



Operating Manual FUH050-FUH100

TRANSFER AND FILTRATION PORTABLE UNIT



Read the safety and operating instructions before use!

EMPTY UNIT: fit the filter element before use

SUMMARY

1	SAFETY REGULATIONS.....	3
2	FEATURES OF THE UNIT.....	4
3	FUH050 - HYDRAULIC AND ELECTRIC SCHEMES.....	5
3.1	HYDRAULIC SCHEME FUH050	5
3.2	ELECTRICAL SCHEME FUH050T... (three phase).....	6
3.3	ELECTRICAL SCHEME FUH050M... (single phase)	7
4	FUH100 – HYDRAULIC AND ELECTRIC SCHEMES	8
4.1	HYDRAULIC SCHEME FUH100	8
4.2	ELECTRICAL SCHEME FUH100T... (three phase).....	9
4.3	ELECTRICAL SCHEME FUH100M... (single phase)	10
5	MOVING THE UNIT	11
6	INSTRUCTIONS OF USE.....	12
6.1	FILTER ELEMENT INSTALLATION.....	12
6.2	SUSTAINED FLUID OPERATIONS.....	14
6.3	ELECTRICAL CONNECTION.....	15
6.4	AIR PURGING PROCEDURE FOR INITIAL FILTER ELEMENT INSTALLATION	16
6.5	SHUTDOWN	16
6.6	PARTICLES COUNTER	18
7	MAINTENANCE	19
7.1	FILTER MAINTENANCE	20
8	IN CASE OF ANOMALY.....	20
9	EC DECLARATION OF CONFORMITY	21 22
10	WARRANTY.....	23
11	ORDERING INFORMATION SPARE ELEMENTS	23
12	USED FILTER ELEMENTS LOGBOOK	24

Enclosures:

- Declaration of Conformity CE
- Technical data sheet of the unit

1 SAFETY REGULATIONS

1. The unit can be used by authorized and trained personnel only after they have read and UNDERSTOOD this manual.
2. This manual must be given to the operator and kept. The unit's holder is responsible for it.
3. **WARNING!** Improper use of the unit can be dangerous due to pressurized oil.
4. Transfer and filtration operations are safe if the regulations listed below are followed.
5. Always ensure you work in safe conditions and never in precarious situations.
6. The operator must be informed and trained about the content of this manual, and their understanding must be verified.
7. The operator is responsible for the correct use of the unit, based on the information provided in this manual and the training received.
8. Before connecting the unit to the power supply, verify that the socket is adequately protected against overloads and short circuits.
9. Verify that the power supply voltage and frequency correspond to the data given on the unit label.
10. Use only cables, plugs, and extensions conform to the regulations in force in the country where the unit is used.
11. Before any intervention on the unit, disconnect the plug from the power supply.
12. Any maintenance and repair operations must be conducted by qualified personnel only.
13. Only original spare parts must be used to maintain the validity of the certification.
14. It is **FORBIDDEN** to operate the unit with a pressure higher than the allowed limit. Such negligence could endanger the operator and cause damage to the unit.

Exercise extra caution when handling metal lances/tubes and moving the unit with oil temperatures above 40/45°C. Avoid direct contact with hot oil and the filter housing.

The manufacturer disclaims any liability for damages caused by negligence or non-compliance with the rules contained in this manual.

2 FEATURES OF THE UNIT

The unit is designed for the transfer and offline filtration of hydraulic oil. The unit consists of:

- Support frame.
- Suction and transfer device: motor-pump group complete with IN and OUT hoses with rigid ends.
- Filtration devices: a Y type filter upstream of the pump to stop possible coarse contamination, and a main filter on the outlet line. The unit is initially supplied without a filter element; before use, a filter element with proper media must be fitted.
- Safety device against risks during unit operation: a switch with protection from overloads and shortcuts. The motor can only start by voluntarily pressing the start button; **during unit operation, the operator must always be present.**

TECHNICAL AND DIMENSIONAL DATA	VALUES
Power	FUH050: 1.5 Kw FUH100: 2.2 Kw
Drive	Electrical, three phase (single phase on request)
Supply voltage	FUH050: 220/230 Vac 50/60 Hz FUH100: 380/400 Vac 50/60 Hz
Electric motor	FUH050: 4P - B5 FUH100: 4P - B5
Overall dimensions (LxPxH)	FUH050: 730 x 950 x 1110 mm FUH100: 730 x 950 x 1320 mm
Weight	FUH050: 130 Kg FUH100: 155 kg
Max working pressure	FUH050: 5 bar FUH100: 15 bar
Max pump flow rate	FUH050: 50 l/min FUH100: 100 l/min
Hydraulic oil	HH-HL-HM-HV-HETG-HEES (acc. To ISO6743/4)
Hydraulic oil viscosity	10 cSt to 800 cSt

The unit is suitable for use in environments with the presence of dust or fluids, with a protection degree of IP55; however, it is NOT suitable for use in hazardous areas Ex (per ATEX directive).

3 FUH050 - HYDRAULIC AND ELECTRIC SCHEMES

3.1 HYDRAULIC SCHEME FUH050

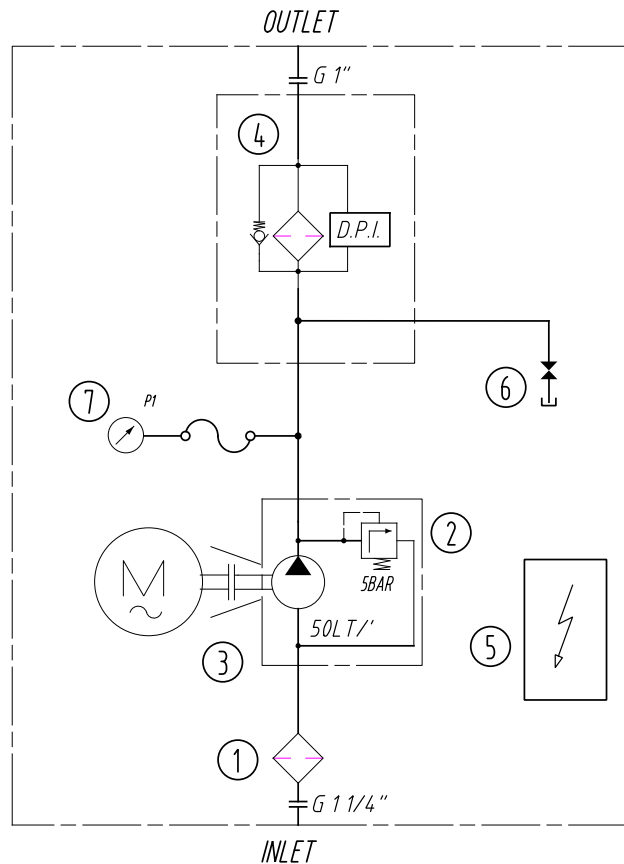
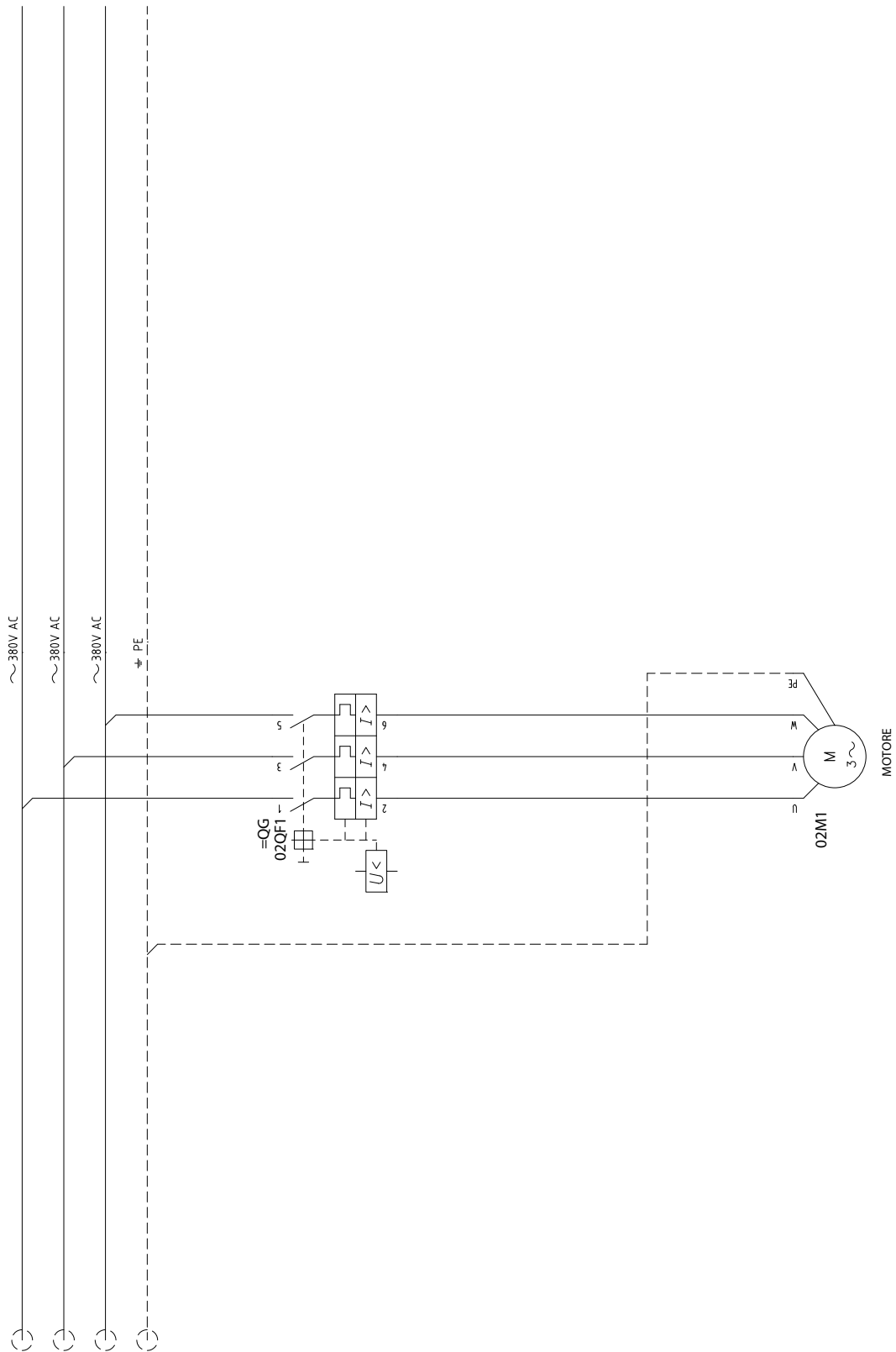


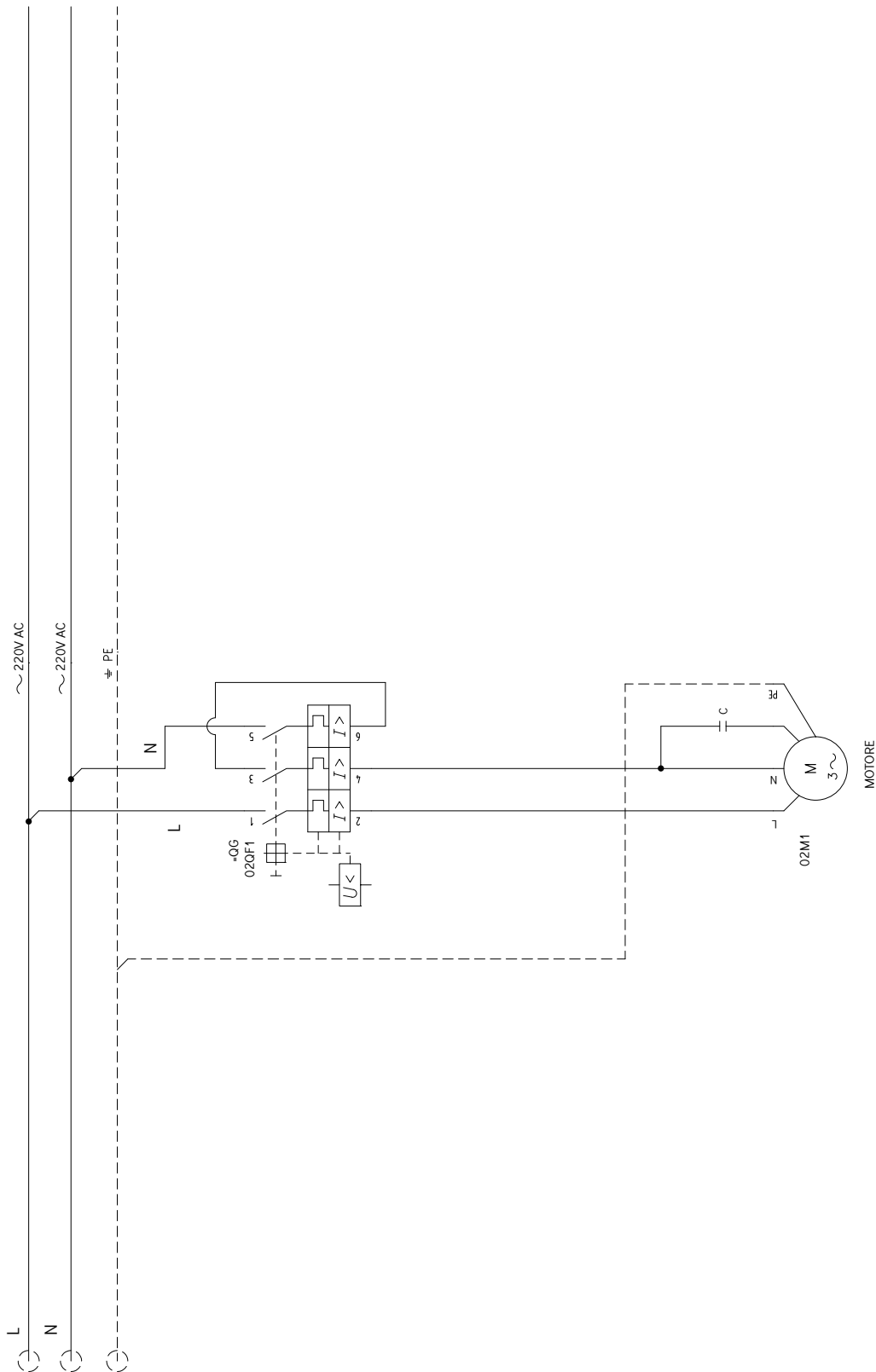
Table 2: COMPONENT LIST FUH050

POS	ITEM	DESCRIPTION
1	B72020013000000	Suction filter "Y"
2	P111072500000N	Gear pump 50 l/min.
3	99200ME4F2UN + 990424 + 99S04 + 99042UN	Motor-pump coupling arrangement
	M254090400200M	Electric motor 1,5 kw
4	FLRU562000B0F10MA2000A1	Filter Head
	U562xxx	Filter element
5	04.006.00119	VISUAL clogging indicator
	K1200266804000	Control panel
6	R402AIG6310380	Sampling drain valve
7	F40NNGFI630101	Pressure gauge

3.2 ELECTRICAL SCHEME FUH050T... (three phase)



3.3 ELECTRICAL SCHEME FUH050M... (single phase)



4 FUH100 – HYDRAULIC AND ELECTRIC SCHEMES

4.1 HYDRAULIC SCHEME FUH100

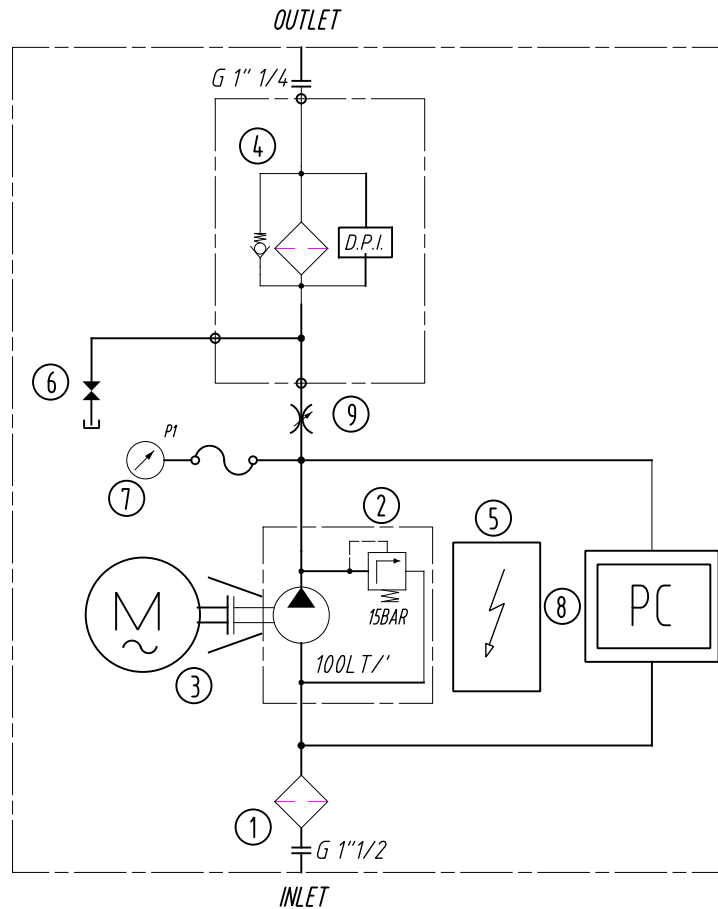
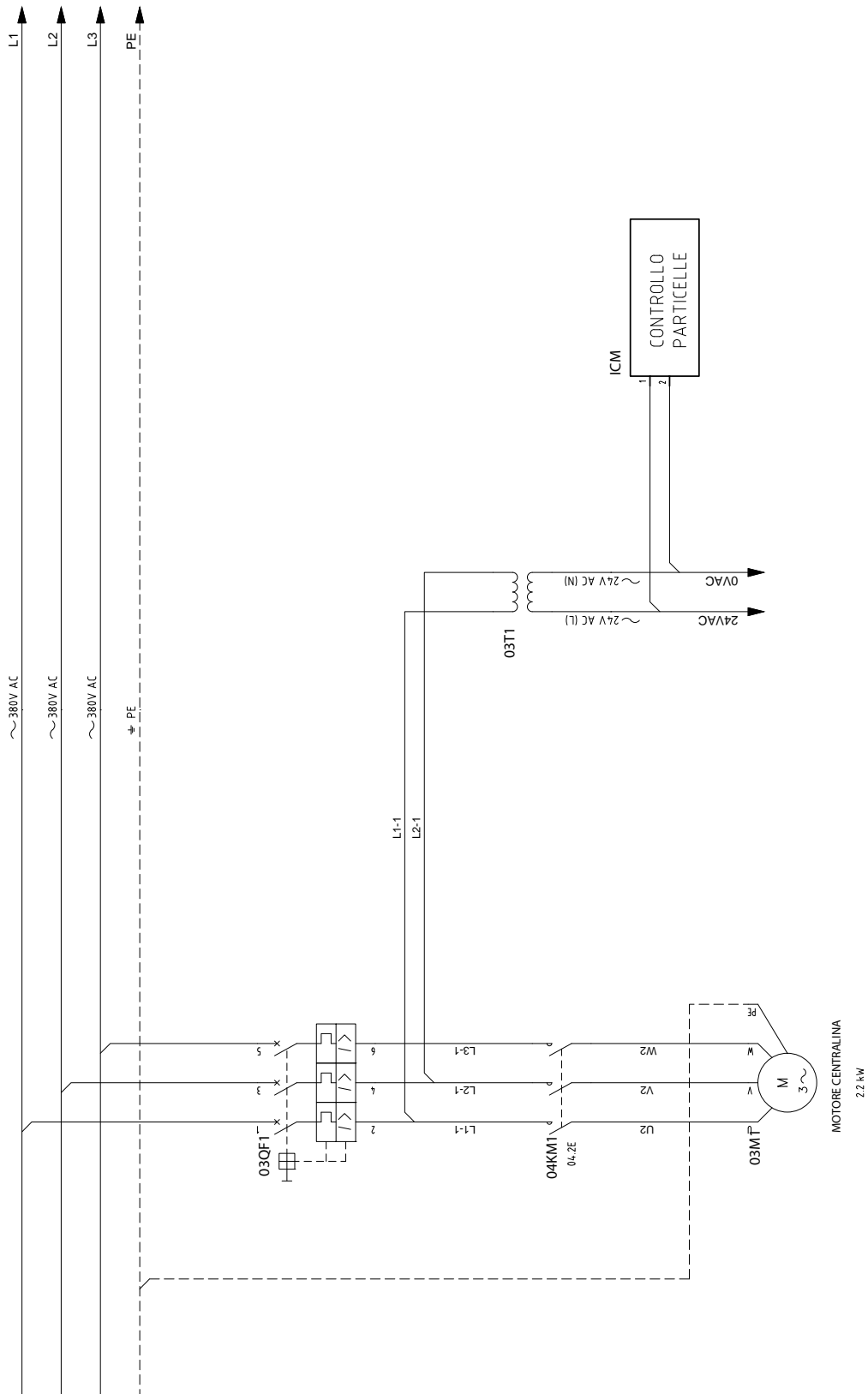


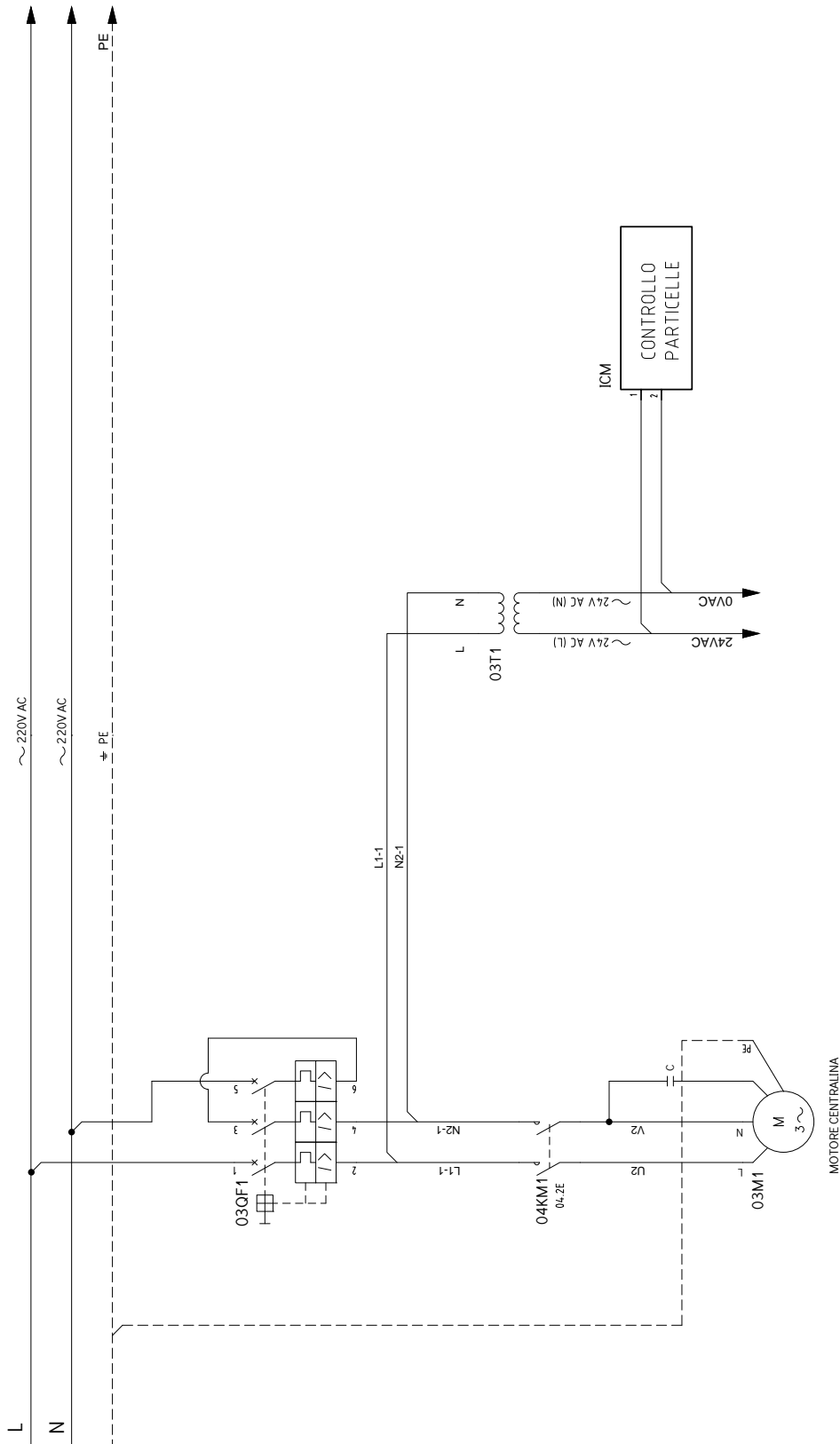
Table 3: COMPONENT LIST FUH100

POS	ITEM	DESCRIPTION
1	B7020038000000	Suction filter "Y"
2	P7500801180072	Gear pump 100 l/min.
3	99200ME4F2UN + 990424 + 99S04 + 99042UN M254090400200M	Motor-pump coupling arrangement Electric motor 2,2 kw
4	FLRU564000B0F10MA2000A1 U564xxx 04.006.00338	Filter Head Filter element VISUAL / ELETTRIC clogging indicator
5	K1200266804000	Control panel
6	R402AIG6310380	Sampling drain valve
7	F40NNGFI630101	Pressure gauge
8	04.006.00187	Particles Counter
9	05.008.01039	Flow restrictor valve

4.2 ELECTRICAL SCHEME FUH100T... (three phase)



4.3 ELECTRICAL SCHEME FUH100M... (single phase)



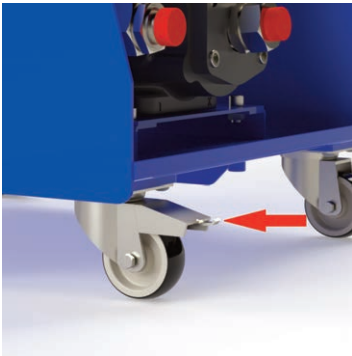
5 MOVING THE UNIT

Personal protective equipment to be used:

- Gloves: mechanical risks (EN 388): resistance to abrasion
- Shoes with steel toe cap (UNI 8615/2 – EN 345)



To transport the unit, utilize the designated handle.



When the transportation is completed, secure the unit by engaging the lever on the right wheel.



In case of handling by third-party devices (e.g., hoists), the unit must be securely held or fixed in place.

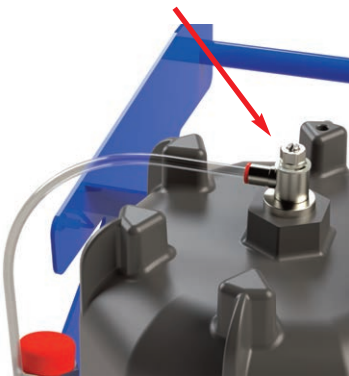
6 INSTRUCTIONS OF USE

Personal protective equipment to be used:

- Gloves:
 - mechanical risks (EN 388): resistance to abrasion
 - chemical risks (UNI EN 374): see the safety data sheet of the fluid used.
- Shoes with steel toe cap (UNI 8615/2 – EN 345)
- Protective glasses (EN 166 CE)

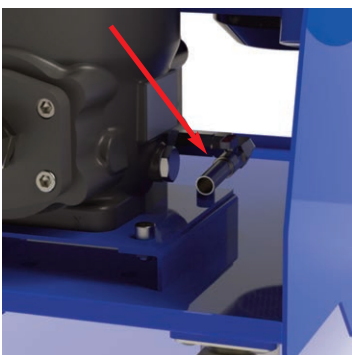
The standard version of the filtration unit is provided without a filter element. Before use, it is essential to install a suitable FILTREC element and adhere to the procedure detailed in the subsequent section titled "Filter Element Installation." This procedure must also be applied as soon as the indicator indicates a clogged filter. In this case, turn off the filtration unit and replace the filter element following the prescribed procedure. Fit the filter element, having the filtration degree suitable to get the target cleanliness level. We recommend using only original FILTREC elements.

6.1 FILTER ELEMENT INSTALLATION



Make sure that the system is switched off and there is no residual pressure in the filter.

Loosen vent screw (refer to image)



Drain oil (in case of replacement of the filter element).



Unscrew the grub screws of the filter bowl
Unscrew filter bowl counter-clockwise.
Lift out filter element (in case of replacement of the filter element).
Check seal on filter bowl. We recommend replacement in any case.



To ensure no contamination occurs during the exchange of the element, first open the plastic bag, then push the element over the spigot in the filter head. Now remove plastic bag.
Push the element carefully over the spigot



Tighten the grub screws of the filter bowl
Tighten drain plug in housing bottom.
Tight vent screw.
The used filter elements cannot be cleaned and re-use

6.2 SUSTAINED FLUID OPERATIONS

The mobile filtration units are designed to accommodate the following fluid operations:

- Off-line filtration
- Filtration during fluid transfer

FILTRATION



In this case, insert and position the suction and delivery lances into the oil drum to be filtered. Ensure that the nozzles are positioned below the oil level to prevent foam formation and potential cavitation. Space the ends of the two lances as far apart as possible, also securing them at different heights, to ensure thorough fluid circulation and prevent emulsion formation. Typically, in containers equipped with only one lance, they should be positioned in an X configuration.

TRANSFER



Insert the suction pipe into the oil to be drawn (tank or drum), ensuring that the rigid end (lance) is fully immersed and securely fixed. Position the delivery pipe either in the tank of the hydraulic system to be filled or in another drum, and secure the pipe in place. Ensure that the lances remain submerged below the oil level to prevent foaming and potential pump cavitations

WARNING: The lances must generally have unrestricted flow. Installing taps or components on both hoses that may obstruct or reduce the flow of fluid is prohibited.

WARNING: Make sure that during operation, the inlet hose is always filled with the oil, its direction is toward the pump, and there are no obstruction present.

6.3 ELECTRICAL CONNECTION

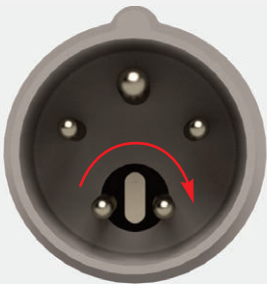
After ensuring that the power supply meets the required voltage and frequency, insert the plug into the main power socket.

Prior to starting the electric motor, ensure that the suction lance (IN) is immersed in the fluid.



CAUTION: Electrical Connection of a Three-Phase Motor

With a three-phase electric motor, it is crucial to pay special attention to the orientation of the electrical phases before operating the unit. Activate the switch for a brief period and observe the rotation direction. If the motor rotates in the opposite direction to the arrow indicated on the motor, the phases of the socket must be reversed by adjusting the five-pole CE plug socket accordingly (see the image, press and rotate with a fine screwdriver for a 180° rotation).



FUH050 SERIES

Once the plug has been inserted, press the button labeled "I" to start the unit. At this point, the transfer and filtration of the fluid begins. To stop the operation, press the RED button.



FUH100 SERIES

Once the plug has been inserted, press the black button (1) and then the button labeled "START" (2) to start the unit. At this point, the transfer and filtration of the fluid begins. To stop the operation, press the button labeled "STOP" (3).

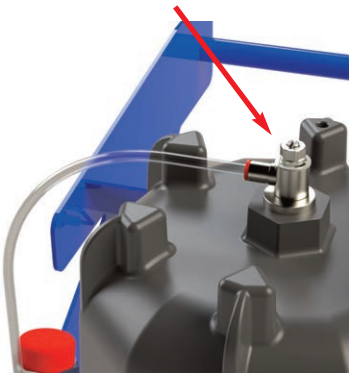


WARNING: In case of EMERGENCY, press the red emergency button. Once the emergency has been resolved, restart the unit by pressing the black button located adjacent to the emergency button.

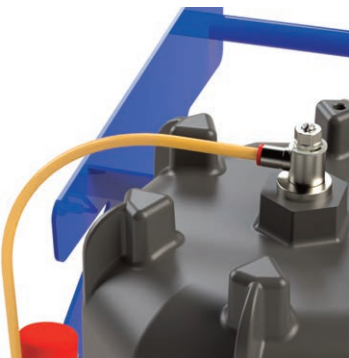
WARNING: In case of a power outage, once the power is restored, restart the unit by pressing the black button located adjacent to the emergency button.

WARNING: Avoid the pump working for an extended period in the absence of oil to prevent wear.

6.4 AIR PURGING PROCEDURE FOR INITIAL FILTER ELEMENT INSTALLATION



When turning on the unit for the first time after inserting or replacing the filter element, purge the air inside the filter body using the vent valve on the cover.



Once the air has been expelled, close the vent valve.

6.5 SHUTDOWN



FUH050 SERIES

To stop the operation, press the RED button.



FUH100 SERIES

To stop the operation, press the button labeled "STOP".

Disconnect the main power plug from the generator.



When the operation is completed, rewind the power cable, inlet, and outlet hoses. Exercise caution when draining the oil contained in them and insert the ends of the hoses into the designated cases. Exercise extra caution when handling metal lances/tubes and moving the unit with oil temperatures above 40/45°C. Avoid direct contact with hot oil and the filter housing.

6.6 PARTICLES COUNTER

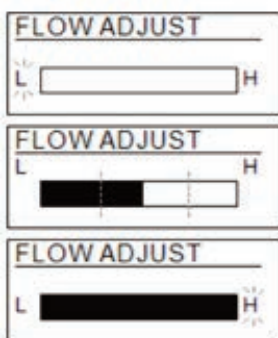
The FUH100 SERIES is equipped with the FMSC particles counter. This compact and precise device allows for continuous monitoring of solid particles in hydraulic and lubricant fluids. It calculates and displays results in accordance with ISO 4406, SAE AS4059, NAS 1638, and GOST 17216 standards. For detailed information, please refer to the “Operating Manual FMSC01S0”, available on www.filtrec.com.



The FMSC particles counter automatically starts when the unit is powered on and shuts down when the unit is powered off (refer to paragraph 6.3 and 6.5 of this manual).



It must be ensured that the pressure is sufficiently high to generate a flow between 50 and 400 ml/min through the FMSC particles counters. To achieve this, adjust the flow restriction valve clockwise or counterclockwise until the flow measured by the particles counter falls within this range.



To read the flow rate, use the [▲] or [▼] buttons and to scroll through the entries until the “flow settings” menu appears. Then press the select button [←] to jump to the next level and read the flow rate. If the flow is automatically determined, this is shown via a bar graph. The bar is scaled from 50 to 400 ml/min. The display is updated every 10 seconds. The flashing letters L (Low) or H (High) signalize a fall below or a rise above the threshold and must be avoided.

Go back by pressing the [▲] and [▼] button simultaneously.

7 MAINTENANCE

Personal protective equipment to be used:

- Gloves:
 - mechanical risks (EN 388): resistance to abrasion
 - chemical risks (UNI EN 374): see the safety data sheet of the fluid used.
- Shoes with steel toe cap (UNI 8615/2 – EN 345)
- Protective glasses (EN 166 CE)

The unit does not require specific maintenance interventions. However, it is advisable to inspect the suction and discharge hoses for optimal condition before each use. Ensure that the filter element is properly installed and that the filter cover is securely fastened.

CHECK	FREQUENCY
Visual check of seals and hoses	Monthly
Filter element replacement	Refer to paragraph 7.1
Check of electrical components (Cables, plug, grounding, pushbutton, contactor) by specialized personnel	Monthly
Replacements of hoses	Before each use the operator must check the correct conditions of the hoses
Safety relief valve: check of integrity and functionality	Every 10 years
Replacement and cleaning of the Y filter in the suction line	Every 6-12 years
Check the expiration date of the particle counter calibration certificate (only for FH100 series)	It is advisable to send it to our headquarters once a year for inspection and issuance of a new calibration certificate

For any servicing not mentioned in paragraph 7, particularly concerning the pump, motor, relief valve, and hoses, contact the manufacturer.

BEFORE ANY SERVICING



MAKE SURE THAT THE UNIT IS DISCONNECTED FROM THE POWER POINT



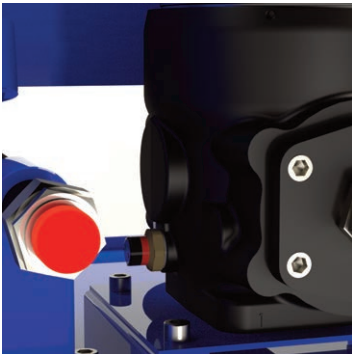
VERIFY THAT THE HOSES ENDS ARE INTO THEIR CASES



ALWAYS WORK OVER A COLLECTION BOWL TO AVOID SPILL OF OIL (see the safety data sheet of the oil used)

WARNING: To preserve the functionality of the hoses, the unit must be stored in a suitable place, avoiding prolonged exposure to the sun or temperatures below 0°C.

7.1 FILTER MAINTENANCE



FUH050 SERIES

The inline filter is equipped with a clogging indicator (pressure gauge). The element must be replaced when the pointer reaches the red sector. For filter element replacement, refer to paragraph 6.1 "Filter Element Installation".



FUH100 SERIES

The unit is equipped with an LED light indicator. The element must be replaced when the LED is activated. For filter element replacement, refer to paragraph 6.1 "Filter Element Installation".

Make sure that the used filter element, any residual oil in the IN and OUT hoses, and the collected spilled oil are disposed of according to local laws.

8 IN CASE OF ANOMALY

1. The Customer must inform the Manufacturer of any problem or defect detected.
2. The Customer can make any intervention only if authorized by the Manufacturer and following their instructions.
3. THE WARRANTY IS NOT VALID if an intervention is made on the unit without the Manufacturer's authorization.
4. THE WARRANTY IS NOT VALID if the Manufacturer detects any tampering or modifications to the unit devices.
5. THE WARRANTY EXPIRES in case of failures occurred due to carelessness, negligence or inexperience of the operator.

The Manufacturer declines all responsibility on tampered units and accidents due to improvised and not trained operator.

9 EC DECLARATION OF CONFORMITY



Dichiarazione CE di Conformità

(secondo Allegato II.A della direttiva 2006/42/CE)

EC Declaration of conformity

(according to Attachment II.A of EC Directive 2006/42/CE)

Il Fabbricante:

The Manufacturer:

FILTREC S.p.A.

Via dei Morengi,1

24060 – Telgate (BG) – ITALIA

Tel. +39 0358369001

www.filtrec.com

dichiara sotto al propria responsabilità che le unità portatili di travaso e filtrazione

declare under its own responsibility that the transfert and filtration units:

Denominazione / Denomination	Unità portatile di filtrazione e trasferimento Transfert and filtration portable unit
Modello / Model	<u>FUH050TG2BS0</u> <u>FUH050MG2BS0</u>

Sono conformi a tutte le disposizioni pertinenti della:

Conforms with all the relevant specifications of:

Direttiva Macchine 2006/42/CE - Machinery Directive 2006/42/CE

Direttiva Compatibilità Elettromagnetica 2014/30/UE - Electromagnetic Compatibility Directive 2014/30/UE

Normative Armonizzate Applicate:

Applied harmonized standards:

UNI EN ISO 12100:2010

UNI EN ISO 13857:2020

UNI EN ISO 13732-1:2009

UNI EN ISO 13849-1:2023

UNI EN ISO 13850:2015

UNI EN ISO 4413:2012

IEC EN 60204-1:2018

Persona autorizzata a costituire il fascicolo tecnico / Authorized Person to issue the technical dossier: FILTREC S.p.A.

Indirizzo / Address: Via dei Morengi,1 – 24060 TELGATE (BG) Italy

Telgate (BG),
Lì 26/02/24

Legale Rappresentante di FILTREC S.p.A.
Legal Representative of FILTREC S.p.A.

Modina Sergio



9 EC DECLARATION OF CONFORMITY



Dichiarazione CE di Conformità

(secondo Allegato II.A della direttiva 2006/42/CE)

EC Declaration of conformity

(according to Attachment II.A of EC Directive 2006/42/CE)

Il Fabbricante:

The Manufacturer:

FILTREC S.p.A.

Via dei Morengi,1

24060 – Telgate (BG) – ITALIA

Tel. +39 0358369001

www.filtrec.com

dichiara sotto al propria responsabilità che le unità portatili di travaso e filtrazione

declare under its own responsibility that the transfert and filtration units:

Denominazione / Denomination	Unità portatile di filtrazione e trasferimento Transfert and filtration portable unit
Modello / Model	<u>FUH100TS4BC1</u> <u>FUH100MS4BC1</u>

Sono conformi a tutte le disposizioni pertinenti della:

Conforms with all the relevant specifications of:

Direttiva Macchine 2006/42/CE - Machinery Directive 2006/42/CE

Direttiva Compatibilità Elettromagnetica 2014/30/UE - Electromagnetic Compatibility Directive 2014/30/UE

Normative Armonizzate Applicate:

Applied harmonized standards:

UNI EN ISO 12100:2010

UNI EN ISO 13857:2020

UNI EN ISO 13732-1:2009

UNI EN ISO 13849-1:2023

UNI EN ISO 13850:2015

UNI EN ISO 4413:2012

IEC EN 60204-1:2018

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Indirizzo / Address: Via dei Morengi,1 – 24060 TELGATE (BG) Italy

Telgate (BG),
Lì 26/02/24

Legale Rappresentante di FILTREC S.p.A.
Legal Representative of FILTREC S.p.A.

Modina Sergio



10 WARRANTY

The units undergo rigorous testing before shipment.

Warranty against any manufacturing defects: under normal conditions of use and maintenance, the unit is guaranteed for 12 months from the date of delivery.

11 ORDERING INFORMATION SPARE ELEMENTS

1.	2.	3.	4.	5.
U5	64	G03	B	3

1. FILTER ELEMENT SERIES	U5	
2. FILTER SIZE	62	
	64	
3. FILTER MEDIA	G01	glassfiber $\beta_{4\mu\text{m(c)}} > 1.000$
	G03	glassfiber $\beta_{5\mu\text{m(c)}} > 1.000$
	G06	glassfiber $\beta_{7\mu\text{m(c)}} > 1.000$
	G10	glassfiber $\beta_{12\mu\text{m(c)}} > 1.000$
	G15	glassfiber $\beta_{17\mu\text{m(c)}} > 1.000$
	G25	glassfiber $\beta_{22\mu\text{m(c)}} > 1.000$
	G40	glassfiber $\beta_{35\mu\text{m(c)}} > 1.000$
	GW03	glassfiber $\beta_{5\mu\text{m(c)}} > 1.000$ + water absorbent
	GW10	glassfiber $\beta_{12\mu\text{m(c)}} > 1.000$ + water absorbent
	AW40	water absorbent only (higher water retention capacity)
4. SEALS	B	NBR
5. BYPASS VALVE	0	no bypass
inbuilt into the filter element	3	3 bar

 FILTER ELEMENT - Preferred filter media - For the complete range of elements available, refer to the U56x series catalog.

For any questions please contact:

FILTREC S.p.A.

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