

Rotary Blowers Omega Series

Air delivery from 0.5 to 160 m³/min – Pressure up to 1000 mbar, vacuum to 500 mbar

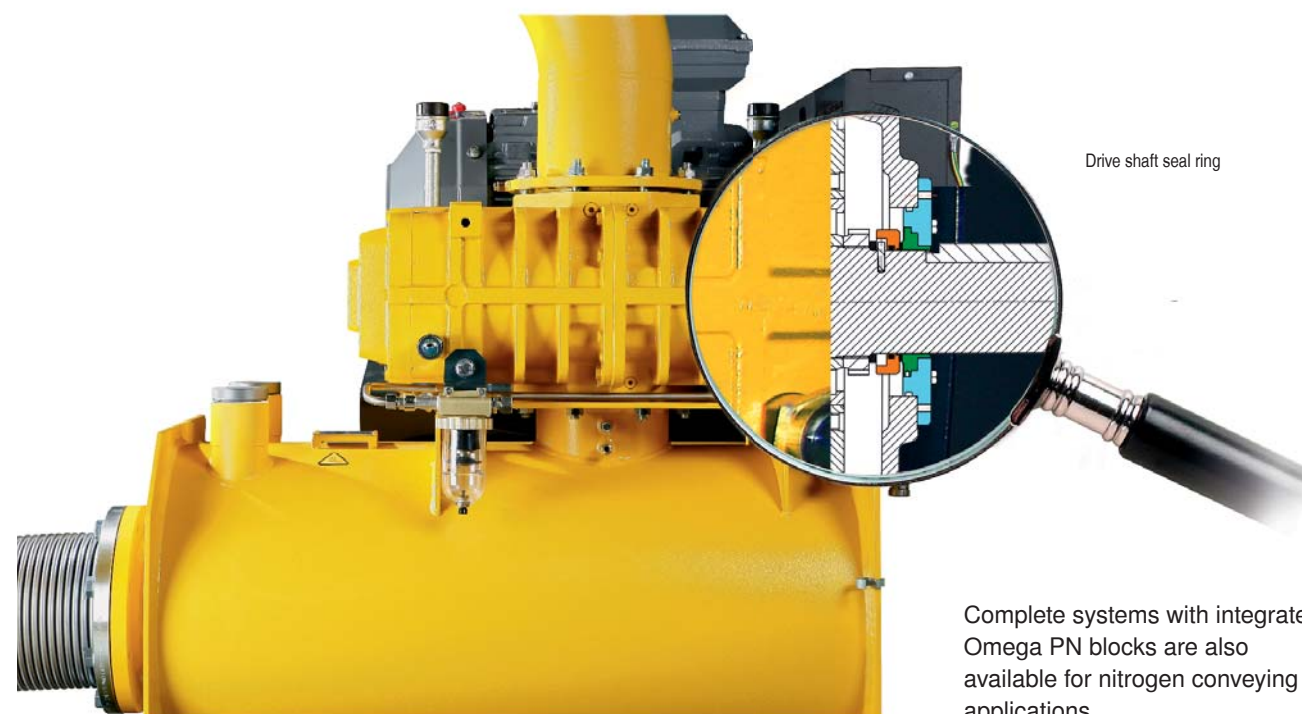


Rotary blowers for nitrogen conveying Model: Omega PN

Field of application

Some bulk materials have to be transported within a closed system under a nitrogen atmosphere.

Leakages from all system components – including rotary blowers – should therefore be kept to an absolute minimum. For such applications, specially-developed PN series blowers are available with three different drive shaft rotary feedthrough seals, as well as wear-free slide ring seals.

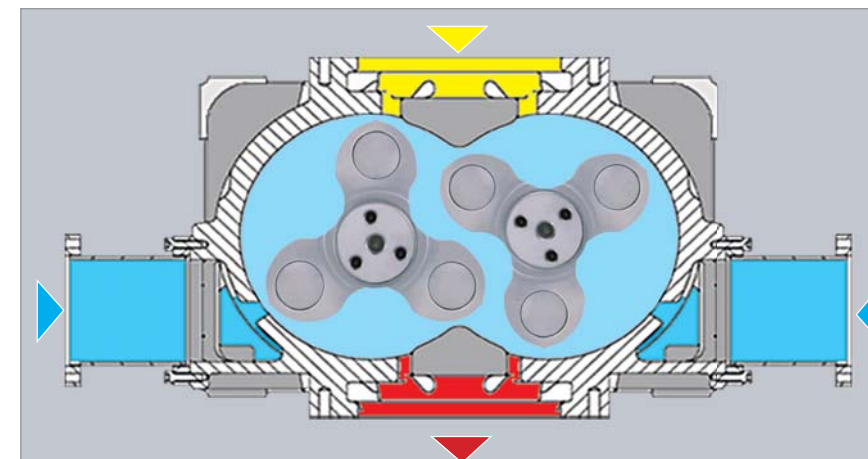


Vacuum blowers with pre-inlet cooling Model: Omega PV

Field of application

For use in low vacuum ranges up to 100 mbar (a) or 900 mbar vacuum.

Function



If vacuum (yellow) occurs between the rotor and the casing ambient air (blue) enters the blower block via so-called pre-inlet channels as the rotors continue to turn. The two volume flows subsequently combine and the arising compression heat is dissipated throughout a much larger volume of trapped air. This approach therefore achieves the same discharge temperatures that are produced by normal blower blocks.



Application examples

Stationary application: Centralised vacuum production (left photo)

Portable application: Suction and silo vehicles (right photo)

Technical Specifications: OMEGA P and OMEGA PN

Model OMEGA-P	21P	22P	23P	24P	41P	42P	43P	52P	53P	62P	63P	64P	82P	83P	84P
Max. delivery m ³ /min	5.0	6.3	8.4	10.6	12.4	15.9	22.5	28.3	41.5	41.6	58.6	74.2	96.7	129.3	156
m ³ /h	300	380	500	630	745	950	1350	1700	2490	2500	2500	4450	5800	7760	9360
Max. speed rpm	6200	6000	5800	5450	5000	4800	4500	4200	4200	3700	3700	3400	3000	2700	2500
Max. pressure drop mbar															
Pressure mbar	1000	1000	1000	800	1000	1000	1000	1000	1000	1000	1000	800	1000	1000	800
Vacuum mbar	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
Max. drive power kW	10	12.5	15	16	23	31	43	55	75	81	81	110	183	200	250
Dimensions mm															
Length, w/o drive shaft mm	325	360	415	480	395	445	545	545	785	625	625	1070	825	1040	1370
Width mm	206	206	206	206	300	300	300	365	365	440	440	480	625	625	625
Height mm	170	170	170	170	240	240	240	290	290	330	330	440	460	610	710
Connection flange DN mm	50	65	65	80	80	100	100	150	150	200	200	250	250	300	300
Weight kg	32	36	42	51	86	100	114	163	205	326	326	410	600	890	1150

The technical specifications for Omega PN blocks are the same as those for Omega 21 P to Omega 83 P models. Inlet pressure for Omega PN blowers is limited to 900 - 1100 mbar(a) for models operating at over-pressure and to discharge pressure for vacuum versions.

Technical Specifications: Omega PV

Model: OMEGA-P	62PV	63PV	82PV	83PV	84PV
Max. suction capacity at 600 mbar vacuum m ³ /min	37	51	87	117	145
Max. suction capacity at 800 mbar vacuum m ³ /min	29	39	72	97	120
Max. speed rpm	3700	3700	3000	2700	2500
Max. pressure drop mbar					
Pressure mbar	1000	1000	1000	1000	800
Vacuum mbar	900	900	900	900	800
Max. drive power kW	80	100	180	220	250
Dimensions mm					
Length, without drive shaft mm	625	625	825	1040	1370
Width mm	440	440	625	625	625
Height mm	330	330	460	610	710
Connection flange, inlet & discharge ports DN mm	200	200	250	300	300
Connection flange, pre-inlet channels mm	2x □ 90	2x2x □ 90	2x □ 130	2x2x □ 130	2x3x □ 130
Weight kg	326	326	600	890	1150

Vapour compression blowers Model: OMEGA B



Field of application

Specially designed for compression of water vapour with vacuum operation in combination with water injection cooling.

- Rotors and block casings made from cast stainless steel or chromium-nickel alloy.
- Various, special internal seals for drive shaft rotary feedthrough (corrosion-resistant and wear-free)
- Various, special seals for drive shaft rotary feedthrough
- Conveying direction:
Vertical, from top to bottom.

Rotary vacuum pump WVC



When producing fine vacuum in combination with a corresponding backing pump, the WVC significantly increases pump suction capacity and vacuum performance. The use of a frequency converter is particularly beneficial, as the converter enables simultaneous activation of rotary vacuum and backing pumps at atmospheric pressure, thereby significantly reducing pumping time.

Technical Specifications: OMEGA B

Model: OMEGA-B		21B	23B	41B	43B	61B	63B	82PB	83PB
Max. delivery*	m ³ /min	2.9	4.1	8.3	14.7	22.8	33	72	93
Vapour volume	kg/h*	54	76	153	273	422	612	1325	1715
Max. speed	rpm	5000	4700	3800	3400	3000	2700	2800	2500
Max. vacuum	mbar	500	500	500	500	500	500	500	500
Max. inlet temperature	°C	85	85	85	85	85	85	85	85
Max. drive power	kW	5.5	8.5	12	20	30	47	93	139
Dimensions	mm								
Length, without drive shaft	mm	See 21P	See 23P	See 41P	See 43P	See 61P	See 63P	See 82P	See 83P
Width	mm								
Height	mm								
Connection flange, inlet & discharge ports DN	mm								
Weight	kg	40	43	90	120	280	350	750	1020

*1 With 500 mbar vacuum and water injection cooling

Technical Specifications: WVC

Model		WVC 180	WVC 360	WVC 800	WVC 1200	WVC 2500	WVC 4000	WVC 5000
Rated pumping speed 50 Hz ¹⁾	m ³ /h	170	310	745	1120	2450	3670	4890
Max. effective pumping speed of backing pump	m ³ /h	150	280	660	990	2210	3260	4270
With a backing pump pumping speed of	m ³ /h	40	100	200	300	630	800	1250
Final partial pressure ²⁾	mbar	< 4 x 10 ⁻³	< 3 x 10 ⁻³	< 3 x 10 ⁻³	< 2 x 10 ⁻³	< 2 x 10 ⁻³	< 2 x 10 ⁻³	< 2 x 10 ⁻³
Total ultimate pressure ²⁾	mbar	< 4 x 10 ⁻³	< 4 x 10 ⁻³	< 4 x 10 ⁻³	< 3 x 10 ⁻³	< 3 x 10 ⁻³	< 3 x 10 ⁻³	< 3 x 10 ⁻³
Max. permitted pressure drop in cont. operation ³⁾ In short-term operation < 3 min.	mbar mbar	130 180	100 150	80 120	80 115	50 90	50 70	35 60
Motor power	kW	1.1	1.5	3	4	7.5	11	11
Rated speed at 50 Hz	rpm	3000						
Min. - max. permitted speed with frequency	rpm Hz	1200-5400 20-90	1200-5400 20-90	900-4800 15-80	900-4800 15-80	600-4500 10-75	600-4500 10-75	600-4200 10-70
Rated pumping capacity at max. speed	m ³ /h	310	560	1190	1790	3670	5500	6850
Shaft sealing and gearbox cooling		Air				Water/air ⁴⁾		
Flange connection: inlet and pressure side PN6 DIN 2501	mm	50	65	100	100	200	200	250
Flow direction		Standard: Vertical, from top to bottom						
Weight approx. ⁵⁾	kg	48	60	145	160	360	365	520

¹⁾ As per DIN 28400 ff;

²⁾ Achievable discharge pressure with single-stage oil rotary pump

³⁾ For a grading ratio of 1:5 in relation to the backing pump

⁴⁾ For sealing via magnetic coupling

⁵⁾ For sealing with oil barrier, incl. E-motor

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