DIAPHRAGM VACUUM PUMPS AND COMPRESSORS

DATA SHEET E 014

N 022 ANE

Concept

The diaphragm pumps from KNF are based on a simple principal - an elastic diaphragm, fixed on its edge, moves up and down its central point by means of an eccentric. In this way the medium is transferred using automatic valves.

Thanks to the KNF modular system, the parts used to transfer the gases can be made from materials with varying degrees of durability. The customer has a choice of pump drives ranging from a selection of motors to explosion-proof models.

Features

Pure transfer, evacuation and compression of air, gases and vapors
No contamination of the media due to oil-free operation

Maintenance-free

Corrosion resistant models

High level of gas tightness:
approx. 6 x 10^{-3} mbar x l/s (not tested in serial production)

Long product life

Very quiet and little vibration

Cool running motor
even when in constant use

Ready for assembly

Can operate in any installed position

Areas of use

The diaphragm pumps offer a high level of performance despite their small size, as well as an excellent price performance ratio. They are required especially in the fields of analysis, medicine and production technology.

The pumps are used for transferring and sucking gases, taking samples (even liquids in a vacuum), evacuating vessels and compressing gases in process systems and vessels.

Performance data

Type	Delivery (l/min)	Vacuum (mbar absolute)	atm. press.	Pressure (bar g)	Weight (kg)
N 022 ANE	15	100		4	4.0
N 026 ANE	20	100		2.5	4.1

N 022 _ _ _

Performance data

Type	Delivery at atm. pressure (l/min)[1]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 022 ANE	15	4	100
N 022 AVE	15	2.5	100
N 022 ATE	13	4	100
N 022 SNE	15	4	100
N 022 SVE	15	2.5	100
N 022 STE	13	4	100

[1] Liter at STP

Motor data

Protection class	IP 20	IP 44
Voltage (V)	230	on request
Frequencies (Hz)	50	
Power P_1 (W)	100	
I_{max} (A)	0.7	

Pump material

Type	Pump head	Diaphragm	Valves
N 022 ANE	Aluminum	CR	Stainless steel
For slightly agressive or corrosive gases and vapors			
N 022 AVE	Aluminum	FPM	Stainless steel
N 022 ATE	Aluminum	PTFE-coated	Stainless steel
N 022 SNE	Stainless steel	CR	CR
N 022 SVE	Stainless steel	FPM	FPM
N 022 STE	Stainless steel	PTFE-coated	PTFE

N 026 _ _ _

Performance data

Type	Delivery at atm. pressure (l/min)[1]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 026 ANE	20	2.5	100
N 026 AVE	20	2.5	100
N 026 ATE	17	2.5	100
N 026 SNE	20	2.5	100
N 026 SVE	20	2.5	100
N 026 STE	17	2.5	100

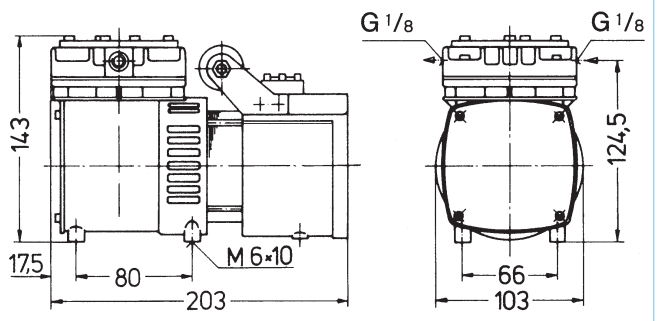
Motor data

Protection class	IP 20	IP 44
Voltage (V)	230	on request
Frequencies (Hz)	50	
Power P_1 (W)	100	
I_{max} (A)	0.7	

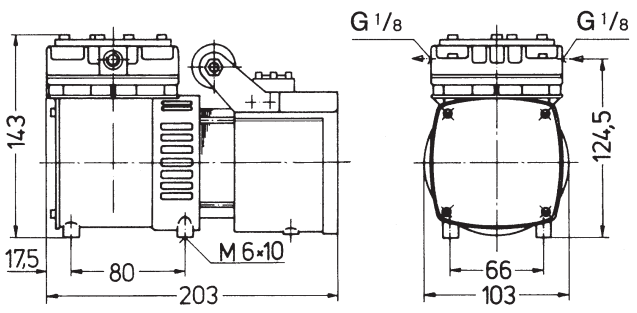
Pump material

Type	Pump head	Diaphragm	Valves
N 026 ANE	Aluminum	CR	Stainless steel
For slightly agressive or corrosive gases and vapors			
N 026 AVE	Aluminum	FPM	Stainless steel
N 026 ATE	Aluminum	PTFE-coated	Stainless steel
N 026 SNE	Stainless steel	CR	CR
N 026 SVE	Stainless steel	FPM	FPM
N 026 STE	Stainless steel	PTFE-coated	PTFE

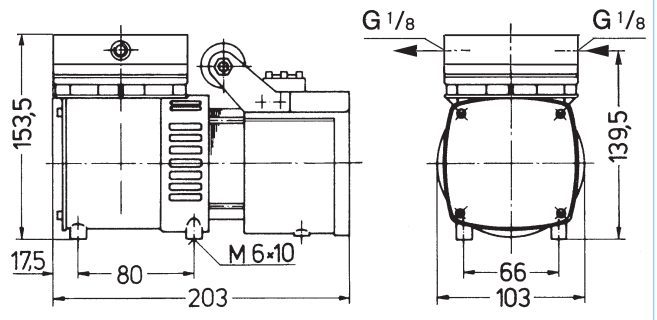
N 022 A_E



N 026 A_E



N 022 S_E



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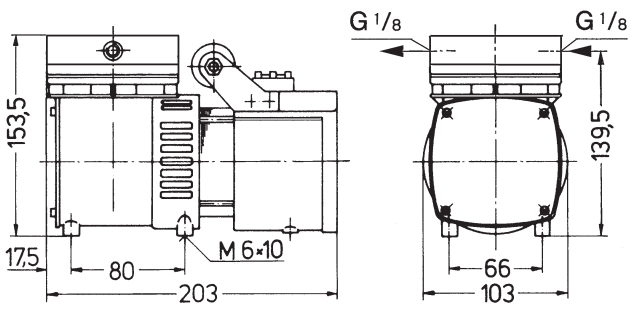

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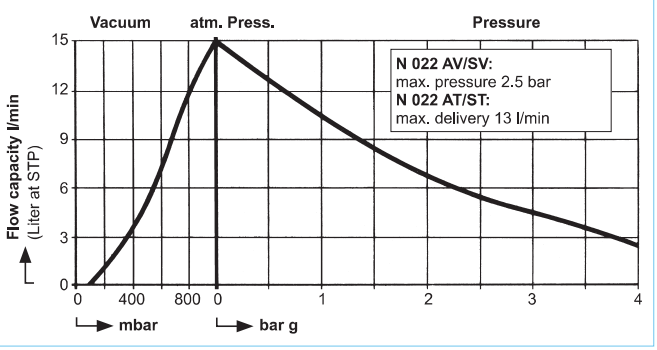

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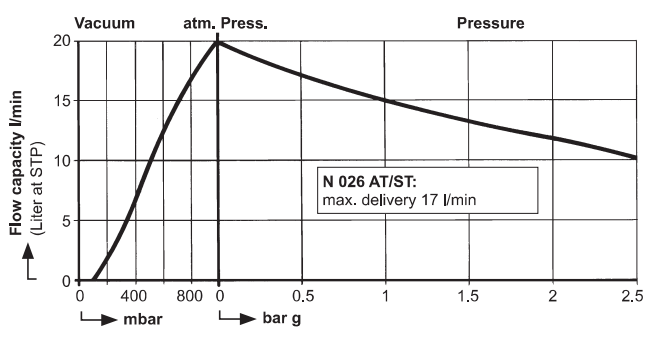
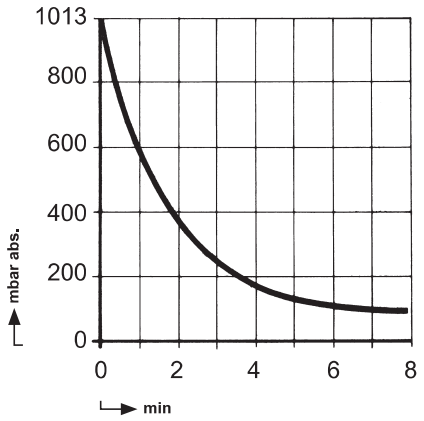
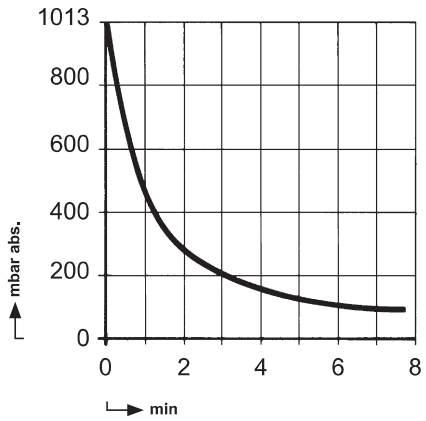


TECHNICAL INFORMATION

Pump down time for 20 l receiver | N 022 ANE



Pump down time for 20 l receiver | N 026 ANE



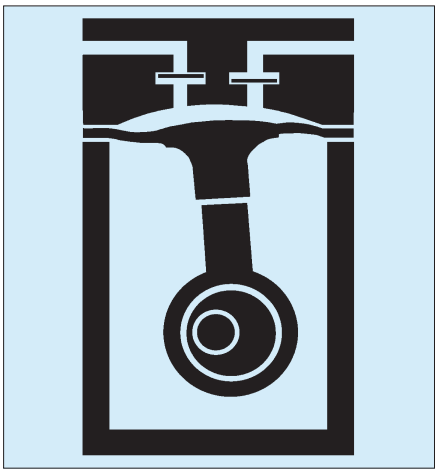
Accessories

Description	Order No.	Details
Silencer/filter	000346	G 1/8
Fine control valve, pressure side	000349	with pressure gauge
Fine control valve, suction side	000350	with vacuum gauge
Pressure relief valve	000351	4 bar for N 022
Pressure relief valve	000351	2.5 bar for N 026
Hose connector	000360	G 1/8
Hose connector, stainless steel	020233	G 1/8
Connection box cover	008637	

HINTS ON FUNCTION, INSTALLATION AND TECHNIQUE

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.



Hints on installation and operation

- Range of use: Transferring air and gases at temperatures between +5 °C and +40 °C.
- Permissible ambient temperature: between +5° C and +40 °C.
- Please check the compatibility of the materials of the pump head, diaphragm and valves with the medium.
- The KNF product line contains pumps suitable for pumping aggressive gases and vapors - please contact us.
- 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.
- The pumps are not designed to start against pressure or vacuum; when a pump is switched on the pressure in the suction and pressure lines must be atmospheric. Pumps that start against pressure or vacuum are available on request.
- To prevent the maximum operating pressure being exceeded, restriction or regulation of the air 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.
- Install the pump so that the fan can draw in sufficient cooling air.
- Fit the pump at the highest point in the system, so that condensate cannot collect in the head of the pump - that prolongs working-life.

KNF Neuberger GmbH
Pumps + Systems
Alter Weg 3
D-79112 Freiburg, Germany
Tel. +49 7664 5909 0
Fax +49 7664 5909 99
info@knf.de
www.knf.de

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