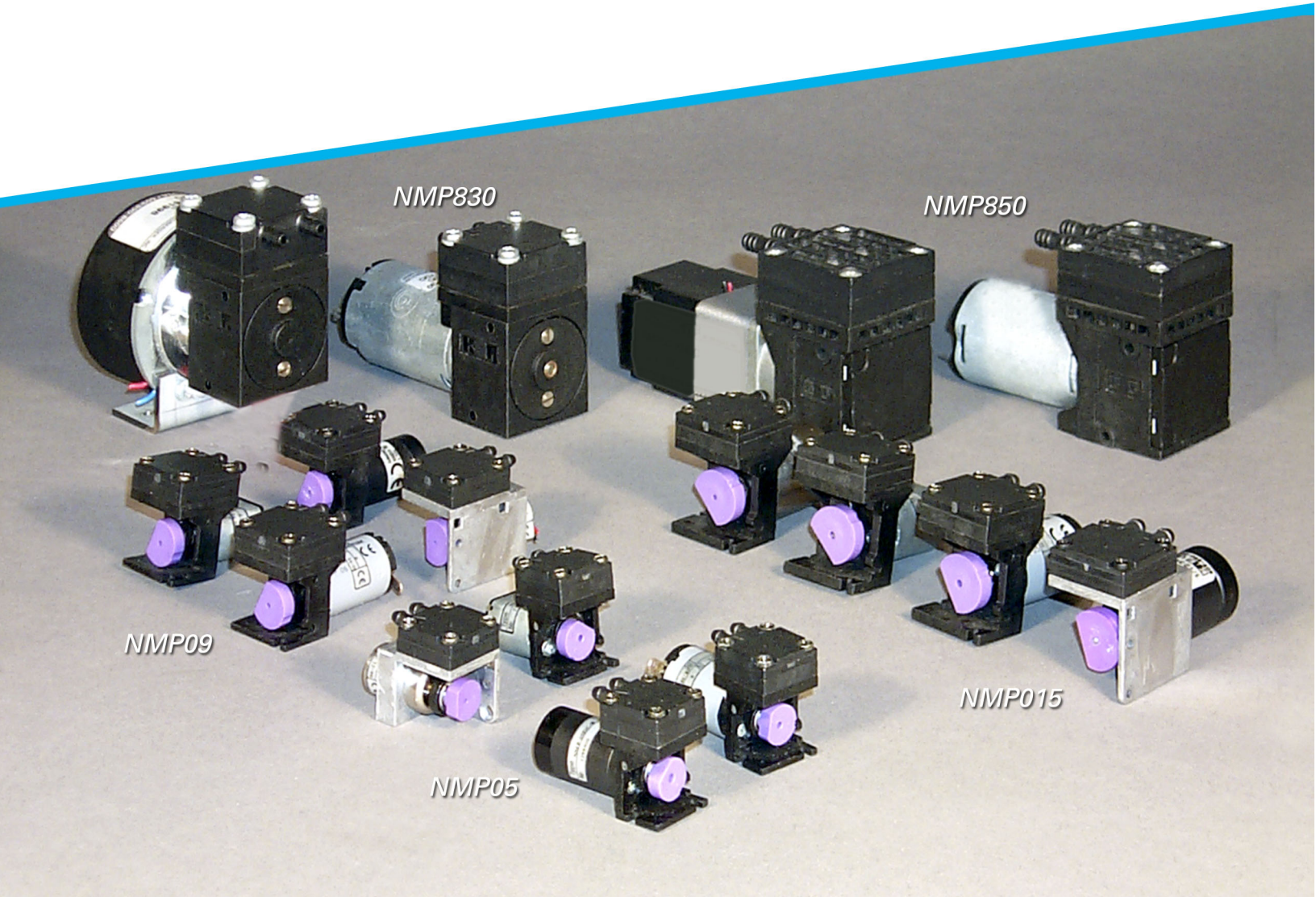
KNF OEM

specific design solutions for OEM professionals

Miniature Air & Gas Diaphragm Pumps

micro size
liquid tolerant
high reliability
emi/rfi filtering
long battery life
ac, dc, bldc motor
negligible leakage
corrosion-resistant
very quiet operation
consistent performance
CE UL *marks available*



Miniature Air & Gas Diaphragm Pumps for the OEM

KNF Neuberger, a pioneer in diaphragm pump design and manufacturing, offers five individual series of gas pumps within our miniature product range. Each is available with a wide variety of motors, wetted materials and performance features, leading to a pump that is optimized for your system requirements. These pumps are simple in design, and are economical and efficient. They are designed for continuous duty in any orientation, and operate quietly on vacuum or pressure. Their proprietary one-piece molded diaphragms achieve a deep vacuum, high performance, and exceptional lifetimes. The unique valve design assures maximum efficiencies, while providing high performance and a tolerance to pumping liquids. They are ideal for use in small, lightweight, battery-operated instruments.

Wetted Materials

From cost effective materials to corrosion-resistant options to wide temperature ranges, KNF has all materials available for nearly all applications.
Possible choices include; Ryton®(PPS), 316 stainless steel, Neoprene®, EPDM, silicone, Viton®, PTFE and many others.

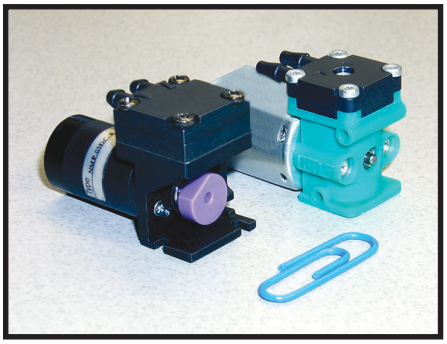
Micropump applications:

- waste removal
- system pressure
- gas/vapor sample transfer
- liquid dispensing
- system vacuum
- air sampling
- pick & place vacuum
- liquid/air aspiration
- vacuum degassing

Motor Choices

KNF micro pumps are available in a variety of motor types. See chart below for choices.

Brush DC Motors - Economically priced and generally reliable, these motors have served the industry over the years. Speed is controlled by varying supply voltage, usually between 50-100%. Potential disadvantages include high commutator noise, brush replacement, brush dust and radio frequency interference (RFI).



KNF's latest liquid pump, the NF5 (right) is possibly the world's smallest commercially available liquid diaphragm pump. The NMP05 air & gas pump is pictured on the left.

Brushless DC Motors - In contrast, BLDC motors use a quiet electronic driver. There are no brushes to wear, no brush dust or RFI arcing. BLDC motors are very compact. The rotor is smaller, therefore has less inertia and requires less start-up current. A BLDC motor can frequently serve as a drop-in upgrade for a brush-DC motor application.

Ironless-Core Motors - Characteristics of ironless-core motors include low friction, low starting voltage, absence of iron losses, high efficiency, good thermal dissipation and linear torque-speed function.

KNF stands ready to help you integrate our pumps into your instrument's control systems to take advantage of these exciting capabilities.

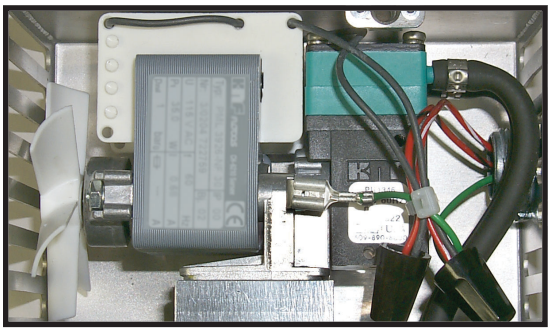
Pump Selection Chart

Model No.	Available Motors	LPM	in. Hg	psig
NMP05	DC/BLDC/IC	.25 - .45	15.2	2.2
NMP09	DC/BLDC/IC	.65 - .85	15.2	7.3
NMP015	DC/BLDC/IC	1.3 - 1.6	18.1	13.7
UNMP830	AC/DC/BLDC	3.1	23.6	22
UNMP850	DC/BLDC	4.5	18.1	16.5

Liquid Micropumps

Also available is KNF's line of liquid pumps, designed from concept to handle the rigorous duties associated with pumping non-compressible media. They are self-priming and can run dry continuously without damage. Models available with flow rates from 0.050 to 6 LPM.

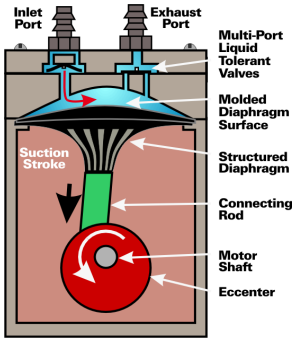
Call us! Whether your application calls for special materials, surface finishes, mounting plates, temperature or other unusual requirements, count on KNF to meet or even exceed your challenge.



KNF pumps are used in a variety of OEM applications. Let us design a pump to meet your exact project requirements.

How a diaphragm pump works

In its simplest form, a diaphragm pump has a motor, eccenter, connecting rod, diaphragm, valve system and pump head.



The drive motor turns the eccenter, oscillating the connecting rod and the diaphragm against the sealed pump chamber. Valves direct the media through the pump in the proper direction. KNF's exclusive, multi-port valve design permits greater flow, and withstands condensate without a loss of performance or lifetime.

INNOVATIVE TECHNOLOGY WORLDWIDE KNF NEUBERGER, INC.

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