DIAPHRAGM VACUUM PUMPS AND COMPRESSORS

DATA SHEET E 030

N 145 ANE

N 145.2 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. Please contact us for further details.

Features

Pure transfer, evacuation and compression of air, gases and vapours
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 compact construction style, as well as an excellent price performance ratio. They are required especially in the fields of analysis, chemicals, 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 abs.)	atm. Press.	Pressure (bar g)	Weight (kg)
N 145 ANE	30	100		7	12
N 145.2 ANE	55			7	15

N 145 ...

PERFORMANCE DATA

Type and Order No. [2]	Delivery at atm. pressure (l/min) [1]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 145 ANE	30	7	100
N 145 AVE	30	5	100
N 145 ATE	27	7	100
N 145 SNE	30	7	100
N 145 SVE	30	5	100
N 145 STE	27	7	100

[1] Litre at STP

MOTOR DATA

Protection class	IP 44		
Voltage/Frequencies (V/Hz)	~230/50		
Power P_1 (W)	320		
Operating current (A)	2,1		

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

MODEL CODES AND MATERIALS

Type and Order No. [2]	**Pump head**	**Diaphragm**	**Valves**
N 145 ANE	Aluminium	Neoprene	Stainless steel
For slightly aggressive and corrosive gases and vapours			
N 145 AVE	Aluminium	Viton	Stainless steel
N 145 ATE	Aluminium	PTFE-coated	Stainless steel
N 145 SNE	Stainless steel	Neoprene	Neoprene
N 145 SVE	Stainless steel	Viton	Viton
N 145 STE	Stainless steel	PTFE-coated	PTFE

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

N 145.2 ...

PERFORMANCE DATA

Type and Order No. [2]	Delivery at atm. pressure (l/min) [1]	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 145.2 ANE	55	7	-
N 145.2 AVE	55	5	-
N 145.2 ATE	49,5	7	-
N 145.2 SNE	55	7	-
N 145.2 SVE	55	5	-
N 145.2 STE	49,5	7	-

[1] Litre at STP

MOTOR DATA

Protection class	IP 44		
Voltage/Frequencies (V/Hz)	~230/50		
Power P_1 (W)	350		
Operating current (A)	2,1		

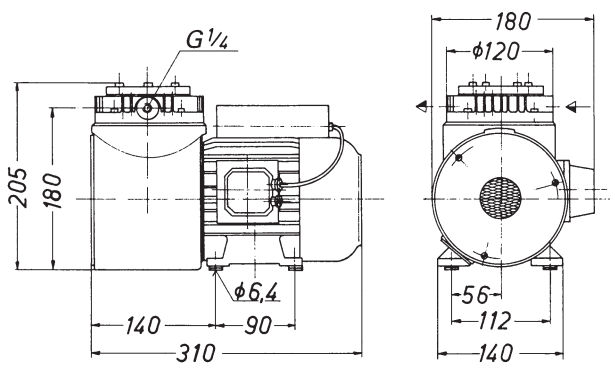
Motors with other voltages, frequencies and protection classes on request.

MODEL CODES AND MATERIALS

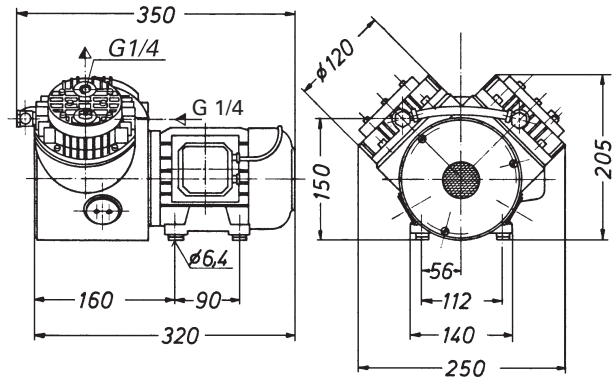
Type and Order No. [2]	**Pump head**	**Diaphragm**	**Valves**
N 145.2 ANE	Aluminium	Neoprene	Stainless steel
For slightly aggressive and corrosive gases and vapours			
N 145.2 AVE	Aluminium	Viton	Stainless steel
N 145.2 ATE	Aluminium	PTFE-coated	Stainless steel
N 145.2 SNE	Stainless steel	Neoprene	Neoprene
N 145.2 SVE	Stainless steel	Viton	Viton
N 145.2 STE	Stainless steel	PTFE-coated	PTFE

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

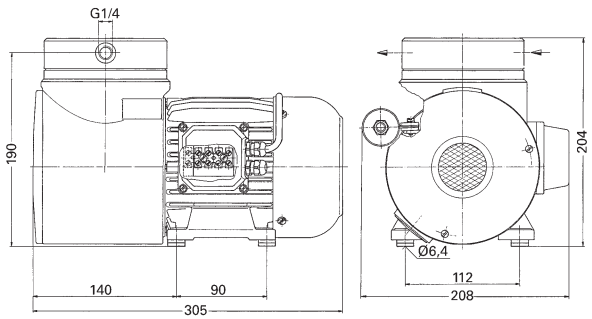
N 145 A_E



N 145.2 A_E



N 145 S_E



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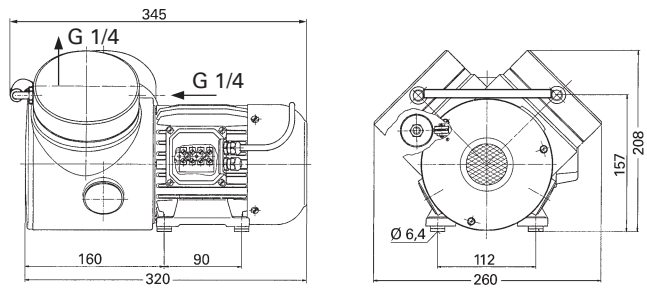

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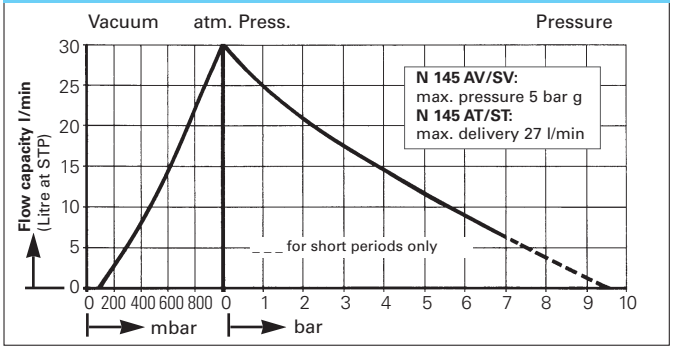

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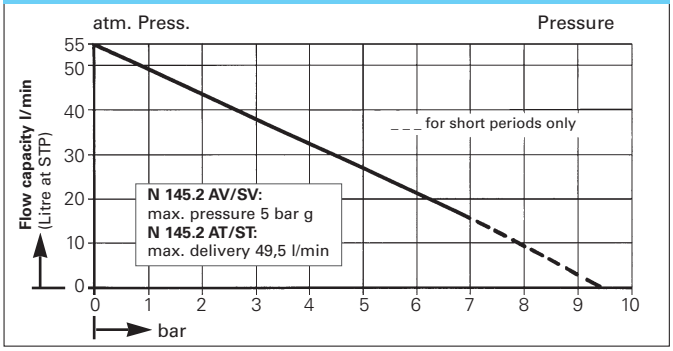
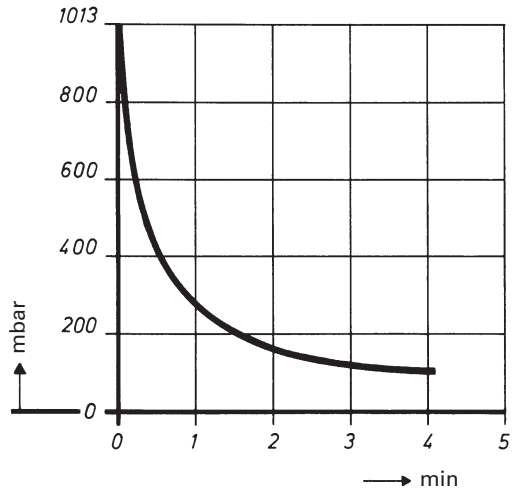
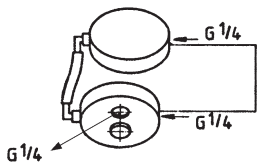


Pump down time for 20 l receiver

N 145 ANE

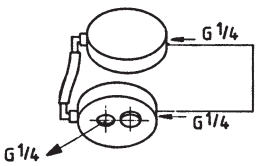


Head connections



N 145.2 A...E

.2
Heads with pressure side in parallel



N 145.2 S...E

Accessories

Description	Order No.	Details
Silencer/filter	000352	G 1/4
Fine control valve, pressure side	000356	with pressure gauge
Fine control valve, suction side	000354	with vacuum gauge
Pressure relief valve	047601	4 bar
Pressure relief valve	047602	7 bar
Hose connector	000362	G 1/4
Hose connector, stainless steel	020234	G 1/4

MODEL CODE FOR EASY ORDERING

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

N 145	.2	AN	E	230 V/50 Hz, IP 44

- Base model
- Head connections press. side in parallel
- 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.

Option N 145/145.2_ _.9
Pump head guaranteed gas-tight:
leakage rate less than 6 x 10^{-3} mbar x l/s in the material combinations AN, AV, SN, SV, ST.

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.

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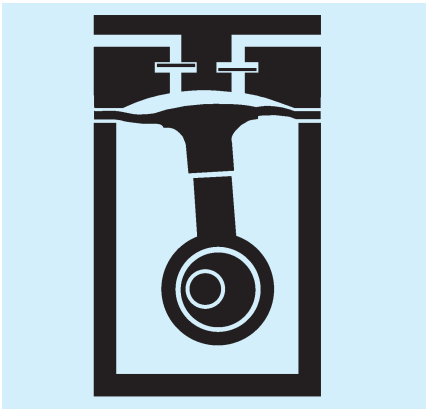
HINTS ON FUNCTION, INSTALLATION AND SERVICE

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
- 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).

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