

HPC

Compressed
Air Systems

Boosters N Series

Initial pressure up to 13 bar – Final pressure up to 45 bar
Flow rate 0.27 – 20.51 m³/min



Why boosters?

The ability to offer compressed air at various pressures makes it one of the most versatile energy sources available. Special applications require specifically tailored solutions in order to achieve optimum efficiency. Boosters are ideal for applications such as PET container production for example, where compressed air is required at a higher pressure than the standard works or control air at particular points in the manufacturing process. In these cases, it is more economical to use the existing works air and boost it to the higher pressure with a small local compressor, rather than to operate the whole compressed air system at the higher pressure. Regulating the pressure of a high pressure network to suit low-pressure applications (which account for most air usage) is simply a waste of money.

KAESER offers a comprehensive range of high performance reciprocating compressors that are able to boost compressed air from a rotary screw compressor up to pressures as high as 45 bar(g). These machines are perfectly matched for use with KAESER KOMPRESSOREN's extensive range of rotary screw compressors and SIGMA PET AIR systems.

Effective up to 45 bar

Continuous research and development

KAESER KOMPRESSOREN's strategy of continuous research and development ensures that every product provides exceptional performance and reliability. KAESER's wide range of boosters for example, features the very latest innovations in reciprocating compressor technology. These include newly designed compressor blocks with oil pumps and high efficiency coolers, both of which are essential for optimised high pressure system operation up to 45 bar. In addition, design details such as pressurised oil lubrication and intensive cylinder cooling all-low up to 100 percent duty cycles.



KAESER compressor block

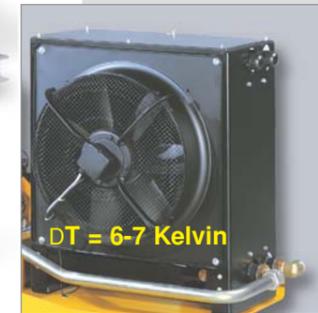
Designed and manufactured by KAESER, the high-pressure compressor blocks are available as two or three cylinder models and operate at low speed to ensure years of reliable and efficient service.



High quality cylinder

High quality cylinder

Every KAESER booster is equipped with super-precision cylinders, each finished by a special process to ensure minimal oil consumption and negligible wear for maximum durability.



Low temperatures

Three-cylinder models are equipped with a fan-assisted aftercooler to ensure lowest possible compressed air outlet temperatures. A water-cooled version with aftercooler is available to achieve even lower "Delta T" results.

DT = 6-7 Kelvin



Energy-saving motors

Needless to say, all KAESER N series compressors are equipped with premium efficiency IE3 efficiency class drive motors.

Compressed air system with booster up to 45 bar



Further information is also available in our SIGMA PET AIR brochure: P-200



Select the best

It is not uncommon for a booster to achieve a maximum pressure of 40 bar, but this once standard figure can now only be considered as second best. KAESER booster systems are in a class of their own however, as they are the product of decades of experience in compressor system design and guarantee continuous delivery at 45 bar.

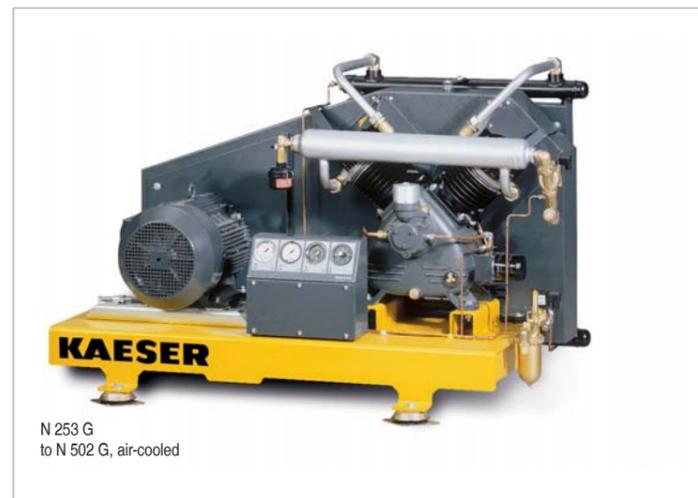
Versatile range



N 60 G
to N 153 G, air-cooled

For lower demand

The smaller models in this range are best suited to applications where low flow rates are needed at pressures up to 40 bar. These compressors are equipped with one- or two-cylinder compressor blocks and are driven by high efficiency motors with up to 4 kW capacity. The quality of these units is second to none as all compressor blocks are designed, manufactured and assembled by KAESER.



N 253 G
to N 502 G, air-cooled

For medium to large demand

When greater air flow rates are needed at pressures up to 45 bar then the mid-size and larger of the KAESER booster models are the natural choice. At the heart of every one of these powerhouses is a precision machined two- or three-cylinder compressor block that delivers exceptional efficiency. IE3 premium efficiency electric drive motors up to 45 kW provide impressive performance. The manual (two-cylinder models) or automatic drive belt tensioning systems (three-cylinder models) ensure consistently efficient power transmission for reliable and economic operation.

According to application, air-cooled or water-cooled aftercooler versions are available (N 253 G - N 502 only air-cooled, from N 2001 G air- or water-cooled aftercooler).

Air-cooled versions (N 2001 G) are equipped with a separate fan-assisted aftercooler to keep the temperature differential between the inlet and compressed air (ΔT) within close tolerances.

To ensure optimum cooling performance with a ΔT value of only approximately 5 K even at high ambient temperatures, the N 2001 can be equipped with a water-cooled compressed air aftercooler.



N 2001 G, air-cooled or water-cooled aftercooler available



Optimum lubrication

Equipped with an oil pump and oil filters, the new continuous oil filtration system available for aftercooler models N 253 G to N 2001 G extends the oil change interval to 2000 operating hours.



Maximum safety

Oil pressure, cylinder head temperatures and air discharge temperatures are continuously monitored on models N 253 G to N 502 G. The safety shut-down sequence is initiated via alarm signals.



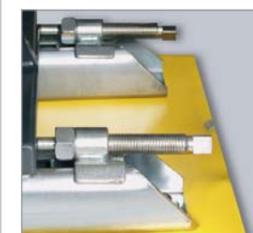
Efficient air cooler

Highly efficient and maintenance-free, the cooler on two-cylinder compressors achieves very low compressed air discharge temperatures.



Automatic belt tensioning

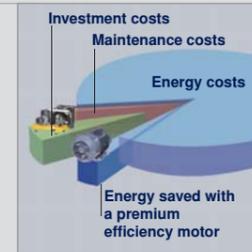
On N 2001 G models constant spring pressure on the motor swing-frame maintains the drive belt at the correct tension to ensure virtually maintenance-free power transmission.



Manual belt tensioning

Quick and easy adjustment maintains optimum power transmission on single- and two-cylinder boosters.

N series: Setting the standard



Energy-saving motors

IE2/IE3 motors consume less power for greater output and provide outstanding efficiency.



Anti-vibration mounts

For vibration-free and quiet operation the machine can be installed either on rubber mounts...**①**

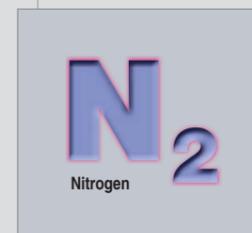


...or on anti-vibration mounts...**②**



Low maintenance = Savings

The combination of the innovative forced lubrication system, precision machining and high quality components ensures minimal maintenance requirement.



Nitrogen compression

Upon request, modified versions of N-series systems are available for compression of nitrogen.



START CONTROL

The 'START CONTROL' provides reliable booster monitoring and control and also reduces the starting load.

Technical specifications

Air-cooled

Model	Initial pressure	Final pressure	Flow rate ¹⁾	Theoretical inlet flow rate	Displacement	Compressor speed	No. of cylinders	Rated motor power	Sound pressure level ¹⁾	Air connection		Dimensions W x D x H	Mass
	bar	bar	m ³ /min	m ³ /min	m ³ /min	Strokes per min				Inlet side	Discharge side		
N 60-G	5	20	0.27	0.41	0.05	950	1	2.2	74	G 1/2	G 1/2	920 x 450 x 550	70
	7.5	30	0.38	0.52									
	10	35	0.53	0.68									
	13	35	0.75	0.77									
N 153-G	5	15	0.67	1.1	0.15	650	2	2.2	74	G 3/4	G 1/2	1390 x 720 x 820	255
	5	20	0.57	1.1				4					
	7.5	15	1.03	1.4				2.2					
	10	15	1.40	1.84				2.2					
	10	40	0.89	1.84				4					
	13	40	1.33	2.08				4					
N 253-G	5	25	0.99	1.92	0.26	1.135	2	7.5	76	G 3/4	G 1/2	1390 x 730 x 810	290
	7.5	20	1.72	2.44				7.5					
	7.5	35	1.45	2.44				11					
	10	25	2.27	3.22				7.5					
	10	45	1.91	3.22				11					
	13	25	3.05	3.64				7.5					
	13	45	2.68	3.64				11					
N 351-G	5	25	1.58	2.82	0.38	950	2	11	77	G 3/4	G 3/4	1550 x 880 x 1020	415
	7.5	25	2.53	3.58				11					
	7.5	35	2.31	3.58				15					
	10	25	3.49	4.73				11					
	10	45	3.04	4.73				15					
	13	25	4.63	5.34				11					
	13	45	4.18	5.34				15					
N 502-G	5	25	2.00	3.69	0.50	990	2	11	77	G 1	G 3/4	1570 x 880 x 1020	460
	7.5	25	3.19	4.69				11					
	7.5	35	2.87	4.69				15					
	10	25	4.38	6.19				11					
	10	35	4.06	6.19				15					
	10	45	3.74	6.19				18.5					
	13	35	5.49	6.99				15					
	13	45	5.17	6.99				18.5					

Air-cooled with oil pump and separate fan

Model	Initial pressure	Final pressure	Flow rate ¹⁾	Theoretical inlet flow rate	Displacement	Compressor speed	No. of cylinders	Rated motor power	Sound pressure level ¹⁾	Air connection		Dimensions W x D x H	Mass
	bar	bar	m ³ /min	m ³ /min	m ³ /min	Strokes per min				Inlet side	Discharge side		
N 2001-G	5	25	7.60	11.34	1.89	910	3	37	85 (102) ²⁾	G 2	G 1 1/2	2790 x 1010 x 1050	1190
	7.5	25	11.51	13.22	1.54	740							
	10	25	15.60	16.91	1.54	740							
	13	25	20.51	21.52	1.54	740							

Water-cooled, with oil pump

Model	Initial pressure	Final pressure	Flow rate ¹⁾	Theoretical inlet flow rate	Displacement	Compressor speed	No. of cylinders	Rated motor power	Sound pressure level ¹⁾	Air connection		Dimensions W x D x H	Mass
	bar	bar	m ³ /min	m ³ /min	m ³ /min	Strokes per min				Inlet side	Discharge side		
N 2001-GW	5	25	7,60	11,34	1,89	910	3	37	84 (100) ²⁾	G 2	G 1 1/2	1980 x 1000 x 1010	1030
	7,5	25	11,51	13,22	1,54	740							
	10	25	15,60	16,91	1,54	740							
	13	25	20,51	21,52	1,54	740							

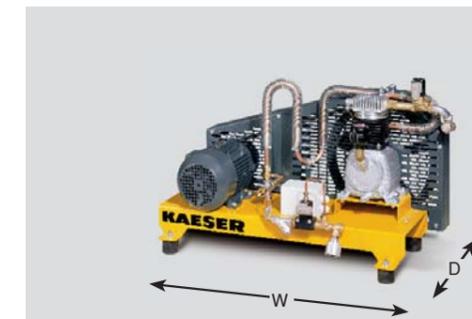
¹⁾ Flow rate is relative to the atmospheric intake conditions, 20 °C ambient temperature, intake temperature of 25 °C and maximum 1000 m above mean sea level.

¹⁾ Sound pressure level as per ISO 2151 and the basic standard ISO 9614-2, tolerance: ± 3 dB(A).

²⁾ Sound power level is specified as per ISO 2151 and the basic standard ISO 9614-2, tolerance: +/- 3dB(A). Sound power is the amount of energy transmitted as acoustic radiation.

Dimensions

Width (W), Depth (D) and Height (H) – see adjacent table for details.



N 60 G to N 153 G, air-cooled



N 2001 G(W), air- and water-cooled



N 253 G to N 502 G, air-cooled

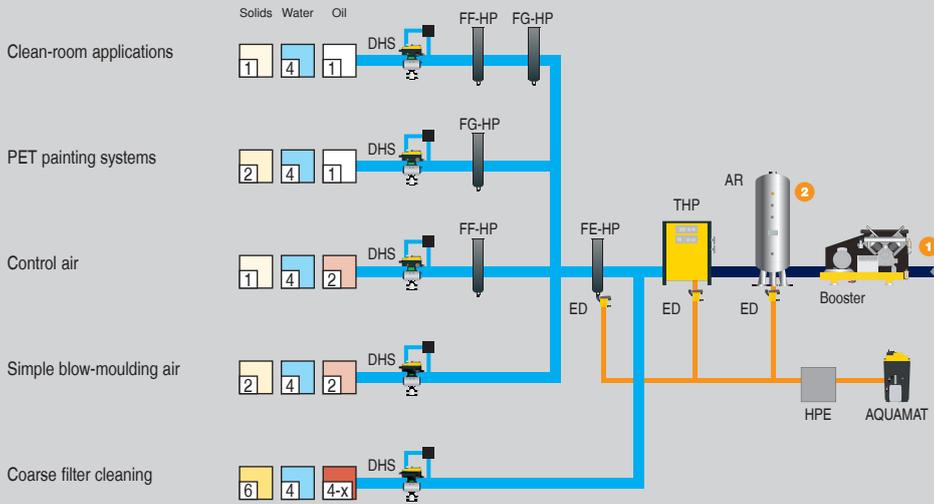


The SIGMA PET AIR Station is a complete turnkey package. See brochure P-200 for further details.

Choose the required grade of treatment according to your field of application:

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

Air treatment with refrigeration dryer



1 Compressed air supply from the low-pressure network; required compressed air quality at booster inlet (Solids 4, Water 4, Oil 3) as per ISO 8573-1, otherwise a centrifugal water separator or air receiver with FC prefilter necessary (particle separation >1µm, remaining oil content <1mg/m³)

2 For condensate separation and pulsation attenuation

Explanation	
AQUAMAT	Condensate treatment system
DHS	Air-main charging system
AR	Air receivers
ED	ECO-DRAIN
FE / FF-HP	Microfilter (high pressure)
FG-HD	Activated carbon filter (high pressure)
HPE	High pressure depressurisation chamber
THP	High pressure refrigeration dryer

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

Solid particles/dust

Class	Max. particle count per m³ * of a particle size d in [µm]		
	0.1 ≤ d ≤ 0.5	0.5 ≤ d ≤ 1.0	1.0 ≤ d ≤ 5.0
0	Please consult KAESER regarding specific requirements		
1	≤ 20,000	≤ 400	≤ 10
2	≤ 400,000	≤ 6,000	≤ 100
3	Not defined	≤ 90,000	≤ 1,000
4	Not defined	Not defined	≤ 10,000
5	Not defined	Not defined	≤ 100,000

Class	Particle concentration C _p in mg/m³ *
6	0 < C _p ≤ 5
7	5 < C _p ≤ 10
X	C _p > 10

Water

Class	Pressure dew point, in °C
0	Please consult KAESER regarding specific requirements
1	≤ -70 °C
2	≤ -40 °C
3	≤ -20 °C
4	≤ +3 °C
5	≤ +7 °C
6	≤ +10 °C
Class	Concentration of liquid water C _w in g/m³ *
7	C _w ≤ 0.5
8	0.5 < C _w ≤ 5
9	5 < C _w ≤ 10
X	C _w > 10

Oil

Class	Total oil concentration (fluid, aerosol + gaseous) [mg/m³]*
0	Please consult KAESER regarding specific requirements
1	≤ 0.01
2	≤ 0.1
3	≤ 1.0
4	≤ 5.0
X	> 5.0

*) At reference conditions 20 °C, 1 bar(a), 0% humidity