DIAPHRAGM VACUUM PUMPS AND COMPRESSORS

DATA SHEET E 016

N 035 ANE with IP 20 motor

N 035 ANE with IP 44 motor

Concept

The diaphragm pumps from KNF are based on a simple principle – 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 resistance. The customer has a choice of pump drives ranging from a selection of motors to explosion-proof models.

Features

Uncontaminated flow
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 035 ANE (IP 20)	30	100		4	7.7
N 035 ANE (IP 44)	30	100		4	7.8

N 035 _ _ E WITH IP 20 MOTOR

PERFORMANCE DATA

Type	Delivery at atm. pressure (l/min)[1)]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 035 ANE	30	4	100
N 035 AVE	30	2	100
N 035 ATE	27	4	100
N 035 SNE	30	4	100
N 035 SVE	30	2	100
N 035 STE	27	4	100

[1)] Liter at STP

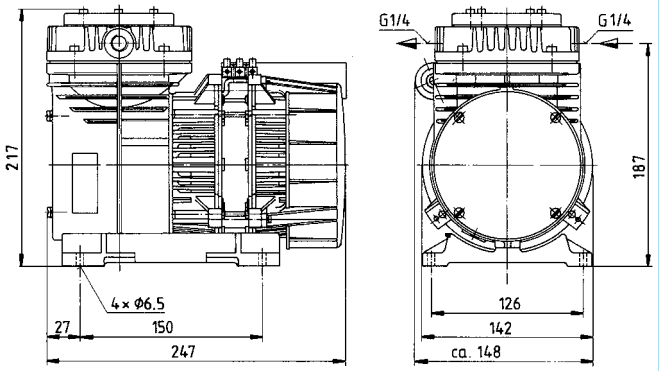
MOTOR DATA

Protection class	IP 20
Voltage (V)	230
Frequencies (Hz)	50
Power P_1 (W)	220
I_{max} (A)	1.2

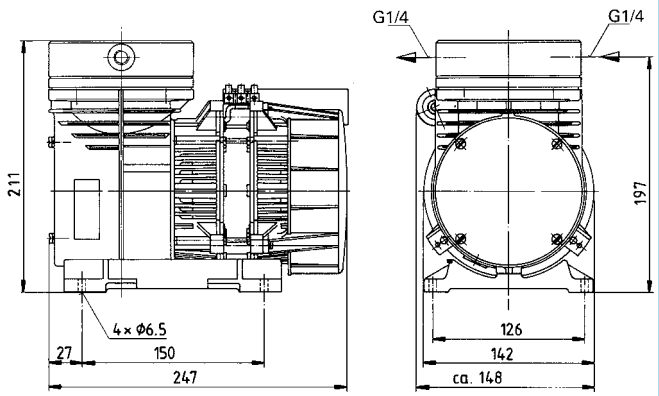
PUMP MATERIAL

Type	Pump head	Diaphragm	Valves
N 035 ANE	Aluminum	CR	Stainless steel
For slightly agressive or corrosive gases and vapors			
N 035 AVE	Aluminum	FPM	Stainless steel
N 035 ATE	Aluminum	PTFE-coated	Stainless steel
N 035 SNE	Stainless steel	CR	CR
N 035 SVE	Stainless steel	FPM	FPM
N 035 STE	Stainless steel	PTFE-coated	PTFE

N 035 A_E (IP 20)



N 035 S_E (IP 20)



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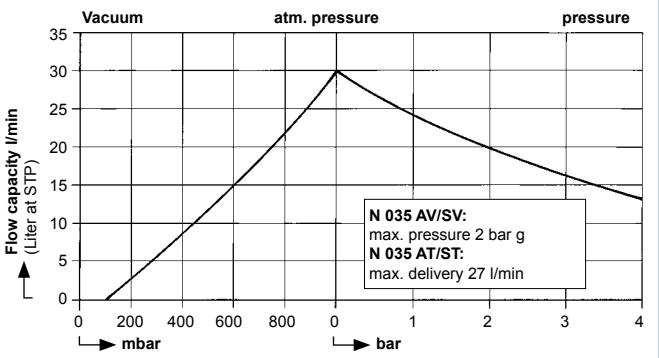


N 035 _ _ E WITH IP 44 MOTOR

PERFORMANCE DATA

Type	Delivery at atm. pressure (l/min)[1)]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 035 ANE	30	4	100
N 035 AVE	30	2	100
N 035 ATE	27	4	100
N 035 SNE	30	4	100
N 035 SVE	30	2	100
N 035 STE	27	4	100

[1)] Liter at STP

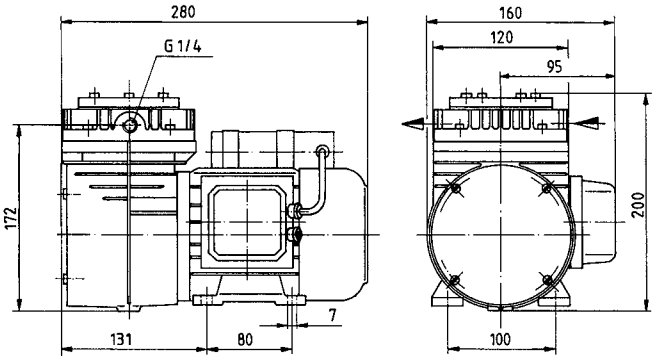
MOTOR DATA

Protection class	IP 44
Voltage (V)	230
Frequencies (Hz)	50
Power P_1 (W)	260
I_{max} (A)	1.35

PUMP MATERIAL

Type	Pump head	Diaphragm	Valves
N 035 ANE	Aluminum	CR	Stainless steel
For slightly agressive or corrosive gases and vapors			
N 035 AVE	Aluminum	FPM	Stainless steel
N 035 ATE	Aluminum	PTFE-coated	Stainless steel
N 035 SNE	Stainless steel	CR	CR
N 035 SVE	Stainless steel	FPM	FPM
N 035 STE	Stainless steel	PTFE-coated	PTFE

N 035 A_E (IP 44)



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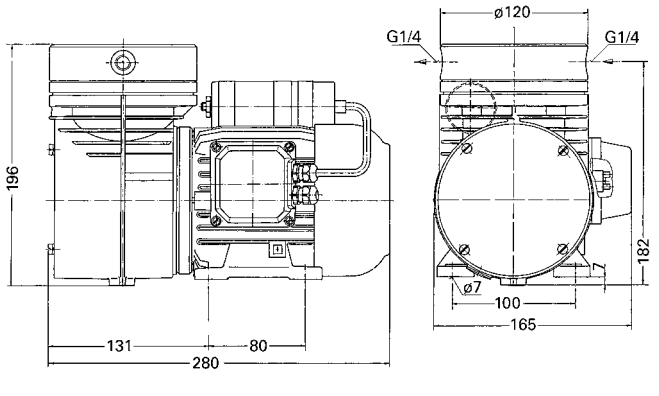

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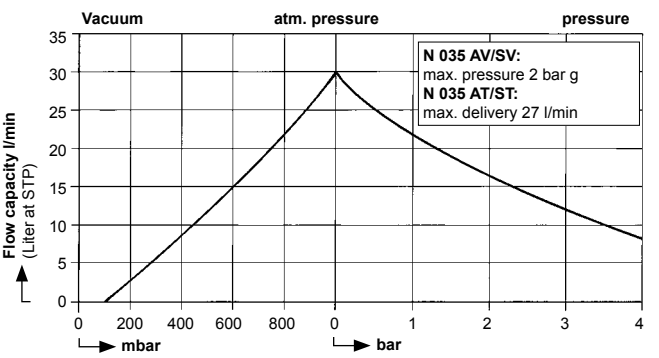
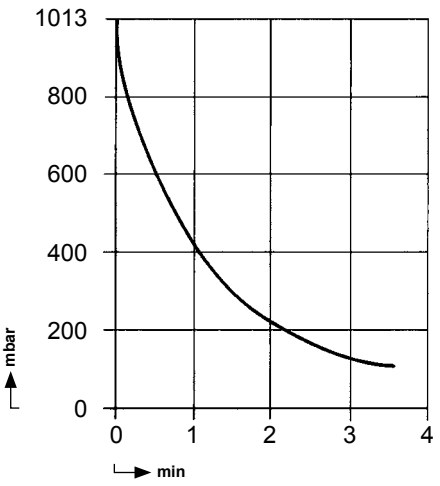


TECHNICAL INFORMATION

PUMP DOWN TIME FOR 20 LITER VESSEL | N 035 ANE



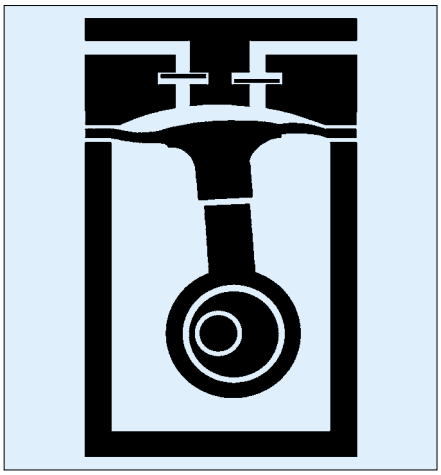
ACCESSORIES

Description	Order No.	Details
Silencer/filter	000352	G 1/4
Fine control valve, pressure side	000482	with pressure gauge
Fine control valve, suction side	000354	with vacuum gauge
Pressure relief valve	047601	4 bar g
Hose connector	000362	G 1/4, for tube ID 9
Hose connector, stainless steel	020234	G 1/4, for tube ID 9

HINTS ON FUNCTION AND INSTALLATION

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: +5° C ... +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 highly 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
Alter Weg 3
D 79112 Freiburg
Tel. +49 7664 5909 0
Fax +49 7664 5909 99
info@knf.de
www.knf.de

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