

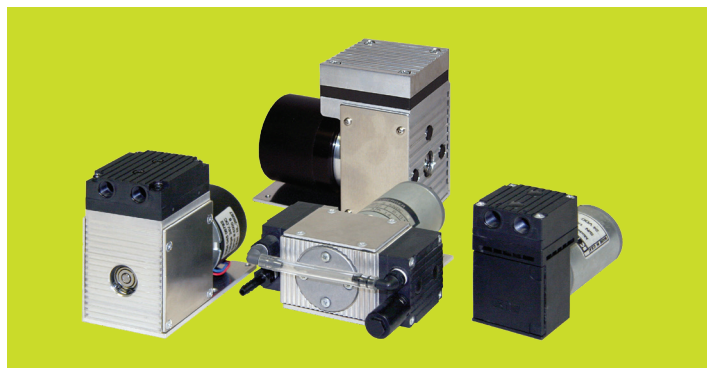


OEM GAS AND LIQUID PUMP SOLUTIONS MEETING YOUR SPECS AND EXCEEDING YOUR EXPECTATIONS



Engineer-to-engineer collaboration

Over 80% of our business involves custom-engineered pump solutions. By bringing together your system knowledge with our technical expertise, we can modify our standard products to optimize pump performance, materials, motor types and configurations to meet your specifications.



Meeting OEM gas and liquid pump design challenges

KNF holds over 300 patents and delivers pump solutions driven by precision engineering and innovation. Our modular pump design concept allows for cost-effective modifications — from simple adjustments through complex new constructions.

Advanced technologies, exclusively from KNF

KNF-patented designs maximize diaphragm pump performance, providing superior alternatives to other pump technologies. We generate deeper vacuums, higher pressures, optimized flow and improved repeatability while minimizing system cost, size, weight and power requirements.

KNF brushless DC motors with integrated controls

KNF designs and builds brushless DC motors and controllers that offer low current draw, long life and reduced EMI/RFI. Integrated speed control, tachometer feedback and current-limiting circuitry deliver flexible control allowing pump performance to match your system's demands.

More than just pumps

KNF can work with you to identify the performance relationships between the pump and other system components. We welcome the opportunity to add value by building a system to include fittings, tubing, filters, valves, gauges, mounting connectors and other fluidic and electrical components.



Innovative liquid pump technology

KNF designs diaphragm-based liquid transfer and metering pumps to meet the unique challenges of pumping incompressible fluids. Our wide range of liquid pumps can self-prime, run dry and reduce cavitation. Whether your application calls for bulk liquid transfer or precise delivery, KNF has a solution. Let KNF's experience work for you.

KNF USA plays a vital role within the KNF Group — a global network of R&D, manufacturing and sales organizations. Our modern 50,000 sq. ft. production facility, located in Trenton, NJ, directly supports our North American customers.

KNF: THE PUMP BRAND OEMs DEMAND

KNF's experience with established designs, materials and motors allows us to optimize standard pumps to fit your exact specifications by offering a variety of options:

- Performance modifications
- Economical BLDC motors
- Custom pump connections
- Custom mounting plates
- Electrical terminations and harnesses
- Shock and vibration isolation
- Finishes and coatings

Wide selection of materials:

- Aluminum
- Polypropylene
- 316 Stainless steel
- Nickel-plated
- Ceramic
- PPS
- PEEK
- EPDM
- PVDF
- Buna-N
- FFPM
- PTFE
- FPM
- Neoprene

A tradition of innovation

Our reputation for OEM collaboration, technical expertise and manufacturing leadership is founded on a mission to resolve the specialized challenges of our customers with the most advanced customized and standard product solutions available.

KNF approaches each collaborative engineering effort with our customers as an opportunity for technical problem solving. The resulting pump solutions have established KNF as the premier U.S. diaphragm pump manufacturer.

Contact KNF today for flexible OEM pump solutions. Whether your pump design challenge is simple or complex, KNF provides the technical expertise, precision engineering and rapid production turnaround with world class customer service to make your project a success.

ENGINEERING YOUR SUCCESS

KNF partners with you, engineer-to-engineer, to understand your instrument's key design parameters and pump performance requirements. Your pump solution is precisely engineered to be a dynamic and interactive subsystem that meets the complex needs of your equipment. KNF's technological advancements in diaphragm pump design give OEM engineers more flexibility than ever.

Optimizing pump design to maximize system performance

Since 1946, KNF has successfully delivered over 30,000 custom pump projects to a diverse customer base:

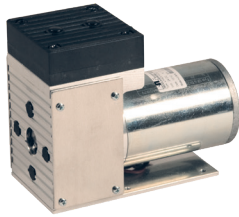
- Medical equipment
- Environmental protection and analysis
- Chemical and process engineering
- Printing technology
- Fuel cells
- Laboratory research
- Food service
- and many more

KNF designs and manufactures precision, oil-free diaphragm pumps and compressors to satisfy any custom OEM pump requirement. Our collaborative approach responds to your specialized equipment needs — meeting your specs and exceeding your expectations.



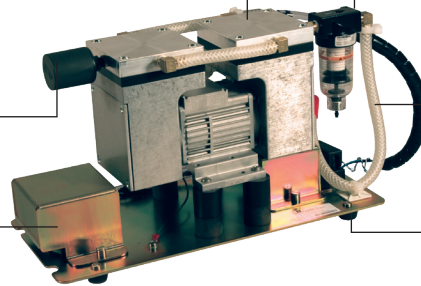
OEM PUMPS

STANDARD PUMP



- Coated Metal Heads:**
 Coatings and finishes for the most exacting requirements.
- Silencer:**
 To reduce pneumatic noise in sensitive environments.
- Brushless DC Motor and Remote-Mounted Motor Drives:**
 Many motor types are available. We'll help select the perfect one for you.

CUSTOM ENGINEERED PUMP



- Separation Filter:**
 Available in many sizes and performance ratings.
- Custom Tubing Connections and Special Cabling Connectors:**
 We connect perfectly with your system.
- Shock Mounts and Rubber Feet:**
 For ease of installation and noise isolation.

OIL-FREE AIR AND GAS PUMPS

Micro Pumps	Available Motors	LPM	CFM	in. Hg	psig
NMP 03	DC/BLDC	0.33	0.01	12.0	5.1
NMP 05	DC/BLDC	0.45	0.02	15.2	5.8
NMS 010	DC/BLDC	0.75	0.03	12.2	2.9
NMP 09	DC/BLDC	0.85	0.03	15.2	9.5
NMP 015	DC/BLDC	1.6	0.06	18.1	13.1
NMS 020	DC/BLDC	1.8	0.06	15.2	7.2
NMP 015.1.2	DC/BLDC	2.1	0.07	12.2	8.7
NMP 830	AC/DC/BLDC	3.1	0.11	22.8	20.3
NMP 850	DC/BLDC	4.5	0.16	23.1	21.8
NMP 850.1.2	BLDC	8.0	0.28	23.1	21.8
NMS 030.1.2	DC/BLDC	12	0.42	24.0	2.9
Mini Pumps					
N 85.3	AC/DC/BLDC	5.0	0.18	29.2	4.4
N 86 ⁽¹⁾	AC/DC/BLDC	7.0	0.25	27.0	29
N 87	AC/BLDC/EX	7.5	0.26	25.8	21.8
N 89	AC/DC/BLDC	9.5	0.34	27.0	7.3
N 811	AC/DC/BLDC	11.5	0.41	27.0	7.3
N 814	AC/DC/BLDC	12	0.42	22.8	29
N 815	AC/DC/BLDC	16	0.56	27.0	—
N 816	AC/DC/BLDC	16	0.56	27.0	14.5
N 816.3	AC/BLDC	16	0.56	29.5	7.3
N 916.50	AC/BLDC	28	0.99	29.3	7.3
High Capacity Pumps					
N 022	AC/BLDC	15	0.53	27.0	58.0
N 922	AC/DC/BLDC/EX	16	0.56	24	29
N 726	AC/BLDC/EX	17	0.60	28.6	—
N 726.3	AC/BLDC/EX	20	0.71	29.7	—
N 023	AC	23	0.81	23.6	29
N 026	AC/BLDC/EX	25	0.88	27.0	36
N 828	AC/DC/BLDC	28	0.99	27.0	14.5
N 035	AC/BLDC/EX	30	1.06	27.0	58.0
N 143 ⁽¹⁾	AC/EX	30	1.06	27.0	102
N 145	AC	30	1.06	27.0	102
N 035.3	AC/BLDC/EX	30	1.06	29.5	—

N 186.3 ⁽¹⁾	AC/EX	30	1.06	29.8	—
N 286.15	AC	30	1.06	—	176
N 838 ⁽¹⁾	AC/DC/BLDC	34	1.20	27.0	7.3
N 726.1.2	AC/BLDC/EX	38	1.34	28.6	—
N 023.1.2	AC	39	1.38	23.7	29.0
N 026.1.2	AC/EX	46	1.62	26.9	28.0
N 186.1.2 ⁽¹⁾	AC/EX	54	1.91	27.0	102
N 145.1.2	AC	55	1.94	27.0	60.0
N 860	AC/EX	60	2.12	27.5	14.5
N 860.3	AC/EX	60	2.12	29.8	14.5
N 838.1.2 ⁽¹⁾	AC/BLDC	60	2.12	27.3	7.2
N 035.1.2	AC/BLDC/EX	62	2.19	27.0	60.0
N 880.3	AC	80	2.82	29.8	14.5
N 860.1.2	AC/EX	110	3.88	27.0	14.5
N 0150 ⁽¹⁾	AC/EX	150	5.30	26.9	14.5
N 0150.3 ⁽¹⁾	AC/EX	150	5.30	29.3	—
N 1200 ⁽¹⁾	AC/EX	150	5.30	26.9	88
N 1400.3 ⁽¹⁾	AC/EX	150	5.30	29.3	—
N 2400.15	AC	150	5.30	—	176
N 0150.1.2 ⁽¹⁾	AC/EX	280	9.89	26.9	14.5
N 1400.1.2 ⁽¹⁾	AC	300	10.59	26.9	88
Heated-Head & Heat-Resistant Pumps (insulation jacket/electronic controller optional)					
N 86	AC/EX	6.0	0.21	21.3	21.7
N 012	AC/EX	10.5	0.37	22.8	21.7
N 024	AC	18	0.64	24.0	21.7
N 036	AC	30	1.06	24.0	21.7
N 036.0	AC	2 x 30	2 x 1.06	24.0	21.7
N 0100	AC	100	3.53	24.6	21.7
Oil-Free Swing Piston Pumps		LPM	CFM	in. Hg	psig
NPK 03	DC/BLDC	3	0.1	21.1	80
NPK 04	DC/BLDC	3.3	0.12	21.1	14.5
NPK 06	DC/BLDC	6	0.21	24	29
NPK 09	AC/DC/BLDC	15	0.53	27.0	102
NPK 018	AC/DC	18	0.64	26.4	21.8
NPK 09.1.2	AC/BLDC	24	0.85	27.0	102

NPK 025	AC/DC	30	1.06	26.3	72.5
NPK 050	AC	50	1.77	24.5	29.0
NPK 0100	AC	78	2.75	27.6	29.0
Deep Vacuum Pumps for Roughing or Backing				mbar abs.	
N 84.4	DC/BLDC	4.8	0.17	2	4.4
N 84.3	AC/DC/BLDC	5.0	0.18	7	4.4
N 813.3	AC/BLDC	13	0.46	3	14.5
N 813.4	AC/BLDC	13	0.46	<0.5	14.5
N 813.5	AC/BLDC	19	0.67	<1	14.5
N 920	AC/BLDC	21	0.74	1.5	7.3
N 940.5	AC/BLDC	50	1.77	1.5	7.3
N 950.50	AC/BLDC	55	1.94	2	7.3

SELF-PRIMING LIQUID TRANSFER PUMPS

NSF certified option and higher pressure models available.

Liquid Pumps	Available Motors	mL/min	GPH	Suction	
				ft. H ₂ O	Pressure psig
NF 5	DC/BLDC	60	0.95	11	14
NFB 5	BLDC	2 x 50	2 x 0.79	10	57
NF 1.5	DC/BLDC	60	0.95	10	145
NF 10/11	AC/DC/BLDC	100	1.6	10	15
NF 1.11	DC/BLDC	100	1.6	10	87
FF 12	DC/BLDC	120	1.9	7.5	14.5
NF 1.30	Geared DC	170	2.7	17	87
FF 20	DC/BLDC	200	3.2	10	43
NF 25	DC/BLDC	250	4.0	10	15
NF 1.25	DC/BLDC	300	4.8	10	145
NFB 25	BLDC	2 x 300	2 x 4.8	10	15
NF 30	AC/DC/BLDC	300	4.8	20	15
NFB 30	AC/DC/BLDC	2 x 300	2 x 4.8	20	15
NF 2.35	DC/BLDC	350	5.5	10	232
NF 60/61	AC/DC/BLDC	600	9.5	10	15
NFB 60	AC/DC/BLDC	2 x 600	2 x 9.5	10	15
NF 1.60	DC/BLDC	650	10.3	10	87
NF 100	AC/DC/BLDC	1200	19	10	15
NF 1.100	AC/DC/BLDC	1300	21	10	87
NFB 100	BLDC	2 x 1300	2 x 21	10	15
NF 300	AC/DC/BLDC/EX	3000	48	10	15
NF 1.300	AC/DC/BLDC/EX	3000	48	10	87
NF 600	AC/DC/BLDC/EX	6000	95	10	15
NF 1.600	AC/DC/BLDC/EX	6000	95	10	87

SELF-PRIMING LIQUID SOLENOID PUMPS

Model	Available Motors	Dispense Volume	mL/min	Suction ft. H ₂ O	Pressure psig
FL 10	Solenoid	33 µL	100	6	14.5
FMM 20	Solenoid	5-17 µL	6-18	10	14.5
FMM 80	Solenoid	30-80 µL	18-48	13	14.5

SELF-PRIMING LIQUID DOSING AND METERING PUMPS

Model	Available Motors	Dispense Volume	mL/min	Suction ft. H ₂ O	Pressure psig
FEM 1.02	Stepper		0.2-20	13	85
FEM 1.02 .55RC	Stepper	5-180 µL	0.2-20	13	85
FEM 1.09	Stepper		0.9-90	13	85
FEM 1.09 .55RC	Stepper	10-520 µL	0.9-90	13	85