncompromising efficiency

SIGMA PROFILE airend
At the heart of every BSD system lies a premium quality airend featuring Kaeser's SIGMA PROFILE rotors. Operating at low speed, KAESER's airends are equipped with flow-optimised rotors for superior efficiency.

The future, today: IE4 motors
KAESER is currently the only compressed air systems provider to equip its compressors with Super Premium Efficiency IE4 motors as standard, thereby ensuring maximum performance and energy efficiency.

Electronic Thermo Management
The innovative Electronic Thermo Management (ETM) system dynamically controls fluid temperature to provide reliable prevention of condensate accumulation. This enhances energy efficiency, for example, by enabling heat recovery to be precisely tailored to meet customers' exact needs.
BSD T series

Premium compressed air quality with an integrated refrigeration dryer

Energy-saving control
The integrated refrigeration dryer in BSD-T units provides high efficiency performance thanks to its energy-saving control. The dryer is active only when compressed air actually needs to be dried. This approach therefore achieves the required compressed air quality with maximum efficiency.

Refrigeration dryer with ECO-DRAIN
The refrigeration dryer also features an ECO-DRAIN. The advanced level-controlled condensate drain eliminates the compressed air losses associated with solenoid valve control. This both saves energy and considerably enhances the reliability of the compressed air supply.

Dependable centrifugal separator
A KAESER axial centrifugal separator fitted with an electronic ECO-DRAIN condensate drain installed upstream from of the refrigeration dryer ensures that condensate is reliably pre-separated and drained, even when ambient temperatures and humidity are high.

Minimal refrigerant required
The refrigeration dryers in KAESER’s new BSD-T units require approximately fifty percent less refrigerant than conventional dryers. This not only saves costs, but is also significantly more environmentally compatible.
BSD SFC series

Variable speed control perfected

Optimised specific power
The variable speed compressor is the most heavily loaded piece of equipment in every compressor station. With its wide control range, the BSD-SFC model is therefore designed with optimum efficiency in mind. This saves energy, maximises service life and enhances reliability.

Precision pressure control
The volumetric flow rate can be adjusted within the control range according to pressure. As a result, operating pressure is precisely maintained to within ±0.1 bar. This allows maximum pressure to be reduced which saves both energy and money.

Separate SFC control cabinet
The SFC variable speed drive is housed in its own control cabinet to shield it from heat from the compressor. A separate fan keeps operating temperatures in the optimum range to ensure maximum performance and service life.

EMC certified
It goes without saying that the SFC control cabinet and SIGMA CONTROL 2 are tested and certified both as individual components and as a system to EMC directive EN 55011 for Class A1 industrial power supplies.
**Equipment**

**Complete unit**
Ready-to-run, fully automatic, supersilenced, vibration damped, all panels powder coated. Suitable for use in ambient temperatures up to +45°C.

**Sound insulation**
Panels lined with laminated mineral wool.

**Vibration damping**
Double insulated anti-vibration mountings using rubber bonded metal elements.

**Airend**
Genuine KAESER rotary screw, single stage airend with energy-saving SIGMA PROFILE and cooling fluid injection for optimised rotor cooling. 1:1 direct drive.

**Drive**
Direct, high-flex coupling, without gearing.

**Electric motor**
Super-Premium-Efficiency IE4 motor, quality German manufacture, IP 55, ISO F for additional reserve; PT 100 winding temperature sensor for motor monitoring; externally lubricated bearings.

**Electrical components**
IP 54 control cabinet, control transformer, Siemens frequency converter, floating contacts for ventilation control.

**Fluid and air flow**
Dry air filter; pneumatic inlet and venting valve; cooling fluid reservoir with triple separation system; pressure relief valve, minimum pressure check valve, thermostatic valve and microfilter in coolant circuit, all fully piped using flexible couplings.

**Cooling**
Air-cooled; separate aluminium cooler for compressed air and cooling fluid; radial fan with separate electric motor, externally lubricated bearings, Electronic Thermo Management (ETM), Water-cooled option with plate-type or shell and tube heat exchangers.

**Refrigeration dryer**
CFC-free, R134a refrigerant, fully insulated, hermetically sealed refrigerant circuit, scroll refrigerant compressor with energy-saving shut-off feature, hot-gas bypass control, electronic condensate drain and upstream centrifugal separator.

**Heat recovery (HR)**
Optionally available with integrated HR system (plate-type heat exchanger).

**SIGMA CONTROL 2**
“Traffic light” LED indicators show operational status at a glance, plain text display, 30 selectable languages, soft-touch keys with icons, fully automated monitoring and control. Selection of Dual, Quadro, Varo, Dynamic and continuous control as standard. Interfaces: Ethernet; additional optional communication modules for: Profinet DP, Modbus, Profinet and DeviceNet; SD card slot for data recording and updates; RFID reader, web server.

**Cooling**
Air-cooled; separate aluminium cooler for compressed air and cooling fluid; radial fan with separate electric motor, externally lubricated bearings, Electronic Thermo Management (ETM), Water-cooled option with plate-type or shell and tube heat exchangers.

**Refrigeration dryer**
CFC-free, R134a refrigerant, fully insulated, hermetically sealed refrigerant circuit, scroll refrigerant compressor with energy-saving shut-off feature, hot-gas bypass control, electronic condensate drain and upstream centrifugal separator.

**Heat recovery (HR)**
Optionally available with integrated HR system (plate-type heat exchanger).
### Technical Specifications

**Standard version**

<table>
<thead>
<tr>
<th>Model</th>
<th>Working pressure</th>
<th>FAD (*)</th>
<th>Max. working pressure</th>
<th>Rated motor power</th>
<th>Dimensions W x D x H</th>
<th>Compressed air connection</th>
<th>Sound pressure level (**)</th>
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**SFC - Version with variable speed drive**

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**T - Version with integrated refrigeration dryer (R 134a refrigerant)**

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**T SFC - Version with variable speed drive and integrated refrigeration dryer**

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1. FAD in accordance with ISO 1217:2009, Annex C: absolute inlet pressure 1 bar (a), cooling and air intake temperature 20 °C
2. Sound pressure level as per ISO 2151 and the basic standard ISO 9614-2, tolerance: ± 3 dB(A)
Choose the required grade of treatment according to your field of application:

Air treatment using a refrigeration dryer (pressure dew point +3°C)

Application examples: Selection of treatment classes to ISO 8573-1 (2010)

- Pure air and clean room technology,大臣, breweries
- Foodstuff production
- Solids Water Oil
- Microchip production, optics and foodstuffs
- Process air, pharmaceuticals
- Photo labs
- Expecially dry conveying air, paint spraying, fine pressure controllers

For non heat protected air systems: Compressed air treatment with a desiccant dryer (down to -70°C pressure dew point)

- Pure air and clean room technology,大臣, breweries
- Microchip production, optics and foodstuffs
- Paint spraying, powder coating
- General works air, high-grade sand blasting
- Sheet blasting
- Low-grade sheet blasting
- Conveying air for waste water systems
- No quality requirements

**Explanation**

- ACT: Activated carbon adsorber
- AQUAMAT: AQUAMAT
- DD: Desiccant dryer
- DHS: Air-membrane desiccant system
- AR: Air receiver
- ED: ECO DRAIN
- FB / FC: Filter
- FS / FC: Pre-filter
- FFG: Activated carbon and microfilter
- FF: Filter
- FG: Activated carbon filter
- RD: Refrigeration dryer
- TRM: Bag filter
- ZK: Centrifugal separator

**Compressed air quality classes to ISO 8573-1 (2010)**

**Solid particle / dust**

| Class | Concentration of solid particles C_p in mg/m³ *
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<tr>
<td>0</td>
<td>≤ 0.1 ≤ d ≤ 0.5</td>
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<tr>
<td>1</td>
<td>0.5 &lt; C_p ≤ 1.0</td>
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<tr>
<td>2</td>
<td>1.0 &lt; C_p ≤ 5.0</td>
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<tr>
<td>3</td>
<td>C_p &gt; 5.0</td>
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**Liquid water**

| Class | Concentration of liquid water C_W in g/m³ *
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<tr>
<td>1</td>
<td>0.5 &lt; C_W ≤ 1.0</td>
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<td>2</td>
<td>1.0 &lt; C_W ≤ 5.0</td>
</tr>
<tr>
<td>3</td>
<td>C_W &gt; 5.0</td>
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</tbody>
</table>

| Class | Total oil concentration (leaf, aerosol + gaseous) [mg/m³] *
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<tr>
<td>1</td>
<td>0.1 &lt; C_o ≤ 0.5</td>
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<td>2</td>
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</tr>
<tr>
<td>3</td>
<td>C_o &gt; 1.0</td>
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* FE microfilters can be optionally installed on refrigeration dryers.