Operating Manual
FUH050-FUH100-FUVR050

TRANSFER AND FILTRATION PORTABLE UNIT

Read the safety and operating instructions before use!

EMPTY UNIT: fit the filter element before use

SUMMARY

Enclosures:

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

1 SAFETY REGULATIONS

1. The portable unit can only be used by authorized and trained personnel after having read and UNDERSTOOD this manual.
2. This manual must be given to the operator and kept. The portable unit holder is responsible for it.
3. CAUTION! Incorrect use of the portable unit can be dangerous due to oil pressure.
4. Transfer and filtration operations are safe if the rules listed below are followed.
5. Always ensure to work under safe conditions and never in precarious situations.
6. The operator must be informed and trained on the content of this manual, and their understanding must be verified.
7. The operator is responsible for the correct use of the portable unit, based on the information provided in this manual and the training received.
8. Before connecting the portable unit to the power supply, check that the outlet is properly protected against overloads and short circuits.
9. Verify that the voltage and frequency of the power supply correspond to the data indicated on the portable unit label.
10. Use only cables, plugs, and extensions that comply with the regulations in force in the country where the portable unit is used.
11. Before any intervention on the portable unit, unplug the power supply.
12. Any maintenance and repair operations must be carried out 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 portable unit with a pressure higher than the authorized limit. Such negligence could endanger the operator and damage to the portable unit.

Be particularly careful when handling metal fittings/tubes and moving the portable unit when the oil temperature is above 40/45°C. Avoid any direct contact with the hot oil and the filter housing.

The manufacturer declines all responsibility for damages caused by negligence or non-compliance with the rules contained in this manual.

2 FEATURES OF THE UNIT

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

- Support frame.
- Suction and transfer device: motor-pump assembly complete with inlet and outlet hoses with rigid ends.
- Filtration devices: a Y-type filter upstream of the pump to stop potential coarse contamination, and a main filter on the outlet line. The portable unit is initially delivered without a filter element; before use, a filter element with appropriate media must be installed.
- Safety device against operational risks: a switch with overload and short-circuit protection. The motor can only start by intentionally pressing the start button; **during theoperation of the unit, the operator must always be present.**

Table 1: TECHNICAL AND DIMENSIONAL DATA

TECHNICAL AND DIMENSIONAL DATA	VALUES
Power	FUH050 - FUVR050: 1.5 Kw FUH100: 2.2 Kw
Drive	Electrical, three phase (single phase on request)
Supply voltage	Single phase: 220/230 Vac 50/60 Hz Three phase: 380/400 Vac 50/60 Hz
Electric motor	4P B3-B5
Overall dimensions (LxPxH)	FUH050: 730 x 950 x 1110 mm FUH100 - FUVR050: 730 x 950 x 1320 mm
Weight	FUH050: 148 Kg FUVR050: 155 Kg FUH100: 188 kg
Max working pressure	FUH050 – FUVR050 : 5 bar FUH100 : 15 bar
Max pump flow rate	FUH050 - FUVR050: 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 portable unit is suitable for use in environments with the presence of dust or liquids, with a protection rating of IP55; however, it is NOT suitable for use in hazardous Ex zones (according to the ATEX directive).

3 FUH050 - FUVR050- HYDRAULIC AND ELECTRIC SCHEMES

3.1 HYDRAULIC SCHEME FUH050 - FUVR050

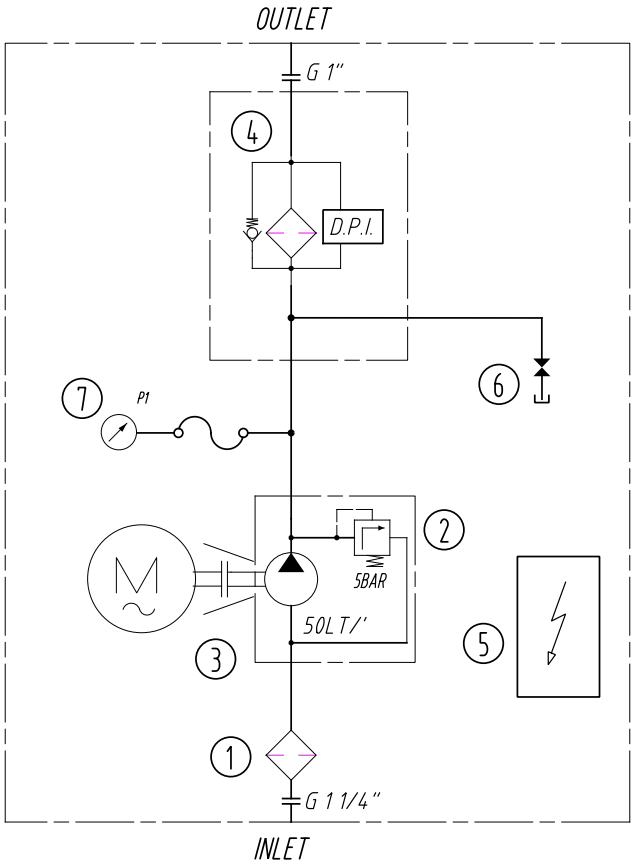
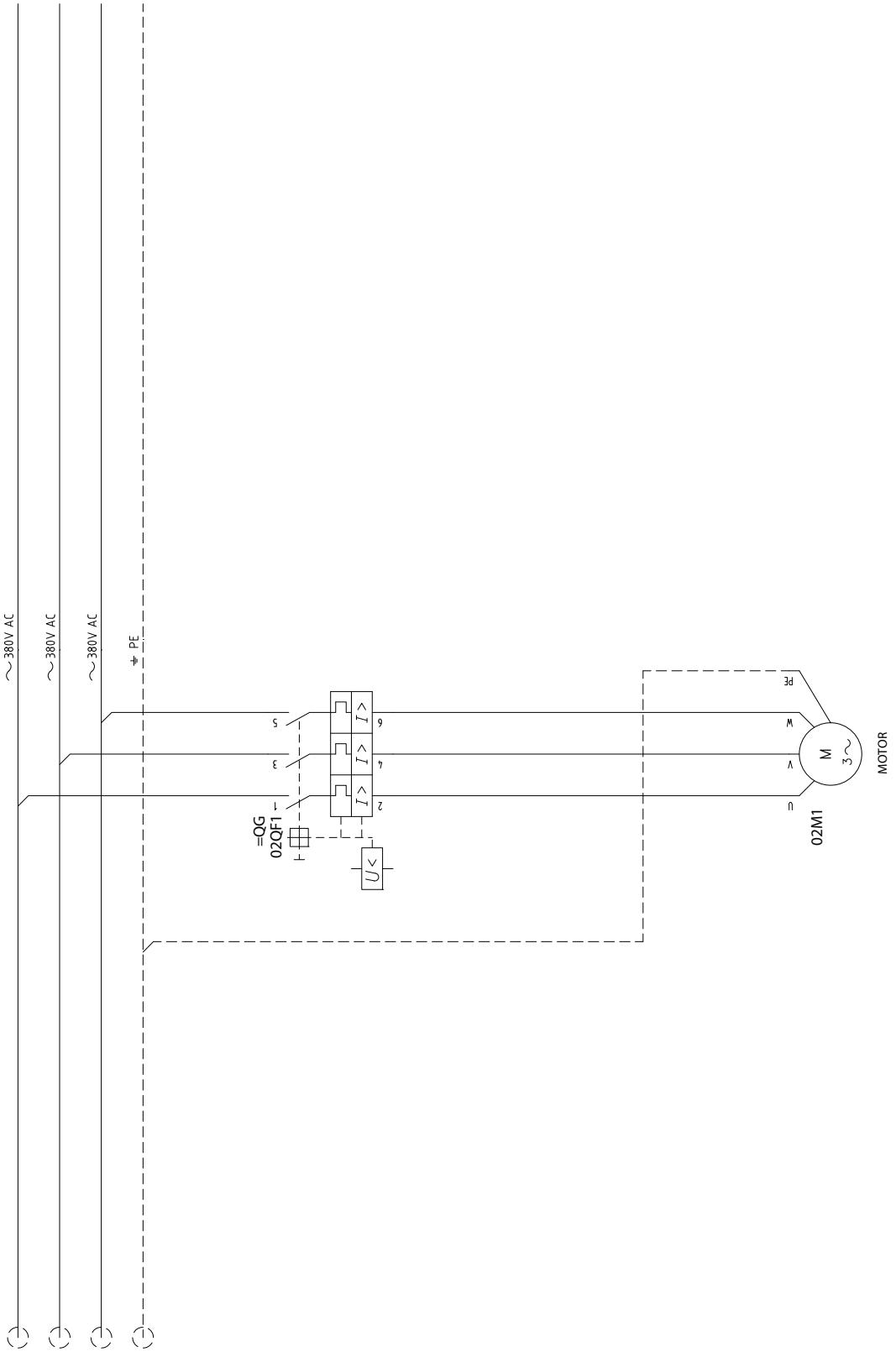


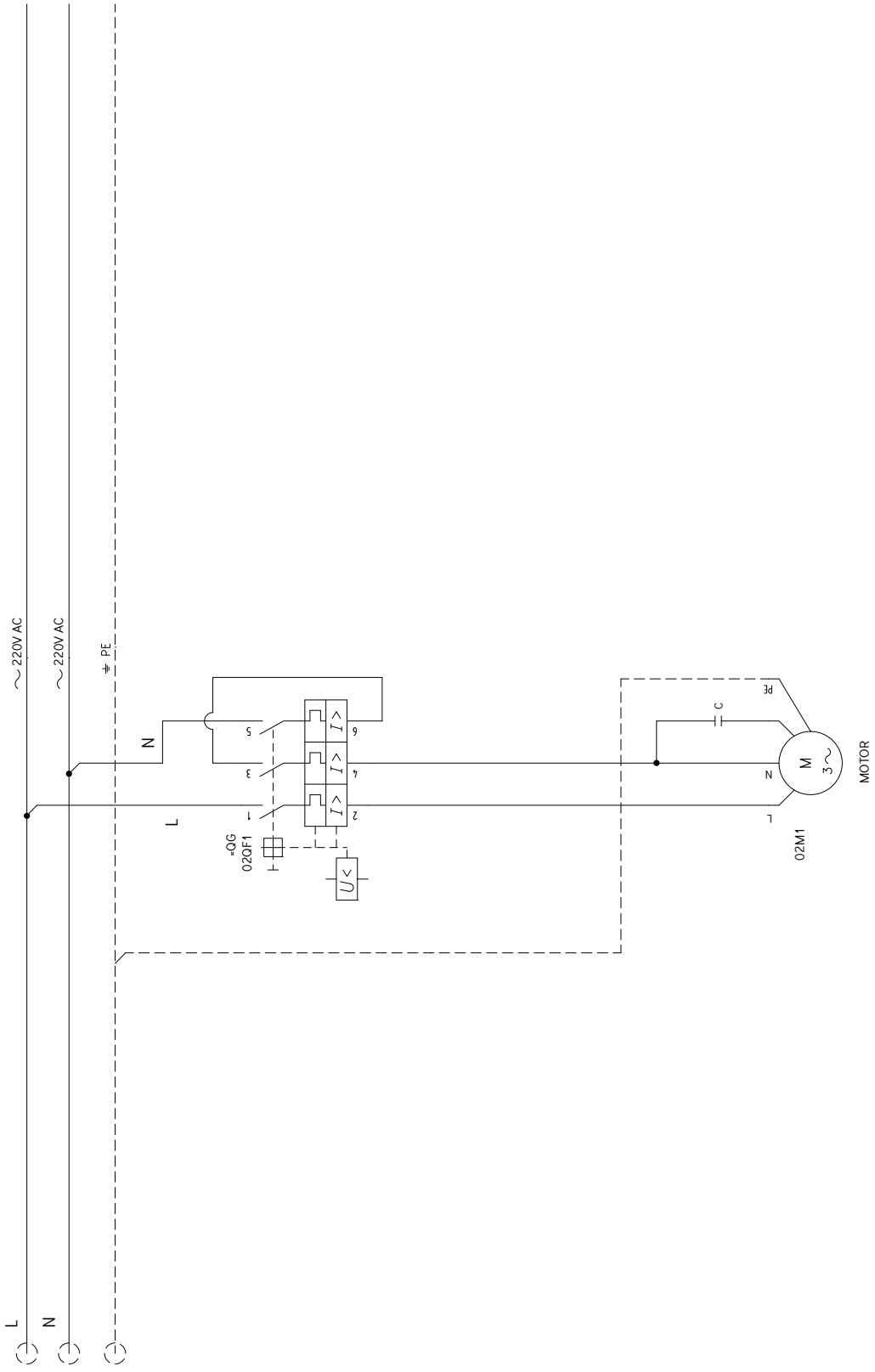
Table 2: COMPONENT LIST FUH050 and FUVR050

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 for FUH050
	U562xxx	Filter element for FUH050
	FLRU564000B0F10MA2000A1	Filter Head for FUVR050
	U564xxx	Filter element for FUVR050
	04.006.00518	VISUAL clogging indicator
5	K1200266804000	Control panel
6	R402AIG6310380	Sampling drain valve
7	F40NNGFI630101	Pressure gauge

3.2 ELECTRICAL SCHEME FUH050T - FUVR050T (three phase)



3.3 ELECTRICAL SCHEME FUH050M - FUVR050M (single phase)



4 FUH100 – HYDRAULIC AND ELECTRIC SCHEMES

4.1 HYDRAULIC SCHEME FUH100

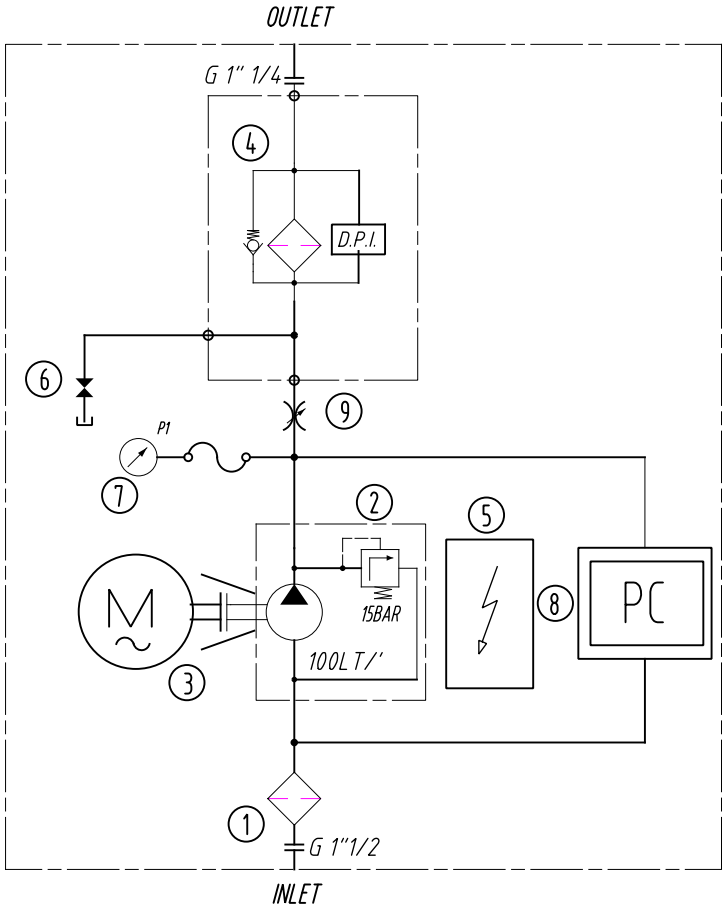
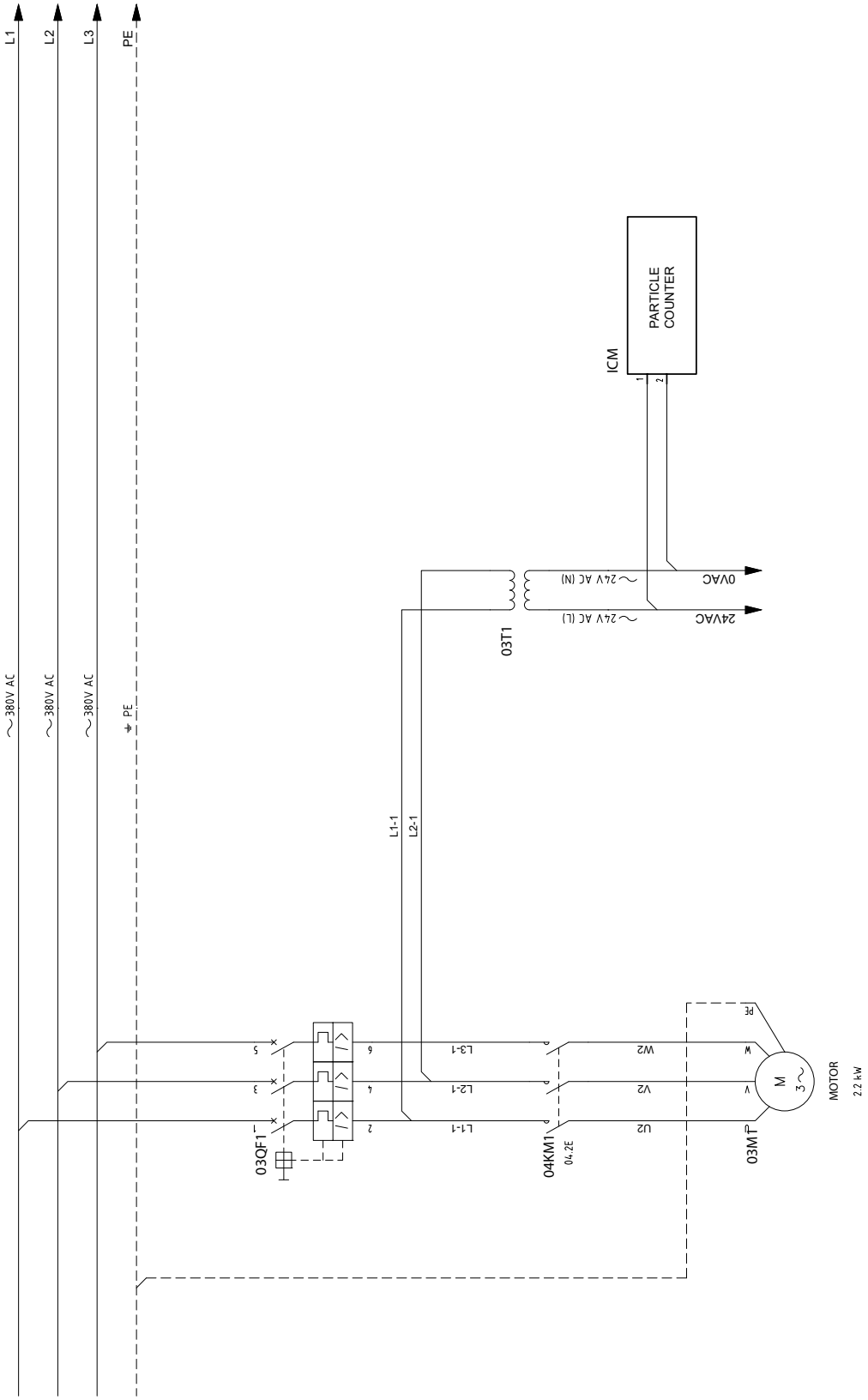


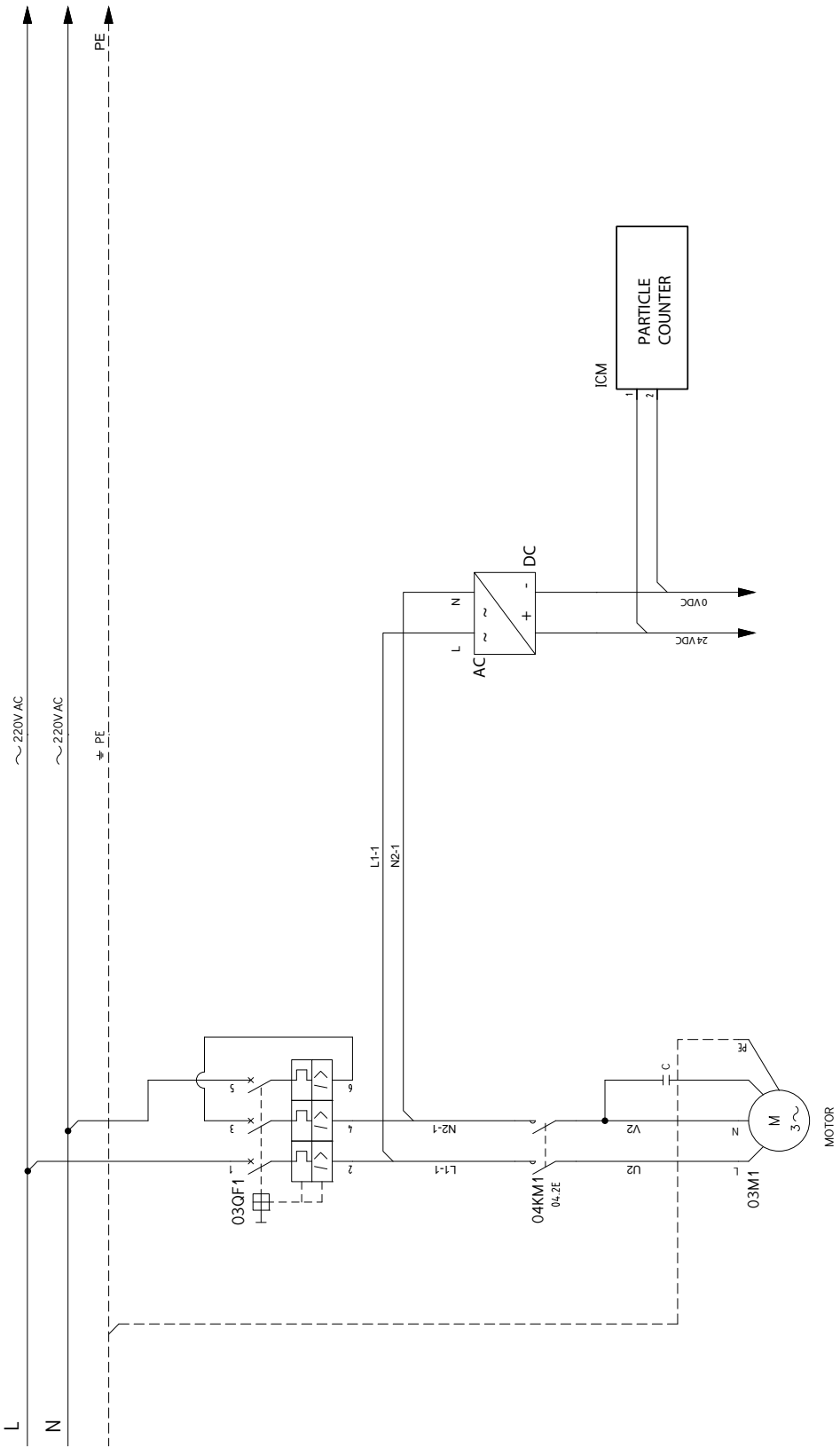
Table 3: COMPONENT LIST FUH100

POS	ITEM	DESCRIPTION
1	B7020038000000	Suction filter "Y"
2	P7500801180072	Gear pump 100 l/min.
3	99200ME4F2UN + 990424 + 99S04 + 99042UN	Motor-pump coupling arrangement
	M254100400200M	Electric motor 2,2 kw
4	FLRU564000B0F10MA2000A1	Filter Head
	U564xxx	Filter element
	04.006.00394	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)

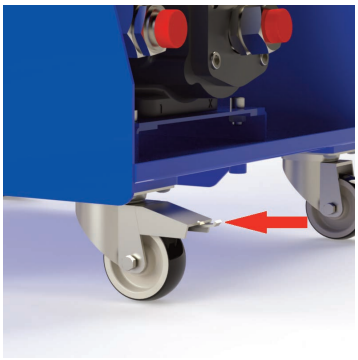


5 MOVING THE UNIT

Personal protective equipment to be used:

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

Use the provided handle to transport the device.



Once transport is complete, secure the device by engaging the lever on the wheels.

In case of transportation using third-party equipment (such as hoists), the portable unit must be securely held or fastened.

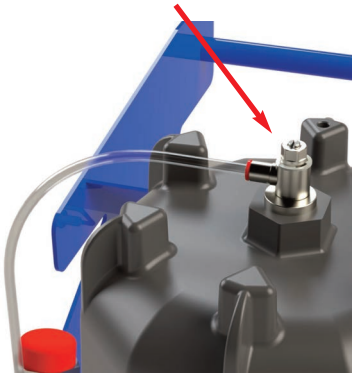
6 INSTRUCTIONS OF USE

Personal protective equipment to be used:

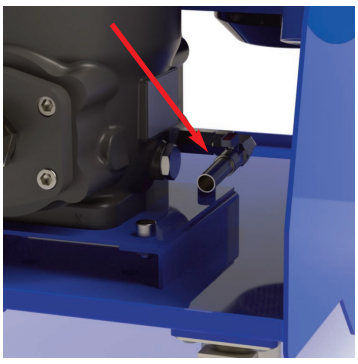
- Gloves:
  - mechanical risks (EN 388): abrasion resistance
  - chemical risks (UNI EN 374): refer to the safety data sheet of the fluid used.
- Shoes with steel toe cap (UNI 8615/2 – EN 345)
- Protective glasses (EN 166 CE)

The standard version of the filtration unit is supplied without a filter element. Before use, it is essential to install an appropriate FILTREC element and follow the procedure described in the following section entitled "Installation of the filter element." This procedure should also be applied as soon as the indicator signals filter clogging. In this case, stop the filtration unit and replace the filter element following the prescribed procedure. Install the filter element with the appropriate filtration degree to achieve the desired cleanliness level. We recommend using only original FILTREC elements.

6.1 FILTER ELEMENT INSTALLATION



Make sure the system is stopped and there is no residual pressure in the filter.
Loosen the air purge screw (see image).



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

Unscrew the set screws from the filter housing (if provided). Unscrew the filter housing cap counterclockwise. Lift out the filter element (if replacing the filter element). Check the filter housing gasket. We recommend replacement in all cases.

To avoid contamination during element replacement, first open the plastic film protecting the element, then push the element onto the filter head fitting. Next, remove the plastic film. Carefully push the element onto the fitting

Screw the filter housing cap clockwise. Tighten the set screws of the filter housing (if provided). Tighten the drain plug at the bottom of the housing. Tighten the air purge screw. Used filter elements cannot be cleaned and reused.

6.2 OPERATIONS PLANNED FOR FLUIDS

Mobile filtration units are designed to accommodate the following operations:

- Offline filtration
- Filtration during fluid transfer (only for FUH050 and FUH100)

FILTRATION

In this case, insert and position the suction and discharge hoses into the oil drum to be filtered. Ensure that the nozzles are positioned below the oil level to prevent foaming and potential cavitation. Space the ends of the two nozzles as far apart as possible, fixing them at different heights, to ensure good fluid circulation and prevent emulsion formation.

TRANSFER

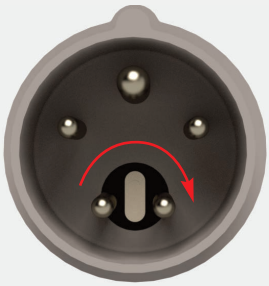
Insert the suction hose into the oil to be drawn (tank or drum), ensuring that the rigid end is fully immersed and securely fixed. Place the discharge hose either in the reservoir of the hydraulic system to be filled or in another drum and secure the hose in place. Ensure that the hoses remain submerged below the oil level to prevent foaming and potential pump cavitation.

WARNING: Hoses/fittings should generally have unrestricted flow. It is prohibited to install valves or components on both hoses that may obstruct or reduce flow.

WARNING: Ensure that during operation, the inlet hose/fitting is always filled with oil, its direction is towards the pump, and there are no obstructions.

6.3 ELECTRICAL CONNECTION

After ensuring that the power supply matches the required voltage and frequency, insert the main power plug. Before starting the electric motor, ensure that the suction fitting (IN) is immersed in the fluid.



CAUTION: Electrical Connection of a Three-Phase Motor

In the case of a three-phase electric motor, it is essential to pay particular attention to the orientation of the electrical phases before operating the portable unit. Activate the switch for a brief period and observe the direction of rotation. If the motor turns in the opposite direction of the arrow indicated on the motor, the phases of the plug must be reversed by adjusting the five-pole CE plug accordingly (see image, push and turn with a thin screwdriver for a 180° rotation)

FUH050 - FVR050 SERIES

Once the plug is inserted, press the black button (1) to start the device. The transfer and filtration of the fluid will then begin. To stop the operation, press the RED button.

FUH100 SERIES

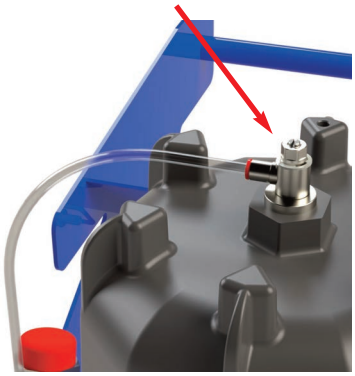
Once the plug is inserted, press the black button (1) and then the "START" button (2) to start the device. The transfer and filtration of the fluid will then begin. To stop the operation, press the "STOP" button (3).

WARNING: In case of EMERGENCY, press the red emergency button. Once the emergency is resolved, restart the device by pressing the black button located next to the emergency button.

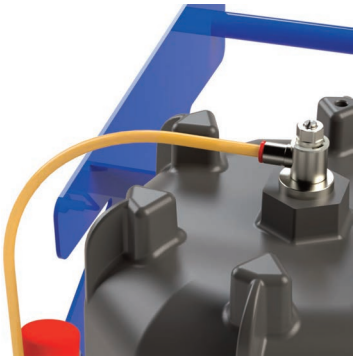
WARNING: In case of power failure, once power is restored, restart the device by pressing the black button located next to the emergency button.

WARNING: Avoid running the pump for an extended period without oil to prevent wear.

6.4 AIR PURGING PROCEDURE FOR INITIAL FILTER ELEMENT INSTALLATION



When starting the device for the first time after inserting or replacing the filter element, purge the air inside the filter housing using the air vent valve located on the cover.



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

6.5 SHUTDOWN

FUH050 - FVR050 SERIES

To stop the operation, press the RED button.

FUH100 SERIES

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

Unplug the main power supply from the generator.

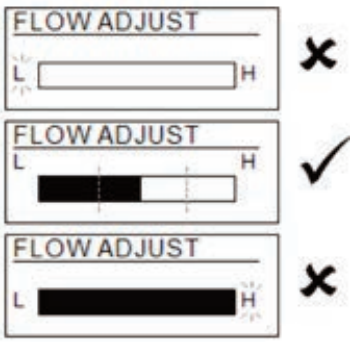
Once the operation is completed, rewind the power cable, input and output hoses/fittings. Exercise caution when draining the oil and insert the metal ends into the designated casings. Be extra careful when handling metal fittings/tubes and when transporting the device when the oil temperature is above 40/45°C. Avoid any direct contact with the 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 particle counter starts automatically when the portable unit is powered on and stops when the portable unit is powered off (see paragraphs 6.3 and 6.5 of this manual).).

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



To read the flow rate, use the buttons [▲] or [▼] and scroll through the displays until the "flow rate settings" menu appears. Then, press the selection button [↵] to move to the next level and read the flow rate. If the flow rate is determined automatically, it is indicated by a bar graph. The bar is graduated from 50 to 400 ml/min. The display is updated every 10 seconds. The flashing letters L (Low) or H (High) indicate a decrease or increase compared to the determined threshold. This should be avoided. Go back by simultaneously pressing the [▲] and [▼] buttons.

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 portable unit does not require specific maintenance interventions. However, it is advisable to inspect the suction and discharge hoses/fittings to ensure they are in perfect condition before each use. Make sure that the filter element is correctly installed and that the filter cover is securely fastened.

Table 4

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

For any maintenance not mentioned in paragraph 7, particularly regarding the pump, motor, vent valve, and hoses/fittings, contact the manufacturer.

BEFORE ANY SERVICING

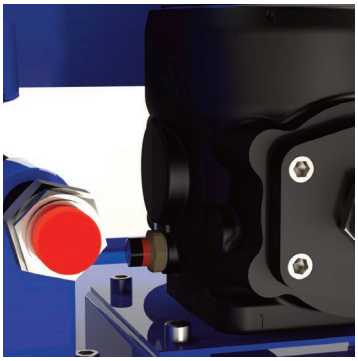
ENSURE THAT THE DEVICE IS DISCONNECTED FROM THE POWER OUTLET

CHECK THAT THE ENDS OF THE FITTINGS ARE PLACED IN THEIR HOUSINGS

ALWAYS WORK OVER A COLLECTION TRAY TO AVOID OIL SPILLS
(refer to the safety data sheet of the oil used)

WARNING: To preserve the functionality of hoses/fittings, the portable unit must be stored in a suitable location, avoiding prolonged exposure to sunlight or temperatures below 0°C.

7.1 FILTER MAINTENANCE



FUH050 - FVR050 SERIES

The in-line filter is equipped with a clogging indicator. The element must be replaced when the indicator turns red. For the replacement of the filter element, see paragraph 6.1 "Filter element installation"

FUH100 SERIES

The portable unit is equipped with a LED light indicator. The element must be replaced when the light is activated. For the replacement of the filter element, refer to paragraph 6.1 "Filter element installation".

Ensure that the used filter element, any oil residue in the inlet and outlet pipes, and spilled oil are disposed of in accordance with local regulations.

8 IN CASE OF ANOMALY

1. The customer must inform the manufacturer of any problem or defect detected.
2. The customer may only perform interventions if authorized by the manufacturer and if following their instructions.
3. WARRANTY IS NOT VALID if an intervention is performed on the portable unit without manufacturer authorization.
4. WARRANTY IS NOT VALID if the manufacturer detects alteration or modification of the unit's devices.
5. WARRANTY EXPIRES in case of failure due to operator carelessness, negligence, or inexperience.

The manufacturer disclaims all responsibility for alteration of the units and accidents caused by an improvised and untrained operator.

9 DECLARATION OF CE COMPLIANCE

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

EC Declaration of conformity
(according to Attachement II.A of EC Directive 2006/42/CE)

Il Fabbricante:
The Manufacturer:
FILTREC S.p.A.
Via dei Morenghi,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 responsability that the transfert and filtration units:

Denominazione / Denomination	*Unità portatile di filtrazione e trasferimento* *Transfert and filtration portable unit*
Modello / Model	*FUH050TG2BS0* *FUH050MG2BS0* *FUVR050TG4BS0* *FUVR050MG4BS0*

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 Morenghi,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
.....

FILTREC®

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

EC Declaration of conformity
(according to Attachement II.A of EC Directive 2006/42/CE)

Il Fabbricante:
The Manufacturer:
FILTREC S.p.A.
Via dei Morenghi,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 responsability that the transfert and filtration units:

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

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 Morenghi,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
.....

FILTREC S.p.A. - Cap. Soc. € 540.000 i.v. - R.E.A. BG n.441716 - Reg. Imprese BG 02064520162 - C.F. 02064520162 - P. IVA 01827200989
Via dei Morenghi,1 - 24060 TELGATE (BG) - Tel.+39 035 8368001 - Fax +39 035 831925 - **www.filtrec.com** - info@filtrec.it - filtrec@pec.it

10 WARRANTY

The portable units undergo rigorous testing before shipment.
Warranty against any manufacturing defects: under normal conditions of use and maintenance, the portable unit is guaranteed for 12 months from the date of delivery.

11 ORDERING INFORMATION SPARE ELEMENTS for FUH050 and FUH100

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

1. FILTER ELEMENT SERIES	U5	
2. FILTER SIZE	62	FUH050
	64	FUH100
3. FILTER MEDIA	G01	glassfiber $ß_{4\mu m(c)} \geq 1.000$
	G03	glassfiber $ß_{5\mu m(c)} \geq 1.000$
	G06	glassfiber $ß_{7\mu m(c)} \geq 1.000$
	G10	glassfiber $ß_{12\mu m(c)} \geq 1.000$
	G15	glassfiber $ß_{17\mu m(c)} \geq 1.000$
	G25	glassfiber $ß_{22\mu m(c)} \geq 1.000$
	G40	glassfiber $ß_{35\mu m(c)} \geq 1.000$
	GW03	glassfiber $ß_{5\mu m(c)} \geq 1.000$ + water absorbent
	GW10	glassfiber $ß_{12\mu m(c)} \geq 1.000$ + water absorbent
	AW40	water aborbent only (higher water retention capacity)
4. SEALS	B	NBR
5. BYPASS VALVE	0	no bypass
inbuilt into the filter element	3	3 bar

for FUVR050

1.	2.	3.	4.	5.	6.
U5	**64**	**G01**	**B**	**0**	**/VRE**

1. FILTER ELEMENT SERIES	U5	
2. FILTER SIZE	64	
3. FILTER MEDIA	G01	glassfiber $ß_{4\mu m(c)} > 2.000$
	GW01	glassfiber $ß_{4\mu m(c)} > 2.000$ + water absorbent
4. SEALS	B	NBR
5. BYPASS VALVE	0	no bypass
6. OPTION	/VRE	varnish removal element

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

12 USED FILTER ELEMENTS LOGBOOK

DATE FIT IN	ELEMENT PART NR.	REPLACEMENT DATE	NOTES

DATE FIT IN	ELEMENT PART NR.	REPLACEMENT DATE	NOTES

DATE FIT IN	ELEMENT PART NR.	REPLACEMENT DATE	NOTES

For any questions please contact:

FILTREC S.p.A.
24060 TELGATE (Bergamo) ITALY
Via dei Morenghi, 1 - www.filtrec.com
Tel. +39 035 8368001 - Fax +39 035 831925
E-Mail: info@filtrec.it