

# SWING PISTON COMPRESSORS AND VACUUM PUMPS FOR AIR

DATA SHEET E 310



NPK 25 AC



NPK 050 AC



NPK 0100 AC

## Concept

The swing piston pumps from KNF are based on a simple principle: 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. KNF swing piston pumps evacuate, transfer and compress air without contamination.

For customers with specific requirements the KNF project team produces tailor made solutions. Use our experience to your advantage and talk to our application 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 evacuating air, taking samples, evacuating vessels and compressing air in process systems and vessels.

PERFORMANCE DATA				
Type	Delivery (l/min)	Vacuum (mbar absolute)	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

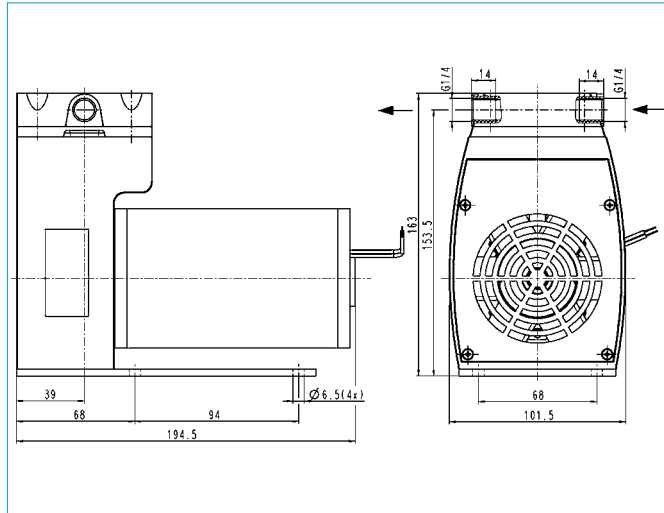
## PERFORMANCE DATA

Type	Delivery at atm. pressure (l/min) <sup>1)</sup>	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
NPK 25 DC	25	4	180

<sup>1)</sup> Liter at STP

## MOTOR DATA

DC motor	24 V
Power P <sub>1</sub> (W)	92
I <sub>max</sub> (A)	3.8



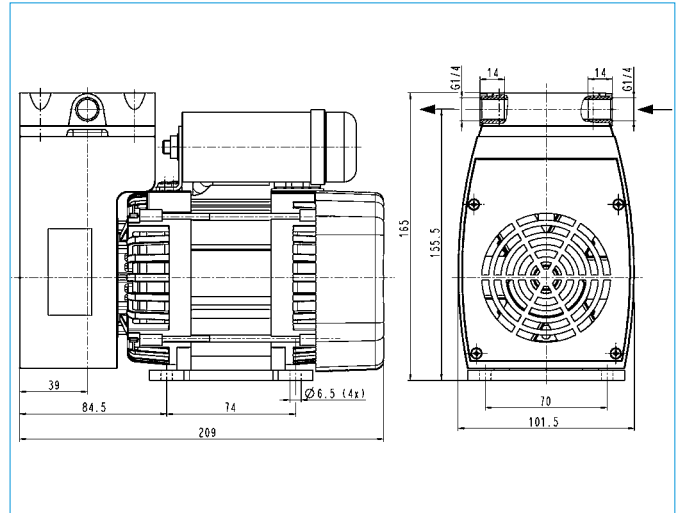
# NPK 25 AC

## PERFORMANCE DATA

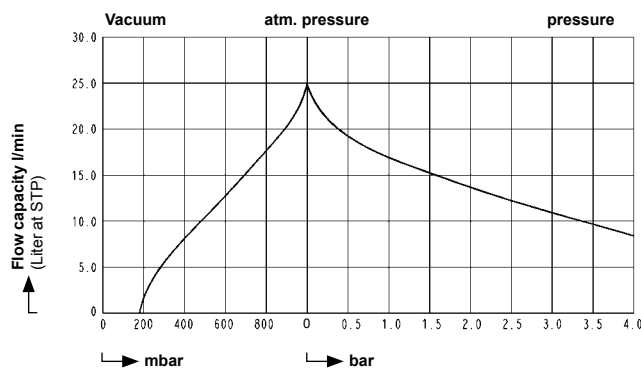
Type	Delivery at atm. pressure (l/min) <sup>1)</sup>	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
NPK 25 AC	30	5	180

## MOTOR DATA

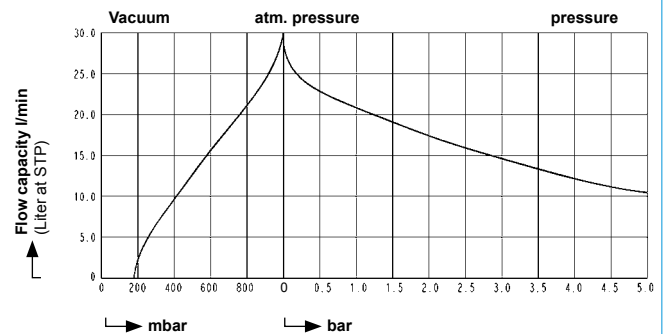
Protection class	IP 20
Voltage (V)	230
Frequencies (Hz)	50
Power P <sub>1</sub> (W)	230
I <sub>max</sub> (A)	1.2



## NPK 25 DC



## NPK 25 AC



# NPK 050 AC

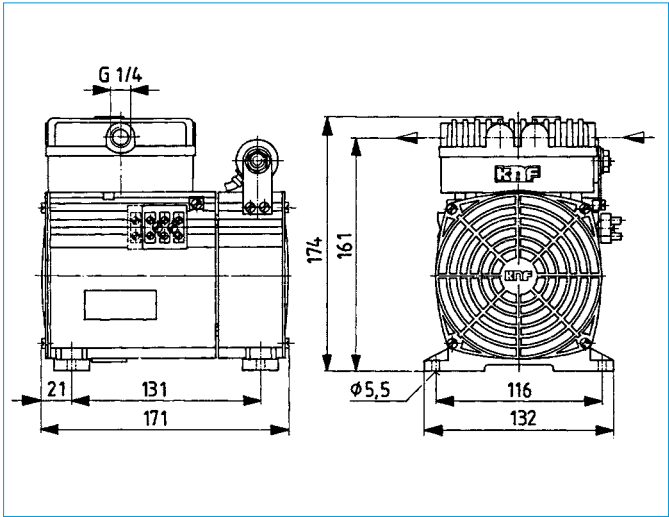
## PERFORMANCE DATA

Type	Delivery at atm. pressure (l/min) <sup>1)</sup>	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
NPK 050 AC	50	2	80

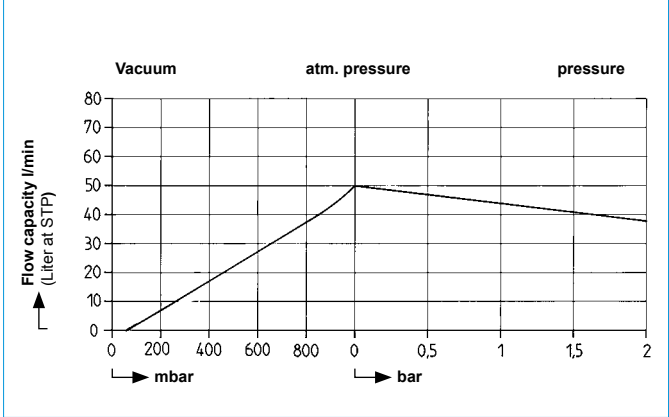
<sup>1)</sup> Liter at STP

## MOTOR DATA

Protection class	IP 20
Voltage (V)	230
Frequencies (Hz)	50
Power P <sub>1</sub> (W)	240
I <sub>max</sub> (A)	1.3



# NPK 050 AC



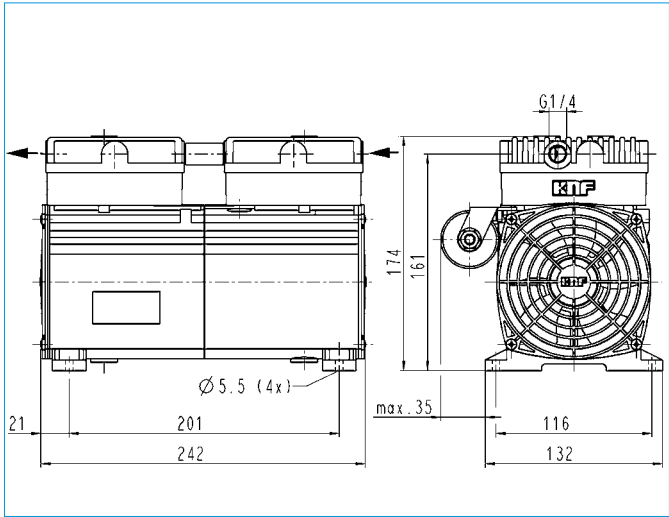
# NPK 0100 AC

## PERFORMANCE DATA

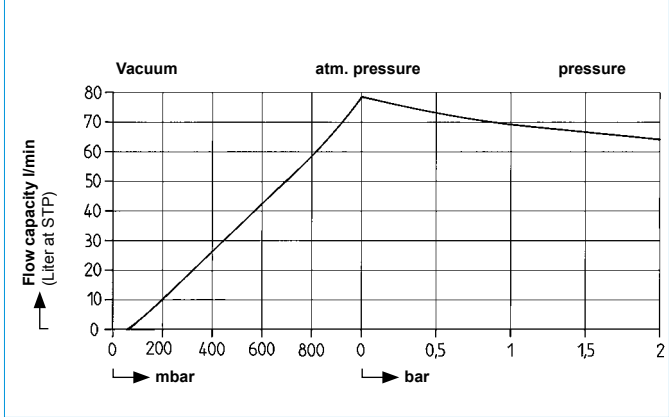
Type	Delivery at atm. pressure (l/min) <sup>1)</sup>	Max. operating pressure (bar g)	Ultimate vacuum (mbar abs.)
NPK 0100 AC	78	2	80

## MOTOR DATA

Protection class	IP 20
Voltage (V)	230
Frequencies (Hz)	50
Power P <sub>1</sub> (W)	320
I <sub>max</sub> (A)	1.5



# NPK 0100 AC



# HINTS ON FUNCTION AND INSTALLATION

## 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.

### SYSTEMS

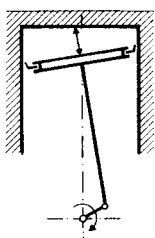


Fig. 1:  
swing piston

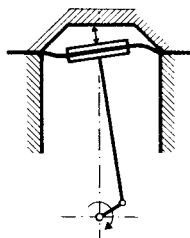


Fig. 2:  
diaphragm pump

## 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: +5 °C ... +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.

### 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

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