



High pressure oxygen compressor 16 Nm³/h, 170 bar

High pressure oxygen compressor 3 Nm³/h, 150 bar



Description of SGI – High pressure piston gas compressors

SGI compressors have been developed specifically for the exacting requirements of safe, reliable compression service with oxygen or other clean gases. The series incorporates design features developed over several decades for a variety of industrial and military compressor applications. They are also well suited for the compression of other clean, dry gases 150 to 200 bar.

The compressors employ oil-less single-acting cylinders on a "V" type crosshead design crankcase. Heat exchangers and compression cylinders are air or fresh water cooled. The crankcase of larger types is splash-lubricated with oxygen compatible oil.

The 3rd and 4th stage pistons are freefloating. This allows piston and ring change-out without cylinder or piston rod removal. All heads are air cooled and can be removed without disconnecting the cooling water piping. Replacement of a floating piston assembly typically requires only one-half hour.

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gas compressors

process gas compression systems





Single stage oxygen compressor roots type
1100 Nm³/h

SGI-process gas compression systems

General aspects of SGI- Gas compression

The SGI- compressors had been developed mainly for use in O₂/N₂ PVSA gas generators as booster compressors, to get higher delivery pressure.

Special features of SGI- Rotating compressors

For lower output pressures up to 6 bar abs we use the principle of rotating hooked rotors.

- Oil free operation

Description of rotating gas compressors

The SGI- compressor consists of two rotors in contra-rotating direction. Due to a minimum clearance between the rotors the compressor can achieve high efficiency without using any oil or lubrication in the compression room. Due to the fact that moving parts are not in contact with each other we can offer long service life and less maintenance.

Between the compression room and the driving gears we have a neutral room which guarantees the separation between the oil free compression room and the lubricated gears. Therefore this machine can be used for compression of gases like oxygen and nitrogen. The machine is driven by a frequency controlled electric motor acc. customers request.

SGI- Multi-Stage gas compressors

In case of higher gas flow or higher discharge pressure it is not possible to fulfill all process requirements with single stage compressors. In these cases multi-stage compressors combining different machine types will be used. In case of lower gas flow we offer the rotary lobe blower hooked type in 1- and 2- stage version up to 500 Nm³/h and 3 to 6 bar abs. In case of larger required flow rates we use a combination of roots type blowers and hooked type blowers in 2- or 3- stage version. In such a system different blowers are mounted on skids and connected with piping to each other. Air cooled coolers are used to take away the heat of compression. We deliver completely assembled skids including heat exchangers, piping, instrumentation and control equipment.



Multistage nitrogen compressor for recycling system
6000 Nm³/h



Single stage oxygen compressor hooked type
500 Nm³/h

SGI offers 3 types of compressors for the different applications.

- **Low pressure range:**
Roots blower, rotary piston hooked type up to 3 bar
- **Medium pressure range:**
Rotary piston hooked type up to 6 bar
- **High pressure:**
Reciprocating piston type up to 200 bar

- One- stage and two stage models
- Pressures to 3 to 6 bar abs
- Air cooled
- Low and easy maintenance
- Less wear due to no moving parts in contact
- Long service life
- No contamination of gas with ambient air
- Neutral room between compression room and mechanical drive
- Compact and lightweight design

	Machine Rotary piston	Gas flow (Nm ³ /h)	Discharge pressure (bar abs)	Rated power (kW)
1- stage compressor	Hooked type	max. 500	3	37
2- stage compressor	Hooked type	max. 500	6	61
2- stage compressor	Hooked type	max. 1000	6	126
3- stage compressor	Roots-hooked type	1500 / 1800	6	158 / 185
3- stage compressor	Roots-hooked type	max. 2800	6	286

Multistage gas compressor



Gas recycling for nitrogen



In case of installation of further units in parallel higher flow capacities are possible. As well these rotating compressors can be combined with piston compressors as booster stage to get higher discharge pressures than 5 bar abs.