

DuoVane

Two-stage Oil-lubricated Rotary Vane Vacuum Pumps
DuoVane 30, DuoVane 95

Instruction Manual

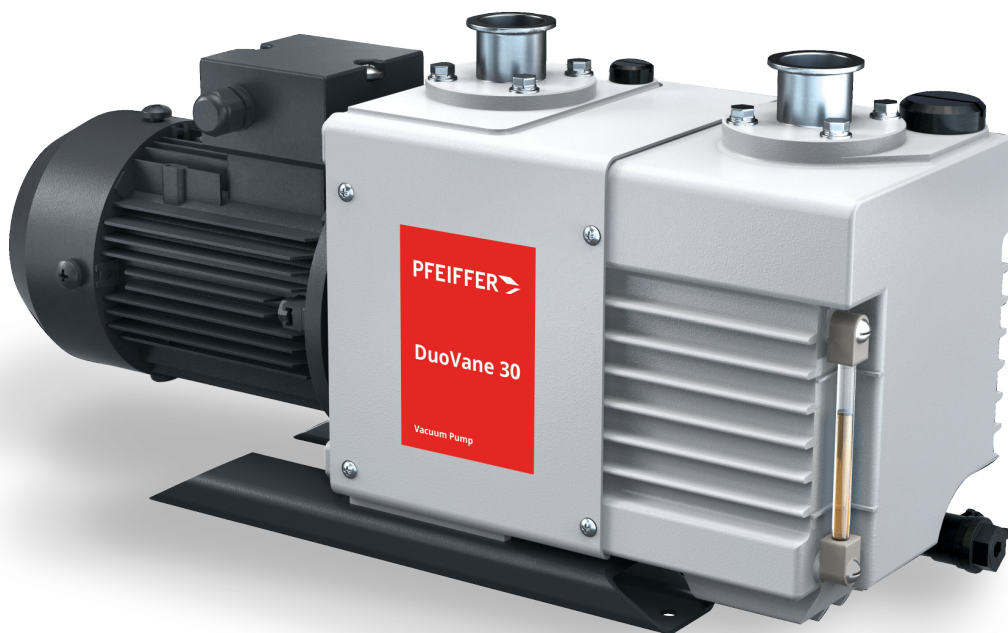


Table of Contents

1	Safety	3
2	Product Description	4
2.1	Operating Principle	5
2.2	Intended Use	5
2.3	Optional Accessories.....	6
2.3.1	Gas Ballast Valve.....	6
2.3.2	Inlet Filter	6
2.3.3	Oil Mist Separator	6
3	Transport	7
4	Storage.....	8
5	Installation.....	9
5.1	Installation Conditions	9
5.2	Connecting Lines / Pipes	10
5.2.1	Inlet Connection	10
5.2.2	Discharge Connection.....	11
5.2.3	Oil Mist Separator (Optional)	11
5.3	Filling Oil.....	12
6	Electrical Connection	14
6.1	Machine delivered without Control Box or Variable Speed Drive (VSD)	14
6.2	Wiring Diagram Three-Phase Motor.....	15
7	Commissioning	17
7.1	Continuous Operation	17
7.2	Conveying Condensable Vapors.....	18
8	Maintenance	19
8.1	Maintenance Schedule	19
8.2	Oil Change Recommendations	20
8.3	Oil Change.....	20
8.4	Coupling Maintenance	22
9	Overhaul	23
10	Decommissioning	24
10.1	Dismantling and Disposal	24
11	Spare Parts	25
12	Accessories	26
13	Troubleshooting	27
14	Technical Data	30
15	Oil	31
16	EU Declaration of Conformity	32

1 Safety

Prior to handling the machine, this instruction manual should be read and understood. If anything needs to be clarified, please contact your manufacturer representative.

Read this manual carefully before use and keep for future reference.

This instruction manual remains valid as long as the customer does not change anything on the product.

The machine is intended for industrial use. It must be handled only by technically trained personnel.

Always wear appropriate personal protective equipment in accordance with the local regulations.

The machine has been designed and manufactured in accordance with the state-of-the-art methods. Nevertheless, residual risks may remain, as described in the following chapters and in accordance with the chapter *Intended Use* [→ 5].

This instruction manual highlights potential hazards where appropriate. Safety notes and warning messages are tagged with one of the keywords DANGER, WARNING, CAUTION, NOTICE and NOTE as follows:



DANGER

... indicates an imminent dangerous situation that will result in death or serious injuries if not prevented.



WARNING

... indicates a potentially dangerous situation that could result in death or serious injuries.



CAUTION

... indicates a potentially dangerous situation that could result in minor injuries.



NOTICE

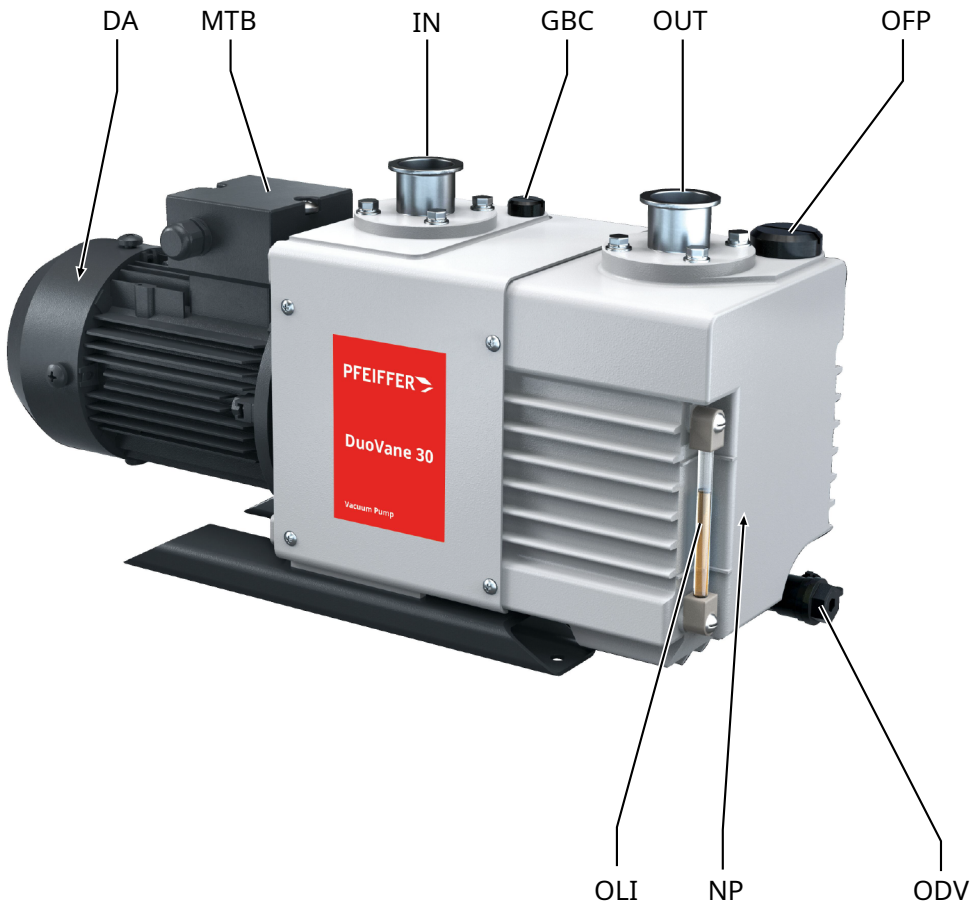
... indicates a potentially dangerous situation that could result in damage to property.



NOTE

... indicates helpful tips and recommendations, as well as information for efficient and trouble-free operation.

2 Product Description



Description			
IN	Inlet connection	OUT	Discharge connection
DA	Directional arrow	GBC	Gas ballast connection
MTB	Motor terminal box	NP	Nameplate
ODV	Oil drain valve	OFP	Oil fill plug
OLI	Oil level indicator		

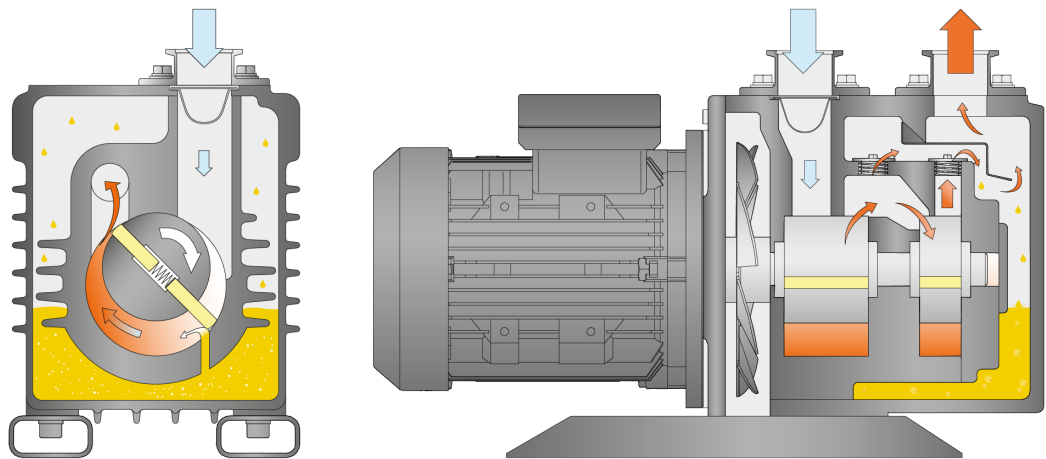
NOTE

Technical term.
In this instruction manual, we consider that the term ‘machine’ refers to the ‘vacuum pump’.

NOTE

Illustrations.
In this instruction manual, the illustrations may differ from the appearance of the machine.

2.1 Operating Principle



The machine works on the two-stage rotary vane principle.

The oil seals the gaps, lubricates the vanes and takes away compression heat.

2.2 Intended Use



WARNING

In case of foreseeable misuse outside the intended use of the machine.

Risk of injuries!

Risk of damage to the machine!

Risk of damage to the environment!

- Make sure to follow all instructions described in this manual.

The machine is intended for the suction of air and other dry, non-aggressive, non-toxic, non-ignitable and non-explosive gases.

Conveying of other media leads to an increased thermal and/or mechanical load on the machine and is permissible only after a consultation with the manufacturer.

The machine is intended for placement in a non-potentially explosive environment.

The machine is capable of maintaining ultimate pressure, see *Technical Data* [→ 30].

The machine is suitable for continuous operation under certain conditions, see *Continuous Operation* [→ 17].

Permitted environmental conditions, see *Technical Data* [→ 30].



NOTICE

Chemical compatibility of the process gases with the machine component materials.

Risk of corrosion inside the compression chamber which can reduce performance and its life-time!

- Check if the process gases are compatible with those following materials:
 - Cast iron
 - Steel
 - Aluminum
 - Fluor elastomer (FKM/FPM)
 - Contact your manufacturer representative for further advice and information.
-

2.3 Optional Accessories

2.3.1 Gas Ballast Valve

The gas ballast valve mixes the process gas with a limited quantity of ambient air to counteract the condensation of vapor inside the machine.

2.3.2 Inlet Filter

The inlet filter protects the machine against dust and other solids in the process gas. The inlet filter is available with a polyester cartridge.

2.3.3 Oil Mist Separator

To reduce the oil consumption and trap any oil mist, when operating at a high inlet pressure, it is recommended to fit an oil mist separator at the discharge connection (OUT).

An oil return line from the oil mist separator to the machine is available in order to retrieve the oil collected by the oil mist separator.

To allow the oil to return to the machine in continuous operation, please comply with the conditions for *Continuous Operation* [→ 17].

3 Transport



WARNING

Suspended load.

Risk of severe injury!

- Do not walk, stand, or work under suspended loads.

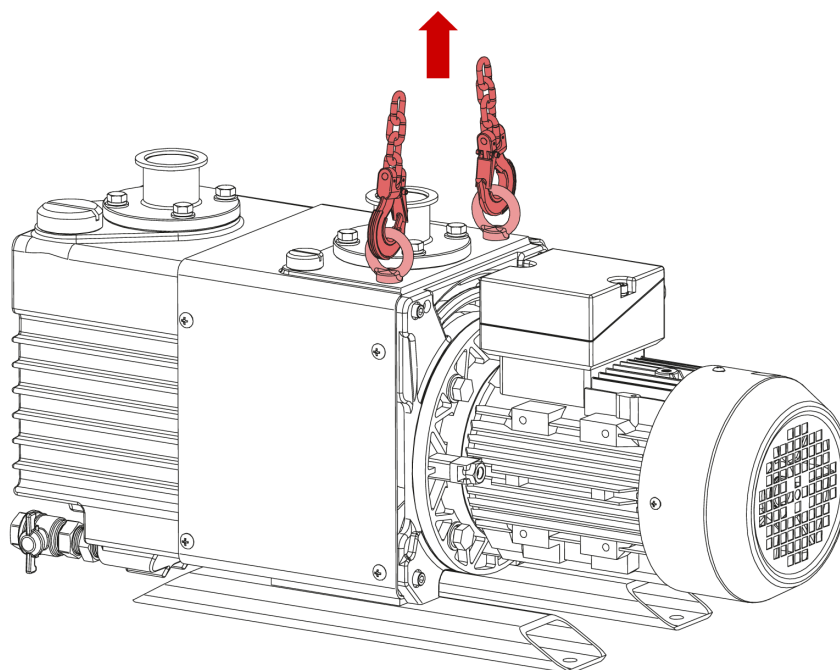


NOTICE

In case the machine is already filled with oil.

Tilting a machine that is already filled with oil can cause large quantities of oil to ingress into the cylinder. Starting the machine with excessive quantities of oil in the cylinder will immediately break the vanes and ruin the machine!

- Drain the oil prior to every transport or always horizontally transport the machine.
- To find out the weight of the machine, refer to the chapter *Technical Data* [→ 30] or the name-plate (NP).



- Check the machine for transport damage.

If the machine is secured to a base plate:

- Remove the machine from the base plate.

4 Storage

- Seal hermetically all apertures with the caps provided with the machine, or with adhesive tape if the caps are no longer available.
- Store the machine indoors, in a dry place, away from dust and vibrations and if possible, in original packaging, preferably at temperatures between -10 ... 50 °C (14 ... 122 °F), less than 95%RH (relative humidity).

If the machine is to be stored for more than 3 months:

- Seal hermetically all apertures with the caps provided with the machine, or with adhesive tape if the caps are no longer available.
- Wrap the machine in a corrosion inhibitor film.
- Store the machine indoors, in a dry place, away from dust and vibrations and if possible, in original packaging, preferably at temperatures between -10 ... 50 °C (14 ... 122 °F), less than 95%RH (relative humidity).

5 Installation

5.1 Installation Conditions



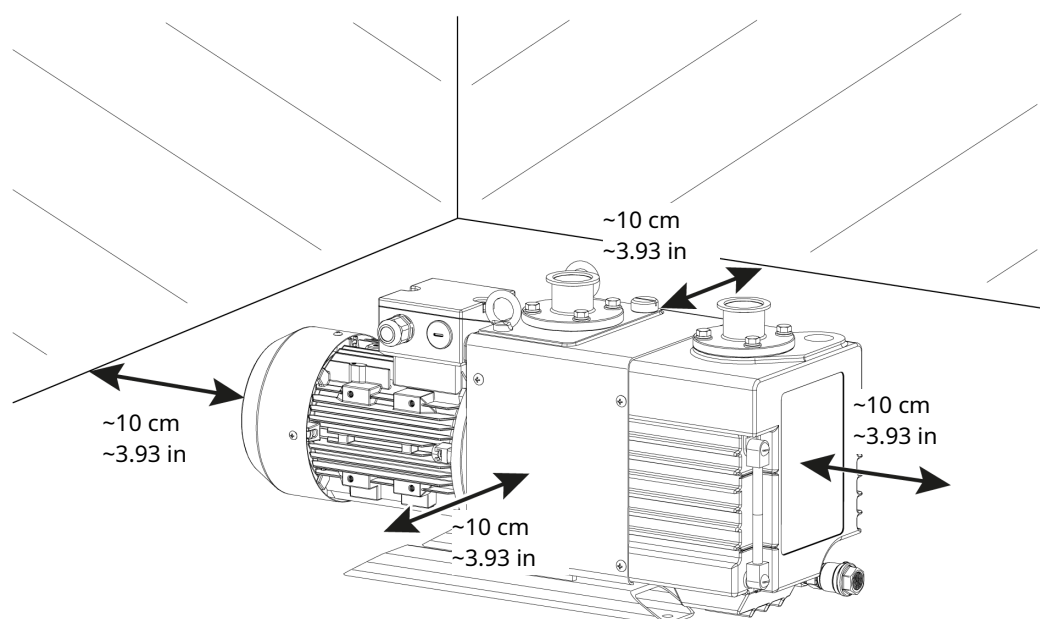
NOTICE

Use of the machine outside of the permitted installation conditions.

Risk of premature failure!

Loss of efficiency!

- Make sure that the installation conditions are fully respected.



- Make sure that the environment of the machine is not potentially explosive.
- Make sure that the ambient conditions comply with the *Technical Data* [→ 30].
- Make sure that the environmental conditions comply with the protection class of the motor and the electrical elements.
- Make sure that the installation space or location is protected from weather and lightning.
- Make sure that the installation space or location is vented such that sufficient cooling of the machine is provided.
- Make sure that cooling air inlets and outlets of the motor fan are not covered or obstructed and that the cooling air flow is not affected adversely in any other way.
- Make sure that the oil level indicator (OLI) remains easily visible.
- Make sure that enough space remains for maintenance work.
- Make sure that the machine is placed or mounted horizontally, a maximum deviation of 1° in any direction is acceptable.
- Check the oil level, see Oil Level Inspection.
- Make sure that all provided covers, guards, hoods, etc. are mounted.

If the machine is installed at an altitude greater than 1000 meters above sea level:

- Contact your manufacturer representative, the motor must be derated or the ambient temperature limited.

5.2 Connecting Lines / Pipes



WARNING

Internal pressure higher than 300 hPa (gauge).

Risk of severe injury!

Risk of damage to the machine!

- Make sure that the discharge line is not clogged (either pipe or oil mist separator).
- Remove all protective covers before installation.
- Make sure that the connection lines cause no stress on the connections of the machine. Therefore, we recommend installing flexible lines at the inlet and discharge connections.
- Make sure that the diameter of the connection lines over the entire length is at least as large as the connections of the machine.

In case of long connection lines:

- Use larger diameters to avoid a loss of efficiency.
- Contact your manufacturer representative for more information.

5.2.1 Inlet Connection



WARNING

Unprotected inlet connection.

Risk of severe injury!

- Do not put hand or fingers in the inlet connection.



WARNING

Unprotected inlet connection.

Risk of severe injury!

- Keep long hair, loose clothing, etc. away from the inlet connection.



NOTICE

Ingress of foreign objects or liquids.

Risk of damage to the machine!

If the inlet gas contains dust or other foreign solid particles:

- Install a suitable filter (5 micron or less) at the inlet of the machine.

Connection size(s):

- ISO-KF 40 for DuoVane 30
- ISO-K 63 for DuoVane 95

- VG 40 (without ISO-KF adapter) for DuoVane 30
- VG 50 (without ISO-KF/ISO-K adapter) for DuoVane 95
- Make sure that the connection lines cause no stress on the connections of the machine. Therefore, we recommend installing flexible lines at the inlet and discharge connections.

5.2.2 Discharge Connection



CAUTION

The discharge gas contains small quantities of oil.

Risk to health!

If air is discharged into rooms where persons are present:

- Make sure that sufficient ventilation is provided.



NOTICE

Discharge gas flow obstructed.

Risk of damage to the machine!

- Make sure that the discharged gas will flow without obstruction. Do not shut off or throttle the discharge line or use it as a pressurized air source.

Connection size(s):

- ISO-KF 40
- VG 40 (without ISO-KF adapter)

Unless the aspirated air is discharged to the environment right at the machine.

- Make sure that the discharge line either slopes away from the machine or provide a liquid separator or a siphon with a drain cock, so that no liquids can flow back into the machine.
- Make sure that the connection lines cause no stress on the connections of the machine. Therefore, we recommend installing flexible lines at the inlet and discharge connections.

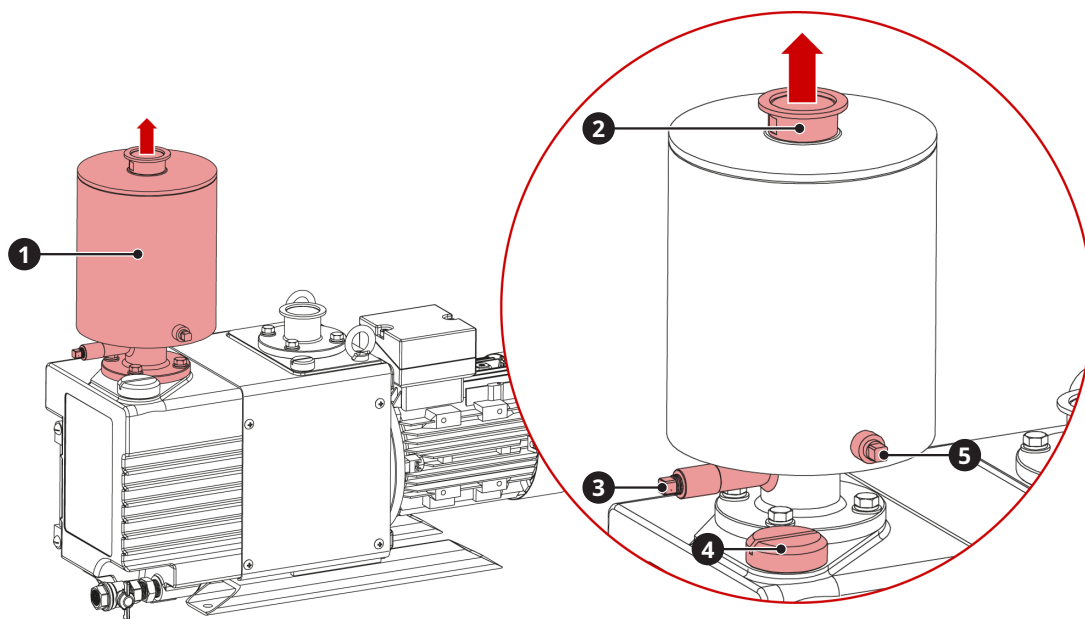
5.2.3 Oil Mist Separator (Optional)

The oil mist separator has to be fitted at the discharge connection.

- Remove the ISO-KF adapter.
- Mount the oil mist separator with its seal and screws.

If there is an oil return line included (optional):

- Connect it from the oil drain port of the oil mist separator to the oil fill plug of the machine (OFP).
- Comply with the conditions for *Continuous Operation* [→ 17].
- It is recommended to monitor the internal pressure, see *Technical Data* [→ 30].



Description			
1	Oil mist separator	2	Discharge connection (OUT)
3	Pressure gauge connection (PGX)	4	Oil fill plug (OFP)
5	Oil return line connection (ORC)/ oil drain plug (ODP)		

5.3 Filling Oil



NOTICE

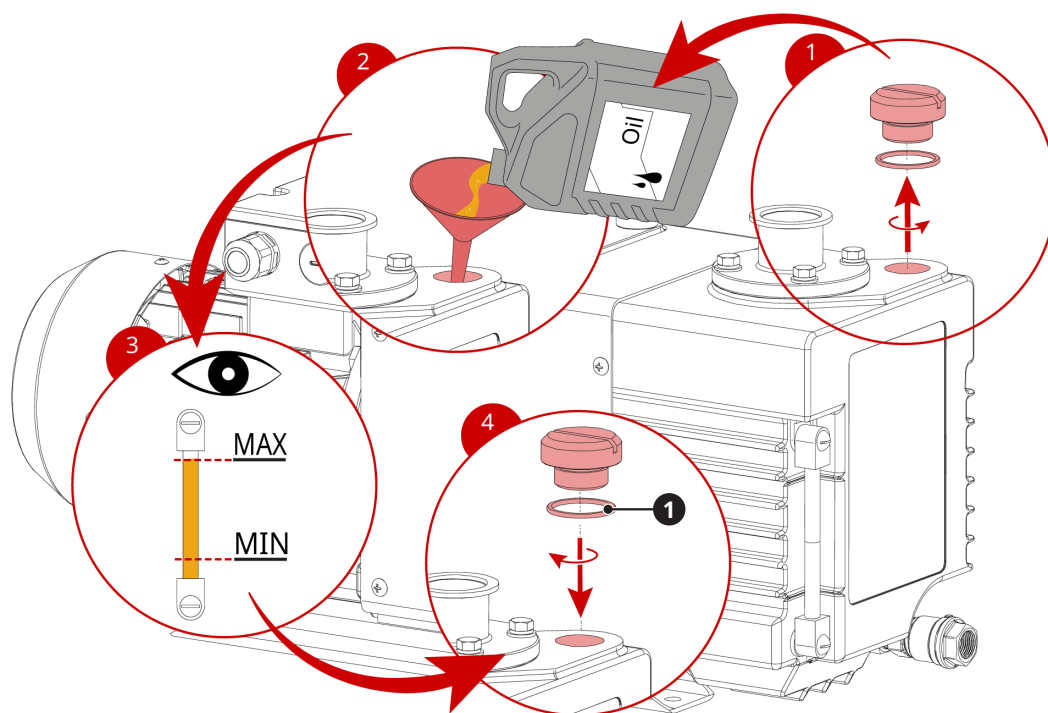
Use of inappropriate oil.

Risk of premature failure!

Loss of efficiency!

- Use only a type of oil previously approved and recommended by the manufacturer.

For oil type and oil capacity see *Technical Data* [→ 30] and *Oil* [→ 31].

**Description**

- | | | | |
|---|--|--|--|
| 1 | Make sure that the o-ring is correctly seated in the groove. | | |
|---|--|--|--|

6 Electrical Connection



DANGER

Live wires.

Risk of electrical shock!

- Electrical installation work must only be executed by qualified personnel.

INSTALLATION(S) CURRENT PROTECTION:



DANGER

Missing current protection.

Risk of electrical shock!

- Provide current protection in accordance with EN 60204-1 on your installation(s).
- The electrical installation must comply with the applicable national and international standards.



NOTICE

Electromagnetic compatibility.

- Make sure that the motor of the machine will not be affected by electric or electromagnetic disturbance from the mains. If necessary, contact your Pfeiffer Vacuum + Fab Solutions representative for more information.
- Make sure that the EMC of the machine is compliant with the requirements of your supply network system, if necessary, provide further interference suppression (EMC of the machine, see EU Declaration of Conformity or UK Declaration of Conformity).

6.1 Machine delivered without Control Box or Variable Speed Drive (VSD)



DANGER

Live wires.

Risk of electrical shock!

- Electrical installation work must only be executed by qualified personnel.
- Make sure that the power supply for the motor is compatible with the data on the nameplate of the motor.
- If the machine is equipped with a power connector, install a residual current protective device to protect persons in case of a defective insulation.
 - Pfeiffer Vacuum + Fab Solutions recommends installing a type B residual protective device suitable for the electrical installation.
- Provide a lockable disconnect switch or an emergency stop switch on the power line so that the machine is completely secured in case of an emergency situation.

- Provide a lockable disconnect switch on the power line so that the machine is completely secured during maintenance tasks.
- Provide an overload protection according to EN 60204-1 for the motor.
 - Pfeiffer Vacuum + Fab Solutions recommends installing a D-curve circuit breaker.
- Connect the protective earth conductor.
- Electrically connect the motor.



NOTICE

Incorrect connection.

Risk of damage to the motor!

- The wiring diagrams given below are typical. Check the inside of the terminal box for motor connection instructions/diagrams.

6.2

Wiring Diagram Three-Phase Motor

- Electrically connect the motor according to the following wiring diagram:

Connector:

- Terminal block (Power supply ► M4 thread; Earth ► M5 thread)



NOTICE

Incorrect direction of rotation.

Risk of damage to the machine!

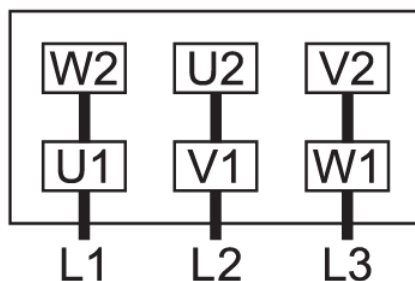
- Operation in the wrong direction of rotation can destroy the machine in a short time! Prior to start-up, ensure that the machine is operated in the right direction.

- Determine the intended direction of rotation with the arrow (stuck on or cast).
- Jog the motor briefly.

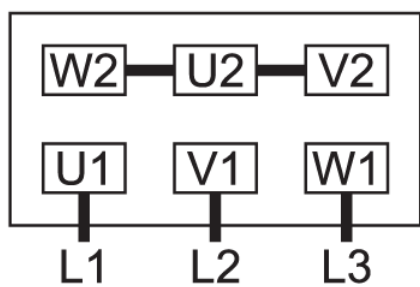
If the rotation of the motor must be changed:

- Switch any two of the motor phase wires.

Delta connection (low voltage):



Star connection (high voltage):



7 Commissioning



CAUTION

During operation the surface of the machine can reach temperatures over 70°C.

Risk of burns!

- Avoid contact with the machine during and directly after operation.



NOTICE

The machine is normally shipped without oil.

Operation without oil will ruin the machine in short time!

- Prior to commissioning, the machine must be filled with oil, see *Filling Oil* [→ 12].

- Make sure that the *Installation Conditions* [→ 9] are met.

If the machine is equipped with a gas ballast valve:

- Make sure that the gas ballast valve is closed before starting the machine.
- Start the machine.
- Make sure that the maximum permissible number of starts does not exceed 12 starts per hour. Those starts should be spread within the hour.
- Make sure that the operating conditions comply with the *Technical Data* [→ 30].
- After a few minutes of operation, check the oil level and top up if necessary.

As soon as the machine is used under normal operating conditions:

- Measure the motor current and record it as reference for future maintenance and trouble-shooting work.

7.1 Continuous Operation



NOTICE

Working at an inlet pressure higher than 65 hPa* in continuous operation.

Oil will gush out from the exhaust and the machine will run out of oil very quickly!

Operation without oil will ruin the machine in short time!

- Limit the inlet pressure in continuous operation.

** except for DuoVane 95, the inlet pressure is limited at 10 hPa.*

If the machine is equipped with an oil mist separator and an oil return line:

- The operating time in continuous operation is not limited below an inlet pressure of 10 hPa for DuoVane 30 and 5 hPa for DuoVane 95.

In case of a higher inlet pressure:

- The machine must be operated at ultimate pressure for at least 2 minutes once every a few hours.

If there is no oil return line installed:

- Drain manually the oil mist separator regularly from the drain plug.

7.2 Conveying Condensable Vapors



CAUTION

Draining the condensate while operating.

The discharged gases and/or liquids may reach temperatures above 70°C!

Risk of burns!

- Avoid direct contact with the flow of gases and/or liquids.



CAUTION

Venting the machine.

The discharged gases and/or liquids may reach temperatures above 70°C!

Risk of burns!

- Avoid direct contact with the flow of gases and/or liquids.



CAUTION



Noise of running machine.

Risk of damage to hearing!

If people are present in the vicinity of a machine that is not insulated from noise for extended periods of time:

- Make sure to wear hearing protection.

Water vapor within the gas flow is tolerated within certain limits. The conveyance of other vapors shall be agreed upon with the manufacturer.

If condensable vapors are to be conveyed:

START

- Close the isolation valve* and open the gas ballast valve** (GB)
- Warm up the machine for 30 minutes
- Open the isolation valve* and perform the process
- Close the isolation valve*
- Wait 30 minutes
- Close the gas ballast valve** (GB)

END

* Not included in the scope of delivery.

** Can be considered as optional on some products

8 Maintenance



DANGER

Live wires.

Risk of electrical shock!

- Electrical installation work must only be executed by qualified personnel.



WARNING



The machine is contaminated with hazardous material.

Risk of poisoning!

Risk of infection!

If the machine is contaminated with hazardous material:

- Wear appropriate personal protective equipment.



CAUTION

Hot surface.

Risk of burns!

- Before doing anything that requires touching the machine, let it cool down first.



CAUTION

Hot liquids.

Risk of burns!

- Before draining liquids, let the machine cool down first.

- Stop the machine and lock it to prevent accidental start-up.
- Vent the connected lines to atmospheric pressure.

If necessary:

- Disconnect all connections.

8.1 Maintenance Schedule

The maintenance intervals depend very much on the individual operating conditions. The intervals given below are considered as starting values which should be individually shortened or extended as appropriate.

Particularly harsh applications or heavy duty operation, such as high dust loads in the environment or in the process gas, other contamination or ingress of process material, can make it necessary to shorten the maintenance intervals significantly.

Interval	Maintenance work
Weekly	• Check the level of the oil, see <i>Filling Oil</i> [→ 12]. • Check the color of the oil, see document PK0219. Obtain document PK0219 from the Pfeiffer Vacuum Download Center on request, or click on the following link: Link to document PK0219. • Check the machine for oil leaks - in case of leaks have the machine repaired (contact the manufacturer).
Monthly	• Check the inlet screen, clean if necessary. In case of an inlet filter being installed: • Check the inlet filter cartridge, replace if necessary.
After the first 240 hours	• Change the oil, see <i>Oil Change</i> [→ 20].
After 2000 hours	In case of an oil mist separator being installed: • Change the filter cartridge
Between 6 and 12 months	• Change the oil, see <i>Oil Change</i> [→ 20]. The oil change depends on the process application, refer to the table of <i>Oil Change Recommendations</i> [→ 20].
Yearly	• Clean the machine from dust and dirt. • Replace the coupling spider, see <i>Coupling Maintenance</i> [→ 22].
Every 5 years	• Have a major overhaul on the machine (contact the manufacturer).

8.2 Oil Change Recommendations

Purpose	Oil Change Interval
Vacuum system for study / laboratory, small vacuum system	Within 6 months to 1 year
Vacuum system for production / vacuum evaporation	Within 3 to 6 months
Vacuum valve exhaust system / large vacuum evaporation system	Within 3 months
Metallurgy vacuum system such as thermal treatment, melting and the like	Within 1 month
High vacuum dry / vacuum impregnation / vacuum forming / vacuum packing system	Within 1 month
Low vacuum dry / pug mill / food packing system	Within 1 week

8.3 Oil Change



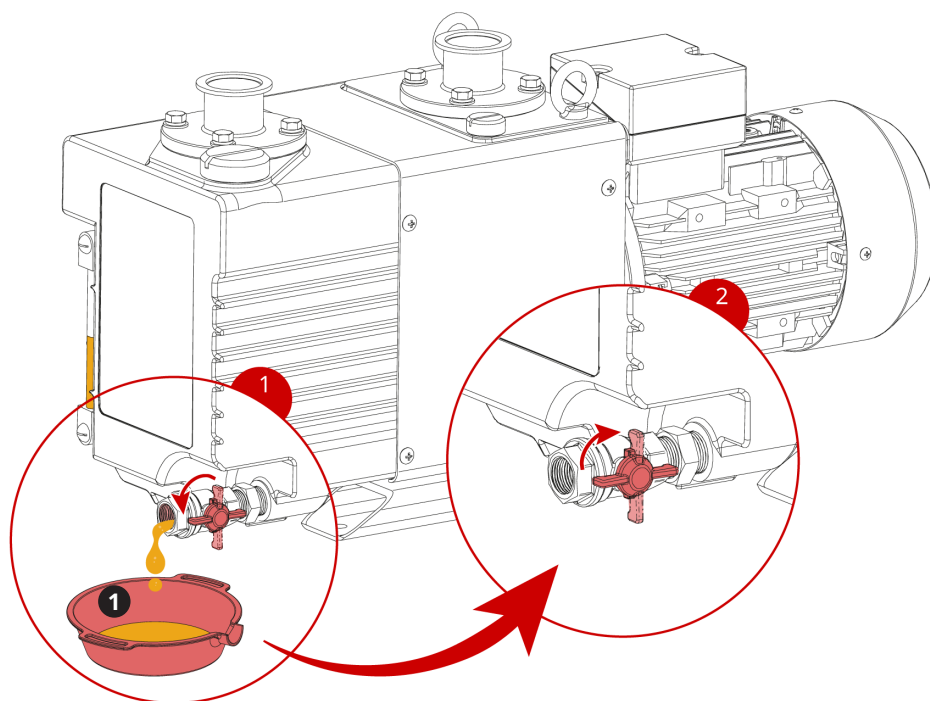
NOTICE

Use of inappropriate oil.

Risk of premature failure!

Loss of efficiency!

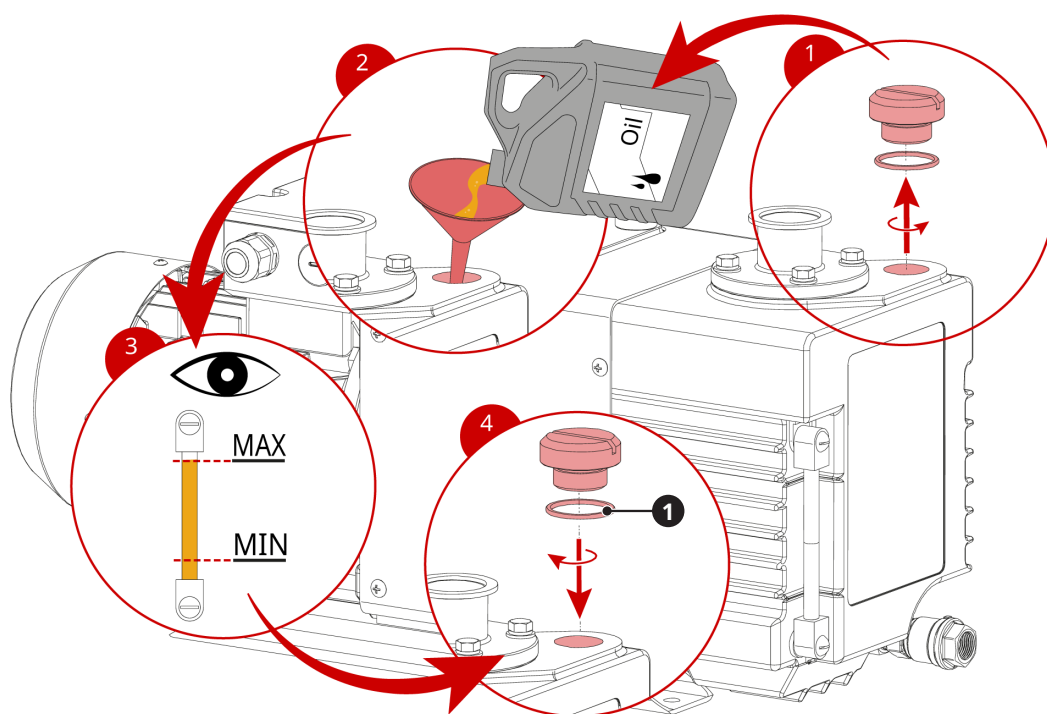
- Use only a type of oil previously approved and recommended by the manufacturer.



Description

1	Drain pan
---	-----------

For oil type and oil capacity see *Technical Data* [→ 30] and *Oil* [→ 31].

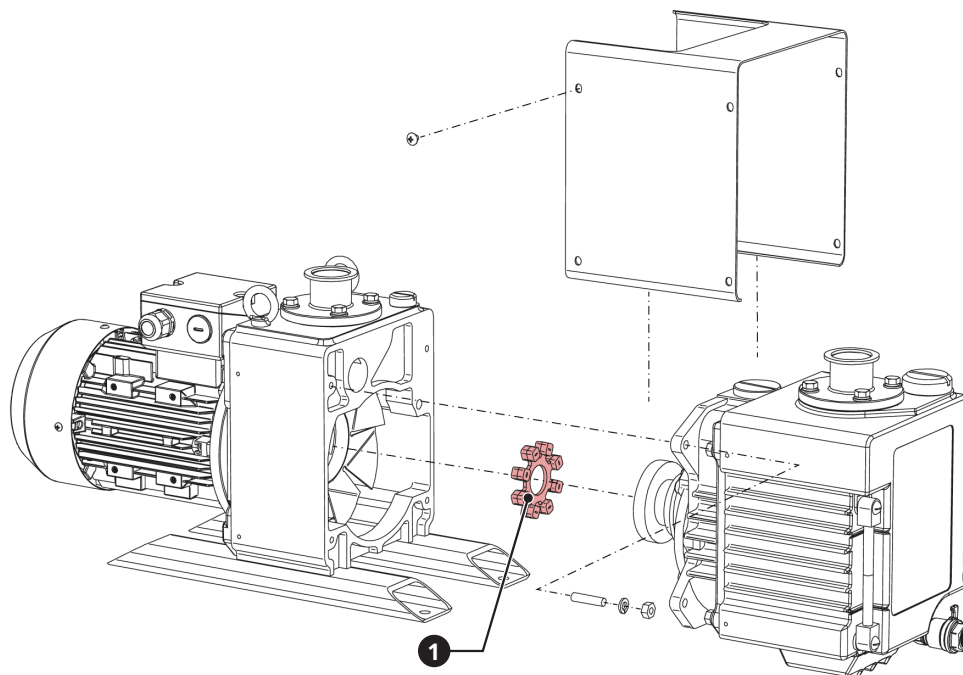


Description

1	Make sure that the o-ring is correctly seated in the groove.
---	--

8.4 Coupling Maintenance

- Disassemble the machine according to the following illustration.



Description

1	Coupling spider
---	-----------------

- Replace the coupling spider.
- Reassemble the machine.

9

Overhaul

**WARNING**

The machine is contaminated with hazardous material.

Risk of poisoning!

Risk of infection!

If the machine is contaminated with hazardous material:

- Wear appropriate personal protective equipment.

**NOTICE**

Improper assembly.

Risk of premature failure!

Loss of efficiency!

- Any disassembly of the machine beyond that described in this manual must be carried out by technicians approved by Pfeiffer Vacuum.

If the machine has conveyed gas contaminated with foreign materials which are hazardous to health:

- Decontaminate the machine as much as possible and state the contamination status in a 'Declaration of Contamination'.

The manufacturer will only accept machine accompanied by a signed, fully completed and legally binding "declaration of contamination".

To obtain a "declaration of contamination" form, contact the manufacturer.

10 Decommissioning



DANGER

Live wires.

Risk of electrical shock!

- Electrical installation work must only be executed by qualified personnel.



CAUTION

Hot surface.

Risk of burns!

- Before doing anything that requires touching the machine, let it cool down first.



CAUTION

Hot liquids.

Risk of burns!

- Before draining liquids, let the machine cool down first.
- Stop the machine and lock it to prevent accidental start-up.
- Disconnect the power supply.
- Vent the connected lines to atmospheric pressure.
- Disconnect all connections.

If the machine is to be stored:

- See *Storage* [→ 8].

10.1 Dismantling and Disposal

- Drain and collect the oil.
- Make sure that no oil drips onto the floor.
- Separate special waste from the machine.
- Dispose of special waste in compliance with applicable regulations.
- Dispose of the machine as scrap metal.

11 Spare Parts



NOTICE

Use of non-Pfeiffer Vacuum genuine spare parts.

Risk of premature failure!

Loss of efficiency!

- Use only Pfeiffer Vacuum genuine spare parts, consumables and supplies to ensure correct operation of the machine and to validate the warranty.

Spare parts kit	Description	Part no.
Minor maintenance kit (DuoVane 30)	Includes all the necessary parts for minor maintenance.	0992 168 950
Minor maintenance kit (DuoVane 95)	Includes all the necessary parts for minor maintenance.	0992 168 956

If other parts are required:

- Contact your Pfeiffer Vacuum representative.

12 Accessories

Please contact your manufacturer representative for accessories list and references.

13 Troubleshooting



DANGER

Live wires.

Risk of electrical shock!

- Electrical installation work must only be executed by qualified personnel.



CAUTION

Hot surface.

Risk of burns!

- Before doing anything that requires touching the machine, let it cool down first.



CAUTION

Hot liquids.

Risk of burns!

- Before draining liquids, let the machine cool down first.

Problem	Possible Cause	Remedy
The machine does not start.	Low ambient temperature.	• Observe the permitted ambient temperature.
	The motor is not supplied with the correct voltage.	• Check the power supply.
	Solid foreign matter has entered the machine.	• Remove the solid foreign matter or repair the machine (contact the manufacturer).
	Internal parts are worn or damaged	• Repair the machine (contact the manufacturer).
	The motor is defective.	• Replace the motor.
	The coupling is defective.	• Replace the coupling (contact the manufacturer).

Problem	Possible Cause	Remedy
The machine does not reach the usual pressure on the inlet connection.	Oil level too low.	• Top up oil.
	The oil is not circulating.	• Conduct an overhaul (contact the manufacturer).
	Oil has deteriorated.	• Perform a non load operation with vacuum valve closed and gas ballast valve open or replace the oil.
	The inlet screen is partially clogged.	• Clean the inlet screen.
	The inlet filter cartridge (optional) is partially clogged.	• Replace the inlet filter cartridge.
	Measurement method or reading is false.	• Check gauge, check final pressure without installation connected.
	Leak in the system.	• Repair leak.
	Internal parts are worn or damaged.	• Repair the machine (contact the manufacturer).
The machine runs very noisily.	Worn coupling.	• Replace the coupling (contact the manufacturer).
	Oil level too low.	• Top up oil.
	The oil is not circulating.	• Conduct an overhaul (contact the manufacturer).
	Internal parts are worn or damaged.	• Repair the machine (contact the manufacturer).
The machine runs too hot. (Pump surface rise up to about 100 °C (212 °F)).	Continuous operation at too high inlet pressure.	• Reduce the inlet pressure.
	Insufficient cooling.	• Remove dust and dirt from the machine.
	Ambient temperature too high.	• Observe the permitted ambient temperature.
	Oil level too low.	• Top up oil.
	The oil is not circulating.	• Conduct an overhaul (contact the manufacturer).
	Oil has deteriorated.	• Perform a non load operation with vacuum valve closed and gas ballast valve open or replace the oil.
The machine fumes or expels oil droplets through the gas discharge.	Oil level too high.	• Drain the oil until it gets the specified level.
	Continuous operation is performed at high inlet pressure.	• Install an oil mist separator.
	Oil mist separator (optional) is clogged.	• Replace the filter element.
	Oil mist separator (optional) is not mounted properly.	• Mount the oil mist separator properly.

Problem	Possible Cause	Remedy
The oil is emulsified.	The machine sucked in liquids or significant amounts of vapor.	• Perform a non load operation with vacuum valve closed and gas ballast valve open or replace the oil. • Modify the operational mode, (see <i>Conveying Condensable Vapors</i> [→ 18]).

For resolution of problems not listed in the troubleshooting table, contact your Pfeiffer Vacuum representative.

14 Technical Data

		DuoVane 30	DuoVane 95
Pumping speed (50Hz / 60Hz)	m ³ /h	24 / 29	80 / 95
	cfm	14.1 / 17.1	47.1 / 55.9
Ultimate total pressure (without gas ballast valve)	hPa (mbar) abs.	6.7 x 10 ⁻³	
	Torr abs.	5 x 10 ⁻³	
Ultimate total pressure (with gas ballast valve)	hPa (mbar) abs.	2 x 10 ⁻²	
	Torr abs.	1.5 x 10 ⁻²	
Nominal motor rating (50Hz / 60Hz)	kW	1.5	3.7
Nominal motor speed (50Hz / 60Hz)	min ⁻¹	1500 / 1800	1500 / 1800
Energy efficiency class		IE3	
Sound pressure level (EN ISO 2151) KpA = 3 dB with oil mist separator (50Hz / 60Hz)	dB(A)	≤ 57 / 61	≤ 60 / 66
Water vapour tolerance max. (with gas ballast valve) (50Hz / 60Hz)	hPa (mbar)	13 / 14	9.7 / 28.2 10*
	Torr	9.8 / 10.5	7.3 / 21.2 7.5*
Water vapour capacity (with gas ballast valve) (50Hz / 60Hz)	g / h	190 / 250	480 / 1650 600*
Ambient temperature range	°C	4 ... 40	
	°F	39 ... 104	
Relative humidity	at 30 °C (86 °F)	80%	
Max. internal pressure	hPa (mbar) gauge	300	
Ambient pressure		Atmospheric pressure	
Cooling method		Air cooled	
Max. oil capacity	l	2.5	4.0
	qt	2.6	4.2
Weight approx.	kg	58	113
	lbs	128	249

* in continuous operation

15 Oil

P3	
Oil type	Mineral oil
Part number 1 L packaging	PK 001 106 -T
Part number 5 L packaging	PK 001 107 -T
Part number 20 L packaging	PK 001 108 -T

16 EU Declaration of Conformity

This Declaration of Conformity and the CE-markings affixed to the nameplate are valid for the machine(s) within the Pfeiffer Vacuum scope of delivery. This Declaration of Conformity is issued under the sole responsibility of the manufacturer.

When this machine(s) is integrated into a superordinate machinery the manufacturer of the superordinate machinery (this can be the operating company, too) must conduct the conformity assessment process for the superordinate machine or plant, issue the Declaration of Conformity for it and affix the CE-marking.

The manufacturer

**Pfeiffer Vacuum GmbH
Berliner Straße 43
DE-35614 Asslar**

declares that the machine(s): DuoVane 30, DuoVane 95

fulfill(s) all the relevant provisions from EU directives:

- 'Machinery' 2006/42/EC
- 'Electromagnetic Compatibility' (EMC) 2014/30/EU
- 'RoHS' 2011/65/EU Restriction of the use of certain hazardous substances in electrical and electronic equipment (incl. all related applicable amendments)

and comply(-ies) with the following harmonized standards that have been used to fulfill those provisions:

Standard	Title of the Standard
EN 1012-2 : 1996 + A1 : 2009	Vacuum pumps - Safety requirements - Part 2
EN ISO 2151 : 2008	Acoustics - Noise test code for compressors and vacuum pumps - Engineering method (grade 2)
EN IEC 61000-6-2 : 2019	Electromagnetic compatibility (EMC) - Generic standards. Immunity for industrial environments
EN IEC 61000-6-4 : 2019	Electromagnetic compatibility (EMC) - Generic standards. Emission standard for industrial environments

Legal person authorized to compile the technical file and authorized representative in the EU (if the manufacturer is not located in the EU):

**Dr. Adrian Wirth
Pfeiffer Vacuum GmbH
Berliner Straße 43
DE-35614 Asslar**

Asslar, 30.10.2024



**Daniel Sälzer
General Manager
Pfeiffer Vacuum GmbH**

Notes

Grid of dots for notes.

A large grid of dots for taking notes, consisting of 20 columns and 30 rows of small, light gray dots.

BUSCH GROUP

The Busch Group is one of the world's largest manufacturers of vacuum pumps, vacuum systems, blowers, compressors and gas abatement systems. Under its umbrella, the group houses two well-known brands: Busch Vacuum Solutions and Pfeiffer Vacuum+Fab Solutions. Together, they offer solutions to a wide range of industries. A global network of highly competent local teams in 44 countries ensures that expert, tailor-made support is always available near you. Wherever you are. Whatever your business.



● Busch Group companies

▲ Busch Group production sites

● Busch Group service centers

■ Busch Group local representatives

www.buschvacuum.com

www.pfeiffer-vacuum.com