

**Genvac**  
**Vacuum**

**GENVAC® KRG/6GVH**  
**Liquid Ring Vacuum**  
**Pumps and Systems**



*Experience In Motion*



## Vacuum technology at the heart of gas-handling systems

The Genvac KRG/6GVH range of liquid ring vacuum pumps from Genvac Vacuum are a proven, cost-effective solution for a wide variety of industrial gas handling processes. The product line offers vacuum capabilities from atmosphere to 33 mbar

### Proven liquid ring performance

Many pump and compressor systems become unreliable when there is liquid or vapor in a gaseous element. The liquid ring technology used in the KRG and 6GVH pumps is a proven economic alternative.

By creating a continuous “ring” of fluid, liquid ring vacuum pumps enable efficient handling of gases for a wide range of industrial processes. Condensed liquids and vapors separated from the process can be discharged, recirculated, or recovered.



### Benefits

- Near isothermal compression
- Oil free; no internal lubrication required
- Handles almost all gases and vapors
- Tolerant to some liquid carryover
- Low maintenance and safe operation
- Low noise and almost vibration free
- Available in a wide range of materials
- No metallic contact of the rotating parts

## Ideal for demanding industrial processes

Genvac KRG and 6GVH vacuum pumps are designed to operate in the most demanding gas handling applications. A wide selection of alloys are available for corrosive applications.

### Principle industries

- Chemical
- Pharmaceutical
- Food and beverage
- Medical
- Power generation
- Oil and gas
- Environmental
- Plastics
- General industry

### Key vacuum applications

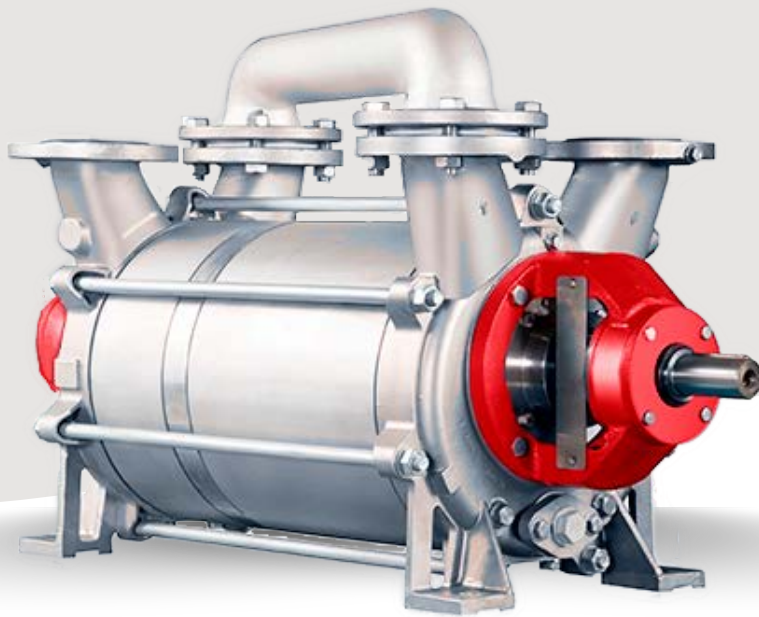
- Drying
- Distillation
- Filtration
- Sterilization
- Deaeration and gasification
- Forming and extrusion
- Vacuum chucking
- Scrubbing and vapor recovery
- Packaging and bottling
- Poultry processing
- Batch reactors



## Operating parameters

	KRG	6GVH
<b>Flows to</b>	1,800 m <sup>3</sup> /h (1,058 cfm)	476 m <sup>3</sup> /h (280 cfm)
<b>Pressures to</b>	Suction – 33 mbar	Suction – 25 Torr (28.9 in Hg)
<b>Hydraulic test (over pressure)*</b>	3.0 bar	----
<b>Temperatures to</b>	100°C (212°F)	100°C (212°F)
<b>Service liquid temperatures to</b>	80°C (183°F)	60°C (183°F)
<b>Size range</b>	DN 65 to 100 (2 to 4 in)	DN 40 to 65 (1.5 to 2.5 in)

\* Dependent on model



## Reliable vacuum performance

### Liquid ring reliability

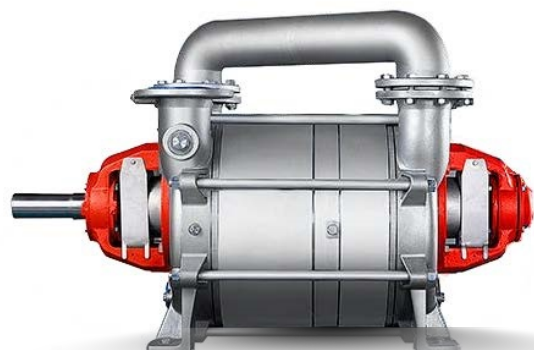
Liquid ring pumps and compressors are less sensitive to conditions that can cause other systems to fail. Remaining liquid and process gas condensates pass through the system without damaging the equipment. These and other performance factors have made liquid ring technology widely accepted as an industry standard.

### Low noise and vibration

With no reciprocating parts, the KRG and 6GVH vacuum pumps run quietly with low vibration. This eliminates the need for special foundations and helps you meet industry noise standards.

### Minimal routine maintenance

The simple construction of liquid ring pumps or compressors allows service with minimal downtime. The KRG and 6GVH units feature a globally accepted port plate design, which has no valves, gears, or metal-to-metal contact of any kind. There is only one moving part, so it does not require internal lubrication. This allows for a long life with very little maintenance for the vacuum pump, while also extending the life of the mechanical seals.



## Application versatility

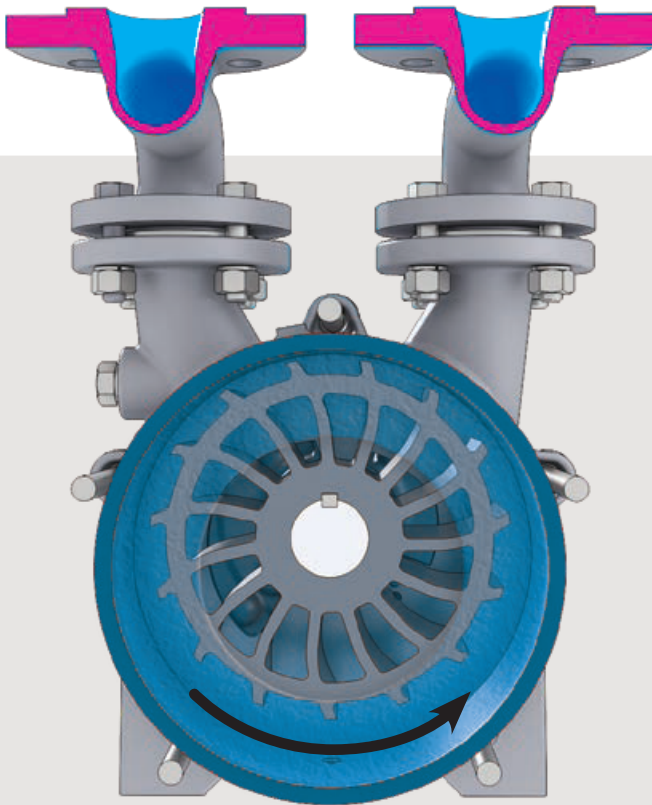
KRG/6GVH vacuum pumps have the ability to cover pressures above and below atmospheric level. This unique attribute of liquid ring principles allows for a wide range of differential pressures with a single technology. Service fluids are selected from those compatible with the process gas, allowing you to select the option that best meets your process needs. In addition, the KRG and 6GVH models are available with a variety of shaft seals and materials, including cast and ductile iron, bronze, stainless steel, and other alloys.

## Broad vacuum range

The effect of a ring of cold liquid to absorb condensable process gas and steam increase capacity, improving vacuum performance. Genvac KRG and 6GVH liquid ring vacuum pumps are available in two-stage models with a wide range of vacuum and compression capacities.

## Ideal for harsh and hazardous processes

The explosion proof motor design of the KRG product range, together with the low temperature rise of the liquid ring principle, ensures the safest isothermal compression of hazardous, flammable or explosive process gases..



*Simplified diagram of liquid ring pump and compressor operation*

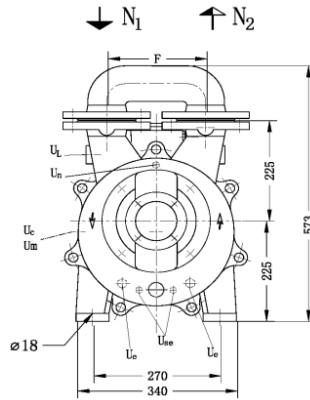
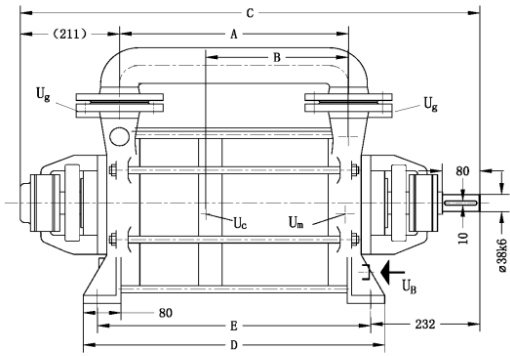
## Liquid ring operating principles

A rotating element (impeller) is eccentrically mounted within a round center body. Service liquid is centrifuged into a uniform liquid ring around the circumference of the center body.

Volume between each of the impeller blade sections varies, relative to the liquid ring, as the impeller rotates. This creates a reciprocating piston action on the volume of gas contained within each of the blade sections. As volume increases, vacuum is created; as volume reduces, compression occurs.

# Performance data

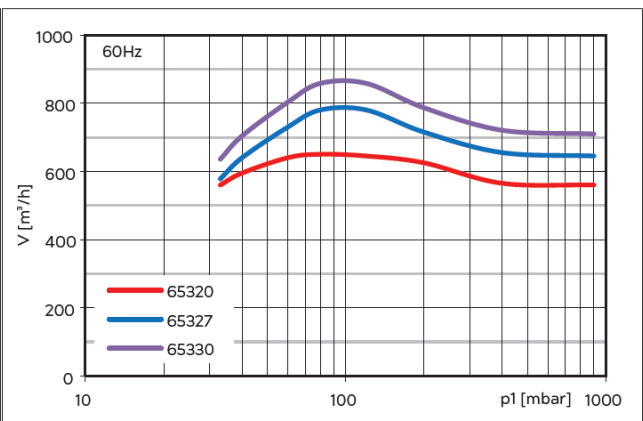
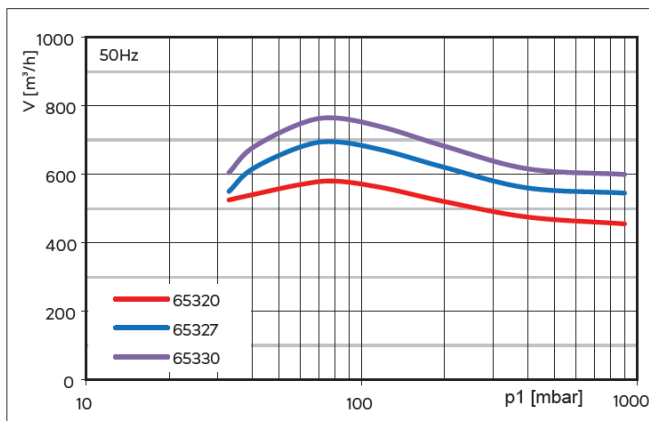
## KRG range



### Basic Data (mm)

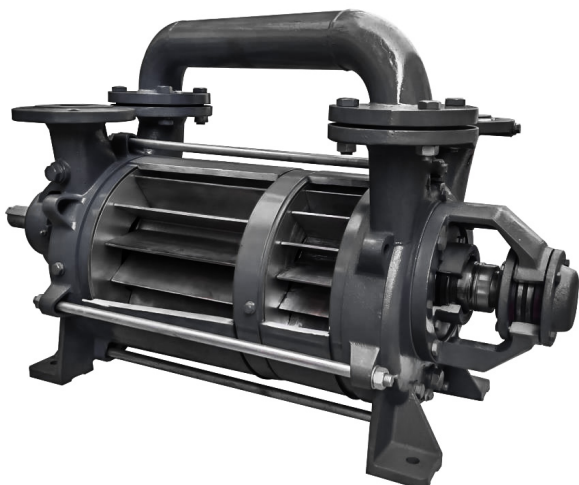
Pump		A	B	D	E	C	F	weight kg
65320	Ok	486	302	640	580	976	210	220
	4B	500	309				240	228
65327	OK	552	368	706	646	1042	210	241
	4B	566	375				240	250
65330	OK	552	368	706	646	1042	210	246
	4B	566	375				240	255

N1	gas-inlet DN 65	N2	gas-outlet
u <sub>B</sub>	connection for service liquid G1	u <sub>e</sub>	drain connection G ½
u <sub>se</sub>	connection for dirt drain G ¼	u <sub>m</sub>	connection for drain valve G ¼
u <sub>l</sub>	connection for vent cock G ¼	u <sub>c</sub>	connection for protection cavitation G¼
U <sub>g</sub>	connection for pressure gauge G¼	U <sub>n</sub>	connection for seal flash water G ¼



### Pump Performance Data Sheet

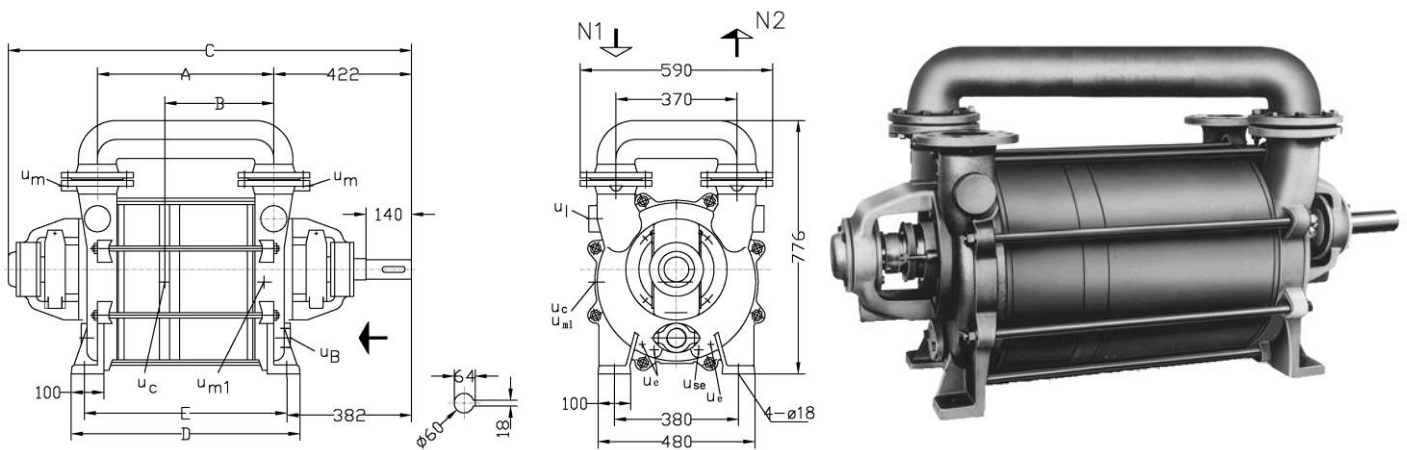
Pump Type	50Hz(1450rpm)			60Hz(1750rpm)			Max.suction vacuum pressure	Noise level at 80 mbar	Max. compression over atmospheric	Max. admissible pressure difference	Volume up to shaft level	Max Water flow
	Motor speed	Motor power	Max.suction capacity	Motor speed	Motor power	Max.suction capacity						
	rpm	kW	m3/h	rpm	kW	m3/h						
65320	1450	15	580	1750	22	650	33	78	1.5bar-50hz 1.1bar-60hz	1.5	16	2.7
65327	1450	18.5	695	1750	30	780	33	78			19	
65330	1450	22	765	1750	30	858	33	78			19	



Low suction pressure: Two-stage design, especially suitable for low suction pressure.  
 Smooth operation and low noise: The rotating parts have no metal contact and almost no vibration;  
 Durable and Reliable: Stainless steel impeller ensures low maintenance and reliable operation.  
 Available Materials: Cast iron and stainless steel are available that can basically handle all gases.  
 Standard cavitation protection interface: The pump can be equipped with cavitation protection pipe to protect the pump from cavitation when the suction pressure is low.  
 Motor-based design: The motor can be selected according to user requirements (50Hz, 60Hz and Ex explosion-proof motor, etc.).  
 Low life cycle cost:

# Performance data

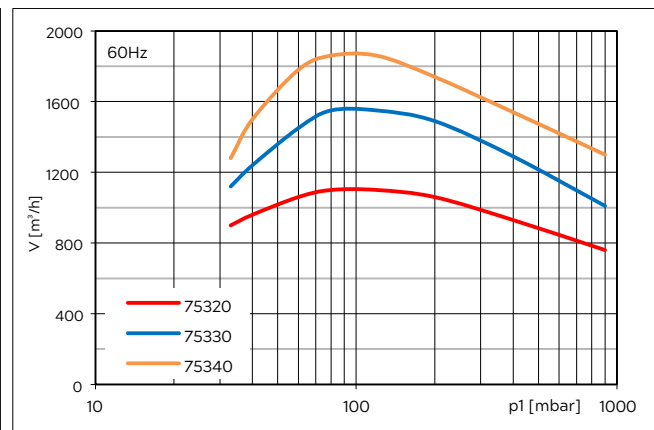
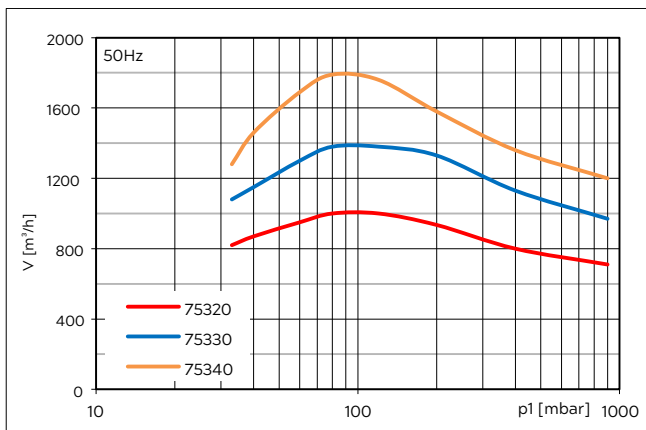
## KRG range



### Basic Data (mm)

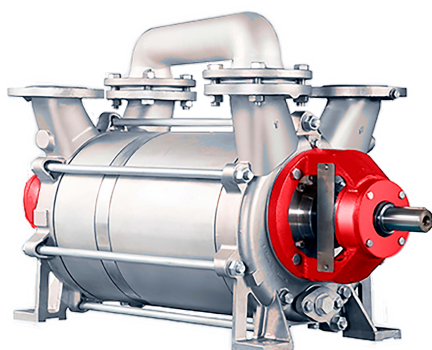
Pump		A	B	C	D	E	Weight kg
75320	Ok	540	333	1235	700	620	450
	4B						485
75330	OK	690	434	1385	850	770	570
	4B						620
75340	OK	790	534	1485	950	870	640
	4B						690

N1	gas-inlet DN100	N2	gas-outlet DN100
u <sub>B</sub>	connection for service liquid G2	u <sub>c</sub>	connection for protection cavitation G3/8
u <sub>se</sub>	connection for dirt drain G ½	u <sub>e</sub>	drain connection G ¼
u <sub>m1</sub>	connection for drain valve G ½	u <sub>m</sub>	connection for pressure gauge G 3/8
u <sub>i</sub>	connection for vent cock G 1 ½	U <sub>n</sub>	connection for seal flash water G 1/4



### Pump Performance Data Sheet

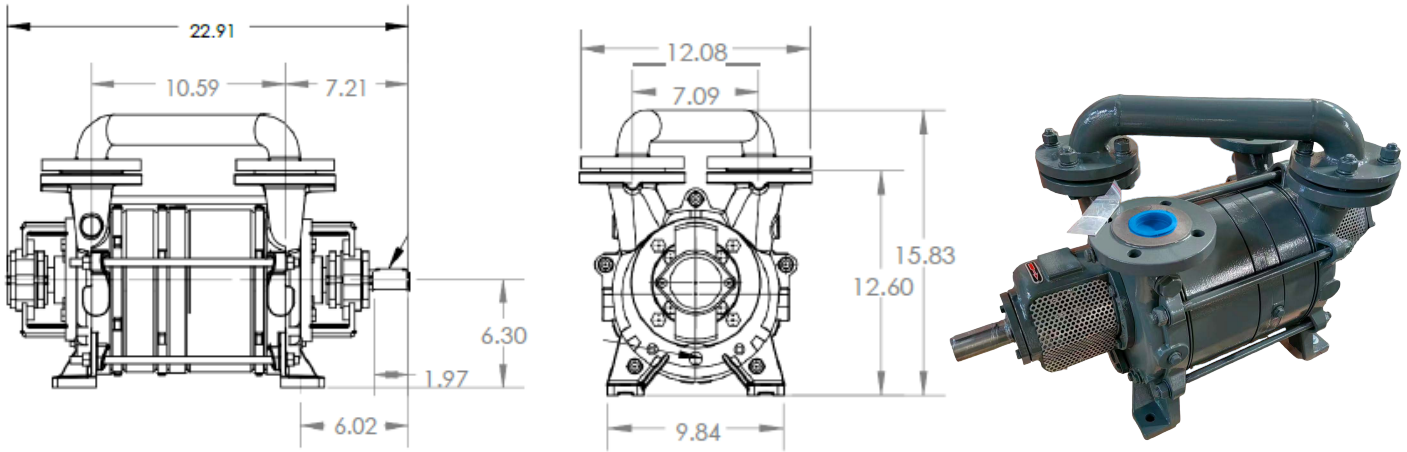
Pump Type	50Hz(975rpm)			60Hz(1175rpm)			Max.suction vacuum pressure	Noise level at 80 mbar	Max. compression over atmospheric	Max. admissible pressure difference	Volume up to shaft level	Max Water flow
	Motor speed	Motor power	Max.suction capacity	Motor speed	Motor power	Max.suction capacity						
	rpm	kW	m3/h	rpm	kW	m3/h						
75320	975	30	1000	1175	37	1100	33	79	1.5	1.8	36	7
75330	975	37	1380	1175	45	1550	33	79	1.5	1.7	47	7
75340	975	45	1790	1175	55	1860	33	79	1.5	1.6	54	7



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 Motor-based design: The motor can be selected according to user requirements (50Hz, 60Hz and Ex explosion-proof motor, etc.). Low life cycle cost:

# Performance data

## 6GVH Range



**Description:** Two-stage liquid ring vacuum pump

**Models:** 6GVH - 140, 180, 300, 350 and 400

**Power range:** 7.5 to 25 HP

**Capacity range:** 100-280 CFM

**Max vacuum:** 28.9" Hg

- Wide suction pressure range [4" - 28.9" Hg]
- Standard construction is cast iron with 304 stainless steel impeller and mechanical seals
- Optional full 304 or 316 stainless steel construction.
- Available with cartridges Optional single or double mechanical seals for improved sealing.
- Available as a free shaft pump or as part of an engineered system.
- 1 year factory warranty.

Model	Speed (RPM)	Frequency (Hz)	Power	Capacity (ACFM)	Inlet (In.)	Discharge (In.)	Seal Water (In.)	Weight (lbs.)
6GVH-140	1450	50	4 KW	85	1.5" FL	1.5" FL	1/2" NPT	165
	1750	60	7,5 HP	100				
6GVH-180	1450	50	7,5 KW	110	1.5" FL	1.5" FL	1/2" NPT	180
	1750	60	10 HP	130				
6GVH300	1450	50	10 KW	170	2" FL	2" FL	1" NPT	315
	1750	60	15 HP	185				
6GVH-350	1450	50	15 KW	200	2" FL	2" FL	1" NPT	340
	1750	60	20 HP	242				
6GVH-400	1450	50	20 KW	250	2" FL	2" FL	1" NPT	405
	1750	60	25 HP	280				

### Construction materials:

- Housing & Heads - Cast iron standard; 304 or 316 SS optional.
- Rotor - Cast Iron standard; 304 or 316 SS optional.
- Cones - Cast iron standard; 304 or 316 SS optional.
- Shaft - Cast steel standard; 304 or 316 SS optional.
- Seal - Teflon Packing standard; Viton mechanical seals optional.

### Applications:

- Vacuum drying
- Evaporation
- Textiles
- Degassing
- Distillation
- Power plants
- Octopus and paper
- Filtering



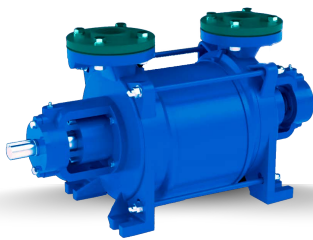
\* Compression pressure : 1013 mbar (atmospheric pressure) The suction volume flow is applied to the suction pressure Tolerance of the operating data 10% Max. fresh water need with lowest suction pressure

## Vacuum and compressor systems

The KRG and 6GVH vacuum pump are the heart of gas handling systems. The pumps are powered by industry standard motors and the discharge gases are processed with a number of engineered components. Genvac Vacuum offers pre-engineered and customized vacuum systems to ensure maximum performance in your process.

### Pre-engineered vacuum systems

Genvac Vacuum's pre-engineered packages offer quick, turnkey commissioning of complete, fully integrated systems. All packages come factory pre-assembled and quality tested, with full system documentation and single source accountability. Arrangements of total recirculation, partial recirculation and single pass service liquids. See the Genvac Vacuum Pre-Engineered Liquid Ring Vacuum Systems brochure.



*GMC system*



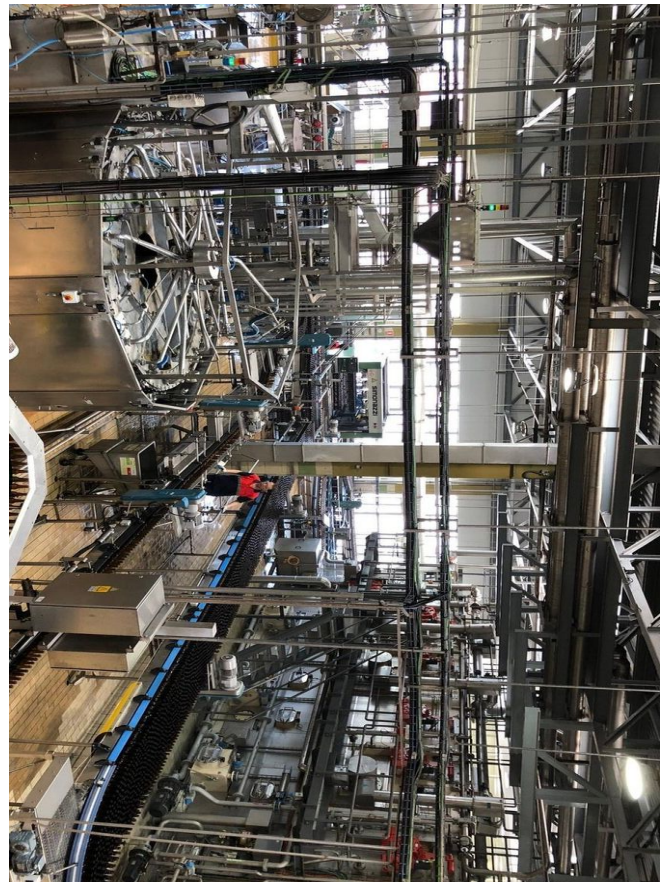
*6GVH system*



*6GVH system*

### Custom engineered gas-handling systems

For processes with more complex gas handling requirements, Genvac can provide custom engineered systems. Our experienced application engineers have the ability to design entire systems to your specifications from the ground up. We can also help develop vacuum systems for new projects or integrate new vacuum packages into existing systems. With our customized gas handling systems, you can expect highly efficient performance and our turnkey service, including engineering, commissioning.





- Sales / Service Location
- Manufacturing Location
- Our Partners



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**Series**  
Systems