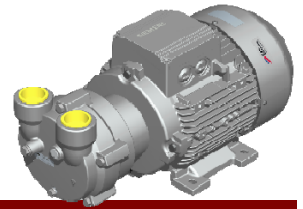


L-BV 2 N

Data sheet 2BV2 071

Liquid ring vacuum pump



General information

Elmo Rietschle vacuum pumps of the model range L-BV2 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. They work cavitation free down to 80 mbar abs. For operation at lower inlet pressures the integrated cavitation protection should be connected for protecting the vacuum pump (no external pipes necessary).

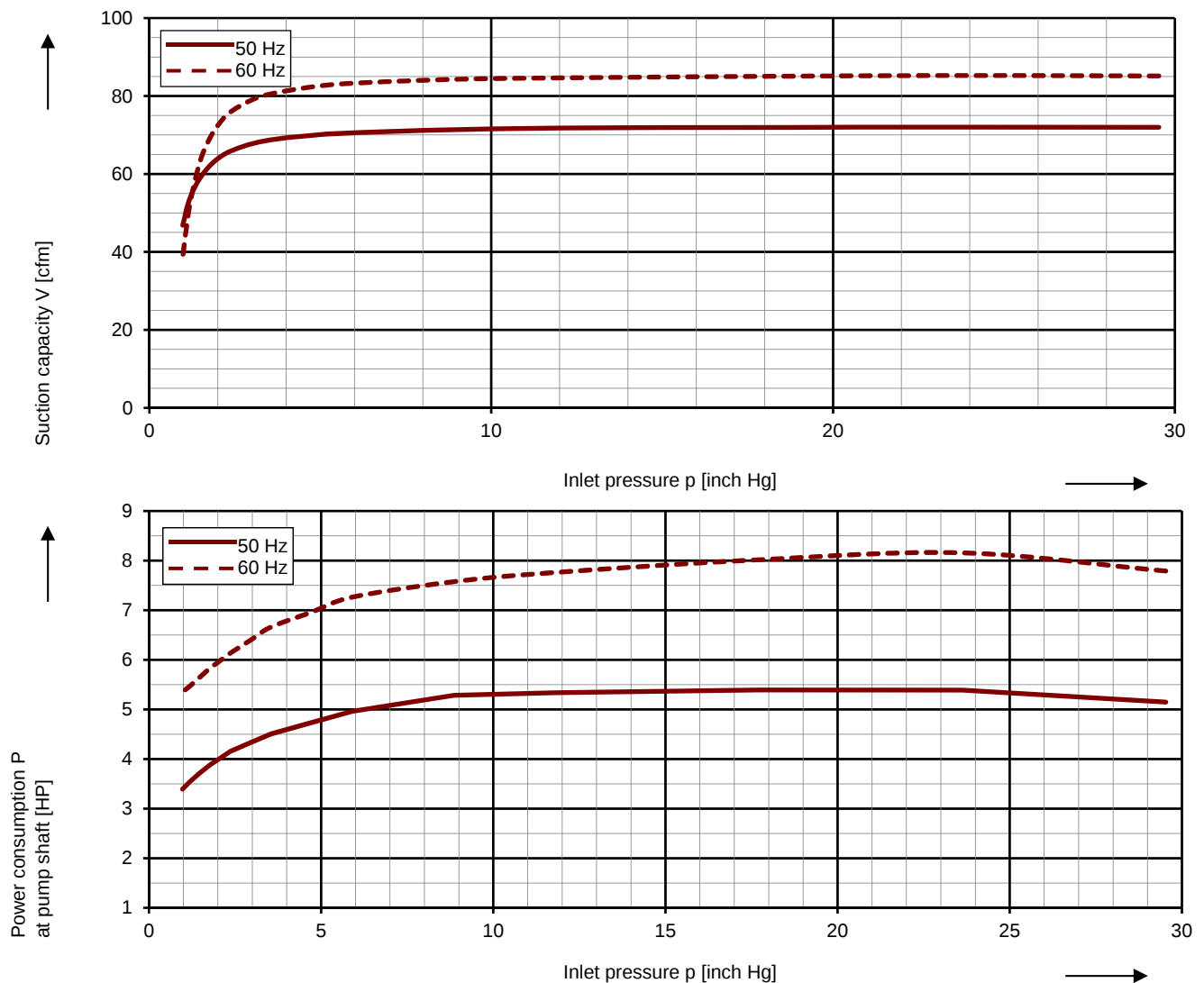
The vacuum pumps are particularly space-saving, reliable and robust in their monoblock design.

The reinforced stainless steel shaft, the permanently lubricated bearings and the ceramic internal coating of the pump housings prevent wear, corrosion and calcification.



Performance curves

Vacuum operation



The characteristic curves are based on the evacuation of 100 % saturated air and an intake temperature of 20 °C. At a suction pressure of 1013 mbar abs. and a temperature of the operating liquid of 15 °C (water as operating liquid) the characteristic curves will be achieved. The tolerance is $\pm 10\%$.

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 approbated for UL and CSA. Vacuum ATEX-pumps with 2006/42 EG for category 2G are available, too.

Selection and ordering data

Typ 2BV2 071

Fre- quency	Rated			Service factor	Efficiency	Quantity of operating liquid 1)	Sound pressure level 2)	Weight Approx.	Order No.
	Voltage	Current	Power						
Hz	V	A	HP	SF	-	cfm	dB(A)	lbs	
3~ 50/60 Hz, IP55, Insulation material class F, UL 1450 and CAN/CSA C22.2 No. 68-09 (certificate number E225239)									
50	190-210 Δ	20,8 Δ	5,4	1,38	IE3	0,25	72	134 *	2BV2071-0 □ K04-1B
60	190-210 YY / 380-420 Y	23,4 YY / 11,7 Y	8,2	1,03	IE3	0,25	76	141 **	
	200 YY	19,8 YY	8,2	1,04	NP	0,25	76		
3~ 50/60 Hz, IP55, Insulation material class F, UL 1450 and CAN/CSA C22.2 No. 68-09 (certificate number E225239)									
50						0,25	72	134 *	2BV2071-0 □ K04-6B
60						0,25	76	141 **	
						0,25	76		
3~ 50/60 Hz, IP55, Insulation material class F, UL 1450 and CAN/CSA C22.2 No. 68-09 (certificate number E225239)									
50	500 Y	7,9 Y	5,4	1,38	IE3	0,25	72	134 *	2BV2071-0 Q04-3B
60	575 Y	6,9 Y	8,2	1,04	NP	0,25	76	141 **	
3~ 50/60 Hz, IP55, Insulation material class F, UL 1450 and CAN/CSA C22.2 No. 68-09 (certificate number E225239)									
50	380-420 Δ / 660-725 Y	10,3 Δ / 6,0 Y	4,6	1,62	IE3	0,25	72	134 *	2BV2071-0 □ Q04-7B
60	440-480 Δ	10,1 Δ	6,2	1,37	IE3	0,25	76	141 **	
	460 Δ	8,6 Δ	6,2	1,20	NP	0,25	76		

Materials			
Casing	Port plate	Impeller	Lantern
Cast iron (internal surface with ceramic coating)	Ceramic	Bronze	-
CrNi steel	Ceramic	CrNi steel	-
CrNi steel	CrNi steel	CrNi steel	-

- 1) The quantities of operating liquid apply for fresh water operation without discharge liquid separator. Tolerance ±10%
- 2) Measuring surface sound pressure level acc. to EN ISO 3744, measured with an equivalent unit at a distance of 1 m. The pump is throttled to an average suction pressure, with piping connected, but no relief valves fitted, tolerance ±3 dB (A).

C  US						
Voltage range			Efficiency			
50 Hz	60Hz	60 Hz		2BV5....		.. 
3~						
200 VΔ	200 V YY / 230 VΔ / 400 VY		•			
190-210 VΔ	190-210 VYY / 220-240 VΔ / 380-420VY					
200 VΔ / 230 VΔ / 400 VY	230 V YY / 460 VY		•			
190-210 VYY / 220-240 VΔ / 380-420VY	220-240 VYY / 440-480VY					
475-525 V Y	550-600 V Y		•			
475-525 VΔ	550-600 VΔ					
400 VΔ / 690 V Y	460 VΔ		•			

All L-BV fulfil the 2006/42/EC (machinery) and 2006/95/EC (low voltage) directives and the EN 60034-1 norm "Rotating electrical machines". The motors comply with EN 60 034-1 / -2 / -30 (IEC 60034) and thermal class F. Voltage tolerances for three phase motors are +/-10%. The frequency tolerance is +/- 2 % maximum. Service factor (SF) and motor efficiency according NEMA MG1-12.

Operation liquid quantity for 50 Hz / 60 Hz [cfm]

p1	Fresh water	Partial recirculation		
mbar abs.	15 °C	8 °C	10 °C	12 °C
> 500	0,14 / 0,14	0,09 / 0,1	0,1 / 0,11	0,11 / 0,12
200 - 500	0,14 / 0,14	0,09 / 0,1	0,1 / 0,11	0,11 / 0,12
< 200	0,27 / 0,27	0,14 / 0,16	0,16 / 0,18	0,19 / 0,21

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). Complete circuit systems L-SV available on request.

Max. additional water carry over / Back pressure

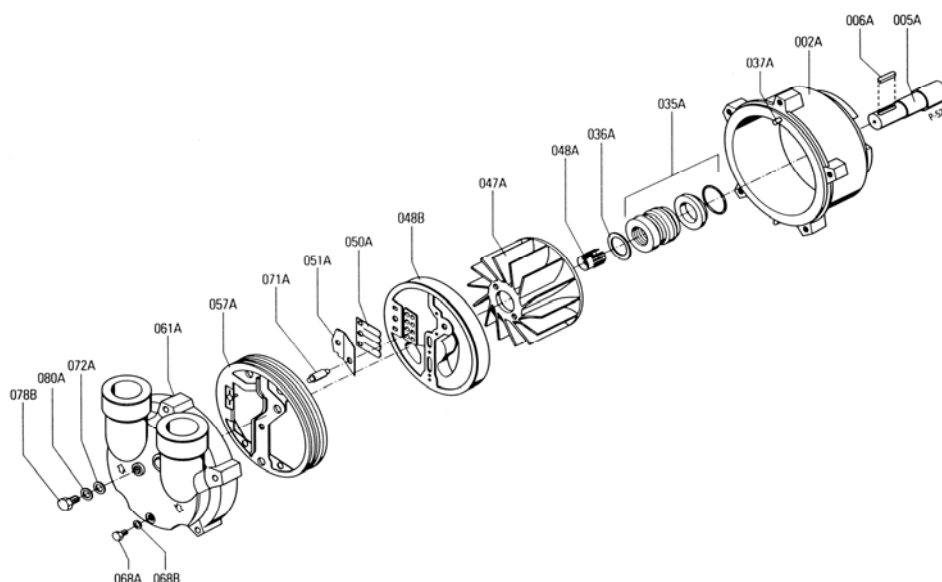
Frequency [Hz]	Water carry-over [cfm]	Back pressure [inch Hg]
50	0,7	710,6
60	0,7	710,6

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.

The cast iron machines are completely painted in standard color RAL 9006.

All cast parts of the stainless steel version are pickled and passivated, the motor is standardly painted in RAL 9006.

Materials



Part No.		Materials			
		Cast iron / ceramic / bronze	CrNi steel / ceramic / CrNi steel	CrNi steel / ceramic / CrNi steel	CrNi steel / CrNi steel / CrNi steel
002	Casing	Cast iron (ASTM A 48-92 / CI 30B)	Cast chrome-nickel steel (ASTM A 743 / A 743M-95 / CF-8M)	Cast chrome-nickel steel (ASTM A 743 / A 743M-95 / CF-8M)	Cast chrome-nickel steel (ASTM A 743 / A 743M-95 / CF-8M)
005	Pump shaft	Chrome steel (ASTM A 276-96 / 420)	Chrome steel (ASTM A 276-96 / 420)	Chrome-Nickel steel (ASTM A 276-96 / 316Ti)	Chrome-Nickel steel (ASTM A 276-96 / 316Ti)
006	Feather key	DIN 6885, chrome-nickel steel (ASTM A 276-96 / 316Ti)	DIN 6885, chrome-nickel steel (ASTM A 276-96 / 316Ti)	DIN 6885, chrome-nickel steel (ASTM A 276-96 / 316Ti)	DIN 6885, chrome-nickel steel (ASTM A 276-96 / 316Ti)
035	Mechanical seal	Carbon / ceramic / fluorine-caotchouc / chrome-nickel steel	Carbon / ceramic / fluorine-caotchouc / chrome-nickel steel	Carbon / ceramic / Teflon (PTFE) / chrome-nickel-molybdenum steel	Carbon / ceramic / Teflon (PTFE) / chrome-nickel-molybdenum steel
036	Washer	Chrome-nickel steel (ASTM A 276-96 / 316)	Chrome-nickel steel (ASTM A 276-96 / 316)	Chrome-nickel steel (ASTM A 276-96 / 316)	Chrome-nickel steel (ASTM A 276-96 / 316)
037	Set screw	DIN EN 28750, steel	DIN EN 28750, steel	DIN EN 28750, steel	not applicable
047	Impeller	Cast aluminium bronze (ASTM B 148-74, No.955)	Cast chrome-nickel steel (ASTM A 743 / A 743M-95 / CF-8M)	Cast chrome-nickel steel (ASTM A 743 / A 743M-95 / CF-8M)	Cast chrome-nickel steel (ASTM A 743 / A 743M-95 / CF-8M)
048	Tolerance ring for impeller	Chrome-nickel steel (ASTM A 276-96 / 304)	Chrome-nickel steel (ASTM A 276-96 / 304)	Chrome-nickel steel (ASTM A 276-96 / 304)	Chrome-nickel steel (ASTM A 276-96 / 304)
049	Port plate	Ceramic (special steatite)	Ceramic (special steatite)	Ceramic (special steatite)	Cast chrome-nickel steel (ASTM A 743 / A 743M-95 / CF-8M)
050	Valve plate	Teflon (PTFE)	Teflon (PTFE)	Teflon (PTFE)	Teflon (PTFE)
051	Intercepting plate	Chrome-nickel steel (ASTM A 276-96 / 316)	Chrome-nickel steel (ASTM A 276-96 / 316)	Chrome-nickel steel (ASTM A 276-96 / 316)	Chrome-nickel steel (ASTM A 276-96 / 316)
057	Gasket for cover	Nitrile-butadiene-caotchouc (NBR) ASTM D 1418-72a	Fluorine-caotchouc (FP) ASTM D 1418-72a, FKM)	Fluorine-caotchouc (FP) ASTM D 1418-72a, FKM)	Teflon (PTFE) flat gasket and O-ring, silicone-caotchouc, Teflon (PTFE) sheathed
061	Cover	Cast iron (ASTM A 48-92 / CI 30B)	Cast chrome-nickel steel (ASTM A 743 / A 743M-95 / CF-8M)	Cast chrome-nickel steel (ASTM A 743 / A 743M-95 / CF-8M)	Cast chrome-nickel steel (ASTM A 743 / A 743M-95 / CF-8M)
063	Screw	Steel (DIN ISO 8992)	Steel (DIN ISO 8992)	Steel (DIN ISO 8992)	Steel (DIN ISO 8992)
068	Plug screw	Steel	Chrome-nickel steel	Chrome-nickel steel	Chrome-nickel steel
069	Sealing ring	Centelen	Teflon (PTFE)	Teflon (PTFE)	Teflon (PTFE)
070	O-Ring	FPM (flour rubber)	FPM (flour rubber)	FPM (flour rubber)	FEP (Perfluorethylenpropylen) & Silicon
071	Pipe of cavitation protection	Teflon (PTFE)	Teflon (PTFE)	Teflon (PTFE)	Teflon (PTFE)
072	Washer for cavitation portection	Chrome-nickel steel (ASTM A 240-75-304)	Chrome-nickel steel (ASTM A 240-75-304)	Chrome-nickel steel (ASTM A 240-75-304)	Chrome-nickel steel (ASTM A 240-75-304)
079	Plug screw	Steel	Chrome-nickel steel	Chrome-nickel steel	Chrome-nickel steel
080	Sealing ring	Centelen	Teflon (PTFE)	Teflon (PTFE)	Teflon (PTFE)

Changes in particular of the quoted performance curve, data and weights may occur without prior notice. The data given do not constitute an obligation from our side to deliver as shown.