INNOVATIVE
TECHNOLOGY
WORLDWIDE

NEUBERGER

DIAPHRAGM VACUUM PUMPS AND COMPRESSORS

DATA SHEET E 025

N 023 ANE

N 023.1.2 ANE.30 E, very quiet version

N 823.3 with structured diaphragm

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 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. Please contact us for further details.

N 823.3: The pump is 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.

Features

Uncontaminated flow
No contamination of the media due to oil-free operation

Maintenance-free

Very quiet and little vibration

High level of gas tightness

Long product life

High performance

Cool running motor
even when in constant use

Can operate in any installed position

KNF SUPERFLOW
A diaphragm pump with minimum size and high performance.

KNF SUPERSIL
A specially quiet version for noise sensitive areas (noise level is below 49 dB[A]).

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 medicine, analysis and production technology.

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

PERFORMANCE DATA

Type	Delivery (l/min)	Vacuum (mbar absolute)	atm. Press.	Pressure (bar g)	Weight (kg)
N 023 ANE	23	213		2	3.2
N 023.1 ANE	39	213			4.6
N 023.2 ANE	39			2	4.6
N 023.1.2 ANE	39	213		2	4.6
N 023.3 ANE	23	52		1	4.6
N 823.3 ANE	24	10		1	5.1

N 023 ANE/N 023 AN.30E

PERFORMANCE DATA

Type and Order No. [1]	Delivery at atm. pressure (l/min) [2]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 023 ANE (Superflow)	23	2	213
N 023 AN.30 E (Supersil)	23	2	213

[2] Litre at STP

MOTOR DATA

Protection class	IP 20		
Voltage/Frequencies (V/Hz)	~230/50		
Power P_1 (W)	60		
Operating current (A)	0.45		

MODEL CODES AND MATERIALS

Type and Order No. [1]	Pump head	Diaphragm	Valves
N 023 ANE	Aluminium	Neopren (CR)	Neopren (CR)
N 023 AN.30E	Aluminium	Neopren (CR)	Neopren (CR)

[1] See also „MODEL CODES FOR EASY ORDERING“

N 023.1 ANE/N 023.1 AN.30E

PERFORMANCE DATA

Type and Order No. [1]	Delivery at atm. pressure (l/min) [2]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 023.1 ANE (Superflow)	39	-	213
N 023.1 AN.30E (Supersil)	39	-	213

[2] Litre at STP

MOTOR DATA

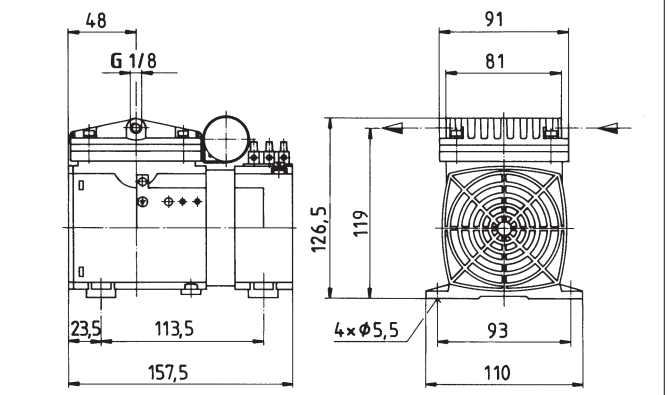
Protection class	IP 20		
Voltage/Frequencies (V/Hz)	~230/50		
Power P_1 (W)	90		
Operating current (A)	0.6		

MODEL CODES AND MATERIALS

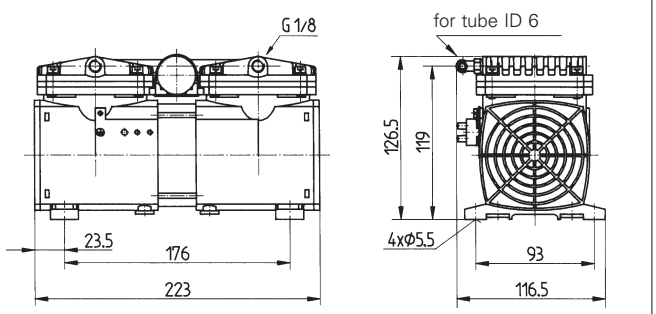
Type and Order No. [1]	Pump head	Diaphragm	Valves
N 023.1 ANE	Aluminium	Neopren (CR)	Neopren (CR)
N 023.1 AN.30E	Aluminium	Neopren (CR)	Neopren (CR)

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

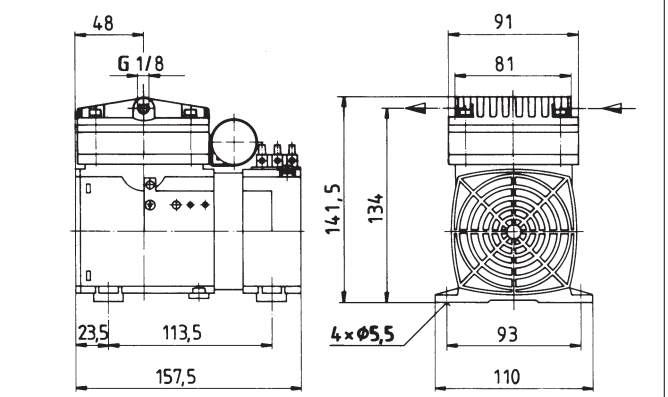
N 023 ANE



N 023.1 ANE



N 023 AN.30E



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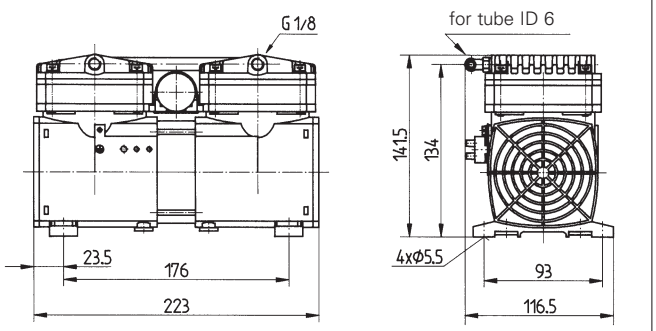
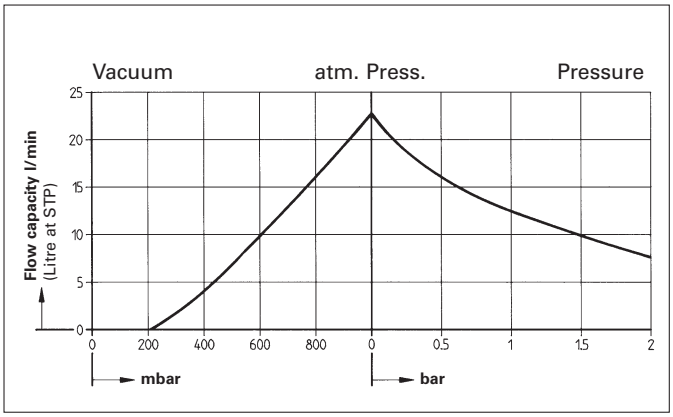
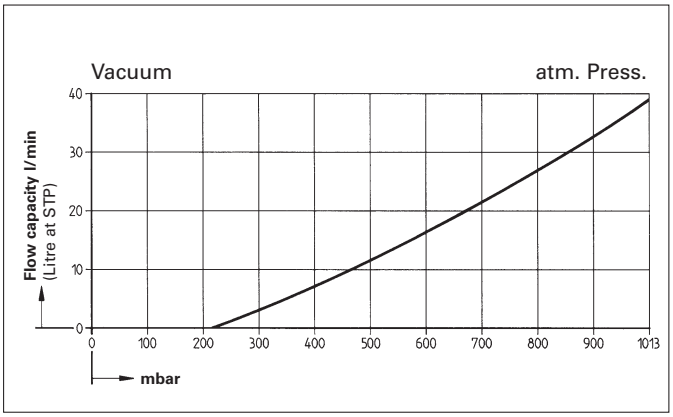






N 023.2 ANE/N 023.2 AN.30E

PERFORMANCE DATA

Type and Order No. [1]	Delivery at atm. pressure (l/min) [2]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 023.2 ANE (Superflow)	39	2	-
N 023.2 AN.30E (Supersil)	39	2	-

[2] Litre at STP

MOTOR DATA

Protection class	IP 20		
Voltage/Frequencies (V/Hz)	~230/50		
Power P_1 (W)	90		
Operating current (A)	0.6		

MODEL CODES AND MATERIALS

Type and Order No. [1]	Pump head	Diaphragm	Valves
N 023.2 ANE	Aluminium	Neopren (CR)	Neopren (CR)
N 023.2 AN.30E	Aluminium	Neopren (CR)	Neopren (CR)

[1] See also „MODEL CODES FOR EASY ORDERING“

N 023.1.2 ANE/N 023.1.2 AN.30E

PERFORMANCE DATA

Type and Order No. [1]	Delivery at atm. pressure (l/min) [2]	Max. operating überdruck (bar g)	Ultimate vacuum (mbar abs.)
N 023.1.2 ANE (Superflow)	39	2	213
N 023.1.2 AN.30E (Supersil)	39	2	213

[2] Litre at STP

MOTOR DATA

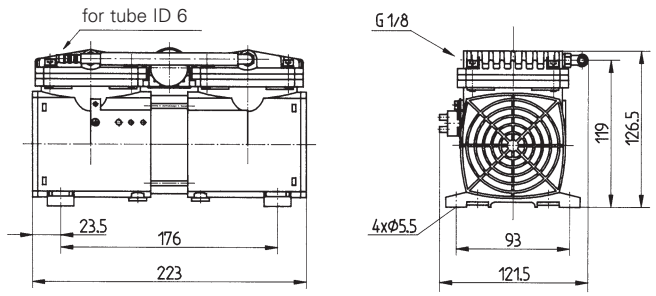
Protection class	IP 20		
Voltage/Frequencies (V/Hz)	~230/50		
Power P_1 (W)	90		
Operating current (A)	0.6		

MODEL CODES AND MATERIALS

Type and Order No. [1]	Pump head	Diaphragm	Valves
N 023.1.2 ANE	Aluminium	Neopren (CR)	Neopren (CR)
N 023.1.2 AN.30E	Aluminium	Neopren (CR)	Neopren (CR)

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

N 023.2 ANE



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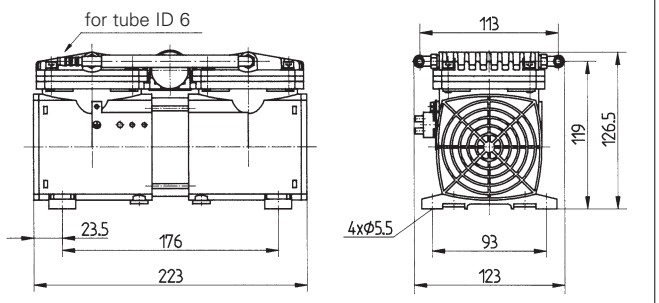

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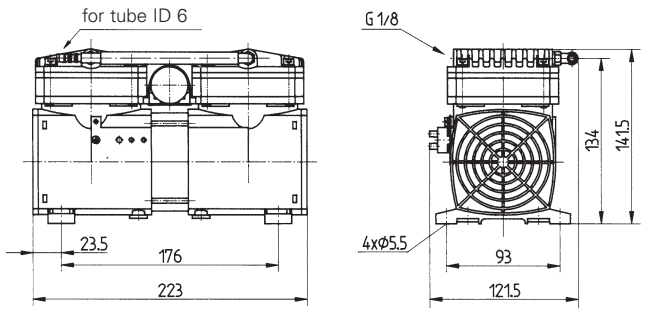

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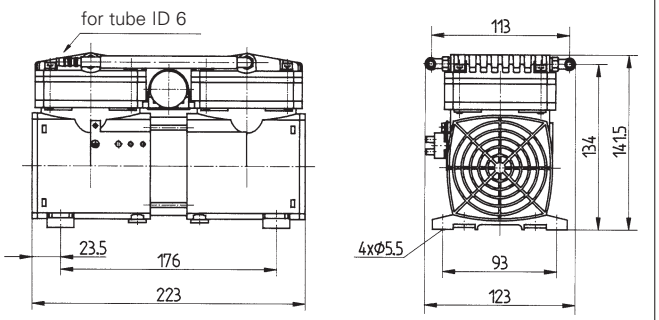
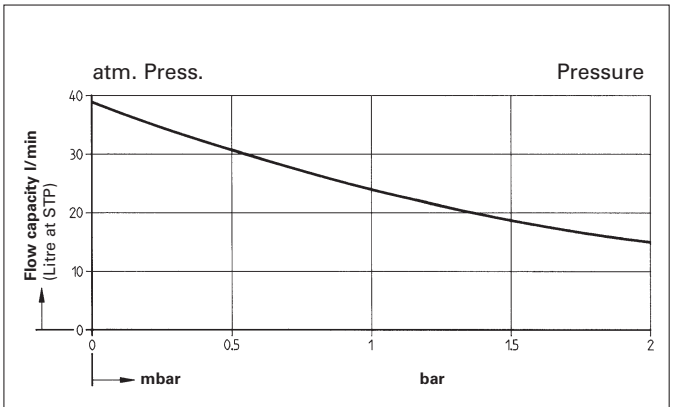
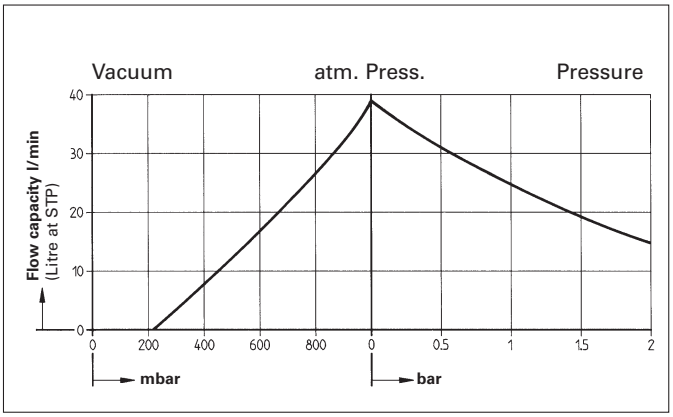






N 023.3 ANE/N 023.3 AN.30E

PERFORMANCE DATA

Type and Order No. [1]	Delivery at atm. pressure (l/min) [2]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 023.3 ANE (Superflow)	23	1	52
N 023.3 AN.30E (Supersil)	23	1	52

[2] Litre at STP

MOTOR DATA

Protection class	IP 20		
Voltage/Frequencies (V/Hz)	~230/50		
Power P_1 (W)	90		
Operating current (A)	0.6		

MODEL CODES AND MATERIALS

Type and Order No. [1]	Pump head	Diaphragm	Valves
N 023.3 ANE	Aluminium	Neopren (CR)	Neopren (CR)
N 023.3 AN.30E	Aluminium	Neopren (CR)	Neopren (CR)

[1] See also „MODEL CODES FOR EASY ORDERING“

N 823.3 _ _E with structured diaphragm

PERFORMANCE DATA

Type and Order No. [1]	Delivery at atm. pressure (l/min) [2]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 823.3 ANE	24	1	10
N 823.3 ATE	24	1	12

[2] Litre at STP

MOTOR DATA

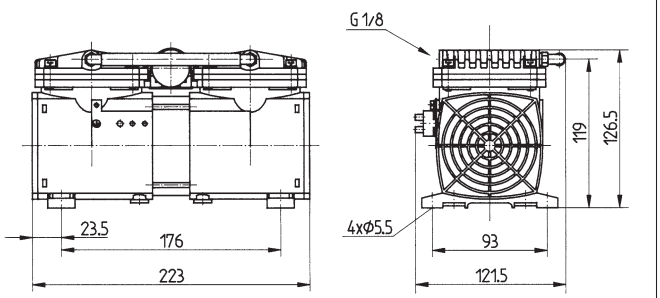
Protection class	IP 20		
Voltage/Frequencies (V/Hz)	~230/50		
Power P_1 (W)	125		
Operating current (A)	0.65		

MODEL CODES AND MATERIALS

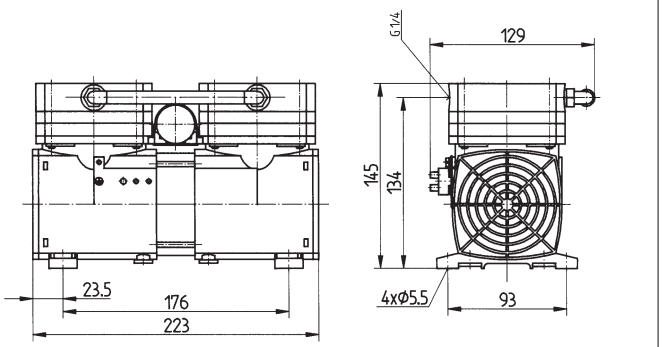
Type and Order No. [1]	Pump head	Diaphragm	Valves
N 823.3 ANE	Aluminium	Neopren (CR)	Perbunan
For slightly aggressive and corrosive gases and vapours			
N 823.3 ATE	Aluminium	PTFE-coated	FFPM

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

N 023.3 ANE



N 823.3 _ _E



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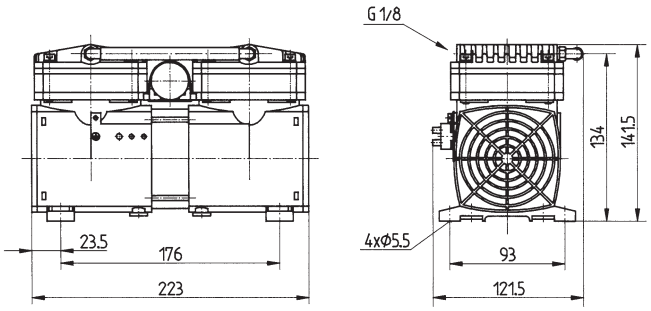

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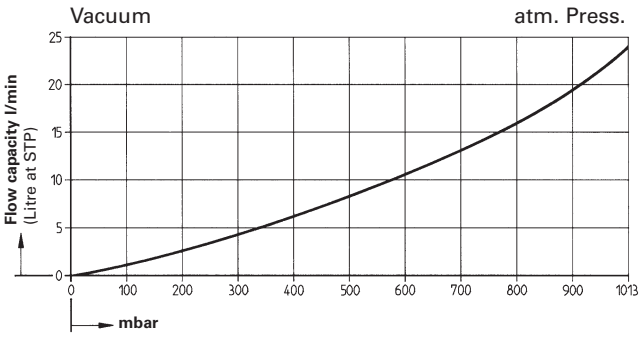
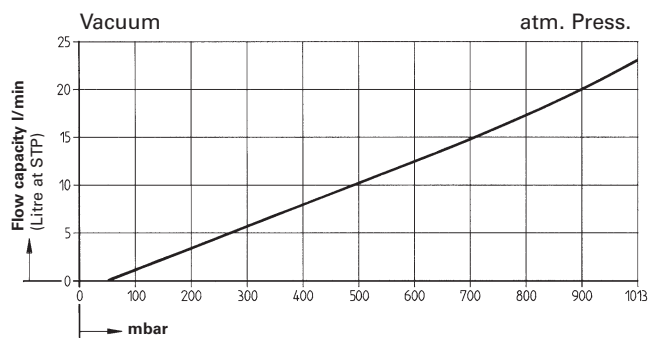
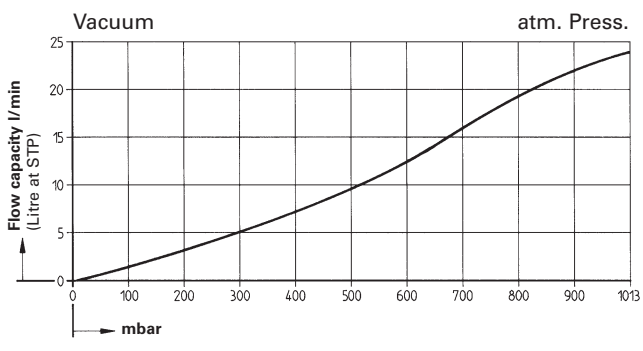
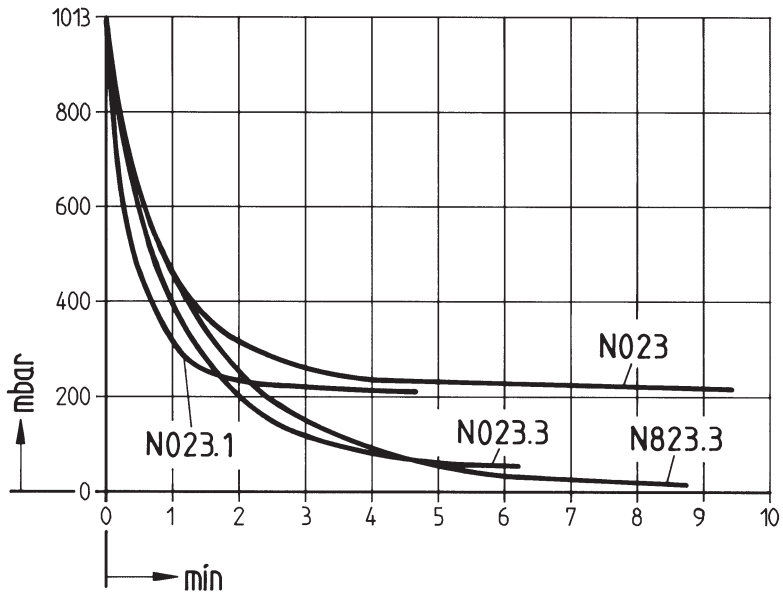




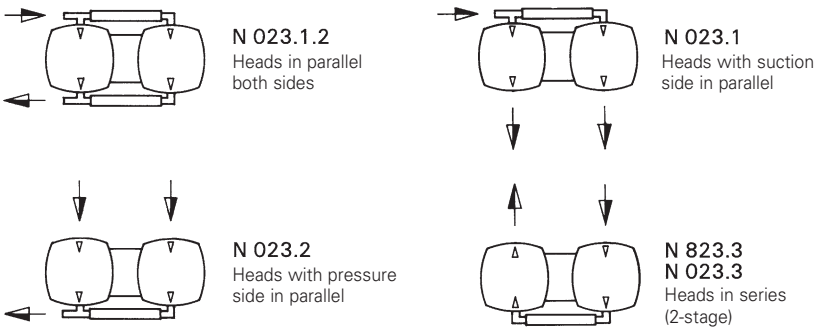
N 823.3 ATE



Pump down time for 20 l receiver



Head connections



Connections

Description	Order No.	Details
for N 023.1	017522	Polyamid/Perbunan
for N 023.2	017519	Polyamid/Perbunan
for N 023.3	018964	Polyamid/Perbunan
for N 823.3	025912	Polyamid/Perbunan

Accessories

Description	Order No.	Details
Filter/Silencer	000352	G 1/4 (for N 823..E)
Filter/Silencer	007006	G 1/8
Hose connector	004974	G 1/4 PA (for N 823..E)
Hose connector	000360	G 1/8 PA
Cover for terminal block	018819	3-pole
Cover for terminal block	018818	4-pole (for thermal switch)

MODEL CODE FOR EASY ORDERING

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

N 823	.3	AN	E	230 V/50 Hz, IP 54

- Base model
- Head connections
- Head materials
- OEM version with ac motor
- Other motor data eg.:

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

TECHNICAL DETAILS

Maximum permissible gas and ambient temperature: between +5°C and +40°C.

Pump head gas-tight:
leakage rate approx. 6 x 10^{-3} mbar l/s (not tested in serial production)

Motors with other voltages, frequencies and protection classes on request.

Hints on function, installation, and service: see back side

KNF - the competent partner for vacuum and compressor technology. Especially for unusual problems. Call us and talk to our application engineers.

KNF Neuberger GmbH
Diaphragm Pumps + Systems
Alter Weg 3
D 79112 Freiburg
Tel. ++49 (0)7664/5909-0
Fax ++49 (0)7664/5909-99
E-mail: info@knf.de
www.knf.de

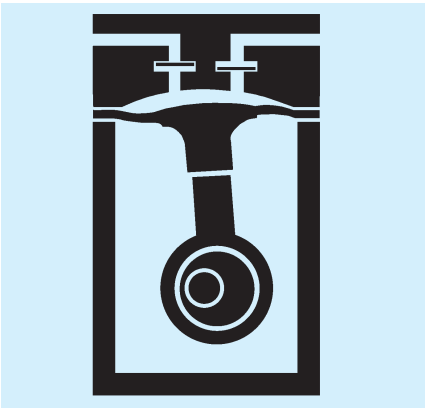
 O 1/2004 Printed in Germany

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 OPERATION 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
- Use chemically resistant version for aggressive gases and vapours
- 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

HINTS ON SERVICE

The diaphragm and valves 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).

KNF Neuberger GmbH
Diaphragm Pumps + Systems
Alter Weg 3
D 79112 Freiburg
Tel. ++49 (0)7664/5909-0
Fax ++49 (0)7664/5909-99
www.knf.de
E-mail: info@knf.de