



OPERATING INSTRUCTIONS

EN

Translation of the original instructions

OME 25 HP - OME 25 HP+

Oil mist eliminator and Oil drain kits

OME 25 HP / OME 25 HP+

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OME 25 HP - OME 25 HP+

II. OME 25 HP/HP+ OIL MIST ELIMINATOR

II.1. THE MODELS

The OME 25 HP is designed for applications involving frequent cycling or high pressure operation.

Incorporating a filter element of bigger capacity, the OME 25 HP+ is the next step toward completely oil free exhausted gases.

The OME 25 HP model and the OME 25 HP+ model are same design but have a different filter capacity. They can be equipped with an ODK kit (see II.3).

II.2. OPERATING PRINCIPLE OF THE ELIMINATOR

The oil mist eliminator is mounted at the exhaust of a rotary vane pump and separates oil droplets and vapours gases emitted at the exhaust of the oil-sealed vacuum pumps. The contaminated oil is filtered.

The eliminator 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 issuing of pumped vapours to stick the valve to the filter.

II.3. OPERATING PRINCIPLE OF THE OIL DRAIN KITS

a) Oil drain kit ODK1 (see figure a)

Used with the OME 25 HP/HP+ oil mist eliminator, it allows to re-inject the filtered oil, accumulated in the oil mist eliminator through the gas ballast.

It consists of a drain pipe which is connected on one end to the bottom of the OME 25 HP, and on the other end to the inlet of the gas ballast.



With an ODK1 kit the pump is not sealed when switched off.

b) Oil drain kit ODK2 (see figure b)

Used with the OME 25 HP/HP+ oil mist eliminator, it is similar to the ODK1 with a NC solenoid valve located at the inlet of the gas ballast. The valve must be connected.



In case of power failure, the valve will close and the pump will stay tight when stopped.

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II.4. CHARACTERISTICS

Characteristics	Unit	OME 25 HP 104199	OME 25 HP+ 108341
Weight	Kg	1.2	
Connection	ISO-KF	DN25	
Tightness	hPa l/s	$1 \cdot 10^{-6}$	
Mounting on pump		nipple marked with «PUMP ↓» label	
Dimensions		see figure 3	

Filter element	OME 25 HP	OME 25 HP +
Material	Original filter element from manufacturer: Cartridge: glass microfibers and epoxy resin.	Original filter element from manufacturer: Borosilicate glass fiber PF impregnated and 100 % polyester fiber /NBR binder.
Filtration level	Trapping: 99.99% of vapor droplets greater than 0.6 microns in diameter.	Trapping: 99.99% of vapor droplets greater than 0.3 microns in diameter.

The OME 25 HP and OME 25 HP+, are delivered with the following connections accessories:

Description	Reference (see Figure 1A/1B)	P/N
1 centering ring DN25 ISO-KF	B	See the products catalog
1 O-ring DN25 ISO-KF	C	
1 quick connect clamp DN25 ISO-KF	D	

Others available accessories	P/N
Oil drain kit ODK1	104360
Oil drain kit ODK2 - 230 V 50/60 Hz	104361
Oil drain kit ODK2 - 115 V 60 Hz	104362
Oil drain kit ODK2 - 200 V 50/60 Hz	104364
Oil drain kit ODK2 - 24 V DC	104365

II.5. INSTALLATION

CAUTION

These operations should be performed when the pump is stopped.

WARNING

In any installation configuration, remove the vent valve installed on the pump exhaust port. This is necessary to allow oil to return to the pump (risk of seizing). This operation is necessary to allow the oil return in the pump (risk of seizing).

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Case 1: The oil mist eliminator is mounted on the exhaust port located vertically on the pump.

Proceed as follows:

- **Remove the vent valve (150)** mounted in the exhaust port **(120)**.
- Assemble as shown in **Figure 1a)** using the connection accessories provided with the eliminator.

Case 2: The oil mist eliminator is mounted on the exhaust port located horizontally on the pump.

- Assemble as shown in **Figure 1b)** using the connection accessories provided with the eliminator and a 90° elbow (ordered separately).

Case 3: The oil mist eliminator is equipped with ODK1 kit **(Figure 2a)**

- Install the oil mist eliminator on the rotary vane pump exhaust.
- On the pump oil casing, unscrew the gas ballast cover (2 screws) with an allen wrench, and remove the adjustment button, the spring and the oil case feedthrough **(55)**.
- Replace the oil case feedthrough **(55)** by the ODK1's, by checking the good positioning of the jet **(52)**.
- On the oil mist eliminator, remove the drain plug **(11)** equipped with its O'ring.
- Screw the connector **(53)** in the bottom of the OME 25 HP with a thin spanner 12 mm and install the 4/6 Rilsan pipe on the connector and secure with the nut.

Cas 4: The oil mist eliminator is equipped with ODK2's kit **(Figure 2b)**

- Install the oil mist eliminator on the rotary vane pump exhaust.
- On the pump oil casing, unscrew the gas ballast cover (2 screws) with an allen wrench, and remove the adjustment button, the spring and the oil case feedthrough **(55)**.
- Replace the oil case feedthrough **(55)** by the ODK2's, by checking the good positioning of the jet **(52)**.
- On the oil mist eliminator, remove the drain plug **(11)** equipped with its O'ring.
- Screw the connector **(53)** in the bottom of the OME 25 HP with a thin spanner 12 mm and install the 4/6 Rilsan pipe on the connector and secure with the nut.
- Unscrew the nut **(59)** on the valve and equip with the supplied coil by checking its compatibility with the power supply voltage.
- Wire the connector **(58)**.
- Connect the connector **(58)** and the coil **(59)**. Power the coil with the corresponding voltage.

In four cases:

- The oil mist eliminator can be located away from the pump.
- Use a suitable diameter of pipe between pump and oil mist eliminator.

In all cases:

- **Connect the nipple marked with the «Pump ↓» label** on the exhaust side of the pump.

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WARNING

All maintenance must be performed by as skilled maintenance operator trained in the relevant health and safety aspects (EMC, electrical hazards, chemical pollution, etc.). Isolate the product from all energy sources (mains electricity, compressed air, etc.) before starting work.

Always check that the voltage of the **Oil drain kit** ODK2 match with the sector voltage.

The electrical connection is at the customer's expense in accordance with main voltage and the type of operation: tightness when the pump stops or air inlet on request.

- 1) **Used to assure the tightness of the pump when the pump stops:**

The solenoid valve (NC) has to be connected on the same main supply of the pump in order to close it when the pump stops.

- 2) **Used to remote control cyclic airinlet on the pump: :**

The solenoid valve (NC) has to be connected on a main supply independent from that of the pump.

This mode of wiring does not insure the tightness in case of power cut.

The opening of the solenoid valve allows to send back the oil into the case of the pump in a very short time.

II.6. OPERATION

Switch-on the pump. When working, oil and settlings are trapped by the filter element until it will be clogged. In such case the safety valve should open when the inner pressure is exceeding the atmospheric pressure by 500 hPa (7 PSI).

When the oil level in the oil mist eliminator exceeds the level of the sight glass, put the pump in low pressure in order to let return the oil in the pump. Check again and fill the oil if necessary.

In case the level remains high and that the pump is in low pressure, the filter element is certainly saturated (**see a1, chapter I.7**).

CAUTION

Do not reuse an oil eliminator that has been stored for a long period (> 1 year) without first performing maintenance on it and replacing its filter element.

WARNING

- 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 (7 PSI). A slight negative pressure in the oil case (100 to 200 hPa / 1.5 PSI), at the exhaust, will prevent gases from accumulating and reduce pump corrosion and pollution.
- When the oil mist eliminator is installed, check periodically at the exhaust orifice that:
 - the exhaust valve can move, so the exhaust is not blocked,
 - the exhaust valve can move, no overpressure in the oil case.

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II.7. MAINTENANCE

DANGER

During pump removal, draining or oil mist eliminator maintenance, the operator may come in contact with process residues which could cause severe injury or death. Ask your safety department for instructions according to the local regulations.

We recommend:

- Wearing gloves, safety glasses, respirator mask, or any appropriated safety equipment.
- Ventilating the premises well or working under an extracted hood.
- Not disposing of maintenance waste through standard disposal channels. Have it destroyed by a qualified company if necessary.
- Not disposing of the used filter element through standard disposal channels; have it destroyed by a qualified company if necessary.
- Install the inlet and exhaust backing plates; these accessories are shipped with the pump.

a) Filter element saturation

The following saturated filter element appears:

- excessive smoke or droplets, or puffs of steam appear at the oil mist eliminator exhaust,
- a rapid or significant drop in the oil level,
- an increase in the pump oil case temperature.

The time taken to reach saturation point depends on the number of pumping operations, their frequency, the volume of pumped gas, and the kind of the oil used. When the filter element is saturated, replace as follows:

a1) Draining the eliminator OME 25 HP/HP+

- Drain by removing the plug (11) and recover oil in appropriate containers.

The connection of the drain port to a circuit collectory expelled liquid ensures an automatic purge. In this case, connect the circuit collectory expelled liquid to a gas collector.

a2) When the OME 25 HP/HP+ is equipped with an oil drain kit ODK1 or ODK2

- Spray with compressed air to remove any obstructions.

b) Disassembly (OME 25 HP: Figure 4a) or (OME 25 HP+: Figure 4b)

CAUTION

These operations should be performed when the pump is stopped.

- Detach the eliminator from the pump and disassemble on a workbench.
- Unscrew the assembling screw (22): the filter element (21) stays on the base (2), remove it.
- Remove the o-ring (9) from the base (2).
- Remove the equipped valve seat (13) from the body (1).
- Unscrew the assembling screw (17) and remove the washer (15) and the valve (16).

c) Oil drain kit removal

- Remove the pipe on the connector (53).
- Remove the DN25 (D) clamping ring and remove the OME.

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d) Cleaning

WARNING

Never clean the filter element: always install a new one equipped with 2 rings.

During disassembly, if the filter element appears very clogged, filled with condensable products or gels, or is filled with very blackish, strong-smelling oil, it is then necessary to check the quality of the pump oil. It probably needs to be changed. In this case, drain the pump, replace the oil before installing an oil mist eliminator equipped with a new filter element.

Elastomer seal (9) must always be replaced by new one.

After use in mineral or synthetic oil, clean the metal components with a mineral products based solvent such as **AXAREL** ⁽¹⁾, **CARECLEAN** ⁽²⁾, **PREMACLEAN** ⁽³⁾, **NAPHTESOL** ⁽⁴⁾. Proceed as follows:

- Clean when cold or hot (max. 45 °C) by dipping or using a cloth.
- Vacuum dry in a ventilated oven.
- **The component must be cleaned a second time with alcohol.**

After use in (perfluorinate) synthetic oil, clean the metal components in a solvent such as **GALDEN S 90** ⁽⁵⁾ and proceed as follows:

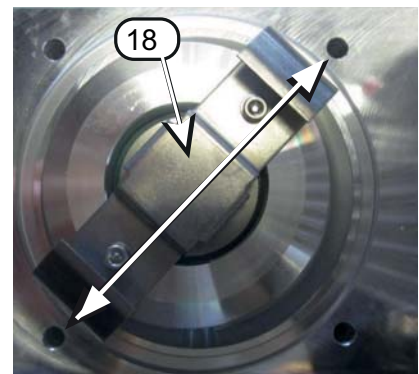
- Clean when cold by dipping or using a cloth.
- Dry the components in the air or with compressed air.

After use in (non-perfluorinate) synthetic or mineral oil, clean the metal components with a solvent such as alcohol and proceed as follows:

- Clean when cold by dipping or using a cloth.
- Dry the components in the air.
- Industrial washing solutions can also be used. The cleaning operation should be followed by vacuum drying.

e) Reassembly

- Position the new o-ring (9) in the lower support (2).
- Install the washer (15) on a new valve (16).
- Position on the valve seat (14) the valve (16) and its washer (15) (**the valve flat face must rest on the valve seat**).
- Install the spring (19) on the washer (15), then assemble the spring support (18) on the valve seat (14) with screws (17) and washers (20).
- Center the set on a new filter element (21).
(OME 25HP+ filter element is equipped with 2 o-rings).
- Install the set in the lower support (2), by aligning the spring support (18) in the axis of the fixing holes of the body (1).
- Install the body (1) on the lower support (2) and assemble with the screws (22) and washers (23), from underneath, without returning the set.
- Connect the eliminator to the pump exhaust port and install the oil kit if necessary (**see paragraph II.5.**).



(1) . . . DUPONT DE NEMOURS registered trademark

(2) . . . CASTROL registered trademark

(3) . . . DOW registered trademark

(4) NIPPON OIL CORPORATION registered trademark

(5) MONTEDISON registered trademark

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II.8. APPLICATIONS NOT RECOMMENDED

CAUTION

Oil mist eliminators should not be used for the following applications: drying, freeze-drying, pumping condensable vapors, impregnation with polymerizable resins and debubbling monomers. Filter elements are flammable: do not use eliminators when pumping flammable products such as oxygen or silane.

The standard oil mist eliminator must also not be used for pumping corrosive products or for microelectronic and chemical applications.

Oil mist eliminator must be essentially used with rotary vane pumps type 3 to 13 cfm I and SD series.

II.9. SPARE PARTS

Parts which must be replaced each time the filter element is changed:

Rep.	Description	P/N		Qty
		OME 25 HP	OME 25 HP+	
21	Filter element * (equipped with 2 O-rings)	100522	107494 *	1
16	Valve	054196		1
9	O'Ring	083539		1
3	Oil level sight glass with O'ring	083546		1
11	Equipped drain plug with O'ring	101575		1

Spare parts for oil drain kit			
Rep.	Description	P/N	Qty
52	Jet (ODK1, ODK2)	102832	1
59	Coil 230V 50/60 Hz	103552	1
59	Coil 115V 60 Hz	038122	1
59	Coil 100V 50/60 Hz	038126	1
59	Coil 200V 50/60 Hz	038125	1
59	Coil 24V DC	038066	1

OME 25 HP / OME 25 HP+

FIGURES

Figure 1b

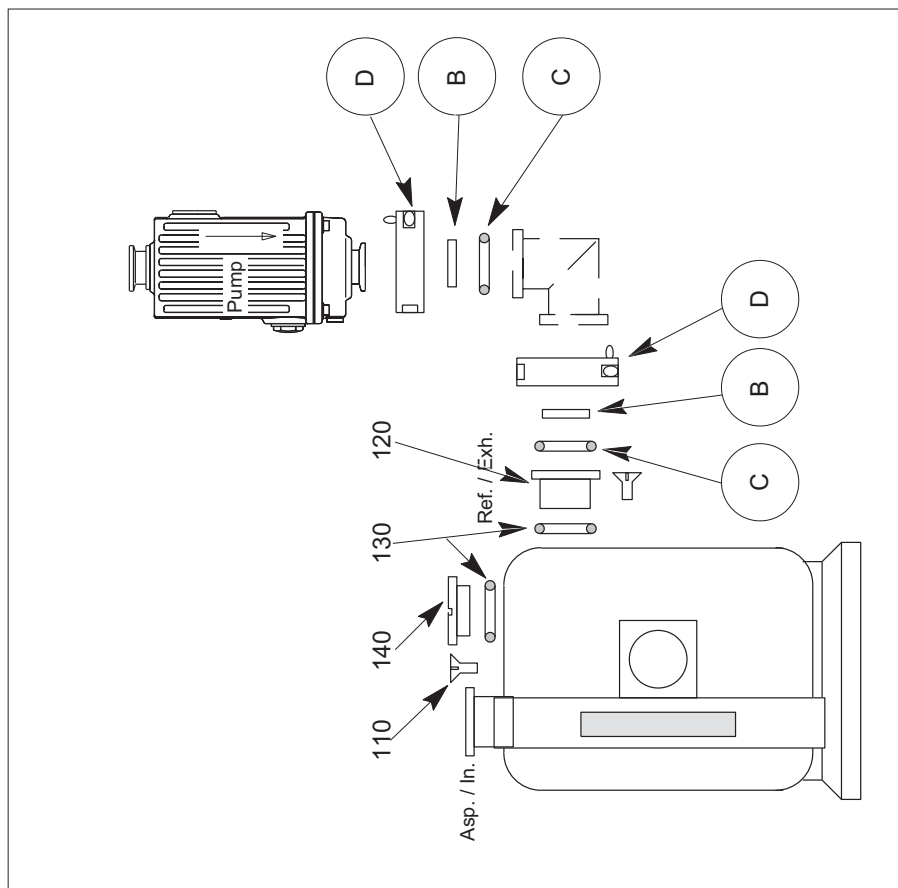
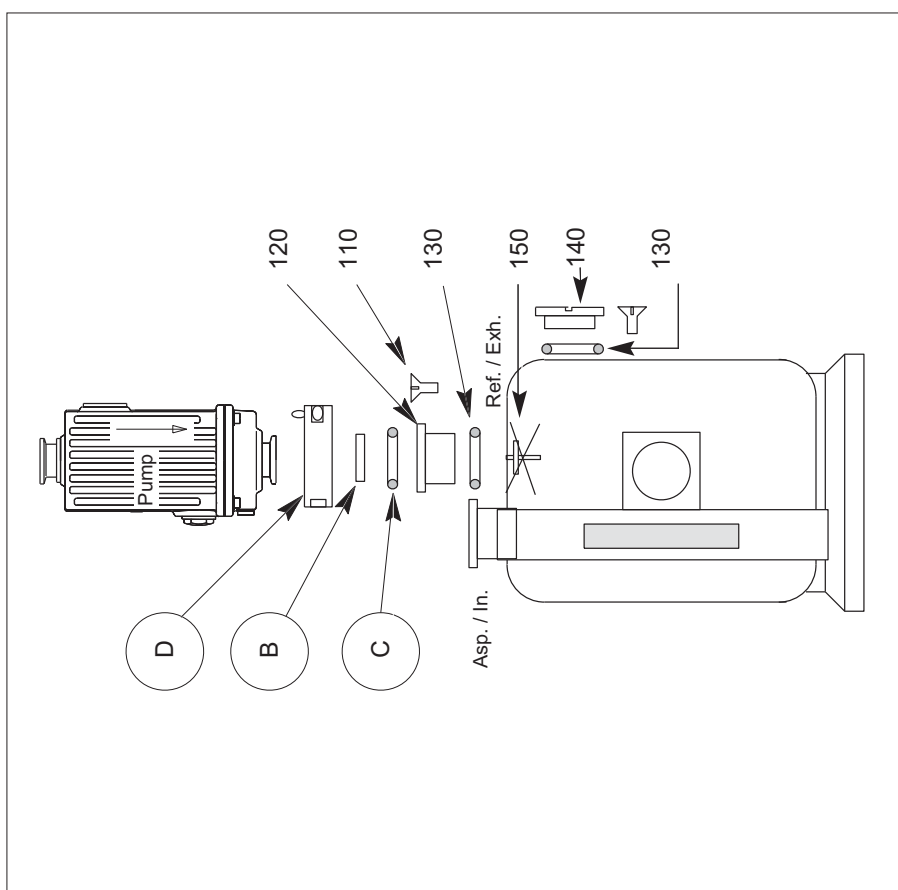


Figure 1a

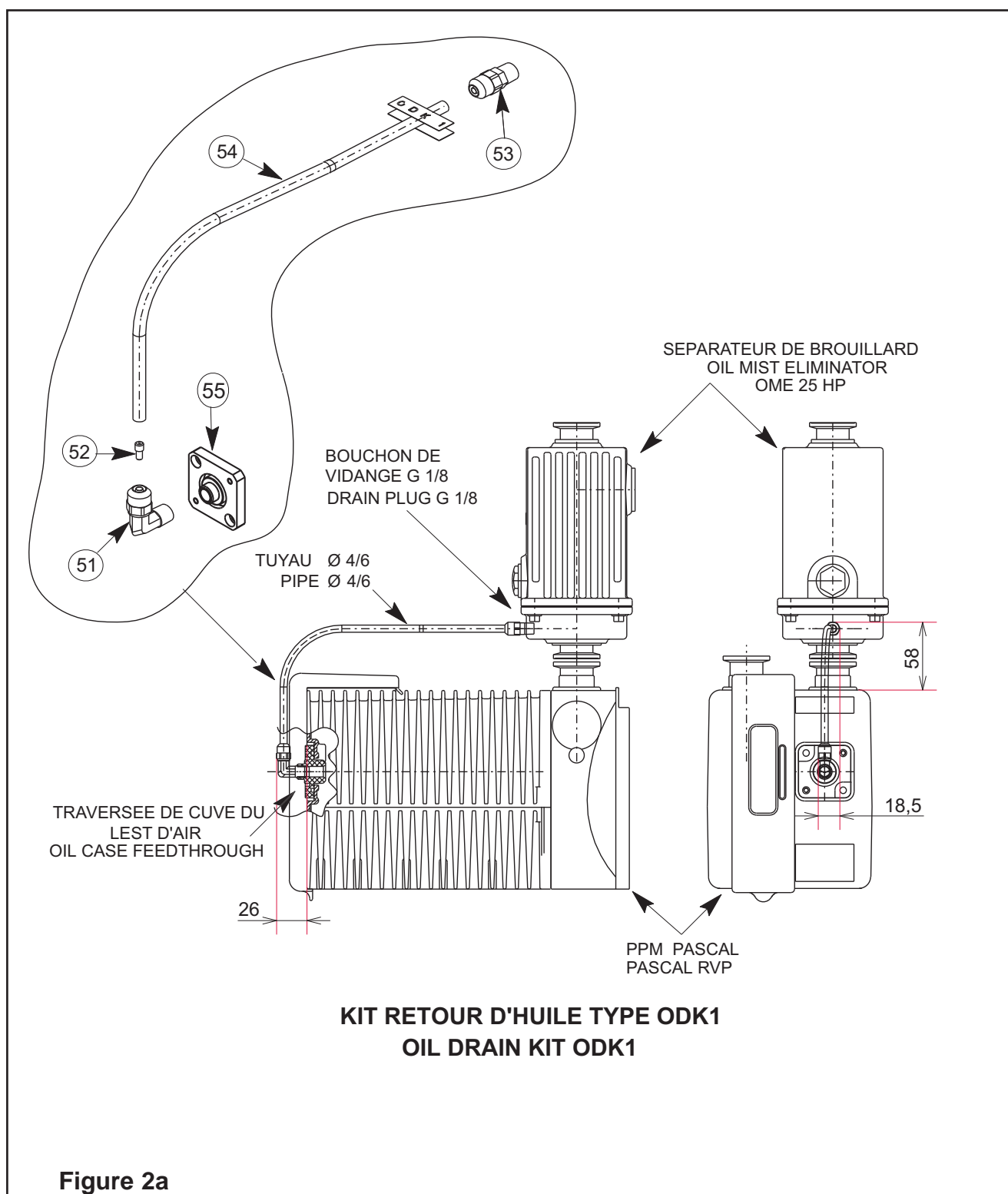


Accessoires livrés avec le séparateur de brouillard / Accessories delivered with OME

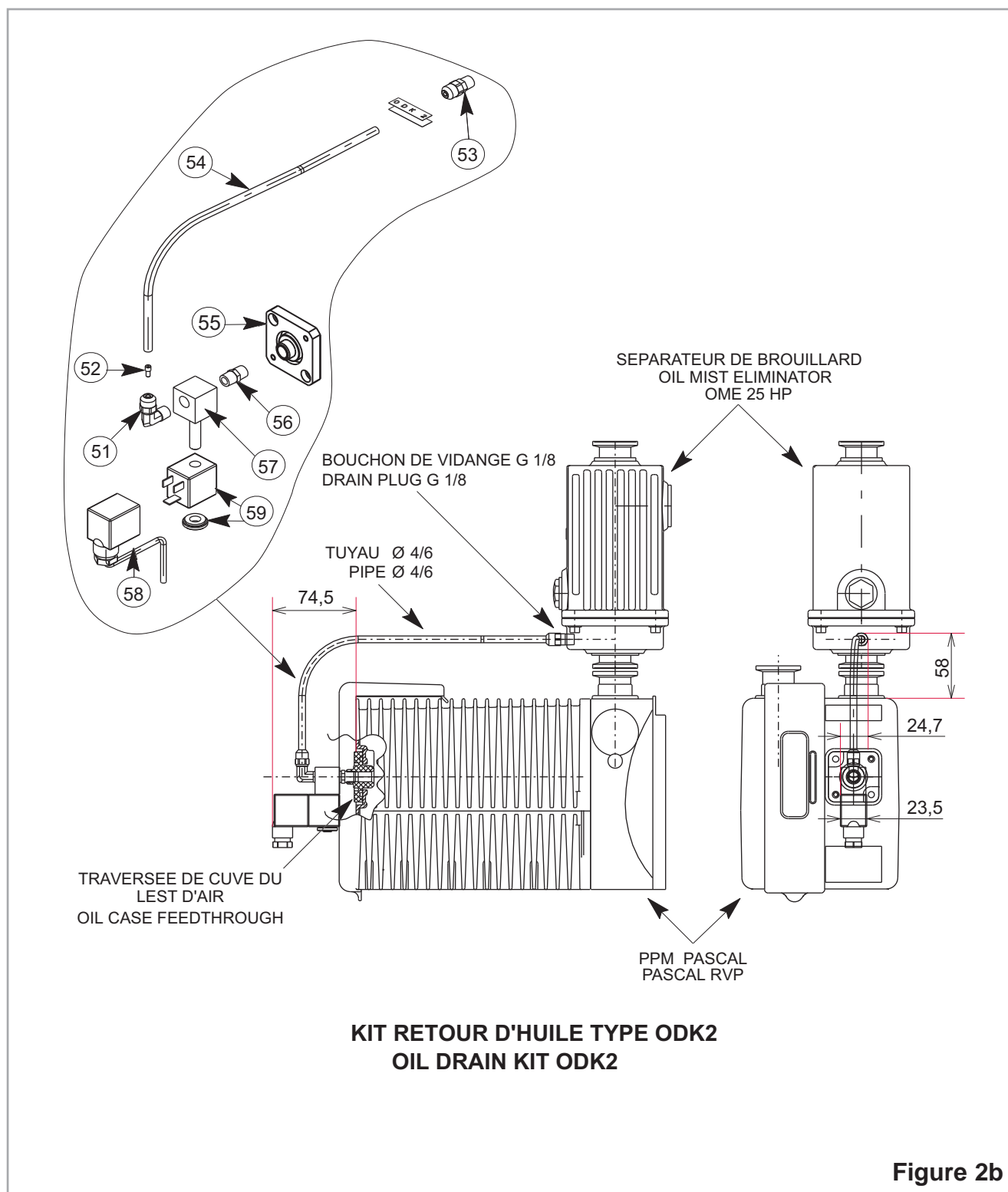
Pièces de la pompe primaire / Rotary vane pump parts



OME 25 HP - OME 25 HP+



OME 25 HP / OME 25 HP+



OME 25 HP - OME 25 HP+

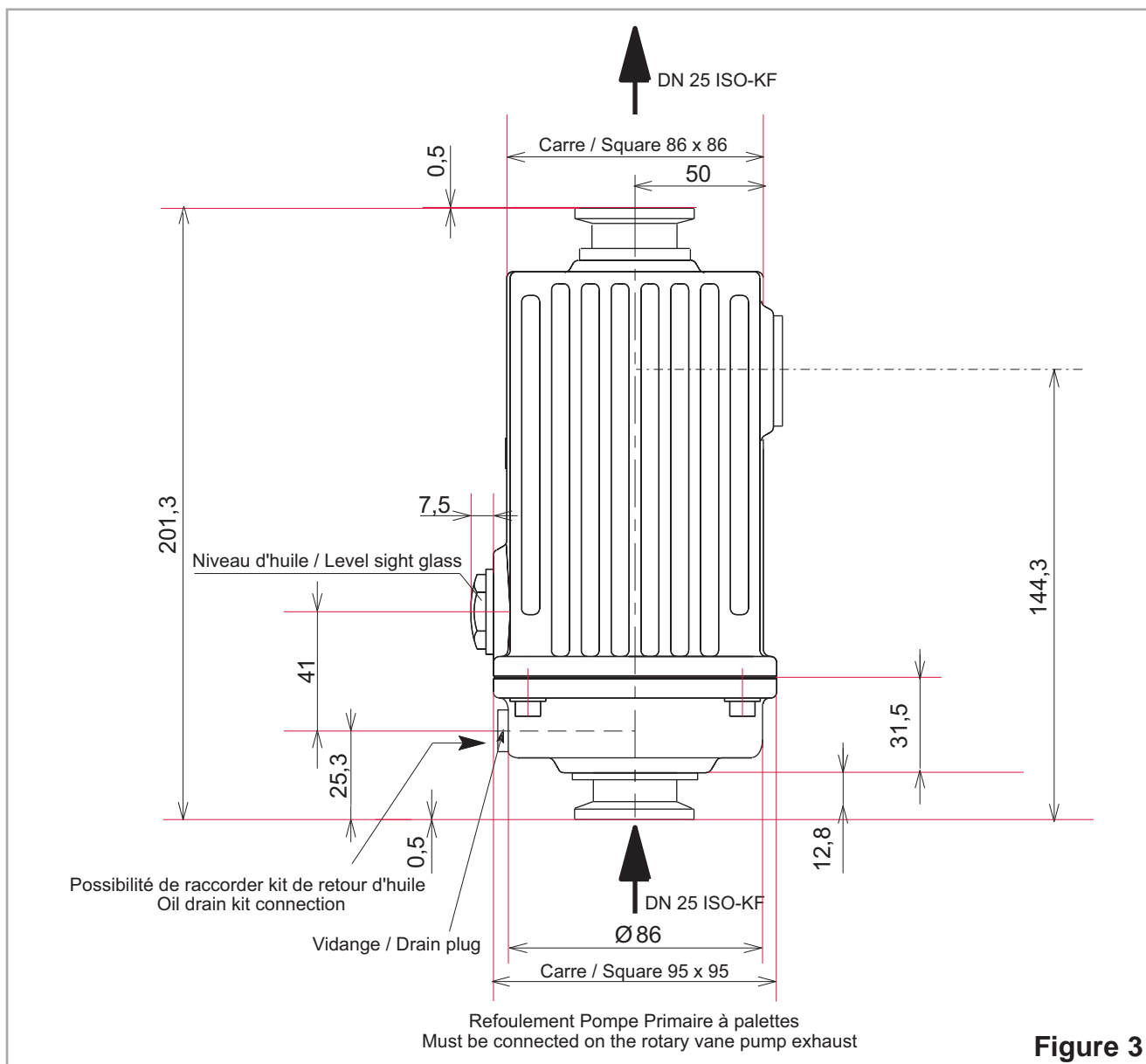
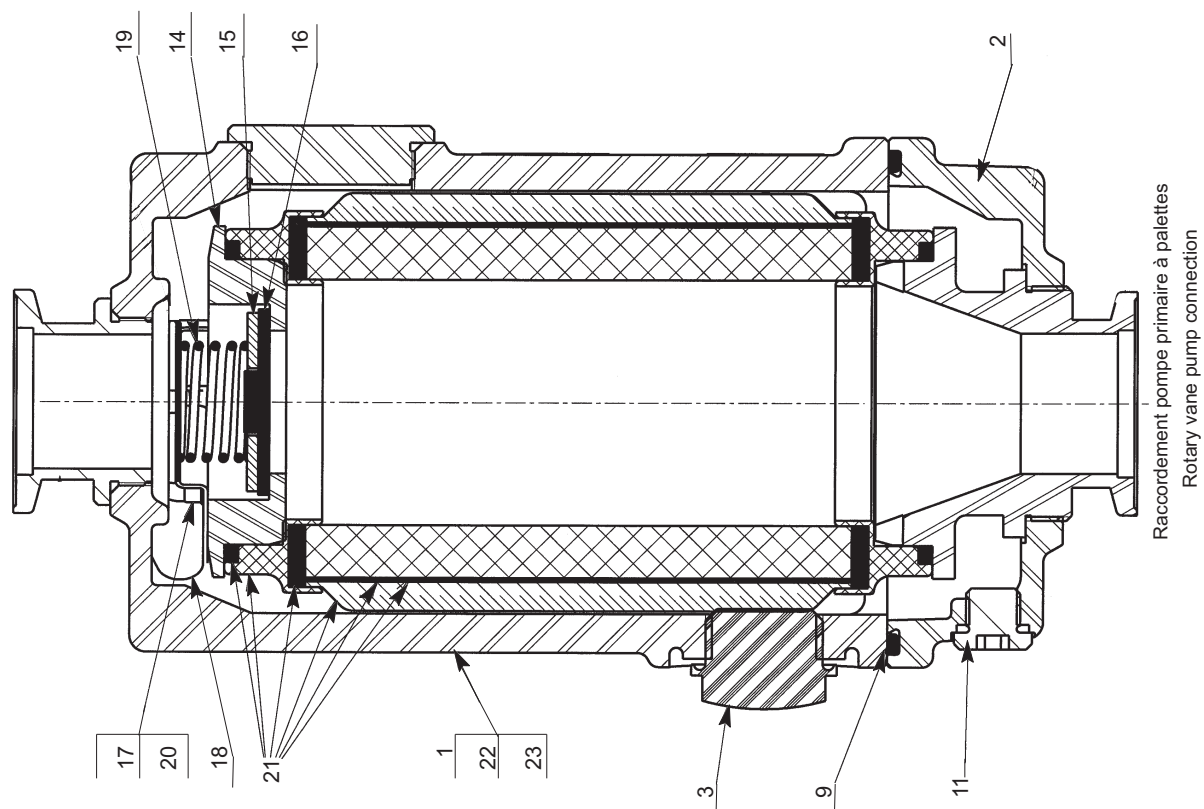


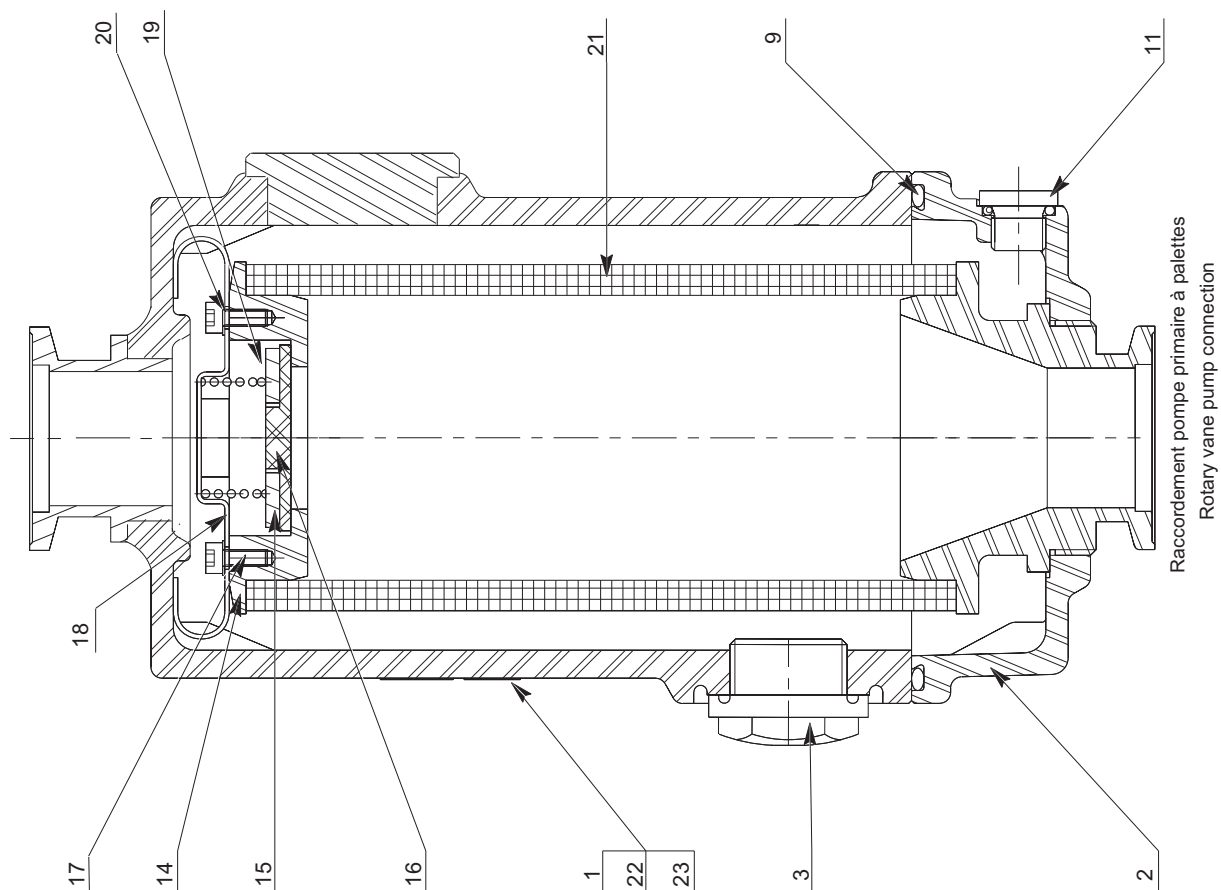
Figure 3

OME 25 HP / OME 25 HP+

OME 25 HP+
Figure 4b



OME 25 HP
Figure 4a



OME 25 HP - OME 25 HP+

NOMENCLATURE KIT DE RETOUR D'HUILE OIL DRAIN KIT NOMENCLATURE					
Rep.	Désignation	Description	ODK1	ODK2	Nbr.
51	Raccord équerre mâle	Mâle elbow connector	X	X	1
52	Gicleur	Jet	X	X	1
53	Raccord union mâle	Mâle connector	X	X	1
54	Tuyau Rilsan (naturel)	Rilsan pipe	X	X	35 cm
55	Traversée de cuve	Feedthrough	X	X	1
56	Raccord mam. mâle	Mâle connector	-	X	1
57	Electrovanne vide	Electrovalve	-	X	1
58	Câble électrique et connecteur	Equipped cable + connector	-	X	1
59	Bobine minisol 230 V 50/60 Hz	Coil 230 V 50/60 Hz	-	X	
	Bobine minisol 115 V 60 Hz	Coil 115 V 60 Hz	-	X	1
	Bobine minisol 100 V 50/60 Hz	Coil 100 V 50/60 Hz	-	X	1
	Bobine minisol 200 V 50/60 Hz	Coil 200 V 50/60 Hz	-	X	1
	Bobine minisol 24 V DC	Coil 24 V DC	-	X	1

NOMENCLATURE OME 25 HP - OME 25HP+			
Rep.	Désignation (<i>matériau</i>)	Description (<i>material</i>)	Nbr.
1	Corps du séparateur (<i>aluminium</i>)	Body (<i>aluminium</i>)	1
2	Corps inférieur (<i>aluminium</i>)	Lower support (<i>aluminium</i>)	1
3	Voyant de niveau + joint (<i>polyamide + élastomère NBR</i>)*	Sight glass + O-ring (<i>polyamid + elastomer NBR</i>)*	1
9	Joint torique (<i>élastomère NBR</i>)*	O-ring (<i>elastomer NBR</i>)*	1
11	Bouchon 1/8 + Joint torique (<i>aluminium + NBR</i>)	Plug 1/8 + O-ring (<i>aluminium + NBR</i>)	1
14	Support clapet (<i>aluminium</i>)	Valve seat (<i>aluminium</i>)	1
15	Rondelle (<i>acier inoxydable</i>)	Washer (<i>stainless steel</i>)	1
16	Clapet (<i>élastomère FPM</i>)*	Valve (<i>elastomer FPM</i>)*	1
17	Vis CHC M 8 x 3 (<i>acier</i>)	Screw CHC M8 x 3 (<i>steel</i>)	2
18	Ressort support (<i>acier</i>)	Spring support (<i>steel</i>)	1
19	Ressort (<i>acier</i>)	Spring (<i>steel</i>)	1
20	Rondelle (<i>acier</i>)	Washer (<i>steel</i>)	2
21	Élément filtant (OME 25 HP) <i>époxy + fibre de verre</i>	Filter element (OME 25 HP) (<i>epoxy binder + glass microfibers</i>)	1
	Élément filtant (OME 25 HP+) + 2 joints (<i>NBR</i>) (<i>fibre de verre borosilicatées imprégnées résine phénolique + fibre 100 % polyester</i>)	Filter element (OME 25 HP+) + 2 O-rings (<i>NBR</i>) (<i>borosilicate glass fiber PF impregnated + 100 % polyester fiber</i>)	1
22	Vis CHC M 5 x 16 (<i>acier</i>)	Screw CHC 5 x 16 (<i>steel</i>)	4
23	Rondelle (<i>acier</i>)	Washer (<i>steel</i>)	4
(*) suivant norme NFT 40-002 - following NFT 40-002 standard			

OME 25 HP / OME 25 HP+



DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

We hereby declare that the product cited below satisfies all relevant provisions according to the following EC directives :

- Machinery 2006/42/EC (Annex II, No. 1 A)
- Restriction of Hazardous Substances 2011/65/EU

The technical file is drawn up by Mr Frédéric Rouveyre, Pfeiffer Vacuum, Société par Actions Simplifiées [simplified joint stock company], 98, avenue de Brogny, B.P 2069, 74009 Annecy cedex, France.

DFT 25, OME 25S, OME 25C, OME 25HP, OME 25HP & ODK 1, OME 40HP+, OME 40HP+ & ODK 136, OME 40S, OME 40 C1, OME 40C2, LNT 25S, LNT 25C, LNT 25P1, ST 25S, ST 40, CT 25

Harmonised standards and national standards and specifications which have been applied:

Standards NF EN-1012-2: 2009

The relevant operating instructions are in compliance with appendix VII, part B.

This partly completed machinery must not be put into operation until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the 2006/42/EC Directive.

We, authorized representatives undertake to transmit, in response to a reasoned request by national authorities, relevant information on the partly completed machinery

Signatures :

(M. Taberlet)
Président

Pfeiffer Vacuum SAS
98, avenue de Brogny
B.P 2069
74009 Annecy
France

(M. Rouveyre)
Responsable R&D des Pompes

Date 06/28/2016

PFEIFFER VACUUM



DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

We hereby declare that the product cited below satisfies all relevant provisions according to the following EC directives :

- Low-voltage 2014/35/EU
- Machinery 2006/42/EC (Annex II, No. 1 A)
- Electromagnetic Compatibility 2014/30/EU
- Restriction of Hazardous Substances 2011/65/EU

The technical file is drawn up by Mr Frédéric Rouveyre, Pfeiffer Vacuum, Société par Actions Simplifiées [simplified joint stock company], 98, avenue de Brogny, B.P 2069, 74009 Annecy cedex, France.

OME 25HP & ODK 2,
OME 25HP+ & ODK 2,
OME 40HP+ & ODK 236,
AGB 4, AGB 36,
OLS 4, OLS 36,
ST 25C

Harmonised standards and national standards and specifications which have been applied:

Standards NF EN-61010-1 : 2011
Standards NF EN-1012-2: 2009

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We, authorized representatives undertake to transmit, in response to a reasoned request by national authorities, relevant information on the partly completed machinery

Signatures :

(M. Rouveyre)
Responsable R&D des Pompes

Pfeiffer Vacuum SAS
98, avenue de Brogny
B.P 2069
74009 Annecy
France

Date 28/06/2016

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T +49 6441 802-0
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