



OPERATING INSTRUCTIONS

EN

Translation of the Original

HIPACE NEO

Air cooling

Dear customer,

Thank you for choosing a Pfeiffer Vacuum product. Your new Pfeiffer Vacuum accessory should support you in your individual application with full performance and without malfunctions. The name Pfeiffer Vacuum stands for high-quality vacuum technology, a comprehensive and complete range of top-quality products and first-class service. With this expertise, we have acquired a multitude of skills contributing to an efficient and secure implementation of our product.

Knowing that our product must not interfere with your actual work, we are convinced that our product offers you the solution that supports you in the effective and trouble-free execution of your individual application.

Please read these operating instructions before putting your product into operation for the first time. If you have any questions or suggestions, please feel free to contact info@pfeiffer-vacuum.de.

Further operating instructions from Pfeiffer Vacuum can be found in the [Download Center](#) on our website.

Disclaimer of liability

These operating instructions describe all models and variants of your product. Note that your product may not be equipped with all features described in this document. Pfeiffer Vacuum constantly adapts its products to the latest state of the art without prior notice. Please take into account that online operating instructions can deviate from the printed operating instructions supplied with your product.

Furthermore, Pfeiffer Vacuum assumes no responsibility or liability for damage resulting from the use of the product that contradicts its proper use or is explicitly defined as foreseeable misuse.

Copyright

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We reserve the right to make changes to the technical data and information in this document.

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1 About this manual



IMPORTANT

Read carefully before use.
Keep the manual for future consultation.

1.1 Validity

This operating instructions is a customer document of Pfeiffer Vacuum. The operating instructions describe the functions of the named product and provide the most important information for the safe use of the device. The description is written in accordance with the valid directives. The information in this operating instructions refers to the product's current development status. The document shall remain valid provided that the customer does not make any changes to the product.

1.1.1 Applicable documents

Designation	Document
Declaration of conformity	A component of these instructions

Tbl. 1: Applicable documents

You can find this document in the [Pfeiffer Vacuum Download Center](#).

1.1.2 Variants

Version with USB connector

- HiPace 80 Neo

Versions with M8 connector assembly

- TC 80
- TC 110
- TC 110 RS
- TC 120
- TCP 350

Tbl. 2: Versions of the air cooling for turbopumps

1.2 Target group

This operating instructions is intended for persons who

- install,
- operate.

The work described in this document may be carried out only by people who have completed suitable technical training (experts), or who have received equivalent training from Pfeiffer Vacuum.

1.3 Conventions

1.3.1 Instructions in the text

Usage instructions in the document follow a general structure that is complete in itself. The required action is indicated by an individual step or multi-part action steps.

Individual action step

A horizontal, solid triangle indicates the only step in an action.

- ▶ This is an individual action step.

Sequence of multi-part action steps

The numerical list indicates an action with multiple necessary steps.

1. Step 1
2. Step 2
3. ...

1.3.2 Pictographs

Pictographs used in the document indicate useful information.



Note



Tip

1.3.3 Abbreviations

Abbreviation	Meaning in this document
DC	Direct current
M8	Metric thread size, nominal size 8 mm
WAF	Width Across Flats
TC	Turbopump electronic drive unit (turbo controller)
USB	Universal Serial Bus

Tbl. 3: Abbreviations used in this document

1.3.4 Stickers on the product

This section describes all the stickers on the product along with their meanings.

<p>PFEIFFER VACUUM D-35641 Asslar</p> <p>Mod.: Air cooling USB Mod.-Nr.: PM Z01 367 Input: 24 V/DC</p> <p>Made in Germany 11/2021 </p>	<p>Rating plate (example) The rating plate is located on the bottom of the mounting bracket</p>
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Tbl. 4: Stickers on the product

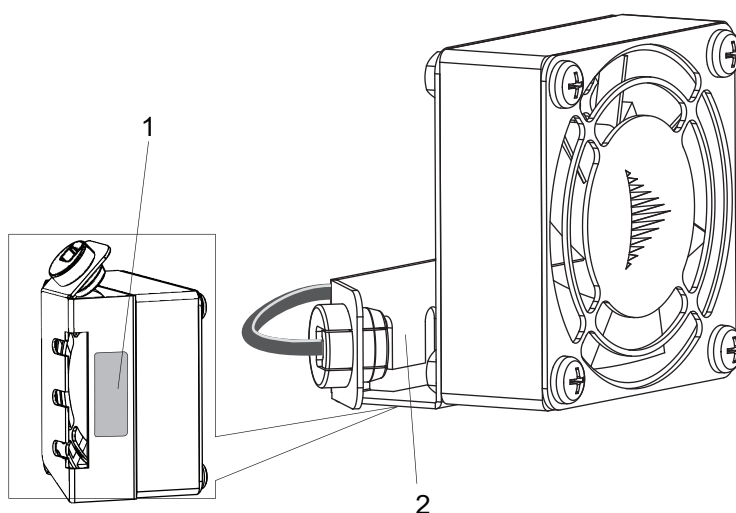


Fig. 1: Position of the sticker on the product

- 1 Rating plate 2 Mounting bracket

2 Safety

2.1 General safety information

The following 4 risk levels and 1 information level are taken into account in this document.

⚠ DANGER	
<p>Immediately pending danger Indicates an immediately pending danger that will result in death or serious injury if not observed.</p> <ul style="list-style-type: none"> ▶ Instructions to avoid the danger situation 	
⚠ WARNING	
<p>Potential pending danger Indicates a pending danger that could result in death or serious injury if not observed.</p> <ul style="list-style-type: none"> ▶ Instructions to avoid the danger situation 	
⚠ CAUTION	
<p>Potential pending danger Indicates a pending danger that could result in minor injuries if not observed.</p> <ul style="list-style-type: none"> ▶ Instructions to avoid the danger situation 	
NOTICE	
<p>Danger of damage to property Is used to highlight actions that are not associated with personal injury.</p> <ul style="list-style-type: none"> ▶ Instructions to avoid damage to property 	
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> i </div>	Notes, tips or examples indicate important information about the product or about this document.

2.2 Safety precautions

<div style="border: 1px solid black; padding: 5px; display: inline-block;"> i </div>	<p>Duty to provide information on potential dangers</p> <p>The product holder or user is obliged to make all operating personnel aware of dangers posed by this product.</p> <p>Every person who is involved in the installation, operation or maintenance of the product must read, understand and adhere to the safety-related parts of this document.</p>
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> i </div>	<p>Infringement of conformity due to modifications to the product</p> <p>The Declaration of Conformity from the manufacturer is no longer valid if the operator changes the original product or installs additional equipment.</p> <ul style="list-style-type: none"> • Following the installation into a system, the operator is required to check and re-evaluate the conformity of the overall system in the context of the relevant European Directives, before commissioning that system.

General safety precautions when handling the product

- ▶ Observe all applicable safety and accident prevention regulations.
- ▶ Check that all safety measures are observed at regular intervals.
- ▶ Never disconnect plug connections during operation.
- ▶ Keep lines and cables away from hot surfaces (> 70 °C).
- ▶ Observe the unit protection degree prior to installation or operation in other environments.
- ▶ Do not carry out your own conversions or modifications on the unit.

2.3 Limits of use of the product

Parameter	Air cooling
Permissible ambient temperature of the turbopump	max. +35 °C ¹⁾
Protection degree	IP20
Relative humidity of air	≤ 85 % not condensing

Tbl. 5: Permissible ambient and operating conditions

2.4 Proper use

- ▶ Use the air cooling exclusively for cooling Pfeiffer Vacuum turbopumps within the limits of use described.
- ▶ Adhere to the installation, commissioning, operating, and maintenance instructions.
- ▶ Do not use any accessory parts other than those recommended by Pfeiffer Vacuum.

2.5 Foreseeable improper use

Improper use of the product invalidates all warranty and liability claims. Any use that is counter to the purpose of the product, whether intentional or unintentional, is regarded as improper use; in particular:

- Connecting to vacuum pumps and units that are not designed for this purpose according to their operating instructions
- Connecting to units with exposed live parts

2.6 Personnel qualification

The work described in this document may only be carried out by persons who have appropriate professional qualifications and the necessary experience or who have completed the necessary training as provided by Pfeiffer Vacuum.

Training people

1. Train the technical personnel on the product.
2. Only let personnel to be trained work with and on the product when under the supervision of trained personnel.
3. Only allow trained technical personnel to work with the product.
4. Before starting work, make sure that the commissioned personnel have read and understood these operating instructions and all applicable documents, in particular the safety, maintenance and repair information.

1) Water cooling is required for higher ambient temperatures

3 Product description

3.1 Function

Pfeiffer Vacuum recommends using air cooling in processes with high gas throughput, bad fore-vacuum pressure and/or high ambient temperatures. If the cooling capacity of the air cooling is insufficient, use water cooling instead.

The air cooling with USB connector is intended for direct connection to the turbopump. As an alternative, there is a version with M8 plug-and-socket connectors for connection to the electronic drive unit.

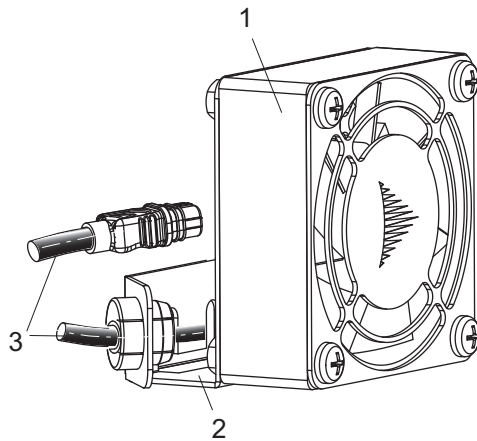


Fig. 2: Layout of air cooling

- | | |
|--------------------|--|
| 1 Fan housing | 3 Control cable with power supply plug |
| 2 Mounting bracket | |

3.2 Identifying the product

- ▶ To ensure clear identification of the product when communicating with Pfeiffer Vacuum, always keep all of the information on the rating plate to hand.

3.3 Scope of delivery

The scope of delivery includes the following parts:

- Air cooling
- Mounting kit (separate package)
- Operating instructions

4 Connecting air cooling

NOTICE

Property damage to third-party electronic devices

The accessory connections on the vacuum pump do not meet any USB standard. The connection assignment does not comply with any standard. Depending on their configuration, the 24 V DC supply voltage may damage or destroy third-party electronic devices, e.g. tablet computer.

- ▶ Do not connect any third-party electronic devices to the accessory connections.
- ▶ Only use the connecting sockets for pump-specific accessories.

Prerequisites

- Turbopump switched off and vented

Required tools

- Open-end wrench, **WAF 7**

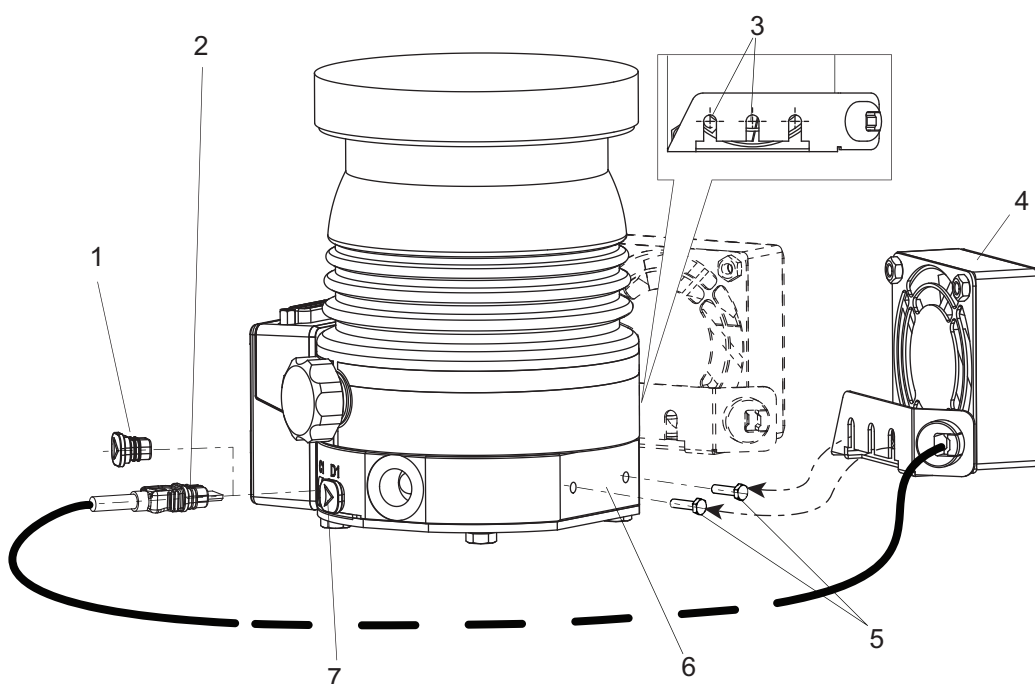


Fig. 3: Example: Connecting air cooling to HiPace 80 Neo

- | | |
|---|---|
| 1 Sealing plugs | 5 Hexagon head screw |
| 2 Control cable | 6 Mounting surface for mounting on the side |
| 3 Hole pattern for mounting on the rear | 7 Accessory connections "C1" and "D1" |
| 4 Air cooling | |

Connecting the air cooling to the turbopump using the USB plug

1. Fix the air cooling at the threaded holes provided to the pump bottom part using the screws from the mounting kit.
2. Connect the control cable of the air cooling to one of the two accessory connections "C1" or "D1" on the pump bottom part.
 - The software of the electronic drive unit automatically resets existing configuration settings to "default".
 - The software of the electronic drive unit automatically recognizes connected accessories.

Connecting the air cooling to the electronic drive unit using M8 plug-and-socket connection

1. Fix the air cooling at the threaded holes provided to the pump bottom part using the screws from the mounting kit.
2. Screw the control cable onto the accessory ports of the plug-and-socket connection for the electronic drive unit.
3. Manually configure the desired accessory output for the air cooling via the interfaces of the electronic drive unit.
 - The specification for the air cooling is "accessory A1".

5 Operation

Important settings and function-related variables are programmed ex factory as parameters in the vacuum pump electronic drive unit. Each parameter has a three-digit number and a description. Parameter-driven operation and control is supported via Pfeiffer Vacuum displays and control units, or externally via RS-485 using Pfeiffer Vacuum protocol.

Parameter	Name	Designation	Adjustment/comment	default
[P:068]	CfgAccC1	Accessory connection C1	0 = fan (continuous operation) 4 = fan (temperature controlled) 6 = Always "0" 7 = Always "1"	0
[P:069]	CfgAccD1	Accessory connection D1	0 = fan (continuous operation) 4 = fan (temperature controlled) 6 = Always "0" 7 = Always "1"	0
[P:728]	fanOnTemp	Start-up temperature of the fan in temperature-controlled mode	45 °C (in the pump bottom part, temperature can be read via [P:330])	45

Tbl. 6: Parameter settings for USB-connection to the turbopump

Parameter	Name	Designation	Adjustment/comment	default
[P:035]	CfgAccA1	Accessory connection A1	0 = fan (continuous operation) 4 = fan (temperature controlled) 6 = Always "0" 7 = Always "1"	0
[P:036]	CfgAccB1	Accessory connection B1	0 = fan (continuous operation) 4 = fan (temperature controlled) 6 = Always "0" 7 = Always "1"	1
[P:037] ²⁾	CfgAccA2	Accessory connection A2	0 = fan (continuous operation) 2 = heating 3 = backing pump 4 = fan (temperature controlled) 6 = Always "0" 7 = Always "1"	3
[P:038] ³⁾	CfgAccB2	Accessory connection B2	0 = fan (continuous operation) 2 = heating 3 = backing pump 4 = fan (temperature controlled) 6 = Always "0" 7 = Always "1"	2
[P:728] ⁴⁾	fanOnTemp	Start-up temperature of the fan in temperature-controlled mode	45 °C (in the pump bottom part, temperature can be read via [P:330])	45

Tbl. 7: Parameter settings for M8- connection to the electronic drive unit

- 2) Depending on type
- 3) Depending on type
- 4) Depending on type

Information regarding commissioning of the turbopump with air cooling

- **Continuous operation:** The fan runs in continuous operation as soon as voltage is supplied.
- **Temperature-controlled:** The fan runs according to the switch point settings in parameter [P:728].

6 Technical data and dimensions

6.1 Technical data

Type designation	Air cooling, shielded	Air cooling, shielded
Part number	PM Z01 367	PM Z01 369
Pump	HiPace 80 Neo	HiPace 30 HiPace 60 P HiPace 80 HiPace 80 Neo SplitFlow 50 / 80
Electronic drive unit	TC 80	TC 110, TC 110 RS, TC 120, TCP 350, TC 80
Control voltage	24 V DC	24 V DC
Electrical connection	Micro USB	M8

Tbl. 8: Air cooling, 24 V DC

6.2 Dimensions

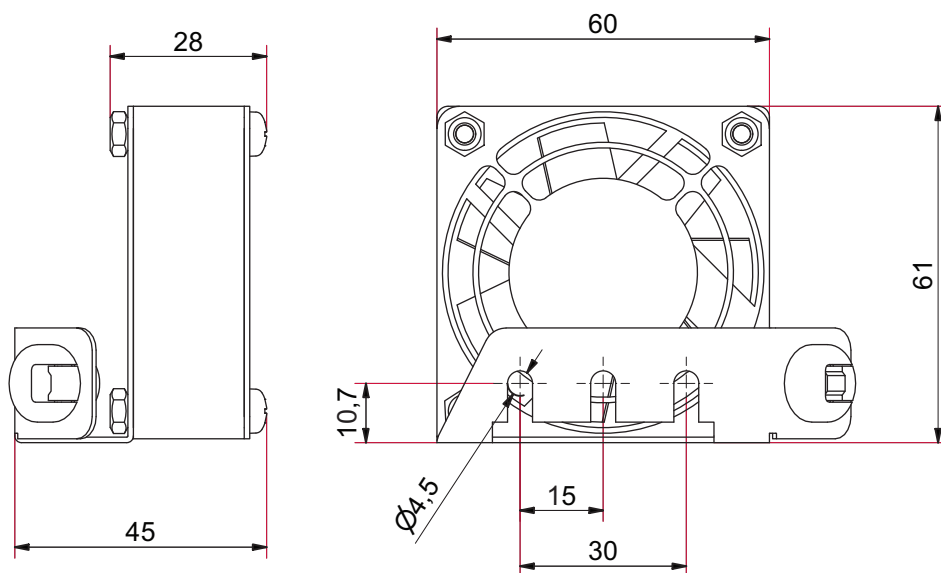


Fig. 4: Dimensions - Air cooling
Dimensions in mm

EC Declaration of Conformity

Declaration for product(s) of the type:

Air cooling

HiPace Neo
SplitFlow

We hereby declare that the listed product satisfies all relevant provisions of the following **European Directives**.

Electromagnetic compatibility 2014/30/EU

Restriction of the use of certain hazardous substances 2011/65/EU

Restriction of the use of certain hazardous substances, delegated directive 2015/863/EU

Harmonized standards and applied national standards and specifications:

DIN EN 61000-3-2: 2019

DIN EN 61000-3-3: 2020

DIN EN 61326-1: 2022

DIN VDE 0580: 2011

Signature:



(Daniel Sälzer)
Managing Director

Pfeiffer Vacuum GmbH
Berliner Straße 43
35614 Asslar
Germany

Asslar, 2022-07-28



UK Declaration of Conformity

This declaration of conformity has been issued under the sole responsibility of the manufacturer.

Declaration for product(s) of the type:

Air cooling

HiPace Neo

SplitFlow

We hereby declare that the listed product satisfies all relevant provisions of the following **British Directives**.

Electrical Equipment (Safety) Regulations 2016

Electromagnetic Compatibility Regulations 2016

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Applied standards and specifications:

EN IEC 61000-3-2:2019

EN IEC 61000-3-3:2020

EN IEC 61326-1:2021

The manufacturer's authorized representative in the United Kingdom and the authorized agent for compiling the technical documentation is Pfeiffer Vacuum Ltd, 16 Plover Close, Interchange Park, MK169PS Newport Pagnell.

Signature:



(Daniel Sälzer)
Managing Director

Pfeiffer Vacuum GmbH
Berliner Straße 43
35614 Asslar
Germany

Asslar, 2023-03-24

**UK
CA**





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