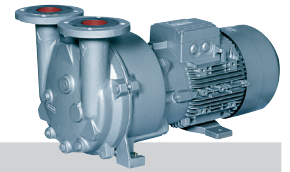


# Data sheet liquidring pump

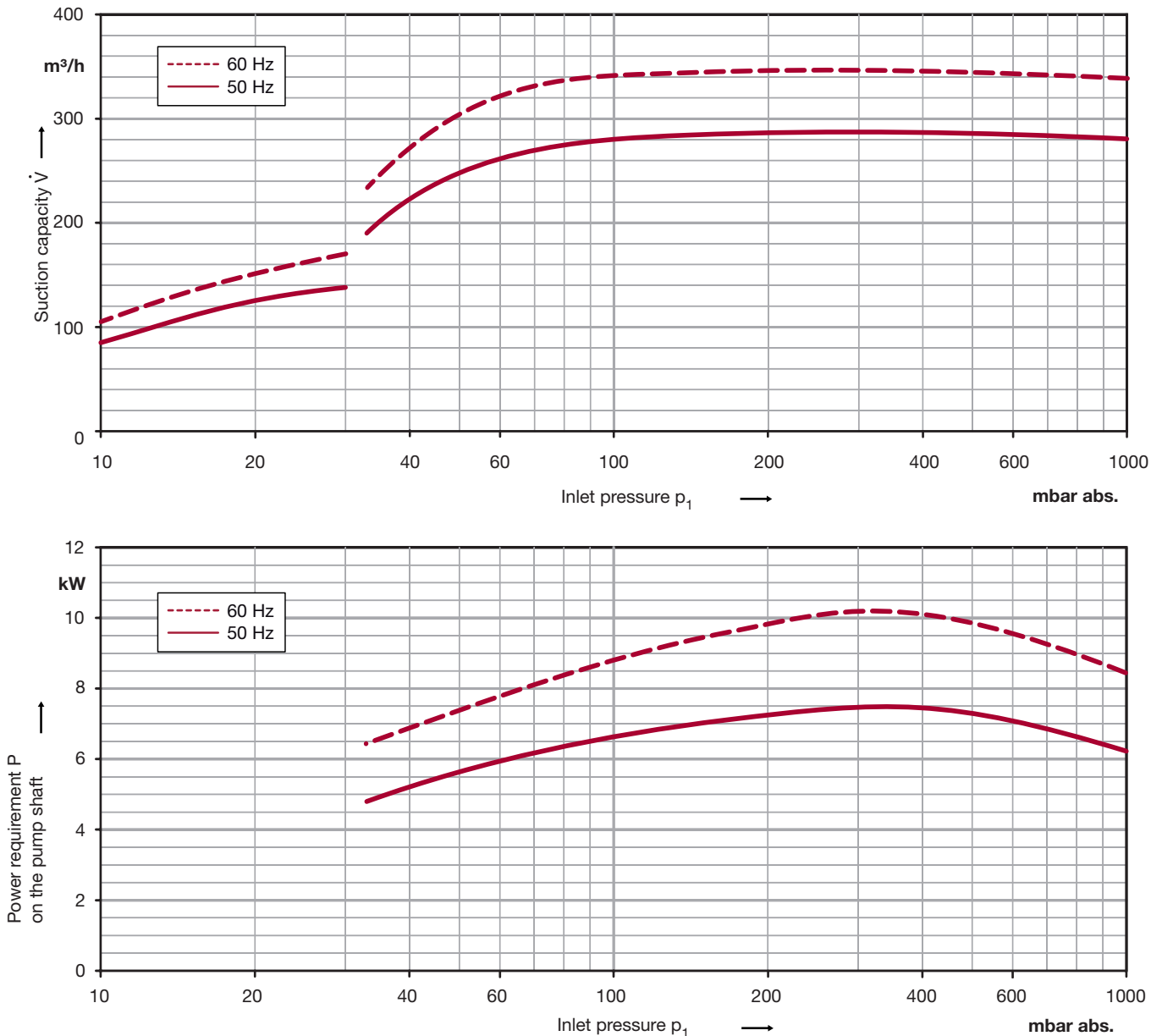
Series L-BV5

| L\_300

Range 2BV5 121 Vacuum pump with gas ejector



## Performance curves for vacuum operation



Vacuum pumps of the L-BV5 range are suitable for evacuating gases and wet vapours down to inlet pressures of 33 mbar abs. (97% vacuum). All these vacuum pumps are equipped with built-in cavitation protection. For operation below 80 mbar abs. the cavitation protection should be connected to protect the vacuum pump. All pumps L-BV5 are especially space-saving in their monoblock design. They are available in cast iron (standard color RAL 9006). The motor is painted as standard in RAL 9006.

The motors are supplied as standard for the input voltage ranges of 50 and 60 Hz and for the protection category IP55 as well as approved for UL and CSA. Vacuum pumps with ATEX 94/9 EG for category 2G are available, too. The characteristics are valid for the inlet of air with a relative humidity of 100 % and a temperature of 20 °C, compression to 1013 mbar abs. and water at 15 °C as operating liquid. The tolerance is ± 10 %.

## Selection and ordering data

Materials	Motor data				Service-factor	Order-No.	Quantity of operating liquid	Sound pressure level **	Weight approx.		
	Fre-quency	Rated									
		voltage	current	output							
Casing/port plate/impeller	Hz	V	A	kW	SF	m³/h	dB(A)	kg			
<b>3- 50/60 Hz version, protection class IP 55, insulation class F *</b>											
cast iron/cast iron/bronze	50 60	200Δ...240Δ 220Δ...275Δ	345Y...415Y 380Y...480Y	38.0 39.0	22.0 22.5	<b>7.5</b> <b>11.4</b>	1.3 1.0	<b>2BV5121-0KH03-8S</b>	1.2 1.5	69 75	165
cast iron/cast iron/bronze	50 60	500Δ 575Δ		16.0 16.5		<b>7.5</b> <b>11.4</b>	1.3 1.0	<b>2BV5121-0KH03-5S</b>	1.2 1.5	69 75	165
CrNi steel/CrNi steel/CrNi steel	50 60	200Δ...240Δ 220Δ...275Δ	345Y...415Y 380Y...480Y	38.0 39.0	22.0 22.5	<b>7.5</b> <b>11.4</b>	1.3 1.0	<b>2BV5121-0HH03-8S</b>	1.2 1.5	69 75	165
CrNi steel/CrNi steel/CrNi steel	50 60	500Δ 575Δ		16.0 16.5		<b>7.5</b> <b>11.4</b>	1.3 1.0	<b>2BV5121-0HH03-5S</b>	1.2 1.5	69 75	165
<b>Gas ejector (for connecting in front of the vacuum pump)</b>											
Heat/Diffusor/Jet	Material name		Frequency	For vacuum pump							
ductile cast iron/ductile cast iron/ CrNi steel	GGG 40 / GGG 40 / CrNi-St		50 Hz	2BV5121-0K		<b>2BP5121-1KC</b>					19
ductile cast iron/ductile cast iron/ CrNi steel	GGG 40 / GGG 40 / CrNi-St		60 Hz	2BV5121-0K		<b>2BP5121-1KF</b>					19
CrNi steel/CrNi steel/CrNi steel	G-X7CrNiMoNb 1810 / X10CrNiMoTi 1810 / X10CrNiMoTi 1810		50 Hz	2BV5121-0H		<b>2BP5121-1HC</b>					19
CrNi steel/CrNi steel/CrNi steel	G-X7CrNiMoNb 1810 / X10CrNiMoTi 1810 / X10CrNiMoTi 1810		60 Hz	2BV5121-0H		<b>2BP5121-1HF</b>					19

The motors are designed according to DIN EN 60 034 / DIN IEC 34-1 and temperature class F. For the three phase machines the tolerances are ± 10 % for fixed voltage and ± 5 % for voltage range.  
For all three phase machines according to UL and CSA norm (UL 507 and CSA 22.2 No. 100) the maximum allowed voltage tolerances are -10 % resp. +6 %. The frequency tolerance is maximum ± 2 %.

All L-BV5 achieve the standards and norms of the low voltage directive 72/23/EWG, rotating electrotechnical motor EN 60034-1-34, electromagnetic compatibility (EMC) DIN EN 61000-0/-6/-4.

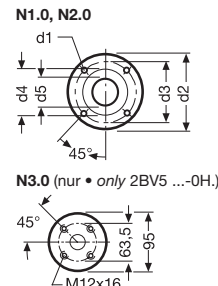
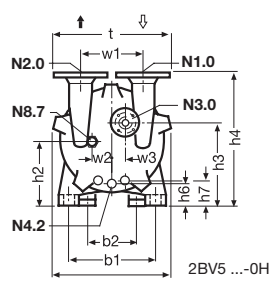
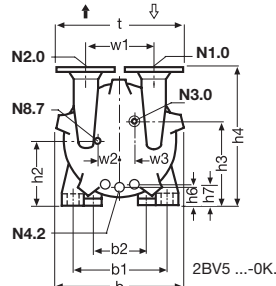
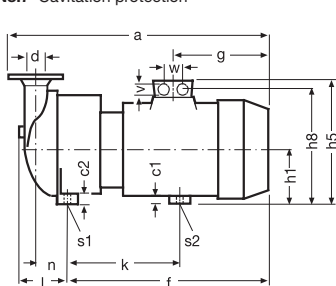
- \* For standard UL 507 and CSA 22.2 No 113 (Certificate Number E225239).
- \*\* Measuring-surface sound-pressure level acc. to DIN EN 21680, measured at a distance of 1 m at medium inlet pressure and with connected pipes.
- \*\*\* The quantities of operating liquid apply for fresh water operation without discharge liquid separator.

For partial recirculation operation the quantity of the fresh applied refrigerant can be reduced by circulation of the operating liquid in a circuit (with discharge liquid separator and internal recirculation of the operating liquid, available as accessories).

An inlet pressure of 10 mbar abs. can be achieved by connecting a gas ejector (see accessories). The gas ejector can be mounted directly onto the vacuum pump.

## Dimensions

- N1.0 Inlet flange
- N2.0 Pressure flange
- N3.0 Connection operating liquid
- N4.2 Drain/Flushing
- N8.7 Cavitation protection



2BV5 121	a	b	b1	b2	c1	c2	h1	h2	h3	h4	h5	h6	h7	h8	k	l	f	g	n	s1
[mm]	752	348	265	190	20	26	151	167	217	385	318	39	60	258	336	135	565	262	96	12 x 23
	s2	t	v	d1	d2	d3	d4	d5	w	w1	w2	w3	d <sup>1)</sup> (N1.0, N2.0)	N3.0 <sup>2)</sup>	N4.2	N8.7				
	12	382	M32x1.5	19	182	142	114	67	42	200	57	29	DN65 / 2½"	G¾ x 24	G¾ x 25	G¾ x 11				

- 1) suitable for mating flange acc. to DIN 2501, ND16 or ANSI B16.5-3-150
- 2) suitable for round flange acc. to DIN 2633, ND16, nominal width 15 or ANSI B16.5-1/2-150

## Other voltages

		2BV5 121-... □ ... □ S	
50 Hz	60 Hz		
<b>3-</b>			
185...220 V Δ / 320...380 V Y 220...240 V Δ / 345...415 V Y 345...415 V Δ 500 V Δ	200...254 V Δ / 345...440 V Y 220...275 V Δ / 380...480 V Y 380...480 V Δ 575 V Δ	H H H H	0 8 7 5
<b>3- ATEX Category 2G</b>			
230 V Δ / 400 V Y 400 V Δ / 690 V Y 500 V Δ	- - -	D D D	1 6 5
- - -	460 V Δ 460 V Y 575 V Δ	G G G	6 1 5

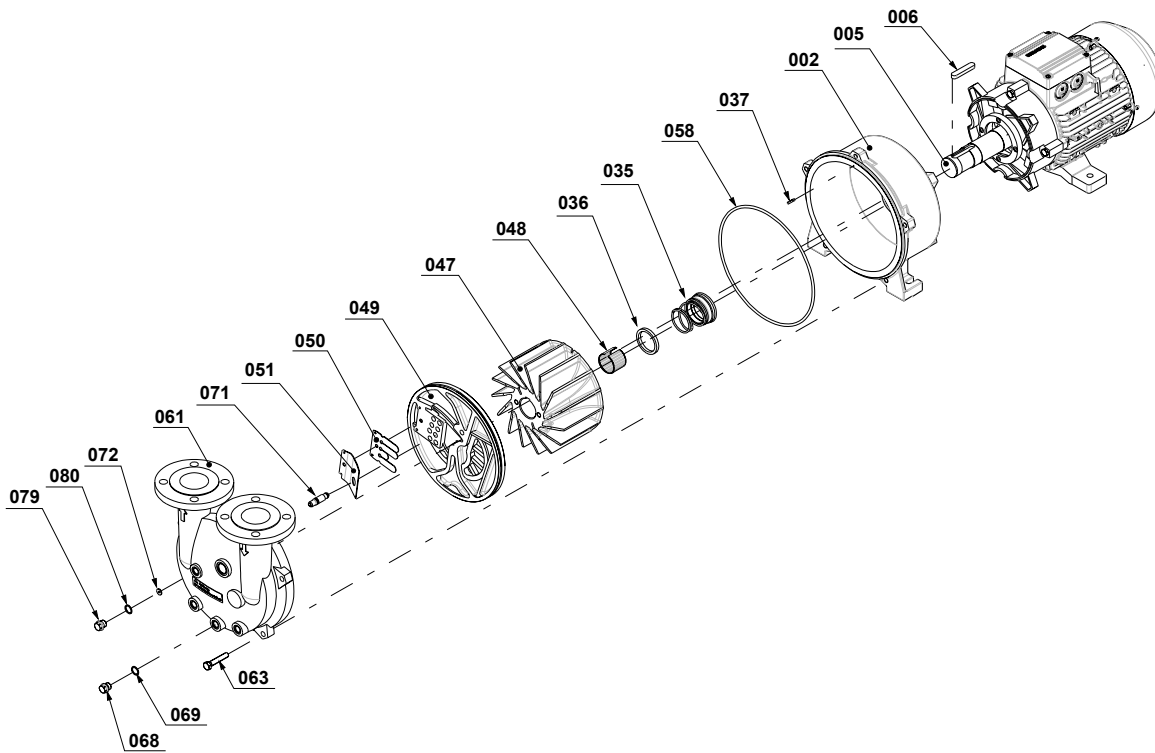
## Quantity of Operating Liquid

Frequency	for fresh water operation / partial recirculation Inlet pressure p (abs.) ***		
	< 200 mbar	200 - 500 mbar	> 500 mbar
Hz	m³/h	m³/h	m³/h
50	1.2 / 0.6	0.4 / 0.3	0.35 / 0.12
60	1.5 / 0.6	0.4 / 0.3	0.35 / 0.12

## Max. add. water carry-over or permissible back pressure

Frequency	max. additional water carry-over	max. permissible back pressure
Hz	m³/h	mbar abs.
50	3.0	1300
60	3.5	1300

## Exploded drawing



## Materials of construction

Part-No.	Designation	Material combination	
		Grey cast iron/Grey cast iron/Bronze	CrNi steel/CrNi steel/CrNi steel
002	Casing	Grey cast iron (EN-GJL HB 195 / EN-JL2030) EN 1561	Cast chrome-nickel-molybdenum steel (G-X5CrNiMoNb 18-10 / 1.4581) EN 10283
005	Pump shaft	Chrome steel (X20Cr13 / 1.4021) EN 10088 - 3	Chrome-nickel-molybdenum steel (X6CrNiMoTi 17-12-2 / 1.4571) EN 10088 - 3
006	Feather key	Chrome-nickel-molybdenum steel (X6CrNiMoTi 17-12-2 / 1.4571) EN 10088 - 3	Chrome-nickel-molybdenum steel (X6CrNiMoTi 17-12-2 / 1.4571) EN 10088 - 3
035	Mechanical seal	SiC / Carbon / Viton (FPM) / Chrome-nickel-molybdenum steel (EN 12756 - BQ1VGG)	SiC / Carbon / Viton (FPM) / Teflon (PTFE) sheated / Chrome-nickel-molybdenum steel (EN 12756 - Q1BM1GG)
036	Washer	Chrome steel (X20Cr13 / 1.4021) EN 10088 - 3	Chrome-nickel-molybdenum steel (X6CrNiMoTi 17-12-2 / 1.4571) EN 10088 - 3
037	Set screw	Chrome-nickel-molybdenum steel (X5CrNiMo 17-12-2 / 1.4401) EN 10088 - 2	Chrome-nickel-molybdenum steel (X5CrNiMo 17-12-2 / 1.4401) EN 10088 - 2
047	Impeller	Cast aluminium bronze (G-CuAl10Fe5Ni5 / CC33G-GS) EN 1982	Cast chrome-nickel-molybdenum steel (G-X5CrNiMoNb 18-10 / 1.4581) EN 10283
048	Tolerance ring for impeller	Chrome-nickel steel (X12CrNi 17-7 / 1.4310) EN 10088 - 2	Chrome-nickel steel (X12CrNi 17-7 / 1.4310) EN 10088 - 2
049	Port plate	Grey cast iron (EN-GJL HB 195 / EN-JL2030) EN 1561	Cast chrome-nickel-molybdenum steel (G-X5CrNiMoNb 18-10 / 1.4581) EN 10283
050	Valve plate	Teflon (PTFE)	Teflon (PTFE)
051	Intercepting plate	Chrome-nickel-molybdenum steel (X10CrNiMoTi 18-10 / 1.4571) EN 10088 - 2	Chrome-nickel-molybdenum steel (X10CrNiMoTi 18-10 / 1.4571) EN 10088 - 2
058	Gasket for cover	Nitrile-butadiene-caotchouc (NBR 70) ISO 1629	Silicone core, Teflon (PTFE) sheated
061	Cover	Grey cast iron (EN-GJL HB 195 / EN-JL2030) EN 1561	Cast chrome-nickel-molybdenum steel (G-X5CrNiMoNb 18-10 / 1.4581) EN 10283
063	Screw	Steel (DIN ISO 8992)	Steel (DIN ISO 8992)
068	Plug screw	Machining steel, lead alloyed (11SMnPb30 / 1.0718) EN 10087	Chrome-nickel-molybdenum steel (X5CrNiMo 17-12-2 / 1.4401) EN 10088 - 3
069	Sealing ring	Teflon (PTFE)	Teflon (PTFE)
071	Pipe of cavitation protection	Teflon (PTFE)	Teflon (PTFE)
072	Washer for cavitation protection	Chrome-nickel steel (X5CrNi 18-10 / 1.4301) EN 10088 - 3	Chrome-nickel steel (X5CrNi 18-10 / 1.4301) EN 10088 - 3
079	Plug screw	Machining steel, lead alloyed (11SMnPb30 / 1.0718) EN 10087	Chrome-nickel-molybdenum steel (X5CrNiMo 17-12-2 / 1.4401) EN 10088 - 3
080	Sealing ring	Teflon (PTFE)	Teflon (PTFE)



Changes in particular the quoted performance curve, datas and weights without prior notice. The figures are without obligations.

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# **Gardner Denver**

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