



OPERATING INSTRUCTIONS

EN

Translation of the Original

OME 40S

Oil Mist Eliminator

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.

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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

Operating instructions	Part number
Rotary Vane Pump, Pascal series 1033, 1063, 2033, 2063 m ³ /h	105527 ¹⁾
Rotary Vane Pump, DuoLine type, models Duo 35, Duo 35 M, Duo 65, Duo 65 M	PK0168 ¹⁾

1) also available at www.pfeiffer-vacuum.com

1.1.2 Products concerned

This document applies to products with the following part numbers:

Part number	Description
104887	OME 40 S Standard Oil Mist Eliminator

1.2 Target group

This user manual is intended for all persons in charge of transport, installation, commissioning/decommissioning, use, maintenance or storage of the product.

The work described in this document must only be carried out by persons with suitable technical training (specialized staff) or persons who have undergone Pfeiffer Vacuum training.

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

Exh.	Exhaust
IN	Inlet flange
OME	Oil Mist Eliminator

1.3.4 Trademark proof

- Axarel® is a trademark of DuPont de Nemours and Company, Wilmington, Delaware, USA..
- CareClean® is a trademark of Castrol Ltd.
- PremaClean® is a trademark of Lenntech BV
- Naphtesol® is a trademark of Nippon Oil Corporation

2 Safety

2.1 General safety information

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

DANGER

Immediately pending danger

Indicates an immediately pending danger that will result in death or serious injury if not observed.

- ▶ Instructions to avoid the danger situation

WARNING

Potential pending danger

Indicates a pending danger that could result in death or serious injury if not observed.

- ▶ Instructions to avoid the danger situation

CAUTION

Potential pending danger

Indicates a pending danger that could result in minor injuries if not observed.

- ▶ Instructions to avoid the danger situation

NOTICE

Danger of damage to property

Is used to highlight actions that are not associated with personal injury.

- ▶ Instructions to avoid damage to property



Notes, tips or examples indicate important information about the product or about this document.

2.2 Intended use

Use the OME exclusively to separate oil mist from gas flow at the exhaust of a rotary vane pump.

- Use the OME exclusively with compatible Rotary Vane Pumps (see « Applicable Documents » chapter).
- Install the OME at the exhaust of the Rotary Vane Pumps, Pascal series, model SD.
- Install the OME at the exhaust of the Rotary Vane Pumps, DuoLine series, models Duo 35, Duo 65, Duo 35 M, Duo 65 M.

2.3 Foreseeable misuse

Improper use will cause all claims for liability and warranties to be forfeited.

Improper use is defined as usage for purposes deviating from those mentioned above, especially:

- connection to Rotary Vane Pumps, Pascal series 1033, 1063, 2033, 2063, models C1, C2.
- connection to Rotary Vane Pumps, DuoLine type, models Duo 35 MC, Duo 65 MC.
- connection to pumps and devices for which it is not intended.
- connection to devices uninsulated electrically.
- use of accessories or spare parts, which are not named in this manual.
- use of the OME on corrosive pumping applications.
- use of the OME on pumping applications with flammable products such as oxygen, silane.
- use for applications :
 - Drying
 - Freeze drying
 - Pumping condensable vapors

- Impregnation with polymerizable resins
- Debubbling monomers

3 Product description

3.1 Product identification

To correctly identify the product when communicating with our service center, always have the information from the product rating plate available.

3.1.1 Scope of delivery

- 1 OME 40S Oil Mist Eliminator
- 1 centering ring equipped with O-Ring DN40 ISO-KF
- 1 quick connect clamp DN40 ISO-KF
- 1 operating instructions

3.1.2 Function

The OME is mounted at the exhaust of a rotary vane pump and separates oil droplets and vapors from gases emitted at the exhaust. Stopped by the filter element, they are transformed into liquid.

The OME must be mounted vertically above the pump, the condensed oil is recovered by flowing back through the filter element into the oil case, if the inlet pressure is less than 1 hPa for a sufficiently long time.

The OME has a safety valve set to 500 hPa relative pressure which prevents overpressure in the pump oil case when the filter element is saturated. Do not allow solid or pasty deposits created by pumped vapors to stick the valve to the filter element.

3.2 Storage

The filter elements inserted in the OME can absorb moisture.

If the new product must be stored:

- ▶ Store the product in a dry place in its original packaging.
- ▶ Store the product at storage temperatures (+5 – +65 °C).
- ▶ Make sure that the filter element is not crushed during storage.

Before using the OME, make sure that the valve is not stuck on the filter element.

If the product was unpacked, used, or stored for a long period (> 1 an) :

- ▶ Proceed to its maintenance by replacing the filter element (see « Maintenance » chapter).

4 Installation

⚠ WARNING

Poisonous substances exit from the exhaust

There is a poisoning hazard from discharged gases or vapors that can be hazardous and/or polluting during use.

- ▶ Install and run the exhaust line so that overpressure cannot build up inside it.
- ▶ Follow the vacuum pump installation instructions in the respective operating instructions.



To allow the oil return in the pump oil case and avoiding all risk of seizing, it is mandatory to take off the vent valve located at the exhaust port of the pump.

General instructions for installing the pump in the pumping line in accordance with industry best practices

1. Perform the installation on the pump stopped and off.
2. Use connection accessories provided with the OME.
3. Use accessories on the inlet and exhaust lines whose materials and sealing properties are compatible with gases being used.
4. Provide in the pumping line, accessories to isolate the pump from the vacuum and exhaust line, to make the maintenance easier (inlet and exhaust isolation valves, purges,...).
5. Remove the blanking plates blocking the inlet and exhaust ports.

In case of distance installation of the OME from the pump:

- Use the same diameter tube between the pump and the OME.
- Install the OME to a level higher than the pump's exhaust.

4.1 Fitting direction

A label indicates the fitting direction of the filter on the pump.

- ▶ Install the OME on the pump's exhaust respecting the assembly direction.

The side on which the filter element is visible must be mounted on the pump.

The side where the spring is visible must be connected to a chimney or an exhaust duct.

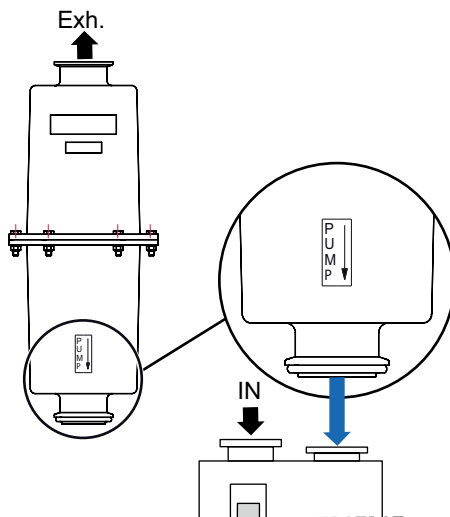


Fig. 1: Fitting direction on the pump

4.2 Installation on the pump

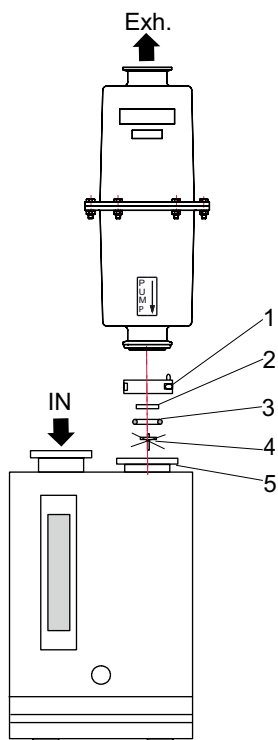


Fig. 2: Installation of OME40S on pump

- | | | |
|-----------------------|------------------|----------------|
| 1 Quick connect clamp | 3 Centering ring | 5 Exhaust port |
| 2 O-Ring | 4 Vent valve | |

1. Remove the vent valve assembled in the pump's exhaust port
2. Assemble as shown in (see « Product description » chapter) using the connection accessories provided with the OME or ordered separately (see Pfeiffer Vacuum products catalogue).
3. Insure the assembly tightness.

5 Operation

WARNING

Risk of overpressure

At the pump exhaust, the discharge circuit must be such that the resulting overpressure in the oil case is as low as possible. The maximum overpressure recommended for correct pump operation is 500 hPa. A slight negative pressure in the oil case (100–200 hPa), at the exhaust, will prevent gases from accumulating and reduce pump corrosion and pollution.

When the OME is installed to a pump exhaust, check periodically that:

- ▶ The exhaust valve is not clogged and does not prevent the operation of the OME's valve.
- ▶ The exhaust valve operates to avoid overpressure in the oil case

WARNING

Emission of toxic substances from the exhaust

Danger of poisoning from emitted gases or vapours, which can be detrimental to health and/or can pollute the environment, depending on the particular application.

- ▶ The exhaust valve is not clogged and does not prevent the operation of the OME's valve.
- ▶ The exhaust valve operates to avoid overpressure in the oil case.



Do not reuse an OME that has been stored for a long duration (> 1 year).

Perform maintenance and replace the filtration element before use.

Commissioning

- ▶ Turn the pump on.

During operation, oil and vapors are trapped by the filter element until it becomes clogged/saturated. In this case, the relief valve should open when the internal pressure exceeds atmospheric pressure by 500 hPa.

Decommissioning

1. Stop the pump.
2. Bring the pump back to the atmospheric pressure and let the pump cool down.
3. Make sure the exhaust pipe is not under pressure.

5.1 Filter element saturation

The time taken to reach saturation point depends on the number of pumping cycles, the volume of pumped gas and the kind of operating fluid used.

The signs of a saturated filter element are :

- Excess of smokes or droplets, or puffs of stream at the OME exhaust
- Rapid or significant drop in the oil level
- Increase of the pump oil case temperature
- Valve noise

When the filter element is saturated, proceed to its replacement (see « Maintenance » chapter)

6 Maintenance

6.1 Maintenance safety instructions

⚠ DANGER

Risk to the health in the event of contact with toxic substances

During pump disconnection, operator could be in contact with process residues on the exhaust that could cause severe injury or death.

- ▶ Take the appropriate safety measures to prevent injury. Consult the department manager for instructions and safety information.
- ▶ Wear gloves, goggles, a respirator or other appropriate safety equipment.
- ▶ Ventilate well the premises or work under an extract hood.
- ▶ Do not dispose of residues in the usual network and, if necessary, seek a competent agency for their destruction.
- ▶ Do not discard the used filter element in the usual network, seek a competent agency for its destruction.
- ▶ Set up the blanking plates at the inlet and exhaust of the pump (supplied with the product).

6.2 Disassembly

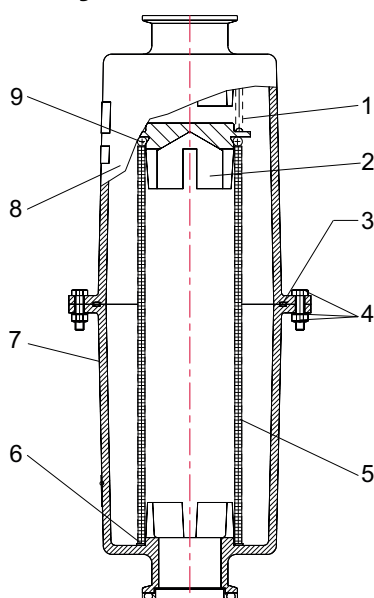


Fig. 3: Filtration element replacement

- | | |
|------------------|----------------------|
| 1 Spring | 6 Flat ring |
| 2 Valve | 7 Bottom of the body |
| 3 O-ring | 8 Upper nipple |
| 4 Nuts | 9 O-ring |
| 5 Filter element | |

When the filter element is saturated, proceed to its change as follows:

1. Remove the OME from the pump (possible oil leak), and disassemble it on a workbench.
2. Loosen the 6 nuts by pressing manually on each end of the OME (to avoid sudden release of the spring), and remove them.
3. Remove the upper nipple and the O-ring.
4. Remove the spring.
5. Remove the valve equipped with the O-ring.
6. Remove the filter element and the flat ring in the bottom of the body.

If when disassembling, the filter element appears very clogged, filled with condensable products or gels, or is filled with very blackish, strong-smelling oil, pump's oil quality must be checked and probably must

be changed. In this case, drain and rinse the pump, replace the oil before installing an OME equipped with a new filter element (see Rotary Vane Pump Maintenance Manual).

6.3 Cleaning



Never clean a filtration element!
Always replace the filtration element with a new one.

- ▶ Always replace the O-rings with new O-rings.

After using mineral or synthetic oil, clean the parts with a mineral-based solvent, in accordance with the legislation in force, for example, the type **AXAREL, CARECLEAN, PREMACLEAN, NAPHTESOL**.

Proceed as follows:

1. Clean when cold or hot (max. 45 °C) by dipping or using lintfree cloth.
2. Vacuum dry in a ventilated heating chamber then.
3. The component must be cleaned a second time with alcohol.

6.4 Reassembly

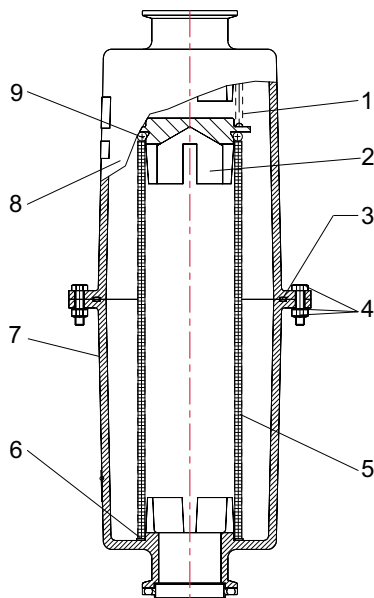


Fig. 4: Filtration element replacement

- | | |
|------------------|----------------------|
| 1 Spring | 6 Flat ring |
| 2 Valve | 7 Bottom of the body |
| 3 O-ring | 8 Upper nipple |
| 4 Nuts | 9 O-ring |
| 5 Filter element | |

1. Install the flat ring in the base of the body.
2. Position the filter element so that it rests on the flat ring in the body.
3. Mount a new O-ring on the valve and install the unit on the filter element, with the O-ring resting on the filter element.
4. Place the spring on the valve and the O-ring in the groove.
5. Position the upper body on the lower body using the connectors.
6. Tighten and 4.1 N·m of torque.
7. Connect the OME to the pump's exhaust using the supplied accessories (see « Product description » chapter).

6.5 Disposal



Environmental protection

The product and its components **must be disposed of in accordance with the applicable regulations relating to environmental protection and human health**, with a view to reducing natural resource wastage and preventing pollution.

Our products contain various materials which must be recycled. Take special care for:

- fluoroelastomers which may breakdown if they are subjected to high temperatures
- components in contact with the products resulting from the processes which may have been contaminated
- a used filtration element should not be disposed of in the usual manner: call a qualified organization for disposal

7 Service solutions by Pfeiffer Vacuum

We offer first-class service

High vacuum component service life, in combination with low downtime, are clear expectations that you place on us. We meet your needs with efficient products and outstanding service.

We are always focused on perfecting our core competence – servicing of vacuum components. Once you have purchased a product from Pfeiffer Vacuum, our service is far from over. This is often exactly where service begins. Obviously, in proven Pfeiffer Vacuum quality.

Our professional sales and service employees are available to provide you with reliable assistance, worldwide. Pfeiffer Vacuum offers an entire range of services, from [original replacement parts](#) to [service contracts](#).

Make use of Pfeiffer Vacuum service

Whether preventive, on-site service carried out by our field service, fast replacement with mint condition replacement products, or repair carried out in a [Service Center](#) near you – you have various options for maintaining your equipment availability. You can find more detailed information and addresses on our homepage, in the [Pfeiffer Vacuum Service](#) section.

You can obtain advice on the optimal solution for you, from your [Pfeiffer Vacuum representative](#).

For fast and smooth service process handling, we recommend the following:



1. Download the up-to-date form templates.
 - [Explanations of service requests](#)
 - [Service requests](#)
 - [Contamination declaration](#)



- a) Remove and store all accessories (all external parts, such as valves, protective screens, etc.).
 - b) If necessary, drain operating fluid/lubricant.
 - c) If necessary, drain coolant.
2. Complete the service request and contamination declaration.



3. Send the forms by email, fax, or post to your local [Service Center](#).

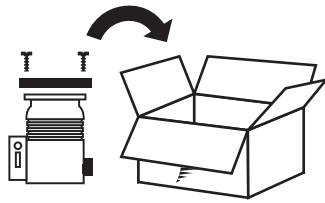


4. You will receive an acknowledgment from Pfeiffer Vacuum.

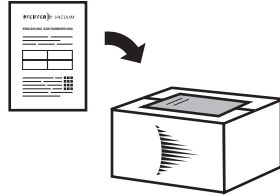
PFEIFFER VACUUM

Submission of contaminated products

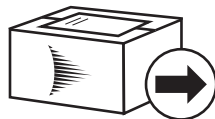
No microbiological, explosive, or radiologically contaminated products will be accepted. Where products are contaminated, or the contamination declaration is missing, Pfeiffer Vacuum will contact you before starting service work. Depending on the product and degree of pollution, **additional decontamination costs** may be incurred.



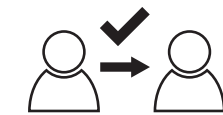
5. Prepare the product for transport in accordance with the provisions in the contamination declaration.
 - a) Neutralize the product with nitrogen or dry air.
 - b) Seal all openings with blind flanges, so that they are airtight.
 - c) Shrink-wrap the product in suitable protective foil.
 - d) Package the product in suitable, stable transport containers only.
 - e) Maintain applicable transport conditions.



6. Attach the contamination declaration to the **outside** of the packaging.



7. Now send your product to your local Service Center.

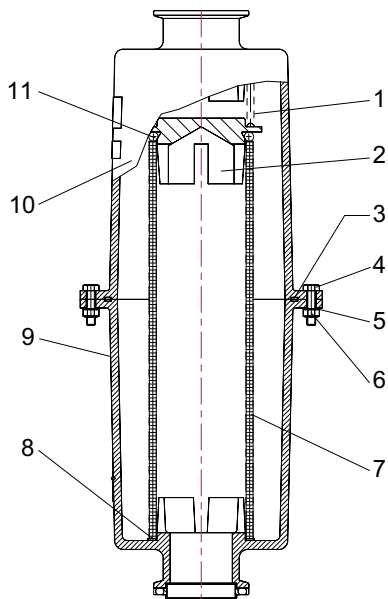


8. You will receive an acknowledgment/quotation, from Pfeiffer Vacuum.

PFEIFFER VACUUM

Our sales and delivery conditions and repair and maintenance conditions for vacuum devices and components apply to all service orders.

8 Spare parts



Item	Description	Material	Quantity	Part number
1	Spring	Stainless steel	1	-
2	Valve	Aluminium	1	-
3	O-ring ²⁾	Elastomer NBR ¹⁾	1	079248
4	Screw CHC M4 x 10	Steel	6	-
5	Washer	Steel	6	-
6	Nut	Steel	6	-
7	Filter element ²⁾	Filter element (glass microfibers + epoxy resine)	1	068443
8	Flat ring ²⁾	Elastomer NBR ¹⁾	1	068446
9	Grey body	Aluminium	1	-
10	White body	Aluminium	1	-
11	O-ring ²⁾	Elastomer NBR ¹⁾	1	082131

1) See standard : ISO 2230: Rubber products — Guidelines for storage

2) Replacement parts for each maintenance

9 Technical data and dimensions

9.1 Technical data

	OME 40S
Weight	2 kg
Connection	DN 40 ISO-KF
Tightness	$1 \cdot 10^{-6}$ hPa l/s
Filtration level	Trapping: 99.99% of vapor droplets greater than 0.6 μm in diameter
Maximum working pressure	1500 hPa
Maximum flow through the OME	17500 hPa l/s (with pump 63 m ³ /h)

9.2 Dimensions

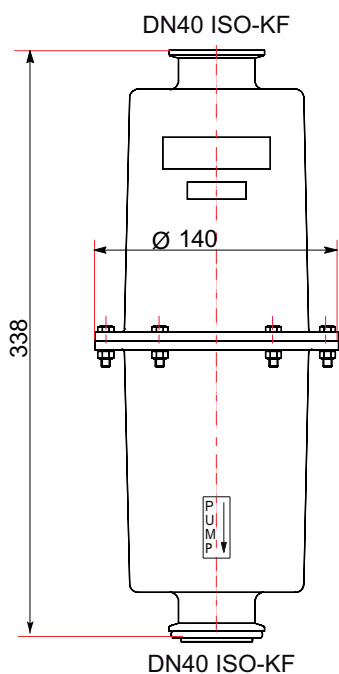


Fig. 5: Dimensions OME 40S

Declaration of incorporation of partly completed machinery

Declaration for product(s) of the type:

**Oil Mist Eliminator
OME 40S**

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

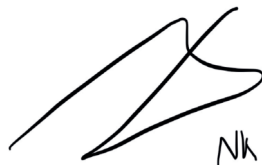
Machinery 2006/42/EC (Annex II, no. 1 B)
Restriction of the use of certain hazardous substances 2011/65/EU

This product should not be put into service before the machine that they will ultimately be incorporated into has been deemed compliant with Machinery Directive 2006/42/EC.

The undersigned also undertake to pass on pertinent information on the partly completed machinery, in response to any reasoned request properly formulated by a national authority.

The person authorized to compile the technical file is Mr. d'Harboulle Philippe, Pfeiffer Vacuum SAS (Simplified joint stock company), 98, avenue de Brogny B.P. 2069, 74009 Annecy cedex.

Signature:



NK

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Nicolas Krzyzelewski
Head of Global Group Dry Pumps
Pfeiffer Vacuum SAS

Annecy, le 2022/08/26





VACUUM SOLUTIONS FROM A SINGLE SOURCE

Pfeiffer Vacuum stands for innovative and custom vacuum solutions worldwide, technological perfection, competent advice and reliable service.

COMPLETE RANGE OF PRODUCTS

From a single component to complex systems:

We are the only supplier of vacuum technology that provides a complete product portfolio.

COMPETENCE IN THEORY AND PRACTICE

Benefit from our know-how and our portfolio of training opportunities!

We support you with your plant layout and provide first-class on-site service worldwide.

Ec05 - Date 2022/09 - P/N:105414OEN



Are you looking for a
perfect vacuum solution?
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