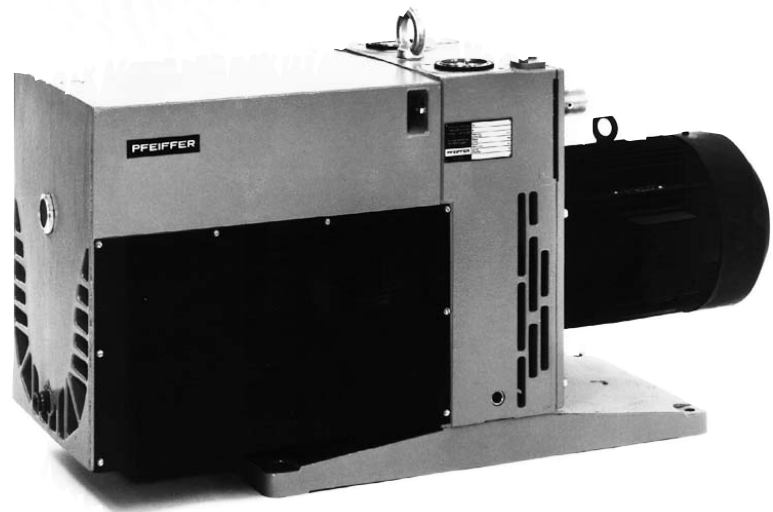


Rotary Vane Pumps



UNO/DUO 120 A

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1. Safety Precautions

- ☞ Read and follow all the instructions in this manual.
- ☞ Inform yourself regarding:
 - ☞ Hazards which can be caused by the pump;
 - ☞ Hazards which can arise in your system;
 - ☞ Hazards which can be caused by the medium being pumped.
- ☞ Avoid exposing any part of your body to vacuum.
- ☞ Observe all safety and accident prevention regulations.
- ☞ Check regularly that all safety requirements are being complied with.
- ☞ Do not carry out any unauthorised conversions or modifications on the pump.
- ☞ When returning the pump to us please note the shipping instructions in Section 7.

1.1. For Your Orientation

Instructions in the text

- ➔ Operating instructions: Here, you have to do something

Symbols Used

The following symbols are used throughout in the illustrations:

- | | |
|--|--|
|  Vacuum-flange |  Gas ballast |
|  Exhaust flange |  Power connection |

Position-Numbers

Identical pump and accessory parts have the same position numbers in all illustrations.

1.2. Pictogram-Definition



Danger of injury from moving parts.



Danger of burns from touching hot parts.



Danger of an electric shock.



Danger of personal injury.



Danger of damage to the pump or system.

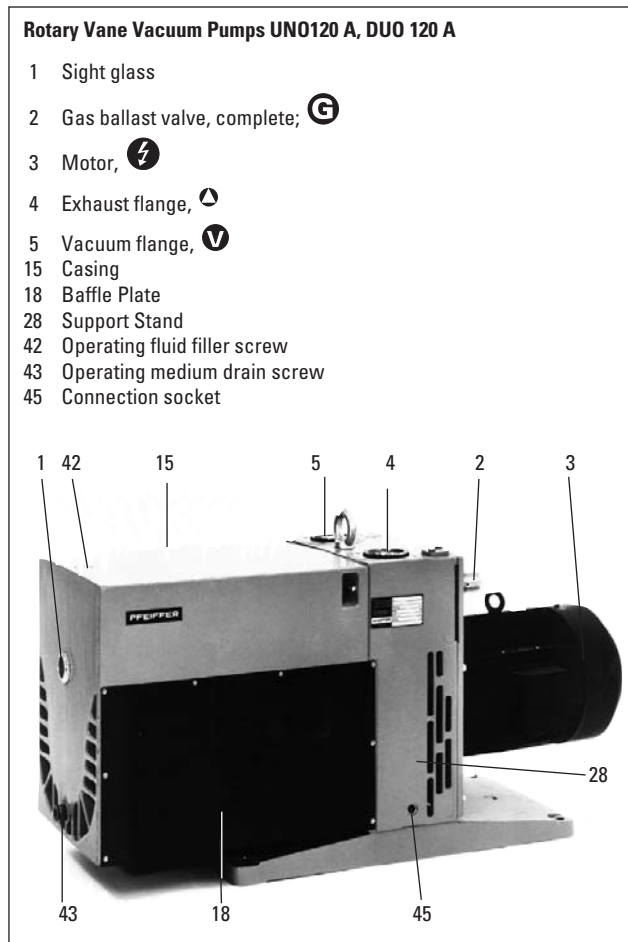


Attention to particularly important information on the product, handling the product, or to a particular part of the documentation.

Modifications reserved

2. Understanding The Rotary Vane Pumps

2.1. Main Features



The UNO 120 A is a single stage and the DUO 120 A is a two stage rotary vane pump.

Special features:

- Pressurised oil lubrication
- Hydraulically controlled high vacuum safety valve
- Optional: Oil filter systems, Condensate separator, Operational monitoring systems.

Proper Use

- Rotary Vane Pumps UNO/DUO 120 A may only be used to generate vacuum.
- Do not use the pump as a compressor.
- Do not pump corrosive or explosive gases (a special version for these operations is available on request).
- Do not operate the pumps where explosive processes are involved. This is only permitted with the "explosive" version of the pump.
- Using accessories not named in this manual is not permitted without authorisation from PFEIFFER.

Improper use will cause any rights regarding liability and guarantees to be forfeited.

Improper Use

The following are regarded as improper:

- Uses not covered above, and, in particular:
 - Connection to pumps and units which is not permitted according to their operating instructions.
 - Connection to units which contain touchable and voltage carrying parts.

Improper use will cause any rights regarding liability and guarantees to be forfeited

2.2. Differences Between The Pump Types

Type	Stage	Nominal flow rate at 50 Hz	Attainable Final Pressure (Total, without Gasballast)
UNO 120 A	one stage	128 m ³ /h	< 3 • 10 ⁻² mbar
DUO 120 A	two-stage	128 m ³ /h	< 2 • 10 ⁻³ mbar

Special Models

Helium tight model:

- Operating Fluid P3
- Leak rate < 1 • 10⁻⁵ mbar l/s
- Additional radial shaft seal with sealing oil chamber

Korrosivgasausführung:

- Operating fluid F5
- Leak rate < 1 • 10⁻⁵ mbar l/s
- Additional radial shaft seal with sealing oil chamber
- Vanes made from special materials
- Gas ballast valve in special version

3. Installation

3.1. Preparations For Installation



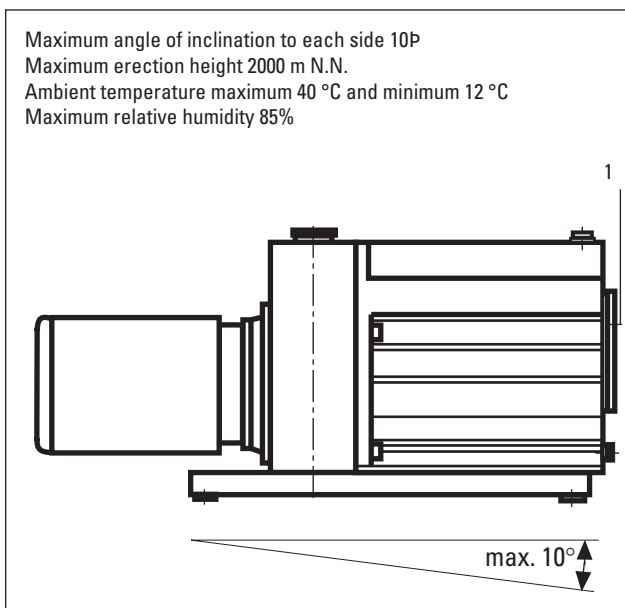
Do not carry out any unauthorised conversions or modifications on the pump.



Fill up with operating fluid before operating the first time (included in a separate pack in the delivery consignment). When transporting use only the eyebolts provided for the purpose. When filled with operating fluid, do not tilt the pump otherwise operating fluid could escape via the exhaust opening.

3.2. Pump Assembly And Location

- ➔ Where stationary installation is involved, anchor the pump on site.
- ➔ Sight glass 1 on the front side must be visible and gas ballast valve ② readily accessible.
- ➔ When installing the pump in a closed housing, ensure there is sufficient air circulation.



3.3. Connecting The Vacuum Side

- ➔ Keep the connection between the vacuum chamber and pump as short as possible.
- ➔ Remove all scaling and loose particles from welded lines prior to assembly.
- To protect the pump, separators, filters and cooling traps etc. (see Section 9. Accessories) can be fitted upstream of the pump. However, the conductance value of the accessory causes a reduction in volume flow rate.



Where rotary vane vacuum pumps are anchored, no forces from the piping system should be allowed to act on the pump. Suspend, decouple or support all piping concerned with the pump.

3.4. Connecting The Exhaust Side



Pressure can rise to dangerous levels in exhaust lines. Lay exhaust lines without built-in shutoff devices. If a shut-off device is installed for internal operating reasons or if there is a risk of excess pressure developing in the lines, official accident prevention regulations must be complied with. The exhaust line diameter should not be less than 63 DN. The line from the pump must be laid with a downward gradient so that condensate is prevented from flowing back into the pump. Otherwise a trap must be installed.



Expelled gases and vapours can represent a hazard to health and/or the environment. For this reason the relevant regulations must always be complied with when working with toxic substances. Only officially approved filters may be used for the separation of such substances. This also applies when handling toxic or chemically unstable gases and to gases susceptible to polymerisation or to the formation of peroxide (see 9. Accessories).

3.5. Connecting To The Mains Power Supply



Power connections must comply with local regulations. Voltage and frequency information given on the rating plate must correspond to the mains voltage and frequency values.

When the electrical connections have been completed, carry out the earthed conductor test. The pump must be disconnected from the power before opening the terminal box.

When switching on for the first time, check the direction of rotation:

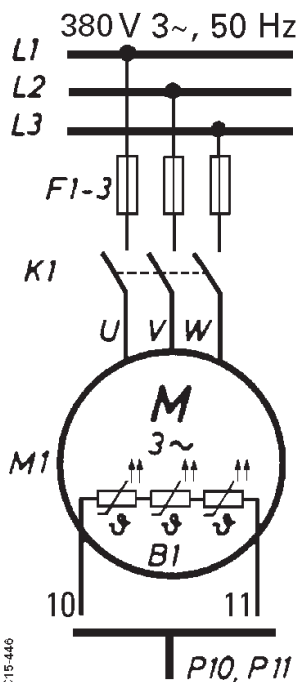
Checking The Direction Of Rotation



Check the direction of rotation of the pump before filling up with operating medium.

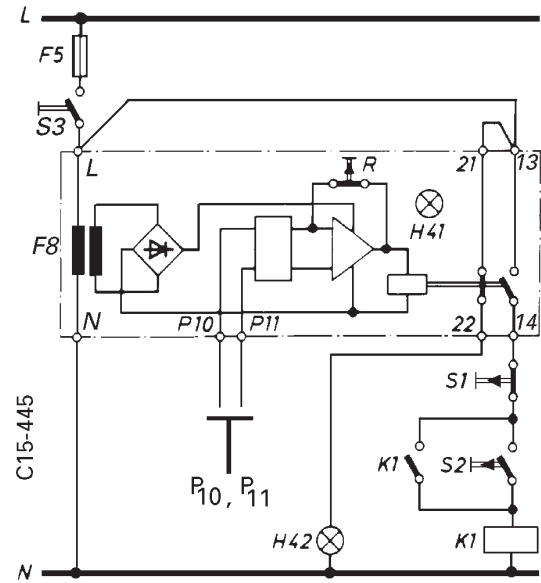
- ➔ Remove blank flange on the exhaust side.
- ➔ Switch on pump for a short time (max. 5 seconds). Motor/motor fan must turn clockwise (see arrow on motor fan cover).
- ➔ If direction of rotation is incorrect: Interchange two phases on the connecting cable.

Power section with motor to be protected



Switching parts list

- S3 Control switch
- S1 Pushbutton "OFF"
- S2 Pushbutton "ON"
- K1 Contactor
- F1-3 Motor fuse
- F5 Control fuse
- F8 Triggering Unit TMA 4 or TMA 4R
- H41 Signal lamp in Triggering Unit F8
- H42 Signal lamp
- M1 Motor
- B1 Temperature sensor
- R Reset button in Triggering Unit F8 (only for type TMA 4R)



Contactor control (short contact making with Triggering Unit Type TMA 4R). Manual reset (R) at triggering unit after thermal tripping. Thermal tripping displayed by H42 and H41.

Three phase PTC motors

The pumps are three phase current motor driven and are equipped with three PTC resistors built into the stator windings. The connection of a tripping unit will protect the pump against overloading (see connecting example).

Tripping unit:

PTC tripping unit with two switchover contacts at the output manufactured by Ziehl, type MSR 220 F (see Section 9, „Accessories“), AEG type TMA 4R or Siemens type 3 UN8 004.

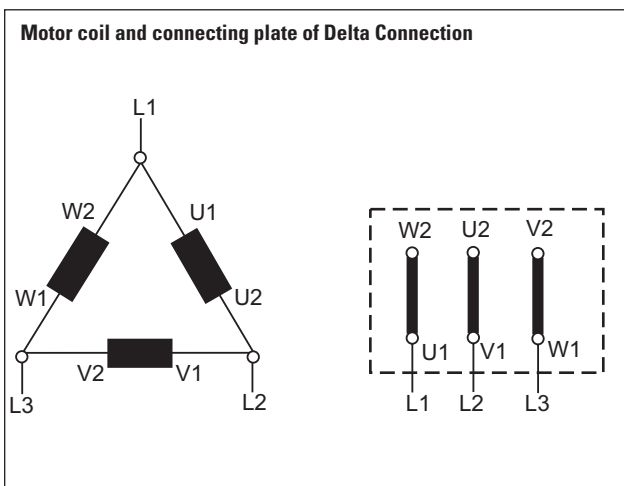
The Three Phase Current Motor Circuit

The three phase motor winding consists of three identical coils.

Delta Connection

The three coils are connected in series with the connection point connected to the mains. The voltage of each coil is the same as the mains voltage whereas the mains current is the cube root of the coil current. Delta connections are denoted by the symbol Δ .

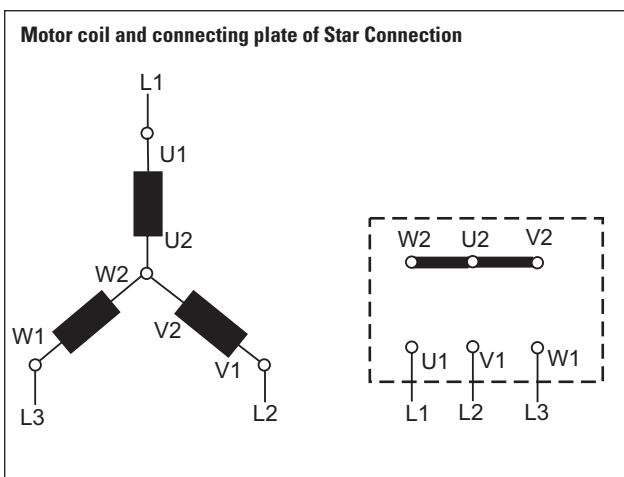
The voltage between the mains supply lines is called mains voltage. The mains current is the current which flows in the supply lines.



Star Connection

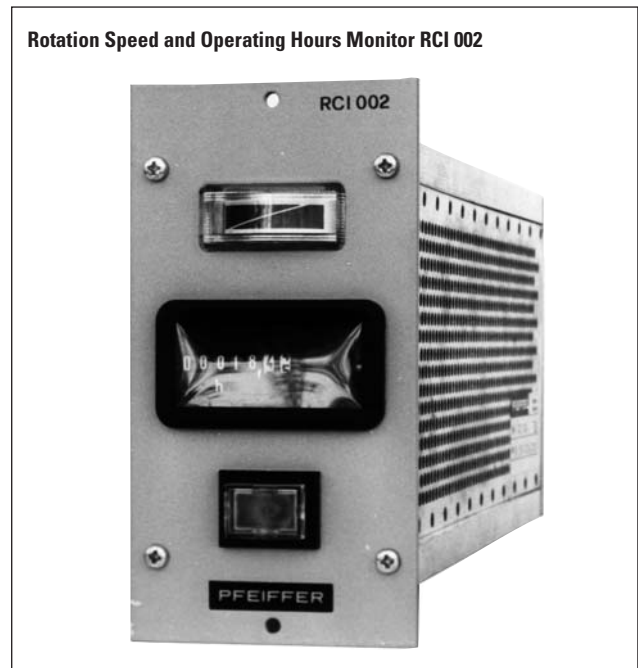
The ends of the three coils are connected at the star center. The terminal voltage is the cube root of the coil voltage; the mains and the coil current are the same. Star connections are denoted by the symbol Y .

A star connection three phase motor for 400 V mains voltage has a coil voltage of 230 V.



3.6. Monitoring Connection

The Rotary Vane Pumps UNO/ DUO 120 A have been designed so that they can be connected to a Rotation Speed and Operating Hours Monitor RCI 002, which is connected at connecting socket 45. For the operation and application of this device please refer to the relevant operations instructions.



3.7. Special Models

Helium Tight and Corrosive Gas Models

Helium tight and corrosive gas models are becoming increasingly important.

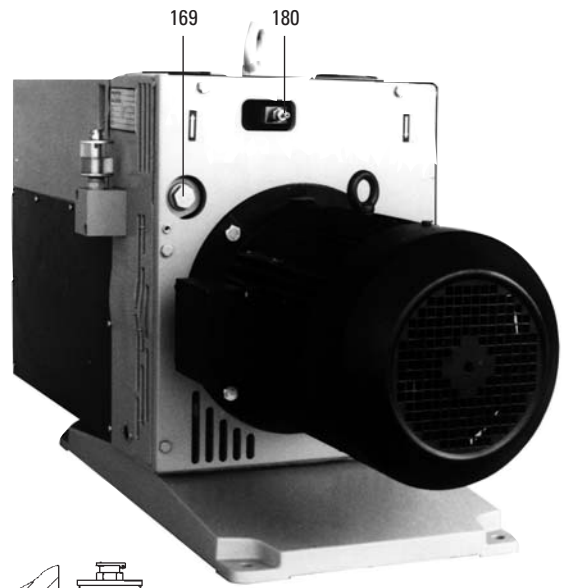
- Helium tight models are distinguished by their high level tightness to the atmosphere. Corrosive gas models are manufactured with special materials.
- There is a different high vacuum safety valve control.
- The rotor shaft of both versions is sealed with an additional radial shaft seal. The cavity between the radial shaft seals 118 and 133 is filled with operating medium and is supplied by the oiler 136.
- If the gas ballast valve 2 is not available, the opening should be closed with the locking screw 169 or a special gas ballast valve with dosing device and hose connection for flushing gas is available (on request).
- Helium tight models are operated, as standard, with operating medium P3 and the corrosive gas version with synthetic operating medium F5, also as standard.



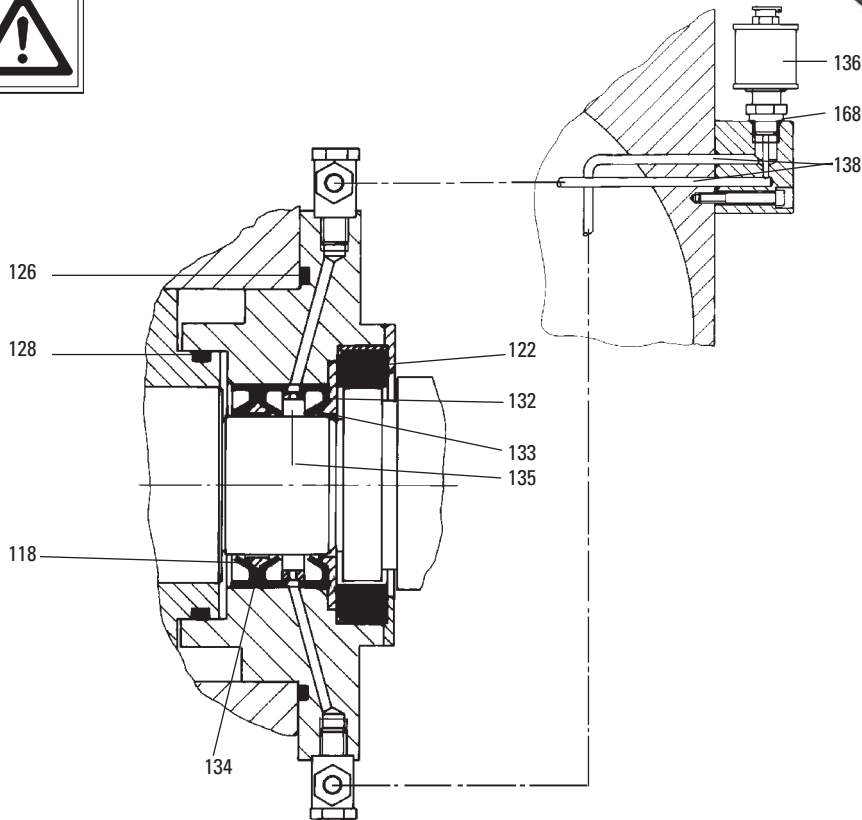
Important: The instructions in 4.1.2 must be observed when working with synthetic operating medium F5.

Helium tight and corrosive gas models UNO/DUO 120 A

- 118 Radial shaft seal
- 122 Armature
- 126 O-ring
- 128 O-ring
- 132 Support washer
- 133 Radial shaft seal
- 134 Double supporting ring
- 135 Spacer
- 136 Oiler
- 138 O-ring
- 168 O-ring
- 169 Locking screw
- 180 Hose nozzle for inert gas inlet







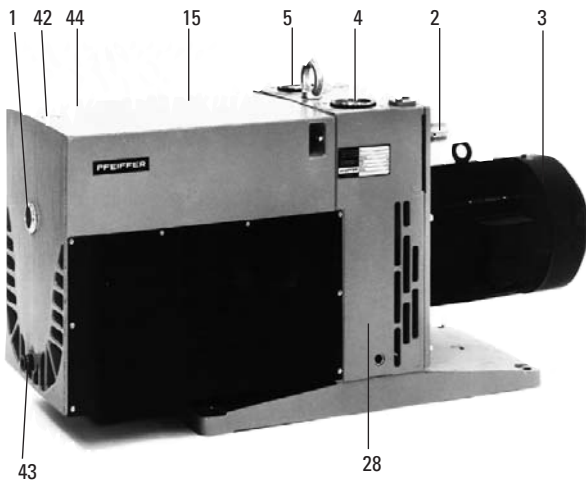
Do not exceed 200 mbar over pressure at inlet for inert gas at hose nozzle 180.



4. Operations

Rotary Vane Vacuum Pumps UN0120 A, DUO 120 A

- | | |
|--|---------------------------------|
| 1 Sight glass | |
| 2 Gas ballast valve, complete;  | |
| 3 Motor,  | 42 Operating fluid filler screw |
| 4 Exhaust flange,  | 43 Operating medium drain screw |
| 5 Vacuum flange,  | |
| 15 Casing | |
| 28 Support Stand | |



4.1. Filling Up And Checking The Operating Fluid




Standard version pumps are tested with operating fluid P3. Guarantees relating to attainment of final pressures and trouble free functioning apply only providing this operating fluid is used.

The delivery consignment contains sufficient operating fluid for one filling.

Pumps for special applications (e.g. for pumping corrosive gases) can be operated with special operating fluids such as F5 and other PFEIFFER operating fluids. The use of such operating fluids requires prior authorisation from the manufacturer.

P3 must be disposed of in accordance with local waste disposal regulations.

- ➔ Remove operating fluid filler screw 42.
- ➔ Fill up with operating fluid included in the consignment (only for P3); refer to rating plate for correct quantity.
- ➔ Replace operating fluid filler screw 42; be careful with the O-ring.
- ➔ Check operating fluid level only when the pump is warm and running and vacuum connection 5 and gas ballast valve  are closed.
- ➔ The level of operating fluid must always be between the top and the middle of the sight glass 1.

- ➔ Topping up operating fluid is possible when the pump is running and in final vacuum operations.
- ➔ In non-stop operations check operating fluid daily, otherwise whenever the pump is switched on.

4.1.2. Operating Fluid F5

Only the synthetic operating fluid F5 may be used for corrosive gas model pumps.

The use of other operating fluid must be cleared by the manufacturer.



When working with synthetic operating media, the manufacturer's directions must be observed.

If "F5" is heated above 300°C, toxic vapours which can harm the airways are given off.

Do not allow "F5" to come into contact with tobacco products (danger of poisoning when ignited). The precautions necessary in the handling of chemicals must be observed.

Please note:

If there is a noticeable loss of operating fluid, the radial shaft seals should be checked.

If operating fluid is leaking out underneath the casing 15 from the opening between the support stand 28 and motor 3, the radial shaft seal must be replaced. Please contact your local Pfeiffer-Service (see Section 7.).

4.2. Switching The Pump ON And OFF



When operating the pump gets hot.

The pump can be switched ON and OFF in any pressure range. On switching off, the built-in high vacuum safety valve 6 to the vacuum plant closes automatically and vents the pump.

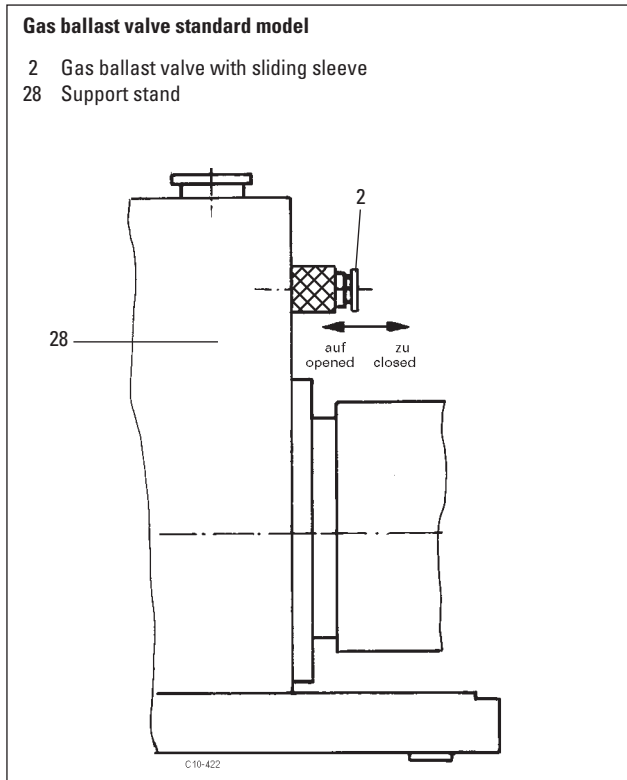
Minimum start-up temperature, in compliance with German Industrial Standard DIN 28 426: + 12 °C.

On switching OFF (intake pressure < 750 mbar) the built-in high vacuum safety valve to the vacuum chamber closes automatically and the pump is vented.

4.3. Gas Ballast Valve

4.3.1 Standard Model

Gas ballast valve 2 is fitted with a sliding sleeve which, when pushed towards the pump, opens the valve and when pushed away from the pump, shuts the valve (Fig. 7). Intermediate settings are not possible.

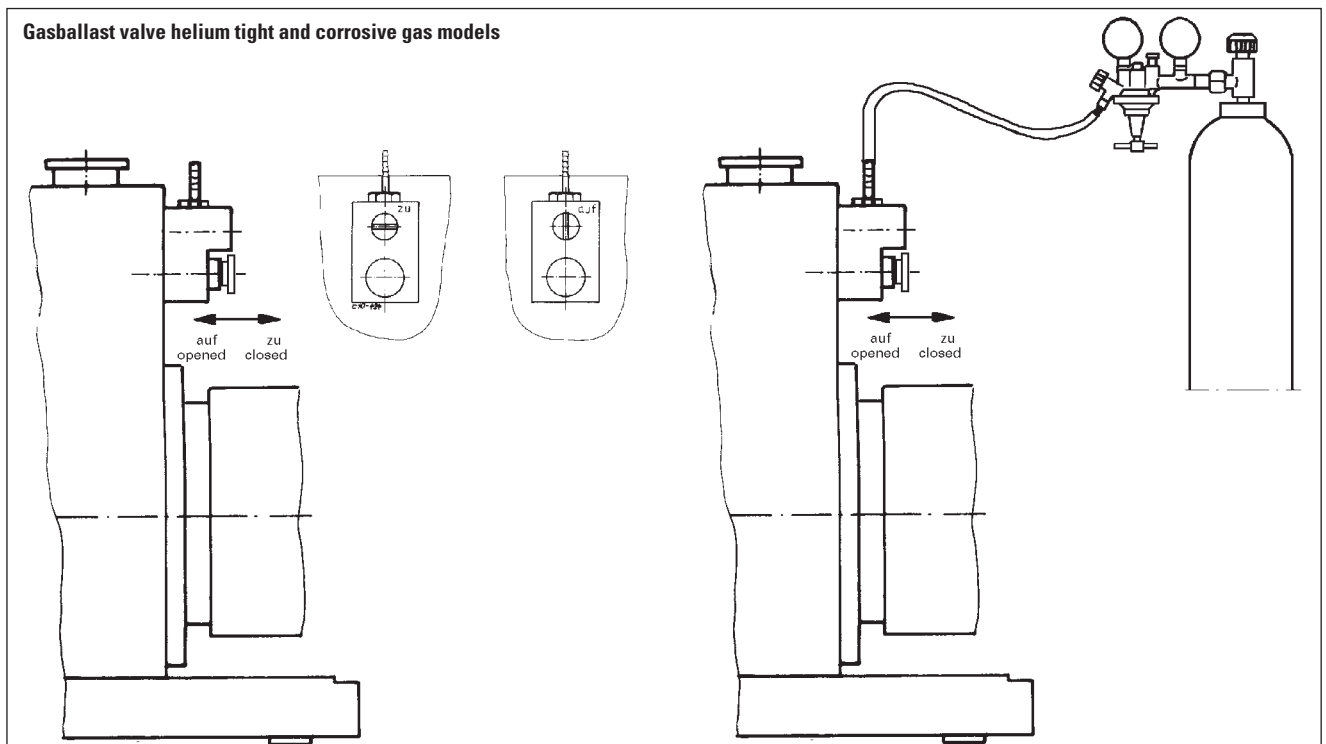


4.3.2 Corrosive Gas Model

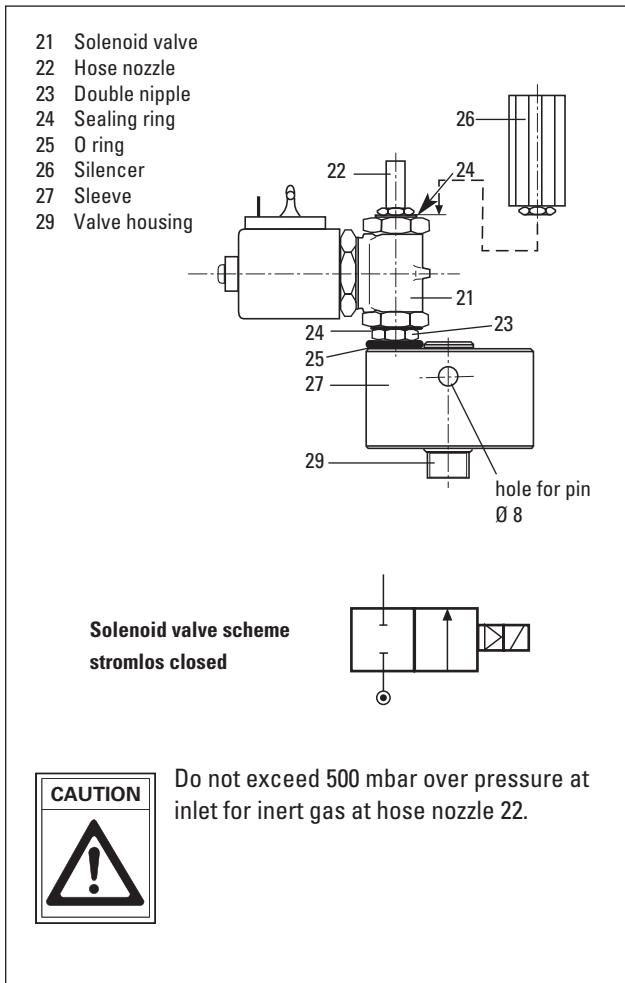
Gas ballast valve 2 is fitted with a dosing device and a flushing gas connection. It has a sliding sleeve which opens the valve when pushed towards the pump and shuts the valve when pushed away from the pump (Fig. 8). The dosing device is closed when the groove in the dosing screw is in the horizontal position; in the vertical position the dosing device is fully open. A flow meter enables any intermediate gas volume setting between fully open and fully closed to be made.

Please note:

Flushing gas must be connected when operating corrosive gas version pumps. The gas ballast valve must be open. Flushing gas pressure may not exceed 1.5 bar. Our specialists would be pleased to give advice regarding the type and volume of flushing gas required.



4.3.3. Magnetic controllable gas ballast valve



Assemble solenoid valve reversion kit for gas ballast valve

- ➔ Push back sliding sleeve of gas ballast valve 2 in standard version.
- ➔ Unscrew valve housing 29 from the stand by means of a pin (Ø 8).
- ➔ Assemble sleeve 27 and valve housing 29 and screw in the stand by means of a pin (Ø 8).
- ➔ Screw in double nipple 23 and solenoid valve as shown in the illustration.

4.4. Pumping Off Dry Gases

No special measures are necessary. The gas ballast valve can remain closed.

4.5. Pumping Off Vapours



To prevent their condensation in the pump, vapours should only be pumped off with the pump at operating temperature and the gas ballast valve 2 open.

Observe pump water vapour tolerance levels (see Section 8.0 Technical Data). When the process has been completed, allow the pump to continue running for approx. 30 minutes for operating medium cleaning purposes.

5. What To Do In Case Of Breakdown?

Problem	Possible Causes	Remedy
Pump doesn't attain final pressure	Pump dirty Operating fluid dirty Leak in system	Operate pump for a longer period with open gasballast valve or change operating fluid Repair leak
Unusual operating noises	Damaged pump stages Damaged coupling piece	Request repair by PFEIFFER Service Request repair by PFEIFFER Service
Oil leaking from the foot of the pump	Radial shaft seal defective	Request repair by PFEIFFER Service
Pump doesn't start	Ambient temperature < 12 °C Dirty pump stages Damaged pump stages	Warm up pump Request cleaning by PFEIFFER Service Request repair by PFEIFFER Service

Further repairs can only be carried out by trained specialists in accordance with Service Instructions.

6. Maintenance

When carrying out servicing work, take the following precautions:



Always ensure the pump cannot be switched on when carrying out any work on the pump. If necessary, remove the pump from the system to carry out inspection work.

- ➔ Only dismantle the pump as far as is necessary in order to repair defects.
- ➔ Dispose of used operating fluid in compliance with local regulations.
- ➔ When working with synthetic operating media, toxic substances and substances contaminated with corrosive gases, the relevant instructions governing their use must be observed.
- ➔ Only use benzene or similar agents for cleaning pump parts. Do not use soluble cleaning agents.

6.1. Changing The Operating Fluid

The rate of deterioration of the operating fluid depends on the pump applications.

- ➔ The level of deterioration of organic operating fluids (for example P3) can be read off from the colour scale in accordance with DIN 51578 on the supplementary sheet PK 800 219 BN/B, on request.
 - The colour scale enables precise colour determination.
- ➔ Fill a specimen in a test tube or some similar vessel and test by holding against the light.
- ➔ Where the discolouration is dark yellow to red brown (equivalent to 4 ... 5 on the scale) change operating fluid.



Where organic operating fluids, for example P3, are involved, the operating fluid should be changed at least once a year!

Replacing The Operating Fluid

- ➔ Switch off the pump.
- ➔ Unscrew operating fluid drain screw 43 and drain operating fluid.



The operating fluid temperature can be as high as 80 °C. During maintenance and repair work, process related toxic gases and vapours can escape from the operating fluid which may become contaminated with harmful substances (radioactive, chemical etc.).

Disposal of used operating fluid is subject to the relevant regulations.

- ➔ Screw in operating fluid drain screw 43.
- ➔ Allow pump to run for about 10 seconds with open vacuum flange.
- ➔ Drain off remaining operating fluid.
- ➔ In the case of serious contamination, the operating fluid will have to be changed several times.
- ➔ Screw in operating fluid drain screw 43 with O-ring.
- ➔ Fill in fresh operating fluid and check level as per section 4.1.



Operating fluid can contain substances from the medium pumped. Operating fluid must be disposed of in accordance with the local respective regulations.

Please request safety instruction data sheets for operating fluids from PFEIFFER or download from the INTRANET/INTERNET.

6.2. Re-Setting The Silencer

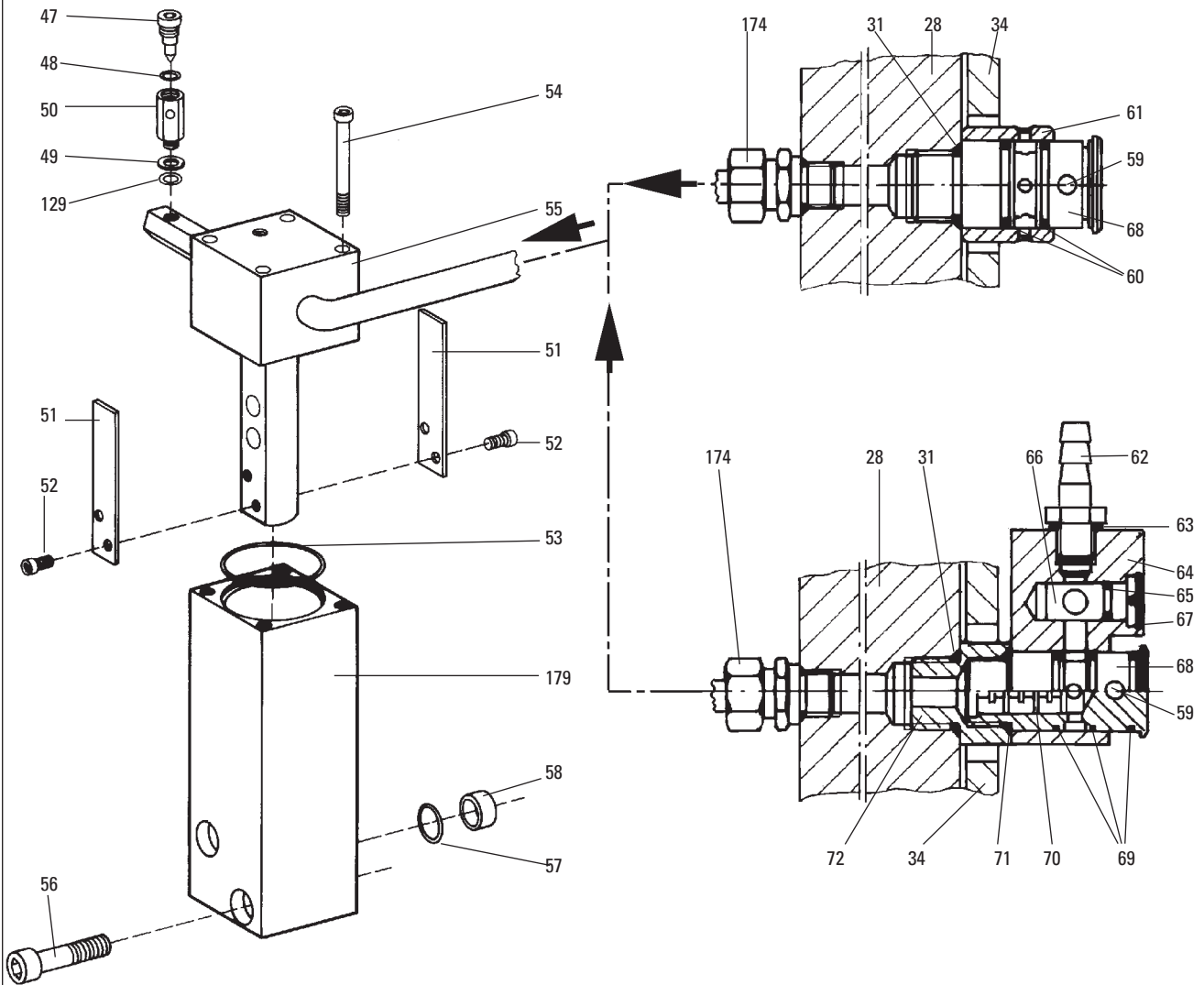
If the silencer 13 is not functioning, a knocking noise becomes audible at end vacuum. This does not cause damage to the pump but it may be disturbing in quiet rooms. Setting can be carried out while the pump is running and the intake socket and gas ballast valve are closed, using a normal screwdriver:

- ➔ The pump must have reached its operating temperature.
- ➔ Remove locking screw 44 (UNO 120A) or operating medium filler screw 42 (DUO 120 A).
- ➔ Using a screwdriver, open the valve spindle 47 approx. 3 turns (flushing) for some seconds and then close it again completely (clockwise).
- ➔ Slowly open the valve spindle 47 (1/2 to a complete turn) until the knocking noise is no longer audible.
- ➔ Replace locking screw 44 or operating medium filler screw 42 paying attention to the O-ring.

Please note:

Silencer cleaning is described in the service instructions.

Helium-tight and korrosive gas models



- 2 Gas ballast
- 13 Silencer
- 14 Non-return valve
- 28 Support stand
- 31 O-ring
- 34 Cover
- 47 Valve spindle
- 48 O-ring
- 49 O-ring
- 50 Valve housing
- 51 Plate spring

- 52 Screw
- 53 O-ring
- 54 Screw
- 55 Insert
- 56 Screw
- 57 O-ring
- 58 Centering sleeve
- 59 Hole
- 60 O-ring
- 61 Sleeve
- 62 Flushing gas connection
- 63 O-ring

- 64 Dosing valve unit
- 65 O-ring
- 66 Dosing insert
- 67 Safety ring
- 68 Valve housing
- 69 O-ring
- 70 Insert
- 71 O-ring
- 72 Intermediate piece
- 129 Centering ring
- 174 Screw connection
- 179 Housing non-return valve

6.3. Cleaning The Gas Ballast Valve

Gas ballast valve 2 can only get dirty if the ambient air sucked in is dusty.

Assembling and dismantling the Standard Model


- ➔ Insert round steel bar into boring 59 and remove gas ballast valve 2; take care with the O-ring.
- ➔ Remove sleeve 61.
- ➔ Remove insert 70 (see "Corrosive Gas Model"). Four bore holes have been provided on the front side for this operation.
- ➔ Clean all parts.
- ➔ Check O-ring 60 for wear and replace if necessary.
- ➔ Lightly oil O-rings with operating medium.
- ➔ Re-assemble the parts in reverse order.

Assembling and dismantling the Helium Tight and Corrosive Gas Models

- ➔ Insert round steel bar into boring 59 and remove valve housing 68 taking care with the O-ring 71. Connecting piece 72 is not removed.
- ➔ Remove dosing valve unit 64 from 68.
- ➔ Remove safety ring 67 and dosing insert 66 from dosing valve unit 64.
- ➔ Remove insert 70. Four borings have been provided on the front side for this operation.
- ➔ Clean all parts.
- ➔ Check O-rings 65 and 69 for wear and replace if necessary.
- ➔ Lightly oil O-rings with operating medium.
- ➔ Re-assemble the parts in reverse order.

6.4. Shutting Down For Longer Periods

Should the pump have to be shut down for an longer period, the complete pumping system must be adequately protected against corrosion.

- ➔ Switch off pump.
- ➔ Unscrew operating fluid drain screw 43 and drain operating fluid as per Section 6.1.
- ➔ Screw in operating fluid drain screw 43; keep an eye on the position of the O-ring.
- ➔ Allow pump to run for about 10 seconds with open vacuum flange. .
- ➔ Drain off remaining operating fluid.
- ➔ Fill up pump with fresh operating fluid:
Filling: UNO 120 A --> 21 l
DUO 120 A --> 18 l

If this amount of operating fluid is filled in, the level is extremely high but this is necessary to protect all parts of the pump against corrosion.



Before operating, the operating fluid must be reduced to its normal level.

7. Service

Do Make Use Of Our Service Facilities

In the event that repairs are necessary to your pump, a number of options are available to you to ensure any system down time is kept to a minimum:

- Have the pump repaired on the spot by our PFEIFFER Service Engineers;
- Return the individual components to the manufacturer for repairs;
- Replace individual components with a new value exchange units.

Local PFEIFFER representatives can provide full details.

Before Returning:

- ➔ Dismantle all accessories.
- ➔ Drain lubricant.
- ➔ Attach a clearly visible notice: "Free of contamination" (to the unit being returned, the delivery note and accompanying paperwork).

Harmful substances" are substances and preparations as defined in current legislation. PFEIFFER will carry out the decontamination and invoice this work to you if you have not attached this note. This also applies where the operator does not have the facilities to carry out the decontamination work. Units which are contaminated microbiologically, explosively or radioactively cannot be accepted as a matter of principle.

Fill Out The Contamination Declaration

- ➔ In every case the "Contamination Declaration" must be completed diligently and truthfully.
- ➔ A copy of the completed declaration must accompany the unit; any additional copies must be sent to your local PFEIFFER Service Center.

Please get in touch with your local PFEIFFER representatives if there are any questions regarding contamination.



Decontaminate units before returning or possible disposal. Do not return any units which are microbiologically, explosively or radioactively contaminated.

Returning Contaminated Units

If contaminated units have to be returned for maintenance/repair, the following instructions concerning shipping must be followed without fail:

- ➔ Neutralise the pump by flushing with nitrogen or dry air.
- ➔ Seal all openings to the air.
- ➔ Seal pump or unit in suitable protective foil.
- ➔ Ship units only in appropriate transport containers.



Repair orders are carried out according to our general conditions of sale and supply.

- ➔ If repairs are necessary, please send the unit together with a short damage description to your nearest PFEIFFER Service Center.

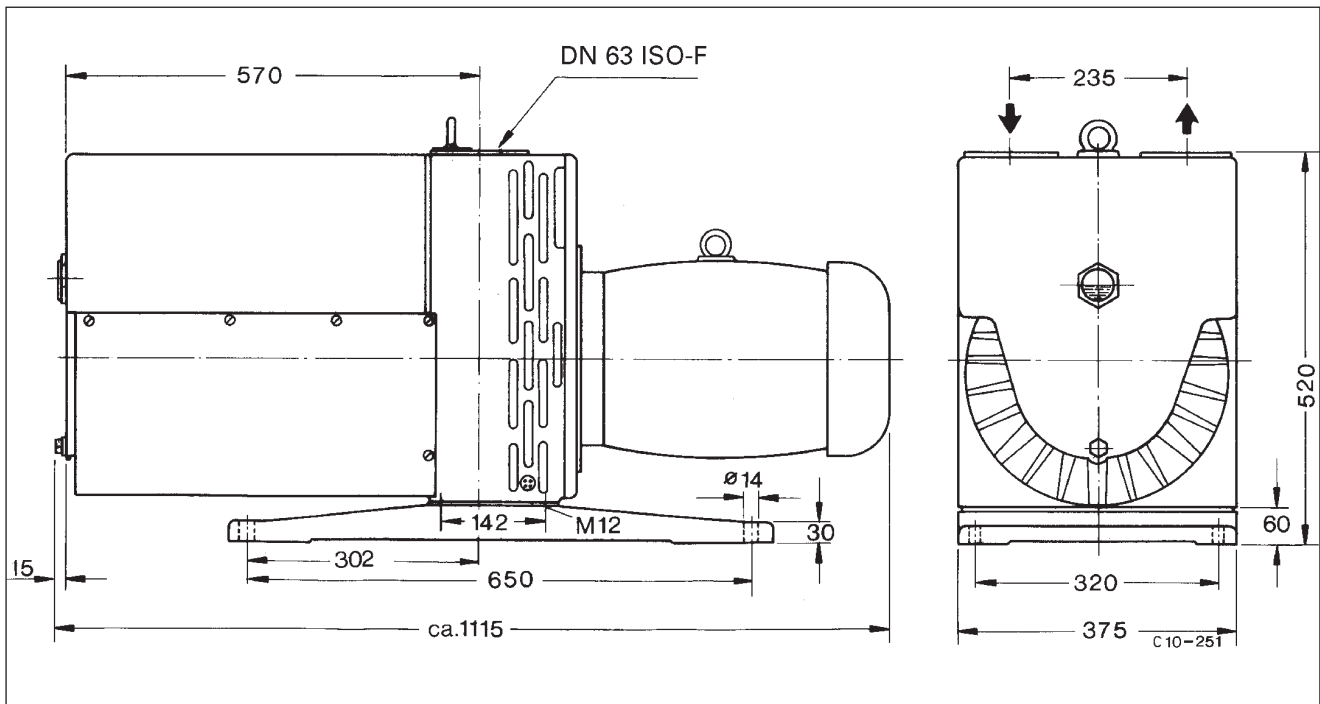
Contact Addresses And Telephone Hotline

Contact addresses and service hotlines can be found on the back cover of these operating instructions.

8. Technische Daten

Single stage Two stage	Unit	UNO 120 A	DUO 120 A
Connection nominal diameter Inlet Outlet	ISO-F ISO-F	DN 63 DN 63	DN 63 DN 63
Rated volume flow rate at 50 Hz 60 Hz Volume flow rate 50 Hz 60 Hz	m ³ /h m ³ /h m ³ /h m ³ /h	128 154 120 144	128 154 120 144
Final pressure total without gas ballast total with gas ballast	mbar mbar	$< 3 \cdot 10^{-2}$ < 1	$< 3 \cdot 10^{-3}$ $< 6 \cdot 10^{-3}$
Auspuffdruck min Auspuffdruck max	mbar mbar	> 250 < 1500	> 250 < 1500
Water vapour compatibility 50 Hz 60 Hz Water vapour acceptable capacity 50 Hz 60 Hz	mbar mbar g/h g/h	33 33 2800 3360	20 20 1800 2150
Noise development without gas ballast	dB(A)	60	60
Operating fluid, amount Max. admissible operating temperature ¹⁾	l °C	17 90	13 90
Nominal rotation speed of pump at 50 Hz at 60 Hz	1/min 1/min	965 1158	965 1158
Nominal motor power three phase motor with motor protection switch at 50 Hz at 60 Hz three phase motor with temperature sensor at 50 Hz at 60 Hz	kW kW kW kW	4 4 4 4	4 4 4 4
Weight pump with three-phase motor.	kg	193	215
¹⁾ The maximum admissible operating temperature of 90 °C is valid for an ambient temperature of 25 °C and operating fluid P3, without gas ballast. Operating temperatures in the range of 110 ... 115 °C could be caused by increased ambient temperature to max. 40 °C (for operating fluid P3).			

8.1. Dimensions



9. Accessories

A comprehensive range of accessories can be found in section B of the Pfeiffer catalogue (order no. PA 800 066 PE), to:

- extend the application range of the pumps and
- protect the pump from wear, when used under extreme operating conditions.

The tripping device to protect against overloading the pump can be ordered under the order number P 4768 051 FQ.

10. Spare parts

Pos.	Description	Quantity	Size	Number	Comment	Order Quantity
	Set of seals	1		PK 215 099-T		
1	Sight glass	1	R 15"	PK 213 140		
2	Gas ballast valve			PK 215 022-U		
29	Sieve insert	2	DN 63 ISO	PK 300 010 -X		
45	PCB	1		PK 215 306 -X		
172	O-ring	2	75,56 x 5,33	P 4071 054 PV		
173	O-ring	1	38 x 3	P 4070 621 PV		
187	Sealing ring	2	20/25,5 x 2,4	P 3191 476		

When ordering accessories and spare parts please be sure to state the full part number. When ordering spare parts please state additionally the unit type and unit number (see rating plate). Please use this list as an order form (by taking a copy).

Declaration of Contamination of Vacuum Equipment and Components

The repair and/or service of vacuum components will only be carried out if a correctly completed declaration has been submitted. Non-completion will result in delay.

The manufacturer could refuse to accept any equipment without a declaration.

This declaration can only be completed and signed by authorised and qualified staff:

1. Description of component:

- Equipment type/model: _____
- Code No.: _____
- Serial No.: _____
- Invoice No.: _____
- Delivery Date: _____

2. Reason for return:

3. Equipment condition

- Has the equipment been used?
yes no
- What type of pump oil was used?

- Is the equipment free from potentially harmful substances?
yes (go to section 5)
no (go to section 4)

4. Process related contamination of equipment

- toxic yes no
- corrosive yes no
- microbiological hazard*) yes no
- explosive*) yes no
- radioactive*) yes no
- other harmful substances yes no

*) We will not accept delivery of any equipment that has been radioactively or microbiologically contaminated without written evidence of decontamination!

Please list all substances, gases and by-products which may have come into contact with the equipment:

Tradename Product name Manufacturer	Chemical name (or Symbol)	Danger class	Precautions associated with substance	Action if spillage or human contact
1.				
2.				
3.				
4.				
5.				

5. Legally Binding Declaration

I hereby declare that the information supplied on this form is complete and accurate. The despatch of equipment will be in accordance with the appropriate regulations covering Packaging, Transportation and Labelling of Dangerous Substances.

Name of Organisation: _____

Address: _____ Post code: _____

Tel.: _____

Fax: _____ Telex: _____

Name: _____

Job title: _____

Date: _____ Company stamp: _____

Legally binding signature: _____



Konformitätserklärung
Declaration of Conformity



im Sinne folgender EU-Richtlinien:
pursuant to the following EU directives:

- **Maschinen/Machinery 98/37/EG**
- **Elektromagnetische Verträglichkeit/Electromagnetic Compatibility 89/336/EWG**
- **Niederspannung/Low Voltage 73/23/EWG**

Hiermit erklären wir, daß das unten aufgeführte Produkt den Bestimmungen der EU-Maschinenrichtlinie 98/37/EG - Anhang IIA, der EU-Richtlinie über elektromagnetische Verträglichkeit 89/336/EWG und der EU-Niederspannungsrichtlinie 73/23/EWG entspricht.

We hereby certify that the product specified below is in accordance with the provision of EU Machinery Directive 98/37/EEC - Annex II A, EU Electromagnetic Compatibility Directive 89/336/EEC and EU Low Voltage Directive 73/23/EEC.

Produkt/Product:

UNO/DUO 120 A

Angewendete Richtlinien, harmonisierte Normen und angewendete, nationale Normen:

Guidelines, harmonised standards, national standards which have been applied:

EN 292-1 60335-1, -41
EN 292-2 EN 61 010
EN 294 EN 60 204
EN 50 081-1 EN 1012-2
EN 50 082-2

Unterschrift/Signature:



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