

OMEGA Series

Flow capacities from 1.5 to 160 m³/min
Gauge pressure up to 1000 mbar; vacuum down to 500 mbar



Rotary blowers for oil-free air

In two and three-lobe versions

What do you expect from a rotary blower?

Efficiency plays a central role in every rotary blower application, which means lowest possible operating costs with minimum power consumption. Also, a compact and robust blower block ensures long operational life with minimum maintenance requirement.

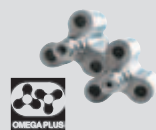
With a comprehensive and dedicated range of two and three-lobe blower blocks in their manufacturing programme, KAESER are in the best position to offer technically and commercially ideal solutions to blower applications.

Two-lobe block



The power consumption of the two-lobe block is even less than the efficient three-lobe design. The two-lobe blower comes into its own where economy of operation is of primary concern and the possibility of pulsations less important. The two-lobe design is also less sensitive to particle contamination in the air.

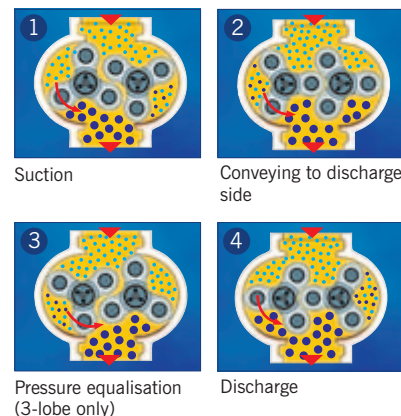
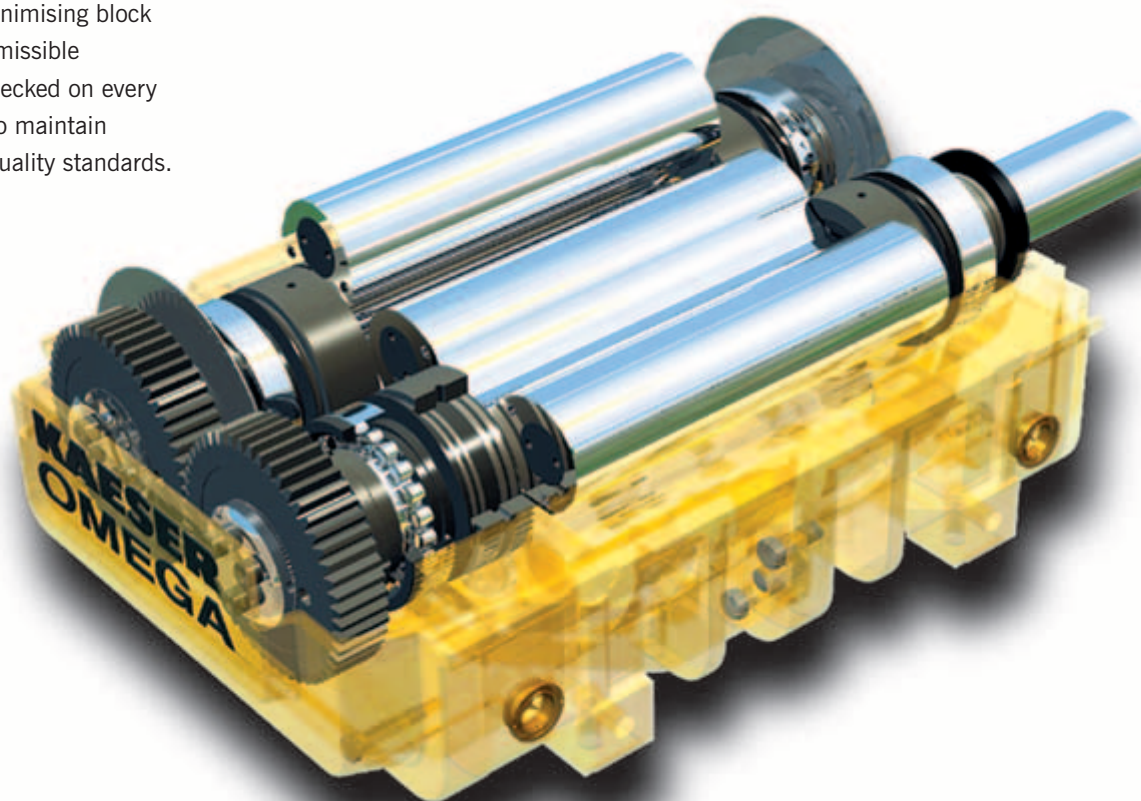
Three-lobe block



The negligible pulsation of the three-lobe block makes it the right choice for applications where thin-wall piping or ducting is used, for example, and where the avoidance of resonance or minimisation of discharge noise is essential. The precision-machined OMEGA rotor profile gives outstanding energy-efficiency.

Super-precision machining

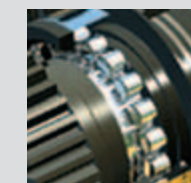
Modern CNC machines grind the profiles of the rotors and timing gears to micron accuracy. Only this ultra-high precision enables the clearance between the rotors and the casing to be set at its absolute minimum, improving volumetric efficiency and minimising block heating. The permissible tolerances are checked on every block and rotor to maintain KAESER's high quality standards.



Functions

Air (or any other gas) in the inlet port is trapped between the rotor lobes and the casing and carried round to the discharge port without being compressed on the way. The casing bore near the discharge opening is machined slightly eccentric so that as a rotor lobe approaches the port the gap between it and the casing begins to widen. This allows a gradual equalisation of pressure between the air in the discharge port and that in the chamber behind the advancing lobe and is the main reason why three-lobe rotors are less inclined to pulsation problems than two-lobe. In two-lobe rotors, pressure equalisation happens abruptly as the advancing lobe crosses the lip of the discharge port.

As the leading lobe crosses the lip of the discharge port the entrapped air is pushed out through the discharge port against whatever resistance there may be in the pipe-work.



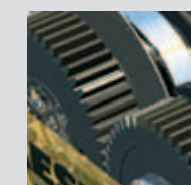
Heavy-duty bearings

Cylindrical roller bearings are able to take up 100 percent of the widely varying radial forces generated. Operational life up to 100,000 hours is achieved.



Non-wearing seals

The well-proven labyrinth seals with pressure equalizing channels are fitted as standard. Other types of shaft seals are available on request.



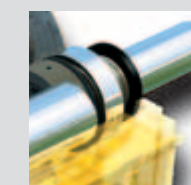
Precise synchronisation

Spur-ground timing gears are finished to the closest tolerance to 5 f 21 with minimum backlash. Their precision is a major factor in the block's efficiency.



Best possible lubrication

Oil slinger discs mounted on each end of the secondary rotor shaft throw lubricating oil onto the bearings. This method is foolproof and ensures perfect, lifelong lubrication.



Rigid rotors

The rotors and shafts are formed in one piece and balanced to Q 2.5 for smooth, trouble-free running.



Tough casing

The distinctive ribbed form of the casing gives strength and rigidity exactly where needed and also ensures adequate cooling. Air chamber and bearing supports are cast in one piece for strength and alignment.



Lobes with sealing strip

The special form of the rotor lobes with machined sealing strip reduces sensitivity to contaminated air and brief thermal overloading.

Rugged design

Decades of experience in blower manufacture, together with intensive research, have culminated in the compact design of the KAESER blower blocks featuring high efficiency and long life. All blocks are available in two or three-lobe design and all are suitable for operation up to 1000 mbar pressure. This means that the smallest

suitable block can be chosen for any particular application, as small, fast-turning blocks are more energy-efficient. This is not just an advantage in terms of purchase price but also in operating costs. Furthermore, the faster airflow of the smaller blocks provides more effective cooling, adding to durability.

Special versions

Many special blocks are available to suit uncommon applications such as a gas version for conveying nitrogen, blocks in nickel-chrome steel for corrosive substances or other non-standard versions.



Technical specifications

Model OMEGA/OMEGA-P	21	22	23	24P	41	42	43	52	53P	61	62	63	64P	82	83	84P
max. delivery m ³ /min	5.0	6.3	8.4	10.6	12.4	15.9	22.5	28.3	41.5	33.2	41.6	58.6	74.2	96.7	129.3	156
m ³ /h	300	380	500	630	745	950	1350	1700	2490	1990	2500	3520	4450	5800	7760	9360
max. speed 1/min	5600	5400	5200	—	4200	4000	3800	3700	—	3400	3200	3000	—	2250	2000	—
max. speed -P 1/min	6200	6000	5800	5450	5000	4800	4500	4200	4200	3900	3700	3500	3400	3000	2700	2500
max. pressure differential mbar																
pressure	1000	1000	800	—	1000	1000	800	1000	—	1000	1000	800	—	1000	800	—
pressure -P	1000	1000	1000	800	1000	1000	1000	1000	1000	1000	1000	1000	800	1000	1000	800
vacuum	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
max. drive power kW																
OMEGA	9.2	11.7	12.5	—	22	28	32	52	—	61	76	86	—	180	185	—
OMEGA -P	10	12.5	15	16	23	31	43	55	75	65	81	110	110	183	200	250
Dimension mm																
Length, without drive shaft	325	360	415	480	395	445	545	545	785	550	625	775	1070	825	1040	1370
Width	206	206	206	206	300	300	300	365	365	440	440	440	480	625	625	625
Height	170	170	170	170	240	240	240	290	290	330	330	330	440	460	610	710
Connecting flange DN mm	50	65	65	80	80	100	100	150	150	150	200	200	250	250	300	300
Weight kg	32	36	42	51	86	100	114	163	205	264	326	326	410	600	890	1150

Blocks marked with „P“ in the table are only available with three-lobe rotors, all others are available with either two or three-lobe rotors.