



## Customer benefit by technical progress

Aerzener Maschinenfabrik has been manufacturing positive displacement blowers since 1868 (Roots design). Aerzener Maschinenfabrik is one of the oldest and biggest manufacturers worldwide and proud to be market leader in Europe.

Technical competence, experienced staff and continuous exchange with customers form an excellent basis for successful new developments in Aerzen.

Aerzener Maschinenfabrik gives priority to customer benefit. Thanks to innovative products manufactured by Aerzener Maschinenfabrik the market success of plant manufacturers and -users is a lasting one.



## Application ranges

The new Aerzen blowers with canned drive are designed for the conveyance of air and neutral gases and are especially applied in the industrial high-vacuum technology.

The blowers cover with a total of 14 sizes theoretical intake volume flows from 105 m<sup>3</sup>/h to 15.330 m<sup>3</sup>/h and pressure ranges up to 10<sup>-5</sup> mbar abs.

Here are some examples of the various application ranges:

- Semiconductor industry
- Micro-electronics
- Production of flat screens
- Laser technology
- Solar technology
- Helium leak indicating units
- Chemical process technology
- Foil- and glass coating
- Manufacture of melting furnace
- Evacuation of hydrogen
- And many others



## Construction and installation

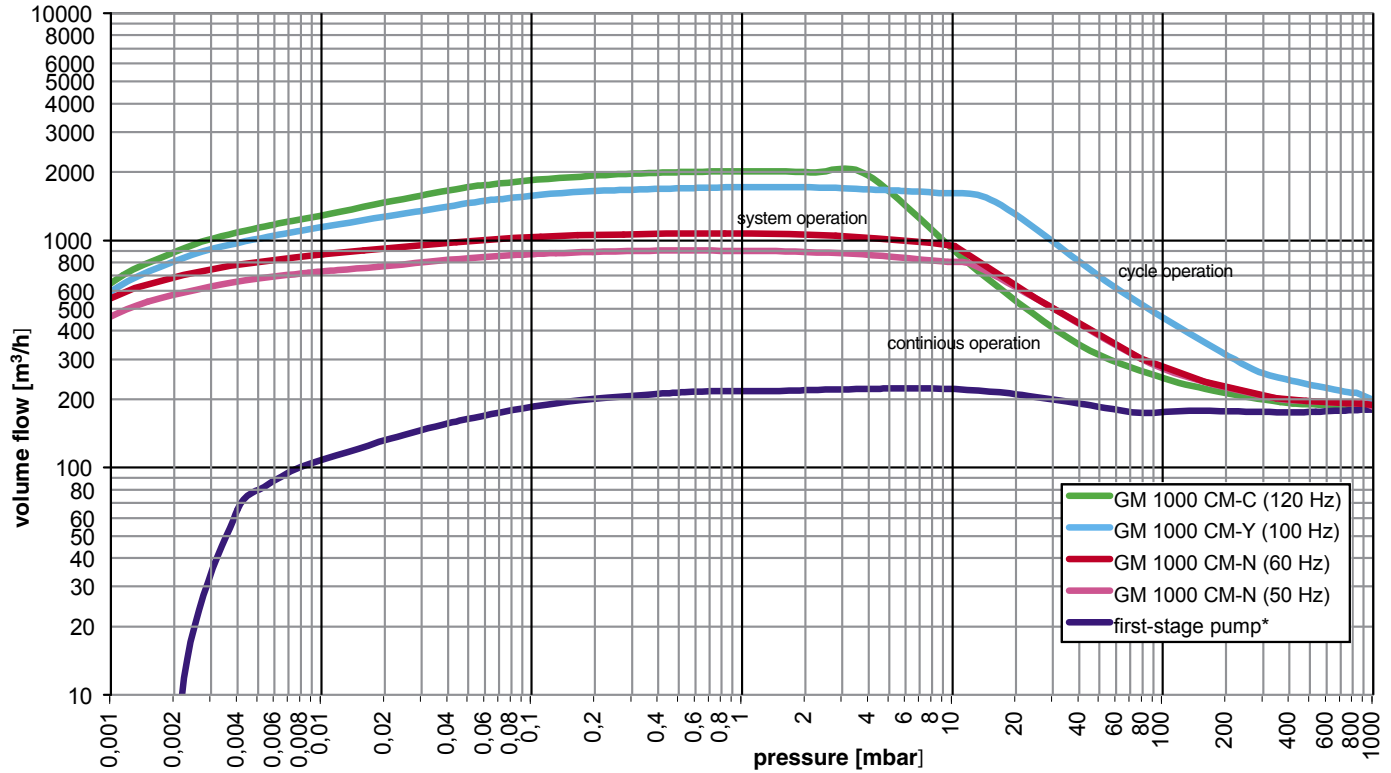
Aerzen vacuum blowers are provided with O-ring sealings at the casing flanges. Further important advantages of the blower stage are the vacuum-tightness and air cooling. The lube oil supply is carried out by oil splash lubrication. The conveying room is protected by combined oil slinger-piston ring labyrinth sealings. The integrated canned motor ensures the sealing of the drive shaft, a shaft passage to atmosphere can be omitted. Regarding the motors it can be chosen between a high-frequency design with a maximum speed of 7.400 rpm (125 c/s) or a system frequency design with a maximum speed of 2.970 rpm at 50 c/s resp. of 3.565 rpm at 60 c/s. Upon request these motors can be applied with corresponding frequency converters for lower speeds and smaller conveying quantities. Thanks to the water cooling of the motor, Aerzen canned blowers are appropriate for the application under clean-room conditions. Air-cooled canned motors can be delivered upon request. The canned material is made of special stainless steel and is therefore corrosion-resisting. Depending on type of process it can be selected between two high-frequency motor variants: For continuous operation the C-motors are designed for a maximum load of 50 mbar, at cyclic operation the Y-motors can be loaded with 150 mbar (< 5 minutes), realizing considerably shorter pump periods.

## Advantages for the customer

- Biggest canned blower series with 14 sizes and volume flows of 105 m<sup>3</sup>/h to 15.330 m<sup>3</sup>/h
- ATEX-certification for zone 0 (internal)
- Optimum selection possibilities by 4 different motor variants
- Pressure ranges from 10<sup>-2</sup> to 10<sup>-5</sup> mbar abs.
- High mechanical load (up to 150 mbar) and therefore, decrease of pump-down periods
- Only little consumptions of water, nitrogen and oil
- Appropriate for the application under clean-room conditions
- Big control range by means of frequency converter from 1.450 to 7.400 rpm resp. from 1.240 to 2.900 rpm
- Vertical and horizontal conveying direction possible  
Aerzen reliability
- Excellent price-/performance ratio



# Exemplary performance curves with Aerzen canned motors



\* Screw vacuum pump for semiconductor industry made by another manufacturer

## Definition of abbreviations

- G: blower
- M: vertical conveying direction
- L: horizontal conveying direction
- number: volume flow at 50 Hz
- CM: canned motor
- N: system frequency
- C: high frequency, continuous operation  
e.g. process application
- Y: high frequency, cycle operation  
e.g. load lock application
- mode S1: continuous operation
- mode S2: cycle operation

## Performance data

Aerzen blower type	GM/GL	170 CM-N	170 CM-N	170 CM-C*	170 CM-Y	250 CM-N	250 CM-N	250 CM-C*	250 CM-Y
System connection/Voltage	V	200 - 460	200 - 460	*in preparation	200 - 460	200 - 460	200 - 460	*in preparation	200 - 460
Frequency (mineral oil/PFPE-oil)	c/s	50	60		125	50	60		125
Intake capacity max. (mineral oil)	m³/h	170	205		450	231	279		610
Speed max. (Mineralöl)	rpm	2800	3380		7400	2800	3380		7400
Intake capacity max. (PFPE-oil)	m³/h	170	205		450	231	279		610
Speed max. (PFPE-oil)	rpm	2800	3380		7400	2800	3380		7400
Motor- rating S1 / S6	kW	1	1,2		3 / 8,3	1	1,2		3 / 8,3
Mech.: Load S1 / S6	mbar	100	100		50 / 150	100	100		50 / 150
Oil filling quantities Vertical conveying direction	l	0,9	0,9		0,9	0,9	0,9		0,9
Oil filling quantities Horizontal conveying direction	l	0,7	0,7		0,7	0,7	0,7		0,7
Cooling water consumption	l/min	2,5	2,5		2,5	2,5	2,5		2,5
Seal gas consumption	Ncm³/min	0,5 - 1,0	0,5 - 1,0		0,5 - 1,0	0,5 - 1,0	0,5 - 1,0		0,5 - 1,0

Aerzen blower type	GM/GL	340 CM-N	340 CM-N	340 CM-C*	340 CM-Y	500 CM-N	500 CM-N	500 CM-C*	500 CM-Y
System connection/Voltage	V	200 - 460	200 - 460	*in preparation	200 - 460	200 - 460	200 - 460	*in preparation	200 - 460
Frequency (mineral oil/PFPE-oil)	c/s	50	60		125	50	60		125
Intake capacity max. (mineral oil)	m³/h	348	420		920	470	567		1242
Speed max. (Mineralöl)	rpm	2800	3380		7400	2800	3380		7400
Intake capacity max. (PFPE-oil)	m³/h	348	420		920	470	567		1242
Speed max. (PFPE-oil)	rpm	2800	3380		7400	2800	3380		7400
Motor- rating S 1 / S 6	kW	1	1,2		3 / 8,3	1	1,2		3 / 8,3
Mech.: Load S 1 / S 6	mbar	75	75		50 / 150	50	50		50 / 150
Oil filling quantities Vertical conveying direction	l	0,9	0,9		0,9	1,1	1,1		1,1
Oil filling quantities Horizontal conveying direction	l	0,7	0,7		0,7	0,8	0,8		0,8
Cooling water consumption	l/min	2,5	2,5		2,5	3,0	3,0		3,0
Seal gas consumption	Ncm³/min	0,5 - 1,0	0,5 - 1,0		0,5 - 1,0	0,5 - 1,0	0,5 - 1,0		0,5 - 1,0

Aerzen blower type	GM/GL	700 CM-N	700 CM-N	700 CM-C*	700 CM-Y	1000 CM-N	1000 CM-N	1000 CM-C	1000 CM-Y
System connection/Voltage	V	200 - 460	200 - 460	*in preparation	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460
Frequency (mineral oil/PFPE-oil)	c/s	50	60		125	50	60	120	100
Intake capacity max. (mineral oil)	m³/h	695	839		1837	962	1158	2400	2000
Speed max. (Mineralöl)	rpm	2800	3380		7400	2850	3430	7100	5920
Intake capacity max. (PFPE-oil)	m³/h	695	839		1837	962	1158	2400	2000
Speed max. (PFPE-oil)	rpm	2800	3380		7400	2850	3430	7100	5920
Motor- rating S 1 / S 6	kW	1	1,2		3 / 8,3	2,5	3	5,5	5 / 15
Mech.: Load S 1 / S 6	mbar	35	35		30 / 100	55	55	40	50 / 150
Oil filling quantities Vertical conveying direction	l	1,1	1,1		1,1	1,8	1,8	1,5	1,8
Oil filling quantities Horizontal conveying direction	l	0,8	0,8		0,8	1,4	1,4	1,1	1,4
Cooling water consumption	l/min	3,0	3,0		3,0	3,0	3,0	3,0	3,0
Seal gas consumption	Ncm³/min	0,5 - 1,0	0,5 - 1,0		0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0

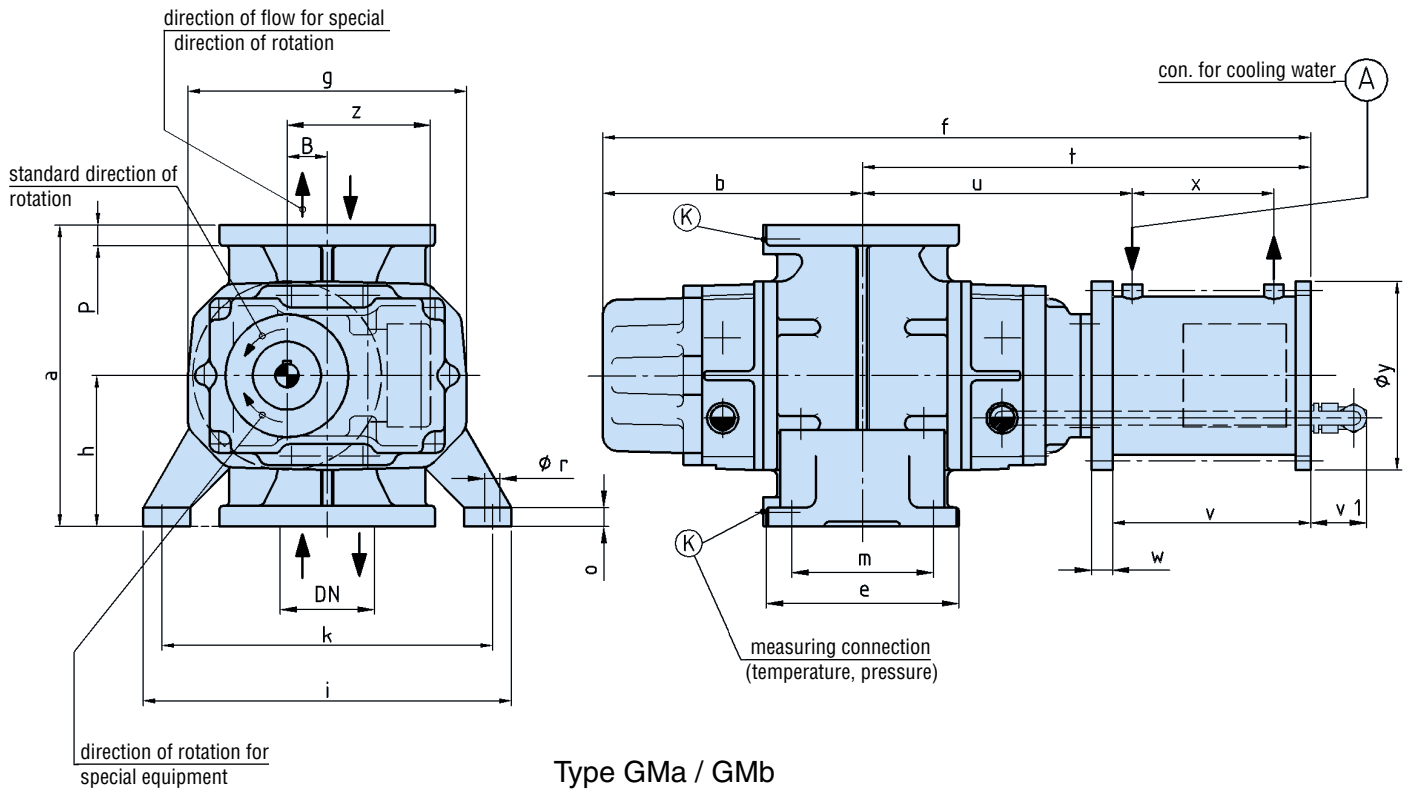
Aerzen blower type	GM/GL	1400 CM-N	1400 CM-N	1400 CM-C	1400 CM-Y	2000 CM-N	2000 CM-N	2000 CM-C/ 2000 CM-CS	2000 CM-Y
System connection/Voltage	V	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460
Frequency (mineral oil/PFPE-oil)	c/s	50	60	120	100	50	60	100	80
Intake capacity max. (mineral oil)	m³/h	1360	1637	2825	2825	1976	2385	4035	3240
Speed max. (Mineralöl)	rpm	2850	3430	5920	5920	2900	3500	5920	4750
Intake capacity max. (PFPE-oil)	m³/h	1360	1637	2825	2825	1976	2385	4035	3240
Speed max. (PFPE-oil)	rpm	2850	3430	5920	5920	2900	3500	5920	4750
Motor- rating S 1 / S 6	kW	2,5	3	5,5	5 / 15	5	5,9	9 / 5,6	8 / 20
Mech.: Load S 1 / S 6	mbar	35	35	30	30 / 100	55	55	50 / 40	50 / 150
Oil filling quantities Vertical conveying direction	l	1,8	1,8	1,5	1,8	2,9	2,9	2,9	2,9
Oil filling quantities Horizontal conveying direction	l	1,4	1,4	1,1	1,4	2,5	2,5	2,5	2,5
Cooling water consumption	l/min	3,0	3,0	3,0	3,0	4,0	4,0	3,0	4,0
Seal gas consumption	Ncm³/min	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0

Aerzen blower type	GM/GL	2800 CM-N	2800 CM-N	2800 CM-C/ 2800 CM-CS	2800 CM-Y	4000 CM-N	4000 CM-N	4000 CM-C	4000 CM-Y
System connection/Voltage	V	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	-
Frequency (mineral oil/PFPE-oil)	c/s	50	60	85	80	50	60	90 / 80	-
Intake capacity max. (mineral oil)	m³/h	2790	3367	4858	4570	3825	4605	6965	-
Speed max. (Mineralöl)	rpm	2900	3500	5050	4750	2930	3530	5345	-
Intake capacity max. (PFPE-oil)	m³/h	2790	3367	4858	4570	3825	4605	6190	-
Speed max. (PFPE-oil)	rpm	2900	3500	5050	4750	2930	3530	4750	-
Motor- rating S 1 / S 6	kW	5	5,9	9 / 5,6	8 / 20	5	5,9	10,9	-
Mech.: Load S 1 / S 6	mbar	35	35	30 / 20	30 / 100	25	25	40	-
Oil filling quantities Vertical conveying direction	l	2,9	2,9	2,9	2,9	7,5	7,5	7,5	-
Oil filling quantities Horizontal conveying direction	l	2,5	2,5	2,5	2,5	4,0	4,0	4,0	-
Cooling water consumption	l/min	4,0	4,0	3,0	4,0	4,0	4,0	4,0	-
Seal gas consumption	Ncm³/min	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	-

Aerzen blower type	GM/GL	5500 CM-N	5500 CM-N	5500 CM-C	5500 CM-Y	7500 CM-N	7500 CM-N	7500 CM-C	7500 CM-Y
System connection/Voltage	V	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460
Frequency (mineral oil/PFPE-oil)	c/s	50	60	60	60	50	60	60	60
Intake capacity max. (mineral oil)	m³/h	5500	6602	6580	6580	7400	8882	8853	8853
Speed max. (Mineralöl)	rpm	2970	3565	3553	3553	2970	3565	3553	3553
Intake capacity max. (PFPE-oil)	m³/h	5500	6602	6580	6580	7400	8882	8853	8853
Speed max. (PFPE-oil)	rpm	2970	3565	3553	3553	2970	3565	3553	3553
Motor- rating S 1 / S 6	kW	12,5	15	14	15 / 29	12,5	15	14	15 / 29
Mech.: Load S 1 / S 6	mbar	55	55	50	55 / 100	35	35	30	35 / 80
Oil filling quantities Vertical conveying direction	l	12,7	12,7	12,7	12,7	12,7	12,7	12,7	12,7
Oil filling quantities Horizontal conveying direction	l	6,1	6,1	6,1	6,1	6,1	6,1	6,1	6,1
Cooling water consumption	l/min	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
Seal gas consumption	Ncm³/min	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0	0,5 - 1,0

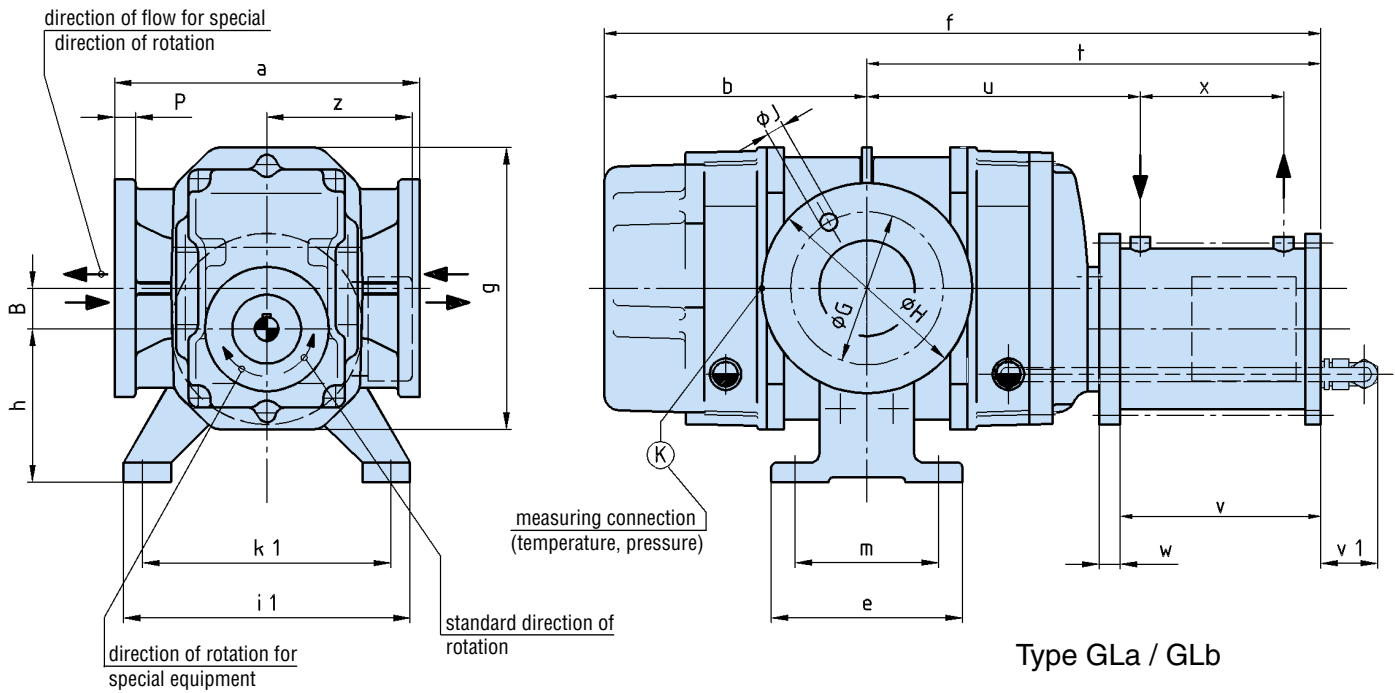
Aerzen blower type	GM/GL	8000 CM-N	8000 CM-N	8000 CM-C	8000 CM-Y	9500 CM-N	9500 CM-N	9500 CM-C	9500 CM-Y
System connection/Voltage	V	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460	200 - 460
Frequency (mineral oil/PFPE-oil)	c/s	25	30	40	40	25	30	40	40
Intake capacity max. (mineral oil)	m³/h	8000	9611	12865	12865	9530	11449	15330	15330
Speed max. (Mineralöl)	rpm	1470	1766	2364	2364	1470	1766	2364	2364
Intake capacity max. (PFPE-oil)	m³/h	8000	9611	12865	12865	9530	11449	15330	15330
Speed max. (PFPE-oil)	rpm	1470	1766	2364	2364	1470	1766	2364	2364
Motor- rating S 1 / S 6	kW	15,4	18,5	11	24,8 / 35	15,4	18,5	11	24,8 / 35
Mech.: Load S 1 / S 6	mbar	35	35	35	35 / 80	25	25	25	25 / 70
Oil filling quantities Vertical conveying direction	l	12	12	12	12	12	12	12	12
Oil filling quantities Horizontal conveying direction	l	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7
Cooling water consumption	l/min	7,0	7,0	7,0	7,0	7,0	7,0	7,0	7,0
Seal gas consumption	Ncm³/min	1,0 - 1,5	1,0 - 1,5	1,0 - 1,5	1,0 - 1,5	1,0 - 1,5	1,0 - 1,5	1,0 - 1,5	1,0 - 1,5

# Dimensions and weights



Type GMa / GMb

Type	Size	a [mm]	b [mm]	e [mm]	f [mm]	g [mm]	h [mm]	i [mm]	i1 [mm]	k [mm]	k1 [mm]	m [mm]	v1 [mm]	DN	Weight approx. kg
GM / GL	170 CM-N	264	224	152	680,5	258	132	332	264	300	232	120	-	50	110
GM / GL	170 CM-C*	* in preparation													
GM / GL	170 CM-Y	264	224	152	680,5	258	132	332	264	300	232	120	-	50	110
GM / GL	250 CM-N	264	239	157	722,5	258	132	332	264	300	232	125	-	80	120
GM / GL	250 CM-C*	* in preparation													
GM / GL	250 CM-Y	264	239	157	722,5	258	132	332	264	300	232	125	-	80	120
GM / GL	340 CM-N	264	287	239	804,5	258	132	332	264	300	232	207	-	80	130
GM / GL	340 CM-C*	* in preparation													
GM / GL	340 CM-Y	264	287	239	804,5	258	132	332	264	300	232	207	-	80	130
GM / GL	500 CM-N	320	280	200	778,5	295	160	390	300	350	260	150	-	100	150
GM / GL	500 CM-C*	* in preparation													
GM / GL	500 CM-Y	320	280	200	778,5	295	160	390	300	350	260	150	-	100	150
GM / GL	700 CM-N	320	330	290	878,5	295	160	390	300	350	260	245	-	100	170
GM / GL	700 CM-C*	* in preparation													
GM / GL	700 CM-Y	320	330	290	878,5	295	160	390	300	350	260	245	-	100	170
GM / GL	1000 CM-N	360	325	260	1015	360	180	440	336	400	296	210	55	100	225
GM / GL	1000 CM-C	360	325	260	860	360	180	440	336	400	296	210	-	100	210
GM / GL	1000 CM-Y	360	325	260	1015	360	180	440	336	400	296	210	55	100	225
GM / GL	1400 CM-N	360	381	340	1127	360	180	500	396	460	356	290	55	150	275
GM / GL	1400 CM-C	360	381	340	972	360	180	500	396	460	356	290	-	150	250
GM / GL	1400 CM-Y	360	381	340	1127	360	180	500	396	460	356	290	55	150	275



Type	Size	a [mm]	b [mm]	e [mm]	f [mm]	g [mm]	h [mm]	i [mm]	i1 [mm]	k [mm]	k1 [mm]	m [mm]	v1 [mm]	DN	Weight approx. kg
GM / GL	2000 CM-N	400	375	330	1157	436	200	570	440	510	380	270	55	150	330
GM / GL	2000 CM-C	400	375	330	1095	436	200	570	440	510	380	270	55	150	310
GM / GL	2000 CM-CS	400	375	330	958	436	200	570	440	510	380	270	55	150	295
GM / GL	2000 CM-Y	400	375	330	1157	436	200	570	440	510	380	270	55	150	330
GM / GL	2800 CM-N	400	445	470	1297	436	200	570	440	510	380	410	55	150	445
GM / GL	2800 CM-C	400	445	470	1235	436	200	570	440	510	380	410	55	150	425
GM / GL	2800 CM-CS	400	445	470	1098	436	200	570	440	510	380	410	55	150	395
GM / GL	2800 CM-Y	400	445	470	1297	436	200	570	440	510	380	410	55	150	445
GM / GL	4000 CM-N	500	460	350	1276	538	250	652	484	600	432	290	65	200	520
GM / GL	4000 CM-C	500	460	350	1276	538	250	652	484	600	432	290	65	200	520
GM / GL	4000 CM-Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GM / GL	5500 CM-N	630	468	360	1588	652	315	800	588	720	508	280	65	200	850
GM / GL	5500 CM-C	630	468	360	1309	652	315	800	588	720	508	280	65	200	695
GM / GL	5500 CM-Y	630	468	360	1588	652	315	800	588	720	508	280	65	200	850
GM / GL	7500 CM-N	630	533	490	1654	652	315	800	588	720	508	410	65	250	920
GM / GL	7500 CM-C	630	533	490	1439	652	315	800	588	720	508	410	65	250	765
GM / GL	7500 CM-Y	630	533	490	1654	652	315	800	588	720	508	410	65	250	920
GM / GL	8000 CM-N	710	627	670	1942	810	355	910	640	830	560	525	65	300	1510
GM / GL	8000 CM-C	710	627	670	1850	810	355	910	640	830	560	525	65	300	1400
GM / GL	8000 CM-Y	710	627	670	1942	810	355	910	640	830	560	525	65	300	1510
GM / GL	9500 CM-N	710	692	800	2082	810	355	910	640	830	560	655	65	300	1550
GM / GL	9500 CM-C	710	692	800	1980	810	355	910	640	830	560	655	65	300	1450
GM / GL	9500 CM-Y	710	692	800	2082	810	355	910	640	830	560	655	65	300	1550

Socket flanges drilled acc. to EN-1092-2



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