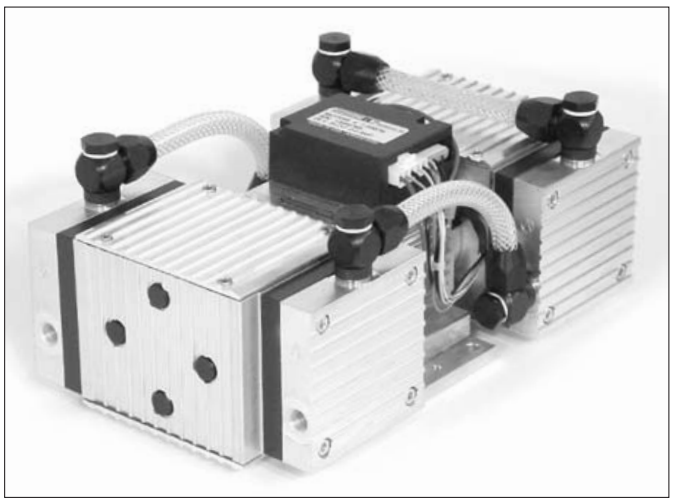
Diaphragm Pumps for Air, Gases and Vapours

INNOVATIVE TECHNOLOGY WORLDWIDE



Series N 813._AN_ _ Pumps

Diaphragm Vacuum Pumps

TECHNICAL FEATURES:

- Uncontaminated flow
- No contamination of the media due to oil-free operation
- Quiet and little vibration
- Maintenance-free
- High pneumatic performance because of structured diaphragm
- Low aerodynamic loss by means of a new valve system
- High level of gas tightness thanks to the closed diaphragm surface and special sealing system
- Can operate in any installed position

CONCEPT

The Diaphragm Vacuum 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 substance is transferred using automatic valves.

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

Thanks to the KNF modular system, the parts used to tranfer 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 brushless dc models. Please contact us for further details.

AREAS OF USE

The 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, e.g. as roughing pump for turbomolecular pumps.

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

For the version with brushless DC motor the following also apply:

- No sparks
- Safe and reliable constant use
- Particulary long durability

PERFORMANCE DATA

Type*	Delivery (l/min)	Vacuum (mbar absolute)	atm. Press.	Pressure (bar g)	Weight (kg)
N 813.3 ANE/DC B	13	3		1	5.9/2.34
N 813.4 ANE/DC B	13	0.5		1	7.5/3.83
N 813.5 ANE	19	1		1	7.5

* E = OEM pump with ac motor, DC B = with brushless dc motor

ACCESSORIES

Description	Order No.	Details
Silencer	000346	G 1/8
Hose connector	005148	G 1/8
Small flange	042191	G 1/8, DN 10
Gasket	026906	for G 1/8

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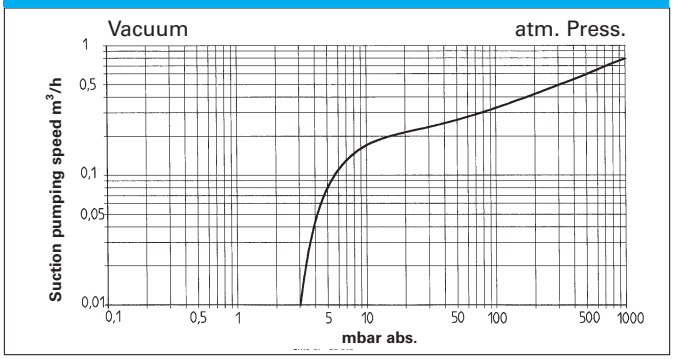
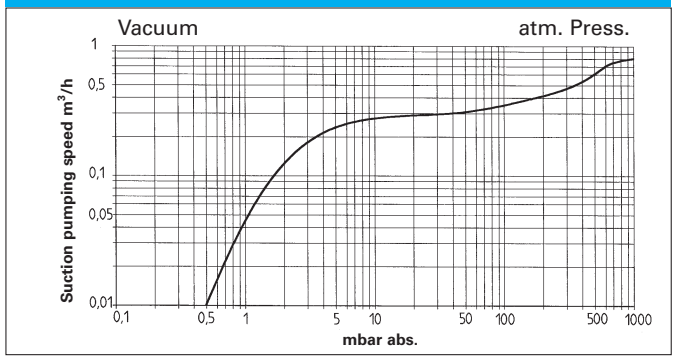
KNF NEUBERGER

N 813.3 ANE / N 813.3 ANDC B *



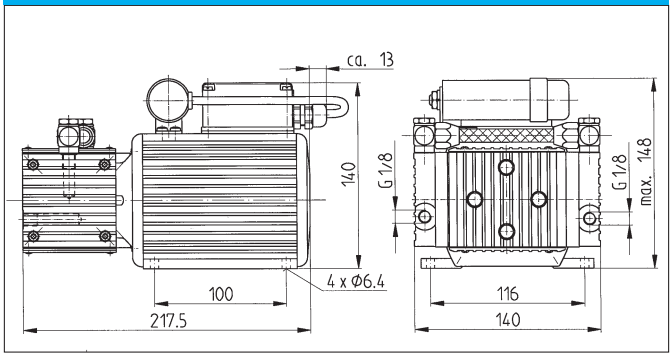
N 813.4 ANE / N 813.4 ANDC B *



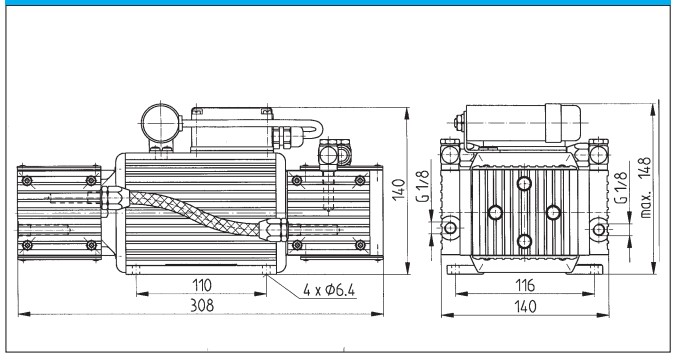
* with brushless dc motor

Dimensions in mm (All dimensional tolerances conform to DIN ISO 2768-1, Tolerance Class V)

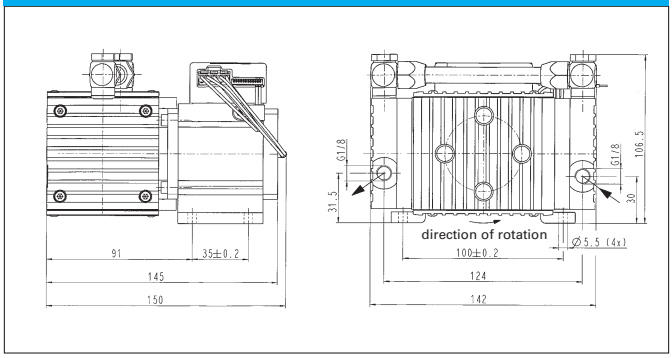
N 813.3 ANE



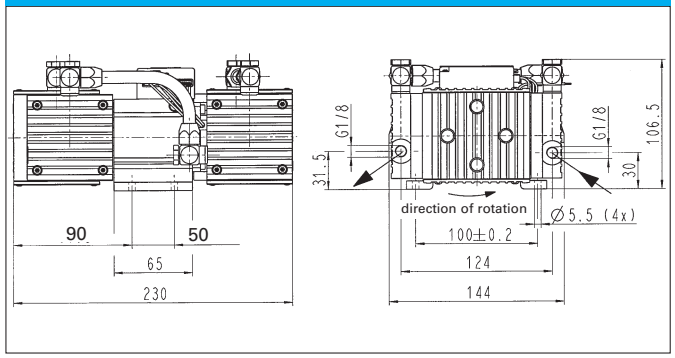
N 813.4 ANE



N 813.3 ANDC B (with brushless dc motor)



N 813.4 ANDC B (with brushless dc motor)



PERFORMANCE DATA

Type and Order No.[2]	Delivery at atm. pressure (l/min)[1]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 813.3 ANE ①	13	1	3
N 813.3 ANDC B ②	13	1	3

[1] Litre at STP

MOTOR DATA

Protection class	① **IP 44**	② **IP 20**	
Voltage/Frequencies (V/Hz)	~230/50	24 V DC	
Power P_1 (W)	50	75	
Operating current (A)	0.4	1.4	

MODEL CODES AND MATERIALS

Type	Pump head	Diaphragm	Valves
N 813.3 AN...	Aluminium	EPDM	EPDM

[2] See also „MODEL CODE FOR EASY ORDERING“

PERFORMANCE DATA

Type and Order No.[2]	Delivery at atm. pressure (l/min)[1]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 813.4 ANE ①	13	1	0.5
N 813.4 ANDC B ②	13	1	0.5

[1] Litre at STP

MOTOR DATA

Protection class	① **IP 44**	② **IP 20**	
Voltage/Frequencies (V/Hz)	~230/50	24 V DC	
Power P_1 (W)	80	105	
Operating current (A)	0.5	2.0	

MODEL CODES AND MATERIALS

Type	Pump head	Diaphragm	Valves
N 813.4 AN...	Aluminium	EPDM	EPDM

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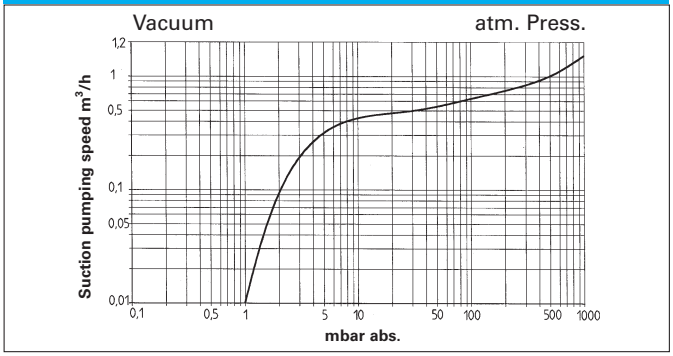
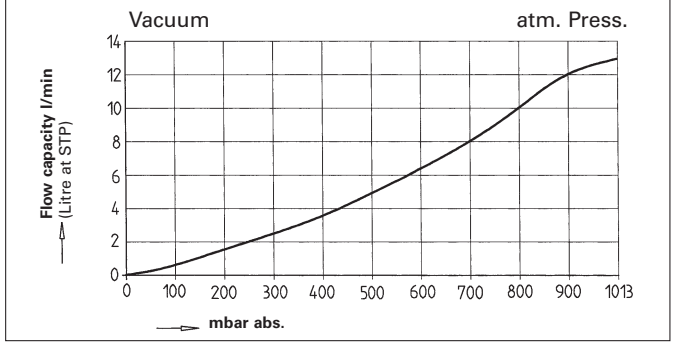
KNF NEUBERGER

N 813.5 ANE

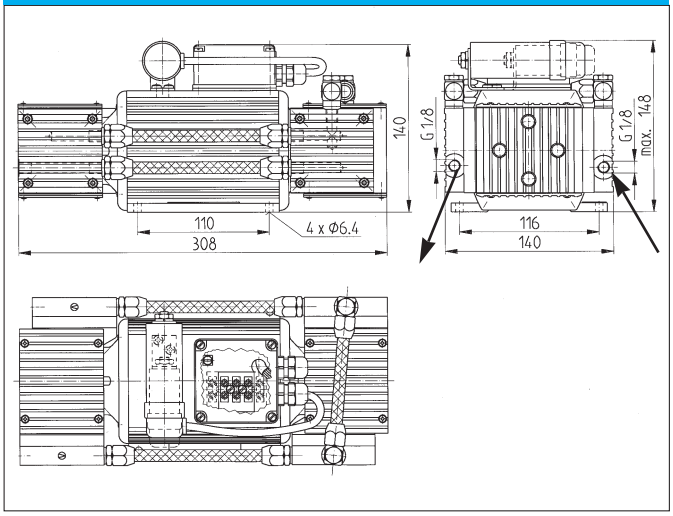


N 813.3 ANE / N 813.3 ANDC B

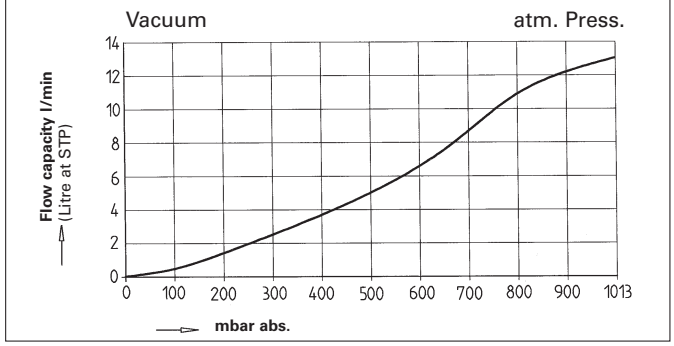


Dimensions in mm
(All dimensional tolerances conform to DIN ISO 2768-1, Tolerance Class V)

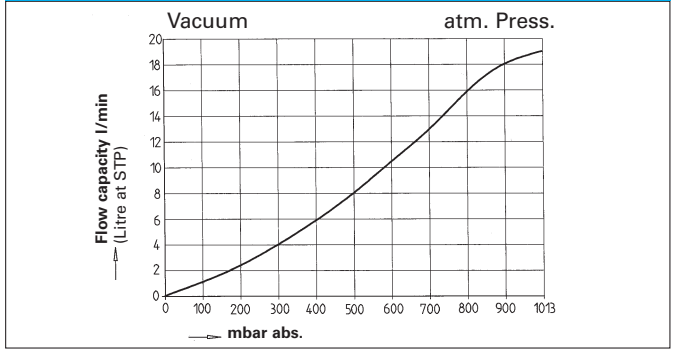
N 813.5 ANE



N 813.4 ANE / N 813.4 ANDC B



N 813.5 ANE



PERFORMANCE DATA

Type and Order No.[2]	Delivery at atm. pressure (l/min)[1]	Max. operating pressure (bar g)[3]	Ultimate vacuum (mbar abs.)
N 813.5 ANE	19	1	1

[1] Litre at STP

MOTOR DATA

Protection class	**IP 44**		
Voltage/Frequencies (V/Hz)	~230/50		
Power P_1 (W)	80		
Operating current (A)	0.5		

MODEL CODES AND MATERIALS

Type and Order No.[2]	Pump head	Diaphragm	Valves
N 813.5 ANE	Aluminium	EPDM	EPDM

[2] See also „MODEL CODE FOR EASY ORDERING“

Diaphragm Pumps for Air, Gases and Vapours

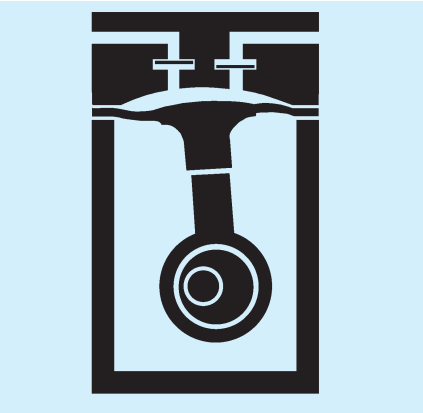
INNOVATIVE TECHNOLOGY WORLDWIDE

HINTS ON FUNCTION, INSTALLATION 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



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
- These pumps are not suitable for aggressive gases and vapours. In these cases there are other products in the KNF program - please ask us for details
- 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 designed to start against vacuum. Pumps that start against pressure are available on request
- 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
- 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

MODEL CODE FOR EASY ORDERING

The model code is identical to the order number. It is set up as follows:

N 813	.3	AN	E	230 V/50 Hz, IP 44

- Base model
- Connection
- Materials
- OEM versions with ac motor
- Other motor data, e.g.:

In addition the motor data must be given in the purchase order (voltage, frequency, and protection class). In our extensive program you can be sure to find the pump you need for your particular application.

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).

PUMP DOWN TIME FOR 20 l RECEIVER