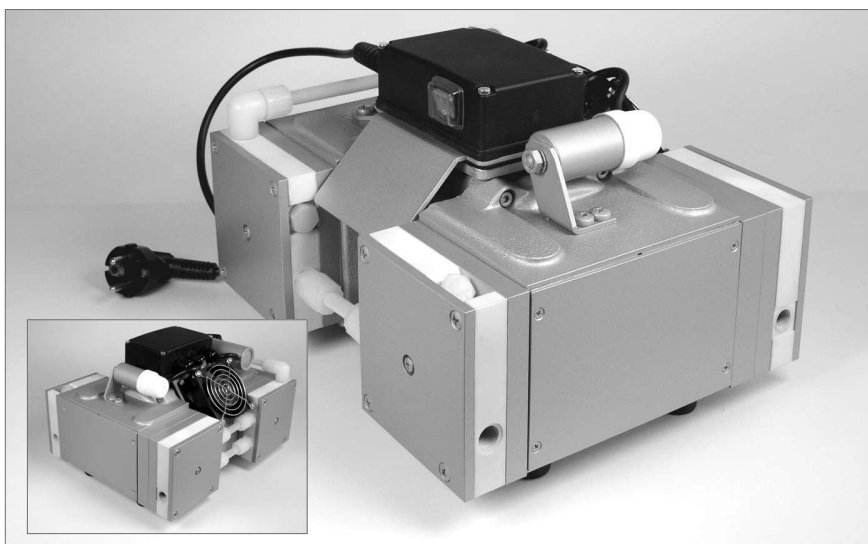


CHEMICALLY RESISTANT DIAPHRAGM PUMP WITH KNF STABILIZATION SYSTEM

DATA SHEET E 164



N 940.5 TTE as AC version in IP 54 (main picture). Inset picture shows the rear view, with the special cooling fan visible.

Concept

The powerful diaphragm vacuum pumps N 940 series are especially well suited for all applications requiring excellent suction speed with low absolute pressures. A series of technical innovations, including a diaphragm stabilization system, allows the high suction especially in the low-vacuum range.

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 voltage and frequency. The explosion-proof models to ATEX, please contact us for further details.

Features

Transferring and evacuation of air and gases

No contamination of the media due to oil-free operation

Optimized suction speed, also for low absolute pressures thanks to KNF stabilization system

High level of gas tightness thanks to the closed diaphragm surface and special sealing system

Quiet running

Cool and efficient brushless motor

Can operate in any installed position

Areas of use

The Diaphragm Vacuum Pump N 940 series offer a high level of performance, as well as an excellent price performance ratio. The pumps are used for transferring, compressing and evacuating air, gases and vapours, taking samples and evacuating vessels and systems.

The chemically-resistant vacuum pumps are required especially in the fields of analytical applications, the process engineering and production technology.

There are many applications for the N 940 series, please contact KNF for application advice.

PERFORMANCE DATA

Type	Delivery (l/min)	Vacuum (mbar absolute)	atm. Press.	Pressure (bar g)	Weight (kg)
N 940.5 TTE	48	2		0.5	18.6

N 940.5 TTE

PERFORMANCE DATA

Type and Order No.	Delivery (l/min) ¹⁾ at atm. pressure	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
N 940.5 TTE	48	0.5	2

¹⁾ Litre at STP

MODEL CODES AND MATERIALS

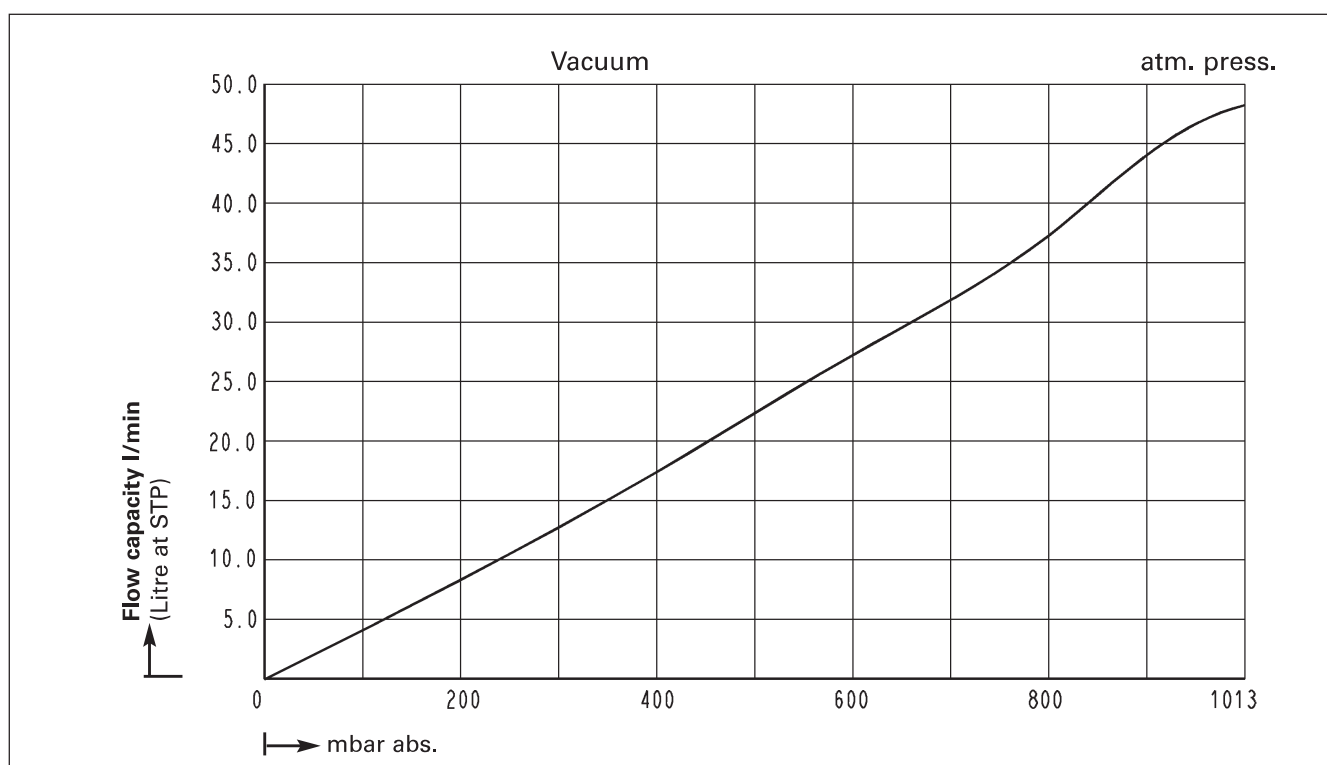
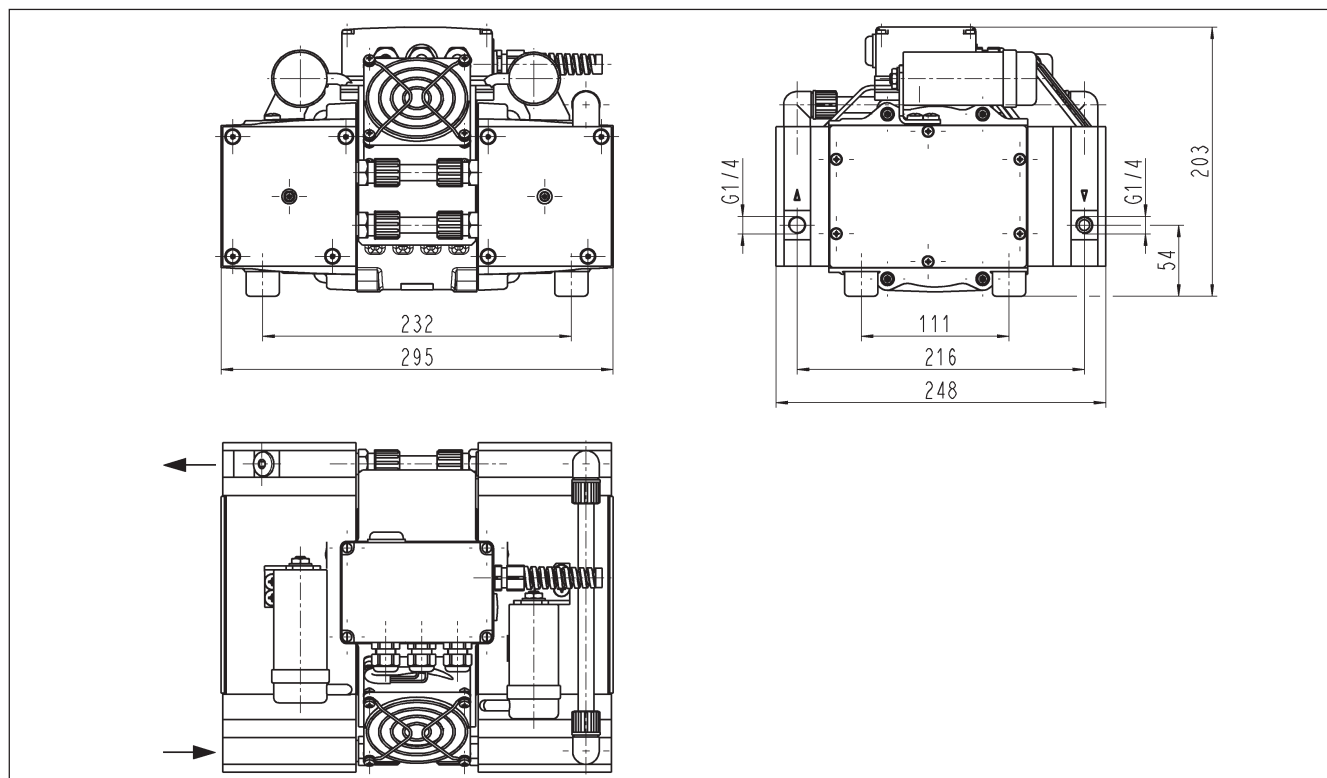
Type and Order No.	Pump head	Diaphragm	Valves
N 940.5 TTE	PTFE/PVDF	PTFE	FFPM

MOTOR DATA

Motor type: AC version			
Protection class	IP 54		
Voltage/Frequencies (V/Hz)	230/50		
Power P ₁ (W)	250		
Operating current (A)	1.7		

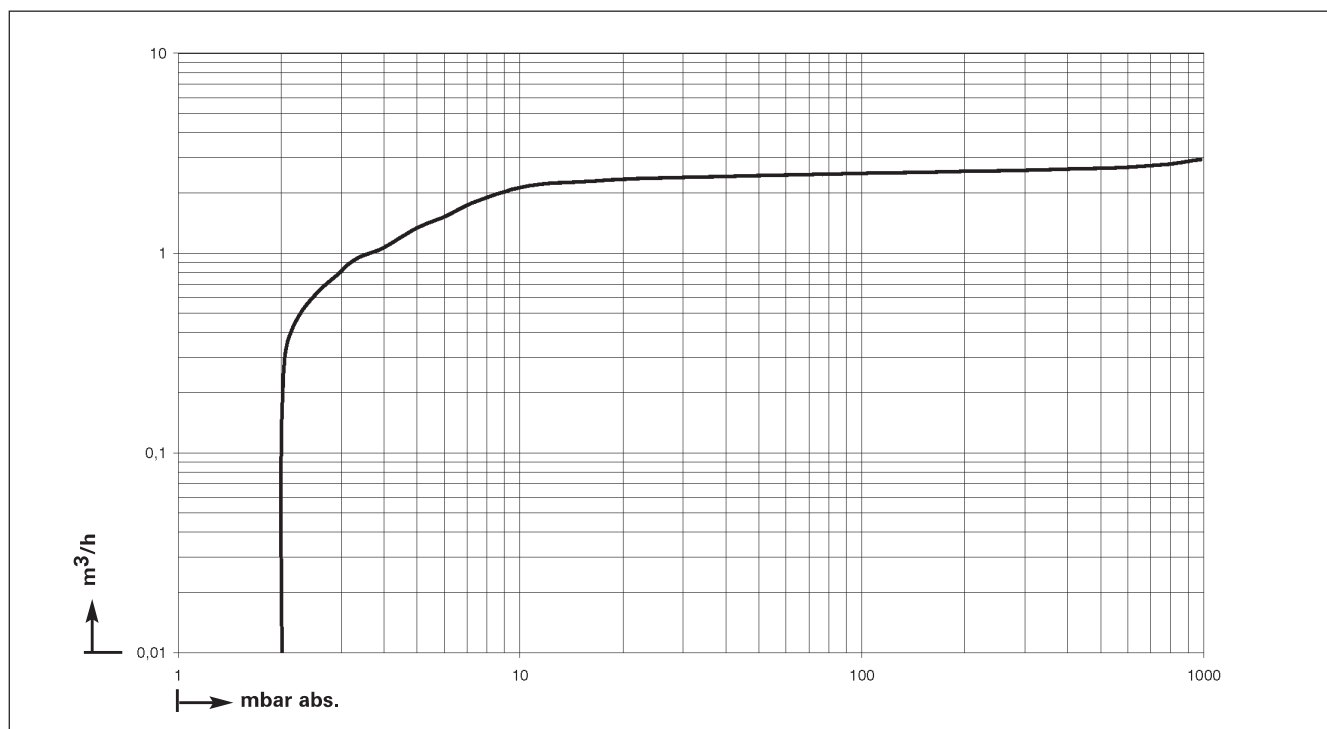
Motors with other voltages, frequencies and protection classes on request.

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

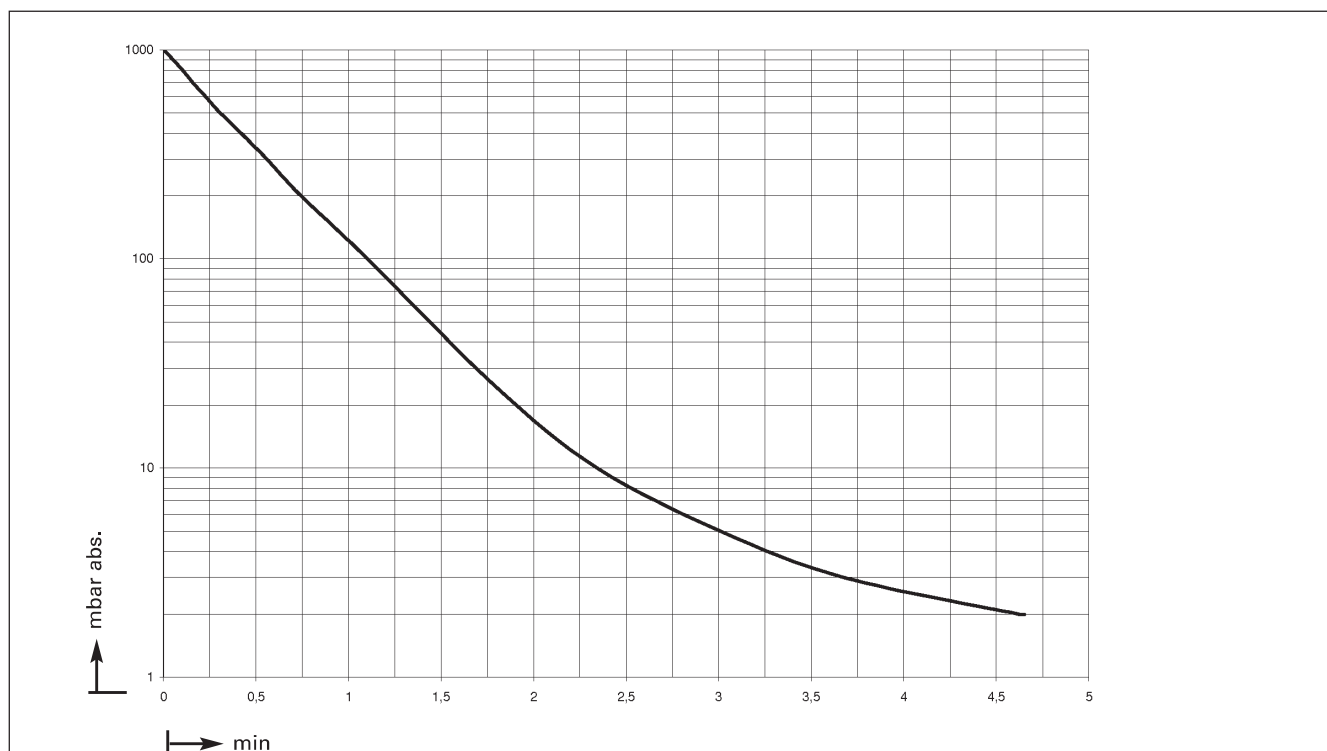


PERFORMANCE DATA

Suction pumping speed



Pump down time for 20 litre receiver, driving speed 1500 1/min



Accessories

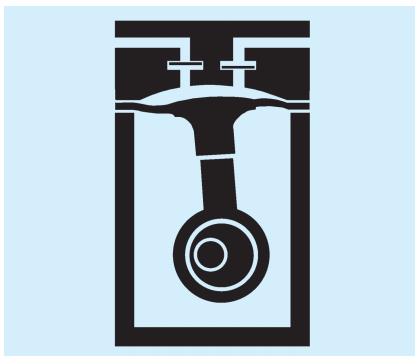
Description	Order No.	Details
Silencer	045993	G 3/8
Adapter for silencer	014757	G 3/8 to G 1/4
Small flange, stainless steel	048116	G 1/4, DN 16
Hose connector, PP	0045293	G 1/4, for tube ID 10

HINTS ON FUNCTION, INSTALLATION AND SERVICE

THE BASIC 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 + 10 °C and + 40 °C
- 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
- 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.

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, Germany
Tel. ++49 (0)7664/5909-0
Fax ++49 (0)7664/5909-99
E-mail: info@knf.de
www.knf.de

Please visit our website at www.knf.com for further information.

Diaphragm stabilization system

An additional diaphragm, the stabilization diaphragm, separates the underside of the working diaphragm from the "crank" space of the pump (see Fig. 2). The space between the two diaphragms (called a vacuum chamber) is connected with the suction side of the pump via an balancing connection. This

way, the vacuum chamber has approximately the same pressure as the working space of the diaphragm pump. The pressure difference between the upper and underside of the diaphragm approaches zero. The working diaphragm remains stable, independent of the inlet pressure of the pump. This

improves the suction speed of the pump significantly, over its entire working range.

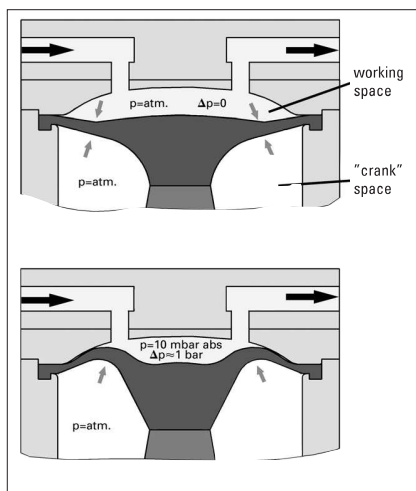


Fig. 1: Diaphragm behavior, due to the pressure difference between working space and "crank" space (normal diaphragm pump)

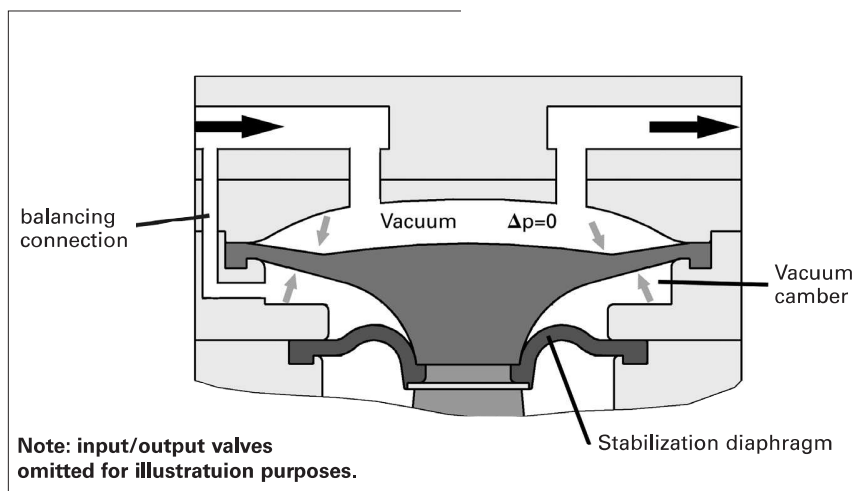


Fig. 2: Diaphragm stabilization system with additional diaphragm. This improves the suction speed of the pump significantly, over its entire working range.