

MINI DIAPHRAGM VACUUM PUMPS

DATA SHEET E 024



N 815 KNE

Concept

The mini diaphragm gas sampling 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.

The pumps are equipped with the patented stress-optimised structured diaphragm, resulting in a high pneumatic performance, a durable product and compact size. Special valves ensure that the product can cope easily with vapor and condensation.

Thanks to the KNF modular system, the parts used to transfer the gases can be made from materials with varying degrees of durability. The pumps can be driven by either AC or DC motors.



N 828 KNDC-B

Features

Uncontaminated flow

No contamination of the media due to oil-free operation

Maintenance-free

Compact size

due to structured diaphragm

High performance

because of structured diaphragm

High level of gas tightness

Long product life

thanks to structured diaphragm

Very quiet and little vibration

Copes well with vapor and condensation

Cool running motor

even when in constant use

Ready for assembly

Can operate in any installed position



N 838 KNDC

Areas of use

The mini diaphragm vacuum 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 sucking gases, taking samples (even liquids in a vacuum) and evacuating vessels.

The AC models are suited for use in machinery which is permanent or mains-operated. Mini diaphragm pumps for portable and stand-alone equipment require DC power supplies.

Performance data

Type	Delivery (l/min)	Vacuum (mbar absolute)	Pressure (bar g)	Weight (kg)
N 815 KNE	15	100		1.55
N 815 KNDC	16	100		0.98
N 828 KNDC	27	100	1	2.1
N 828 KNDC-B	28	100	1	1.8
N 828 KN.29DC-B	28	100	1	1.8
N 828 KNE	28	100	1	2.2
N 838 KNDC	32	100	0.5	2.2
N 838 KNDC-B	34	100	0.5	2.0
N 838 KN.29DC-B	34	100	0.5	2.0
N 838 KNE	34	100	0.5	2.3

N 815 KNDC | N 815 KTDC

Performance data

Type	Delivery at atm. pressure (l/min) ¹⁾	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 815 KNDC	16	-	100
N 815 KTDC	15	-	160

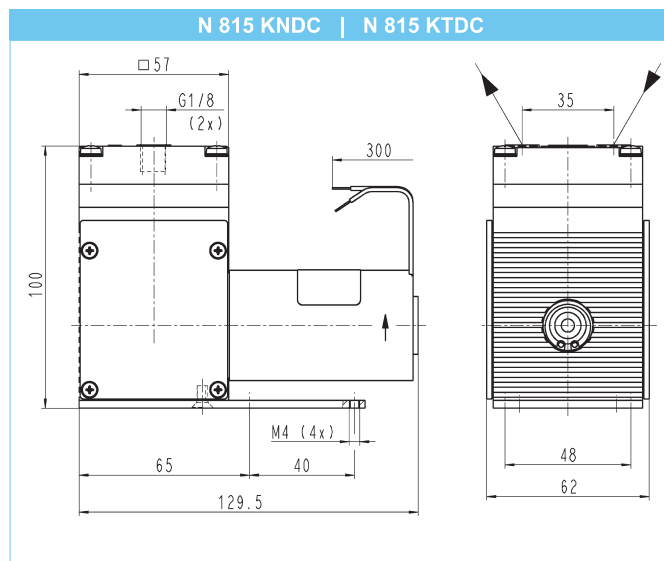
¹⁾ Liter at STP

Motor data

Voltage	12 V	24 V
I _{max} (A)	1.8	0.9

Pump material

Type	Pump head	Diaphragm	Valves
N 815 KNDC	PPS	CR	EPDM
N 815 KTDC	PPS	PTFE-coated	FFPM



N 815 KNE | N 815 KTE

Performance data

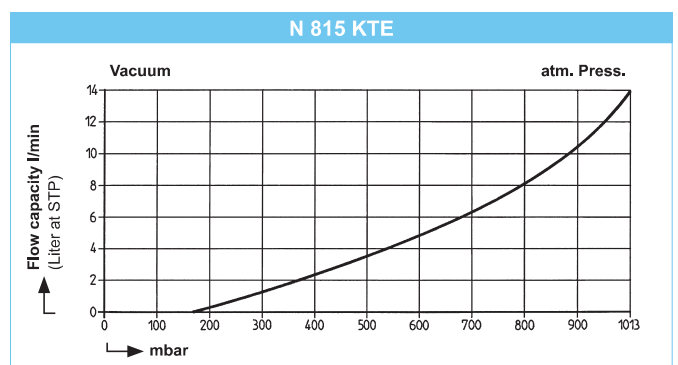
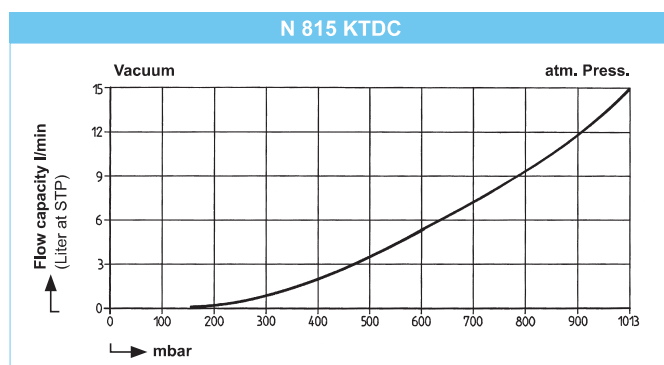
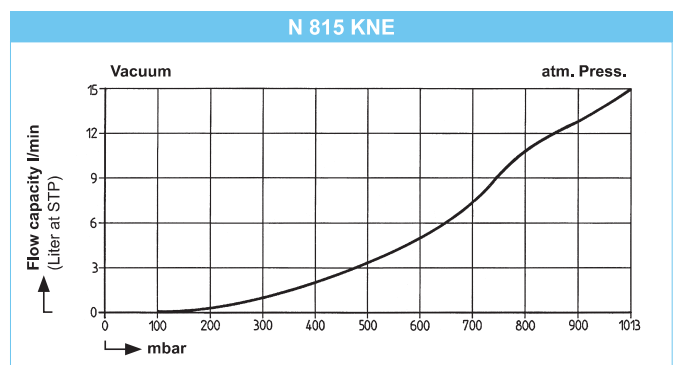
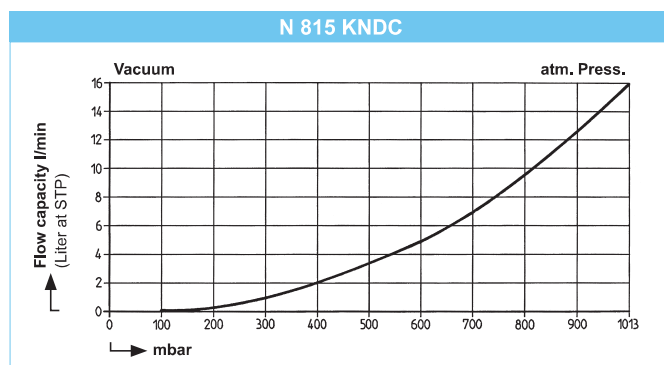
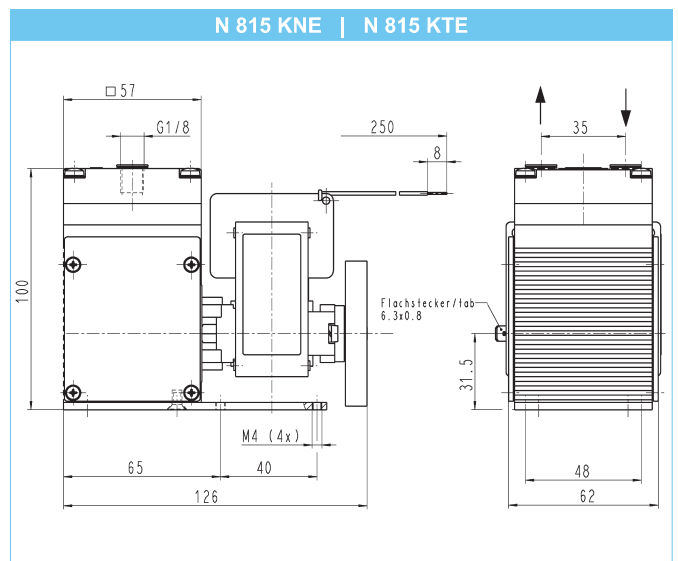
Type	Delivery at atm. pressure (l/min) ¹⁾	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 815 KNE	15	-	100
N 815 KTE	14	-	160

Motor data

Protection class	IP 00
Voltage (V)	230
Frequencies (Hz)	50
Power P ₁ (W)	50
I _{max} (A)	0.55

Pump material

Type	Pump head	Diaphragm	Valves
N 815 KNE	PPS	CR	EPDM
N 815 KTE	PPS	PTFE-coated	FFPM



N 828 KN_ _ _ | N 828 ANDC

Performance data

Type	Delivery at atm. pressure (l/min) ¹⁾	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 828 KNDC	27	1	100
N 828 ANDC	27	1	100
N 828 KNDC-B	28	1	100
N 828 KN.29DC-B	6-28	1	100

¹⁾ Liter at STP

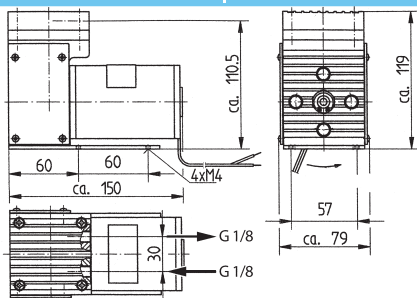
Motor data

Voltage	12 V	24 V	24 V (DC-B)
Protection class			IP 20
Power P ₁ (W)			58
I _{max} (A)	3.2	1.7	2.4

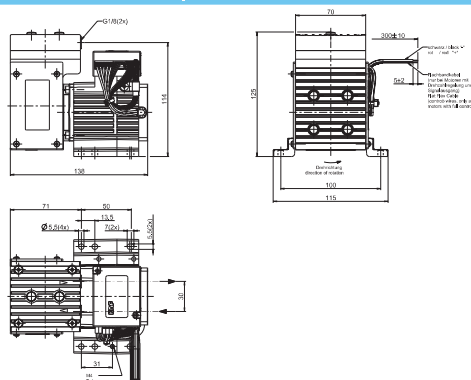
Pump material

Type	Pump head	Diaphragm	Valve plates/sealings
N 828 KN...	PPS	EPDM	FPM
N 828 ANDC	Aluminum	EPDM	FPM

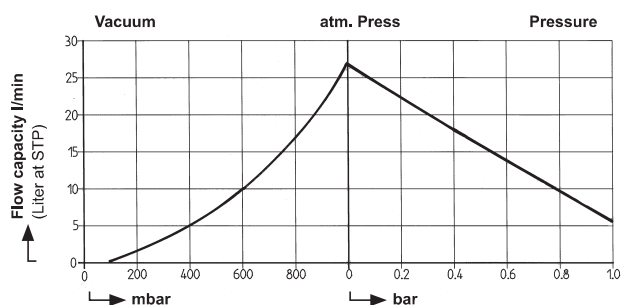
N 828 KNDC | N 828 ANDC



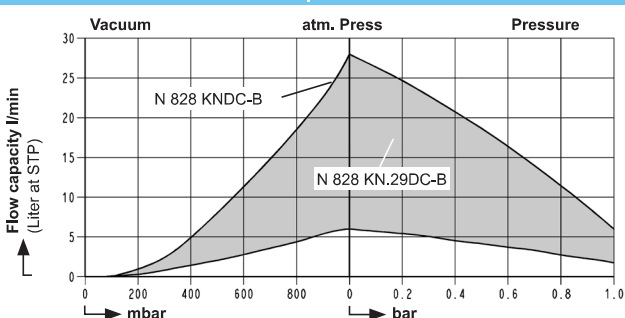
N 828 KNDC-B | N 828 KN.29DC-B



N 828 KNDC | N 828 ANDC



N 828 KNDC-B | N 828 KN.29DC-B



N 828 KNE | N 828 ANE

Performance data

Type	Delivery at atm. pressure (l/min) ¹⁾	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 828 KNE	28	1	100
N 828 ANE	28	1	100

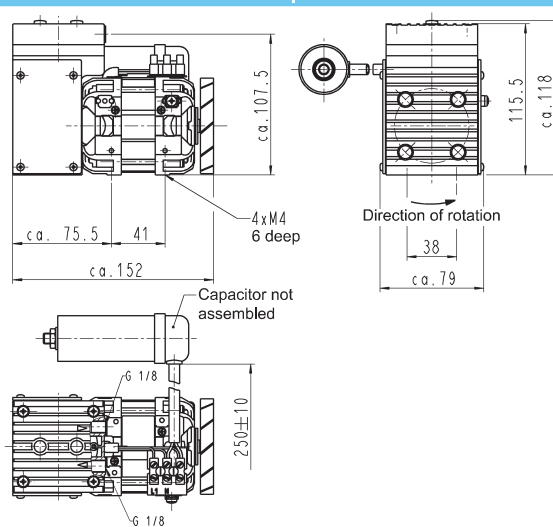
Motor data

Protection class	IP 00
Voltage (V)	230
Frequencies (Hz)	50
Power P ₁ (W)	100
I _{max} (A)	0.6

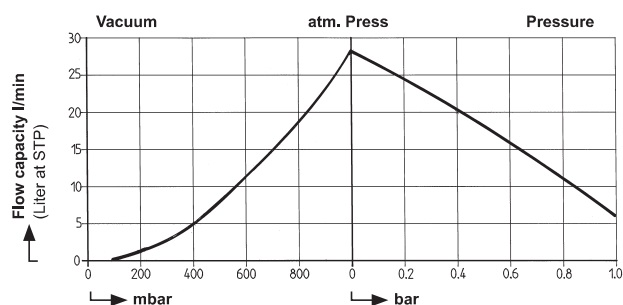
Pump material

Type	Pump head	Diaphragm	Valve plates/sealings
N 828 KNE	PPS	EPDM	FPM
N 828 ANE	Aluminum	EPDM	FPM

N 828 KNE | N 828 ANE



N 828 KNE | N 828 ANE



N 838 KN_ _ _ | N 838 ANDC

Performance data

Type	Delivery at atm. pressure (l/min) ¹⁾	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 838 KNDC	32	0.5	100
N 838 ANDC	32	0.5	100
N 838 KNDC-B	34	0.5	100
N 838 KN.29DC-B	8.5-34	0.5	100

¹⁾ Liter at STP

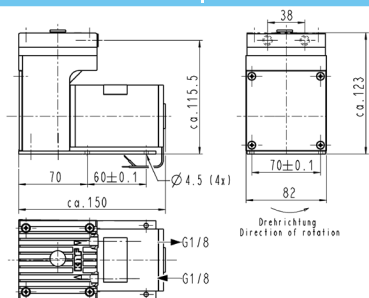
Motor data

Voltage	12 V	24 V	24 V (DC-B)
Protection class			IP 20
Power P ₁ (W)			58
I _{max} (A)	3.7	1.9	2.4

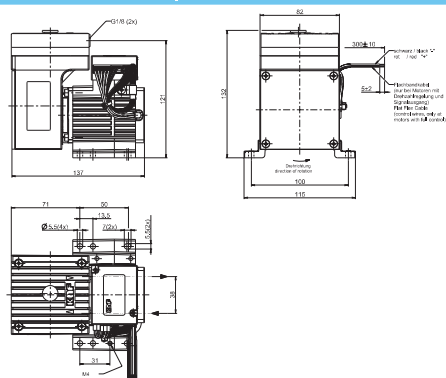
Pump material

Type	Pump head	Diaphragm	Valve plates/ sealings
N 838 KN...	PPS	EPDM	FPM
N 838 ANDC	Aluminum	EPDM	FPM

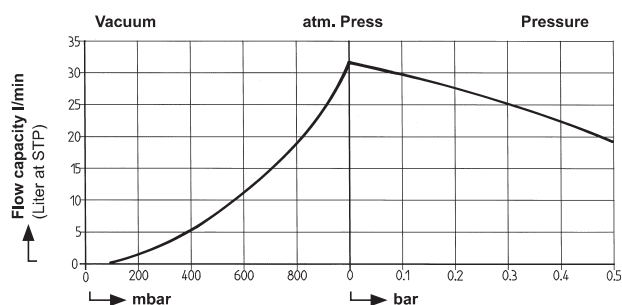
N 838 KNDC | N 838 ANDC



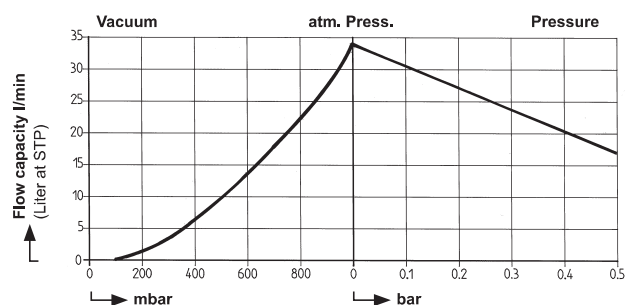
N 838 KNDC-B | N 838 KN.29DC-B



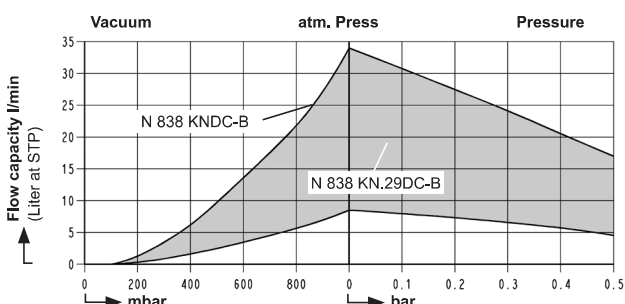
N 838 KNDC | N 838 ANDC



N 838 KNE | N 838 ANE



N 838 KNDC-B | N 838 KN.29DC-B



Performance data

Type	Delivery at atm. pressure (l/min) ¹⁾	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 838 KNE	34	0.5	100
N 838 ANE	34	0.5	100

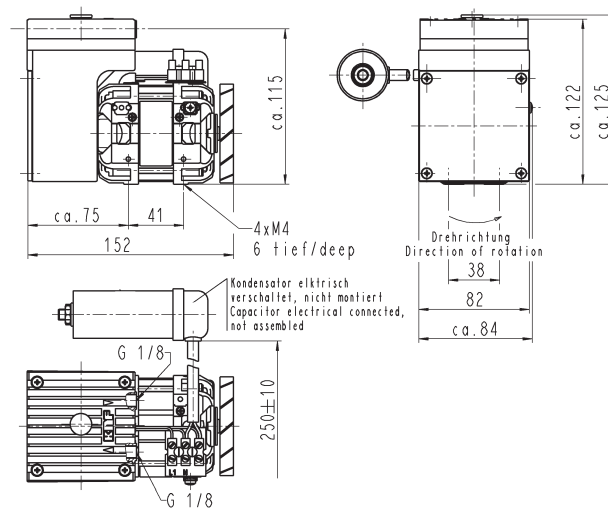
Motor data

Protection class	IP 00
Voltage (V)	230
Frequencies (Hz)	50
Power P ₁ (W)	100
I _{max} (A)	0.6

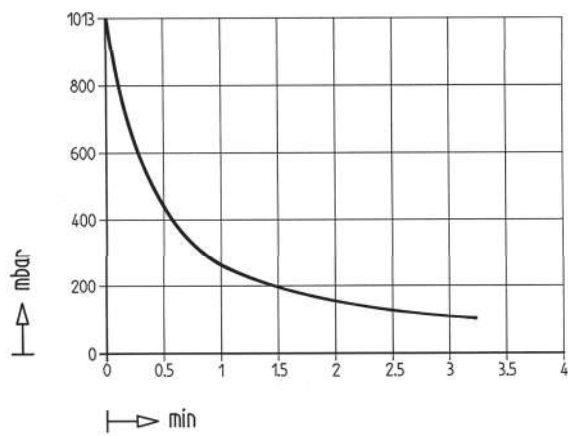
Pump material

Type	Pump head	Diaphragm	Valve plates/ sealings
N 838 KNE	PPS	EPDM	FPM
N 838 ANE	Aluminum	EPDM	FPM

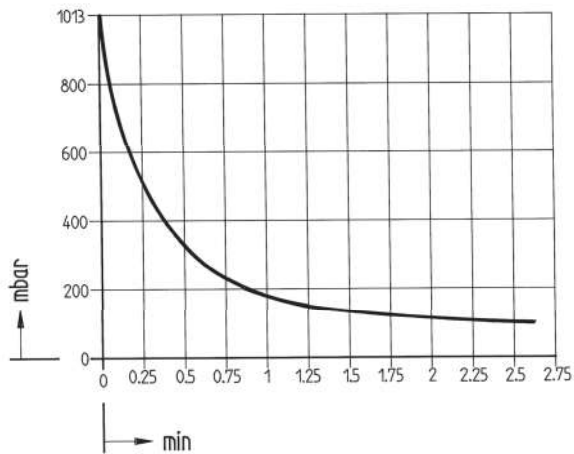
N 838 KNE | N 838 ANE



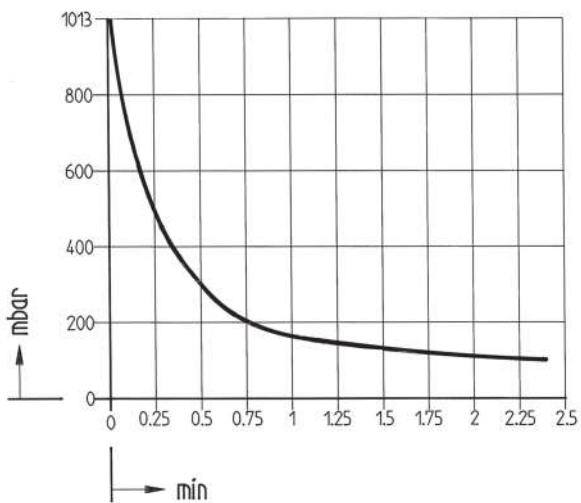
Pump down time 5 l receiver | N 815 KNE



Pump down time 10 l receiver | N 828 KNE | N 828 ANE



Pump down time 10 l receiver | N 838 KNE | N 838 ANE

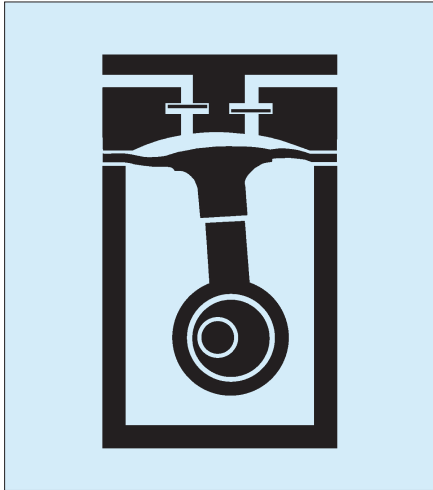


Accessories		
Description	Order No.	Details
Filter/Silencer	000346	G 1/8 (N 815)
Filter/Silencer	007006	G 1/8
Hose connector	000360	G 1/8 / PA
Hose connector	014052	G 1/8 / PVDF

HINTS ON FUNCTION, INSTALLATION AND TECHNIQUE

Function of KNF diaphragm gas sampling pumps

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.
- 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.
- 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.
- 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.

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