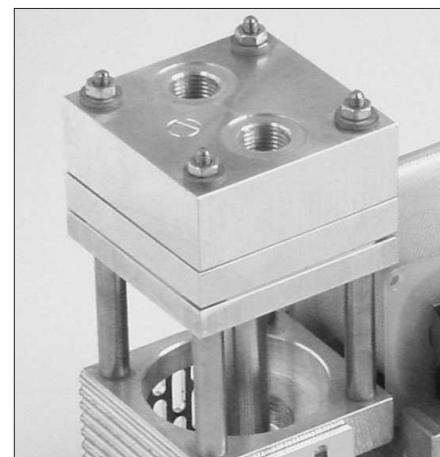
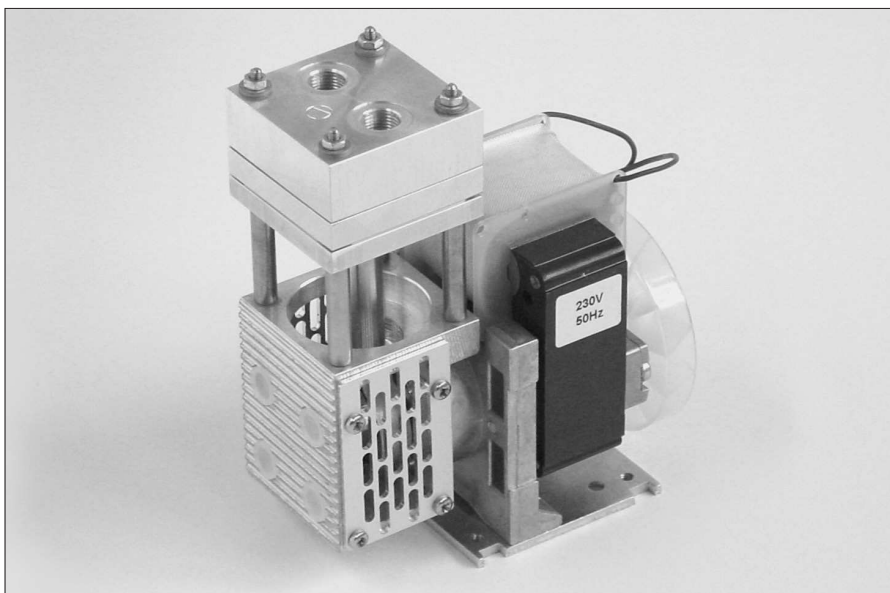


TEMPERATURE-RESISTANT MINI DIAPHRAGM GAS SAMPLING PUMPS

DATA SHEET E 074



Temperature-resistant diaphragm pump with raised pump head. With this design, there is little heat transfer to the pump housing when hot gases are pumped.

N 86 ST.16E

Concept

The temperature-resistant and heated 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.

This pump is a temperature-resistant version up to 240 °C without a heater (for diaphragm gas pumps with pump head heater, see data sheet E 076).

There is a choice of pump drives ranging from a selection of AC motors to explosion-proof models.

Features

Uncontaminated flow of the media (oil-free operation)

No maintenance required

Easy access to the pump head

Gas tight:

Leakage <math> < 6 \times 10^{-3} \text{ mbar x l/s}</math>

Areas of use

Diaphragm pumps have become the standard in many analytical applications. Based on their design, they work without any lubrication.

Often hot gases need to be analyzed, and the gas must not be allowed to cool down when it is transferred from the source being checked, to the analyzer as the constituent parts could condense out, leading to faulty results. To overcome these problems hot gases are pumped using diaphragm pumps with temperature-resistant pump head.

Performance data

| Type | Delivery (l/min) | Vacuum (mbar absolute) | atm. press. | Pressure (bar g) | Weight (kg) |
|-------------|------------------|------------------------|-------------|------------------|-------------|
| N 86 AT.16E | 6 | 290 | | 1.5 | 1.30 |
| N 86 ST.16E | 6 | 290 | | 1.5 | 1.52 |

Performance data

| Type | Delivery at atm. pressure (l/min) ¹⁾ | Max. operating pressure (bar g) | Ultimate vacuum (mbar abs.) |
|-------------|---|---------------------------------|-----------------------------|
| N 86 AT.16E | 6 | 1.5 | 290 |
| N 86 ST.16E | 6 | 1.5 | 290 |

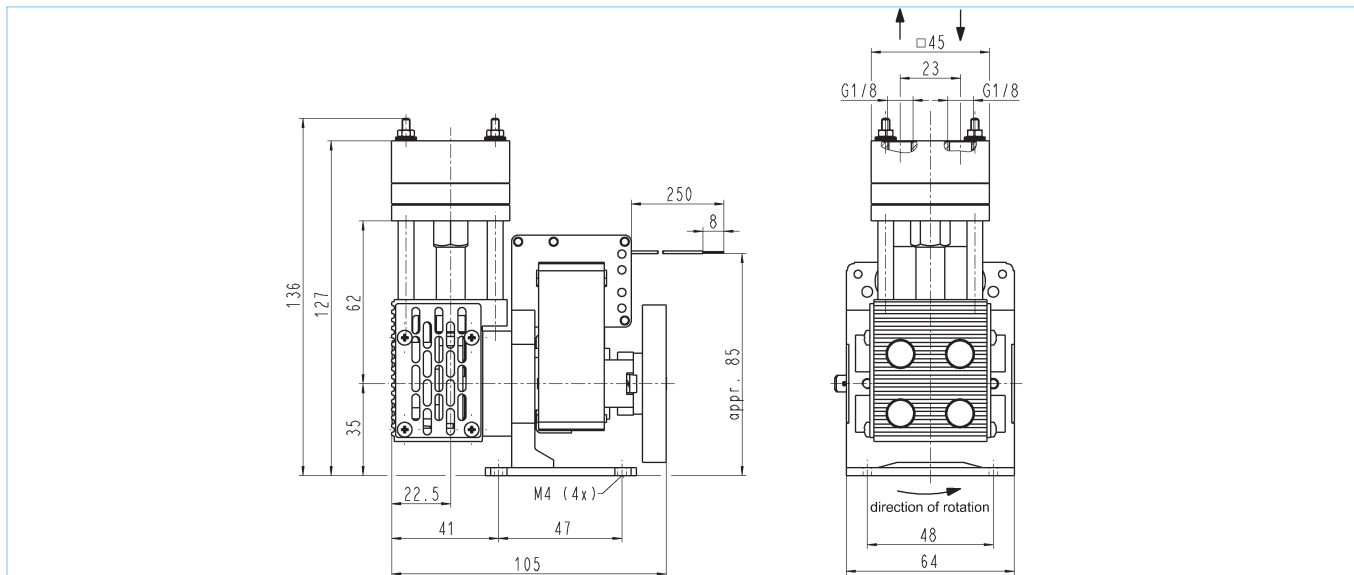
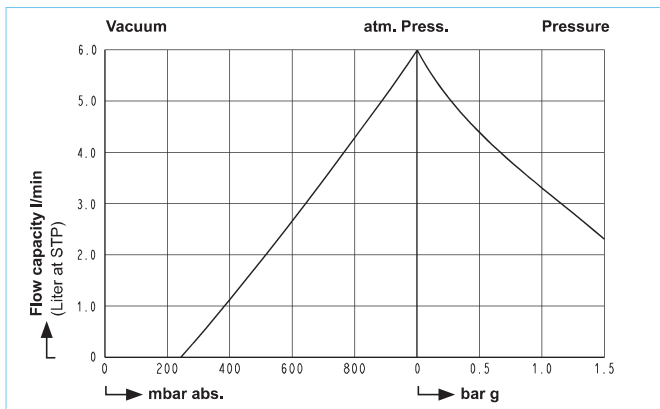
¹⁾ Liter at STP

Motor data

| | |
|--------------------------|-------|
| Protection class | IP 00 |
| Voltage (V) | 230 |
| Frequencies (Hz) | 50 |
| Power P ₁ (W) | 60 |
| I _{max} (A) | 0.7 |

Pump material

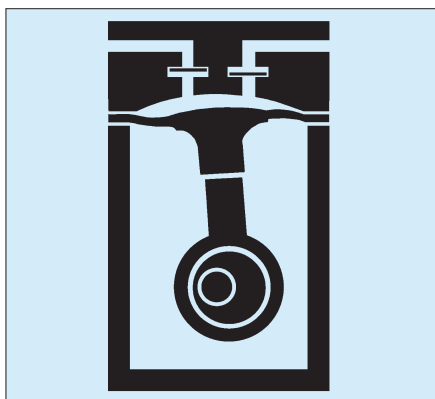
| Type | Pump head | Diaphragm | Valves |
|-------------|-----------------|-----------|--------|
| N 86 AT.16E | Aluminum | PTFE | PTFE |
| N 86 ST.16E | Stainless steel | PTFE | PTFE |



HINTS ON FUNCTION, INSTALLATION AND TECHNIQUE

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 +240 °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 vacuum. Pumps that start against pressure 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 of the tubing cannot flow to in the pump head.

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