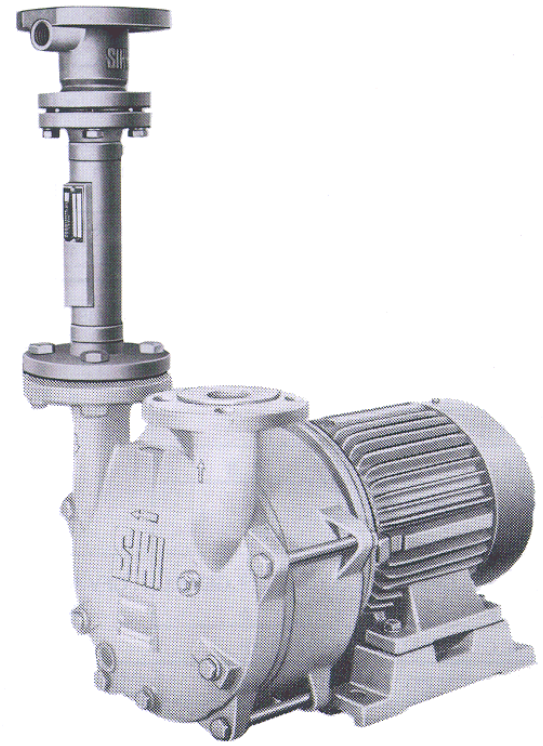
Gas ejector
for single-stage liquid ring vacuum pumps

GEV 25 . . . GEV 1800

FLOWSERVE
SIHI® Pumps

Operating pressure: **8 to 80 mbar**
Suction volume flow: **5 to 1050 m³/h**



GEV 150 + LEM 150

CONSTRUCTION TYPE

Sterling SIHI gas ejectors are simple and sturdy vacuum gas ejectors with following particular characteristics:

- Adaptable to different operating conditions by adequate material selection
- Simple installation into the suction line of liquid ring vacuum pumps
- Low noise service which is free of maintenance and deficient in vibration

APPLICATION

Sterling SIHI gas ejectors extend the operating range of Sterling SIHI liquid ring vacuum pumps so that lower absolute pressures become possible (to 8 mbar).

Field of application are e.g.:

- Chemistry and pharmacy for distilling and degassing
- Electric industry for impregnation and drying
- Plastics industry for degassing etc.

The gases which are to be handled may be vapour saturated or aggressive. Sterling SIHI gas ejectors are used wherever the vacuum attainable by a liquid ring vacuum pump is not sufficient and where danger of running in cavitation is immenent for the liquid ring vacuum pump. Even if the suction side of the ejector is closed, the liquid ring vacuum pump is protected against cavitation.

NOTE

The characteristics of the suction volume flow of the gas ejectors depend on essentially on the suction capacity of the liquid ring vacuum pump and therefore on the vapour pressure ant temperature of the service liquid used.
To meet with the different conditions, we offer 2 construction series.

Type:	**A**	**B**
Service liquid:	water to 15°C	water to 30°C
Suction pressure:	8 · · · 40 mbar	20 · · · 80 mbar

POLLUTION CONTROLL: To reduce the exhaust blast the motive gas can be removed from the separator.

The standard combinations described in this catalogue list are optimal in view of suction volume flow, power absorption and service charges. Other combinations of gas ejectors and liquid ring vacuum pumps can be applied. Details on request.

Material design

Item	COMPONENTS	GEV 25 and GEV 50		GEV 90...GEV 150			GEV 250...GEV 425 GEV 350...GEV 450	
		0S	4F	0R	0B	4B	0A	4B
0970	Motive nozzle	1.4571		hard rubber	1.4571		2.0401	1.4571
0975	Venturi tube	2.0401	1.4571					
0951	Casing	EP-resin glass-fibre reinforced		0.6025		1.4408	0.6025	1.4408
0960	Venturi tube holder	not available		0.6025			0.6025	
0969	Insert ring			not available		1.4571	not available	1.4571

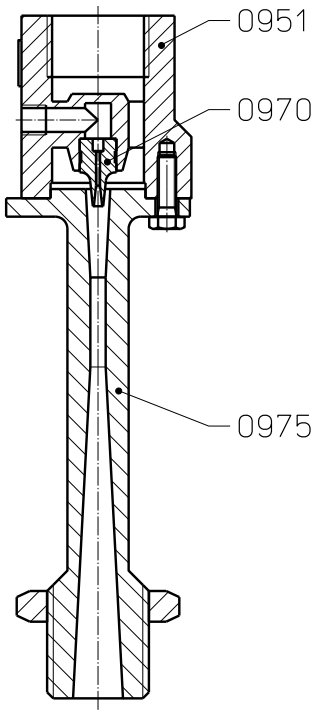
Item	COMPONENTS	GEV 600...GEV 1800	
		0A	4B
0970	Motive nozzle	2.0401	1.4571
0975	Venturi tube		
0951	Casing	0.6025	1.4408
0960	Venturi tube holder	1.0038	

Item	COMPONENTS	GEV 91...GEV 161	
		0A	4B
17.40	Motive nozzle	2.0401	1.4571
17.50	Venturi tube		
10.60	Casing	0.6025	1.4408

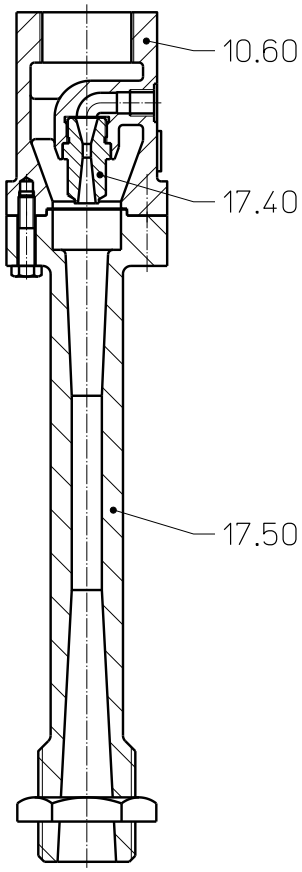
In case of the material design 4B the venturi tube holder is not in contact with the medium handled.

Sectional drawing

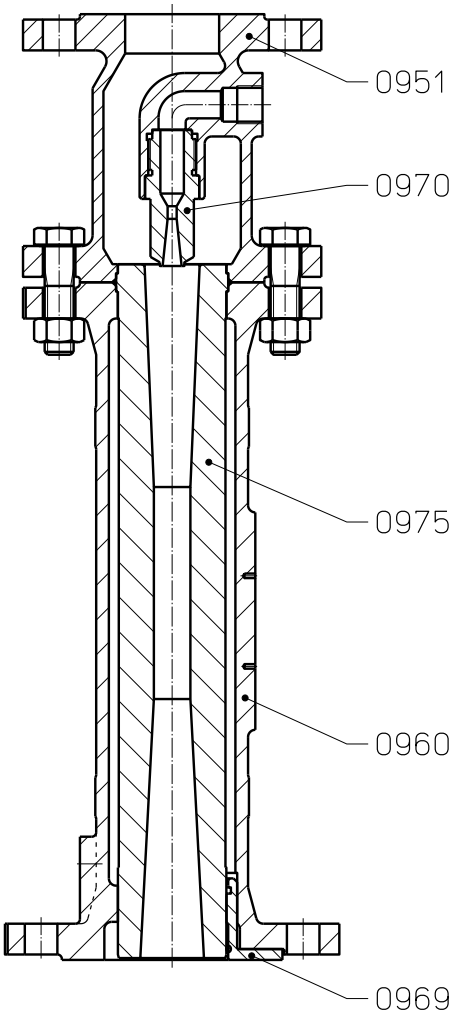
GEV 25 + GEV 50



GEV 91 . . . GEV 161



GEV 90 . . . GEV 1800



Technical Data

Suction pressure range 8 to 40 mbar type A, E — service liquid temperature up to 15 °C
Suction pressure range 20 to 80 mbar type B, F — service liquid temperature up to 30 °C

gas ejector + liquid ring vacuum pump	pump speed	rated power of the motor of the liquid ring vacuum pump	pressure at a suction volume flow = zero mbar	mbar	make-up water flow for difference in temperature m³/h	
	rpm	kW	type A	type B	2°C	5°C
GEV 25 + LEM 25 / LEM 26	2800	0.75	8	- *	0.11	0.06
GEV 50 + LEM 50 / LEM 51		1.5			0.19	0.11
GEV 91 + LEM/L 91	2900	2.2	5...6	10...12	0.35	0.22
GEV 126 + LEM/L 126 AZ/AB		3		8...9	0.4	0.26
GEV 161 + LEM/L 161 8Z/8B	1460	4		5...7	0.65	0.39
GEV 90 + LEM/L 90	1450	2.2	5...7	12	0.4	0.21
GEV 90 + LEM/L 126 CZ/CB	2900	3				
GEV 125 + LEM/L 125	1450				0.47	0.26
GEV 150 + LEM/L 150		4	4...6		0.49	0.28
GEV 150 + LEM/L 161 9Z/9B	1460					
GEV 250 + LEM/L 250	1450	5.5	4...5	8	0.6	0.34
GEV 325 + LEM 325		7.5		12	0.91	0.55
GEV 425 + LEM 425		11			1.22	0.78
GEV 350 + LEH 350		7.5			1.0	0.53
GEV 450 + LEH 450		11			1.25	0.71
GEV 600 + LEH 600	1460	15		8...9	1.7	1.0
GEV 800 + LEH 800		18.5		7	2.0	1.2
GEV 900 + LEH 900		22			2.4	1.5
GEV 1200 + LEH 1200	975	30	3...4	8	4.3	2.7
GEV 1500 + LEH 1500		37		4	4.75	3.1
GEV 1800 + LEH 1800		45		10	5.0	3.3

* The gas ejectors GEV 25 and GEV 50 only are available as type A. At a service water temperature of 30°C and suction volume flow zero a pressure of 17 mbar is reached.

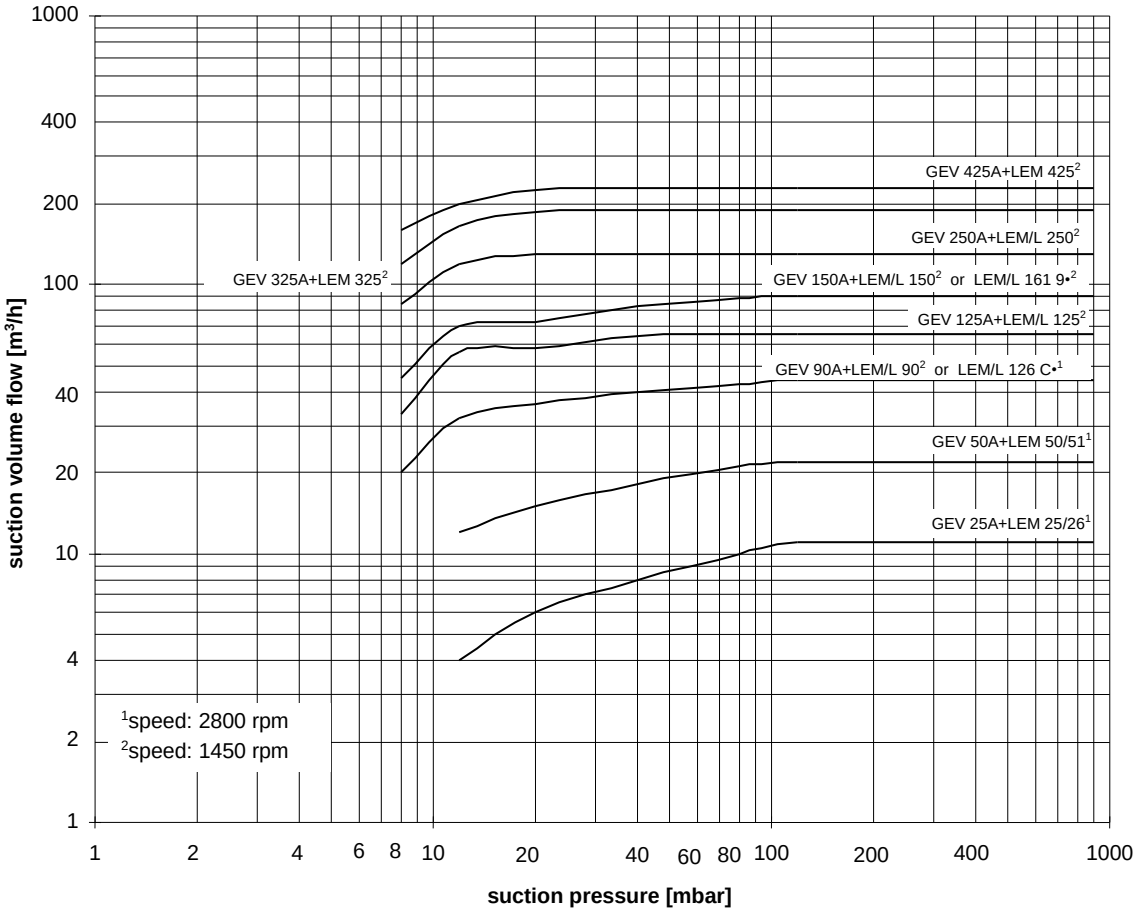
The make-up liquid flow is indicated for combined operation. The service liquid is 2 °C resp. 5 °C warmer than the make-up water. Data for make-up water operation, see operation instructions for liquid ring vacuum pumps.

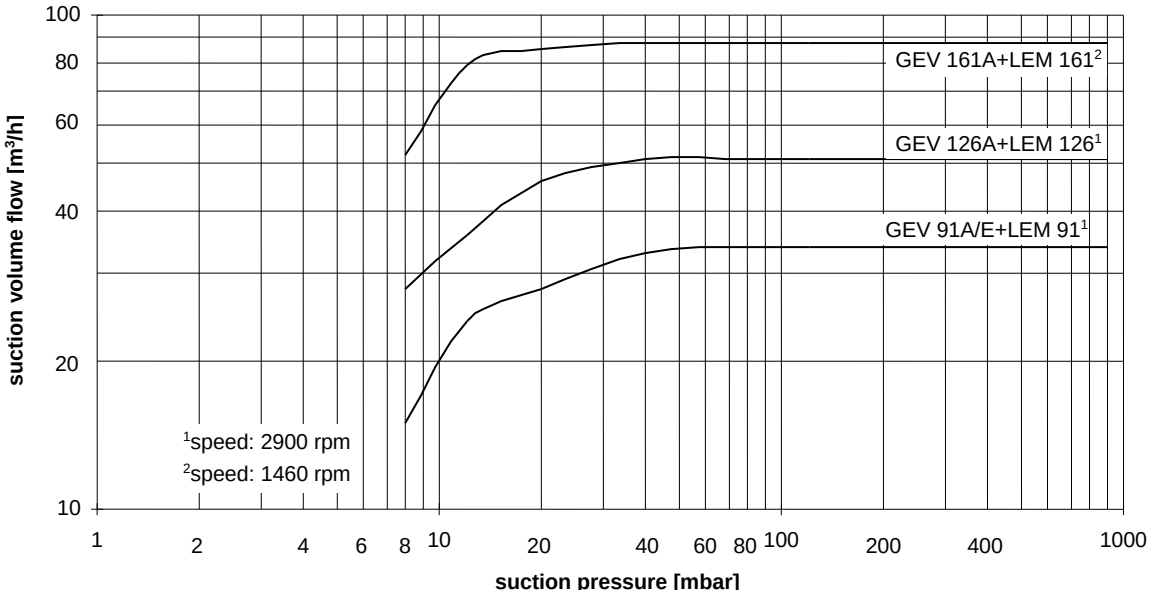
The values indicated for the suction volume flow are applicable for the compression of dry air of 20 °C from suction pressure to atmospheric pressure (1013 mbar). As service liquid for the liquid ring vacuum pump is used water of 15 °C resp. 30 °C. The motive air for the gas ejector has a pressure of abt. 1013 mbar.

Motive and pumping gases with physical properties differing from those of air, service water with temperatures different from those indicated, as well as service liquids other than water, cause a change of the suction capacity which can be determined by Sterling SIHI on request.

Performance graph of the combinations

Suction pressure range: 8 to 40 mbar for service liquid temperatures up to 15°C



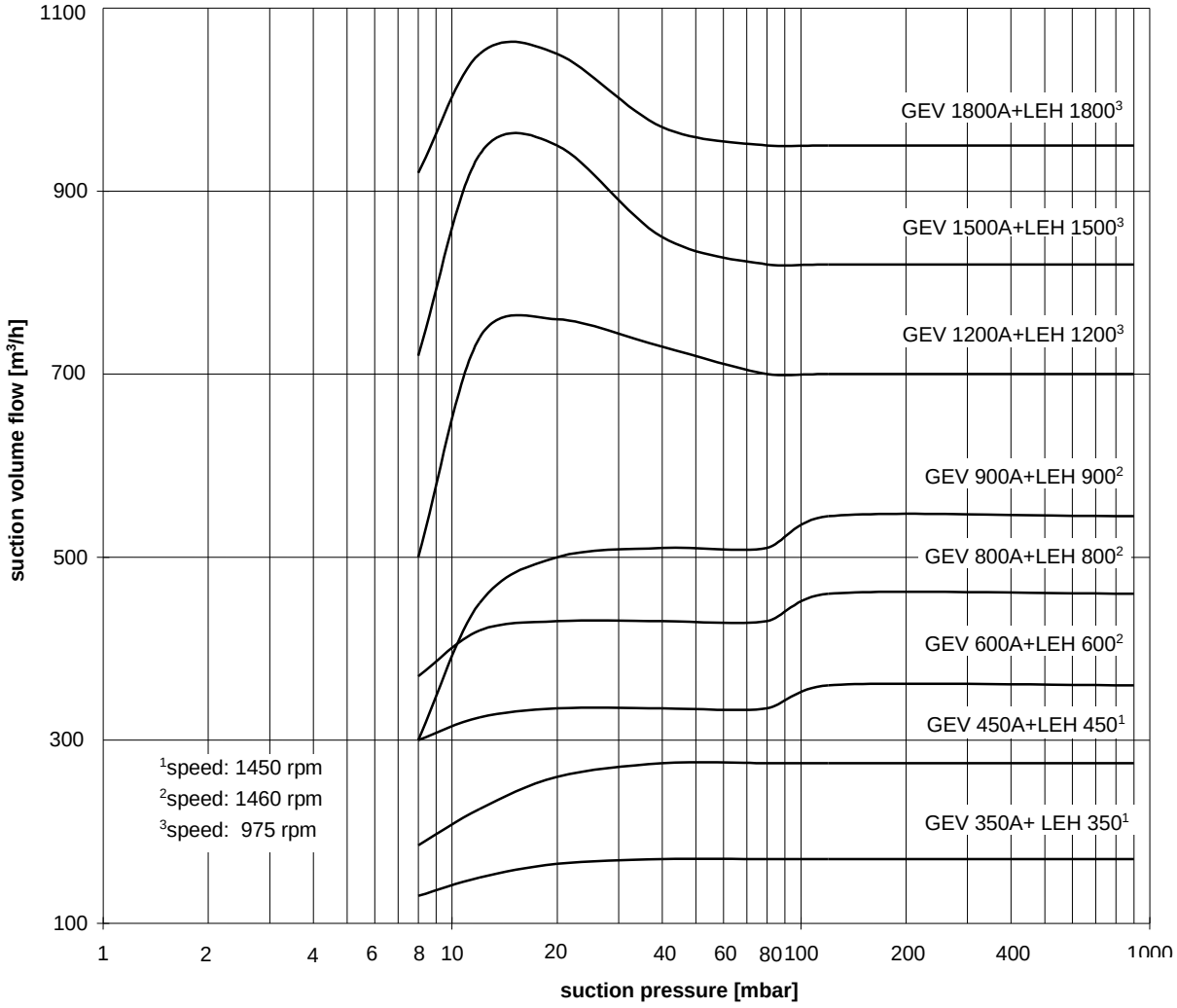


If a combination gas ejector - liquid ring vacuum pump is applied in the range from 40 mbar to 1013 mbar, the motive gas flow can be shut off. Then the suction volume flow of the combination increases by abt. 15 %.

For the suction volume flow the tolerance is 10 %.

Performance graph of the combinations

Suction pressure range: 8 to 40 mbar for service liquid temperatures up to 15°C

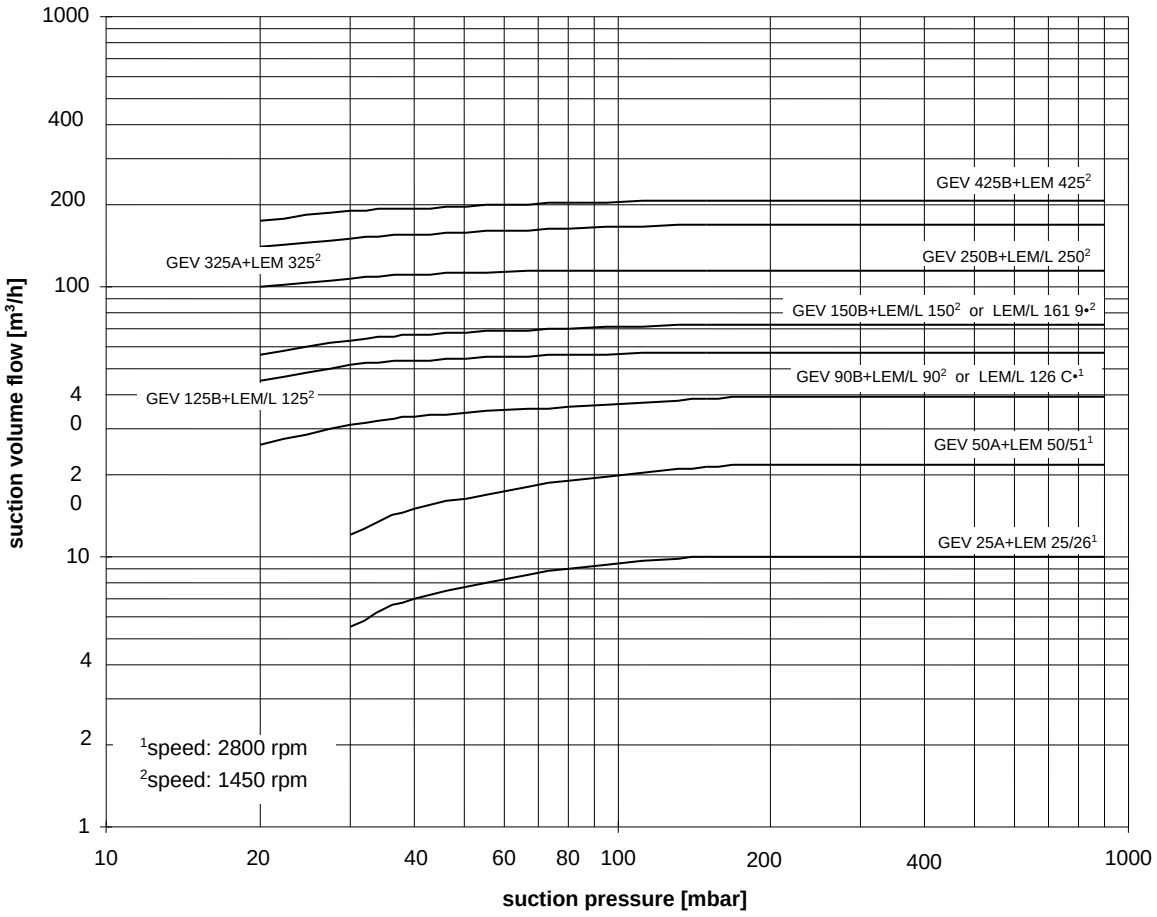


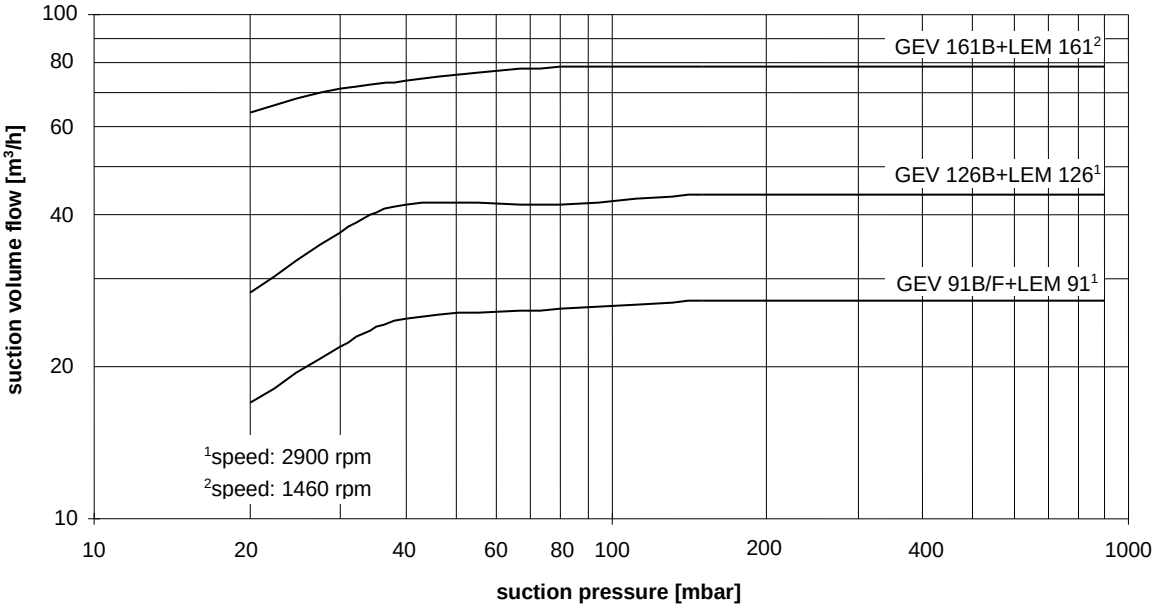
If a combination gas ejector - liquid ring vacuum pump is applied in the range from 40 mbar to 1013 mbar, the motive gas flow can be shut off. Then the suction volume flow of the combination increases by abt. 15 %.

For the suction volume flow the tolerance is 10 %.

Performance graph of the combinations

Suction pressure range: 20 to 80 mbar for service liquid temperatures up to 30°C





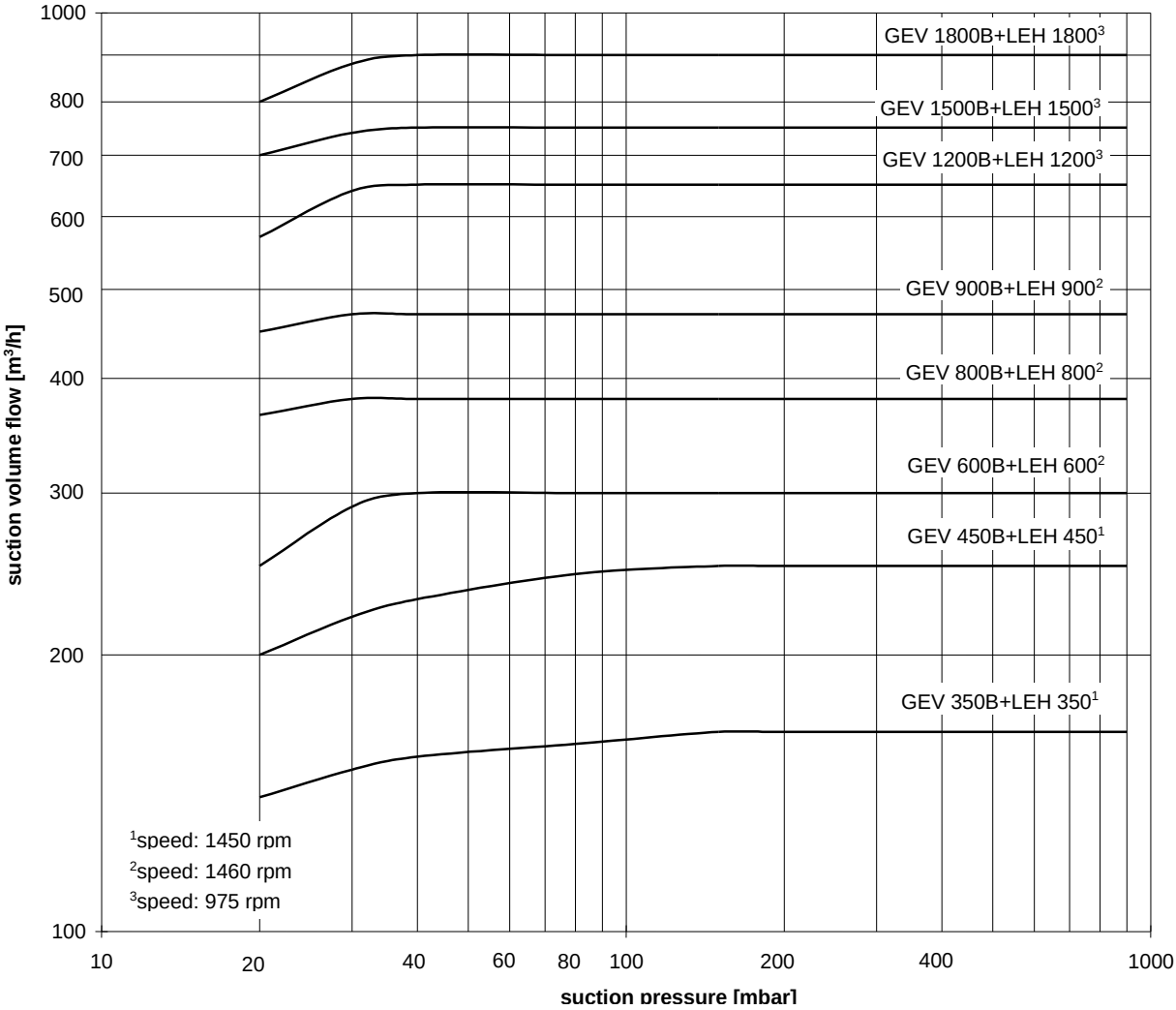
If a combination gas ejector - liquid ring vacuum pump is applied in the range from 80 mbar to 1013 mbar, the motive gas flow can be shut off. Then the suction volume flow of the combination increases by abt. 15 %.

For the suction volume flow the tolerance is 10 %.

Performance graph of the combinations

Suction pressure range: 20 to 80 mbar

for service liquid temperatures up to 30°C

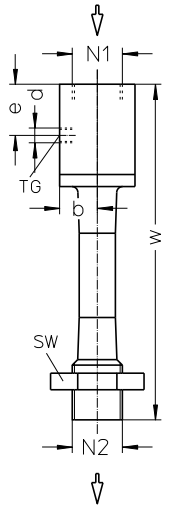


If a combination gas ejector - liquid ring vacuum pump is applied in the range from 80 mbar to 1013 mbar, the motive gas flow can be shut off. Then the suction volume flow of the combination increases by abt. 15 %.

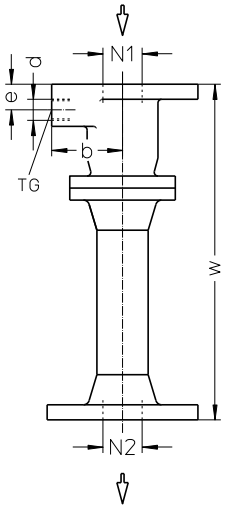
For the suction volume flow the tolerance is 10 %.

Dimensions

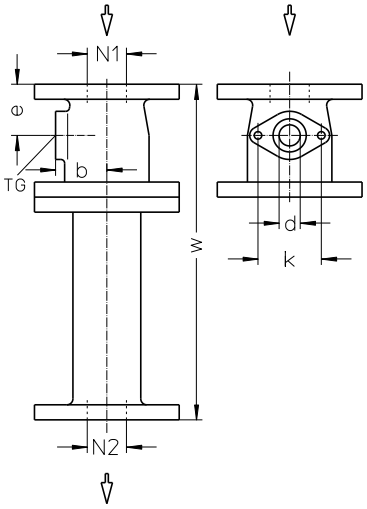
GEV 25 + GEV 50
GEV 91 bis GEV 161



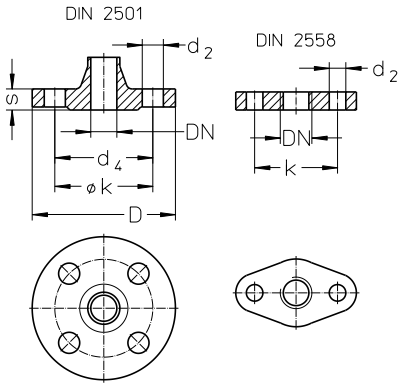
GEV 90 bis GEV 450
GEV 91 E + F



GEV 600 bis GEV 1800



Flanschanschlussmaße



N1 = gas-inlet, N2 = gas-outlet, TG = motive gas inlet

series + size	type	N1	N2	b	d	e	w	SW	weight in kg for material design 0R 0	0B 0	4B 0	0A 0	0S 0	4F 0
GEV 25	A	G 1	G 1	25	G 1/8	34	223	46	-				1.1	
GEV 50														
GEV 91	A, B	G 1 1/4	G 1 1/4	33.5	G 1/4	45	291	55	-		3.8	3.6	-	
GEV 126	A, B						338				4.2	3.9		
GEV 161	A, B	G 1 1/2	G 1 1/2				422	66			5.0	4.7		
GEV 91	E, F	40	40	35	G 1/4	93	340	-	-			7		
GEV 90	A, B			70	G 1/2	25	284	-	7.5	8.5		-		
GEV 125	A						329		8	9				
	B						284		7.5	8.5				
GEV 150	A						354		8	9				
	B						329							
GEV 250	A, B		50				414		-		13	12.5		
GEV 325	A	50	65	50		50	597				28			
	B						543				27			
GEV 425	A						684				30.5	29.5		
	B						597				28			
GEV 350	A,B						522				25			
GEV 450	A						663				29	28		
	B						576				26.5			
GEV 600	A, B	65	100	70	25 *	85	846				42	40		
GEV 800	A, B													
GEV 900	A, B						866							
GEV 1200	A, B	100	125	90	50 *	100	1057				77	78		
GEV 1500	A						1250				92	94		
	B						1057				76	77		
GEV 1800	A						1291				91	93		
	B						1250				92	94		

* Flange suitable for counter-flange according to DIN 2558

flange connections according to DIN 2501 PN 10						DIN 2558 PN 6	
DN	40	50	65	100	125	25	50
k	110	125	145	180	210	75	110
D	150	165	185	220	250	-	-
d_2 x number	18 x 4	18 x 4	18 x 4	18 x 8	18 x 8	11 x 2	14 x 2
d_4	88	102	122	158	188	-	-
s	16	18	18	19	22	-	-

Example for ordering:

G E V A	**91**	**A**	**0A 0**
series	size	type	material design

Any changes in the interest of the technical development are reserved.

Sterling SIHI GmbH
Lindenstraße 170, D-25524 Itzehoe, Germany, Telephone +49 (0) 48 21 / 7 71 - 01, Fax +49 (0) 48 21 / 7 71-274