



For neutral, slightly aggressive and corrosive gases and vapours

Pure and uncontaminated

Diaphragm pumps have been giving excellent service in laboratory environments for decades. The specific feature of these pumps: The compression chamber is hermetically sealed from the drive mechanism by the diaphragm. This ensures that the conveyed media are neither contaminated nor polluted.

Unlike water-jet pumps, diaphragm pumps supply constant vacuum.

Easy Service

Diaphragm and valve plates are the only parts subject to wear. They are simple to change.

More features of diaphragm pumps:

- Maintenance-free
- Compact design
- Silent running
- Long-life
- Reliable
- Simple connection to the electric mains (mains plug) and the pneumatic system
- Environmentally friendly as water is neither consumed nor contaminated.

Extensive product range

Over and above the pumps specified here, the extensive KNF product range comprises other laboratory pumps. As these pumps are chemically resistant, they can be used universally. Pumps with higher final vacuum and flow rate are also available.

Modular vacuum systems, liquid pumps and metering pumps complete the KNF product range. Please ask for more printed information.

Examples of KNF laboratory pumps and systems in service

- Vacuum gel drying
- Vacuum oven
- Vacuum filtration
- Vacuum exciccators
- Vacuum distillation
- Vacuum extraction.



LABOPORT® Diaphragm Compressors and Vacuum Pumps

with the patented KNF Structured Diaphragm

The stress-optimized diaphragm while ensuring long service life allows to reduce

the pump size. Special valve solutions make LABOPORT® pumps extremely insensitive

to vapour and condensate.

Performance data and technical information

Pump type	Delivery (l/min)*	Ultimate vacuum (mbar abs.)	Operating pressure (bar)	Motor ~230V/50Hz operating current (A) power P ₁ (W)	Protection class	Pneumatic connectors for tube ID	Dimensions LxHxB (mm)	Weight (kg)
N 86 KN.18	6	100	2,4	0.63 / 65	IP 20	4 mm	164/141/90	1.9
N 86 KT.18	5.5	160	2,5	0.63 / 65	IP 20	4 mm	164/141/90	1.9
N 811 KN.18	11.5	240	2	0.80 / 65	IP 20	6 mm	187/157/90	2.5
N 811 KT.18	11.5	290	2	0.80 / 65	IP 20	6 mm	187/157/90	2.5
N 820 AN.18	22	100	1	0.90 / 130	IP 44	9 mm	261/204/110	7.1
N 820 AT.18	20	100	1	0.90 / 130	IP 44	9 mm	261/204/110	7.1
N 820.3 AN.18	22	8	1	0.70 / 120	IP 44	9 mm	304/204/110	9.3
N 820.3 AT.18	20	8	1	0.70 / 120	IP 44	9 mm	304/204/110	9.3

Gastightness: leakage rate approx. 6×10^{-3} mbar l/s, not tested in serial production.

Choice of components in contact with the pumped media

Code	Pump head	Diaphragm	Valves
KN	PPS	EPDM	FPM
KT	PPS	PTFE	FFPM
AN	Aluminium	CR	NBR
AT	Aluminium	PTFE	FFPM

Accessories

Description	Details	For Type	Order No.
Silencer	G 1/8	N 86/811	000345
Filter	G 1/8	N 86/811	000346
Silencer	G 1/4	N 820	007007
Hose connector	G 1/8, PVDF, OD 4 mm	N 86	014052
Hose connector	G 1/8, PVDF, OD 6 mm	N 811	025671
Hose connector	G 1/4, PVDF, OD 10 mm	N 820	004658



Diaphragm Vacuum Pumps and Compressors

for big flow rate and high pressure

A wide range of diaphragm pumps of different chemical resistance, higher pressures and flow rates complement the above range of LABOPORT® pumps.

Performance data and technical information

Pump type	Delivery (l/min)*	Ultimate vacuum (mbar abs.)	Operating pressure (bar g)	Motor ~230V/50Hz operating current (A) power P ₁ (W)	Protection class	Pneumatic connectors for tube ID	Dimensions LxHxB (mm)	Weight (kg)
N 022 AN.18	15	100	4	0.75 / 60	IP 20	6 mm	203/187/103	4
N 022 AT.18	13	100	4	0.75 / 60	IP 20	6 mm	203/187/103	4
N 026.3 AN.18	22	20	-	0.85 / 150	IP 20	9 mm	243/185/185	5.8
N 026.3 AT.18	18	25	-	0.85 / 150	IP 20	9 mm	243/185/185	5.8
N 035.3 AN.18	30	13	-	1.50 / 200	IP 20	9 mm	294/222/250	11.3
N 035.3 AT.18	27	20	-	1.50 / 200	IP 20	9 mm	294/222/250	11.3
N 035.3 AN.18	30	13	-	2 / 200	IP 44	9 mm	322/222/250	11.6
N 035.3 AT.18	27	20	-	2 / 200	IP 44	9 mm	322/222/250	11.6
N 035 AN.18	30	100	4	1 / 150	IP 20	9 mm	265/254/143	8.2
N 035 AT.18	27	100	4	1 / 150	IP 20	9 mm	265/254/143	8.2
N 035 AN.18	30	100	4	1.80 / 120	IP 44	9 mm	280/255/198	8.2
N 035 AT.18	27	100	4	1.80 / 120	IP 44	9 mm	280/255/198	8.2
N 145 AN.18	30	100	7	2 / 250	IP 44	9 mm	325/285/210	12
N 145 AT.18	27	100	7	2 / 250	IP 44	9 mm	325/285/210	12
N 026.1.2 AN.18	39	100	2	0.85 / 150	IP 20	9 mm	243/185/185	5.8
N 026.1.2 AT.18	31	100	2	0.85 / 150	IP 20	9 mm	243/185/185	5.8
N 035.1.2 AN.18	55	100	4	1.50 / 200	IP 20	9 mm	294/222/250	11.3
N 035.1.2 AT.18	50	100	4	1.50 / 200	IP 20	9 mm	294/222/250	11.3
N 035.1.2 AN.18	55	100	4	2 / 200	IP 44	9 mm	322/222/250	11.6
N 035.1.2 AT.18	50	100	4	2 / 200	IP 44	9 mm	322/222/250	11.6
N 145.1.2 AN.18	55	100	7	2 / 250	IP 44	9 mm	350/260/250	15
N 145.1.2 AT.18	50	100	7	2 / 250	IP 44	9 mm	350/260/250	15

Gastightness: leakage rate approx. 6×10^{-3} mbar l/s, not tested in serial production.

Choice of components in contact with the pumped media

Code	Pump head	Diaphragm	Valves
AN	Aluminium	CR	Stainless steel
AT	Aluminium	PTFE	Stainless steel

Motors with other voltages and frequencies on request.

Accessories

Description	Details	For Type	Order No.
Silencer/filter	G 1/8	N 022	000346
Silencer/filter	G 1/4	N 026/N 035/N145	000352
Pressure relief valve	1-4 bar	N 022 AN	000351
Pressure relief valve	2 bar	N 026 AN	003074
Pressure relief valve	4 bar	N 145 AN/N 035 AN	047601
Pressure relief valve	7 bar	N 145 AN	047602
Fine control valve with pressure gauge	G 1/8	N 022 AN	000349
Fine control valve with pressure gauge	G 1/4	N 026 AN	011867
Fine control valve with pressure gauge	G 1/4	N 035 AN	000482
Fine control valve with pressure gauge	G 1/4	N 145 AN	000356
Fine control valve with vacuum gauge	G 1/8	N 022 AN	000350
Fine control valve with vacuum gauge	G 1/4	N 026 AN	011868
Fine control valve with vacuum gauge	G 1/4	N 035/N 145 AN	000354

* Litre at STP

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Hints on function, operation and service

Function of KNF Diaphragm Vacuum Pumps and Compressors

An elastic diaphragm is moved up and down by an eccentric (see illustration). On the down-stroke it draws the air or gas being handled through the inlet valve. On the up-stroke the diaphragm forces the medium through the exhaust valve and out of the head. The compression chamber is hermetically separated from the drive mechanism by the diaphragm. The pumps transfer, evacuate and compress completely oil-free.

Diaphragm pump



Features and Advantages

The diaphragm vacuum pumps and compressors ranges have the following features and advantages:

- 100 % oil-free transfer, evacuation and compression
- Excellent gas tightness
- Pure transfer
- Maintenance-free
- High performance and compact dimensions
- Long working life.

Hints on operation

- Range of use: Transferring air and gases at temperatures between +5°C and +40°C.
- Use chemically resistant versions for aggressive gases and vapours.
- Permissible ambient temperature: between +5°C and +40°C.
- The standard pumps are not suitable for use in areas where there is a risk of explosion. In these cases there are other products in the KNF program - please ask us for details.

- To prevent the maximum operating pressure being exceeded, restriction or regulation of the gas flow should only be carried out in the suction line.
- Components connected to the pump must be designed to withstand the pneumatic performance of the pump.
- Fit the pump so that the fan can draw in sufficient cooling air.
- Place the pump at the highest point in the system, so that condensate cannot collect in the head of the pump.

Hints on service

The diaphragm and valve plates are the only parts of the KNF diaphragm pumps subject to wear. They are easy to change, as no special tools are needed.

If you have any questions, please call our application engineers (see below for contact telephone number).