MPFILTRI®
CONTAMINATION CONTROL

Use & Maintenance Manual

UFM Series - Mobile transfer and filtration unit

PRODUCT OVERVIEW

UFM mobile transfer and filtration unit series

Key features:

- Transfer
- Filtration
- Flow rates from 15 l/min up to 180 l/min
- Maximum working pressure from 4 bar up to 10 bar
- Absolute filtration
- Wide range of filtration media
- Water removal filter elements
- Single-phase and three-phase motors
- Comprehensive choice of configurations
- In-line contamination monitoring (ICM2.0 series particle counter)
- Equipped with handles and wheels for manoeuvrability
- CE standard

DECLARATION OF CONFORMITY

CE EC declaration

DECLARATION OF CONFORMITY IN ACCORDANCE WITH 2006/42/EC MACHINERY DIRECTIVE

The company:

MP Filtri S.p.A.
Via 1° Maggio, 3
20042 - Pessano con Bornago (MI) - Italy

as a manufacturer, it declares that the machine:

Name	Code / Model
MOBILE FILTRATION UNIT	UFM015MA1000P01 UFM041MA1010P01 UFM041TA1010P01 UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01 UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01 UFM181TA3020P01 UFM181TA3021P01 UFM919TA3020P01 UFM919TA3021P01

to which this declaration refers, complies with the following Directives: **2006/42/EC Machinery Directive.**

Furthermore, the technical documentation was compiled in accordance with **Annex VII Part A.**
The machine also complies with the provisions of the following standards:

UNI EN ISO 12100-1-2:2010	Safety of machinery
UNI EN ISO 13857:2008	Safety of machinery - Safety distances to prevent the reaching into dangerous areas with the upper and lower limbs
UNI EN ISO 13732-1:2009	Ergonomics of thermal environments - Methods for evaluating human response to contact with surfaces
UNI EN ISO 4413:2012	Hydraulics - General rules and safety requirements for systems and their components

Pessano con Bornago, 14/05/2019

Chief Executive Officer
CEO

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1 General warnings and information for the recipient

1.1 General information

The mobile filtration units of the UFM series have been designed and manufactured in compliance with the machinery directive and the low voltage directive with regards to electric motors. The EC Declaration of Conformity is included in this manual.
The warranty has a duration of twelve months starting from the date shown on the delivery note. To consulte “General Warranty Conditions” section of this Use and Maintenance Manual.

1.2 General and safety instructions

Read this manual carefully before commissioning, maintenance or other activities on or with the unit. Each operator involved in the operation of the mobile filtration unit must wear the following personal protective equipment:

Safety glasses

Safety shoes

Gloves

Before carrying out any installation or work on and/or with the machine it is necessary to strictly follow the instructions listed in this manual. It is also necessary to comply with the provisions in force concerning accident prevention and safety in the workplace. The warnings to prevent dangers to the health of the personnel assigned to the machine, are highlighted in this documentation with signal words to notifications:

If important information concerning the product affects the use of the product or a part of this documentation, all of it must be particularly taken into account.

NOTE

This means that failure to comply with the relevant safety regulations may result in slight injury or damage to equipment.

CAUTION

This means that failure to comply with the relevant safety regulations can result in death, serious injury or considerable damage to equipment.

DANGER

GENERAL WARNINGS

To allow rapid identification of the employees who must read this manual, definitions have been used with the following meaning:

OPERATOR	The person in charge of using the machine for productive purposes. The operator is aware of the measures taken by the machine manufacturer to eliminate the sources of risk of accidents at work and complies with the operational constraints.
PERSONNEL INVOLVED IN SLINGING AND HOISTING OPERATIONS	The person in charge of handling the machine or parts thereof. The slinger is aware of the problems concerning the transport of machines or parts thereof in safe conditions; for this purpose, they use lifting equipment suitable for the purpose following the instructions provided by the machine manufacturer.
MACHINE SETTER	The person in charge of preparing the machine for normal operation. The machine setter is aware of the measures taken by the machine manufacturer to eliminate the sources of risk of accidents at work and complies with the operational constraints. The machine setter takes the necessary precautions to intervene in conditions of maximum safety.
MAINTENANCE TECHNICIAN	The person in charge of performing maintenance operations on the machine. The maintenance technician is aware of the possible dangerous situations that may arise during his work and takes the necessary precautions to avoid risks of accidents at work.
ELECTRICIAN	The person in charge of carrying out maintenance operations on the machine's electrical system. The electrician is aware of the possible dangerous situations that may arise during his work and takes appropriate precautions to avoid risks of accidents at work.

1.3 Operator station and dangerous areas

Areas adjacent to the electric motor due to the presence of live equipment and potentially very hot surfaces are to be considered as dangerous areas. The operator has no reason to access electrical equipment and is not authorised to do so.

The trolley must be taken out of service and/or dismantled in full compliance with the regulations in force at that time in the country where the machine is installed.

NOTE

The machine is not suitable for outdoor use and all electrical equipment has a minimum degree of protection IP 55.

NOTE

1.4 Hazards and risks that cannot be eliminated

Risk of electric shock on the electric motor, in case of motor malfunction, risk of burns due to high temperature, accidental oil leakage with consequent possibility of slipping, rupture of the hoses with consequent loss of lubricant.

With oil temperatures above 40/45° C, take extra caution in the handing of metal lances/tubes and movement of the mobile filtration unit. Avoid direct contact with hot oil and the filter housing.

1.5 Personal Protective Equipment

For normal use of the mobile filtration unit, safety shoes, gloves and safety glasses must be worn. In general the PPE to be used according to the operations on the machine are summarised in the following table:

OPERATION	PPE
Normal operation	Safety shoes, protective gloves, safety glasses
Normal maintenance	Safety shoes, protective gloves, safety glasses

GENERAL WARNINGS

2 Transport and handling conditions

2.1 UFM015

The filtration unit is transported packed in a cardboard box.
Handling of the product is done with a handle bracket.
The weight is listed below:

Total weight UFM015	14.8 Kg

2.2 UFM041-051-091-181-919

The filtration unit is transported packaged with strapping and plastic film.
The product is moved by means of wheels. The movement of the same is carried out by acting on the special handle.
The weight of each individual unit is shown below:

Total weight UFM041	45 kg
Total weight UFM051	70 kg
Total weight UFM091-181-919	105-120 kg

GENERAL WARRANTY CONDITIONS

3 Warranty, limits and exclusions

1 - The seller assumes a guarantee of the normal mechanical operation of their product for a period of one year (except as provided for in Item H4 referred to the general conditions of sale and warranty sent with each order confirmation) from the delivery date.

2 - The warranty is limited to the replacement of damaged or defective parts due to poor quality of the material or construction. It does not extend to defects due to normal wear or due to inexperience or negligence of the customer and to parts that due to the composition of the material or the nature of their use are subject to rapid wear.

3 - Damage or defects must be declared, under penalty of forfeiture, by registered letter within eight days of discovery.
The seller, once being aware of the existence of the defect, is obligated to replace the defective elements if they have not been tampered with due to attempted repair or modification by the customer (or third parties), and provided that he has punctually fulfilled the contractual obligations, with particular regard to payments which, if not carried out in the manner and within the agreed terms, entail the forfeiture of the guarantee and the seller's right not to effect the replacements.

4 - Any other indemnity, request for compensation for damages, also by third parties, due to production shutdown of the customer is expressly excluded.

5 - The items to be replaced must be sent with transport costs to be paid by the purchaser ex works of the seller who will replace them as soon as possible with delivery to their premises. The replaced parts belonging to the customer remain at his disposal for eight days within which they can be collected; following this deadline the seller is entitled to regard them as scrap in his possession without any compensation.

6 - The examination of the failures and their causes will always be carried out in the seller’s workshops and all the related costs will be borne by the customer. The customer is also responsible for all inspection costs that may be requested on site. In no case may the customer demand the termination of the contract.

7 - The warranty is not transferable and applies only to the invoice recipient.

8 - The warranty is no longer valid when one of the following conditions is the case:
a) payments are not made by the client in the manner and terms agreed
b) tampering with what is provided without the seller's explicit authorisation
c) improper use of what is supplied
d) failure to perform maintenance
e) installation, modification, replacement of parts or of what is supplied

4 Mobile transfer and filtration units

The UFM series mobile filtration units are machines designed for transferring and filtering lubricants and hydraulic oils.
The UFM015 version can be moved thanks to the use of handle and low weight, all other versions have wheels for moving.
They can be used with fluids at different temperatures (therefore different viscosities) as long as they fall within the limits indicated by this manual.
Operation with Mineral Oils, Synthetic Fluids & HFCs.

NOTE

The machine can be used for:

TRANSFER
- transferring from drums into tanks
- to top up from drums into tanks

FILTRATION
- off-line filtration in tanks
- additional off-line filtration system in tanks
- off-line filtration of new oil into drums or underground/large tanks
- Particle counting and determination of cleanliness class according to ISO4406, NAS1638, AS4059 (only for versions with ICM mounted on UFM051-091-181-919)
- Measurement of the water saturation level (RH) contained in the fluid and of the temperature

Depending on the version, the mobile filtration units can use filter elements and cartridges with different filtering media, filtration degree and dimensions; the fibre filter elements have high storage capacity and absolute filtration $\beta_{x(c)}>1000$.

Single-phase and three-phase electric motors.
Wide range of flow rate, from 15 l/1' to 180 l/1'.
Optical and electrical systems for filter monitoring.
Electrical systems for greater safety:
- unit shutdown in case of clogged filter
- unit shutdown when the set cleanliness class is reached (particle counter version only)

Before commissioning the equipment make sure:
- you have read this manual carefully
- check the good condition of the mobile filtration unit
- report any damage or breakages suffered by the mobile filtration unit during transport
- verify the presence of all the accessories supplied

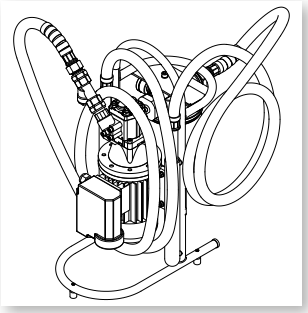
For other types of fluids contact our technical / commercial service.

NOTE

4.1 Included documentation

The following documents are attached to this manual:
- Certificate of inspection

5 Technical features



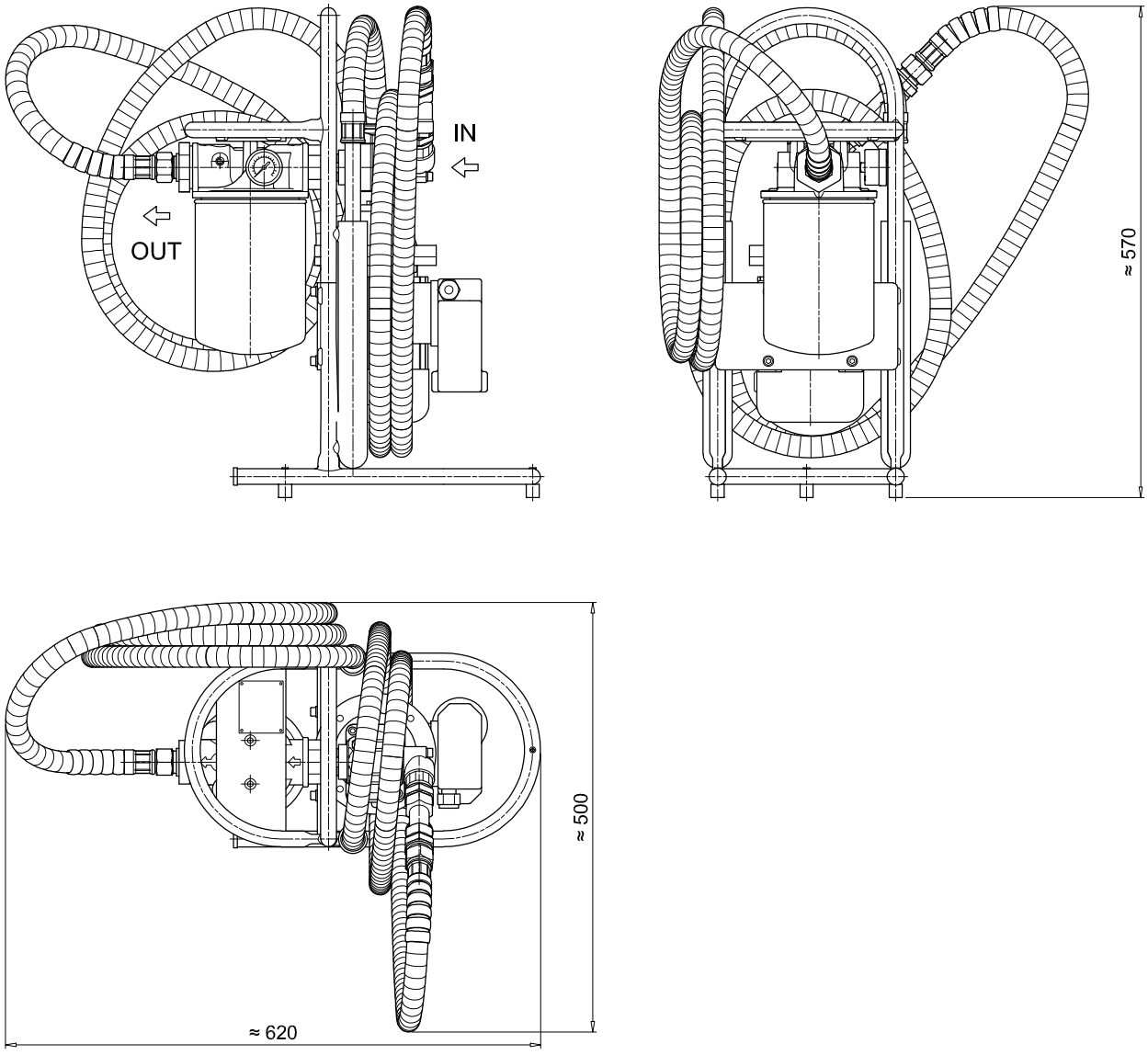
The mobile filtration unit consists of a support frame with a handle for transport.
The assembly/motor pump connected to the hoses is used for suctioning and discharging the fluid.
It is equipped with a suction filter and a discharge filter.
The mobile filtration unit is complete with electrical safety systems for the filter and the assembly/motor pump.

Pump	External gear pump	
Electric motor	0,18 kW 230 Volt single-phase	
Flow rate (l/min)	15 l/min -1450 rpm	
Max. working pressure	4 bar	
Viscosity	Minimum operating viscosity 10 cSt Maximum operating viscosity 200 cSt Maximum only for cold starts 400 cSt	
Suction filter	Y-shape fine filter unit 500 micron	
Type of filtering mat/degree of filtration Internal/external filtration	Fibre 1/3/6/10/25 $\beta_{x(c)}>1000$ Wire mesh 25/60 µm Water absorber	NOTE 1 / NOTE 2
Bypass valve	3 bar	
Fluid temperature	from +5 °C to +60 °C	
Ambient temperature	from +5 °C to +40 °C	
Protection class	IP 55	
Seals	NBR	
Compatibility with hydraulic fluids	Mineral & Synthetic oils. For other fluids contact MP Filtri.	
Hoses	Flexible suction hose DN18 L = 2500mm Lance DE20 L = 400mm Flexible delivery hose DN18 L = 2500mm Lance DE18 L = 400mm	
Weight	14.8 kg	
Equipment	Pressure gauge Strap wrench	

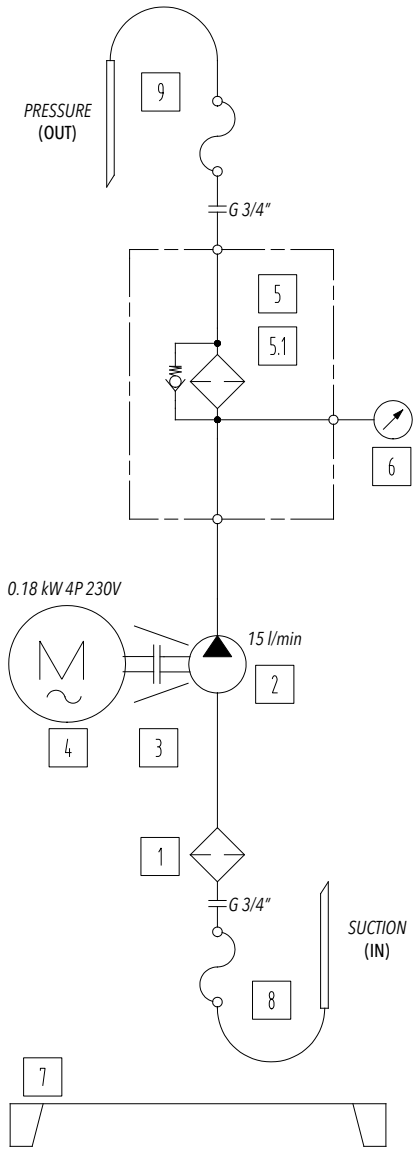
Microfibre filter elements with water absorber: disposable components — NOTE 1

The system is supplied without a filter cartridge — NOTE 2

5.1 Dimensions



5.2 Hydraulic circuit and bill of materials



Version:
UFM015MA1000P01

Position	Quantity	Description
1	1	Y shaped filter 500micron
2	1	Gear pump
3	1	Complete motor/pump coupling
4	1	Electric motor 0.18 kW 4P-B3/B5
5	1	Filter Head
5.1	1	Standard length: Microfibre filter cartridge 1µm Microfibre filter cartridge 3µm Microfibre filter cartridge 6µm Microfibre filter cartridge 10µm Microfibre filter cartridge 25µm Wire mesh filter cartridge 25µm Wire mesh filter cartridge 60µm NOTE Increased length: Microfibre filter cartridge 1µm Microfibre filter cartridge 3µm Microfibre filter cartridge 6µm Microfibre filter cartridge 10µm Microfibre filter cartridge 25µm Wire mesh filter cartridge 25µm Wire mesh filter cartridge 60µm Filter cartridge for water separation NOTE
6	1	Pressure gauge
7	1	Mobile unit frame
8	1	(IN) DN18 flexible suction hose + lance
9	1	(OUT) DN18 flexible pressure hose + lance

Microfibre filter elements with water absorber: disposable components NOTE

6 Installation procedures and general operation

6.1 Introduction

The mobile filtration units are suitable for the following fluid operations:

- Transfer with filtration
- Off-line filtration (maximum recommended volume 250L)

In standard execution the filtration unit is supplied without filter cartridge, before its use install an original MP Filtri filter cartridge suitable for the type of unit you are using (see filter cartridge codes listed in Table 6.7.2 Item. 7) and perform the procedures described in Section 6.2 "Filter cartridge Installation".

6.2 Filter Cartridge Installation

1

Lubricate the cartridge seal with the fluid being used

2

Position the cartridge

3

Screw in the filter cartridge until the gasket comes into contact with the filter head and then rotate half a turn

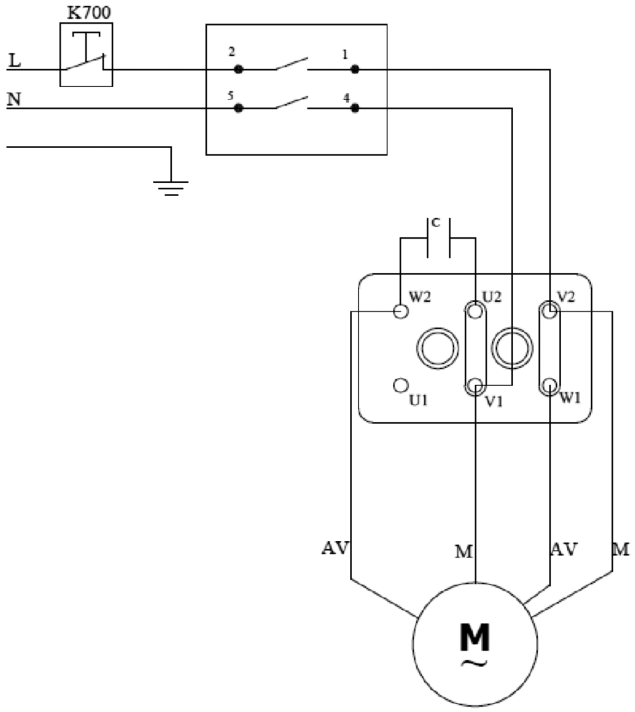
These operations must be performed with the machine off. Do not turn on the unit without first installing the filter cartridge. Check that the cartridge is properly screwed in.

CAUTION

We recommend using only original MP Filtri filter cartridges.

NOTE

6.3 Wiring diagram



6.3.1 Electrical connection

The mobile filtration unit must be connected to the power supply using the included plug; also check the following:
- the applicable laws and regulations at the location and at the time of installation
- that the power supply voltage and the frequency at the connection point are compatible with those indicated on the rating plate of the mobile filtration unit
- the data shown on the rating plate.

The supply voltage must correspond to the voltage specified on the rating.

The construction features of the electric cable guarantee great flexibility, excellent resistance to weather conditions, oils and greases, mechanical and thermal stresses: Standard IMQ-CPT-007, CEI EN 50525-2-21.
Compliant with requirements of the BT 2006/95/CE directives.

The terminal box contains metal elements that are under hazardous voltage; after making the connections, always close the box cover.

NOTE

6.3.2 Triangular electrical connection of a three-phase motor - not applicable for UFM015
6.3.3 Electrical connection of a single-phase motor - not applicable for UFM015
6.3.4 Electrical panel - not applicable for UFM015
6.3.5 Electrical panel labels - not applicable for UFM015

6.4 Use

6.4.1 Installation

The mobile filtration unit must be positioned in a place that guarantees its stability during use.

TRANSFER
Connect/immerse the metal suction lance (IN) to the tank or to the drum, immerse the discharge hose (OUT) in the machine tank or in the drum which should be transferred to.
If the transfer oil is to be cleaned, it is advisable to filter the oil contained in the drum or tank several times before being transferred.
Be careful not to mix up the suction and discharge hoses. The suction hose (IN) is the one with the largest diameter.

In this case immerse the metal suction lances (IN) and the discharge lances (OUT) in the barrel or tank to be transferred to. Be careful that the lances remain below the level of the oil to be transferred in order to avoid foaming and cavitation; space the ends of the two lances in order to recirculate all the fluid and not generate an emulsion.

FILTRATION
Immerse the metal lances for suction (IN) and for discharge (OUT) inside the tank far from each other, if possible positioning them at different heights (100 mm suction from the bottom of the tank, discharge immersed a minimum of 200 mm).

Make sure that the tubes/lances are properly fixed or perfectly stable before starting.
Be careful not to mix up the suction and discharge hoses. The suction hose (IN) is the one with the largest diameter.

The discharge lance must in general have unrestricted flow. It is prohibited to install taps or components on both hoses that may obstruct or reduce the flow of the fluid.

CAUTION

6.4.2 Power on

1 Insert the electric plug into a single-phase socket.

Connect to the power supply

Before starting up the electric motor, make sure that the suction lance (IN) is immersed in the fluid.

CAUTION

2 Once inserted, press the power on button "I" located on the terminal box of the electric motor (Fig. 1).
At this point the transfer and filtration of the fluid begins.

Power On/Off button

Fig.1

6.4.3 Air vent - not applicable for UFM015

6.4.4 Oil analysis with particle counter - not applicable for UFM015

6.4.5 Shutdown

1 Once the operations have been completed, switch off the electric pump by pressing the Off button "0" on the terminal box of the electric motor (Fig. 2) and disconnect the electric connection plug.

Fig.2

2 Put the lances in their respective housings anchored to the frame (⚠ - Fig. 3), paying attention to the fluid still present in the hoses.
Rewind the power supply cable.

Fig.3

With oil temperatures above 40/45° C, give special caution to the handling of the metal lances/tubes and movement of the trolley. Avoid direct contact with hot oil, the mobile filtration unit and its installed components.

⚠ CAUTION

6.4.6 Operating limits and environmental limits

The trolley is designed to operate at a maximum pressure of 4 bar.
The electric motor is designed to operate according to the rating plate data.
For use in environments with very cold or very hot temperatures, refer to the technical data provided in Section 5.

6.5 Normal and scheduled maintenance

The UFM015 does not require particular maintenance interventions, it is however good practice to check the perfect condition of the suction and discharge hoses before use. Check that the filter cartridge is screwed tight.
Periodically check the tightness of the hydraulic connections and if the electrical cable ends in the motor terminal box are tight. Also check the cleanliness of the "Y" shaped filter for any accumulated macro impurities, so as to preserve the filter element (CS 100 or CS 150).

6.5.1 Oil leaks

Oil leaks can form on the joints of the hoses and on fittings if any connections or screws are loosened, in which case we recommend checking the correct tightness.
If the operations described above are not able to solve the problem, contact the manufacturer.

6.6 Filter clogging

Clogging of the filter cartridge is easily detected by the pressure gauge mounted on the filter head (Fig. 4).
When the pressure reaches 2.5 bar, replace the filter element and at the same time clean the "Y" shaped filter in the suction line.
The spin-on filter is equipped with a bypass valve with a response pressure set at 3 bar.

Pressure gauge

Fig.4

It is recommended to never exceed the response pressure of the bypass valve (3 bar).

CAUTION

6.6.1 Filter cartridge replacement

Before replacing the filter cartridge, make sure that the oil temperature is below + 40/45° C.
Replace the filter cartridge whenever necessary, i.e. whenever the gauge indicates a clogged filter (2.5 bar) or when other fluids must be filtered. To unscrew the cartridge use the included "strap wrench" (Fig. 5).
It is recommended to thoroughly clean the filter head before beginning operations to replace the filter cartridge.

Strap wrench
Fig.5

1

Unscrew the cartridge

2

Collect the oil contained in the filter cartridge in a container

3

Lubricate the cartridge seal with the fluid being used

4

Position the cartridge

5

Screw in the filter cartridge until the gasket comes into contact with the filter head and then rotate half a turn

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

6.6.2 Air vent - not applicable for UFM015

6.6.3 Replacing and cleaning of the filter in the suction line

Regularly (every 6 months or if you hear pump cavitation noises) check the blockage status of the suction filter and clean or replace it if necessary.

Suction filter

Unscrew the nut and remove the filter element

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

6.7 Designation & Ordering code

MOBILE FILTRATION UNIT UFM 015

Configuration example: UFM | 015 | M | A | 1 | 0 | 0 | 0 | P01

Series
UFM

Size
015 15 l/min

Electric motor
M 220V single phase

Seals
A NBR

Pressure gauges and Clogging indicators
1 Manometer

Cartridge
0 Without cartridge

Filtration surface
0 Not provided

Option
0 No options

Option
P01 MP Filtri standard
Pxx Customized

Cartridge should be ordered separately

CARTRIDGE STANDARD LENGTH

Inorganic microfibre	Wire mesh element
CS 100 A01 A P01	CS 100 M25 A P01
CS 100 A03 A P01	CS 100 M60 A P01
CS 100 A06 A P01	
CS 100 A10 A P01	
CS 100 A25 A P01	

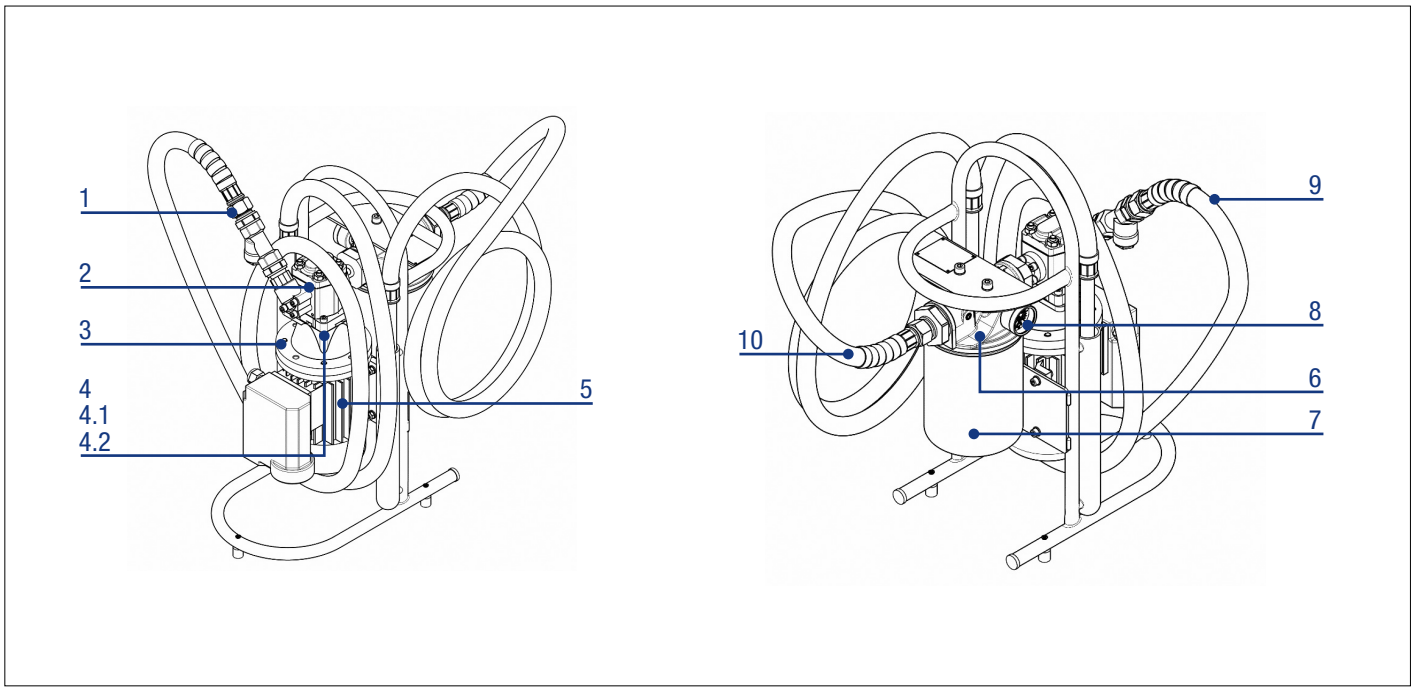
CARTRIDGE EXTENDED LENGTH

Inorganic microfibre	Wire mesh element
CS 150 A01 A P01	CS 150 M25 A P01
CS 150 A03 A P01	CS 150 M60 A P01
CS 150 A06 A P01	
CS 150 A10 A P01	
CS 150 A25 A P01	

WATER REMOVAL - CARTRIDGE EXTENDED LENGTH

Multi-Layer water absorber
CW150P10A

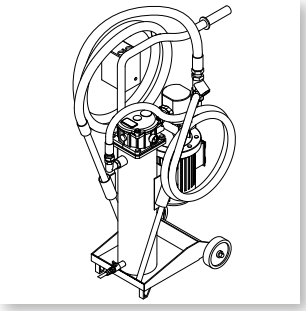
6.7.1 Spare parts



6.7.2 List of spare parts

Position	Series	Description	Code	Quantity
1	UFM015MA1000P01	Y-shaped filter 3/4" BSP - 500micron	02200001	1
2	UFM015MA1000P01	Gear pump	02200002	1
3	UFM015MA1000P01	Pump bracket	LMG140MFS1004EAN	1
4	UFM015MA1000P01	Pump side half-coupling	SGEA01FS100	1
4.1	UFM015MA1000P01	Motor side half-coupling	SGEA01M01021FG	1
4.2	UFM015MA1000P01	Elastic wheel	EGE0	1
5	UFM015MA1000P01	Electric motor 0.18 kW 4P B3B5 IP55 2F 230V 50/60Hz	02200003	1
6	UFM015MA1000P01	Filter (spin-on filter head)	2006436	1
7	UFM015MA1000P01	Standard length: Microfibre filter cartridge 1µm	CS100A01AP01	1
		Microfibre filter cartridge 3µm	CS100A03AP01	
		Microfibre filter cartridge 6µm	CS100A06AP01	
		Microfibre filter cartridge 10µm	CS100A10AP01	
		Microfibre filter cartridge 25µm	CS100A25AP01	
		Wire mesh filter cartridge 25µm	CS100M25AP01	
		Wire mesh filter cartridge 60µm	CS100M60AP01	
		Increased length: Microfibre filter cartridge 1µm	CS150A01AP01	
		Microfibre filter cartridge 3µm	CS150A03AP01	
		Microfibre filter cartridge 6µm	CS150A06AP01	
		Microfibre filter cartridge 10µm	CS150A10AP01	
		Microfibre filter cartridge 25µm	CS150A25AP01	
		Wire mesh filter cartridge 25µm	CS150M25AP01	
		Wire mesh filter cartridge 60µm	CS150M60AP01	
8	UFM015MA1000P01	Pressure gauge	BVA25P01	1
9	UFM015MA1000P01	Flexible suction hose DN18 L = 2500mm Inclined cut lance DE20 L = 370mm	02200004	1
10	UFM015MA1000P01	Flexible delivery hose DN18 L = 2500mm Inclined cut lance DE18 L = 370mm	02200005	1
11	UFM015MA1000P01	Strap wrench	02200006	1

5 Technical features



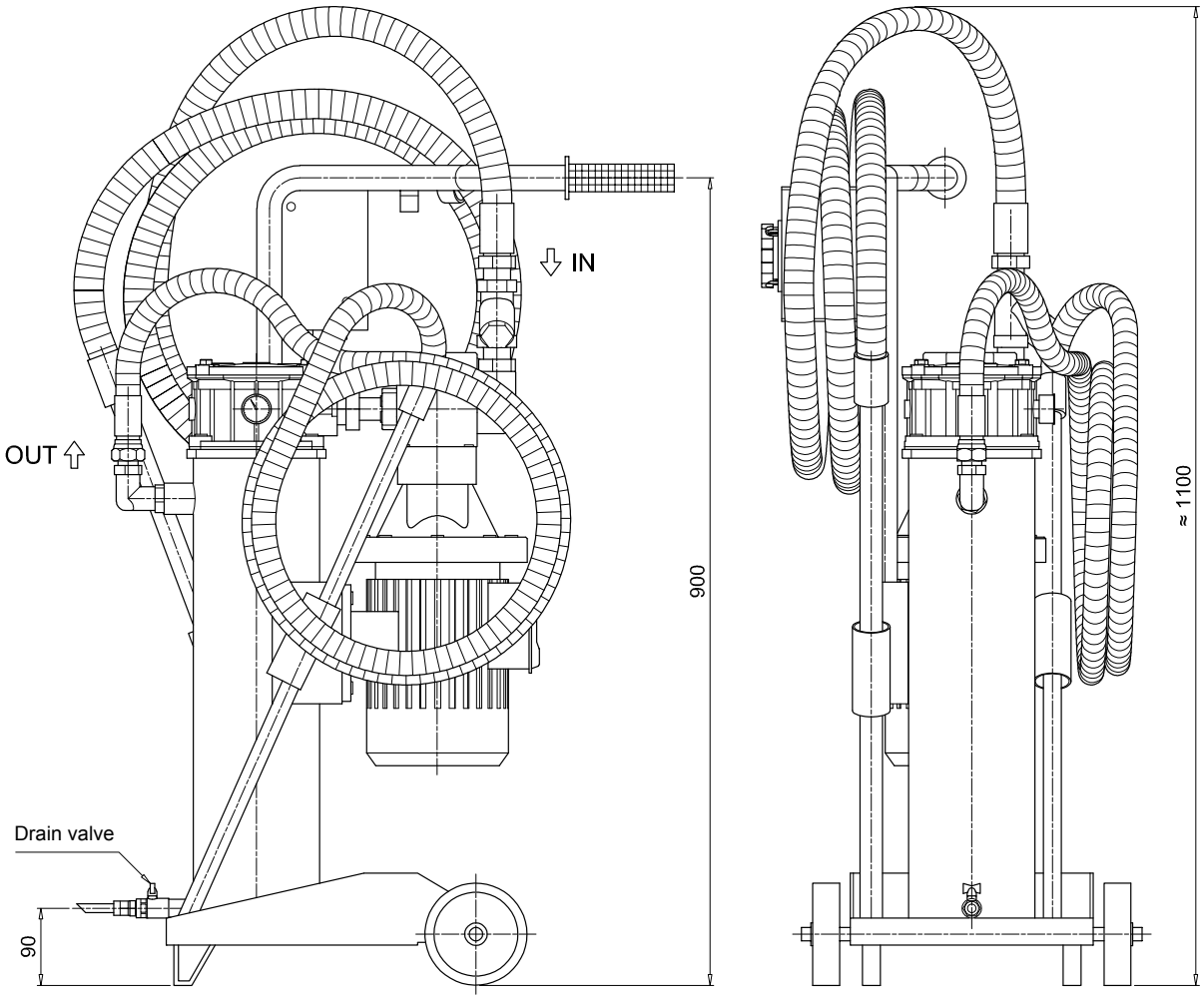
The mobile filtration unit consists of a support frame with handle and wheels for manoeuvrability.
The assembly/motor pump connected to the hoses is used for suctioning and discharging the fluid.
It is equipped with a suction filter and a discharge filter.
The mobile filtration unit is complete with electrical safety systems for the filter and the assembly/motor pump.

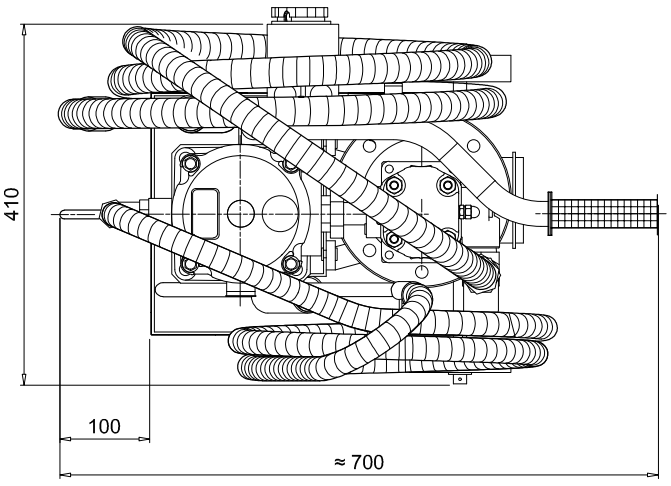
Pump	External gear pump with integrated pressure relief valve
Electric motor	0.75 kW 230 Volt single-phase - 0.75 kW 400/230 Volt three-phase
Flow rate (l/min)	34 l/min -1450 rpm
Max. working pressure	5 bar
Viscosity	Minimum operating viscosity 10 cSt Maximum operating viscosity 200 cSt Maximum only for cold starts 800 cSt
Suction filter	Y-shape fine filter unit 900 micron
Type of filtering mat/degree of filtration Internal/external filtration	Fibre 1/3/6/10/16/25 $\beta_{x(c)}>1000$ Wire mesh 25/60 µm Water absorber NOTE 1 / NOTE 2
Bypass valve	3 bar
Fluid temperature	from -5 °C to +80 °C
Ambient temperature	from -20 °C to +45 °C
Protection class	IP 55
Seals	NBR
Compatibility with hydraulic fluids	Mineral & Synthetic oils. For other fluids contact MP Filtri.
Hoses	Flexible suction hose DN25 L = 3000mm Lance DE25 L = 700mm Flexible delivery hose DN20 L = 3000mm Lance DE20 L = 700mm
Weight	45 kg
Equipment	Pressure gauge

Microfibre filter elements with water absorber: disposable components — NOTE 1

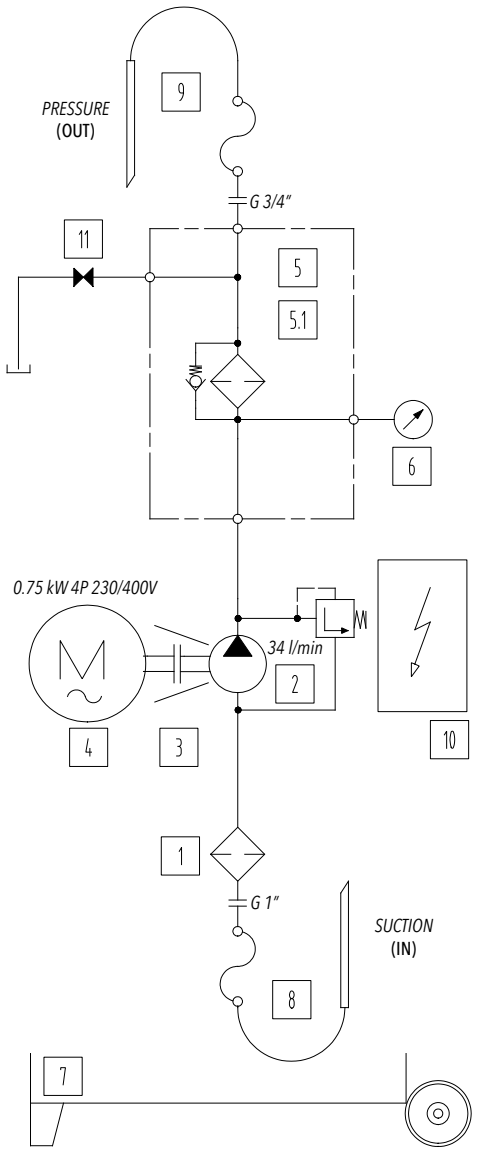
The system is supplied without filter element — NOTE 2

5.1 Dimensions





5.2 Hydraulic circuit and bill of materials



Versions:

UFM041MA1010P01 - UFM041TA1010P01

Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Gear pump
3	1	Motor/pump coupling
4	1	Single-phase electric motor 0.75 kW 4P-B3/B5 (IE3) Three-phase electric motor 0.75 kW 4P-B3/B5 (IE3)
5	1	Filter
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Pressure gauge
7	1	Mobile unit frame
8	1	(IN) DN25 flexible suction hose + lance
9	1	(OUT) Flexible DN20 pressure hose + lance
10	1	Electrical panel single-phase version Electrical panel three-phase version
11	1	Discharge valve

Microfibre filter elements with water absorber: disposable components NOTE

6 Installation procedures and general operation

6.1 Introduction

The mobile filtration units are suitable for the following fluid operations:

- Transfer with filtration
- Off-line filtration (maximum recommended volume 350/500L)

The standard version of the filtration unit is delivered without a filter element, before its use install an original MP Filtri filter element suitable for the type of unit being used (see filter element codes listed in Table 6.7.2 Item.8) and carry out the procedures described in Section 6.2 "Filter element installation".

6.2 Filter element installation

1

Opening the cover

2

Insert the element seat into the filter element

3

Insert the bypass spring

4

Tighten the nut up to the stop

5

Insert the filter element into the filter

6

Check the correct positioning of the element seat/spring/cover and filter closure

7

Tighten the cover

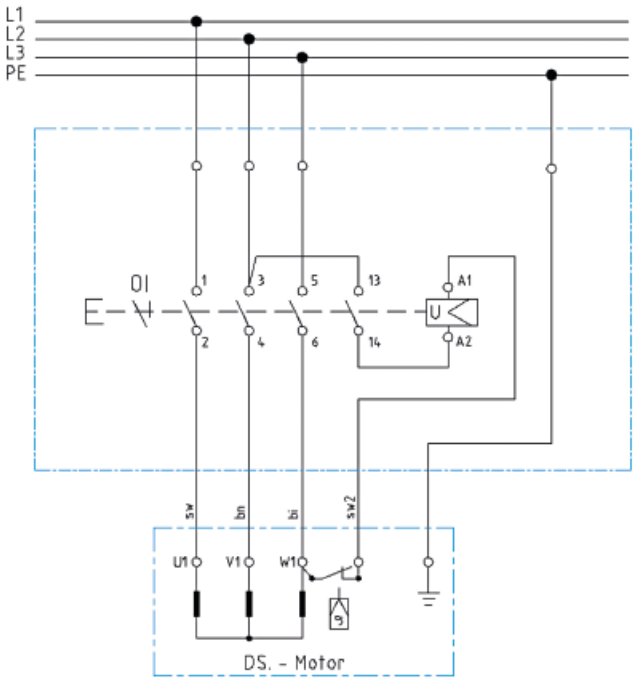
These operations must be performed with the machine off. Do not turn on the unit without first installing the filter element. Check that the filter element is inserted correctly.

CAUTION

We recommend using only original MP Filtri filter cartridges.

NOTE

6.3 Wiring diagram



6.3.1 Electrical connection

The trolley must be connected via the plug supplied to the power supply, checking:
- the laws and technical specifications valid in the place and at the time of installation
- that the power supply voltage and the frequency at the connection point are compatible with those indicated on the rating plate of the mobile filtration unit
- the data shown on the rating plate.

It is recommended to use a multi-wire cable with a minimum cross-section of 4 x 2,5 mm^2 for the connection of the electric motor.
The red plug indicates a three-phase motor, the blue plug a single-phase motor.
The supply voltage must correspond to the voltage specified on the rating plate.

The construction features of the electric cable guarantee great flexibility, excellent resistance to weather conditions, oils and greases, mechanical and thermal stresses: Standard IMQ-CPT-007, CEI EN 50525-2-2.
Compliant with requirements of the BT 2006/95/CE directives.

The terminal box contains metal elements that are under hazardous voltage; after making the connections, always close the box cover.

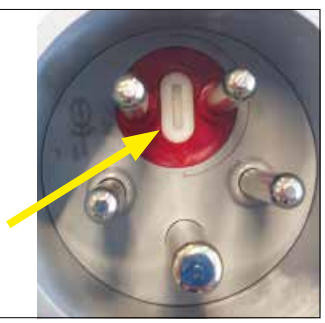
⚠ NOTE

6.3.2 Triangular electrical connection of a three-phase motor

This motor is connected to the three-phase line, which can be 230V or more commonly 400V. Since the windings that make up the motor must be powered at 230V, the connection must be made in the following manner:

- Delta connection: this connection applies the same voltage to the windings as to the line.

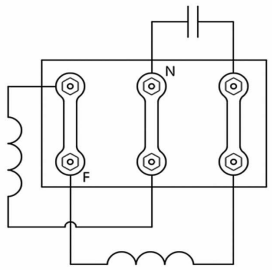
To be able to change the direction of rotation it is sufficient to invert two phases by acting directly on the appropriate five-pole CE plug (see photo on the right).



6.3.3 Electrical connection of a single-phase motor

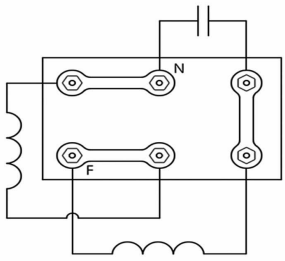
Depending on its type, this motor is connected to the single-phase line in only one way:

- Motor with single-phase winding: Characteristic system for single-phase motors that have only a single winding, in which one end must be connected to the phase and the other end to the neutral conductor. To change the direction of rotation of the motor, reverse phase and neutral.
- Motor with two-phase winding: Two-phase winding that, as for a single-phase winding, functions with a permanently powered capacitor. To change the direction of rotation, connect the terminals as shown in the circuit diagram.



The direction of rotation of the motor is determined differently depending on the connection.

To change the direction of rotation of the motor, reverse phase and neutral.



6.3.4 Electrical panel

3-phase electrical panel

Single-phase electrical panel

6.3.5 Electrical panel labels - not applicable for UFM041

6.4 Use

6.4.1 Installation

The mobile filtration unit must be positioned in a place that guarantees its stability during use.

TRANSFER

Connect/immerse the metal suction lance (IN) to the tank or to the drum, immerse the discharge hose (OUT) in the machine tank or in the drum which should be transferred to.

If the transfer oil is to be cleaned, it is advisable to filter the oil contained in the drum or tank several times before being transferred. In this case immerse the metal suction lances (IN) and the discharge lances (OUT) in the barrel or tank to be transferred to. Be careful that the lances remain below the level of the oil to be transferred in order to avoid foaming and cavitation; space the ends of the two lances in order to recirculate all the fluid and not generate an emulsion.

FILTRATION

Immerse the metal lances for suction (IN) and for discharge (OUT) inside the tank far from each other, if possible positioning them at different heights (100 mm suction from the bottom of the tank, discharge immersed a minimum of 200 mm).

Make sure that the tubes/lances are properly fixed or perfectly stable before starting.
Be careful not to mix up the suction and discharge hoses. The suction hose (IN) is the one with the largest diameter.

The discharge lance must in general have unrestricted flow. It is prohibited to install taps or components on both hoses that may obstruct or reduce the flow of the fluid. CAUTION

6.4.2 Power on

Insert the electric plug into a socket.
Check the direction of rotation in the version with three-phase motor. NOTE
Three-phase electric power supply with protective conductor is required for the power supply of the trolley.

Electrical connection for the single-phase motor

Electrical connection for the three-phase motor (5 poles plug)

5 poles plug for the three-phase motor

Before starting up the electric motor, make sure that the suction lance (IN) is immersed in the fluid. CAUTION

Operate the rotary knob for a few seconds and observe the direction of rotation. The direction observed on the fan side must be clockwise, otherwise the phases L1 and L2 must be inverted. NOTE

After inserting the plug, turn the rotary knob for turning on and off to "I" on the terminal box of the motor (Fig. 1).
At this point the transfer and filtration of the fluid begins.

Rotary knob ON/OFF Fig.1

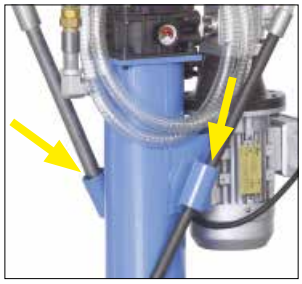
6.4.3 Air vent - not applicable for UFM041

6.4.4 Oil analysis with particle counter - not applicable for UFM041

6.4.5 Shutdown

On/off knob Fig.2

When the operations have been completed, turn off the electric pump by turning the shut-off knob to "0" on the terminal box of the electric motor (Fig. 2) and disconnect the electrical connection plug.



Lance holders Fig.3

Put the lances in their respective housings (⚠ - Fig. 3), anchored to the frame paying attention to the fluid still present in the hoses. Rewind the power supply cable.

The UFM041 is equipped with a thermal protection device against electrical overloads, short circuits and overheating.
If a "BLOCK" occurs, check the operating conditions (e.g. clogged filter, fluid conditions, motor overheating, etc.) and reset the thermal protection by pressing the appropriate button on the side of the motor terminal box.

With oil temperatures above 40/45° C, give special caution to the handling of the metal lances/tubes and movement of the trolley. Avoid direct contact with hot oil, the mobile filtration unit and its installed components.

⚠ *CAUTION*

6.4.6 Operating limits and environmental limits

The trolley is designed to operate at a maximum pressure of 5 bar.
The electric motor is designed to operate according to the rating plate data.
For use in environments with very cold or very hot temperatures, refer to the technical data provided in Section 5.

6.5 Normal and scheduled maintenance

The UFM041 does not require particular maintenance interventions, it is in any case a good rule to check the perfect condition of the suction and discharge hoses before each use. Check that the filter element is correctly installed and that the filter cover is tightly screwed on.
Periodically check the tightness of the hydraulic connections and if the electrical cable ends in the motor terminal box are tight. Also check the cleanliness of the "Y" shaped filter for any accumulated macro impurities, so as to preserve the filter element (MR2504).

6.5.1 Oil leaks

Oil leaks can form on the joints of the hoses and on fittings if any connections or screws are loosened, in which case we recommend checking the correct tightness.
If the operations described above are not able to solve the problem, contact the manufacturer.

6.6 Filter clogging

The conditions relating to the clogging of the filter element are guaranteed by a pressure gauge (Fig. 4) mounted on the head of the MPH250 filter. When the pressure reaches 1.75 bar, replace the filter element and at the same time clean the "Y" shaped filter in the suction line.
The MPH filter is equipped with a bypass valve with a response pressure set at 3 bar.

Pressure gauge

Fig.4

It is recommended to never exceed the response pressure of the bypass valve (2.5 bar).

CAUTION

6.6.1 Replacing the filter element

Before proceeding with the replacement of the filter element, make sure that the oil temperature is lower than +40/45° C.
Replace the filter element whenever necessary, i.e. whenever the gauge indicates that the filter is clogged (1.75 bar) or when different fluids must be filtered.
The filtration of the filter element takes place from inside to outside, the residual oil in the filter body is normally clean. The oil must be emptied only when different fluids must be filtered using the drain valve (Fig. 5) installed at the base of the filter body.

Drain valve

Fig.5

It is recommended to clean the filter head thoroughly before replacing the filter element.

1

Open the filter cover

2

Remove the filter element

3

Unscrew the bypass spring nut

4

Remove the element seat

5

Clean the filter element seat

6

Check the correct positioning of the element seat/spring/cover and filter closure

7

Insert the bypass spring

8

Tighten the nut up to the stop

9

Insert the filter element

10

Check the correct positioning of the filter element

11

Tighten the cover

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

6.6.2 Air vent - not applicable for UFM041

6.6.3 Replacing and cleaning of the filter in the suction line

Regularly (every 6 months or if you hear pump cavitation noises) check the blockage status of the suction filter and clean or replace it if necessary.

Suction filter

Unscrew the nut and remove the filter element

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

6.7 Designation & Ordering code

MOBILE FILTRATION UNIT UFM 041

Configuration example: UFM | 041 | T | A | 1 | 0 | 1 | 0 | P01

Series
UFM

Size
041 34 l/min

Electric motor
M 230V single phase
T 400/230V three phase

Seals
A NBR

Pressure gauges and Clogging indicators
1 Manometer

Filter element
0 Without element

Filtration surface
1 Standard

Option
0 No options

Option
P01 MP Filtri standard
Pxx Customized

Filtration element should be ordered separately

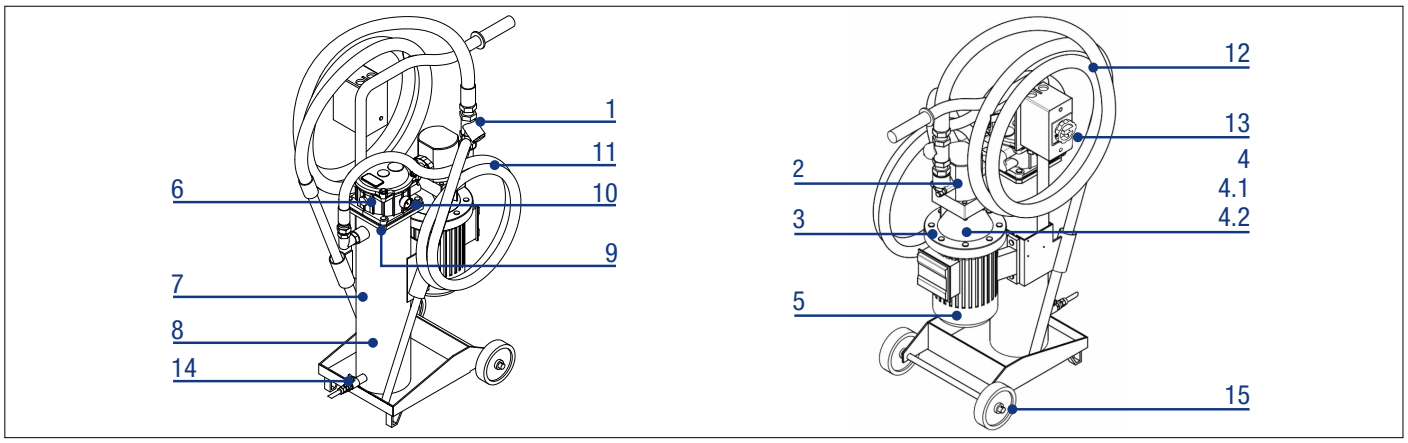
FILTRATION SURFACE - STANDARD

Inorganic microfibre	Wire mesh element
MR 250 4 A01 A P01	MR 250 4 M25 A P01
MR 250 4 A03 A P01	MR 250 4 M60 A P01
MR 250 4 A06 A P01	
MR 250 4 A10 A P01	
MR 250 4 A16 A P01	
MR 250 4 A25 A P01	

WATER REMOVAL - FILTRATION SURFACE - STANDARD

Multi-Layer water absorber
MR2504WA025AP01

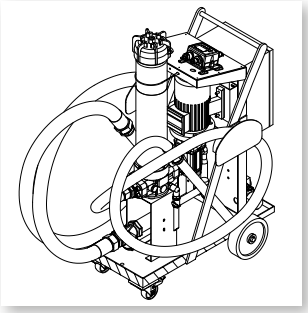
6.7.1 Spare parts



6.7.2 List of spare parts

Position	Series	Description	Code	Quantity
1	UFM041MA1010P01 UFM041TA1010P01	Y-shaped filter 1" BSP - 900micron	02200007	1
2	UFM041MA1010P01 UFM041TA1010P01	External gear pump with integrated pressure relief valve	02200008	1
3	UFM041MA1010P01 UFM041TA1010P01	Pump bracket	LMG201MFS2004SANU	1
4	UFM041MA1010P01 UFM041TA1010P01	Pump side half-coupling	SGEA21FS200U	1
4.1	UFM041MA1010P01 UFM041TA1010P01	Motor side half-coupling	SGEA21M03044U	1
4.2	UFM041MA1010P01 UFM041TA1010P01	Elastic wheel	EGE2U	1
5	UFM041MA1010P01	Single-phase electric motor 0.75 kW 4P B3B5 IP55 2F 230V 50/60Hz CLASS IE3	02200010	1
	UFM041TA1010P01	3-phase electric motor 0.75 kW 4P B3B5 IP55 3F 230/400V 50/60Hz CLASS IE3	02200011	1
6	UFM041MA1010P01 UFM041TA1010P01	MPH250 filter head assembly	02019097	1
7	UFM041MA1010P01 UFM041TA1010P01	Return filter body	MPI2504F0AP03	1
8	UFM041MA1010P01 UFM041TA1010P01	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element	MR2504A01AP01 MR2504A03AP01 MR2504A06AP01 MR2504A010AP01 MR2504A016AP01 MR2504A025AP01 MR2504M25AP01 MR2504M60AP01 MR2504WA025AP01	1
9	UFM041MA1010P01 UFM041TA1010P01	Filter gasket kit MPH250	02050151	1
10	UFM041MA1010P01 UFM041TA1010P01	Pressure gauge	BVA14P01	1
11	UFM041MA1010P01 UFM041TA1010P01	Flexible suction hose DN25 L = 3000mm Inclined cut lance DE25 L = 700mm	02200013	1
12	UFM041MA1010P01 UFM041TA1010P01	Flexible delivery hose DN20 L = 3000mm Inclined cut lance DE20 L = 700mm	02200012	1
13	UFM041MA1010P01	Electrical panel single-phase version + cable and CEE plug	02200014	1
	UFM041TA1010P01	Electrical panel three-phase version + cable and CEE plug	02200015	1
14	UFM041MA1010P01 UFM041TA1010P01	Discharge valve	02200039	1
15	UFM041MA1010P01 UFM041TA1010P01	Fixed wheel Ø125x30x15mm. Blue polyurethane coating and black polyamide structure.	02200016	2

5 Technical features



The mobile filtration unit consists of a support frame with handle and wheels for manoeuvrability.
The assembly/motor pump connected to the hoses is used for suctioning and discharging the fluid.
It is equipped with a suction filter and a discharge filter.
The mobile filtration unit is complete with electrical and mechanical safety systems, for the filter and the assembly/motor pump.

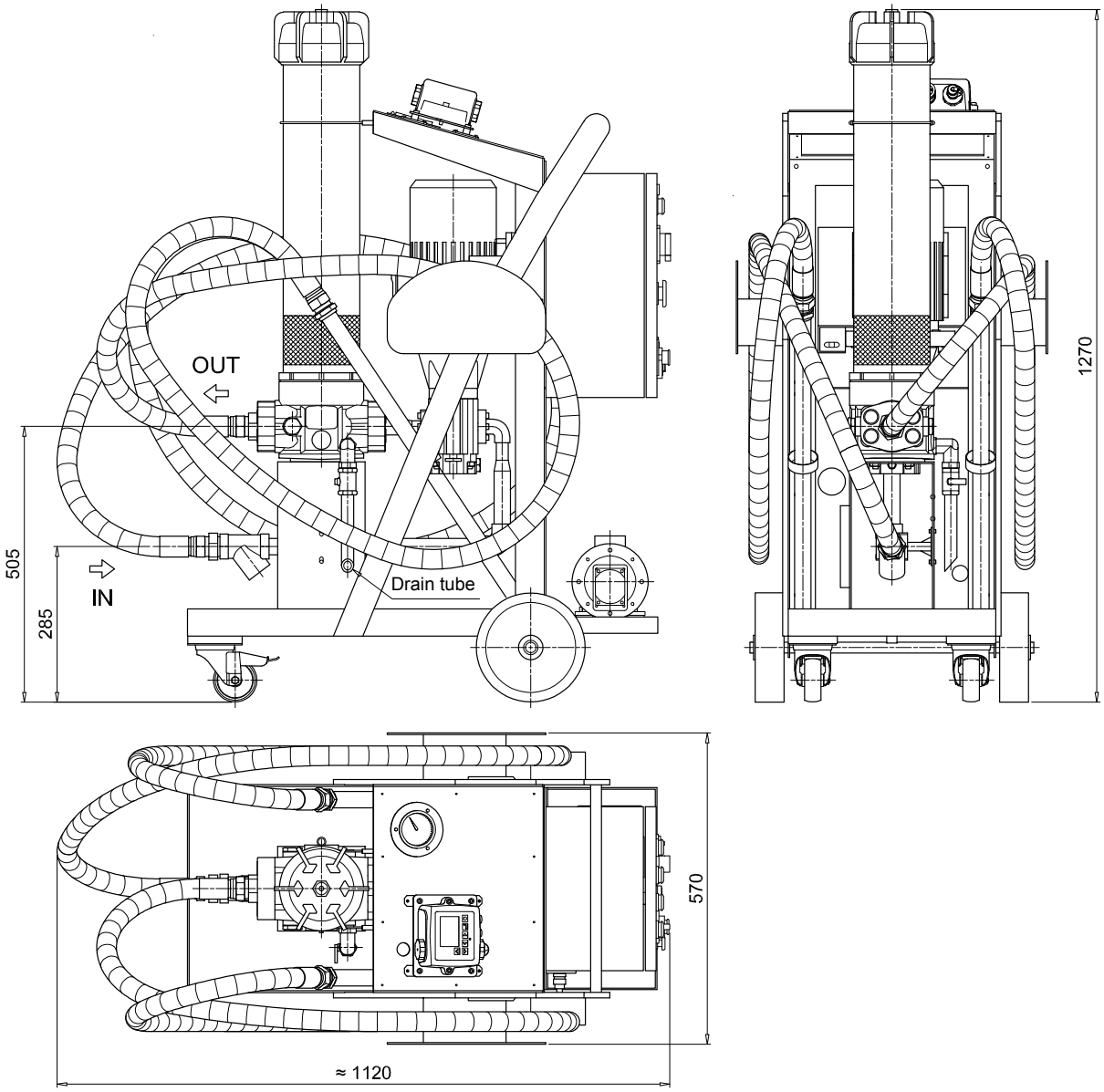
Pump	External gear pump with integrated pressure relief valve
Electric motor	0.75 kW 230 Volt single-phase - 0.75 kW 400/230 Volt three-phase
Flow rate (l/min)	34 l/min -1450 rpm
Max. working pressure	5 bar
Viscosity	Minimum operating viscosity 10 cSt Maximum operating viscosity 200 cSt Maximum only for cold starts 800 cSt
Suction filter	Y-shape fine filter unit 900 micron
Type of filtering mat/degree of filtration Internal/external filtration	Fibre 1/3/6/10/16/25 $\beta_{x(c)}>1000$ Wire mesh 25/60 µm Water absorber NOTE 1 / NOTE 2
Bypass valve	2.5 bar
Fluid temperature	from -5 °C to +80 °C
Ambient temperature	from -20 °C to +45 °C
Protection class	IP 55
Seals	NBR
Compatibility with hydraulic fluids	Mineral & Synthetic oils. For other fluids contact MP Filtri.
Hoses	Flexible suction hose DN25 L = 3000mm Lance DE25 L = 700mm Flexible delivery hose DN20 L = 3000mm Lance DE20 L = 700mm
Weight	70 kg
Standard equipment	Main filter bypass valve blocking Pressure gauge
Characteristic features UFM051MA2010P01 UFM051TA2010P01 UFM051MA2020P01 UFM051TA2020P01	Optical clogging indicator
UFM051MA3010P01 UFM051TA3010P01 UFM051MA3020P01 UFM051TA3020P01	Electric clogging indicator with automatic motor stop
UFM051TA3011P01 UFM051TA3021P01	Electric clogging indicator with automatic motor stop, ICM2.0 series particle counter and communication module

Microfibre filter elements with water absorber: disposable components — NOTE 1

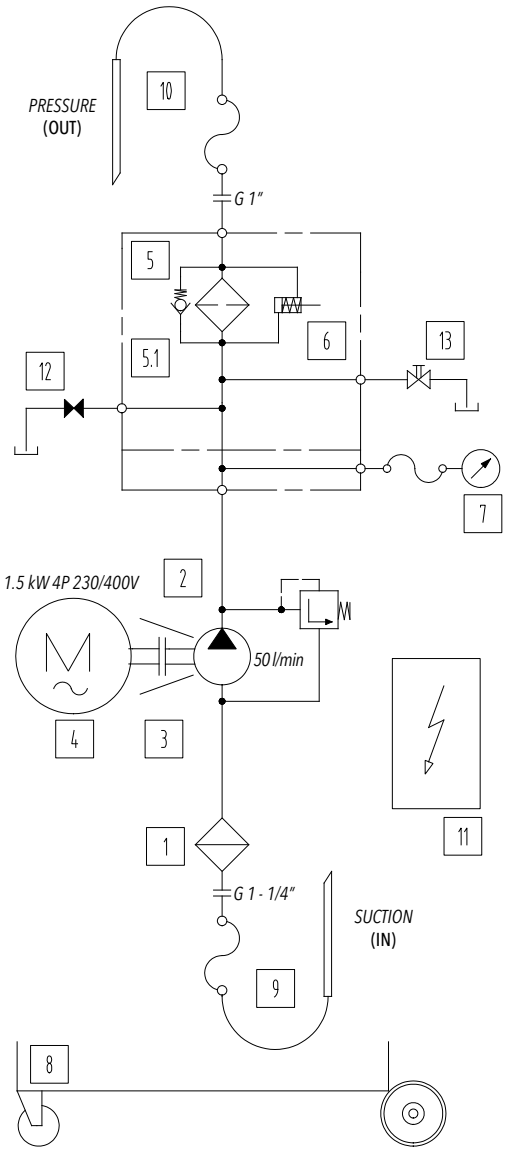
The system is supplied without filter element — NOTE 2

5.1 Dimensions

Filter length	H1 [mm]
1	1230 standard
2	1530 higher



5.2 Hydraulic circuit and bill of materials



Versions:

UFM051MA2010P01 - UFM051TA2010P01

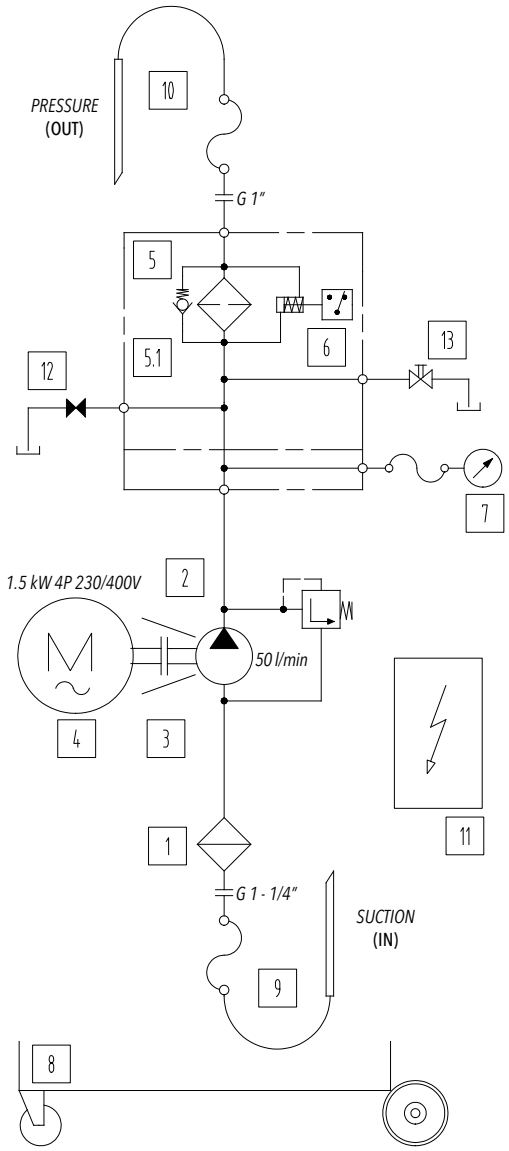
Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Gear pump
3	1	Motor/pump coupling
4	1	Single-phase electric motor 1.5 kW 4P-B3/B5 (IE3) Three-phase electric motor 1.5 kW 4P-B3/B5 (IE3)
5	1	Standard filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN32 flexible suction hose + lance
10	1	DN25 flexible discharge hose + lance
11A	1	Electrical panel single-phase version
11B	1	Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve

>> NEXT

Microfibre filter elements with water absorber: disposable components NOTE

>> NEXT

Hydraulic circuit and bill of materials



Versions:

UFM051MA3010P01 - UFM051TA3010P01

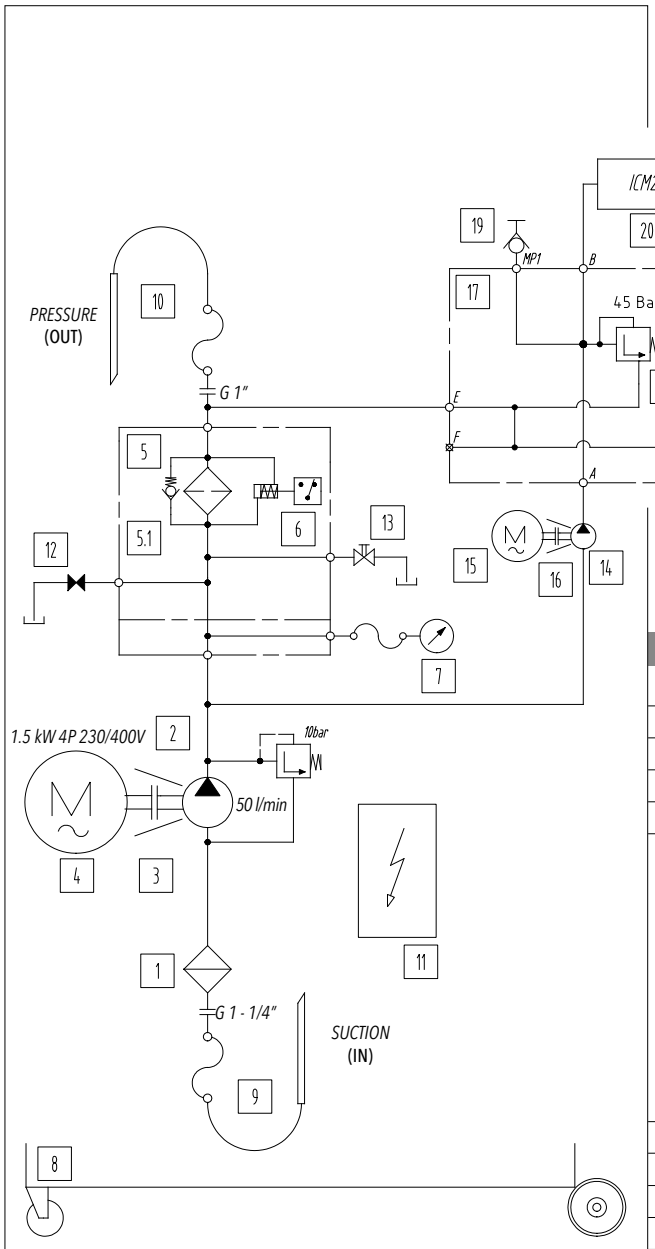
Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Gear pump
3	1	Motor/pump coupling
4	1	Single-phase electric motor 1.5 kW 4P-B3/B5 (IE3) Three-phase electric motor 1.5 kW 4P-B3/B5 (IE3)
5	1	Standard filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical/electric differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN32 flexible suction hose + lance
10	1	DN25 flexible discharge hose + lance
11A	1	Electrical panel single-phase version
11B	1	Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve

>> NEXT

Microfibre filter elements with water absorber: disposable components NOTE

>> NEXT

Hydraulic circuit and bill of materials



A = IN Auxiliary pump for ICM2.0
B = IN ICM 2.0
C = OUT ICM 2.0 (closed)
D = OUT ICM 2.0
E = RETURN
F = RETURN (closed)
MP1 = Minimess - IN ICM 2.0
MP2 = Minimess - OUT ICM 2.0

Version:
UFM051TA3011P01

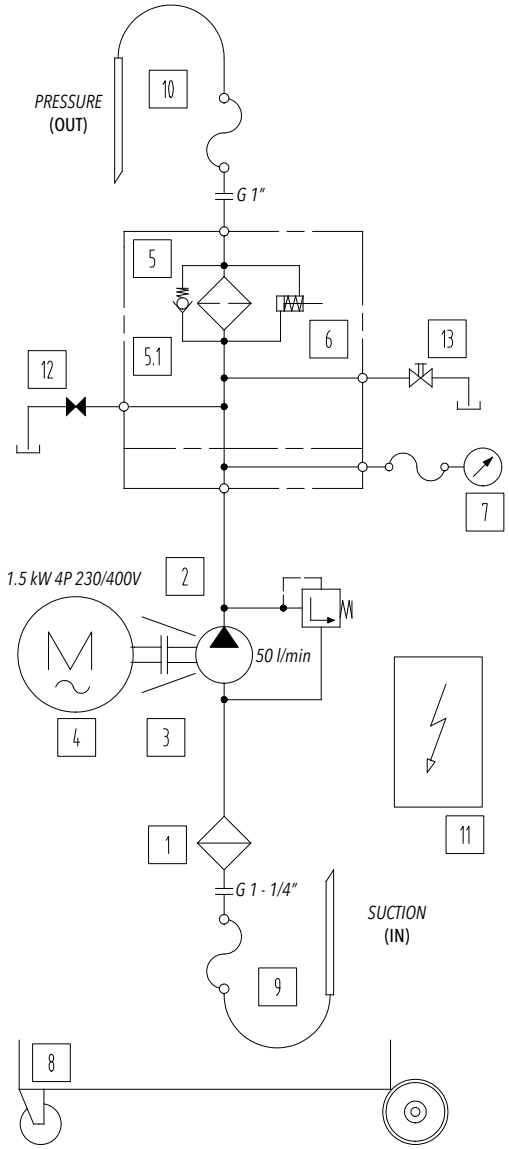
Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Gear pump
3	1	Motor/pump coupling
4	1	Three-phase electric motor 1.5 kW 4P-B3/B5 (IE3)
5	1	Standard filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical/electric differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN32 flexible suction hose + lance
10	1	DN25 flexible discharge hose + lance
11	1	Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve
14	1	Gear pump
15	1	Single-phase electric motor 0.18 kW 4P-B3/B5
16	1	Monoblock
17	2	Relief valve
18	1	Motor/pump coupling
19	1	Particle counter
20	1	Communication module

>> NEXT

Microfibre filter elements with water absorber: disposable components NOTE

>> NEXT

Hydraulic circuit and bill of materials



Versions:

UFM051MA2020P01 - UFM051TA2020P01

Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Gear pump
3	1	Motor/pump coupling
4	1	Single-phase electric motor 1.5 kW 4P-B3/B5 (IE3) Three-phase electric motor 1.5 kW 4P-B3/B5 (IE3)
5	1	Increased filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN32 flexible suction hose + lance
10	1	DN25 flexible discharge hose + lance
11	1	Electrical panel single-phase version Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve

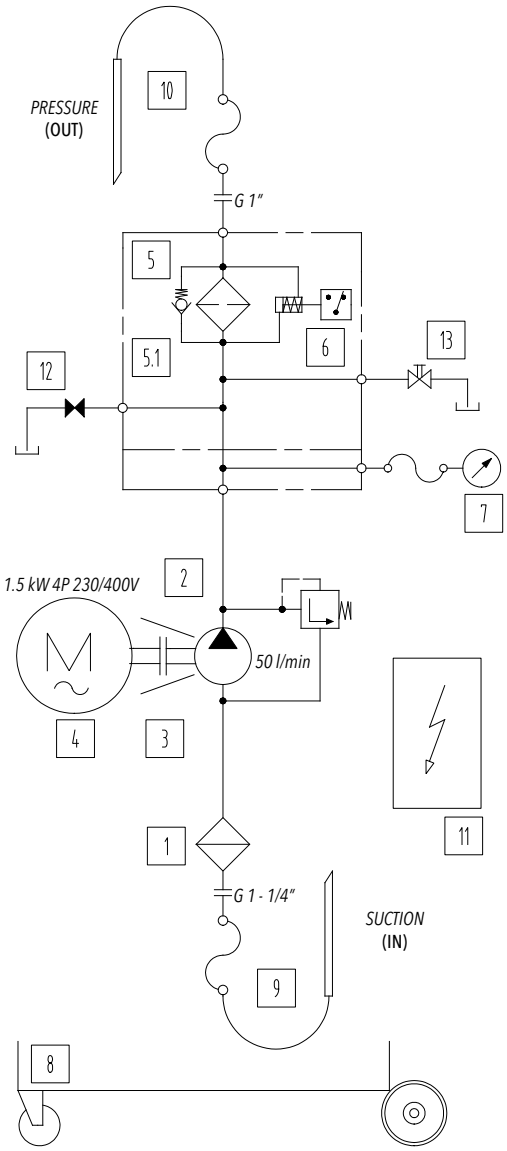
>> NEXT

Microfibre filter elements with water absorber: disposable components NOTE

UFM051

>> NEXT

Hydraulic circuit and bill of materials



Versions:

UFM051MA3020P01 - UFM051TA3020P01

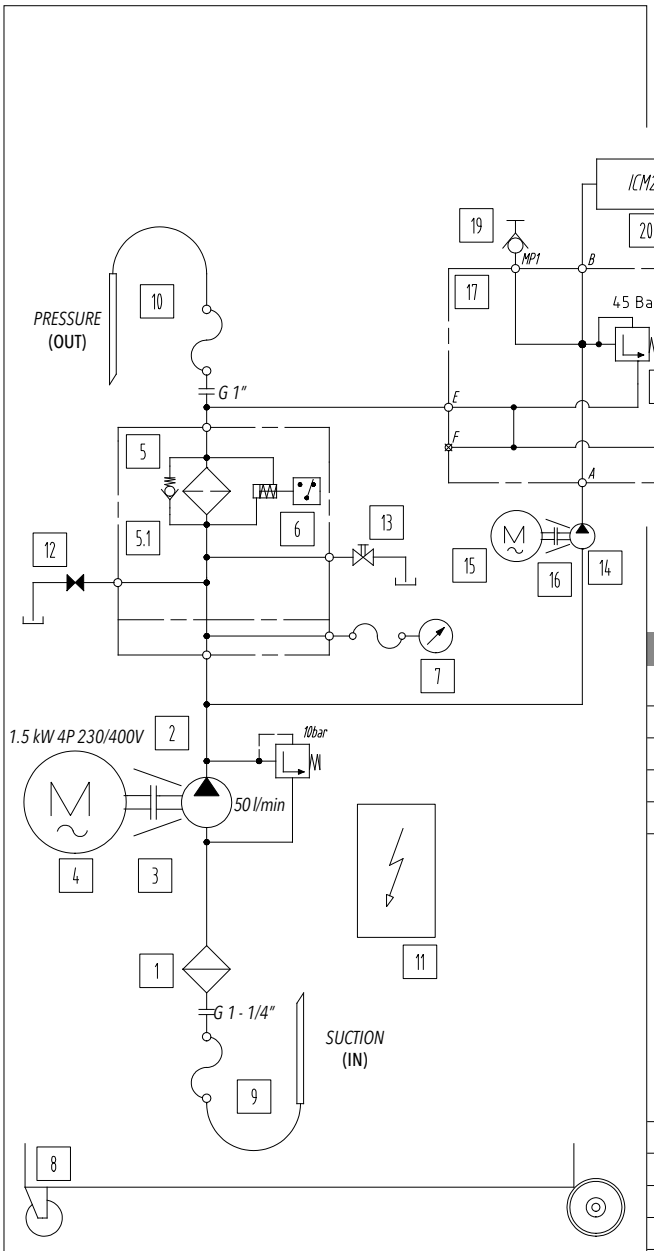
Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Gear pump
3	1	Motor/pump coupling
4	1	Single-phase electric motor 1.5 kW 4P-B3/B5 (IE3) Three-phase electric motor 1.5 kW 4P-B3/B5 (IE3)
5	1	Increased filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical/electric differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN32 flexible suction hose + lance
10	1	DN25 flexible discharge hose + lance
11	1	Electrical panel single-phase version Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve

>> NEXT

Microfibre filter elements with water absorber: disposable components NOTE

>> NEXT

Hydraulic circuit and bill of materials



A = IN Auxiliary pump for ICM2.0
B = IN ICM 2.0
C = OUT ICM 2.0 (closed)
D = OUT ICM 2.0
E = RETURN
F = RETURN (closed)
MP1 = Minimess - IN ICM 2.0
MP2 = Minimess - OUT ICM 2.0

Version:
UFM051TA3021P01

Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Gear pump
3	1	Motor/pump coupling
4	1	Three-phase electric motor 1.5 kW 4P-B3/B5 (IE3)
5	1	Increased filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical/electric differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN32 flexible suction hose + lance
10	1	DN25 flexible discharge hose + lance
11	1	Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve
14	1	Gear pump
15	1	Single-phase electric motor 0.18 kW 4P-B3/B5
16	1	Monoblock
17	2	Relief valve
18	1	Motor/pump coupling
19	1	Particle counter
20	1	Communication module

Microfibre filter elements with water absorber: disposable components NOTE

6 Installation procedures and general operation

6.1 Introduction

The mobile filtration units are suitable for the following fluid operations:

- Transfer with filtration
- Off-line filtration (maximum recommended volume 500/700L)

The standard version of the filtration unit is delivered without a filter element, before its use install an original MP Filtri filter element suitable for the type of unit being used (see filter element codes listed in Table 6.7.2 Item.7) and carry out the procedures described in Section 6.2 "Filter element installation".
The filter bypass valve can be locked by replacing the endcap with bypass (Fig. 2) with the included (Fig. 1) blind endcap (Fig. 3).
The endcap is inserted into the filter element.


Scope of supply Fig.1


Endcap with bypass Fig.2


Blind endcap Fig.3

With the bypass valve blocked pay close attention to the clogging indicator. As soon as the indicator indicates the clogged filter, turn off the filtration unit and replace the filter element.

CAUTION

6.2 Filter element installation

1


Loosen the air vent nut

2


Unscrew the cover

3


Choose the endcap with bypass or blind endcap

4

Fig.4

Fig.5


Insert the endcap with bypass (Fig. 4) or the possibly selected blind endcap (Fig. 5) in the filter element

5


Insert the filter element into the filter body

6


Screw on the cover

7


Make sure the air vent is closed

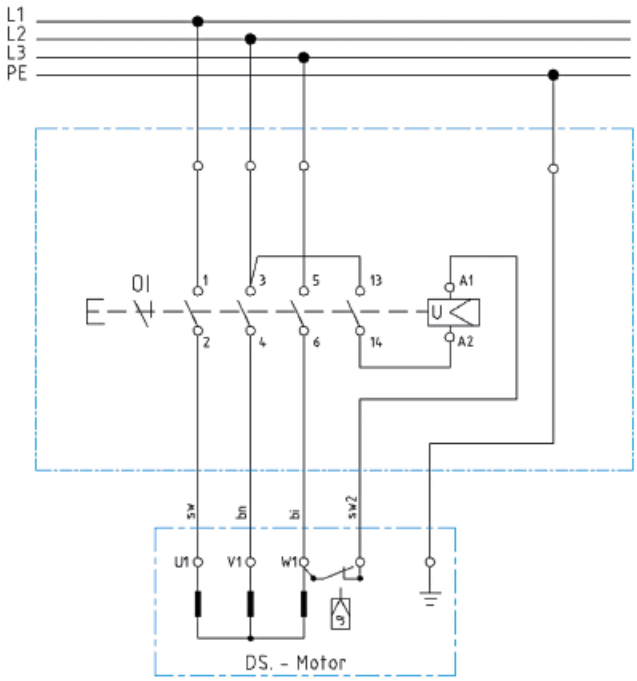
These operations must be performed with the machine off. Do not turn on the unit without first installing the filter element.

CAUTION

We recommend using only original MP Filtri filter cartridges.

NOTE

6.3 Wiring diagram



6.3.1 Electrical connection

The trolley must be connected via the plug supplied to the power supply, checking:
- the laws and technical specifications valid in the place and at the time of installation
- that the power supply voltage and the frequency at the connection point are compatible with those indicated on the rating plate of the mobile filtration unit
- the data shown on the rating plate.

It is recommended to use a multi-wire cable with a minimum cross-section of 4 x 2,5 mm^2 for the econnection of the electric motor.
The red plug indicates a three-phase motor, the blue plug a single-phase motor.
The supply voltage must correspond to the voltage specified on the rating plate.

The construction features of the electric cable guarantee great flexibility, excellent resistance to weather conditions, oils and greases, mechanical and thermal stresses: Standard IMQ-CPT-007, CEI EN 50525-2-2.
Compliant with requirements of the BT 2006/95/CE directives.

The terminal box contains metal elements that are under hazardous voltage; after making the connections, always close the box cover.

NOTE

6.3.2 Triangular electrical connection of a three-phase motor

This motor is connected to the three-phase line, which can be 230V or more commonly 400V. Since the windings that make up the motor must be powered at 230V, the connection must be made in the following manner:

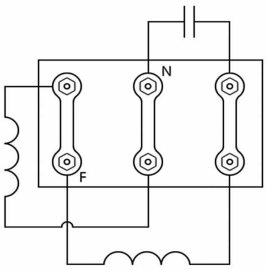
- Delta connection: this connection applies the same voltage to the windings as to the line.

To be able to change the direction of rotation it is sufficient to invert two phases by acting directly on the appropriate five-pole CE plug (see photo on the right).
Trolley with particle counter (see Fig. 8 on page 55)

6.3.3 Electrical connection of a single-phase motor

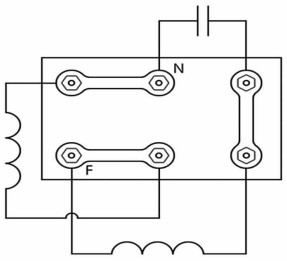
Depending on its type, this motor is connected to the single-phase line in only one way:

- Motor with single-phase winding: Characteristic system for single-phase motors that have only a single winding, in which one end must be connected to the phase and the other end to the neutral conductor. To change the direction of rotation of the motor, reverse phase and neutral.
- Motor with two-phase winding: Two-phase winding that, as for a single-phase winding, functions with a permanently powered capacitor. To change the direction of rotation, connect the terminals as shown in the circuit diagram.



The direction of rotation of the motor is determined differently depending on the connection.

To change the direction of rotation of the motor, reverse phase and neutral.



6.3.4 Electrical panel

Version with single-phase motor

UFM051MA2010P01
UFM051MA2020P01

UFM051MA3010P01
UFM051MA3020P01

Version with three-phase motor

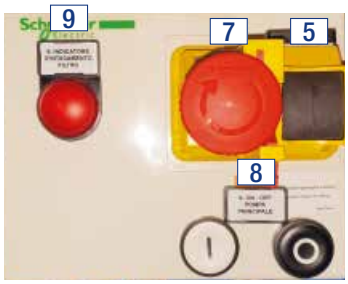
UFM051TA2010P01
UFM051TA2020P01

UFM051TA3010P01
UFM051TA3020P01

Version with three-phase motor and particle counter

UFM051TA3011P01
UFM051TA3021P01

Labels on the electrical panel



Version with electric/optical differential pressure indicator

Version with electric/optical differential pressure indicator and particle counter

6.3.5 Electrical panel labels

NOTE

Pos.	Translation of electrical panel labels				
	ENGLISH	ITALIAN	FRENCH	GERMAN	SPANISH
1	VOLTAGE ON	TENSIONE	APPAREIL SOUS TENSION	SPANNUNG EIN	TENSIÓN ACTIVA
2	PHASE REVERSE	FASE ROVESCIA	INVERSION DE PHASE	PHASENUMKEHR	INVERSIÓN FASE
3	ICM ALARM	ALLARME ICM	ALARME ICM	ALARM ICM	ALARMA ICM
4	THERMAL ALARM	TERMICO	ALARME THERMIQUE	WÄRMEALARM	ALARMA TÉRMICA
5	ON-OFF GENERAL	ACCESO/SPENTO	INTERRUPTEUR MARCHE/ ARRÊT GÉNÉRAL	EIN-/AUSSCHALTER	ON-OFF GENERAL
6	PHASE INVERTER	INVERTITORE DI FASE	INVERSEUR DE PHASE	PHASENUMKEHRSCHALTUNG	INVERSOR FASE
7	EMERGENCY STOP	STOP EMERGENZA	ARRÊT D'URGENCE	NOTABSCHALTUNG	PARADA EMERGENCIA
8	ON-OFF MAIN PUMP	ON-OFF POMPA PRINCIPALE	MARCHE/ARRÊT POMPE PRINCIPALE	EIN-AUS HAUPTPUMPE	ON-OFF BOMBA PRINCIPAL
9	FILTER ELEMENT CLOGGING	INDICATORE D'INTASAMENTO FILTRO	ÉLÉMENT FILTRANT OBSTRUÉ	FILTEREINSATZ VERSTOPFT	ATASCO ELEMENTO FILTRO
10	ON-OFF COUNTER AND AUXILIARY PUMP	ON-OFF CONTATORE E POMPA SECONDARIA	MARCHE/ARRÊT COMPTEUR ET POMPE AUXILIAIRE	EIN-AUS ZÄHLER UND HILFSPUMPE	ON-OFF CONTADOR Y BOMBA AUXILIAR

The mobile filtration unit is supplied with labels in English

NOTE

6.4 Use

6.4.1 Installation

The mobile filtration unit must be positioned in a place that guarantees its stability during use.

TRANSFER
Connect/immerse the metal suction lance (IN) to the tank or to the drum, immerse the discharge hose (OUT) in the machine tank or in the drum which should be transferred to.
If the transfer oil has to be cleaned, it is advisable to filter the oil contained in the drum or tank several times before being transferred. In this case immerse the metal suction lances (IN) and the discharge lances (OUT) in the drum or oil tank to be transferred. Be careful that the lances remain below the level of the oil to be transferred in order to avoid foaming and cavitation; space the ends of the two lances as far as possible from each other in order to recirculate all the fluid and not generate an emulsion.

FILTRATION
Immerse the metal lances for suction (IN) and for discharge (OUT) inside the tank far from each other, if possible positioning them at different heights (100 mm suction from the bottom of the tank, discharge immersed a minimum of 200 mm).

Make sure that the tubes/lances are properly fixed or perfectly stable before starting.
Be careful not to mix up the suction and discharge hoses. The suction hose (IN) is the one with the largest diameter.

The discharge lance must in general have unrestricted flow. It is prohibited to install taps or components on both hoses that may obstruct or reduce the flow of the fluid.

CAUTION

6.4.2 Power on

Insert the electric plug into a single-phase socket (Fig. 6) or 3-phase socket (Fig. 7) depending on the version (check the voltage). Check the direction of rotation in the version with three-phase motor: Operate the switch for a few seconds and observe the direction of rotation of the electric motor. The direction observed on the fan side must be clockwise, otherwise the phases L1 and L2 must be inverted (Fig. 8). NOTE
Three-phase electric power supply with protective conductor is required for the power supply of the trolley.

Electrical connection for the single-phase motor Fig.6

Electrical connection for the three-phase motor (5 poles plug) Fig.7

Phase inverter only for version with ICM2.0 particle counter Fig.8

5 poles plug for the three-phase motor

Before starting up the electric motor, make sure that the suction lance (IN) is immersed in the fluid.

CAUTION

Operate the switch for a few seconds and observe the direction of rotation. The direction observed on the fan side must be clockwise, otherwise the phases L1 and L2 must be inverted.

NOTE

Models:
UFM051MA2010P01 UFM051TA2010P01
UFM051MA2020P01 UFM051TA2020P01

After inserting the plug, turn the rotary knob for turning on and off located on the terminal box of the electric motor to "I" (Fig. 9).
At this point the transfer and filtration of the fluid begins.

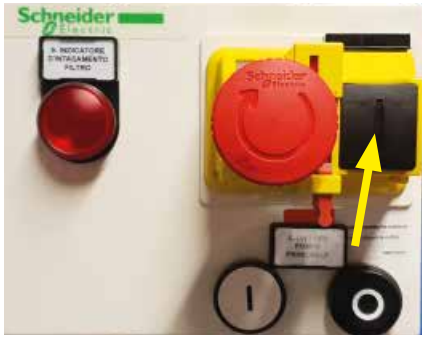
Knob
ON/OFF

With visual display Fig.9

Models:
UFM051MA3010P01 UFM051TA3010P01
UFM051MA3020P01 UFM051TA3020P01

Once the plug has been inserted, press the button a (Fig. 10 - general power supply), press the ignition switch "I" on the electrical panel (Fig. 11).
At this point the transfer and filtration of the fluid begins.

Button
general power supply



With electric indicator Fig.10

Button
ON/OFF

With electric indicator Fig.11

Models:
UFM051TA3011P01
UFM051TA3021P01

Once inserted, turn the switch to "I" (Fig. 12 - General power supply), then press the on button "I" on the electrical panel (Fig. 13).
At this point the transfer and filtration of the fluid begins.

Button
general power supply

With electric indicator and particle counter Fig.12

Button
ON/OFF

With electric indicator and particle counter Fig.13

6.4.3 Air vent

When the unit is first turned on after inserting the filter element, vent the air inside the filter body using the vent valve (Fig. 14) on the cover. Once the air has been removed, close the vent valve.

Air vent Fig.14

Collect the oil in a container and dispose of it in accordance with the regulations in force.

NOTE

6.4.4 Oil analysis with particle counter

The ICMWMKUG12.0 series particle counter versions allow contamination counting and classification according to the international standards ISO4406 - NAS1638 - AS4059 Tab.1 - AS4059 Tab.2.
The particle counter also supplies the value of the water content in the oil and the temperature via an internal sensor.
It is possible to program the particle counter by connecting it via the ICMUSBI module (supplied) to a Personal Computer.
It is possible to enter a default value for the cleanliness class (according to the regulations used).
When this value is reached, the unit switches off automatically.

NOTE

Motor/pump assembly and pressure relief valves for the use of the particle counter

Start/Stop auxil- Fig.15
iary pump for particle counter

Manual activation of particle counter Fig.16

To commission the ICM, switch on the auxiliary pump and the particle counter using the selector in the electrical panel (Fig. 15), then wait 5 minutes after switching on before counting. To carry out the count, activate the particle counter button (Fig. 16).

Before starting the particle counter auxiliary pump, make sure that the main pump has been running for about 5-6 minutes and that the hoses are full of oil.

CAUTION

The instruction manual, the programming of the particle counter, the software and the installation drivers are contained in the included USB stick in the section "ICM User Manual".

NOTE

6.4.5 Shutdown

Models:
UFM051MA2010P01 UFM051TA2010P01
UFM051MA2020P01 UFM051TA2020P01

Once the operations have been completed, switch off the electric pump, turn the shutdown switch to "0" on the terminal box of the electric motor (Fig. 17) and disconnect the electrical connection plug.

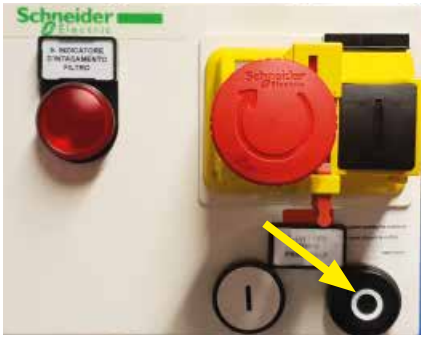
Button
ON/OFF

With visual display Fig.17

Models:
UFM051MA3010P01 UFM051TA3010P01
UFM051MA3020P01 UFM051TA3020P01

Once the operations have been completed, switch off the electric pump, press the shutdown button to "0" on the electrical panel (Fig. 18) and disconnect the electrical connection plug.

Button
ON/OFF



With electric indicator Fig.18

Models:
UFM051TA3011P01
UFM051TA3021P01

Once the operations have been completed, switch off the electric pump, press the button "0" on the electrical panel (Fig. 19), turn the shutdown switch to "0" (Fig. 20 - General power supply) and disconnect the electrical connection plug.
If the particle counter is used, switch off the auxiliary unit before the main electric pump by turning the pump shut-off switch (Fig. 21).

Button
ON/OFF

With electric indicator and particle counter Fig.19

Button
general power supply

With electric indicator and particle counter Fig.20

Button
ON/OFF

With electric indicator and particle counter Fig.21

Put the lances in their respective housings (⚠ - Fig. 22), anchored to the frame paying attention to the fluid still present in the hoses. Rewind the power supply cable.

Lance holders Fig.22

The UFM051 is equipped with a thermal protection device against electrical overloads, short circuits and overheating. If a "BLOCK" occurs, check the operating conditions (e.g. clogged filter, fluid conditions, motor overheating, etc.) and reset the thermal protection by pressing the appropriate button on the side of the motor terminal box.

With oil temperatures above 40/45° C, give special caution to the handling of the metal lances/tubes and movement of the trolley. Avoid direct contact with hot oil, the mobile filtration unit and its installed components.

⚠ CAUTION

6.4.6 Operating limits and environmental limits

The trolley is designed to operate at a maximum pressure of 10 bar.
The electric motor is designed to operate according to the rating plate data.
For use in environments with very cold or very hot temperatures, refer to the technical data provided in Section 5.

6.5 Normal and scheduled maintenance

The UFM051 does not require particular maintenance interventions, it is in any case a good rule to check the perfect condition of the suction and discharge hoses before each use. Check that the filter element is correctly installed and that the filter cover is tightly screwed on.
Periodically check the tightness of the hydraulic connections and if the electrical cable ends in the motor terminal box are tight. Also check the cleanliness of the "Y" shaped filter for any accumulated macro impurities, so as to preserve the filter element (CU4005/4006).
Check the expiration date of the particle counter calibration certificate.

To keep the efficiency of the particle counter high, it is advisable to send it once a year to our headquarters for inspection, monitoring, testing on the test bench and issuing a new calibration certificate.

⚠ CAUTION

6.5.1 Oil leaks

Oil leaks can form on the joints of the hoses and on fittings if any connections or screws are loosened, in which case we recommend checking the correct tightness.
If the operations described above are not able to solve the problem, contact the manufacturer.

6.6 Filter clogging

- *Versions with visual differential clogging indicator*
UFM051MA2010P01 - UFM051TA2010P01 - UFM051MA2020P01 - UFM051TA2020P01

The conditions relating to the blockage of the filter element are guaranteed by a visual indicator (Fig. 23) mounted on the head of the LMP430 filter. When the differential pressure of 3 bar is reached, the red alarm piston is visible.
Replace the filter element.

- *Versions with electric/visual differential pressure indicator for blockage*
UFM051MA3010P01 - UFM051TA3010P01 - UFM051MA3020P01 - UFM051TA3020P01 - UFM051TA3021P01

The conditions related to the blockage of the filter element are ensured by an electric indicator (Fig. 24) mounted on the head of the LMP430 filter. When the differential pressure of 3 bar is reached, the electric signal switches off the machine and turns on the light on the electrical panel. Replace the filter element.

All models are equipped with a pressure gauge (Fig. 25) with 10 bar full scale to measure the circuit pressure.
For signalling the clogged filter, refer to the differential pressure indicators.
The LMP430 filter is equipped with a bypass valve with a response pressure set at 3.5 bar.

Version with visual indicator Fig.23

Version with visual/ electric indicator Fig.24

Pressure gauge Fig.25

It is recommended to never exceed the response pressure of the bypass valve (3.5 bar).

CAUTION

6.6.1 Replacing the filter element

Before proceeding with the replacement of the filter element, make sure that the oil temperature is lower than +40/45° C.
Replace the filter element whenever necessary, i.e. whenever the differential pressure indicator indicates a clogged filter or when different fluids must be filtered.
The filtration of the filter element takes place from the outside to the inside, drain the residual oil into the body as it is not normally clean.
The oil must always be emptied using the drain valve (Fig. 26) located at the base of the filter body, clean the inside of the container.

It is recommended to clean the filter cover carefully before beginning the operations for replacing the filter element.

1

Open the vent valve

2 Fig.26

Drain the oil using the oil drain

3

Unscrew the cover

4

Remove the filter element

5

Remove the bypass or blind endcap

6

Make sure the container is securely tightened

7 Fig.27

Fig.28

Insert the endcap with bypass (Fig. 27) or the possibly used blind endcap (Fig. 28) in the new filter element

8

Insert the new filter element

9

Screw on the cover

10

Close the air vent

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

6.6.2 Air vent

When the unit is first turned on after replacing the filter element, drain the air inside the filter body using the vent valve (Fig. 29) on the cover. Once the air has been removed, close the vent valve.

Air vent Fig.29

Collect the oil in a container and dispose of it in accordance with the regulations in force.

NOTE

6.6.3 Replacing and cleaning of the filter in the suction line

Regularly (every 6 months or if you hear pump cavitation noises) check the blockage status of the suction filter and clean or replace it if necessary.

Suction filter

Unscrew the nut and remove the filter element

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

UFM051

6.7 Designation & Ordering code

MOBILE FILTRATION UNIT UFM 051

Configuration example: UFM | 051 | T | A | 2 | 0 | 1 | 0 | P01

Series
UFM

Size
051 50 l/min

Electric motor
M 230V Single phase
T 400/230V Three phase

Seals
A NBR

Pressure gauges and Clogging indicators
2 Manometer + Visual Differential Clogging indicator
3 Manometer + Electrical/Visual Differential Clogging indicator

Filter element
0 Without element

Filtration surface
1 Standard
2 Higher

Option
0 No options
1 ICM 2.0 particle counter (available three phase electric motor only)

Option
P01 MP Filtri standard
Pxx Customized

Filtration element should be ordered separately

FILTRATION SURFACE 1 - STANDARD

Inorganic microfibre	Wire mesh element
CU 400 5 A01 A N P01	CU 400 5 M25 A N P01
CU 400 5 A03 A N P01	CU 400 5 M60 A N P01
CU 400 5 A06 A N P01	
CU 400 5 A10 A N P01	
CU 400 5 A16 A N P01	
CU 400 5 A25 A N P01	

FILTRATION SURFACE 2 - HIGHER

Inorganic microfibre	Wire mesh element
CU 400 6 A01 A N P01	CU 400 6 M25 A N P01
CU 400 6 A03 A N P01	CU 400 6 M60 A N P01
CU 400 6 A06 A N P01	
CU 400 6 A10 A N P01	
CU 400 6 A16 A N P01	
CU 400 6 A25 A N P01	

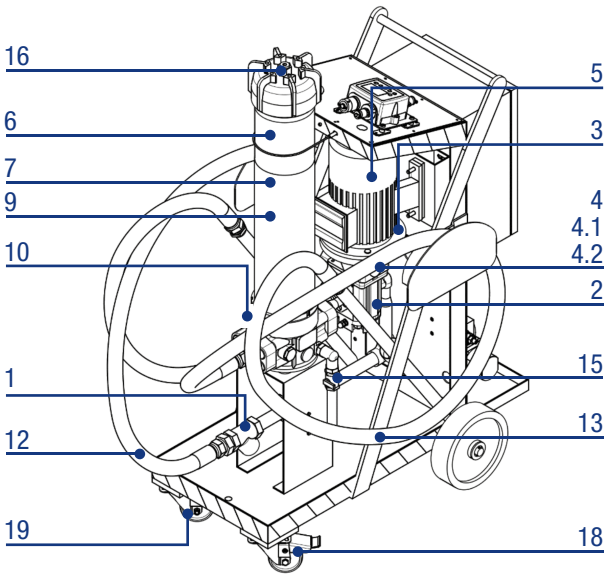
WATER REMOVAL - FILTRATION SURFACE 1 - STANDARD

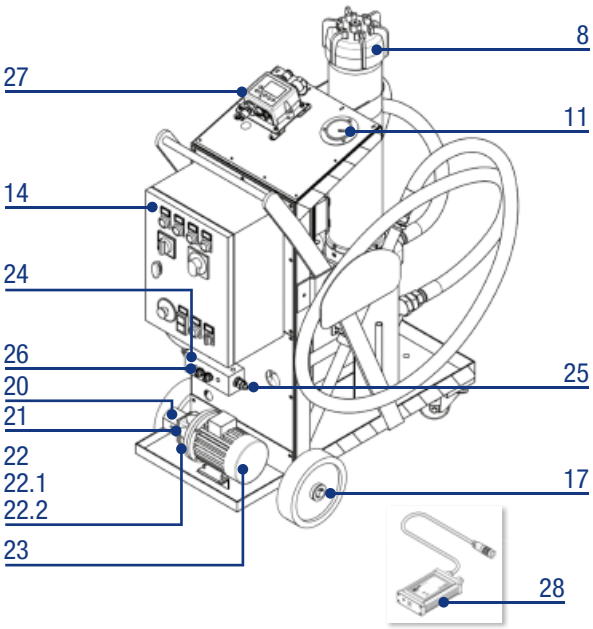
Multi-Layer water absorber
CU4005WA025ANP01

WATER REMOVAL - FILTRATION SURFACE 2 - HIGHER

Multi-Layer water absorber
CU4006WA025ANP01

6.7.1 Spare parts





6.7.2 List of spare parts

Position	Series	Description	Code	Quantity
1	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Y-shaped filter 1-1/4" BSP - 800micron	02200017	1
2	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	ALP2D50 External gear pump with integrated pressure relief valve	02200018	1
3	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Pump bracket	LMG201MFS2004SANU	1

>> NEXT

>> NEXT

List of spare parts

Position	Series	Description	Code	Quantity
4	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Pump side half-coupling	SGEA21FS200U	1
4.1	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Motor side half-coupling	SGEA21M04048U	1
4.2	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Elastic wheel	EGE2U	1
5	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01	Single-phase electric motor 1.5 kW 4P B3B5 IP55 2F 230V 50/60Hz CLASS IE3	02200019	1
	UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	3-phase electric motor 1.5 kW 4P B3B5 IP55 3F 230/400V 50/60Hz CLASS IE3	02200020	
6	UFM051MA2010P01 UFM051MA3010P01 UFM051TA2010P01 UFM051TA3010P01 UFM051TA3011P01	Standard filter length	LMP4305BAF1P02	1
	UFM051MA2020P01 UFM051MA3020P01 UFM051TA2020P01 UFM051TA3020P01 UFM051TA3021P01	Increased filter length	LMP4306BAF1P02	
7	UFM051MA2010P01 UFM051MA3010P01 UFM051TA2010P01 UFM051TA3010P01 UFM051TA3011P01	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm	CU4005A01ANP01 CU4005A03ANP01 CU4005A06ANP01 CU4005A10ANP01 CU4005A16ANP01	1

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>> NEXT

List of spare parts

Position	Series	Description	Code	Quantity
	series codes see previous page	Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element	CU4005A25ANP01 CU4005M25ANP01 CU4005M60ANP01 CU4005WA025ANP01	
7	UFM051MA2020P01 UFM051MA3020P01 UFM051TA2020P01 UFM051TA3020P01 UFM051TA3021P01	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element	CU4006A01ANP01 CU4006A03ANP01 CU4006A06ANP01 CU4006A10ANP01 CU4006A16ANP01 CU4006A25ANP01 CU4006M25ANP01 CU4006M60ANP01 CU4006WA025ANP01	1
8	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Endcap with 3.5 bar bypass	02001414	1
		Blind endcap without bypass	01044108	1
9	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Gasket kit for LMP430 filter	02050393	1
10	UFM051MA2010P01 UFM051MA2020P01 UFM051TA2010P01 UFM051TA2020P01	Optical differential pressure indicator	DVM30HP01	1
	UFM051MA3010P01 UFM051MA3020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Optical/electric differential pressure indicator	DLA30HA51P01	1
11	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Pressure gauge	MGF63G10	1
12	UFM051MA2010P01 UFM051MA2020P01	Flexible suction hose DN32 L = 3000 mm Inclined cut lance DE42 L = 700 mm	02200021	1

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List of spare parts

Position	Series	Description	Code	Quantity
12	UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Flexible suction hose DN32 L = 3000 mm Inclined cut lance DE42 L = 700 mm	02200021	1
13	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Flexible delivery hose DN25 L = 3000mm Inclined cut lance DE30 L = 700mm	02200022	1
14	UFM051MA2010P01 UFM051MA2020P01	Electrical panel single-phase version + cable and CEE plug	02200023	1
	UFM051TA2010P01 UFM051TA2020P01	Electrical panel three-phase version + cable and CEE plug	02200024	
	UFM051MA3010P01 UFM051MA3020P01	Electrical panel single-phase version + cable and CEE plug	02200025	
	UFM051TA3010P01 UFM051TA3020P01	Electrical panel three-phase version + cable and CEE plug	02200026	
	UFM051TA3011P01 UFM051TA3021P01	Electrical panel three-phase version + cable and CEE plug	02200027	
15	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Discharge valve	02200039	1
16	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Air vent valve	02200040	1
17	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01	Fixed wheel Ø200x50x20mm Blue polyurethane coating and black polyamide structure	02200045	2

>> NEXT

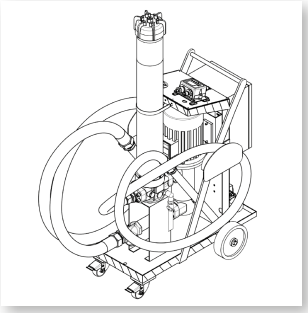
>> NEXT

List of spare parts

Position	Series	Description	Code	Quantity
17	UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Fixed wheel Ø200x50x20mm Blue polyurethane coating and black polyamide structure	02200045	2
18	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Swivel wheel with Ø80x30x20mm lock Blue polyurethane coating and black polyamide structure	02200046	1
19	UFM051MA2010P01 UFM051MA2020P01 UFM051MA3010P01 UFM051MA3020P01 UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Swivel wheel Ø80x30x20mm Blue polyurethane coating and black polyamide structure	02200047	1
20	UFM051TA3011P01 UFM051TA3021P01	025-D-18 gear pump	02200048	1
21	UFM051TA3011P01 UFM051TA3021P01	Pump bracket	LMG140MFS05M4SANU	1
22	UFM051TA3011P01 UFM051TA3021P01	Pump side half-coupling	SGEA01FS05M	1
22.1	UFM051TA3011P01 UFM051TA3021P01	Motor side half-coupling	SGEA01M01021FG	1
22.2	UFM051TA3011P01 UFM051TA3021P01	Elastic wheel	EGE0	1
23	UFM051TA3011P01 UFM051TA3021P01	Single-phase electric motor 0.18 kW 4P B3/B5 CLASS IE3	02200049	1
24	UFM051TA3011P01 UFM051TA3021P01	Valve lock	02200050	1
25	UFM051TA3011P01 UFM051TA3021P01	Relief valve	02200051	2
26	UFM051TA3011P01 UFM051TA3021P01	1/4” pressure mini-plug	02200052	2
27	UFM051TA3011P01 UFM051TA3021P01	Particle counter	ICMWMKUG12.0	1
28	UFM051TA3011P01 UFM051TA3021P01	Communication module	ICMUSBI	1
29	UFM051TA2010P01 UFM051TA2020P01 UFM051TA3010P01 UFM051TA3020P01 UFM051TA3011P01 UFM051TA3021P01	Adapter for 5 to 4 poles plug for the three-phase motor	xxxxxxxx	1

UFM091

5 Technical features



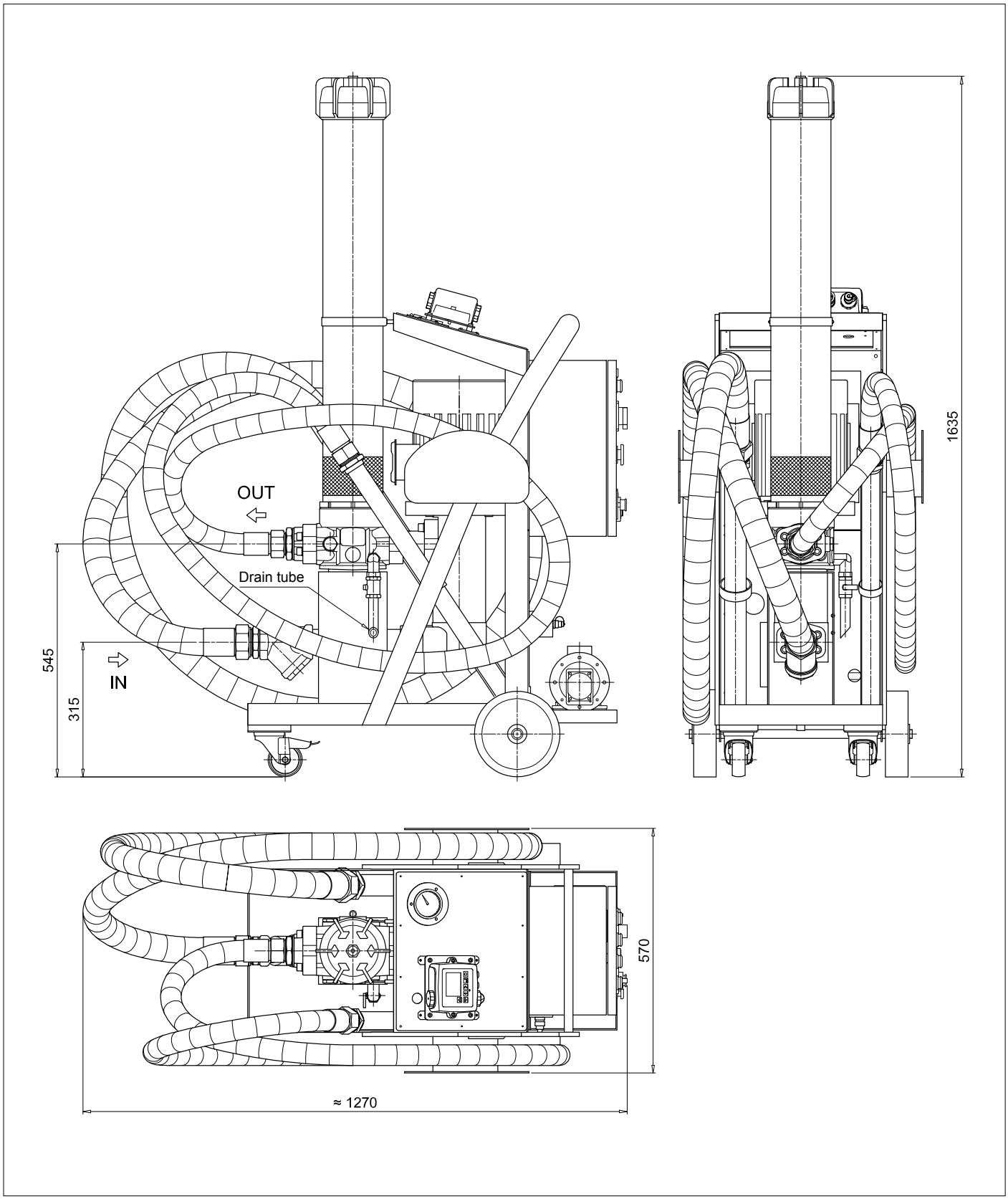
The mobile filtration unit consists of a support frame with handle and wheels for manoeuvrability.
The assembly/motor pump connected to the hoses is used for suctioning and discharging the fluid.
It is equipped with a suction filter and a discharge filter.
The mobile filtration unit is complete with electrical and mechanical safety systems, for the filter and the assembly/motor pump.

Pump	Screw pump with integrated pressure relief valve
Electric motor	2.2 kW 400/230 Volt three-phase
Flow rate (l/min)	90 l/min -1450 rpm
Max. working pressure	10 bar
Viscosity	Minimum operating viscosity 10 cSt Maximum operating viscosity 800 cSt Maximum only for cold starts 2000 cSt
Suction filter	Y-shape fine filter unit 900 micron
Type of filtering mat/degree of filtration Internal/external filtration	Fibre 1/3/6/10/16/25 $\beta_{x(c)}>1000$ Wire mesh 25/60 µm Water absorber NOTE 1 / NOTE 2
Bypass valve	3.5 bar
Fluid temperature	from -10 °C to +80 °C
Ambient temperature	from -20 °C to +45 °C
Protection class	IP 55
Seals	NBR
Compatibility with hydraulic fluids	Mineral & Synthetic oils. For other fluids contact MP Filtri.
Hoses	Flexible suction hose DN50 L = 3000mm Lance DE50 L = 700mm Flexible delivery hose DN38 L = 3000mm Lance DE42 L = 700mm
Weight	105 kg
Standard equipment	Main filter bypass valve blocking Pressure gauge
Equipment according to the versions	
UFM091TA2020P01	Optical clogging indicator
UFM091TA3020P01	Electric clogging indicator with automatic motor stop
UFM091TA3021P01	Electric clogging indicator with automatic motor stop, ICM2.0 series particle counter and communication module

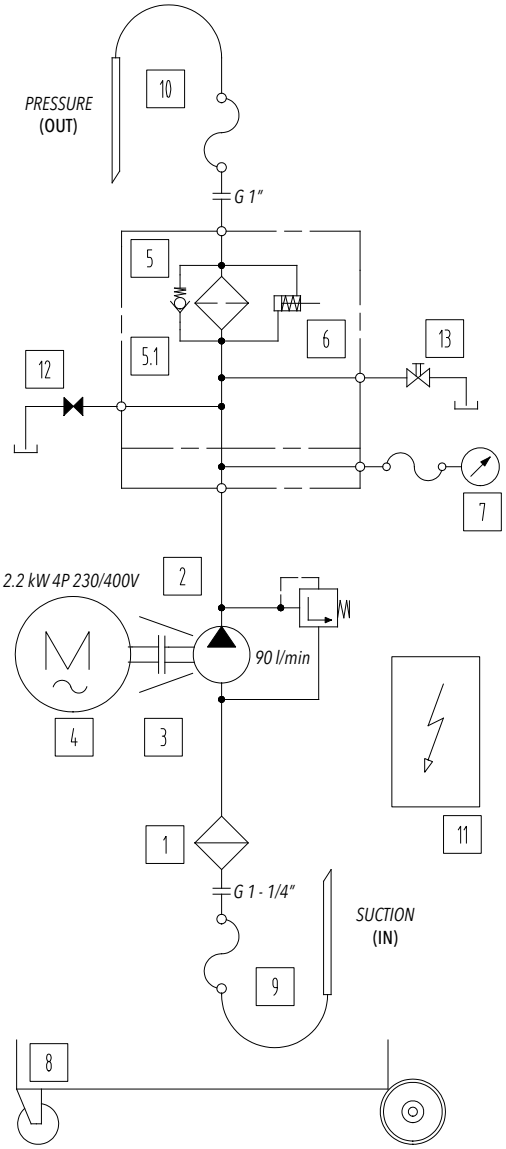
Microfibre filter elements with water absorber: disposable components — NOTE 1

The system is supplied without filter element — NOTE 2

5.1 Dimensions



5.2 Hydraulic circuit and bill of materials



Version:
UFM091TA2020P01

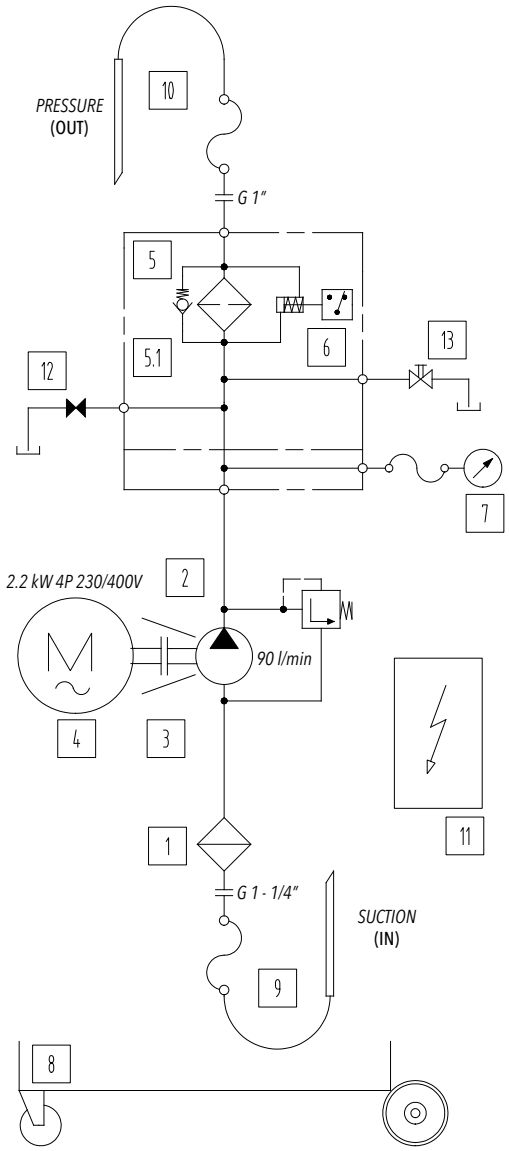
Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Screw pump
3	1	Motor/pump coupling
4	1	Three-phase electric motor 2.2 kW 4P-B3/B5 (IE3)
5	1	Increased filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN50 flexible suction hose + lance
10	1	DN38 flexible discharge hose + lance
11	1	Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve

>> NEXT

Microfibre filter elements with water absorber: disposable components NOTE

>> NEXT

Hydraulic circuit and bill of materials



Version:
UFM091TA3020P01

Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Screw pump
3	1	Motor/pump coupling
4	1	Three-phase electric motor 2.2 kW 4P-B3/B5 (IE3)
5	1	Increased filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical/electric differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN50 flexible suction hose + lance
10	1	DN38 flexible discharge hose + lance
11	1	Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve

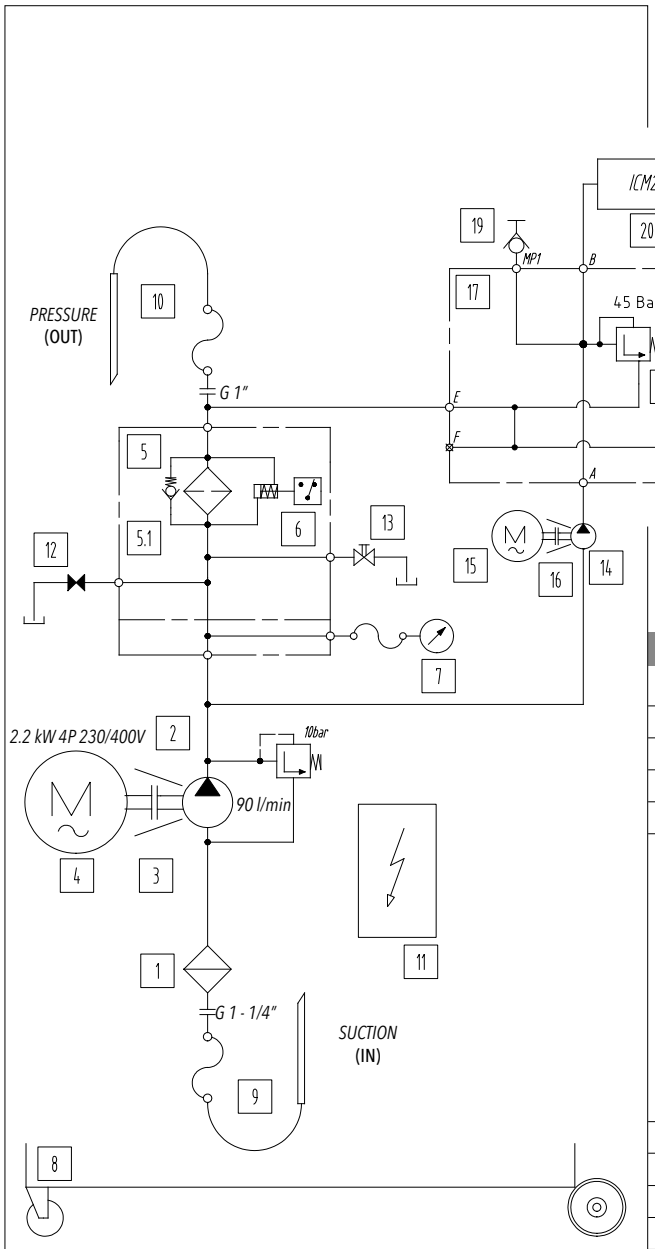
>> NEXT

Microfibre filter elements with water absorber: disposable components NOTE

UFM091

>> NEXT

Hydraulic circuit and bill of materials



A = IN Auxiliary pump for ICM2.0
B = IN ICM 2.0
C = OUT ICM 2.0 (closed)
D = OUT ICM 2.0
E = RETURN
F = RETURN (closed)
MP1 = Minimess - IN ICM 2.0
MP2 = Minimess - OUT ICM 2.0

Version:
UFM091TA3021P01

Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Screw pump
3	1	Motor/pump coupling
4	1	Three-phase electric motor 1.5 kW 4P-B3/B5 (IE3)
5	1	Increased filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical/electric differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN50 flexible suction hose + lance
10	1	DN38 flexible discharge hose + lance
11	1	Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve
14	1	Gear pump
15	1	Single-phase electric motor 0.18 kW 4P-B3/B5
16	1	Monoblock
17	2	Relief valve
18	1	Motor/pump coupling
19	1	Particle counter
20	1	Communication module

Microfibre filter elements with water absorber: disposable components NOTE

6 Installation procedures and general operation

6.1 Introduction

The mobile filtration units are suitable for the following fluid operations:

- Transfer with filtration
- Off-line filtration (maximum recommended volume 500/700L)

The standard version of the filtration unit is delivered without a filter element, before its use install an original MP Filtri filter element suitable for the type of unit being used (see filter element codes listed in Table 6.7.2 Item.5) and carry out the procedures described in Section 6.2 "Filter element installation".
The filter bypass valve can be locked by replacing the endcap with bypass (Fig. 2) with the included (Fig. 1) blind endcap (Fig. 3).
The endcap is inserted into the filter element.


Scope of supply Fig.1


Endcap with bypass Fig.2


Blind endcap Fig.3

With the bypass valve blocked pay close attention to the clogging indicator. As soon as the indicator indicates the clogged filter, turn off the filtration unit and replace the filter element.

CAUTION

6.2 Filter element installation

1


Loosen the air vent nut

2


Unscrew the cover

3


Choose the endcap with bypass or blind endcap

4

Fig.4


Fig.5


Insert the endcap with bypass (Fig. 4) or the possibly selected blind endcap (Fig. 5) in the filter element

5


Insert the filter element into the filter body

6


Screw on the cover

7


Make sure the air vent is closed

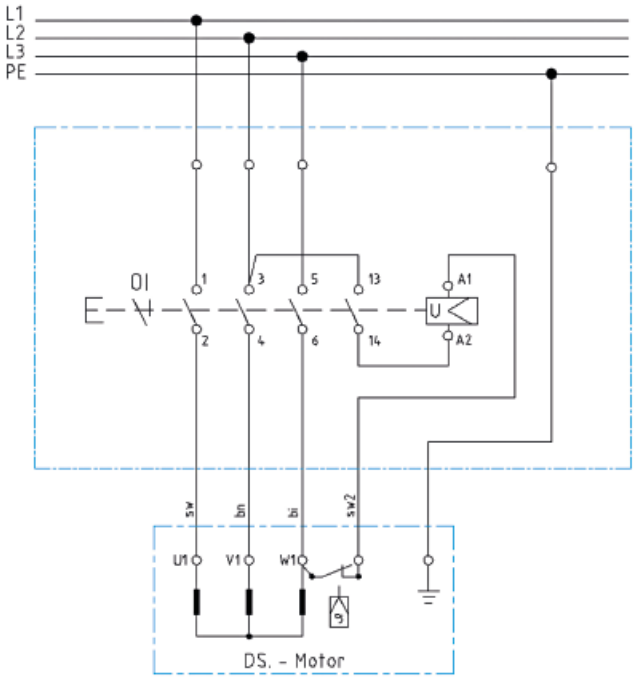
These operations must be performed with the machine off. Do not turn on the unit without first installing the filter element.

CAUTION

We recommend using only original MP Filtri filter cartridges.

NOTE

6.3 Wiring diagram



6.3.1 Electrical connection

The trolley must be connected via the plug supplied to the power supply, checking:
- the laws and technical specifications valid in the place and at the time of installation
- that the power supply voltage and the frequency at the connection point are compatible with those indicated on the rating plate of the mobile filtration unit
- the data shown on the rating plate.

It is recommended to use a multi-wire cable with a minimum cross-section of 4 x 2,5 mm^2 for the econnection of the electric motor.
The red plug indicates a three-phase motor, the blue plug a single-phase motor.
The supply voltage must correspond to the voltage specified on the rating plate.

The construction features of the electric cable guarantee great flexibility, excellent resistance to weather conditions, oils and greases, mechanical and thermal stresses: Standard IMQ-CPT-007, CEI EN 50525-2-2.
Compliant with requirements of the BT 2006/95/CE directives.

The terminal box contains metal elements that are under hazardous voltage; after making the connections, always close the box cover.

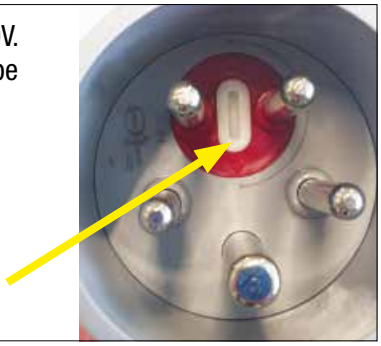
NOTE

6.3.2 Triangular electrical connection of a three-phase motor

This motor is connected to the three-phase line, which can be 230V or more commonly 400V. Since the windings that make up the motor must be powered at 230V, the connection must be made in the following manner:

- Delta connection: this connection applies the same voltage to the windings as to the line.

To be able to change the direction of rotation it is sufficient to invert two phases by acting directly on the appropriate five-pole CE plug (see photo on the right).
Trolley with particle counter (see fig. 7 on page 79)



6.3.3 Electrical connection of a single-phase motor - not applicable for UFM091

6.3.4 Electrical panel

Version with three-phase motor

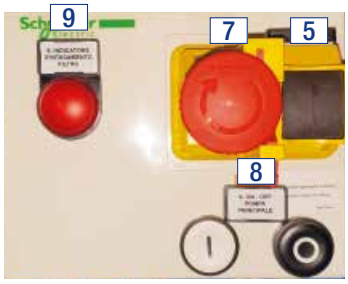
UFM091TA2020P01

UFM091TA3020P01

Version with three-phase motor and particle counter

UFM091TA3021P01

Labels on the electrical panel



Version with electric/optical differential pressure indicator

Version with electric/optical differential pressure indicator and particle counter

6.3.5 Electrical panel labels

NOTE

Pos.	Translation of electrical panel labels				
	ENGLISH	ITALIAN	FRENCH	GERMAN	SPANISH
1	VOLTAGE ON	TENSIONE	APPAREIL SOUS TENSION	SPANNUNG EIN	TENSIÓN ACTIVA
2	PHASE REVERSE	FASE ROVESCIA	INVERSION DE PHASE	PHASENUMKEHR	INVERSIÓN FASE
3	ICM ALARM	ALLARME ICM	ALARME ICM	ALARM ICM	ALARMA ICM
4	THERMAL ALARM	TERMICO	ALARME THERMIQUE	WÄRMEALARM	ALARMA TÉRMICA
5	ON-OFF GENERAL	ACCESO/SPENTO	INTERRUPTEUR MARCHE/ ARRÊT GÉNÉRAL	EIN-/AUSSCHALTER	ON-OFF GENERAL
6	PHASE INVERTER	INVERTITORE DI FASE	INVERSEUR DE PHASE	PHASENUMKEHRSCHALTUNG	INVERSOR FASE
7	EMERGENCY STOP	STOP EMERGENZA	ARRÊT D'URGENCE	NOTABSCHALTUNG	PARADA EMERGENCIA
8	ON-OFF MAIN PUMP	ON-OFF POMPA PRINCIPALE	MARCHE/ARRÊT POMPE PRINCIPALE	EIN-AUS HAUPTPUMPE	ON-OFF BOMBA PRINCIPAL
9	FILTER ELEMENT CLOGGING	INDICATORE D'INTASAMENTO FILTRO	ÉLÉMENT FILTRANT OBSTRUÉ	FILTEREINSATZ VERSTOPFT	ATASCO ELEMENTO FILTRO
10	ON-OFF COUNTER AND AUXILIARY PUMP	ON-OFF CONTATORE E POMPA SECONDARIA	MARCHE/ARRÊT COMPTEUR ET POMPE AUXILIAIRE	EIN-AUS ZÄHLER UND HILFSPUMPE	ON-OFF CONTADOR Y BOMBA AUXILIAR

The mobile filtration unit is supplied with labels in English

NOTE

6.4 Use

6.4.1 Installation

The mobile filtration unit must be positioned in a place that guarantees its stability during use.

TRANSFER
Connect/immerse the metal suction lance (IN) to the tank or to the drum, immerse the discharge hose (OUT) in the machine tank or in the drum which should be transferred to.
If the transfer oil has to be cleaned, it is advisable to filter the oil contained in the drum or tank several times before being transferred. In this case immerse the metal suction lances (IN) and the discharge lances (OUT) in the drum or oil tank to be transferred. Be careful that the lances remain below the level of the oil to be transferred in order to avoid foaming and cavitation; space the ends of the two lances as far as possible from each other in order to recirculate all the fluid and not generate an emulsion.

FILTRATION
Immerse the metal suction lances (IN) and the discharge lance (OUT) inside the tank far from each other, possibly positioning them at different heights (100 mm suction from the bottom of the tanks, immersed flow for a minimum of 200 mm).

Make sure that the tubes/lances are properly fixed or perfectly stable before starting.
Be careful not to mix up the suction and discharge hoses. The suction hose (IN) is the one with the largest diameter.

The discharge lance must in general have unrestricted flow. It is prohibited to install taps or components on both hoses that may obstruct or reduce the flow of the fluid.

CAUTION

6.4.2 Power on

Insert the electric plug into a three-phase socket (Fig. 6) depending on the version (check the voltage).
Check the direction of rotation in the version with three-phase motor: Operate the switch for a few seconds and observe the direction of rotation of the electric motor. The direction observed on the fan side must be clockwise, otherwise the phases L1 and L2 must be inverted (Fig. 7). *NOTE*
Three-phase electric power supply with protective conductor is required for the power supply of the trolley.

Fig.6 Electrical connection for the three-phase motor (5 poles plug)

Fig.7 Phase inverter only for version with ICM2.0 particle counter

5 poles plug for the three-phase motor

Before starting up the electric motor, make sure that the suction lance (IN) is immersed in the fluid.

CAUTION

Operate the switch for a few seconds and observe the direction of rotation. The direction observed on the fan side must be clockwise, otherwise the phases L1 and L2 must be inverted.

NOTE

Models:
UFM091TA2020P01

After inserting the plug, turn the rotary knob for turning on and off located on the terminal box of the electric motor to "I" (Fig. 8).
At this point the transfer and filtration of the fluid begins.

Rotary knob
ON/OFF

With visual display Fig.8

Models:
UFM091TA3020P01

Once the plug has been inserted, press the button a Fig. 9 (general power supply), press the ignition switch "I" on the electrical panel (Fig. 10).
At this point the transfer and filtration of the fluid begins.

Button
general power supply

With electric indicator Fig.9

Button
ON/OFF

With electric indicator Fig.10

Models:
UFM091TA3021P01

Once inserted, turn the switch to "I" (Fig. 11 - General power supply), then press the on button "I" on the electrical panel (Fig. 12).
At this point the transfer and filtration of the fluid begins.

Button
general power supply

With electric indicator and particle counter Fig.11

Button
ON/OFF

With electric indicator and particle counter Fig.12

6.4.3 Air vent

When the unit is first turned on after inserting the filter element, vent the air inside the filter body using the vent valve (Fig. 13) on the cover. Once the air has been removed, close the vent valve.

Air vent Fig.13

Collect the oil in a container and dispose of it in accordance with the regulations in force.

NOTE

6.4.4 Oil analysis with particle counter

The ICMWMKUG12.0 series particle counter versions allow contamination counting and classification according to the international standards ISO4406 - NAS1638 - AS4059 Tab.1 - AS4059 Tab.2.
The particle counter also supplies the value of the water content in the oil and the temperature via an internal sensor.
It is possible to program the particle counter by connecting it via the ICMUSBI module (supplied) to a Personal Computer.
It is possible to enter a default value for the cleanliness class (according to the regulations used). NOTE
When this value is reached, the unit switches off automatically.

Motor/pump assembly and pressure relief valves for the use of the particle counter

Start/Stop auxiliary pump for particle counter Fig.14

Manual activation of particle counter Fig.15

To commission the ICM, switch on the auxiliary pump and the particle counter using the selector in the electrical panel (Fig. 14), then wait 5 minutes after switching on before counting. To carry out the count, activate the particle counter button (Fig. 15).

Before starting the particle counter auxiliary pump, make sure that the main pump has been running for about 5-6 minutes and that the hoses are full of oil.

CAUTION

The instruction manual, the programming of the particle counter, the software and the installation drivers are contained in the included USB stick in the section "ICM User Manual".

NOTE

6.4.5 Shutdown

Models:
UFM091TA2020P011

Once the operations have been completed, switch off the electric pump, turn the switch-off knob to "0" on the terminal box of the electric motor (Fig. 16) and disconnect the electrical connection plug.

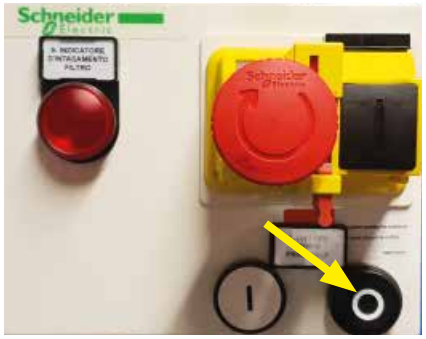
Rotary knob
ON/OFF

With visual display Fig.16

Models:
UFM091TA3021P01

Once the operations have been completed, switch off the electric pump, press the shutdown button to "0" on the electrical panel (Fig. 17) and disconnect the electrical connection plug.

Button
ON/OFF



With electric indicator Fig.17

Models:
UFM091TA3021P01

Once the operations have been completed, switch off the electric pump, press the button "0" on the electrical panel (Fig. 18), turn the shutdown switch to "0" (Fig. 19 - General power supply) and disconnect the electrical connection plug.
If the particle counter is used, switch off the auxiliary unit before the main electric pump by turning the pump shut-off switch (Fig. 20).

Button
ON/OFF

With electric indicator and particle counter Fig.18

Button
general power supply

With electric indicator and particle counter Fig.19

Button
ON/OFF

With electric indicator and particle counter Fig.20

Put the lances in their respective housings (⚠ - Fig. 21), anchored to the frame paying attention to the fluid still present in the hoses.
Rewind the power supply cable.

Lance holders Fig.21

The UFM091 is equipped with a thermal protection device against electrical overloads, short circuits and overheating. If a "BLOCK" occurs, check the operating conditions (e.g. clogged filter, fluid conditions, motor overheating, etc.) and reset the thermal protection by pressing the appropriate button on the side of the motor terminal box.

With oil temperatures above 40/45° C, give special caution to the handling of the metal lances/tubes and movement of the trolley. Avoid direct contact with hot oil, the mobile filtration unit and its installed components. ⚠ CAUTION

6.4.6 Operating limits and environmental limits

The trolley is designed to operate at a maximum pressure of 10 bar.
The electric motor is designed to operate according to the rating plate data.
For use in environments with very cold or very hot temperatures, refer to the technical data provided in Section 5.

6.5 Normal and scheduled maintenance

The UFM091 does not require particular maintenance interventions, it is in any case a good rule to check the perfect condition of the suction and discharge hoses before each use. Check that the filter element is correctly installed and that the filter cover is tightly screwed on.
Periodically check the tightness of the hydraulic connections and if the electrical cable ends in the motor terminal box are tight. Also check the cleanliness of the "Y" shaped filter for any accumulated macro impurities, so as to preserve the filter element (CU4006).
Check the expiration date of the particle counter calibration certificate.

To keep the efficiency of the particle counter high, it is advisable to send it once a year to our headquarters for inspection, monitoring, testing on the test bench and issuing a new calibration certificate. ⚠ CAUTION

6.5.1 Oil leaks

Oil leaks can form on the joints of the hoses and on fittings if any connections or screws are loosened, in which case we recommend checking the correct tightness.
If the operations described above are not able to solve the problem, contact the manufacturer.

6.6 Filter clogging

- *Versions with visual differential clogging indicator*
UFM091TA2020P01

The conditions relating to the blockage of the filter element are guaranteed by a visual indicator (Fig. 22) mounted on the head of the LMP430 filter. When the differential pressure of 3 bar is reached, the red alarm piston is visible. Replace the filter element.

- *Versions with electric/visual differential pressure indicator for blockage*
UFM091TA3020P01 - UFM091TA3021P01

The conditions related to the blockage of the filter element are ensured by an electric indicator (Fig. 23) mounted on the head of the LMP430 filter. When the differential pressure of 3 bar is reached, the electric signal switches off the machine and turns on the light on the electrical panel. Replace the filter element.

All models are equipped with a pressure gauge (Fig. 24) with 10 bar full scale to measure the circuit pressure.
For signalling the clogged filter, refer to the differential pressure indicators.
The LMP430 filter is equipped with a bypass valve with a response pressure set at 3.5 bar.

Version with visual indicator Fig.22

Version with visual/electric indicator Fig.23

Pressure gauge Fig.24

It is recommended to never exceed the response pressure of the bypass valve (3.5 bar).

CAUTION

6.6.1 Replacing the filter element

Before proceeding with the replacement of the filter element, make sure that the oil temperature is lower than +40/45° C.
Replace the filter element whenever necessary, i.e. whenever the differential pressure indicator indicates a clogged filter or when different fluids must be filtered.
The filtration of the filter element takes place from the outside to the inside, drain the residual oil into the body as it is not normally clean.
The oil must always be emptied using the drain valve (Fig. 25) located at the base of the filter body, clean the inside of the container.

It is recommended to clean the filter cover carefully before beginning the operations for replacing the filter element.

1

Open the vent valve

2 Fig.25

Drain the oil using the oil drain

3

Unscrew the filter cover

4

Remove the filter element

5

Remove the bypass or blind endcap

6

Make sure the container is securely tightened

7 Fig.26

Fig.27

Insert the endcap with bypass (Fig. 26) or the possibly used blind endcap (Fig. 27) in the new filter element

8

Insert the new filter element

9

Screw on the cover

10

Close the air vent

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

6.6.2 Air vent

When the unit is first turned on after replacing the filter element, drain the air inside the filter body using the vent valve (Fig. 28) on the cover. Once the air has been removed, close the vent valve.

Air vent Fig.28

Collect the oil in a container and dispose of it in accordance with the regulations in force.

NOTE

6.6.3 Replacing and cleaning of the filter in the suction line

Regularly (every 6 months or if you hear pump cavitation noises) check the blockage status of the suction filter and clean or replace it if necessary.

Suction filter

Unscrew the nut and remove the filter element

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

UFM091

6.7 Designation & Ordering code

MOBILE FILTRATION UNIT UFM 091

Configuration example: UFM | 091 | T | A | 2 | 0 | 2 | 0 | P01

Series
UFM

Size
091 90 l/min

Electric motor
T 400/230V Three phase

Seals
A NBR

Pressure gauges and Clogging indicators
2 Manometer + Visual Differential Clogging indicator
3 Manometer + Electrical/Visual Differential Clogging indicator

Filter element
0 Without element

Filtration surface
2 Higher

Option
0 No options
1 ICM 2.0 particle counter

Option
P01 MP Filtri standard
Pxx Customized

Filtration element should be ordered separately

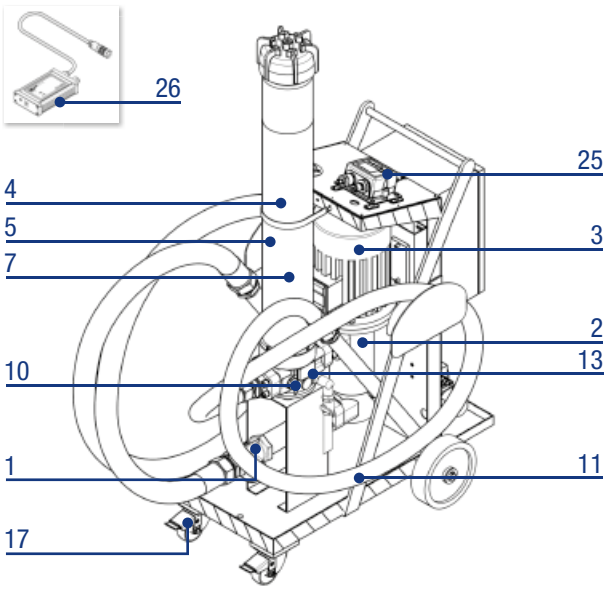
FILTRATION SURFACE - HIGHER

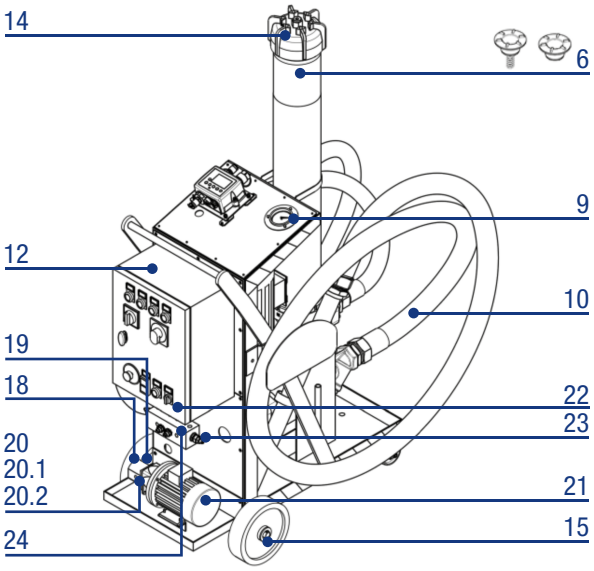
Inorganic microfibre	Wire mesh element
CU 400 6 A01 A N P01	CU 400 6 M25 A N P01
CU 400 6 A03 A N P01	CU 400 6 M60 A N P01
CU 400 6 A06 A N P01	
CU 400 6 A10 A N P01	
CU 400 6 A16 A N P01	
CU 400 6 A25 A N P01	

WATER REMOVAL - FILTRATION SURFACE 1 - HIGHER

Multi-Layer water absorber
CU4006WA025ANP01

6.7.1 Spare parts





6.7.2 List of spare parts

Position	Series	Description	Code	Quantity
1	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Y-shaped filter 2" BSP - 900micron	02200041	1
2	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	GR45 SMT16B-180L/AC28 B5 RF3 Screw pump with integrated pressure relief valve	02200042	1
3	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	3-phase el. motor 2.2 kW 4P B3B5 IP55 3F 230/400V 50/60Hz CLASS IE3	02200028	1
4	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Increased filter length	LMP4306BAF1P02	1
5	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element	CU4006A01ANP01 CU4006A03ANP01 CU4006A06ANP01 CU4006A10ANP01 CU4006A16ANP01 CU4006A25ANP01 CU4006M25ANP01 CU4006M60ANP01 CU4006WA025ANP01	1
6	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Endcap with 3.5 bar bypass	02001414	1
		Blind endcap without bypass	01044108	
7	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Gasket kit for LMP430 filter	02050393	1
8	UFM091TA2020P01	Optical differential pressure indicator	DVM30HP01	1
	UFM091TA3020P01 UFM091TA3021P01	Optical/electric differential pressure indicator	DLA30HA51P01	

>> NEXT

>> NEXT

List of spare parts

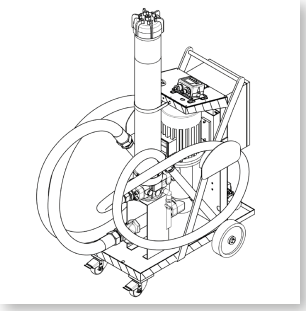
Position	Series	Description	Code	Quantity
9	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Pressure gauge	MGF63G10	1
10	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Flexible suction hose DN50 L = 3000mm Inclined cut lance DE50 L = 700mm	02200044	1
11	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Flexible delivery hose DN38 L = 3000mm Inclined cut lance DE42 L = 700mm	02200043	1
12	UFM091TA2020P01	Electrical panel three-phase version + cable and CEE plug	02200029	1
	UFM091TA3020P01		02200030	
	UFM091TA3021P01		02200031	
13	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Discharge valve	02200039	1
14	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Air vent valve	02200040	1
15	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Fixed wheel Ø200x50x20mm. Blue polyurethane coating and black polyamide structure	02200045	2
16	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Swivel wheel with Ø80x30x20mm lock. Blue polyurethane coating and black polyamide structure	02200046	1
17	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Swivel wheel Ø80x30x20mm. Blue polyurethane coating and black polyamide structure	02200047	1
18	UFM091TA3021P01	025-D-18 gear pump	02200048	1
19	UFM091TA3021P01	Pump bracket	LMG140MFS05M4SANU	1
20	UFM091TA3021P01	Pump side half-coupling	SGEA01FS05M	1
20.1	UFM091TA3021P01	Motor side half-coupling	SGEA01M01021FG	1
20.2	UFM091TA3021P01	Elastic wheel	EGE0	1
21	UFM091TA3021P01	Single-phase electric motor 0.18 kW 4P B3/B5 CLASS IE3	02200049	1
22	UFM091TA3021P01	Valve lock	02200050	1
23	UFM091TA3021P01	Relief valve	02200051	2
24	UFM091TA3021P01	1/4” pressure mini-plug	02200052	2
25	UFM091TA3021P01	Particle counter	ICMWMKUG12.0	1
26	UFM091TA3021P01	Communication module	ICMUSBI	1
27	UFM091TA2020P01 UFM091TA3020P01 UFM091TA3021P01	Adapter for 5 to 4 poles plug for the three-phase motor	xxxxxxx	1

UFM091

UFM181

5 Technical features

The mobile filtration unit consists of a support frame with handle and wheels for manoeuvrability.
The assembly/motor pump connected to the hoses is used for suctioning and discharging the fluid.
It is equipped with a suction filter and a discharge filter.
The mobile filtration unit is complete with electrical and mechanical safety systems, for the filter and the assembly/motor pump.

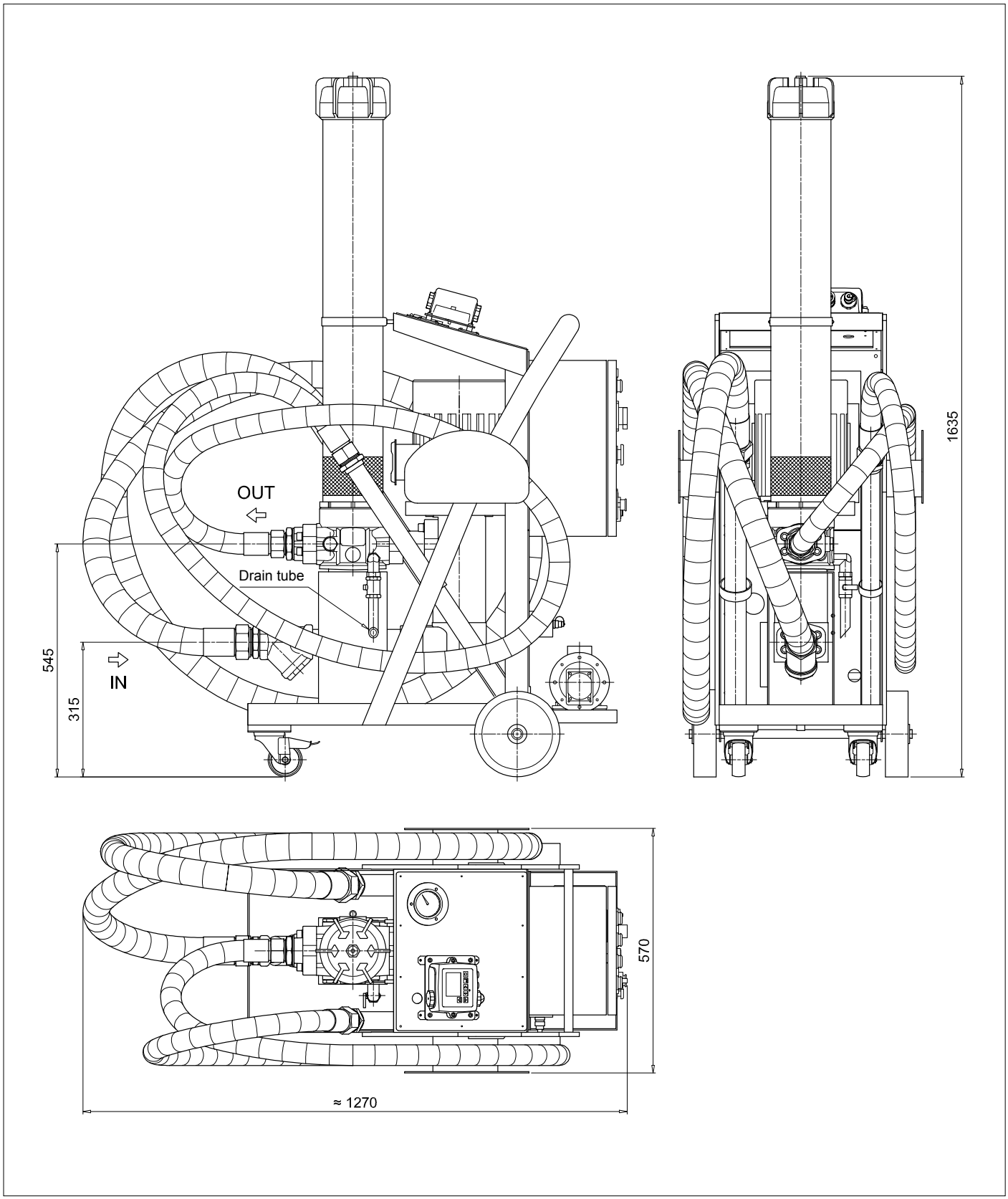


Pump	Screw pump with integrated pressure relief valve
Electric motor	4 kW 400/230 Volt three-phase - 2 poles
Flow rate (l/min)	180 l/min -2900 rpm
Max. working pressure	10 bar
Viscosity	Minimum operating viscosity 10 cSt Maximum operating viscosity 800 cSt Maximum only for cold starts 2000 cSt
Suction filter	Y-shape fine filter unit 900 micron
Type of filtering mat/degree of filtration Internal/external filtration	Fibre 1/3/6/10/16/25 $\beta_{x(c)}>1000$ Wire mesh 25/60 µm Water absorber NOTE 1 / NOTE 2
Bypass valve	3.5 bar
Fluid temperature	from -10 °C to +80 °C
Ambient temperature	from -20 °C to +45 °C
Protection class	IP 55
Seals	NBR
Compatibility with hydraulic fluids	Mineral & Synthetic oils. For other fluids contact MP Filtri.
Hoses	Flexible suction hose DN50 L = 3000mm Lance DE50 L = 700mm Flexible delivery hose DN38 L = 3000mm Lance DE42 L = 700mm
Weight	109 kg
Standard equipment	Main filter bypass valve blocking Pressure gauge
Equipment according to the versions UFM181TA3020P01	Electric clogging indicator with automatic motor stop
UFM181TA3021P01	Electric clogging indicator with automatic motor stop, ICM2.0 series particle counter and communication module

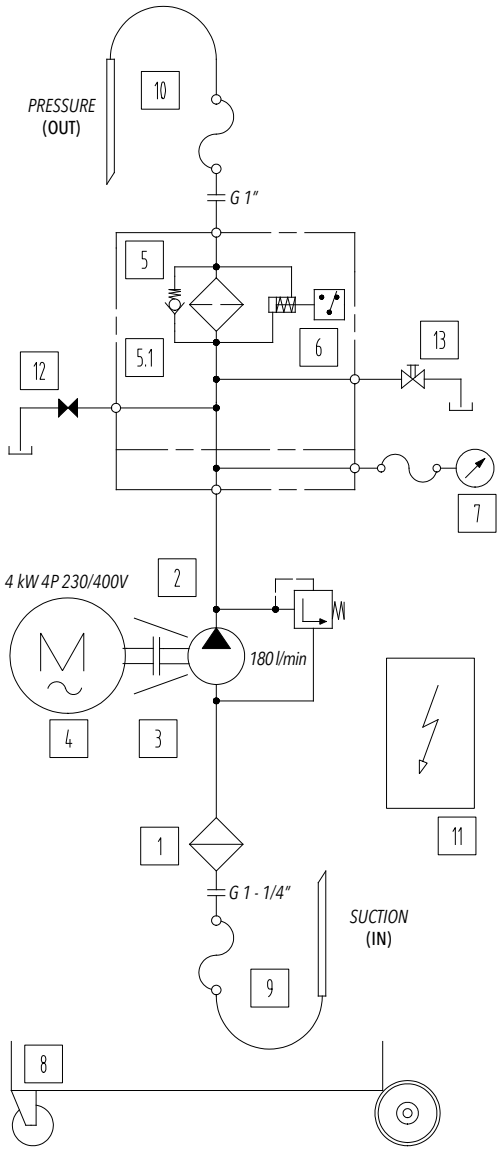
Microfibre filter elements with water absorber: disposable components — NOTE 1

The system is supplied without filter element — NOTE 2

5.1 Dimensions



5.2 Hydraulic circuit and bill of materials



Version:
UFM181TA3020P01

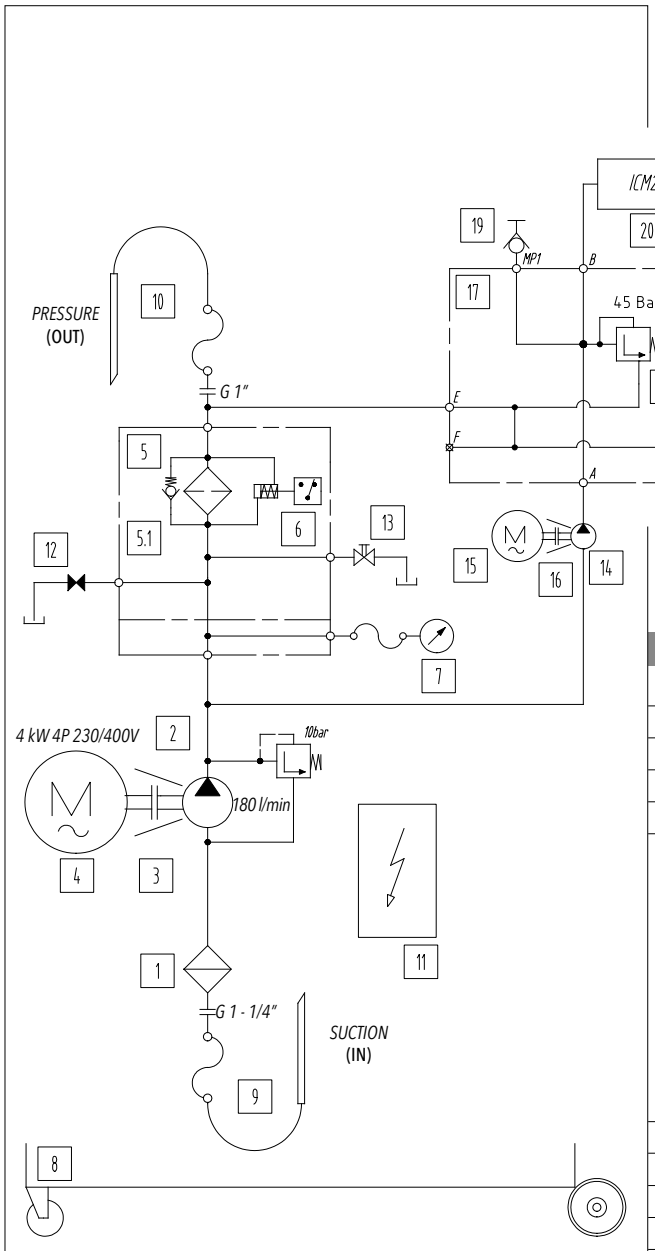
Position	Quantity	Description
1	1	900 micron Y shaped filter
2	1	Screw pump
3	1	Motor/pump coupling
4	1	Three-phase electric motor 4 kW 2P-B3/B5 (IE3)
5	1	Increased filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical/electric differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN50 flexible suction hose + lance
10	1	DN38 flexible discharge hose + lance
11	1	Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve

>> NEXT

Microfibre filter elements with water absorber: disposable components NOTE

>> NEXT

Hydraulic circuit and bill of materials



A = IN Auxiliary pump for ICM2.0
B = IN ICM 2.0
C = OUT ICM 2.0 (closed)
D = OUT ICM 2.0
E = RETURN
F = RETURN (closed)
MP1 = Minimess - IN ICM 2.0
MP2 = Minimess - OUT ICM 2.0

Version:
UFM181TA3021P01

Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Screw pump
3	1	Motor/pump coupling
4	1	Three-phase electric motor 4 kW 2P-B3/B5 (IE3)
5	1	Increased filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical/electric differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN50 flexible suction hose + lance
10	1	DN38 flexible discharge hose + lance
11	1	Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve
14	1	Gear pump
15	1	Single-phase electric motor 0.18 kW 4P-B3/B5
16	1	Monoblock
17	2	Relief valve
18	1	Motor/pump coupling
19	1	Particle counter
20	1	Communication module

Microfibre filter elements with water absorber: disposable components NOTE

6 Installation procedures and general operation

6.1 Introduction

The mobile filtration units are suitable for the following fluid operations:

- Transfer with filtration
- Off-line filtration (maximum recommended volume 1800/2700L)

The standard version of the filtration unit is delivered without a filter element, before its use install an original MP Filtri filter element suitable for the type of unit being used (see filter element codes listed in Table 6.7.2 Item.5) and carry out the procedures described in Section 6.2 "Filter element installation".
The filter bypass valve can be locked by replacing the endcap with bypass (Fig. 2) with the included (Fig. 1) blind endcap (Fig. 3).
The endcap is inserted into the filter element.


Scope of supply Fig.1


Endcap with bypass Fig.2


Blind endcap Fig.3

With the bypass valve blocked pay close attention to the clogging indicator. As soon as the indicator indicates the clogged filter, turn off the filtration unit and replace the filter element.

CAUTION

6.2 Filter element installation

1


Loosen the air vent nut

2


Unscrew the cover

3


Choose endcap with bypass or blind endcap

4

Fig.4

Fig.5


Insert the endcap with bypass (Fig. 4) or the possibly selected blind endcap (Fig. 5) in the filter element

5


Insert the filter element into the filter body

6


Screw on the cover

7


Make sure the air vent is closed

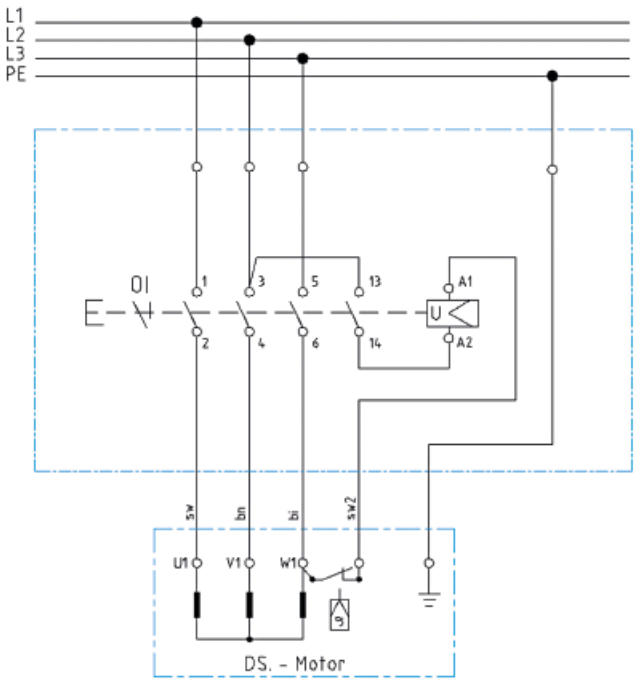
These operations must be performed with the machine off. Do not turn on the unit without first installing the filter element.

CAUTION

We recommend using only original MP Filtri filter cartridges.

NOTE

6.3 Wiring diagram



6.3.1 Electrical connection

The trolley must be connected via the plug supplied to the power supply, checking:
- the laws and technical specifications valid in the place and at the time of installation
- that the power supply voltage and the frequency at the connection point are compatible with those indicated on the rating plate of the mobile filtration unit
- the data shown on the rating plate.

It is recommended to use a multi-wire cable with a minimum cross-section of 4 x 2,5 mm^2 for the econnection of the electric motor.
The red plug indicates a three-phase motor, the blue plug a single-phase motor.
The supply voltage must correspond to the voltage specified on the rating plate.

The construction features of the electric cable guarantee great flexibility, excellent resistance to weather conditions, oils and greases, mechanical and thermal stresses: Standard IMQ-CPT-007, CEI EN 50525-2-2.
Compliant with requirements of the BT 2006/95/CE directives.

The terminal box contains metal elements that are under hazardous voltage; after making the connections, always close the box cover.

⚠ NOTE

6.3.2 Triangular electrical connection of a three-phase motor

This motor is connected to the three-phase line, which can be 230V or more commonly 400V. Since the windings that make up the motor must be powered at 230V, the connection must be made in the following manner:

- Delta connection: this connection applies the same voltage to the windings as to the line.

To be able to change the direction of rotation it is sufficient to invert two phases by acting directly on the appropriate five-pole CE plug (see photo on the right).
Trolley with particle counter (see fig. 7 on page 101)

6.3.3 Electrical connection of a single-phase motor - not applicable for UFM181

6.3.4 Electrical panel

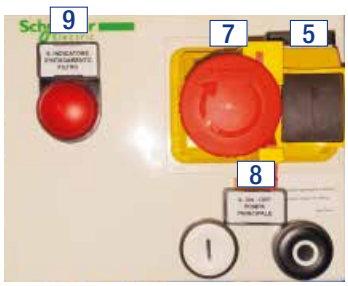
Version with three-phase motor

UFM181TA3020P01

Version with three-phase motor and particle counter

UFM181TA3021P01

Labels on the electrical panel



Version with electric/optical differential pressure indicator

Version with electric/optical differential pressure indicator and particle counter

6.3.5 Electrical panel labels

NOTE

Pos.	Translation of electrical panel labels				
	ENGLISH	ITALIAN	FRENCH	GERMAN	SPANISH
1	VOLTAGE ON	TENSIONE	APPAREIL SOUS TENSION	SPANNUNG EIN	TENSIÓN ACTIVA
2	PHASE REVERSE	FASE ROVESCIA	INVERSION DE PHASE	PHASENUMKEHR	INVERSIÓN FASE
3	ICM ALARM	ALLARME ICM	ALARME ICM	ALARM ICM	ALARMA ICM
4	THERMAL ALARM	TERMICO	ALARME THERMIQUE	WÄRMEALARM	ALARMA TÉRMICA
5	ON-OFF GENERAL	ACCESO/SPENTO	INTERRUPTEUR MARCHE/ ARRÊT GÉNÉRAL	EIN-/AUSSCHALTER	ON-OFF GENERAL
6	PHASE INVERTER	INVERTITORE DI FASE	INVERSEUR DE PHASE	PHASENUMKEHRSCHALTUNG	INVERSOR FASE
7	EMERGENCY STOP	STOP EMERGENZA	ARRÊT D'URGENCE	NOTABSCHALTUNG	PARADA EMERGENCIA
8	ON-OFF MAIN PUMP	ON-OFF POMPA PRINCIPALE	MARCHE/ARRÊT POMPE PRINCIPALE	EIN-AUS HAUPTPUMPE	ON-OFF BOMBA PRINCIPAL
9	FILTER ELEMENT CLOGGING	INDICATORE D'INTASAMENTO FILTRO	ÉLÉMENT FILTRANT OBSTRUÉ	FILTEREINSATZ VERSTOPFT	ATASCO ELEMENTO FILTRO
10	ON-OFF COUNTER AND AUXILIARY PUMP	ON-OFF CONTATORE E POMPA SECONDARIA	MARCHE/ARRÊT COMPTEUR ET POMPE AUXILIAIRE	EIN-AUS ZÄHLER UND HILFSPUMPE	ON-OFF CONTADOR Y BOMBA AUXILIAR

The mobile filtration unit is supplied with labels in English

NOTE

6.4 Use

6.4.1 Installation

The mobile filtration unit must be positioned in a place that guarantees its stability during use.

TRANSFER
Connect/immerse the metal suction lance (IN) to the tank or to the drum, immerse the discharge hose (OUT) in the machine tank or in the drum which should be transferred to.
If the transfer oil has to be cleaned, it is advisable to filter the oil contained in the drum or tank several times before being transferred.
In this case immerse the metal suction lances (IN) and the discharge lances (OUT) in the drum or oil tank to be transferred. Be careful that the lances remain below the level of the oil to be transferred in order to avoid foaming and cavitation; space the ends of the two lances as far as possible from each other in order to recirculate all the fluid and not generate an emulsion.

FILTRATION
Immerse the metal suction lances (IN) and the discharge lance (OUT) inside the tank far from each other, possibly positioning them at different heights (100 mm suction from the tank bottom, immersed delivery for a minimum of 200 mm).

Make sure that the tubes/lances are properly fixed or perfectly stable before starting
Be careful not to mix up the suction and discharge hoses. The suction hose (IN) is the one with the largest diameter.

The discharge lance must in general have unrestricted flow. It is prohibited to install taps or components on both hoses that may obstruct or reduce the flow of the fluid.

CAUTION

6.4.2 Power on

Insert the electric plug into a three-phase socket (Fig. 6) depending on the version (check the voltage).
Check the direction of rotation in the version with three-phase motor: Operate the switch for a few seconds and observe the direction of rotation of the electric motor. The direction observed on the fan side must be clockwise, otherwise the phases L1 and L2 must be inverted (Fig. 7). NOTE
Three-phase electric power supply with protective conductor is required for the power supply of the trolley.

Electrical connection for the three-phase motor (5 poles plug) Fig.6

Phase inverter only for version with ICM2.0 particle counter Fig.7

5 poles plug for the three-phase motor

Before starting up the electric motor, make sure that the suction lance (IN) is immersed in the fluid. CAUTION

Operate the switch for a few seconds and observe the direction of rotation. The direction observed on the fan side must be clockwise, otherwise the phases L1 and L2 must be inverted. NOTE

Models:
UFM181TA3020P01

Once the plug has been inserted, press the button a (Fig. 8 - general power supply), press the ignition switch "I" on the electrical panel (Fig. 9).
At this point the transfer and filtration of the fluid begins.

Button
general power supply

Fig.8
With electric indicator

Button
ON/OFF

Fig.9
With electric indicator

Models:
UFM181TA3021P01

Once inserted, turn the switch to "I" (Fig. 10 - General power supply), then press the on button "I" on the electrical panel (Fig. 11).
At this point the transfer and filtration of the fluid begins.

Button
general power supply

Fig.10
With electric indicator and particle counter

Button
ON/OFF

Fig.11
With electric indicator and particle counter

6.4.3 Air vent

When the unit is turned on for the first time after having inserted or replaced the filter element, drain the air inside the filter body using the vent valve (Fig. 12) on the cover. Once the air has been removed, close the vent valve.

Air vent Fig.12

Collect the oil in a container and dispose of it in accordance with the regulations in force.

NOTE

6.4.4 Oil analysis with particle counter

The ICMWMKUG12.0 series particle counter versions allow contamination counting and classification according to the international standards ISO4406 - NAS1638 - AS4059 Tab.1 - AS4059 Tab.2.
The particle counter also supplies the value of the water content in the oil and the temperature via an internal sensor.
It is possible to program the particle counter by connecting it via the ICMUSBI module (supplied) to a Personal Computer.
It is possible to enter a default value for the cleanliness class (according to the regulations used). NOTE
When this value is reached, the unit switches off automatically.

Motor/pump assembly and pressure relief valves for the use of the particle counter

Start/Stop auxiliary pump for particle counter Fig.13

Manual activation of particle counter Fig.14

To commission the ICM, switch on the auxiliary pump and the particle counter using the selector in the electrical panel (Fig. 13), then wait 5 minutes after switching on before counting. To carry out the count, activate the particle counter button (Fig. 14).

Before starting the particle counter auxiliary pump, make sure that the main pump has been running for about 5-6 minutes and that the hoses are full of oil.

CAUTION

The instruction manual, the programming of the particle counter, the software and the installation drivers are contained in the included USB stick in the section "ICM User Manual".

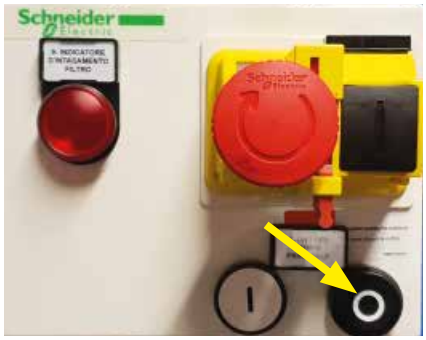
NOTE

6.4.5 Shutdown

Models:
UFM181TA3020P01

Once the operations have been completed, switch off the electric pump, press the shutdown button to "0" on the electrical panel (Fig. 15) and disconnect the electrical connection plug.

Button
ON/OFF



With electric indicator Fig.15

Models:
UFM181TA3021P01

Once the operations have been completed, switch off the electric pump, press the button "0" on the electrical panel (Fig. 16), turn the shutdown switch to "0" (Fig. 17 - General power supply) and disconnect the electrical connection plug.
If the particle counter is used, switch off the auxiliary unit before the main electric pump by turning the pump shut-off switch (Fig. 18).

Button
ON/OFF

With electric indicator and particle counter Fig.16

Button
general power supply

With electric indicator and particle counter Fig.17

Button
ON/OFF

With electric indicator and particle counter Fig.18

Put the lances in their respective housings (⚠ - Fig. 19), anchored to the frame paying attention to the fluid still present in the hoses. Rewind the power supply cable.

Lance holders Fig.19

The UFM181 is equipped with a thermal protection device against electrical overloads, short circuits and overheating. If a "BLOCK" occurs, check the operating conditions (e.g. clogged filter, fluid conditions, motor overheating, etc.) and reset the thermal protection by pressing the appropriate button on the side of the motor terminal box.

With oil temperatures above 40/45° C, give special caution to the handling of the metal lances/tubes and movement of the trolley. Avoid direct contact with hot oil, the mobile filtration unit and its installed components.

⚠ *CAUTION*

6.4.6 Operating limits and environmental limits

The trolley is designed to operate at a maximum pressure of 10 bar.
The electric motor is designed to operate according to the rating plate data.
For use in environments with very cold or very hot temperatures, refer to the technical data provided in Section 5.

6.5 Normal and scheduled maintenance

The UFM181 does not require particular maintenance interventions, it is in any case a good rule to check the perfect condition of the suction and discharge hoses before each use. Check that the filter element is correctly installed and that the filter cover is tightly screwed on.
Periodically check the tightness of the hydraulic connections and if the electrical cable ends in the motor terminal box are tight. Also check the cleanliness of the "Y" shaped filter for any accumulated macro impurities, so as to preserve the filter element (CU4006).
Check the expiration date of the particle counter calibration certificate.

To keep the efficiency of the particle counter high, it is advisable to send it once a year to our headquarters for inspection, monitoring, testing on the test bench and issuing a new calibration certificate.

CAUTION

6.5.1 Oil leaks

Oil leaks can form on the joints of the hoses and on fittings if any connections or screws are loosened, in which case we recommend checking the correct tightness.
If the operations described above are not able to solve the problem, contact the manufacturer.

6.6 Filter clogging

- *Versions with electric/visual differential pressure indicator for blockage*
UFM181TA3020P01 - UFM181TA3021P01

The conditions related to the blockage of the filter element are ensured by an electric indicator (Fig. 20) mounted on the head of the LMP430 filter. When the differential pressure of 3 bar is reached, the electric signal switches off the machine and turns on the light on the electrical panel. Replace the filter element.

All models are equipped with a pressure gauge (Fig. 21) with 10 bar full scale to measure the circuit pressure.
For signalling the clogged filter, refer to the differential pressure indicators.
The LMP430 filter is equipped with a bypass valve with a response pressure set at 3.5 bar.

Version with visual/electric indicator Fig.20

Pressure gauge Fig.21

It is recommended to never exceed the response pressure of the bypass valve (3.5 bar).

CAUTION

6.6.1 Replacing the filter element

Before proceeding with the replacement of the filter element, make sure that the oil temperature is lower than +40/45° C.
Replace the filter element whenever necessary, i.e. whenever the differential pressure indicator indicates a clogged filter or when different fluids must be filtered.
The filtration of the filter element takes place from the outside to the inside, drain the residual oil into the body as it is not normally clean.
The oil must always be emptied using the drain valve (Fig. 22) located at the base of the filter body, clean the inside of the container.
It is recommended to clean the filter cover carefully before beginning the operations for replacing the filter element.

1

Open the vent valve

2 Fig.22

Drain the oil using the oil drain

3

Unscrew the filter cover

4

Remove the filter element

5

Remove the bypass or blind endcap

6

Make sure the container is securely tightened

7 Fig.23

Fig.24

Insert the endcap with bypass (Fig. 23) or the possibly used blind endcap (Fig. 24) in the new filter element

8

Insert the new filter element

9

Screw on the cover

10

Close the air vent

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

6.6.2 Air vent

When the unit is first turned on after replacing the filter element, drain the air inside the filter body using the vent valve (Fig. 25) on the cover. Once the air has been removed, close the vent valve.

Air vent Fig.25

Collect the oil in a container and dispose of it in accordance with the regulations in force.

NOTE

6.6.3 Replacing and cleaning of the filter in the suction line

Regularly (every 6 months or if you hear pump cavitation noises) check the blockage status of the suction filter and clean or replace it if necessary.

Suction filter

Unscrew the nut and remove the filter element

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

UFM181

6.7 Designation & Ordering code

MOBILE FILTRATION UNIT UFM 181

Configuration example: UFM | 181 | T | A | 3 | 0 | 2 | 0 | P01

Series
UFM

Size
181 180 l/min

Electric motor
T 400/230V Three phase

Seals
A NBR

Pressure gauges and Clogging indicators
3 Manometer + Electrical/Visual Differential Clogging indicator

Filter element
0 Without element

Filtration surface
2 Higher

Option
0 No options
1 ICM 2.0 particle counter

Option
P01 MP Filtri standard
Pxx Customized

Filtration element should be ordered separately

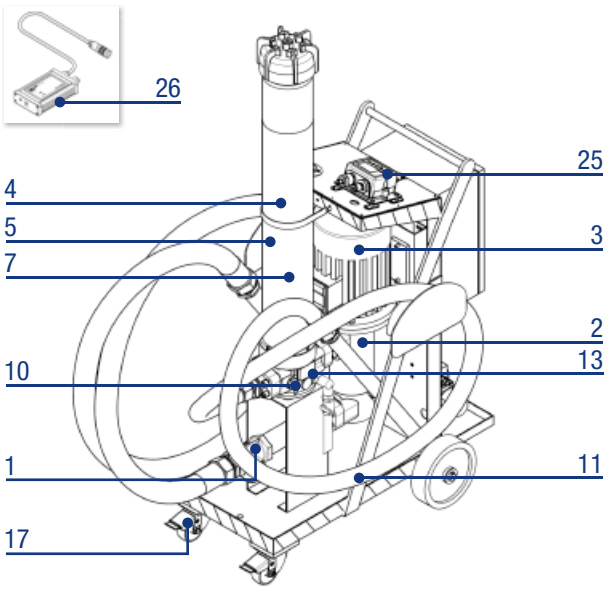
FILTRATION SURFACE - HIGHER

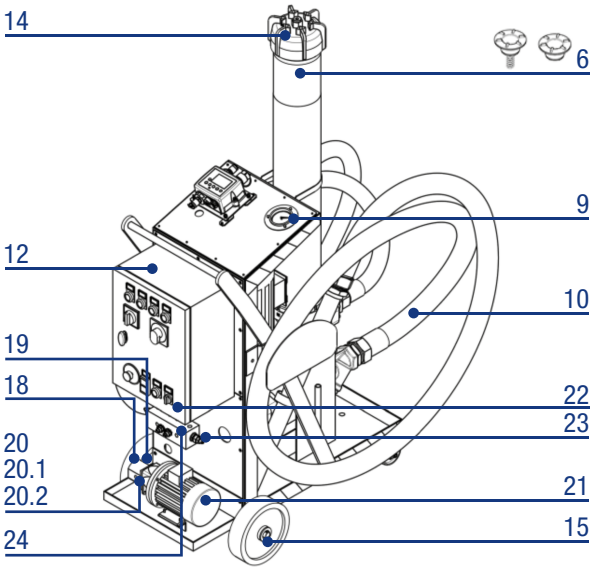
Inorganic microfibre	Wire mesh element
CU 400 6 A01 A N P01	CU 400 6 M25 A N P01
CU 400 6 A03 A N P01	CU 400 6 M60 A N P01
CU 400 6 A06 A N P01	
CU 400 6 A10 A N P01	
CU 400 6 A16 A N P01	
CU 400 6 A25 A N P01	

WATER REMOVAL - FILTRATION SURFACE 1 - HIGHER

Multi-Layer water absorber
CU4006WA025ANP01

6.7.1 Spare parts





6.7.2 List of spare parts

Position	Series	Description	Code	Quantity
1	UFM181TA3020P01 UFM181TA3021P01	Y-shaped filter 2" BSP - 900micron	02200041	1
2	UFM181TA3020P01 UFM181TA3021P01	GR45 SMT16B-180L/AC28 B5 RF3 Screw pump with integrated pressure relief valve	02200042	1
3	UFM181TA3020P01 UFM181TA3021P01	3-phase el. motor 4 kW 2P B3B5 IP55 3F 230/400V 50/60Hz CLASS IE3	02200032	1
4	UFM181TA3020P01 UFM181TA3021P01	Increased filter length	bypass	1
5	UFM181TA3020P01 UFM181TA3021P01	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element	CU4006A01ANP01 CU4006A03ANP01 CU4006A06ANP01 CU4006A10ANP01 CU4006A16ANP01 CU4006A25ANP01 CU4006M25ANP01 CU4006M60ANP01 CU4006WA025ANP01	1
6	UFM181TA3020P01	Endcap with 3.5 bar bypass	02001414	1
	UFM181TA3021P01	Blind endcap without bypass	01044108	
7	UFM181TA3020P01 UFM181TA3021P01	Gasket kit for LMP430 filter	02050393	1
8	UFM181TA3020P01 UFM181TA3021P01	Optical/electric differential pressure indicator	DLA30HA51P01	1
9	UFM181TA3020P01 UFM181TA3021P01	Pressure gauge	MGF63G10	1
10	UFM181TA3020P01 UFM181TA3021P01	Flexible suction hose DN50 L = 3000mm Inclined cut lance DE50 L = 700mm	02200044	1
11	UFM181TA3020P01 UFM181TA3021P01	Flexible delivery hose DN38 L = 3000mm Inclined cut lance DE42 L = 700mm	02200043	1
12	UFM181TA3020P01	Electrical panel three-phase version + cable and CEE plug	02200033	1

>> NEXT

>> NEXT

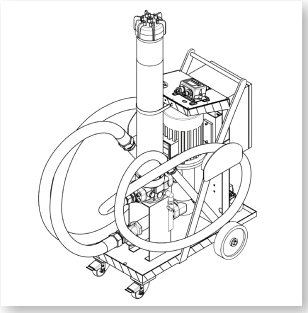
List of spare parts

Position	Series	Description	Code	Quantity
12	UFM181TA3021P01	Electrical panel three-phase version + cable and CEE plug	02200034	1
13	UFM181TA3020P01 UFM181TA3021P01	Discharge valve	02200039	1
14	UFM181TA3020P01 UFM181TA3021P01	Air vent valve	02200040	1
15	UFM181TA3020P01 UFM181TA3021P01	Fixed wheel Ø200x50x20mm. Blue polyurethane coating and black polyamide structure	02200045	2
16	UFM181TA3020P01 UFM181TA3021P01	Swivel wheel with Ø80x30x20mm lock. Blue polyurethane coating and black polyamide structure	02200046	1
17	UFM181TA3020P01 UFM181TA3021P01	Swivel wheel Ø80x30x20mm. Blue polyurethane coating and black polyamide structure	02200047	1
18	UFM181TA3021P01	025-D-18 gear pump	02200048	1
19	UFM181TA3021P01	Pump bracket	LMG140MFS05M4SANU	1
20	UFM181TA3021P01	Pump side half-coupling	SGEA01FS05M	1
20.1	UFM181TA3021P01	Motor side half-coupling	SGEA01M01021FG	1
20.2	UFM181TA3021P01	Elastic wheel	EGE0	1
21	UFM181TA3021P01	Single-phase electric motor 0.18 kW 4P B3/B5 CLASS IE3	02200049	1
22	UFM181TA3021P01	Valve lock	02200050	1
23	UFM181TA3021P01	Relief valve	02200051	2
24	UFM181TA3021P01	1/4” pressure mini-plug	02200052	2
25	UFM181TA3021P01	Particle counter	ICMWMKUG12.0	1
26	UFM181TA3021P01	Communication module	ICMUSBI	1
27	UFM181TA3020P01 UFM181TA3021P01	Adapter for 5 to 4 poles plug for the three-phase motor	XXXXXX	1

UFM181

UFM919

5 Technical features



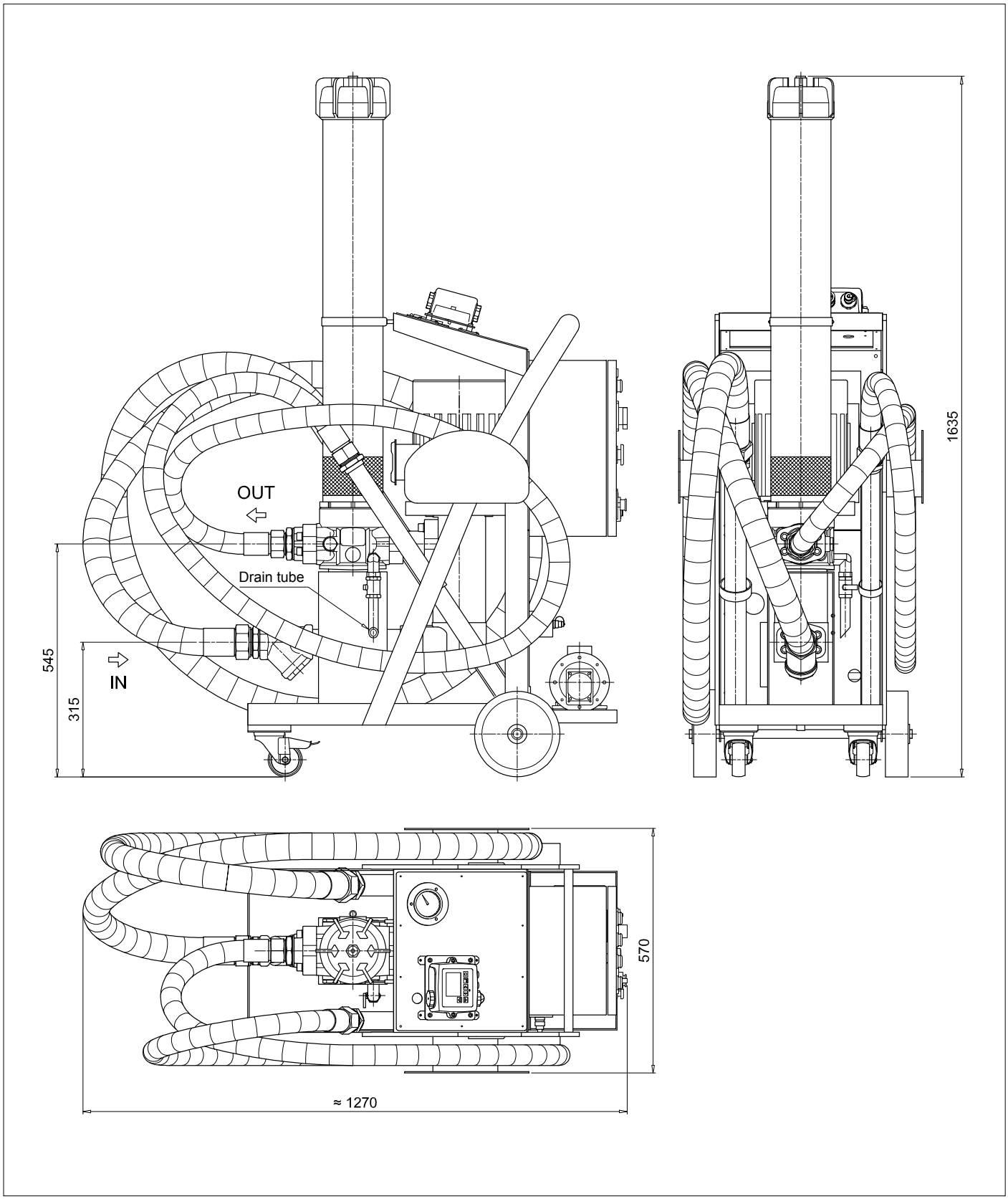
The mobile filtration unit consists of a support frame with handle and wheels for manoeuvrability.
The assembly/motor pump connected to the hoses is used for suctioning and discharging the fluid.
It is equipped with a suction filter and a discharge filter.
The mobile filtration unit is complete with electrical and mechanical safety systems, for the filter and the assembly/motor pump.

Pump	Screw pump with integrated pressure relief valve
Electric motor	3.7/5 kW 400/230 Volt three-phase - 2/4 poles
Flow rate (l/min)	90 l/min -1450 rpm / 180 l/min -2900 rpm
Max. working pressure	10 bar
Viscosity	Minimum operating viscosity 10 cSt Maximum operating viscosity 800 cSt Maximum only for cold starts 2000 cSt
Suction filter	Y-shape fine filter unit 900 micron
Type of filtering mat/degree of filtration Internal/external filtration	Fibre 1/3/6/10/16/25 $\beta_{x(c)} > 1000$ Wire mesh 25/60 µm Water absorber NOTE 1 / NOTE 2
Bypass valve	3.5 bar
Fluid temperature	from -10 °C to +80 °C
Ambient temperature	from -20 °C to +45 °C
Protection class	IP 55
Seals	NBR
Compatibility with hydraulic fluids	Mineral & Synthetic oils. For other fluids contact MP Filtri.
Hoses	Flexible suction hose DN50 L = 3000mm Lance DE50 L = 700mm Flexible delivery hose DN38 L = 3000mm Lance DE42 L = 700mm
Weight	120kg
Standard equipment	Main filter bypass valve blocking Pressure gauge Lance 90° DE40 L = 700mm
Equipment according to the versions UFM919TA3020P01	Electric clogging indicator with automatic motor stop
UFM919TA3021P01	Electric clogging indicator with automatic motor stop, ICM2.0 series particle counter and communication module

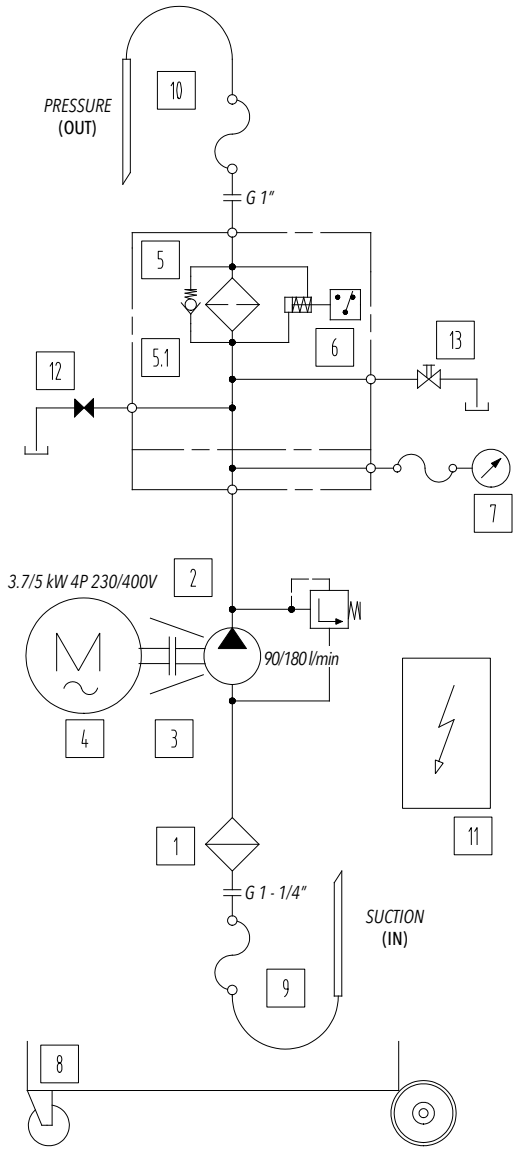
Microfibre filter elements with water absorber: disposable components — NOTE 1

The system is supplied without filter element — NOTE 2

5.1 Dimensions



5.2 Hydraulic circuit and bill of materials



Version:
UFM919TA3020P01

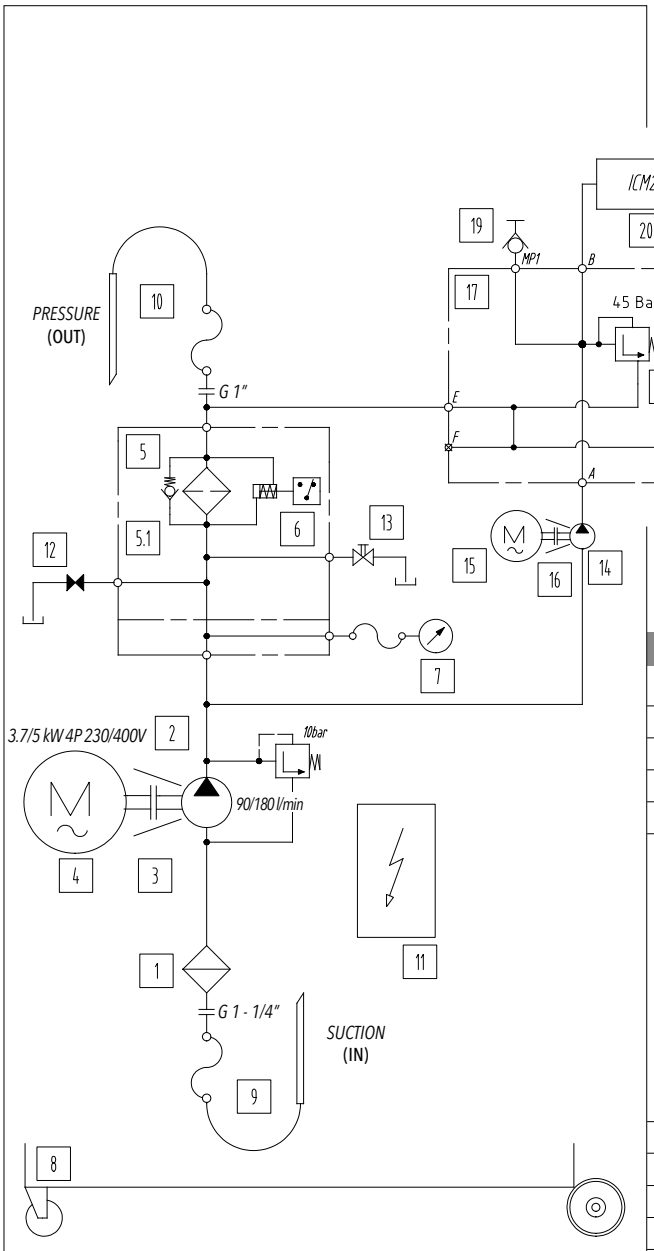
Position	Quantity	Description
1	1	900 micron Y shaped filter
2	1	Screw pump
3	1	Motor/pump coupling
4	1	Three-phase electric motor 3.7/5 kW 2/4P-B3/B5 (IE3)
5	1	Increased filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical/electric differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN50 flexible suction hose + lance
10	1	DN38 flexible discharge hose + lance
11	1	Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve

>> NEXT

Microfibre filter elements with water absorber: disposable components NOTE

>> NEXT

Hydraulic circuit and bill of materials



A = IN Auxiliary pump for ICM2.0
B = IN ICM 2.0
C = OUT ICM 2.0 (closed)
D = OUT ICM 2.0
E = RETURN
F = RETURN (closed)
MP1 = Minimess - IN ICM 2.0
MP2 = Minimess - OUT ICM 2.0

Version:
UFM919TA3021P01

Position	Quantity	Description
1	1	Y shaped filter 900micron
2	1	Screw pump
3	1	Motor/pump coupling
4	1	Three-phase electric motor 3.7/5 kW 2/4P-B3/B5 (IE3)
5	1	Increased filter length
5.1	1	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element NOTE
6	1	Optical/electric differential pressure indicator
7	1	Pressure gauge
8	1	Mobile unit frame
9	1	DN50 flexible suction hose + lance
10	1	DN38 flexible discharge hose + lance
11	1	Electrical panel three-phase version
12	1	Discharge valve
13	1	Air vent valve
14	1	Gear pump
15	1	Single-phase electric motor 0.18 kW 4P-B3/B5
16	1	Monoblock
17	2	Relief valve
18	1	Motor/pump coupling
19	1	Particle counter
20	1	Communication module

Microfibre filter elements with water absorber: disposable components NOTE

6 Installation procedures and general operation

6.1 Introduction

The mobile filtration units are suitable for the following fluid operations:

- Transfer with filtration
- Off-line filtration (maximum recommended volume 1800/2700L)

The standard version of the filtration unit is delivered without a filter element, before its use install an original MP Filtri filter element suitable for the type of unit being used (see filter element codes listed in Table 6.7.2 Item.5) and carry out the procedures described in Section 6.2 "Filter element installation".
The filter bypass valve can be locked by replacing the endcap with bypass (Fig. 2) with the included (Fig. 1) blind endcap (Fig. 3).
The endcap is inserted into the filter element.


Scope of supply Fig.1


Endcap with bypass Fig.2


Blind endcap Fig.3

With the bypass valve blocked pay close attention to the clogging indicator. As soon as the indicator indicates the clogged filter, turn off the filtration unit and replace the filter element.

CAUTION

6.2 Filter element installation

1


Loosen the air vent nut

2


Unscrew the cover

3


Choose endcap with bypass or blind endcap

4

Fig.4

Fig.5

Insert the endcap with bypass (Fig. 4) or the possibly selected blind endcap (Fig. 5) in the filter element

5


Insert the filter element into the filter body

6


Screw on the cover

7


Make sure the air vent is closed

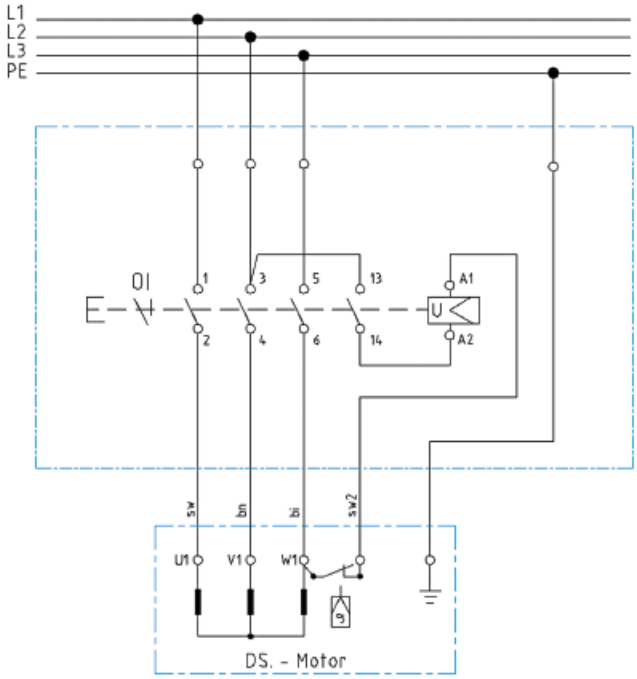
These operations must be performed with the machine off. Do not turn on the unit without first installing the filter element.

CAUTION

We recommend using only original MP Filtri filter cartridges.

NOTE

6.3 Wiring diagram



6.3.1 Electrical connection

The trolley must be connected via the plug supplied to the power supply, checking:
- the laws and technical specifications valid in the place and at the time of installation
- that the power supply voltage and the frequency at the connection point are compatible with those indicated on the rating plate of the mobile filtration unit
- the data shown on the rating plate.

It is recommended to use a multi-wire cable with a minimum cross-section of 4 x 2,5 mm^2 for the econnection of the electric motor.
The red plug indicates a three-phase motor, the blue plug a single-phase motor.
The supply voltage must correspond to the voltage specified on the rating plate.

The construction features of the electric cable guarantee great flexibility, excellent resistance to weather conditions, oils and greases, mechanical and thermal stresses: Standard IMQ-CPT-007, CEI EN 50525-2-2.
Compliant with requirements of the BT 2006/95/CE directives.

The terminal box contains metal elements that are under hazardous voltage; after making the connections, always close the box cover.

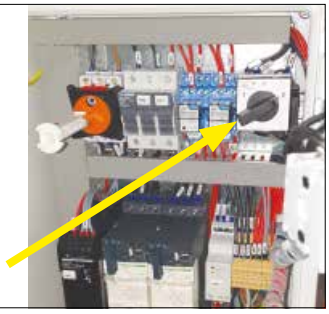
NOTE

6.3.2 Triangular electrical connection of a three-phase motor

This motor is connected to the three-phase line, which can be 230V or more commonly 400V. Since the windings that make up the motor must be powered at 230V, the connection must be made in the following manner:

- Delta connection: this connection applies the same voltage to the windings as to the line.

To be able to change the direction of rotation it is sufficient to turn the selector (see photo on the right).



6.3.3 Electrical connection of a single-phase motor - not applicable for UFM919

6.3.4 Electrical panel

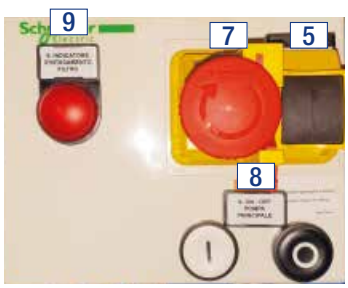
Version with three-phase motor

UFM919TA3020P01

Version with three-phase motor and particle counter

UFM919TA3021P01

Labels on the electrical panel



Version with electric/optical differential pressure indicator

Version with electric/optical differential pressure indicator and particle counter

6.3.5 Electrical panel labels

NOTE

Pos.	Translation of electrical panel labels				
	ENGLISH	ITALIAN	FRENCH	GERMAN	SPANISH
1	VOLTAGE ON	TENSIONE	APPAREIL SOUS TENSION	SPANNUNG EIN	TENSIÓN ACTIVA
2	PHASE REVERSE	FASE ROVESCIA	INVERSION DE PHASE	PHASENUMKEHR	INVERSIÓN FASE
3	ICM ALARM	ALLARME ICM	ALARME ICM	ALARM ICM	ALARMA ICM
4	THERMAL ALARM	TERMICO	ALARME THERMIQUE	WÄRMEALARM	ALARMA TÉRMICA
5	ON-OFF GENERAL	ACCESO/SPENTO	INTERRUPTEUR MARCHE/ ARRÊT GÉNÉRAL	EIN-/AUSSCHALTER	ON-OFF GENERAL
6	PHASE INVERTER	INVERTITORE DI FASE	INVERSEUR DE PHASE	PHASENUMKEHRSCHALTUNG	INVERSOR FASE
7	EMERGENCY STOP	STOP EMERGENZA	ARRÊT D'URGENCE	NOTABSCHALTUNG	PARADA EMERGENCIA
8	ON-OFF MAIN PUMP	ON-OFF POMPA PRINCIPALE	MARCHE/ARRÊT POMPE PRINCIPALE	EIN-AUS HAUPTPUMPE	ON-OFF BOMBA PRINCIPAL
9	FILTER ELEMENT CLOGGING	INDICATORE D'INTASAMENTO FILTRO	ÉLÉMENT FILTRANT OBSTRUÉ	FILTEREINSATZ VERSTOPFT	ATASCO ELEMENTO FILTRO
10	ON-OFF COUNTER AND AUXILIARY PUMP	ON-OFF CONTATORE E POMPA SECONDARIA	MARCHE/ARRÊT COMPTEUR ET POMPE AUXILIAIRE	EIN-AUS ZÄHLER UND HILFSPUMPE	ON-OFF CONTADOR Y BOMBA AUXILIAR

The mobile filtration unit is supplied with labels in English

NOTE

6.4 Use

6.4.1 Installation

The mobile filtration unit must be positioned in a place that guarantees its stability during use.

TRANSFER
Connect/immerse the metal suction lance (IN) to the tank or to the drum, immerse the discharge hose (OUT) in the machine tank or in the drum which should be transferred to.
If the transfer oil has to be cleaned, it is advisable to filter the oil contained in the drum or tank several times before being transferred.
In this case immerse the metal suction lances (IN) and the discharge lances (OUT) in the drum or oil tank to be transferred. Be careful that the lances remain below the level of the oil to be transferred in order to avoid foaming and cavitation; space the ends of the two lances as far as possible from each other in order to recirculate all the fluid and not generate an emulsion.

FILTRATION
Immerse the metal suction lances (IN) and the discharge lances (OUT) inside the tank far from each other, possibly positioning them at different heights (100 mm suction from the tank bottom, immersed delivery for a minimum of 200 mm).

Make sure that the tubes/lances are properly fixed or perfectly stable before starting.
Be careful not to mix up the suction and discharge hoses. The suction hose (IN) is the one with the largest diameter.

The discharge lance must in general have unrestricted flow. It is prohibited to install taps or components on both hoses that may obstruct or reduce the flow of the fluid.

CAUTION

6.4.2 Power on

Insert the electric plug into a three-phase socket (Fig. 6) depending on the version (check the voltage).
Check the direction of rotation in the version with three-phase motor: Operate the switch for a few seconds and observe the direction of rotation of the electric motor. The direction observed on the fan side must be clockwise, otherwise the phases L1 and L2 must be inverted (Fig. 7). NOTE
Three-phase electric power supply with protective conductor is required for the power supply of the trolley.

Electrical connection for the three-phase motor (5 poles plug) Fig.6

Phase inverter only for version with ICM2.0 particle counter Fig.7

5 poles plug for the three-phase motor

Before starting up the electric motor, make sure that the suction lance (IN) is immersed in the fluid. CAUTION

Operate the switch for a few seconds and observe the direction of rotation. The direction observed on the fan side must be clockwise, otherwise the phases L1 and L2 must be inverted. NOTE

Models:
UFM919TA3020P01

Once the plug has been inserted, press the button a (Fig. 8 - general power supply), press the ignition switch "I" on the electrical panel (Fig. 9).
At this point the transfer and filtration of the fluid begins.

Button
general power supply

Fig.8
With electric indicator

Button
ON/OFF

Fig.9
With electric indicator

Models:
UFM919TA3021P01

Once inserted, turn the switch to "I" (Fig. 10 - General power supply), then press the on button "I" on the electrical panel (Fig. 11).
At this point the transfer and filtration of the fluid begins.

Button
general power supply

Fig.10
With electric indicator and particle counter

Button
ON/OFF

Fig.11
With electric indicator and particle counter

6.4.3 Air vent

When the unit is turned on for the first time after having inserted or replaced the filter element, drain the air inside the filter body using the vent valve (Fig. 12) on the cover. Once the air has been removed, close the vent valve.

Air vent Fig.12

Collect the oil in a container and dispose of it in accordance with the regulations in force.

NOTE

6.4.4 Oil analysis with particle counter

The ICMWMKUG12.0 series particle counter versions allow contamination counting and classification according to the international standards ISO4406 - NAS1638 - AS4059 Tab.1 - AS4059 Tab.2.
The particle counter also supplies the value of the water content in the oil and the temperature via an internal sensor.
It is possible to program the particle counter by connecting it via the ICMUSBI module (supplied) to a Personal Computer.
It is possible to enter a default value for the cleanliness class (according to the regulations used). NOTE
When this value is reached, the unit switches off automatically.

Motor/pump assembly and pressure relief valves for the use of the particle counter

Start/Stop auxiliary pump for particle counter Fig.13

Manual activation of particle counter Fig.14

To commission the ICM, switch on the auxiliary pump and the particle counter using the selector in the electrical panel (Fig. 13), then wait 5 minutes after switching on before counting. To carry out the count, activate the particle counter button (Fig. 14).

Before starting the particle counter auxiliary pump, make sure that the main pump has been running for about 5-6 minutes and that the hoses are full of oil.

CAUTION

The instruction manual, the programming of the particle counter, the software and the installation drivers are contained in the included USB stick in the section "ICM User Manual".

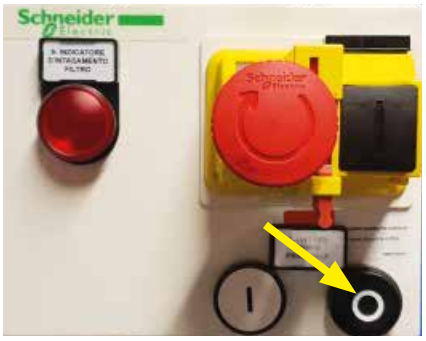
NOTE

6.4.5 Shutdown

Models:
UFM919TA3020P01

Once the operations have been completed, switch off the electric pump, press the shutdown button to "0" on the electrical panel (Fig. 15) and disconnect the electrical connection plug.

Button
ON/OFF



With electric indicator Fig.15

Models:
UFM919TA3021P01

Once the operations have been completed, switch off the electric pump, press the button "0" on the electrical panel (Fig. 16), turn the shutdown switch to "0" (Fig. 17 - General power supply) and disconnect the electrical connection plug.
If the particle counter is used, switch off the auxiliary unit before the main electric pump by turning the pump shut-off switch (Fig. 18).

Button
ON/OFF

With electric indicator and particle counter Fig.16

Button
general power supply

With electric indicator and particle counter Fig.17

Button
ON/OFF

With electric indicator and particle counter Fig.18

Put the lances in their respective housings (⚠ - Fig. 19), anchored to the frame paying attention to the fluid still present in the hoses. Rewind the power supply cable.

Lance holders Fig.19

The UFM919 is equipped with a thermal protection device against electrical overloads, short circuits and overheating. If a "BLOCK" occurs, check the operating conditions (e.g. clogged filter, fluid conditions, motor overheating, etc.) and reset the thermal protection by pressing the appropriate button on the side of the motor terminal box.

With oil temperatures above 40/45° C, give special caution to the handling of the metal lances/tubes and movement of the trolley. Avoid direct contact with hot oil, the mobile filtration unit and its installed components.

⚠ *CAUTION*

6.4.6 Operating limits and environmental limits

The trolley is designed to operate at a maximum pressure of 10 bar.
The electric motor is designed to operate according to the rating plate data.
For use in environments with very cold or very hot temperatures, refer to the technical data provided in Section 5.

6.5 Normal and scheduled maintenance

The UFM919 does not require particular maintenance interventions, it is in any case a good rule to check the perfect condition of the suction and discharge hoses before each use. Check that the filter element is correctly installed and that the filter cover is tightly screwed on.
Periodically check the tightness of the hydraulic connections and if the electrical cable ends in the motor terminal box are tight. Also check the cleanliness of the "Y" shaped filter for any accumulated macro impurities, so as to preserve the filter element (CU4006).
Check the expiration date of the particle counter calibration certificate.

To keep the efficiency of the particle counter high, it is advisable to send it once a year to our headquarters for inspection, monitoring, testing on the test bench and issuing a new calibration certificate.

CAUTION

6.5.1 Oil leaks

Oil leaks can form on the joints of the hoses and on fittings if any connections or screws are loosened, in which case we recommend checking the correct tightness.
If the operations described above are not able to solve the problem, contact the manufacturer.

6.6 Filter clogging

- *Versions with electric/visual differential pressure indicator for blockage*
UFM919TA3020P01 - UFM919TA3021P01

The conditions related to the blockage of the filter element are ensured by an electric indicator (Fig. 20) mounted on the head of the LMP430 filter. When the differential pressure of 3 bar is reached, the electric signal switches off the machine and turns on the light on the electrical panel. Replace the filter element.

All models are equipped with a pressure gauge (Fig. 21) with 10 bar full scale to measure the circuit pressure.
For signalling the clogged filter, refer to the differential pressure indicators.
The LMP430 filter is equipped with a bypass valve with a response pressure set at 3.5 bar.

Version with visual/electric indicator Fig.20

Pressure gauge Fig.21

It is recommended to never exceed the response pressure of the bypass valve (3.5 bar).

CAUTION

6.6.1 Replacing the filter element

Before proceeding with the replacement of the filter element, make sure that the oil temperature is lower than +40/45° C.
Replace the filter element whenever necessary, i.e. whenever the differential pressure indicator indicates a clogged filter or when different fluids must be filtered.
The filtration of the filter element takes place from the outside to the inside, drain the residual oil into the body as it is not normally clean.
The oil must always be emptied using the drain valve (Fig. 22) located at the base of the filter body, clean the inside of the container.
It is recommended to clean the filter cover carefully before beginning the operations for replacing the filter element.

1

Open the vent valve

2 Fig.22

Drain the oil using the oil drain

3

Unscrew the filter cover

4

Remove the filter element

5

Remove the bypass or blind endcap

6

Make sure the container is securely tightened

7 Fig.23

Fig.24

Insert endcap w/ bypass (Fig. 23) or possibly used blind endcap (Fig. 24) in the new filter element

8

Insert the new filter element

9

Screw on the cover

10

Close the air vent

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

6.6.2 Air vent

When the unit is first turned on after replacing the filter element, drain the air inside the filter body using the vent valve (Fig. 25) on the cover. Once the air has been removed, close the vent valve.

Air vent Fig.25

Collect the oil in a container and dispose of it in accordance with the regulations in force.

NOTE

6.6.3 Replacing and cleaning of the filter in the suction line

Regularly (every 6 months or if you hear pump cavitation noises) check the blockage status of the suction filter and clean or replace it if necessary.

Suction filter

Unscrew the nut and remove the filter element

Collect the replaced oil and filter element in a container and dispose of it in accordance with the regulations in force.

NOTE

Any intervention must be carried out with the machine off. Always remember to unplug the power supply.

CAUTION

UFM919

6.7 Designation & Ordering code

MOBILE FILTRATION UNIT UFM 919

Configuration example: UFM | 919 | T | A | 3 | 0 | 2 | 0 | P01

Series
UFM

Size
919 90-180 l/min

Electric motor
T 400/230V Three phase - 2/4 pole

Seals
A NBR

Pressure gauges and Clogging indicators
3 Manometer + Electrical/Visual Differential Clogging indicator

Filter element
0 Without element

Filtration surface
2 Higher

Option
0 No options
1 ICM 2.0 particle counter

Option
P01 MP Filtri standard
Pxx Customized

Filtration element should be ordered separately

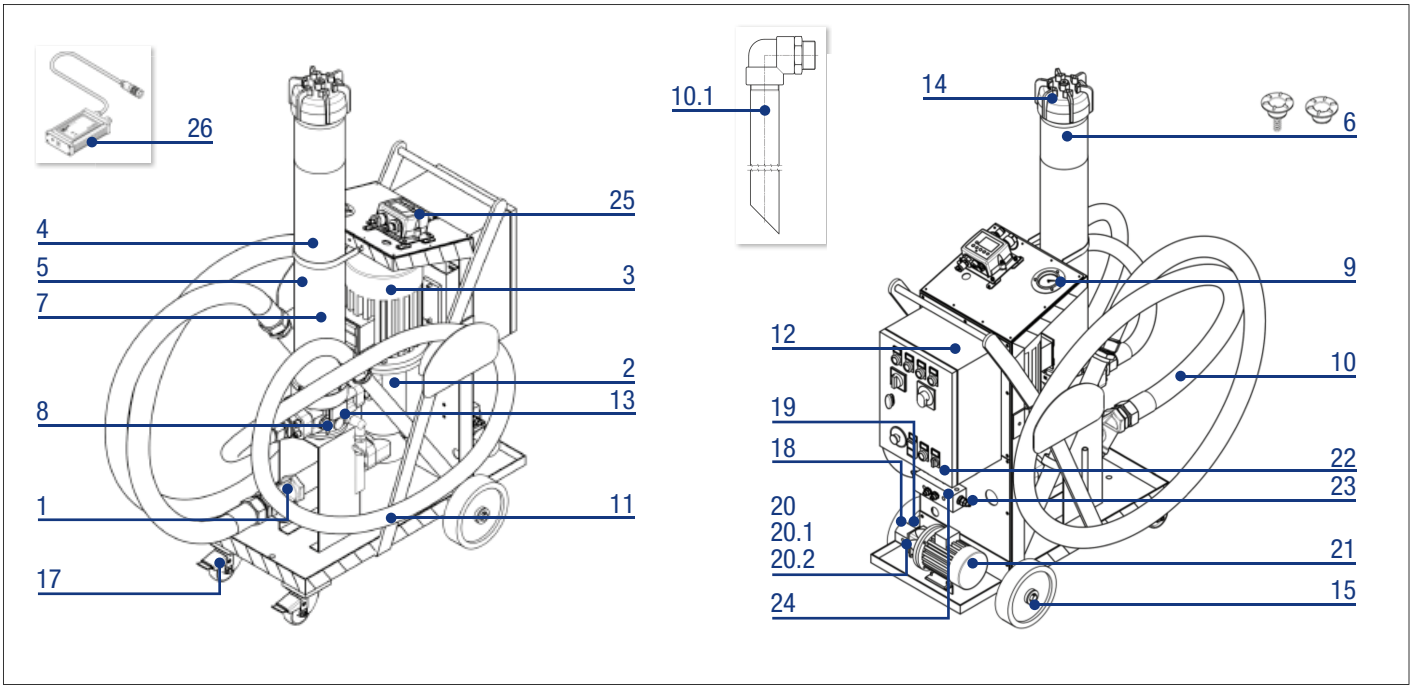
FILTRATION SURFACE - HIGHER

Inorganic microfibre	Wire mesh element
CU 400 6 A01 A N P01	CU 400 6 M25 A N P01
CU 400 6 A03 A N P01	CU 400 6 M60 A N P01
CU 400 6 A06 A N P01	
CU 400 6 A10 A N P01	
CU 400 6 A16 A N P01	
CU 400 6 A25 A N P01	

WATER REMOVAL - FILTRATION SURFACE 1 - HIGHER

Multi-Layer water absorber
CU4006WA025ANP01

6.7.1 Spare parts



6.7.2 List of spare parts

Position	Series	Description	Code	Quantity
1	UFM919TA3020P01 UFM919TA3021P01	Y-shaped filter 2" BSP - 900micron	02200041	1
2	UFM919TA3020P01 UFM919TA3021P01	GR45 SMT16B-180L/AC28 B5 RF3 Screw pump with integrated pressure relief valve	02200042	1
3	UFM919TA3020P01 UFM919TA3021P01	3-phase el. motor 3.7/5 kW 2/4P B3B5 IP55 400/230V 50/60Hz CLASS IE3	02200035	1
4	UFM919TA3020P01 UFM919TA3021P01	Increased filter length	LMP4306BAF1P02	1
5	UFM919TA3020P01 UFM919TA3021P01	Microfibre filter element 1µm Microfibre filter element 3µm Microfibre filter element 6µm Microfibre filter element 10µm Microfibre filter element 16µm Microfibre filter element 25µm Filter element in 25µm wire mesh Filter element in 60µm wire mesh Water absorber filter element	CU4006A01ANP01 CU4006A03ANP01 CU4006A06ANP01 CU4006A10ANP01 CU4006A16ANP01 CU4006A25ANP01 CU4006M25ANP01 CU4006M60ANP01 CU4006WA025ANP01	1
6	UFM919TA3020P01	Endcap with 3.5 bar bypass	02001414	1
	UFM919TA3021P01	Blind endcap without bypass	01044108	
7	UFM919TA3020P01 UFM919TA3021P01	Gasket kit for LMP430 filter	02050393	1
8	UFM919TA3020P01 UFM919TA3021P01	Optical/electric differential pressure indicator	DLA30HA51P01	1
9	UFM919TA3020P01 UFM919TA3021P01	Pressure gauge	MGF63G10	1
10	UFM919TA3020P01 UFM919TA3021P01	Flexible suction hose DN50 L = 3000mm Inclined cut lance DE50 L = 700mm	02200044	1
10.1	UFM919TA3020P01 UFM919TA3021P01	Lance 90° for suction of oil from the drums Inclined cut lance DE38 L = 700mm	02200036	1

>> NEXT

>> NEXT

List of spare parts

Position	Series	Description	Code	Quantity
11	UFM919TA3020P01 UFM919TA3021P01	Flexible delivery hose DN38 L = 3000mm Inclined cut lance DE42 L = 700mm	02200043	1
12	UFM919TA3020P01 UFM919TA3021P01	Electrical panel three-phase version + cable and CEE plug	02200037 02200038	1
13	UFM919TA3020P01 UFM919TA3021P01	Discharge valve	02200039	1
14	UFM919TA3020P01 UFM919TA3021P01	Air vent valve	02200040	1
15	UFM919TA3020P01 UFM919TA3021P01	Fixed wheel Ø200x50x20mm. Blue polyurethane coating and black polyamide structure	02200045	2
16	UFM919TA3020P01 UFM919TA3021P01	Swivel wheel with Ø80x30x20mm lock. Blue polyurethane coating and black polyamide structure	02200046	1
17	UFM919TA3020P01 UFM919TA3021P01	Swivel wheel Ø80x30x20mm. Blue polyurethane coating and black polyamide structure	02200047	1
18	UFM919TA3021P01	025-D-18 gear pump	02200048	1
19	UFM919TA3021P01	Pump bracket	LMG140MFS05M4SANU	1
20	UFM919TA3021P01	Pump side half-coupling	SGEA01FS05M	1
20.1	UFM919TA3021P01	Motor side half-coupling	SGEA01M01021FG	1
20.2	UFM919TA3021P01	Elastic wheel	EGE0	1
21	UFM919TA3021P01	Single-phase electric motor 0.18 kW 4P B3/B5 CLASS IE3	02200049	1
22	UFM919TA3021P01	Valve lock	02200050	1
23	UFM919TA3021P01	Relief valve	02200051	2
24	UFM919TA3021P01	1/4” pressure mini-plug	02200052	2
25	UFM919TA3021P01	Particle counter	ICMWMKUG12.0	1
26	UFM919TA3021P01	Communication module	ICMUSBI	1
27	UFM919TA3020P01 UFM919TA3021P01	Adapter for 5 to 4 poles plug for the three-phase motor	XXXXXX	1

UFM919

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