

SWING PISTON VACUUM PUMPS AND COMPRESSORS FOR AIR

DATA SHEET E310



NPK 25 AC



NPK 050 AC



NPK 0100 AC

Concept

The Swing Piston Pumps from KNF are based on a simple principal: As it rises and falls the piston tilts first to one side, then the other. The compression forces act along the axis of the connecting rod, so that there is no component of force acting against the cylinder wall to cause wear. Thanks to the sealing lip on the piston seal the swing piston pump runs dry, and 100% oil-free. They will evacuate, transfer and compress air without contamination.

For customers with unusual requirements the KNF Project Team produces specially tailored solutions. Use our experience to your advantage and talk to our applications engineers.

Features

No contamination of the air due to oil-free operation

Maintenance-free

High level of flow-rate

Excellent ultimate vacuum

Very quiet and little vibration

Ready for installation

Can operate in any installed position

Areas of use

The Swing Piston Pumps offer a high level of performance despite their small size, as well as an excellent price performance ratio. They are used especially in the fields of medicine, environmental and production technology.

These pumps are used for transferring, compressing and evacuation air, taking samples, evacuating vessels and compressing air in process systems and vessels.

PERFORMANCE DATA

Type	Delivery (l/min)	Vacuum (mbar absolute)	atm. Press.	Pressure (bar g)	Weight (kg)
NPK 25 DC	25	180		4	4.3
NPK 25 AC	30	180		5	5,2
NPK 050 AC	50	80		2	5.6
NPK 0100 AC	78	80		2	7.8

NPK 25 DC

NPK 25 AC

PERFORMANCE DATA

Type and Order No. ²⁾	Delivery at atm. pressure (l/min) ¹⁾	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
NPK 25 DC	25	4	180

PERFORMANCE DATA

Type and Order No. ²⁾	Delivery at atm. pressure (l/min) ¹⁾	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
NPK 25 AC	30	5	180

MOTOR DATA ⁴⁾

DC motor		24 V	
Operating current (A)		3,8	
Power P ₁ (W)		92	

MOTOR DATA ⁴⁾

Protection class		IP 20	
Voltage/Frequencies (V/Hz)		~230/50	
Power P ₁ (W)		230	
Operating current (A)		1.2	

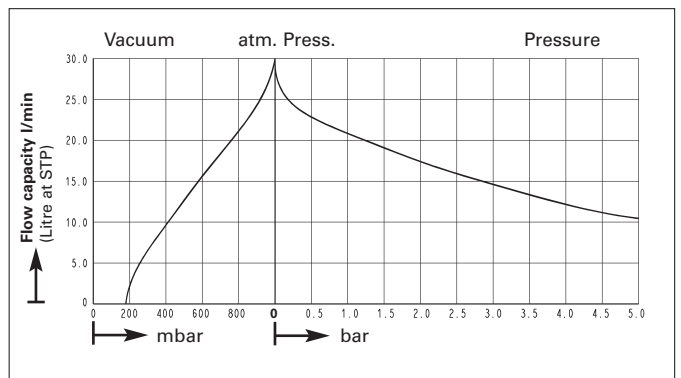
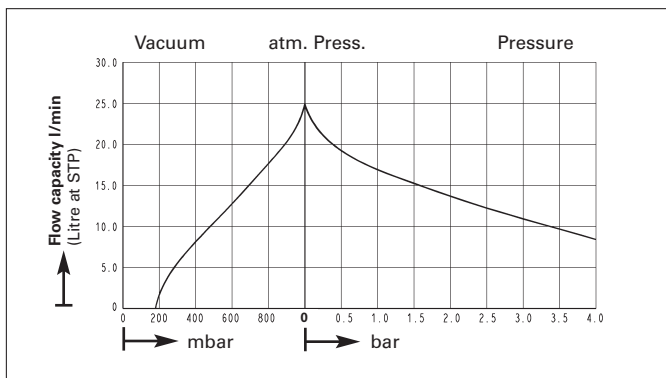
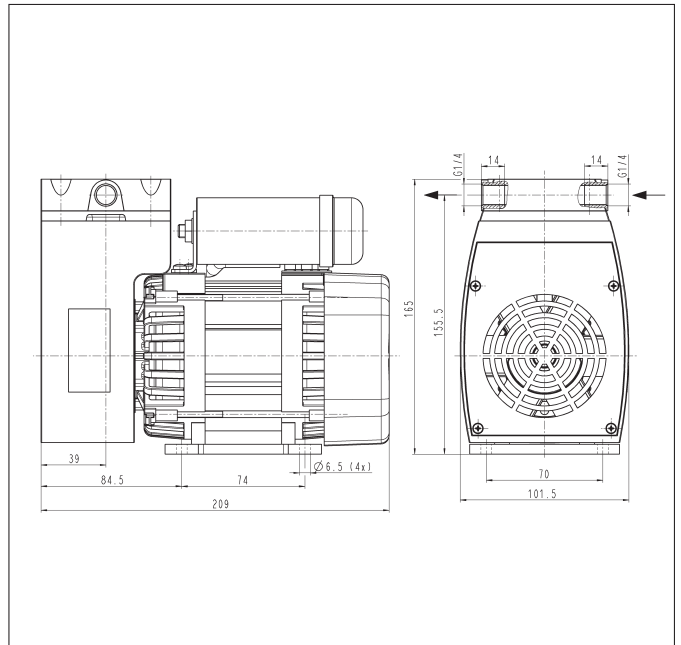
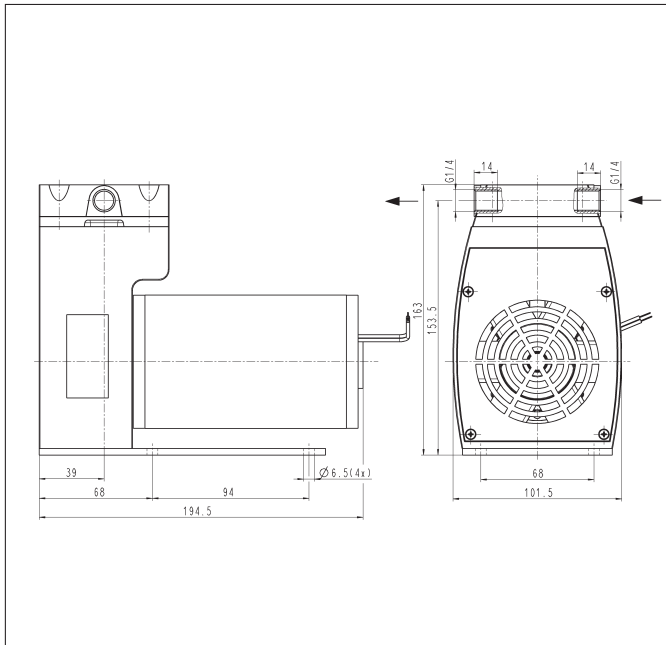
1) Litre at STP

2) See also „MODEL CODES FOR EASY ORDERING“

3) All dimensional tolerances conform to DIN ISO 2768-1, Tolerance Class V

4) Motors with other voltages, frequencies and protection classes on request

Dimensions mm ³⁾



NPK 050 AC

NPK 0100 AC

PERFORMANCE DATA

Type and Order No. ²⁾	Delivery at atm. pressure (l/min) ¹⁾	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
NPK 050 AC	50	2	80

PERFORMANCE DATA

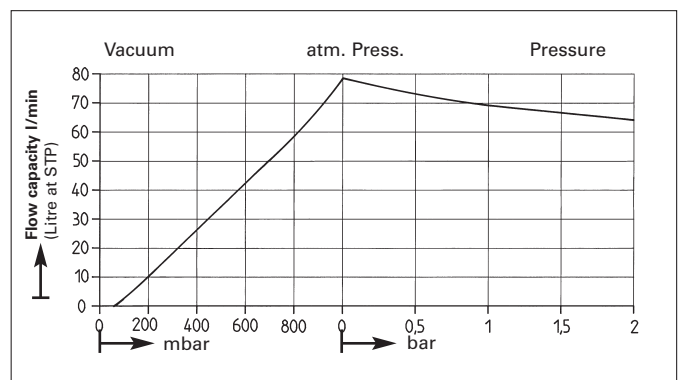
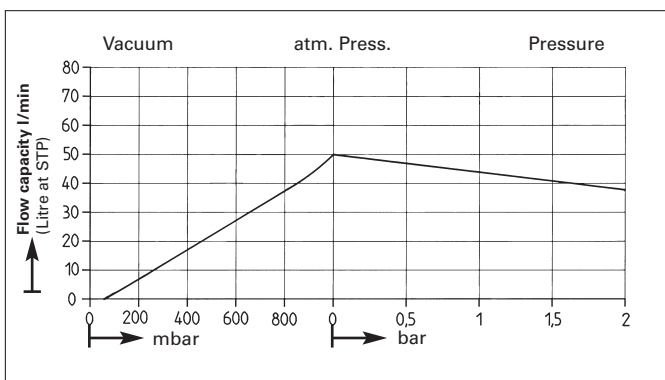
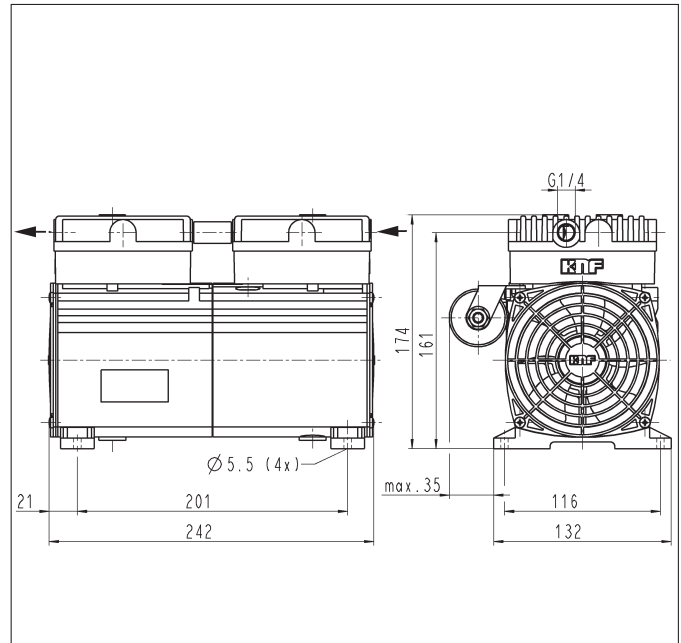
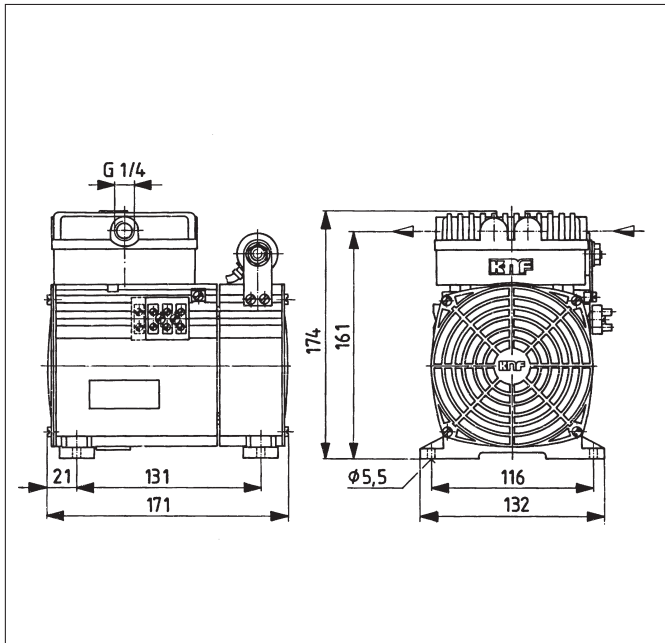
Type and Order No. ²⁾	Delivery at atm. pressure (l/min) ¹⁾	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
NPK 0100 AC	78	2	80

MOTOR DATA ⁴⁾

Protection class	IP 20		
Voltage/Frequencies (V/Hz)	230/50		
Power P ₁ (W)	240		
Operating current (A)	1.3		

MOTOR DATA ⁴⁾

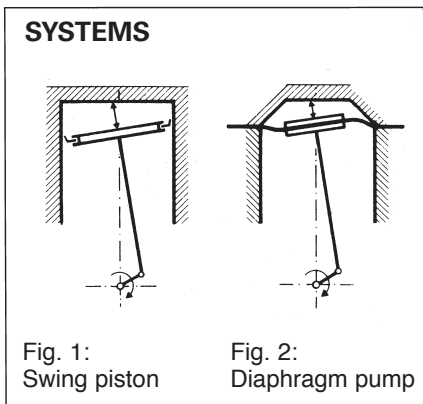
Protection class	IP 20		
Voltage/Frequencies (V/Hz)	230/50		
Power P ₁ (W)	320		
Operating current (A)	1.5		



HINTS ON FUNCTION, INSTALLATION AND SERVICE

FUNCTION OF KNF SWING PISTON VACUUM PUMPS AND COMPRESSORS

As it rises and falls the piston tilts first to one side, then the other (see figure 1). Just as with the diaphragm pump, the compression forces act along the axis of the connecting rod, so that there is no component of force acting against the cylinder wall to cause wear. In contrast to the diaphragm pump (see figure 2), the swing piston pump has a sealing lip. Thanks to the sealing lip on the piston seal the swing piston pump runs dry, and 100% oil-free.



HINTS ON INSTALLATION AND OPERATION

- Range of use: transferring, evacuating and compressing of air 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 piston seal and valves are the only parts of the KNF swing piston pumps subject to wear. They are easy to change, as no special tools are needed.

MODEL CODE FOR EASY ORDERING

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

NPK 25	AC DC	230 V/50 Hz, IP 20 or 24 V
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- Base model
- Versions with ac (AC) or dc motor (DC)
- 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.

Accessories

Description	Order-No.	Detail
Filter / Silencer G 1/4	007007	NPK 25
Filter / Silencer G 1/4	020381	NPK 050
Filter / Silencer G 1/4	020414	NPK 0100
Hose connector G 1/4 for tube ID 9	000362	NPK 25/050/0100
Gasket	001818	NPK 25/050/0100

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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