

NASH[®]

An Ingersoll Rand Business

INDUSTRIAL PROCESS APPLICATIONS



**GROW YOUR
PRODUCTION EFFICIENCY
WITH NASH'S SAFE & EFFICIENT
VACUUM SYSTEMS**

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TURN TO THE TRUSTED MARKET LEADER!

Applications

General Industrial Applications

General industrial processes have a wide variety of vacuum pumping challenges from simply pumping air to handling liquid carryover and solid debris. Our vacuum pumps are required to perform reliably, safely, and consistently. The ability of our process vacuum pumps to handle these upset conditions without failure enables continued throughput without compromising the quality of your production. Certain models of Nash vacuum pumps and compressors are best suited for certain applications as shown in the table below. However, we're also capable of designing bespoke vacuum systems to suit your specific process needs.

POULTRY PROCESSING VACUUM SOLUTIONS	MOLDER FIBER	SUGAR PRODUCTION	WOOD TREATMENT	BOOTLE FILLING	PLASTIC EXTRUSION	STERILIZERS AND AUTOCLAVES	CALIBRATION TABLES - PLASTIC PROFILES	CHUCKING	VACUUM FILTRATION
<u>VECTRA XL</u>	<u>VECTRA XL</u>	<u>VECTRA XL</u>	<u>VECTRA XL</u>	<u>2BV5</u>	<u>VECTRA SX</u>	<u>VECTRA XL</u>	<u>2BV5</u>	<u>VECTRA XL</u>	<u>2BM5</u>
<u>VECTRA GL</u>	<u>2BE4</u>	<u>CL</u>	<u>SC</u>	<u>2BV2/7</u>	<u>VECTRA XL</u>	<u>TC/TCM</u>	<u>2BV2/7</u>		<u>2BM1</u>
	<u>2BV6</u>	<u>SC</u>		<u>2BE1</u>	<u>2BV6</u>		<u>VECTRA XL</u>		<u>VECTRA XL</u>
		<u>2BE1</u>		<u>VECTRA GL</u>					<u>2BE4</u>
		<u>2BE4</u>		<u>VECTRA XL</u>					<u>P2620</u>
									<u>904</u>
									<u>2BE1</u>
									<u>2BE3</u>

Liquid Ring Operating

Principle

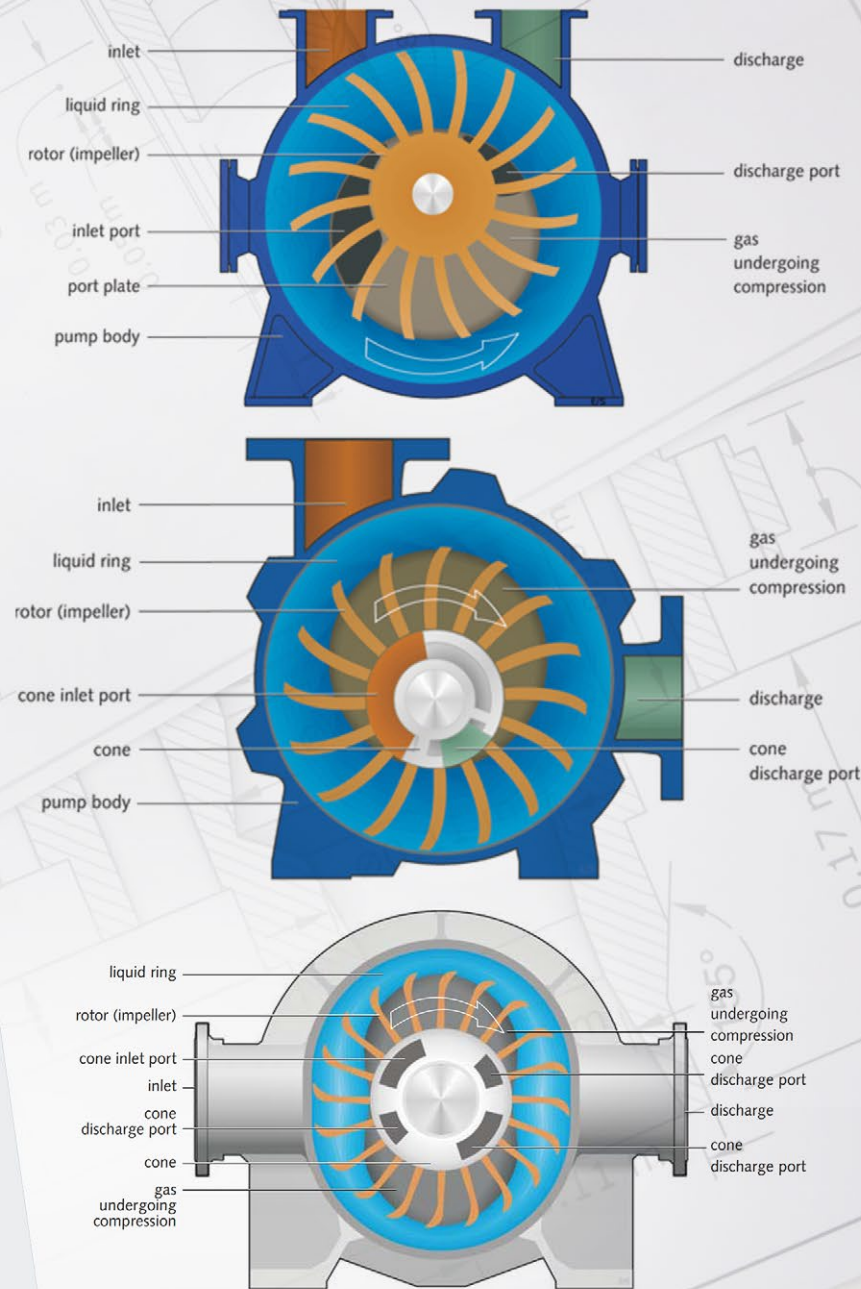
Nash liquid ring pumps are positive displacement machines achieve compression using a simple design and working principle. The seal liquid forms the ring inside a pump body as the rotor spins creating small chambers for gas to be trapped. The axis of the rotor is eccentric from the body allowing the liquid to almost fill, and then almost empty each rotor chamber during a single revolution, forming the compression of the gas for the pumping action.

Vacuum inlet and atmospheric discharge ports provide flow paths for the gas mixture being handled. The heat of compression of the gas is dissipated into the seal liquid, and some of the liquid flows out to discharge. The exhaust gas and residual water discharge is separated from the gas stream and directed to the house exhaust and returned to the pump respectively. Seal fluid is replaced by a constant flow of cooler seal fluid.

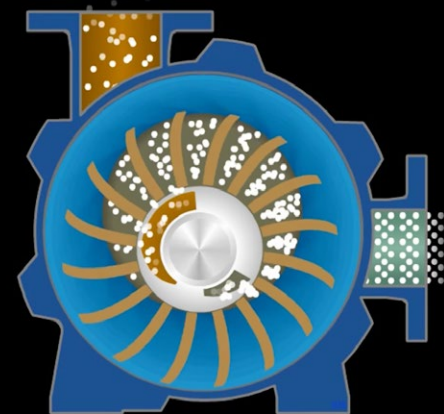
Gases Handled

Nash liquid ring pumps are capable of handling a wide variety of gases; from gasoline vapors, sulfur dioxide, and chlorine to hydrogen sulfide and vinyl chloride monomers.

Seal liquids can be chosen based on process requirements and the gas being handled. In addition to water, a range of seal liquids including acetic acid, acetone, glycol, xylene, and more can be used.



Characteristics of a NASH Liquid Ring Vacuum Pump Advantages:



NASH
by Gardner Denver

- **Accepts Carryover**

Soft solids, Moisture, slugs, Chemicals, etc, will not harm the pump. These impurities will simply be washed out through the pump discharge.

- **Cool & Quiet Operation**

The pump runs cool owing to the circulation of the sealing water inside the pump. The operation is also relatively quiet - not exceeding 85 dBA.

- **Constant Operation For Any Vacuum Level**

Pump can operate constantly and continuously at any vacuum level - from 29" HG Vac. to atmospheric pressure.

- **Easy Maintenance**

NASH pump has few parts and only one moving part. Therefore wear is less and thus maintenance is simpler and cheaper.

- **Longer Pump Life**

Generally, a NASH pump has a longer life span, mainly due to its robust construction and because the NASH pump has only one moving part, the rotor, which is mounted on a shaft supported by a set of bearings designed for a B-10 service life of 20 years continuous operation.

- **Environmentally Friendly**

The NASH pump does not require any oil-change, filters, oil-pans, condensers etc. Plant rooms run clean, free of oil contamination and oil discharge to sewers.

Materials, Suction Capacity, Vacuum & Compression

Materials

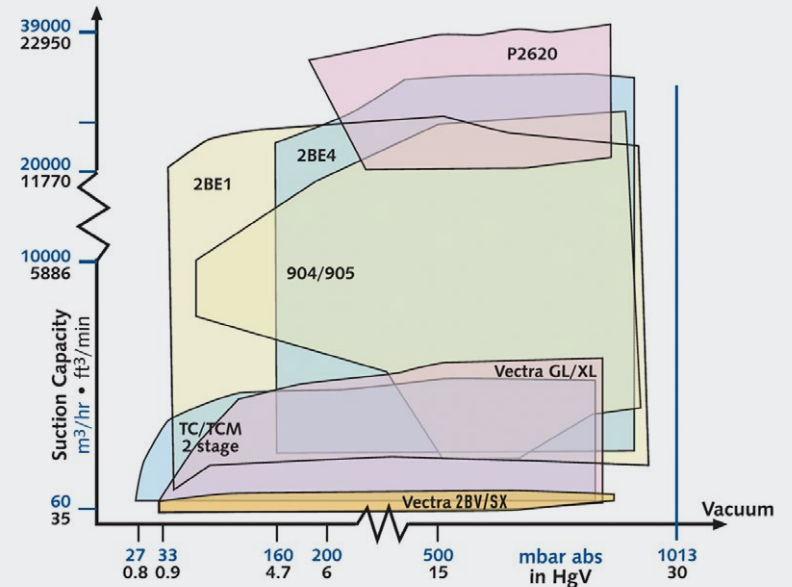
Our liquid ring pumps are available in a range of materials, including cast iron and stainless steel, and feature ceramic coated components and polyisoprene linings. We can also manufacture pumps in exotic materials such as titanium and bronze, ensuring that our equipment is able to meet almost any process demands and conditions.

Suction Capacity, Vacuum, Compression

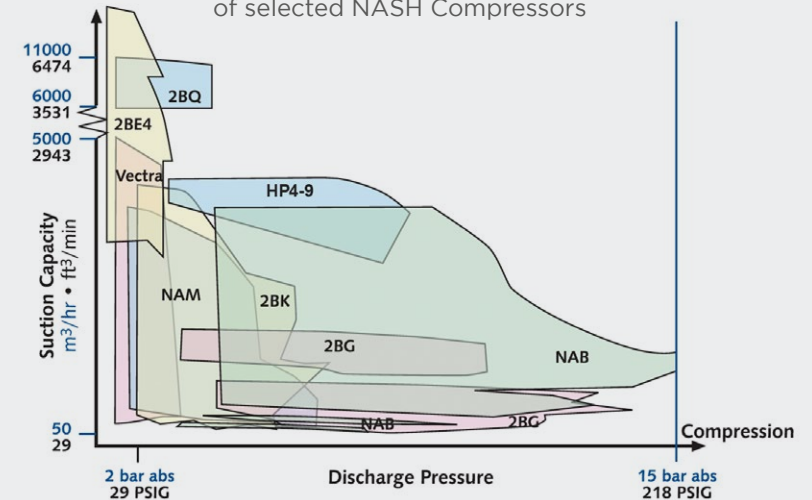
Nash liquid ring vacuum pumps and compressors offer the widest performance range on the market. Depending on the size and model, our liquidring vacuum pumps are capable of providing a suction capacity between 10 m³/hr to 39,000 m³/hr, with vacuum levels down to 28 mbar abs. Certain models can also be equipped with a center shroud, allowing the liquidring vacuum pump to operate at multiple suction pressures. Our liquid ring compressors are capable of achieving a capacity between 50 and 16,000 m³/h and discharge pressures from 2 bar abs up to 15 bar abs.

In certain applications it is also possible to use the same model for both vacuum and compression.

Vacuum: Performance Range
of selected NASH Pumps

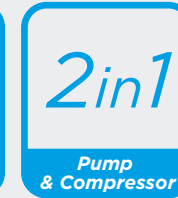


Compression: Performance Range
of selected NASH Compressors



NASH VECTRA SX SERIES

NASH's Vectra SX liquid ring vacuum pump and compressor series delivers optimum performance with unprecedented production efficiencies and lower lifecycle costs. Available in capacities ranging from 25 to 260 m³/h, (15 to 150 ACFM), and have been designed to meet the widespread needs of the process industry.



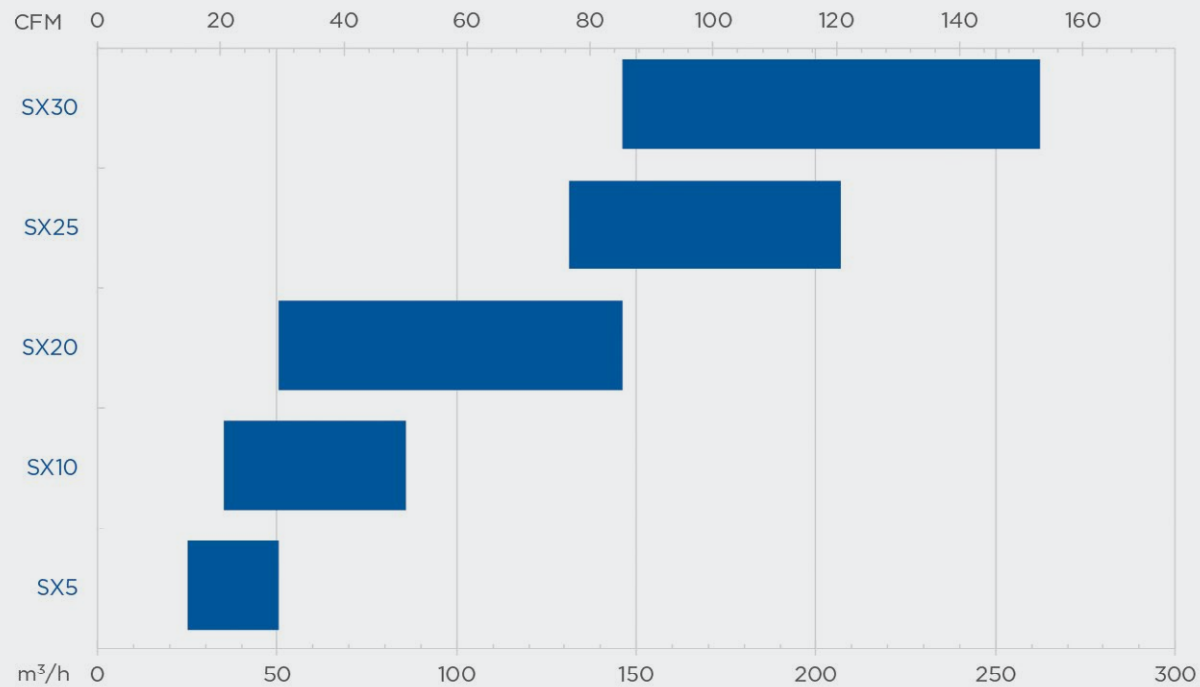
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NASH VECTRA SX SERIES

Technical Data NASH VECTRA SX

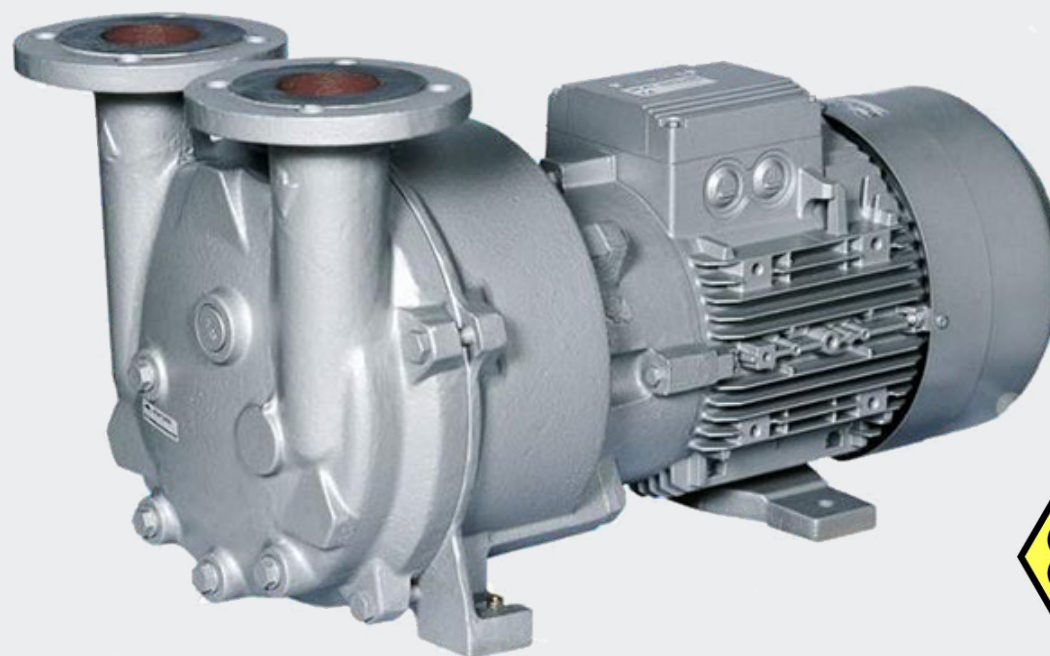
Suction Capacity	25 to 260 m ³ /h (15 to 150 ACFM)
Vacuum Range	33 mbar abs. (to 1 inHgA)
Maximum Discharge Pressure	to 2.3 bar abs (to 33 psia)
Differential Pressure	to 1.5 bar (to 19 psi)
Shaft Sealing	Single acting Mechanical Seal
Materials	Cast Iron with precision cast 316 SS Rotor and SS lined body; All precision cast 316 SS

Models and Performance Range



NASH 2BV5 SERIES

NASH 2BV series mono-block pumps are engineered to provide suction volumes of up to 600 m³/h with pressures of up to 33 mbar abs. With sound pressures of less than 75 dBA, the 2BV series provides quiet, vibration free operation, ensuring compliance with the strictest noise standards; all in a compact, space saving package.



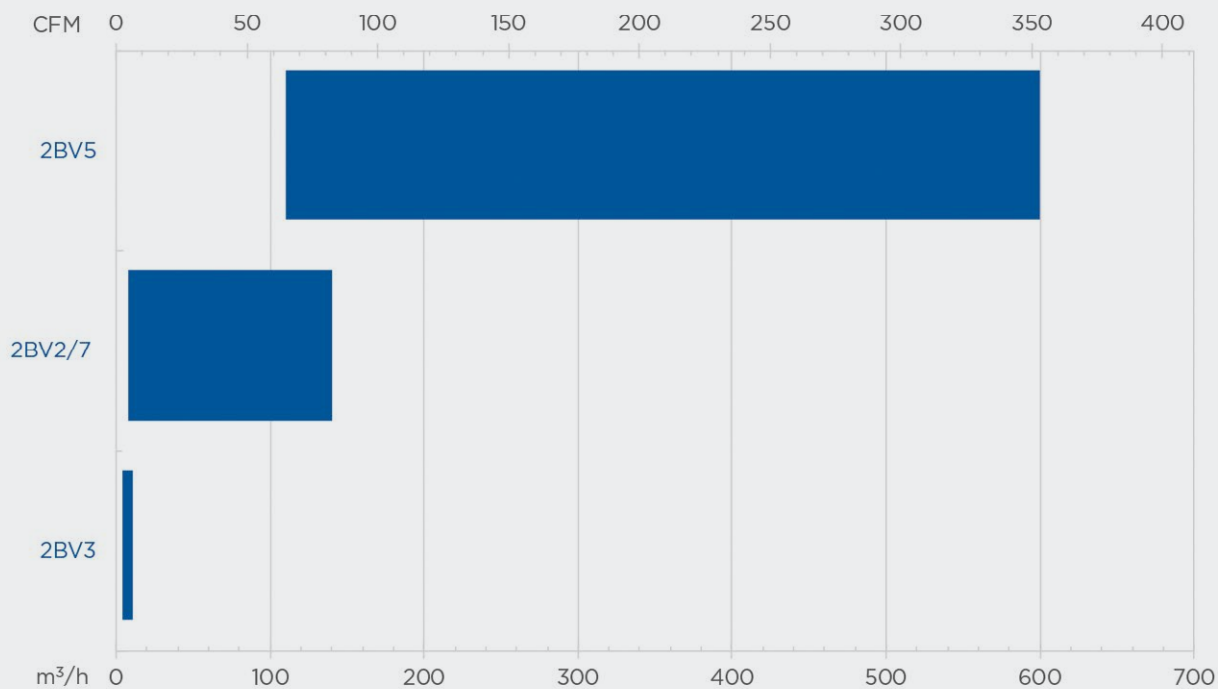
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NASH 2BV5 SERIES

Technical Data NASH 2BV5

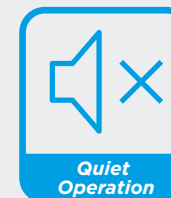
Suction Capacity	160 to 580 m ³ /h (95 to 340 ACFM)
Vacuum Range	to 33 mbar abs. (to 1 inHgA)
Maximum Discharge Pressure	to 2.3 bar abs. (to 32 psia)
Differential Pressure	to 1,3 bar (to 19 psi)
Shaft Sealing	Single acting Mechanical Seal
Materials	Cast Iron/Bronze, Stainless Steel

Models and Performance Range



NASH 2BV6 SERIES

NASH 2BV6 Liquid Ring Vacuum Pumps are single stage units designed for continuous operation, as vacuum pumps or compressors. With capacity ranging from 160 to 580 m³/h (95 to 340 ACFM), the 2BV6 series is used to extract and pump dry and moist gases, mainly air and air/vapor mixtures, in chemical, food & beverage, and other general industrial processes.



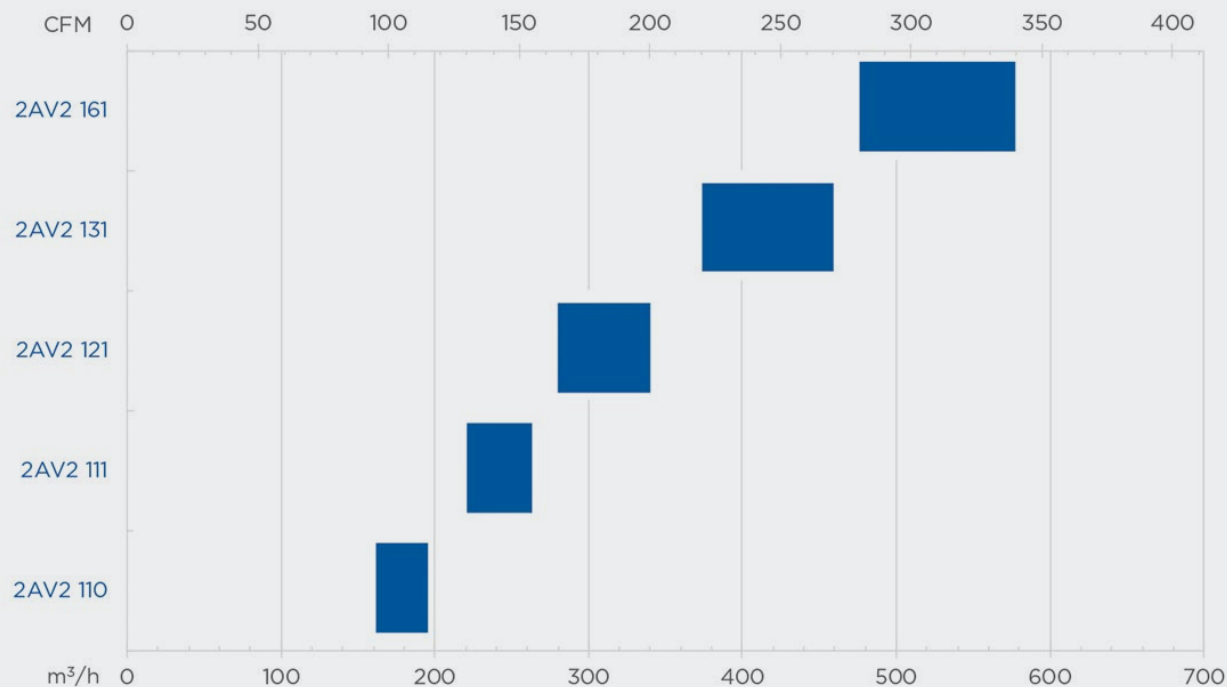
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NASH 2BV6 SERIES

Technical Data NASH 2BV6

Suction Capacity	160 to 580 m ³ /h (95 to 340 ACFM)
Vacuum Range	to 33 mbar abs. (to 1 inHgA)
Maximum Discharge Pressure	to 2.2 bar abs. (to 32 psia)
Differential Pressure	19 psi (1.3 bar abs.)
Shaft Sealing	Single-acting self flushing or externally flushed mechanical seals, or double-acting mechanical seals with external flushing
Materials	Cast Iron, 316 Stainless Steel

Models and Performance Range



NASH 2BV2/7 SERIES

The NASH 2BV7 monoblock liquid ring vacuum pumps have been designed to provide superior performance for a wide array of applications. Available from 25 to 145 m³/h (15 to 85 ACFM), their high vacuum capability, extra water handling ability, and compact size combine to make an ideal machine for industries like plastics manufacturing and medical technologies.



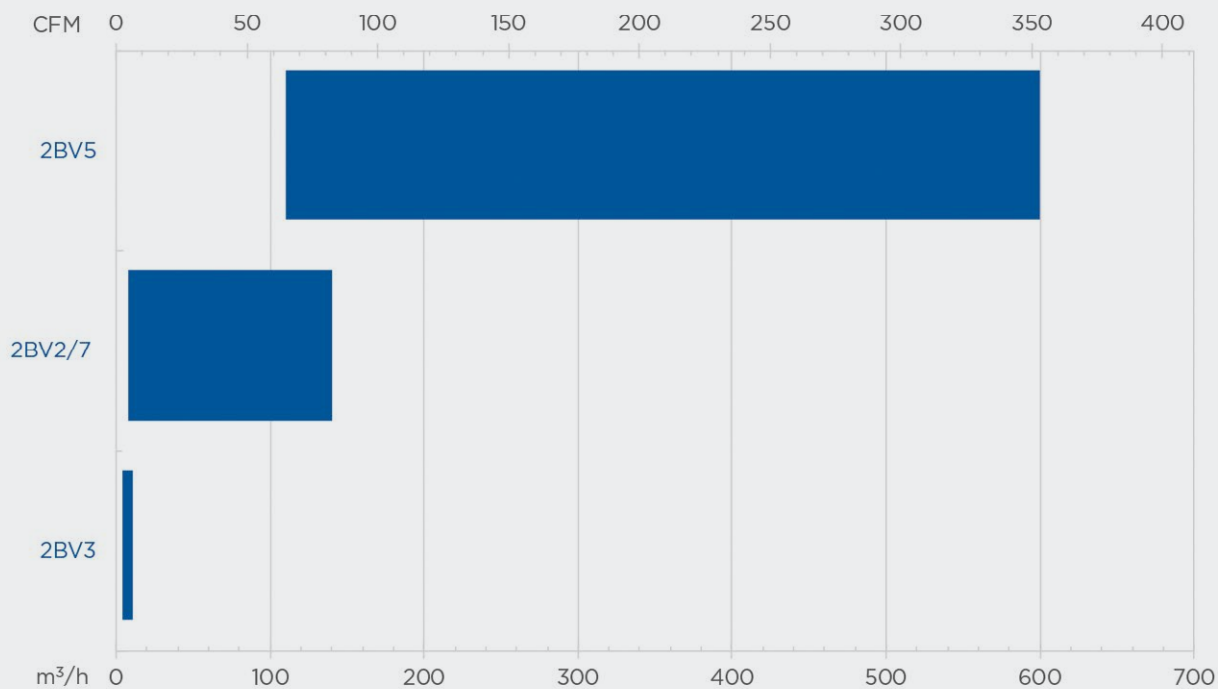
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NASH 2BV2/7 SERIES

Technical Data NASH 2BV7

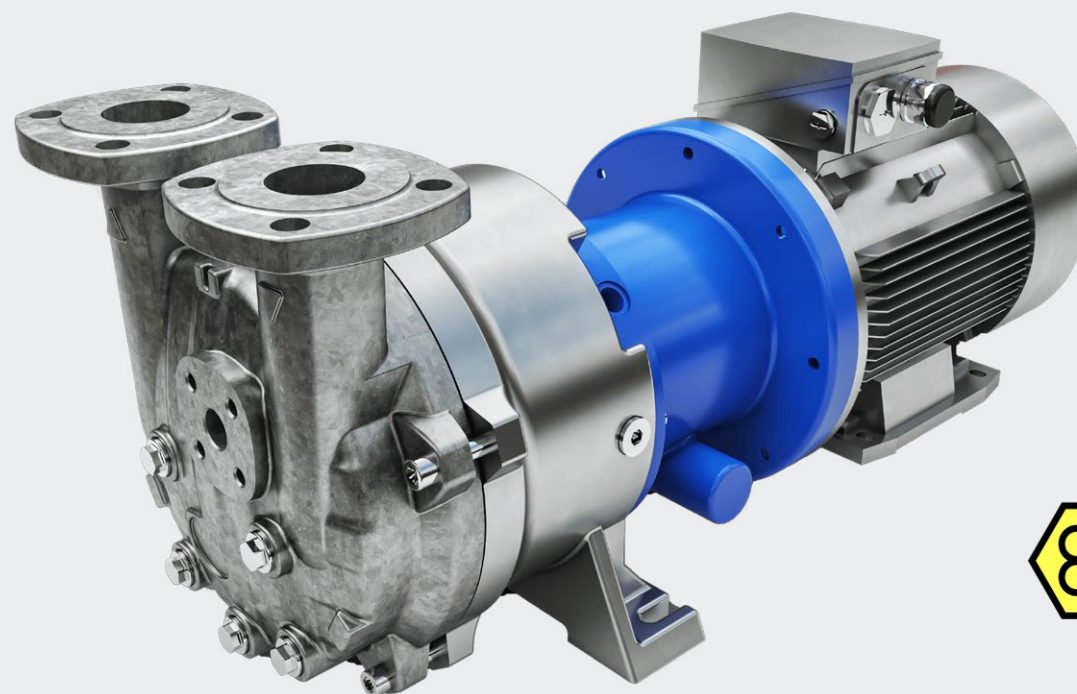
Suction Capacity	25 to 145 m ³ /h, (15 to 85 ACFM)
Vacuum Range	to 33 mbar abs. (to 1 inHgA)
Maximum Discharge Pressure	to 2.2 bar abs. (to 32 psia)
Differential Pressure	to 19 psi (to 1.3 bar)
Shaft Sealing	Single acting Mechanical Seal
Materials	Cast Iron/Bronze, Stainless Steel

Models and Performance Range



NASH 2BM5 SERIES

The NASH 2BM Mag Drive liquid ring vacuum pump and compressor series provides reliable, leak free performance for applications requiring the highest levels of safety. Different than the 2BM1, the 2BM5 model has only 1 inlet and discharge port. With a hermetically sealed pump body and capacity from 75 to 440 m³/h (45 to 260 ACFM) the 2BM5 liquid ring pump/compressor is an ideal match for process applications in the chemical, pharmaceutical, petrochemical, and the food industries.



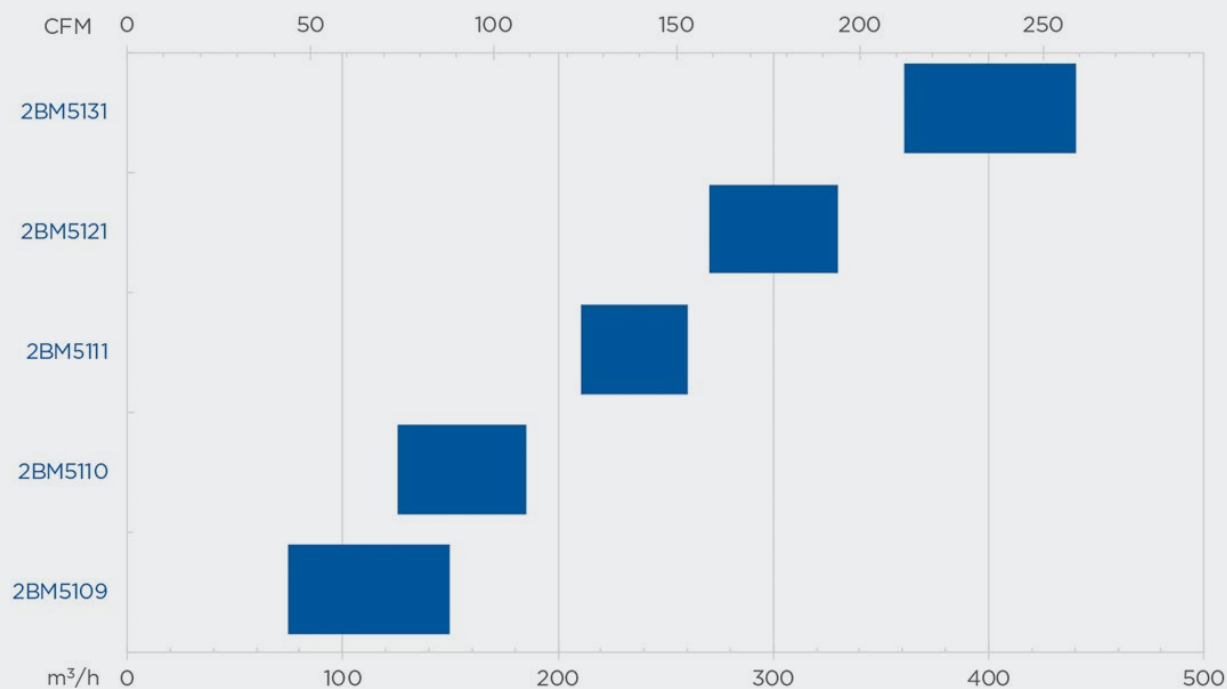
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NASH 2BM5 SERIES

Technical Data NASH 2BM5

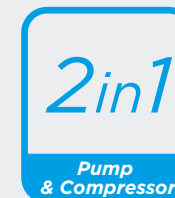
Suction Capacity	75 to 440 m ³ /h (45 to 260 ACFM)
Vacuum Range	to 33 mbar abs. (to 1 inHgA)
Maximum Discharge Pressure	to 2.3 bar abs. (to 33.4 psia)
Differential Pressure	to 19 psi (to 1.3 bar)
Shaft Sealing	Can/O-Ring
Materials	Cast Iron/Bronze, Stainless Steel

Models and Performance Range



NASH 2BE1 SMALL SERIES

The NASH 2BE1 liquid ring vacuum pump and compressor series covers a broad range of suction volume from 100 to 22,500 m³/h (60 to 13,000 ACFM), vacuum range of 33 mbar abs. (to 1 inHgA) and pressure of 3.5 bar abs. (50 psia). Based on the proven reliable flat sided liquid ring vacuum pump design the 2BE1 is available in 23 models, has a large differential pressure capability, and is ATEX Certified. For these reasons, the 2BE1 is one of the most popular liquid ring pumps worldwide and can be found in almost all industrial vacuum applications including the chemical, pulp & paper, and power generation industries.

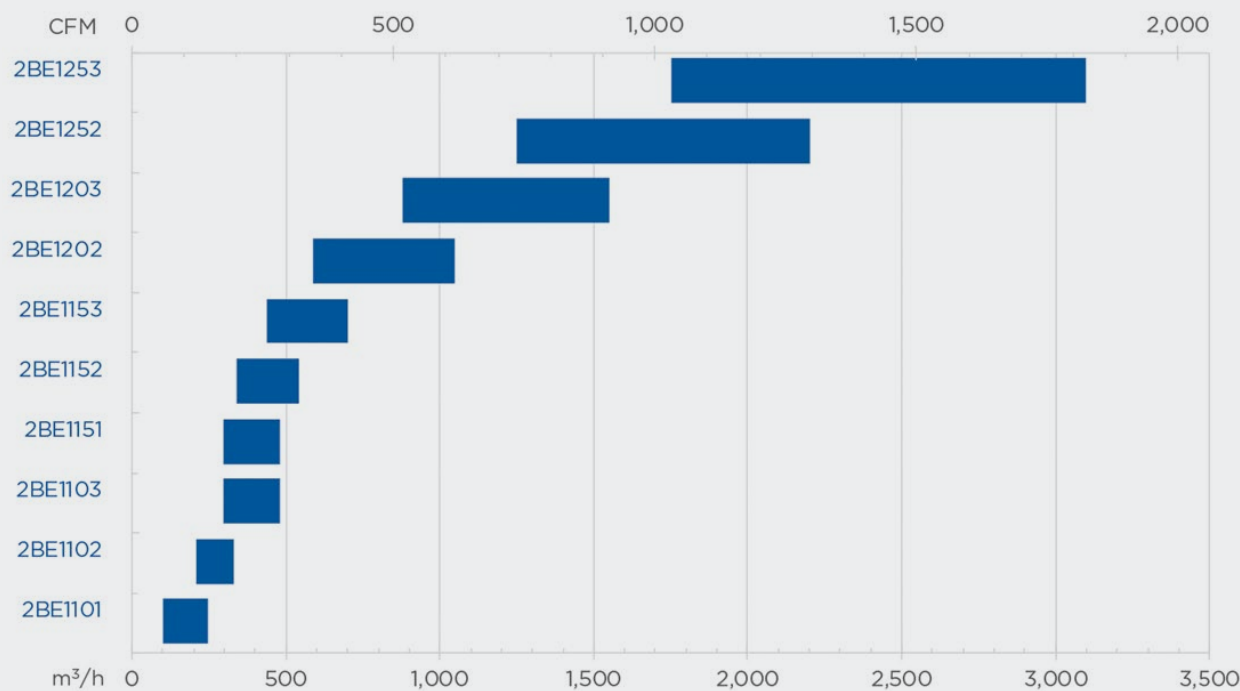


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NASH 2BE1 SMALL SERIES

Technical Data NASH 2BE1	
Suction Capacity	100 to 3.000 m ³ /h (60 to 13,000 ACFM)
Vacuum Range	33 mbar abs. (to 1 inHgA)
Maximum Discharge Pressure	3.5 bar abs. (50 psia)
Differential Pressure	to 2,6 bar (to 37.7 psi)
Shaft Sealing	Stuffing box (standard), Mechanical Seals (single acting/double acting) on request
Materials	Cast Iron, Stainless Steel, Combination of both materials

Models and Performance Range

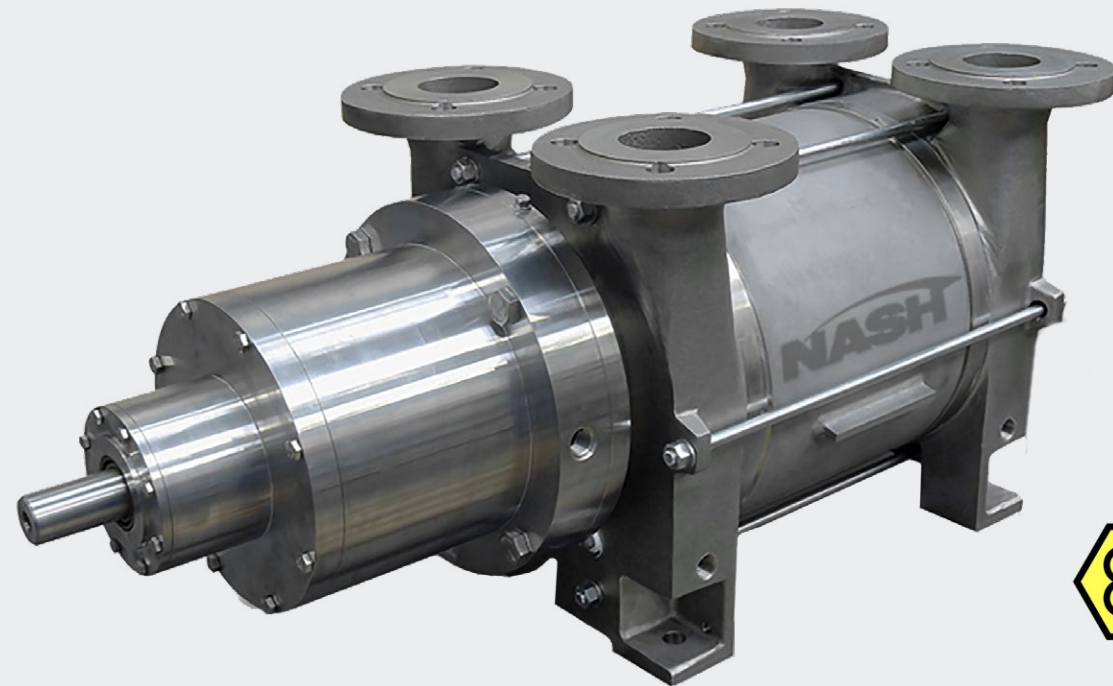
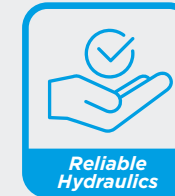


NASH 2BM1 SERIES

The NASH 2BM Mag Drive liquid ring vacuum pump and compressor series provides reliable, leak free performance for applications requiring the highest levels of safety. Each model is powered by a permanent magnet motor drive system, equipped with static O-ring seals, to provide non-contact torque transmission.

This allows the 2BM series to feature a hermetically sealed pump body, eliminating any possibility of leakage and allowing for safe operation in hazardous and explosive conditions, as well as ensuring compliance with even the strictest environmental regulations. ATEX certification is available for the 2BM series.

Based on the venerable 2BE series pumps and compressors, the 2BM series offer proven reliability. The completely enclosed design, with no rotating shaft seals, eliminates wear and maintenance issues, while the pump's operating fluid ensures optimum lubrication and cooling of the friction bearings and magnetic coupling, further streamlining maintenance.



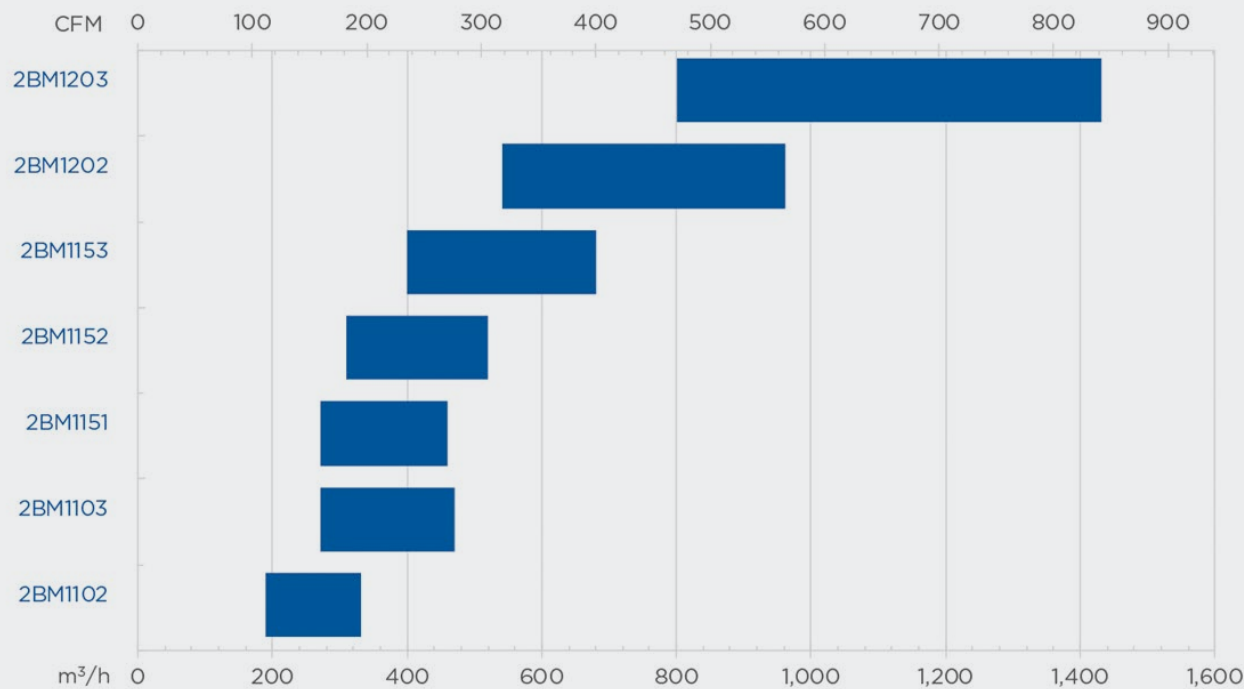
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NASH 2BM1 SERIES

Technical Data NASH 2BM1

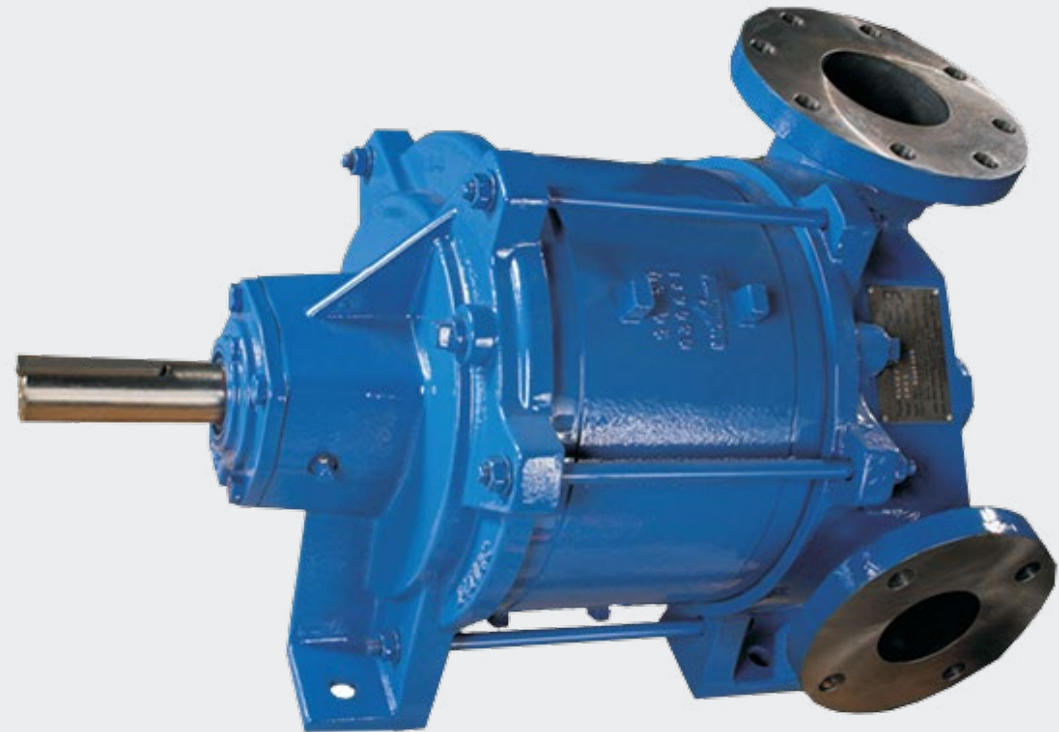
Suction Capacity	125 to 1.400 m ³ /h (75 to 900 ACFM)
Vacuum Range	to 33 mbar abs. (to 1 inHgA)
Maximum Discharge Pressure	2,5 bar abs. (36 psia)
Differential Pressure	to 1,5 bar (to 21.8 psi)
Shaft Sealing	Magnetic seal
Materials	Cast Iron, Stainless Steel

Models and Performance Range



NASH VECTRA GL SERIES

The NASH Vectra liquid ring vacuum pump and compressor series deliver optimum performance with unprecedented production efficiencies. The Vectra GL models, with capacity ranging from 195 to 1,400 m³/h (115 to 830 ACFM), are engineered to deliver outstanding reliability and performance for general industrial applications.



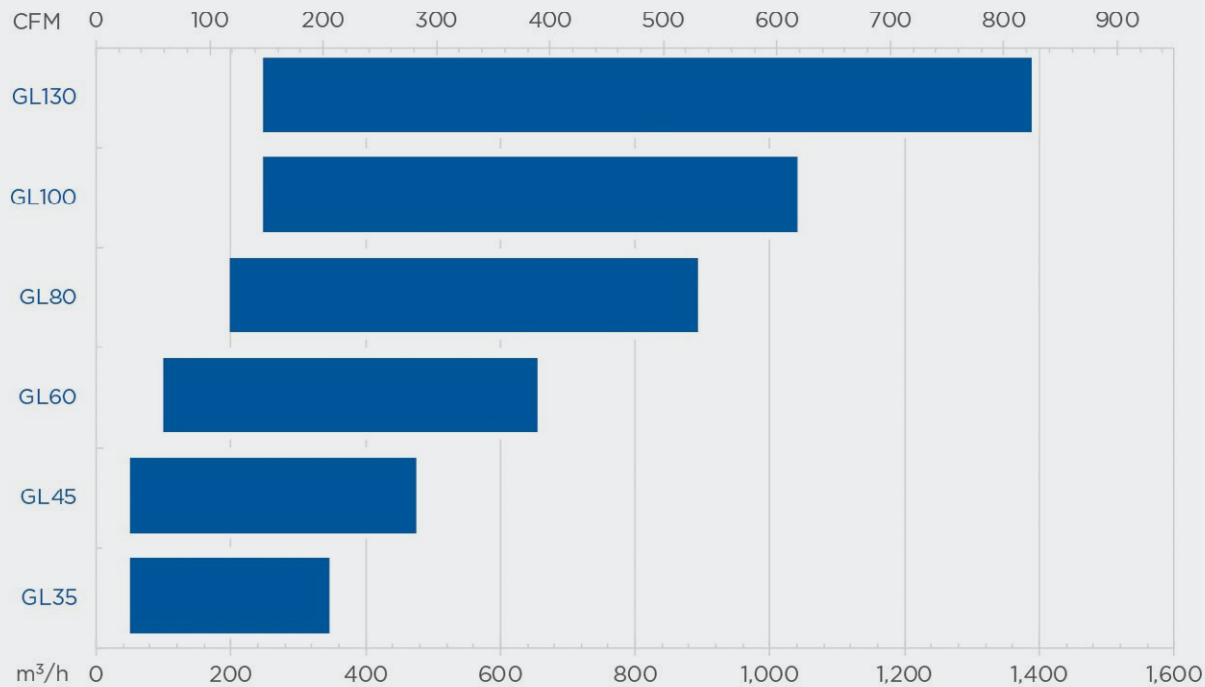
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NASH VECTRA GL SERIES

Technical Data NASH VECTRA GL

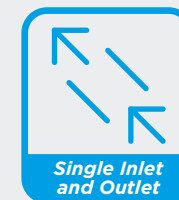
Suction Capacity	195 to 1,400 m ³ /h (115 to 830 ACFM)
Vacuum Range	to 67 mbar abs. (to 2 inHgA)
Maximum Discharge Pressure	2 bar abs. (15 psig)
Differential Pressure	to 1 bar (to 15 psi)
Shaft Sealing	Mechanical Seals single acting
Materials	Ductile Iron

Models and Performance Range



NASH VECTRA XL SERIES

NASH Vectra XL vacuum pumps are designed for rigorous, nonstop demands of harsh industrial environments, including: chemical, oil & gas, and food & beverage. The Vectra XL vacuum series is manufactured to deliver optimum, reliable performance and exclusive production efficiencies specific to customer application requirements. The capacities of the Vectra XL pumps range from about 195 to 8,900 m³/h (115 to 5,200 ACFM) with pressures up to 2 bar (to 29 psi).



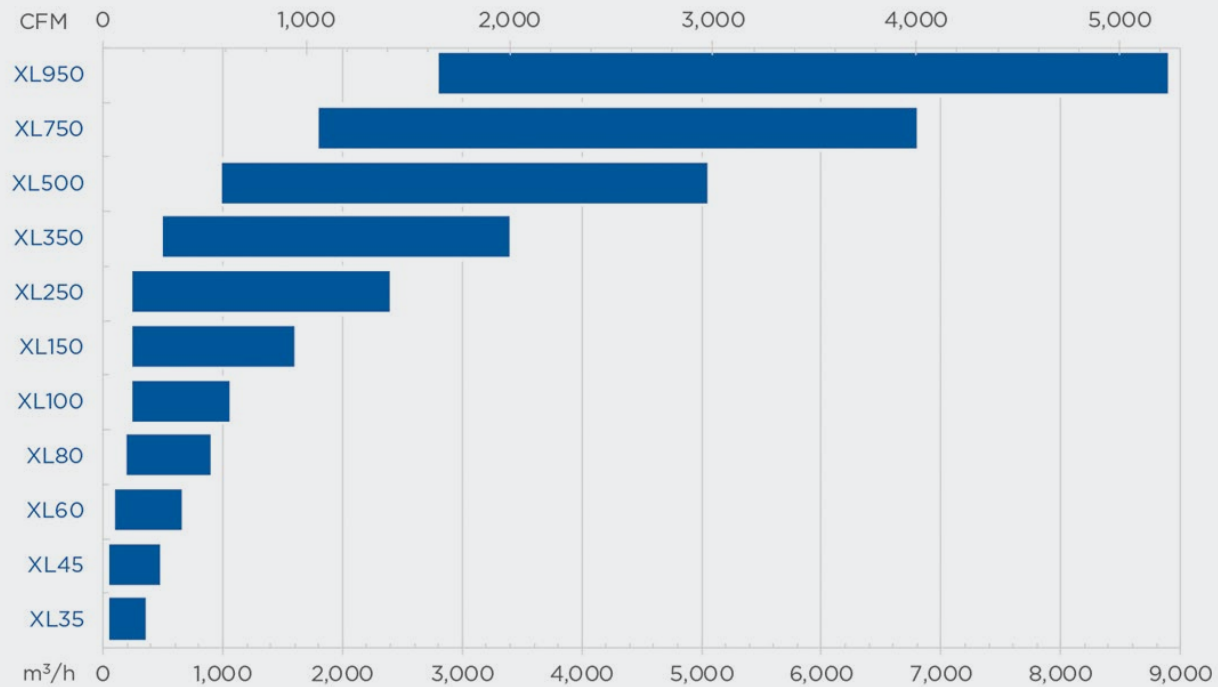
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NASH VECTRA XL SERIES

Technical Data NASH VECTRA XL

Suction Capacity	195 to 8,900 m ³ /h (115 to 5,200 ACFM)
Vacuum Range	to 33 mbar abs. (to 1 inHgA)
Maximum Discharge Pressure	3 bar abs. (29 psig)
Differential Pressure	to 2 bar (to 29 psi)
Shaft Sealing	Stuffing box (standard), Mechanical Seals (single acting/double acting) or Cartridge (on request)
Materials	Ductile Iron, Stainless Steel

Models and Performance Range



NASH SC SERIES

The NASH SC liquid ring vacuum pump and compressor series is a reliable and flexible alternative to the popular NASH CL series. Designed as an upgrade to the existing CL models, the SC series delivers proven performance with flexible installation options and reduced maintenance requirements. Available in 9 models, the capacities of the SC pumps range from about 120 to 2,000 m³/h (70 to 1,150 ACFM). SC pumps and compressors are typically found in food and general industrial applications.



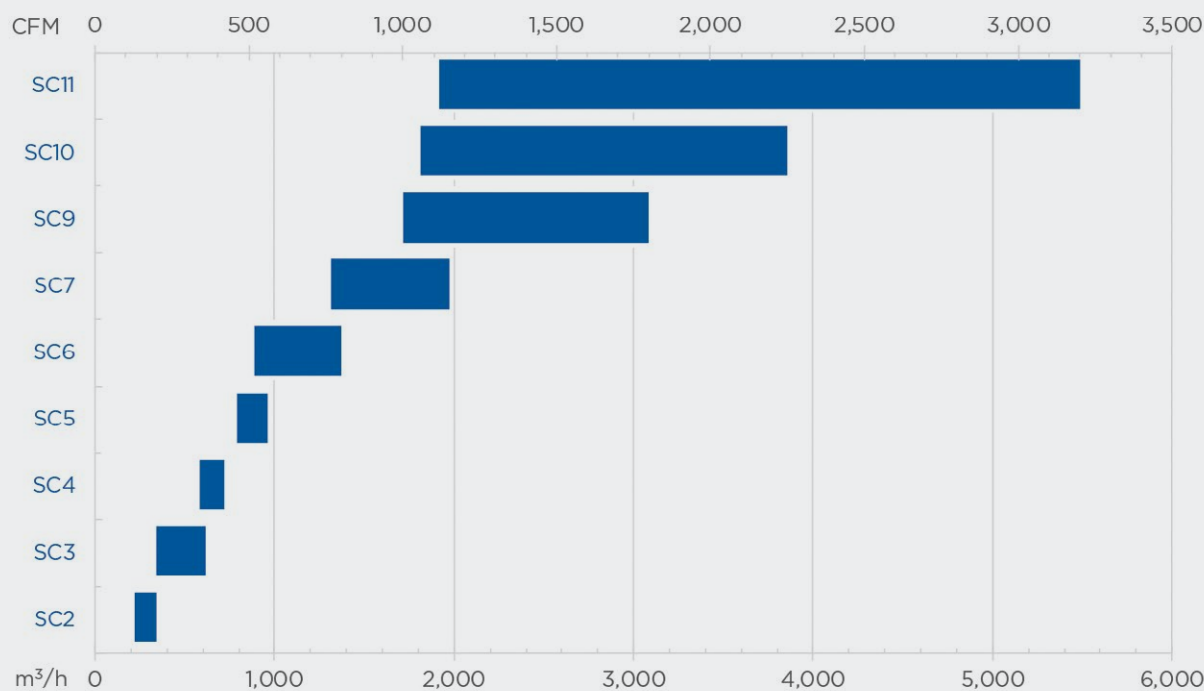
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NASH SC SERIES

Technical Data NASH SC

Suction Capacity	220 m ³ /h to 5.400 m ³ /h (70 to 1,150 ACFM)
Vacuum Range	to 100 mbar abs. (to 2 inHgA)
Maximum Discharge Pressure	2,5 bar abs. (20 psig)
Differential Pressure	1,5 bar (22 psi)
Shaft Sealing	Stuffing box (standard), Mechanical Seals (single acting/double acting) on request
Materials	Cast Iron, Stainless Steel

Models and Performance Range



NASH CL SERIES

The NASH CL liquid ring vacuum pump & compressor series delivers classic Nash performance with a broad range of suction volume, vacuum, and pressure. This single stage liquid ring vacuum pump & compressor series is available in 12 different models and can be found in many applications including paper machine dewatering, autoclaves, carburetor testing, chucking, condenser air removal, container filling, cooking, deaerating, drying, evisceration, exhausting, molding, pickup and conveying, priming, slot extraction, and solvent recovery.

ECO-FLO



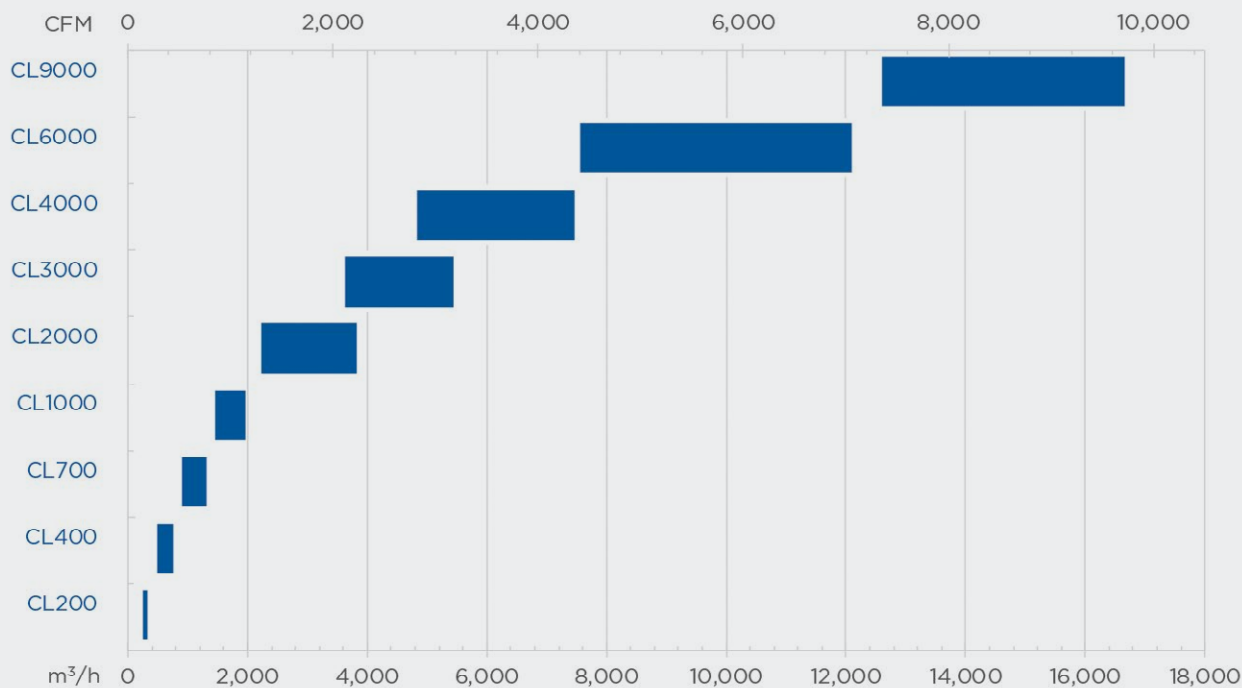
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NASH CL SERIES

Technical Data NASH CL

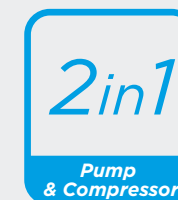
Suction Capacity	240 to 16,500 m ³ /h (140 to 14,800 ACFM)
Vacuum Range	to 100 mbar abs. (to 3 inHgA)
Maximum Discharge Pressure	2,5 bar abs. (20 psig)
Differential Pressure	to 1.5 bar (22 psi)
Shaft Sealing	Stuffing box (standard), Mechanical Seals (single acting/double acting) on request
Materials	Cast Iron, Stainless Steel

Models and Performance Range



NASH 2BE1 LARGE SERIES

The NASH 2BE1 liquid ring vacuum pump and compressor series covers a broad range of suction volume, vacuum, and pressure. Based on the proven reliable flat sided liquid ring vacuum pump design the 2BE1 is available in 23 models, has a large differential pressure capability, and is ATEX Certified. For these reasons, the 2BE1 is one of the most popular liquid ring pumps worldwide and can be found in almost all industrial vacuum applications including the chemical, pulp & paper, and power generation industries.

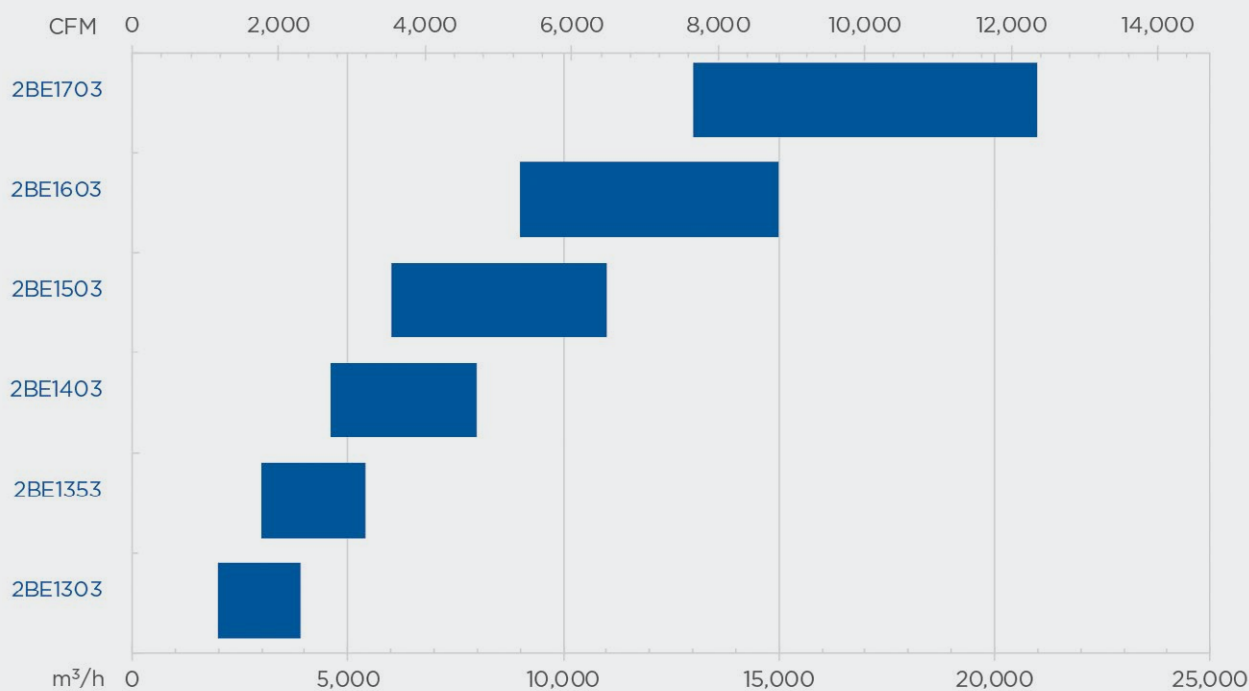


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NASH 2BE1 LARGE SERIES

Technical Data NASH 2BE1	
Suction Capacity	2.000 m ³ /h to 21.000 m ³ /h (60 to 13,000 ACFM)
Vacuum Range	to 33 mbar abs. (to 1 inHgA)
Maximum Discharge Pressure	2,1 bar abs (50 psia)
Differential Pressure	to 1.1 bar (to 37.7 psi)
Shaft Sealing	Stuffing box (standard), Mechanical Seals (single acting/double acting) on request
Materials	Cast Iron, Stainless Steel, Combination of both materials

Models and Performance Range

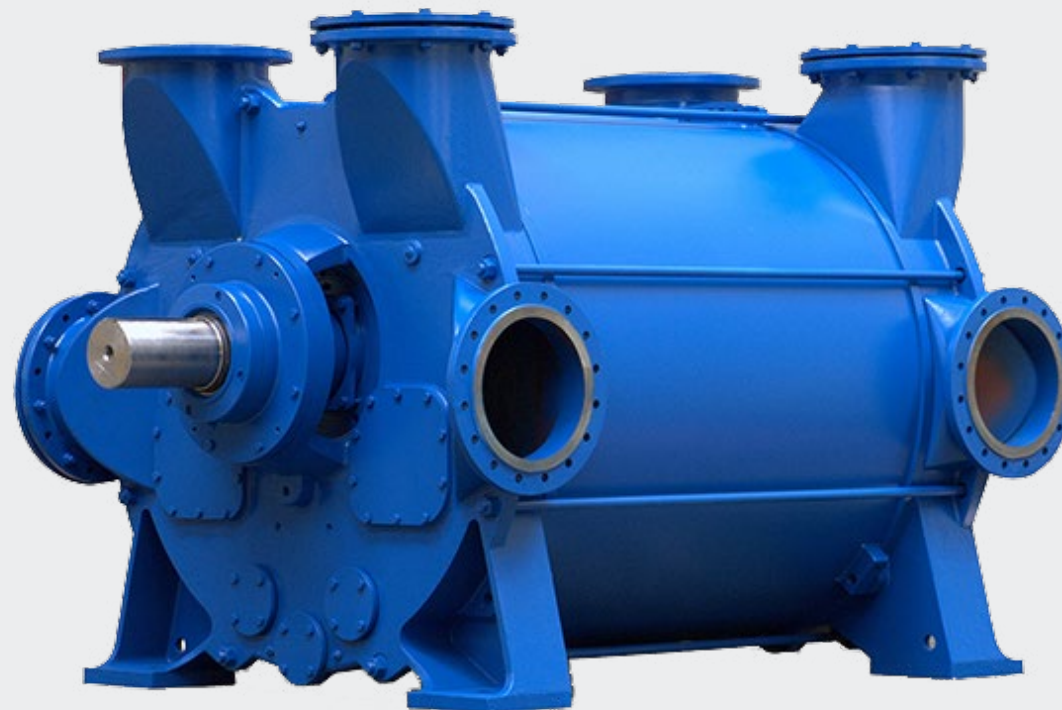
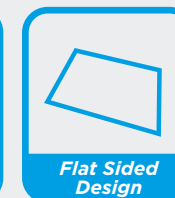


NASH 2BE4 SERIES

NASH 2BE4 vacuum pumps and compressors have been engineered to provide maximum durability and reliability, with the lowest possible cost of operation.

Based on the proven reliable flat sided liquid ring vacuum pump design, the 2BE4 has a polyisoprene lined body for improved corrosion resistance, unique inlet and discharge connections for maximum flexibility, and a large inspection port for quick and easy access to pump internals. The 2BE4 provides efficient operation across the entire vacuum range, and can also be equipped with a center shroud providing split vacuum differential of up to 12 inHg (400 millibar). This allows the use of fewer vacuum pumps—which saves space and installation costs.

Available in a range of capacities, ranging from 1,950 to 32,100 m³/h (1,150 to 18,900 ACFM); the 2BE4 series has been designed to perform in the even the most demanding applications in the pulp & paper, power, mining, and the chemical process industries.



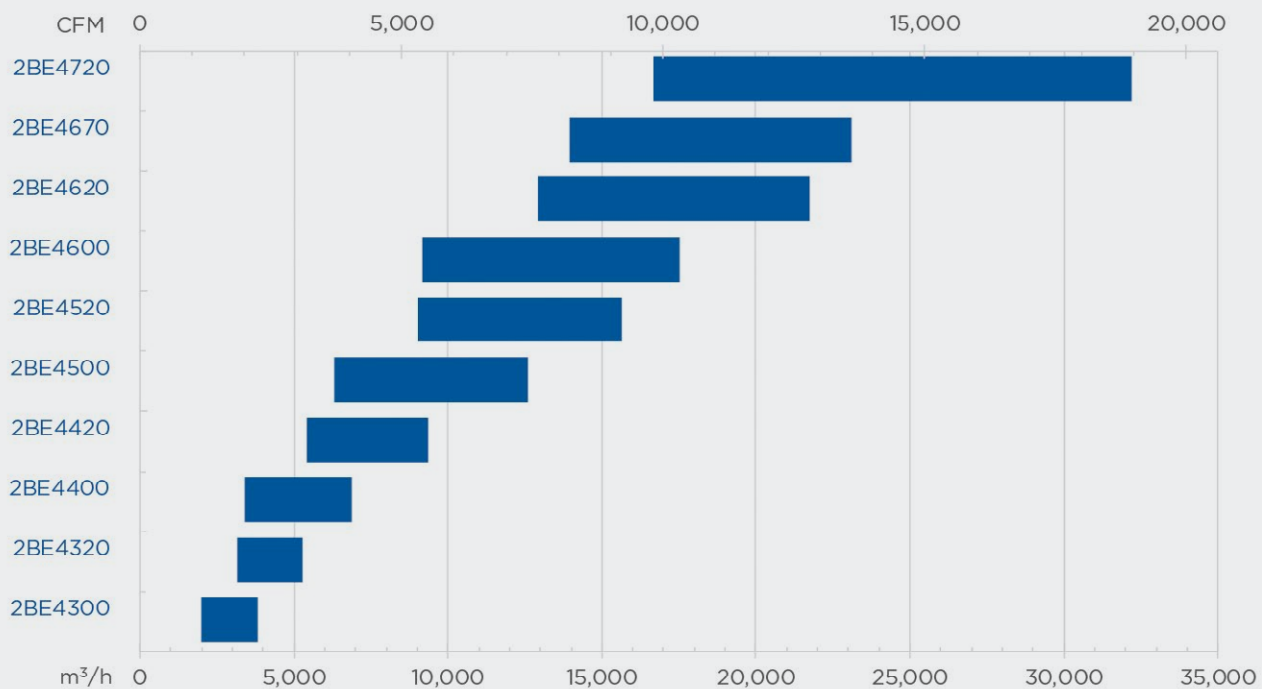
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NASH 2BE4 SERIES

Technical Data NASH 2BE4

Suction Capacity	2.000 m ³ /h to 32.200 m ³ /h (1,150 to 18,900 ACFM)
Vacuum Range	to 160 mbar abs. (to 4 inHgA)
Maximum Discharge Pressure	2,5 bar abs. (36 psia)
Differential Pressure	to 1.5 bar (to 22 psi)
Shaft Sealing	Stuffing box (standard), Mechanical Seals (single acting / double acting) on request
Materials	Cast Iron, Stainless Steel, Combination of both materials, Polyisoprene Lining

Models and Performance Range



NASH 904 SERIES

Capacities of the 904 pumps range from 4,600 to 28,600 m³/h (upward from about 2,700 ACFM) at vacuum. These durable pumps can handle excess liquid carryover without any difficulty, even if it arrives as massive slugs. 904 pumps are found in many industries including paper, chemical, and mining.



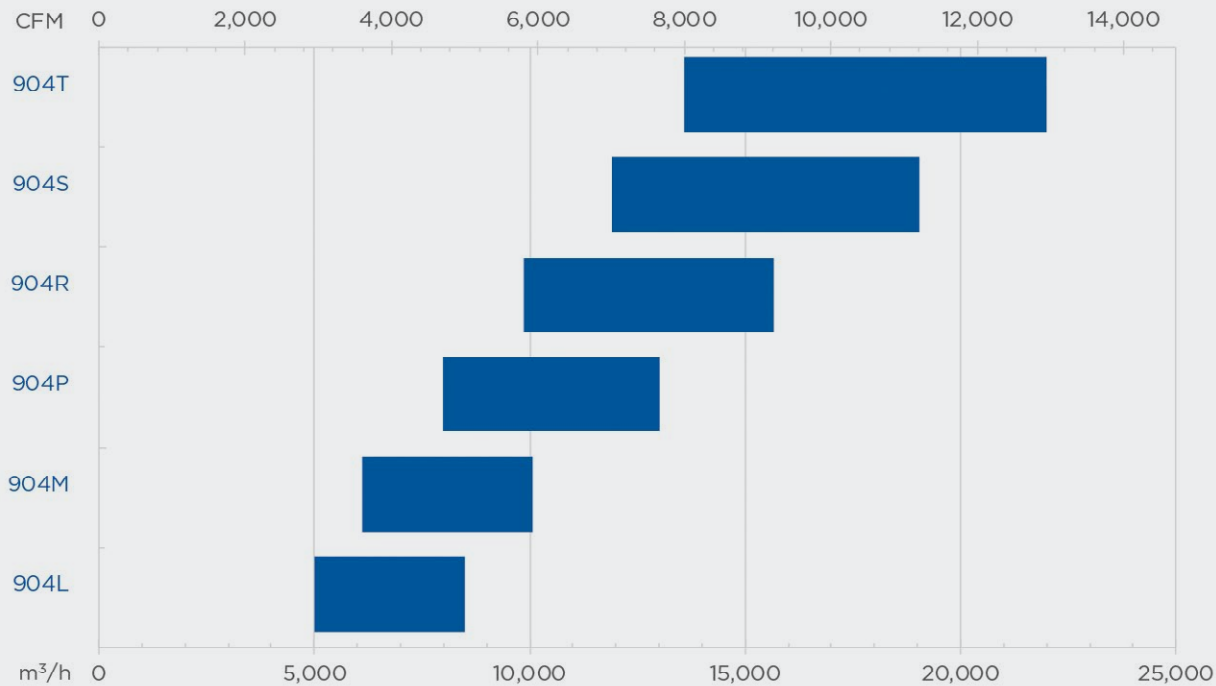
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NASH 904 SERIES

Technical Data NASH 904

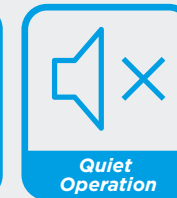
Suction Capacity	5.000 m ³ /h to 22.000 m ³ /h (2,700 to 16,800 ACFM)
Vacuum Range	to 120 mbar abs. (to 4 inHgA)
Maximum Discharge Pressure	2.5 bar abs. (30 psia)
Differential Pressure	to 1.5 bar (to 15 psi)
Shaft Sealing	Stuffing Box (standard), Mechanical Seals (single acting/double acting) on request
Materials	Cast Iron

Models and Performance Range



NASH P2620 SERIES

The NASH P2620 liquid ring vacuum pump model allows efficient operation over the entire vacuum range without the need to change the pump's internals. With the largest capacity in our portfolio, ranging from 23,800 to 39,000 m³/h (14,000 to 21,800 ACFM), the P2620 is designed to operate in demanding environments such as paper, power, mining, and chemical process industries.

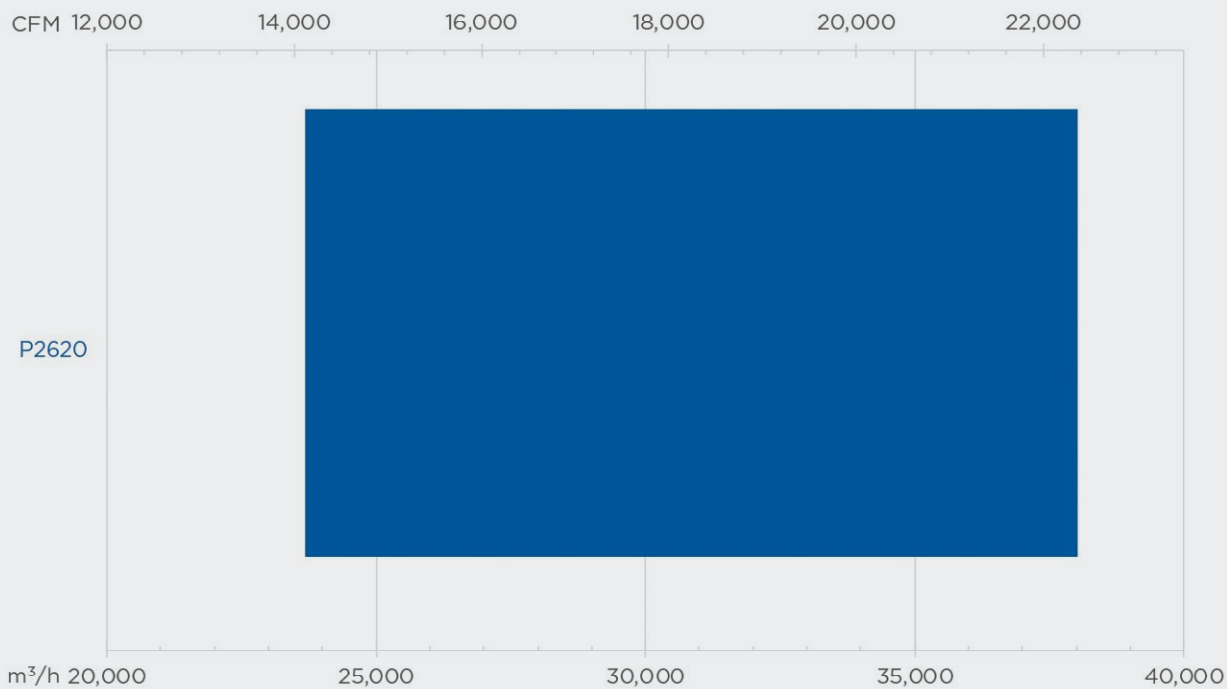


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NASH P2620 SERIES

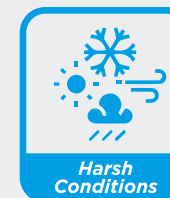
Technical Data NASH P2620	
Suction Capacity	24.000 to 38.000 m ³ /h (14,000 to 21,800 ACFM)
Vacuum Range	to 160 mbar abs. (to 4.7 inHgA)
Maximum Discharge Pressure	2.5 bar abs. (22 psia)
Differential Pressure	to 1.5 bar (to 22 psi)
Shaft Sealing	Stuffing Box (standard), Mechanical Seals (single acting/double acting) on request
Materials	Cast Iron

Models and Performance Range



NASH TC/TCM SERIES

Nash TC/TCM two stage vacuum pumps are designed to operate at low suction pressures with low vapor pressure seal liquids. Ranging in capacity from 170 to 3,600 m³/h (100 to 2,100 ACFM), they feature an internal two stage rotor, and are capable of handling large amounts of liquid carryover without difficulty.



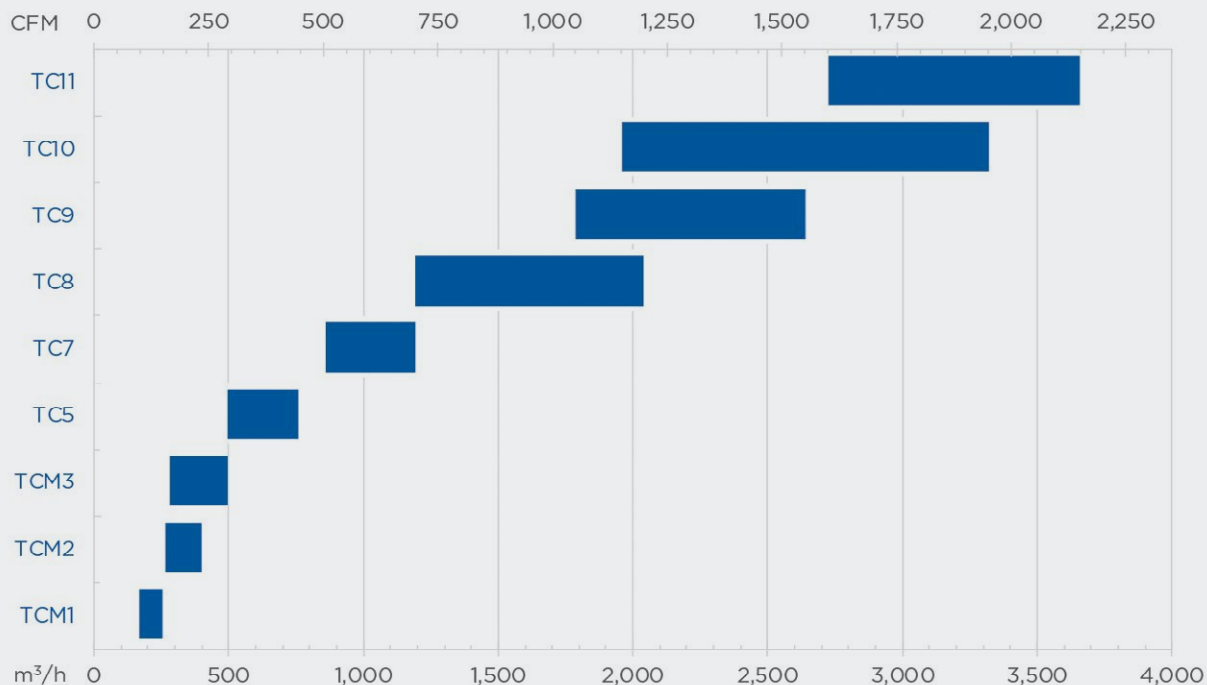
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NASH TC/TCM SERIES

Technical Data NASH TC/TCM

Suction Capacity	170 to 3650 m ³ /h (100 to 2,100 ACFM)
Vacuum Range	to 28 mbar abs. (to 0.8 inHgA)
Shaft Sealing	Stuffing box (standard), Mechanical Seals (single acting/double acting) or Cartridge (on request)
Materials	Cast Iron, Ductile Iron, Stainless Steel

Models and Performance Range





Manufacturing Facilities

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