

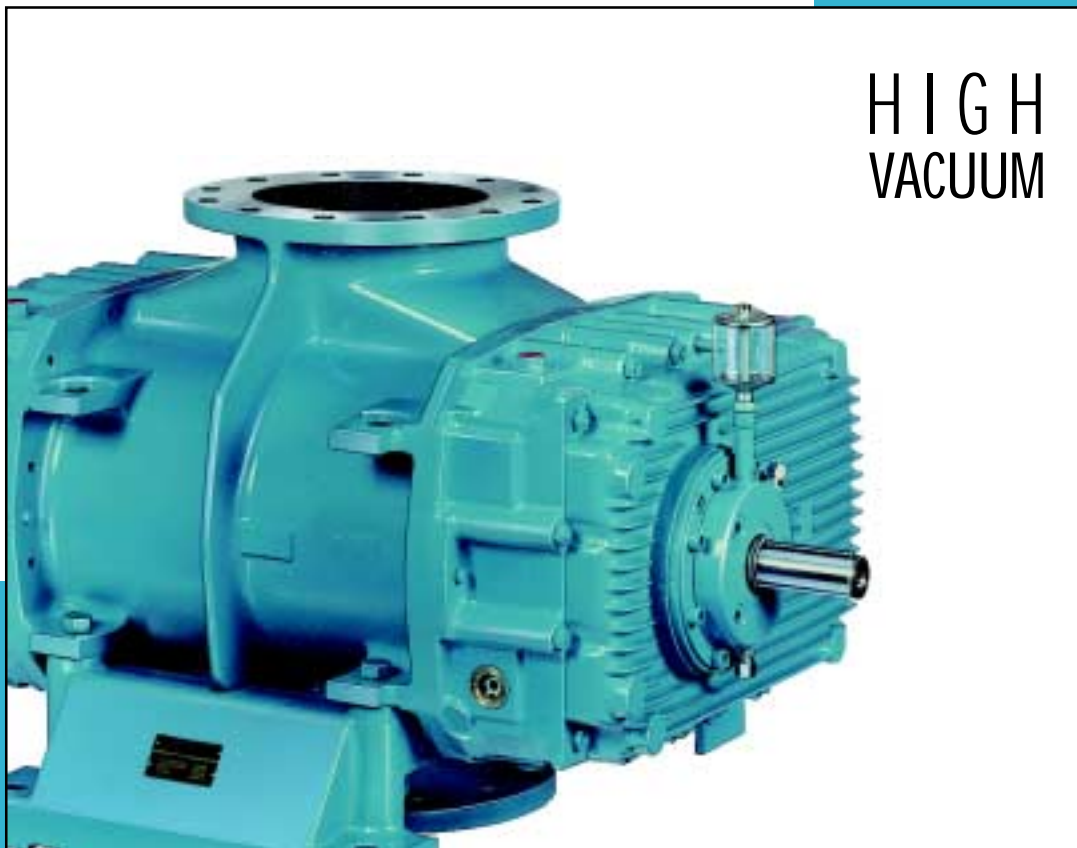
AERZEN

POSITIVE DISPLACEMENT BLOWERS

for conveying of air and neutral gases for high vacuum

series GMa / GLa - GMb / GLb . . . HV

theoretical nominal suction volume flow from 180 m³/h to 97.000 m³/h



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GMBH

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Aerzen Vacuum-Blowers

Aerzen Positive Displacement Blowers (of the “Roots” type design) have been manufactured since 1868 and today are highly developed standard production machines designed and adapted to find use in a wide variety of applications.

Fields of application

Conveying of air and neutral gases.

Vacuum from 10^{-2} mbar to approx. 200 mbar for HV-blowers

available in 19 sizes for theoretical nominal suction volume flow from 180 to 97.000 m³/h.

The max. admissible differential pressure depends on the thermal load.

(See performance diagrams / chart - below)

Design

Due to the 0-ring seals the housing flanges are vacuum-tight, aircooled. Splash oil lubrication.

Shaft sealings

Conveying chamber by combined oil slinger- piston ring labyrinth seals. Driving shaft by double radial seal rings with grease barrier.

Direction of flow (viewed onto driving shaft)

GMa/b = vertical or GLa/b = horizontal.

Blower up to size 16.13 HV alternatively vertical to the bottom or horizontal to the right.

Blower up to size GMb 17.15 HV vertical to the bottom.

Drive

Direct coupling with motor or via spur gear, converter operation, narrow v-belt drive restricted to the smaller pressure differentials.

Drive unit

Consisting of cast connector with perforated sheet cover, flexible coupling and flanged B5-motor acc. to IEC-standard equipped with 3 PTC-thermistors, suitable for frequency-converter operation.

Special material only for HV-blowers

- Designs of the housing parts in nodular graphite cast iron EN-GJS-400-18U-LT (GGG 40.3)
- Rotary pistons and housing parts made of cast steel (GS-C25) and CrNi- cast steel (1.4313 or 1.4407) are available for 5 sizes.

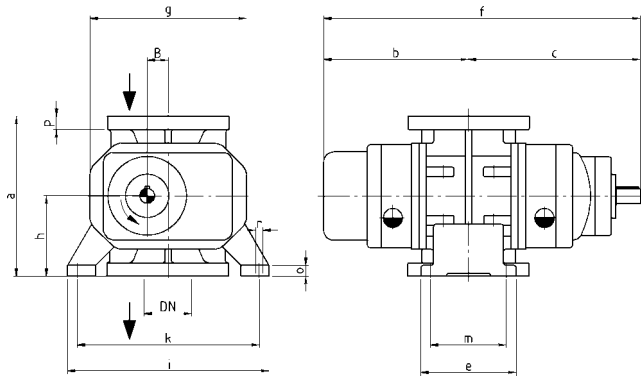
Heatable blowers wHV available in 9 sizes.

Design upon request.

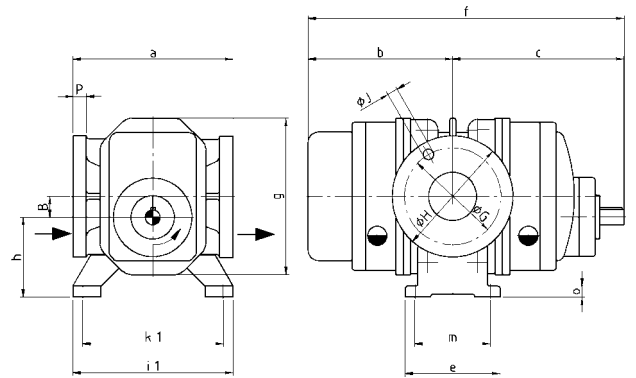
Operating- and Performance Diagrams for Aerzen High Vacuum Blowers

For sizes	50 Hz - operation			60 Hz - operation		
	Speed [1/min]	Suction volume S _{th} [m ³ /h]	Drwg.-no. Performance diagram	Speed [1/min]	Suction volume S _{th} [m ³ /h]	Drwg.-no. Performance diagram
GMa / GLa 10.0 HV	2950	180	4 TG - 4161	3600	215	4 TG - 4169
GMa / GLa 10.1 HV	2950	240	4 TG - 3708	3600	295	4 TG - 4136
GMa / GLa 10.2 HV	2950	365	4 TG - 4149	3600	440	4 TG - 4145
GMa / GLa 11.3 HV	2950	500	4 TG - 3709	3600	600	4 TG - 4137
GMa / GLa 11.4 HV	2950	730	4 TG - 4150	3600	880	4 TG - 4146
GMa / GLa 12.5 HV	2950	1000	4 TG - 3710	3600	1200	4 TG - 4138
GMa / GLa 12.6 HV	2950	1400	4 TG - 4151	3600	1700	4 TG - 4147
GMa / GLa 13.f7 HV	2950	2010	4 TG - 3711	3600	2420	4 TG - 4139
GMa / GLa 13.8 HV	2950	2840	4 TG - 4152	3600	3420	4 TG - 4148
GMb / GLb 14.9 HV	2950	3850	4 TG - 3712	3600	4700	4 TG - 3859
GMb / GLb 15.10 HV	2950	5500	4 TG - 3713	3590	6650	4 TG - 4052
GMb / GLb 15.11 HV	2950	7350	4 TG - 3714	3590	8950	4 TG - 4053
GMb / GLb 16.12 HV	1470	5330	4 TG - 3715	1800	6500	4 TG - 4208
GMb / GLb 16.f13 HV	1470	8000	4 TG - 3716	1800	9800	4 TG - 4209
GMb / GLb 16.13 HV	1470	9535	4 TG - 3717	1800	11600	4 TG - 4210
GMb 17.15 HV	1470	15685	4 TG - 3718	1800	19050	4 TG - 4211

Dimensions Blower-Stage HV



Type of construction GMa / Gmb



Type of construction GLa / GLb (to size 16.13)

Type of construction	a	b	c	e	f	g	h	i	i1	k	k1	m	o	r	B	DN	G	H	P	Weight approx. kgs
GMa/GLa 10.0	264	224	262	152	486	258	132	332	264	300	232	120	18	M12	34	50	125	165	18	70
GMa/GLa 10.1	264	239	283	157	522	258	132	332	264	300	232	125	18	M12	34	80	160	200	22	80
GMa/GLa 10.2	264	287	324	239	611	258	132	332	264	300	232	207	18	M12	34	80	160	200	22	90
GMa/GLa 11.3	320	280	324	200	604	295	160	390	300	350	260	150	20	M16	42.6	100	180	220	22	115
GMa/GLa 11.4	320	330	374	290	704	295	160	390	300	350	260	245	24	M16	42.6	100	180	220	22	135
GMa/GLa 12.5	360	325	380	260	705	360	180	440	336	400	296	210	30	M16	53.3	100	180	220	22	175
GMa/GLa 12.6	360	381	436	340	817	360	180	500	396	460	356	290	27	M16	53.3	150	240	285	24	215
GMa/GLa 13.f7	400	383	423	330	806	436	200	570	440	510	380	270	35	M20	67.5	150	240	285	24	260
GMa/GLa 13.8	400	453	493	470	946	436	200	570	440	510	380	410	27	M20	67.5	150	240	285	24	360
GMb/GLb 14.9	500	470	510	350	980	538	250	652	484	600	432	290	35	M20	84	200	295	340	26	435
GMb/GLb 15.10	630	468	545	360	1013	652	315	800	588	720	508	280	50	M20	106	200	295	340	26	610
GMb/GLb 15.11	630	533	610	490	1143	652	315	800	588	720	508	410	50	M20	106	250	350	395	26	680
GMb/GLb 16.12	710	506	603	442	1109	810	355	910	640	830	560	297	30	M24	135	250	350	395	24	970
GMb/GLb 16.f13	710	620	717	670	1337	810	355	910	640	830	560	525	30	M24	135	300	400	445	24	1120
GMb/GLb 16.13	710	685	782	800	1467	810	355	910	640	830	560	655	30	M24	135	300	400	445	24	1160
Gmb 17.15	1000	782	825	855	1607	1005	500	930		810		725	50	M30	167.5	350	460	505	24	2020
Gmb18.17	1120	950	994	1120	1944	1240	560	1160		1050		900	50	M30	210	500	620	670	34	3400
GMa 19.19	1420	1075	1079	1270	2154	1518	710	1320		1200		1010	50	M30	264	600	725	780	36	5070
GMa 20.21 T	1800	1567	1468	1965	3039	1879	630	1640		1500		1615	50	M30	320	800	950	1015	44	10400

Mechanical loading capacity acc. to sheet 4 TG - 3381, 4TG - 3382 and 4 TG - 4218

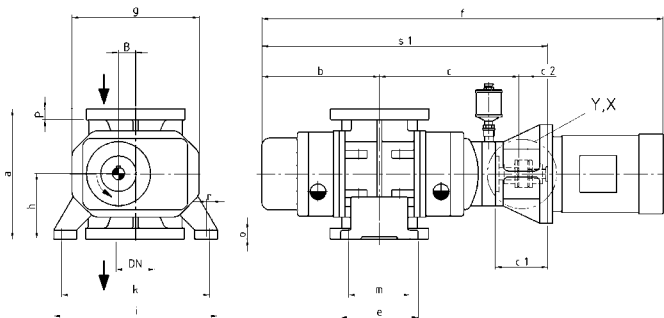
Socket flanges drilled acc. to DIN 2532 resp. 2533



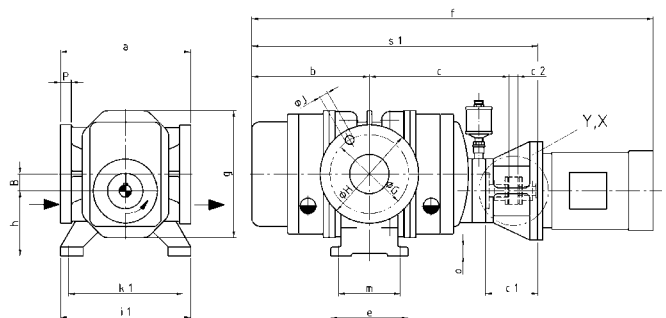
Technical data of the drive units for Aerzen High Vacuum Blowers

Size:	Theoretical suction volume at		Mech. max. adm. differential pressure [mbar]	Oil filling quantities for		Motor rating at 50 Hz [kW]	Speed [1/min]	System voltage [V]	Total weight Stage + drive [kG]	Drawing-no. of the units	Order-no. of the drive units
	50 Hz [m³/h]	60 Hz [m³/h]		GMa/b [liter]	GLa/b [liter]						
10.0 HV	180	215	130	0,9	0,7	0,75	3000	230/400	80	2 ZG - 8862	720701000
10.1 HV	240	295	140	0,9	0,7	1,1	3000	230/400	90	2 ZG - 8863	730268000
10.2 HV	365	440	130	0,9	0,7	1,5	3000	230/400	105	2 ZG - 8864	720702000
11.3 HV	500	600	140	1,1	0,8	2,2	3000	230/400	125	2 ZG - 8865	720703000
11.4 HV	730	880	130	1,1	0,8	3	3000	400/690	170	2 ZG - 8866	720704000
12.5 HV	1000	1200	130	1,5	1,1	4	3000	400/690	225	2 ZG - 8867	720705000
12.6 HV	1400	1700	130	1,5	1,1	5,5	3000	400/690	275	2 ZG - 8868	720706000
13.f7 HV	2010	2420	110	2,5	2,1	7,5	3000	400/690	330	2 ZG - 8869	730270000
13.8 HV	2840	3420	100	2,5	2,1	11	3000	400/690	445	2 ZG - 8870	720707000
14.9 HV	3850	4700	80	7	3,5	11	3000	400/690	545	2 ZG - 8871	720708000
15.10 HV	5500	6650	80	12	5,4	15	3000	400/690	680	2 ZG - 8872	720709000
15.11 HV	7350	8950	80	12	5,4	18,5	3000	400/690	960	2 ZG - 8873	730272000
16.12 HV	5330	6400	110	11	7,6	18,5	1500	400/690	1310	2 ZG - 8874	720711000
16.f13 HV	8000	9600	75	11	7,6	18,5	1500	400/690	1460	2 ZG - 8875	720711000
16.13 HV	9535	11440	75	11	7,6	22	1500	400/690	1500	2 ZG - 8876	730273000
17.15 HV	15685	18825	60	18,5	---	30	1470	400/690	2020	2 ZG - 8877	720712000

Dimensions Blower-Unit HV



Type of construction GMa / Gmb



Type of construction GLa / GLb

Type of construction	a	b	c	e	f	g	h	i	i1	k	k1	m	o	r (for)	s1	z	B	DN	G	H	P	Weight approx. kgs
GMa/GLa 10.0 HV	264	224	262	152	776	258	132	332	264	300	232	120	18	M12	544	232	34	50	125	165	18	80
GMa/GLa 10.1 HV	264	239	283	157	812	258	132	332	264	300	232	125	18	M12	580	232	34	80	160	200	22	90
GMa/GLa 10.2 HV	264	287	324	239	946	258	132	332	264	300	232	207	18	M12	679	267	34	80	160	200	22	105
GMa/GLa 11.3 HV	320	280	324	200	939	295	160	390	300	350	260	150	20	M16	672	267	42.6	100	180	220	22	125
GMa/GLa 11.4 HV	320	330	374	290	1089	295	160	390	300	350	260	245	24	M16	784	305	42.6	100	180	220	22	170
GMa/GLa 12.5 HV	360	325	380	260	1113	360	180	440	336	400	296	210	30	M16	785	328	53.3	100	180	220	22	225
GMa/GLa 12.6 HV	360	381	436	340	1287	360	180	500	396	460	356	290	27	M16	917	370	53.3	150	240	285	24	275
GMa/GLa 13.f7 HV	400	383	423	330	1282	436	200	570	440	510	380	270	35	M20	912	370	67.5	150	240	285	24	330
GMa/GLa 13.8 HV	400	453	493	470	1583	436	200	570	440	510	380	410	27	M20	1080	503	67.5	150	240	285	24	445
Gmb/GLb 14.9 HV	500	470	510	350	1621	538	250	652	484	600	432	290	35	M20	1118	503	84	200*	295	340	26	545
Gmb/GLb 15.10 HV	630	468	545	360	1654	652	315	800	588	720	508	280	50	M20	1151	503	106	200*	295	340	26	680
Gmb/GLb 15.11 HV	630	533	610	490	1828	652	315	800	588	720	508	410	50	M20	1281	547	106	250*	350	395	26	960
Gmb/GLb 16.12 HV	710	506	603	442	1856	810	355	910	640	830	560	297	30	M24	1254	602	135	250*	350	395	24	1400
Gmb/GLb 16.f13 HV	710	620	717	670	2084	810	355	910	640	830	560	525	30	M24	1482	602	135	300*	400	445	24	1460
Gmb/GLb 16.13 HV	710	685	782	800	2214	810	355	910	640	830	560	655	30	M24	1612	602	135	300*	400	445	24	1500
Gmb 17.15 HV	1000	782	825	855	2421	1005	500	930	920	810	810	725	50	M30	1752	669	167.5	350*	460	505	24	2020

Socket flanges drilled acc. to DIN 2533 / * = DIN 2532



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