



INSTRUCTION MANUAL

MOBI®

Codes:

FP-TR1200-02

FP-TR1200-03

FP-TR1200-02-UK

Kit Includes:

MOBI® MIDGET Battery
Powered RO System
1200GPD

Mobi® Midget Battery
Powered RO System
1200GPD



English

INSTR-FP-TR1200



These instructions identifies a risk situation which could lead to serious injury. **MUST** read before operating the **FILTERPLUS® MOBI®** filtration trolley system.

- 1. **Why STREAMLINE®?** 3
- 2. **Warranty Information** 4
- 3. **Responsibilities**
 - General Responsibilities 5
 - Manufactures Responsibilities 5
 - Personnel Responsibilities 5
- 4. **Technical Specifications** 6
 - Technical Data 6
 - Parts and Accessories 6
 - Plumbing Safety and Diagram 7
- 5. **Safety Regulations**
 - Personal Safety 8
 - Electrical Specifications & Safety 8
 - System Safety 10
- 6. **Operating the FILTERPLUS® MOBI® filtration system**
 - Unpacking your system 11
 - Storage of your system 12
 - About your system 13-14
 - Charging your battery (only relevant to FP-TR1200-02 model) 15
 - How to assemble your system 16
 - How to turn your system ON 17 - 18
 - How to operate your system 19
 - How to turn your system OFF 20
- 7. **Malfunctions and Troubleshooting** 21
- 8. **Maintenance and Replacing Filters** 22
 - Prefilters 23
 - Reverse osmosis (RO) filters 24
 - De-ionising (DI) resin filter 25
- 9. **Disposal of System and Filters** 26
- 10. **Declaration of Conformity** 26

Why STEAMLINER®?

Flexibility

- **STREAMLINE®** systems can be built according to customers' exact requirements
- For non-standard systems, the user's needs or specifications are listened to and turned into reality.

Quality

- Whilst price is important, quality is remembered long after price is forgotten
- We insist on sourcing brand name products from around the world, only of a reputable quality, and bring them together under the **STREAMLINE®** name
- All **STREAMLINE®** products carry a full one year's warranty, according to the manufacturers' standard terms and conditions of sale.

Service

- We have an in-house technical helpline able to answer most of your questions relating to the capabilities and functionalities of all **STREAMLINE®** products
- If we get it wrong, we will put it right. If you are sent a wrong item, we will immediately attend to sending you the correct item and arrange a collection of the wrong item without any quibbles
- **STREAMLINE®** is backed by a comprehensive range with massive stocks providing you with a 'one stop shop' for all your requirements.



**MANUFACTURED
IN THE
UNITED KINGDOM**



SAFELY CLEANING AT HEIGHT

**CHECKED AND
TESTED BY
QUALITY CONTROL**

2 Warranty Information

STREAMLINE® Warranty

The warranty on all Machines and Equipment is for 1 year (12-months) from RECORDED DATE OF PURCHASE.

THIS WARRANTY EXCLUDES NORMAL MAINTENANCE ITEMS, including but not limited to HOSES, FILTERS, O-RINGS, DIAPHRAGMS, VALVES, GASKETS, CARBON BRUSHES and damage to motors and other components as a result of failure to replace normal maintenance items. THIS LIST IS NOT EXHAUSTIVE.

If **STREAMLINE®** receives notice of such defects during the warranty period, **STREAMLINE®** will either, at its opinion, repair or replace components which prove to be defective.

Replacement parts will only be supplied under warranty, upon the inspection and approval of the defective parts by **STREAMLINE®**.

Should it be necessary to supply replacement parts before the opportunity to inspect, these will be charged at current prices and credit will only be issued upon subsequent inspection and warranty approval by **STREAMLINE®**.

The customer is responsible for the cost of return of the defective part. If warranty is approved, **STREAMLINE®** will pay for the cost of the repaired or replacement part.

This warranty excludes the following conditions and circumstances which are at the discretion of **STREAMLINE®**:

Wear and tear, misuse, abuse improper maintenance, frost damage, the use of chemicals other than those supplied or approved by **STREAMLINE®**, improper installation or repair, unauthorised modification, incidental or consequential costs, loss or damage, service, labour or third party charges, the cost of returning defective parts to **STREAMLINE®**.

This warranty constitutes the exclusive remedy of any purchaser of a **STREAMLINE®** unit and is in lieu of all other warranties, express or implied, including without limitation any implied warranty of merchantability or fitness for use, to the fullest extent permitted by law. In no event shall any implied warranty of merchantability or fitness for use exceed the term of the applicable warranty stated above and **STREAMLINE®** shall have no other obligation or liability.

Important
Unfortunately these rights cannot be transferred to a third party.



3 Responsibilities

Responsibilities

General Responsibilities

These operating instructions allows you to use the **FILTERPLUS® MOBI®** filtration system safely and efficiently. The instructional booklet must be read before setting up, starting or using your **STREAMLINE®** equipment. It is an integral part of the product itself.

Please read the warning and instructions contained in this booklet carefully. They provide important information on the safe use and maintenance of the equipment. Pay particular attention to general safety instructions.

Please keep this booklet in a safe place near your **FILTERPLUS® MOBI®** filtration system for future consultation.

Your **FILTERPLUS® MOBI®** filtration system is constructed according to current safety standard and regulations. The latest and current edition is illustrated in this manual.

The contents of this booklet should be bought to the attention of all users.

Manufacturer Responsibilities

VARITECH SYSTEMS Ltd, the manufacturer of **STREAMLINE®**, holds 12-months warranty on all machines and equipment from the date of purchased (see Warranty section 2)

VARITECH SYSTEMS Ltd, the manufacturer of **STREAMLINE®**, is in no case responsible for failures or errors caused by modifications to the unit by customer or other persons.

Personnel Responsibilities

The **FILTERPLUS® MOBI®** filtration equipment is designed and manufactured to be operated in industrial applications. It is important that the operator(s) of the **FILTERPLUS® MOBI®** filtration equipment have read through these operating instructions thoroughly, and understand all safety instructions and regulations.

The **FILTERPLUS® MOBI®** filtration equipment is not intended for use by children, adolescents, persons under the influence of alcohol / drugs or simply lacking experience and knowledge. These operating instructions are designed to educate the user, informing the operator how to carry out the task at hand successfully, whilst avoiding potential dangers that might occur.

Important
If needed, training videos can be found on the **STREAMLINE®** website: www.streamline.systems

4 Technical Specifications

Technical Specifications

Specification Data

| PRODUCT CODE | FP-TR1200L-02 | FP-TR12000-02 | FP-TR1200-03 |
|--|---------------------|-------------------|-----------------|
| Country of Origin | United Kingdom | United Kingdom | United Kingdom |
| Maximum Height | 112mm | 112mm | 112mm |
| Maximum Length | 41mm | 41mm | 41mm |
| Maximum Width | 47mm | 47mm | 47mm |
| Dry Weight | 21.7kg | 28.2kg | 26.5kg |
| Wet Weight | 23.2kg | 30.1kg | 29.0kg |
| Inlet Pressure Requirement | 2.8bar / 40psi | 2.8bar / 40psi | 2.8bar / 40 psi |
| Optimum Operating Pressure | 8.3bar / 120psi | 8.3bar / 120psi | 8.3bar / 120psi |
| Standard Water Inlet Connection (Male hose lock) | 3/4 inch | 3/4 inch | 3/4 inch |
| Waste Water Outlet Connection (Male hose lock) | 3/4 inch | 3/4 inch | 3/4 inch |
| Pure Water Outlet Connection (Male hose lock) | 3/4 inch | 3/4 inch | 3/4 inch |
| Electrical Power Supply | Lithium Ion Battery | 12V Battery | 230V mains |
| Power Consumption | 1.2W | 1.2W | 56W |
| Optimum Water Quality | 000ppm | 000ppm | 000ppm |
| Water Quality Range | 000ppm - 400ppm | 000ppm - 400ppm | 000ppm - 400ppm |
| Pure Water Flow (optimum output) | 3.8Lpm | 3.8Lpm | 3.8Lpm |
| Operating Time | 12 Hours Run Time | 12 Hours Run Time | Continual |

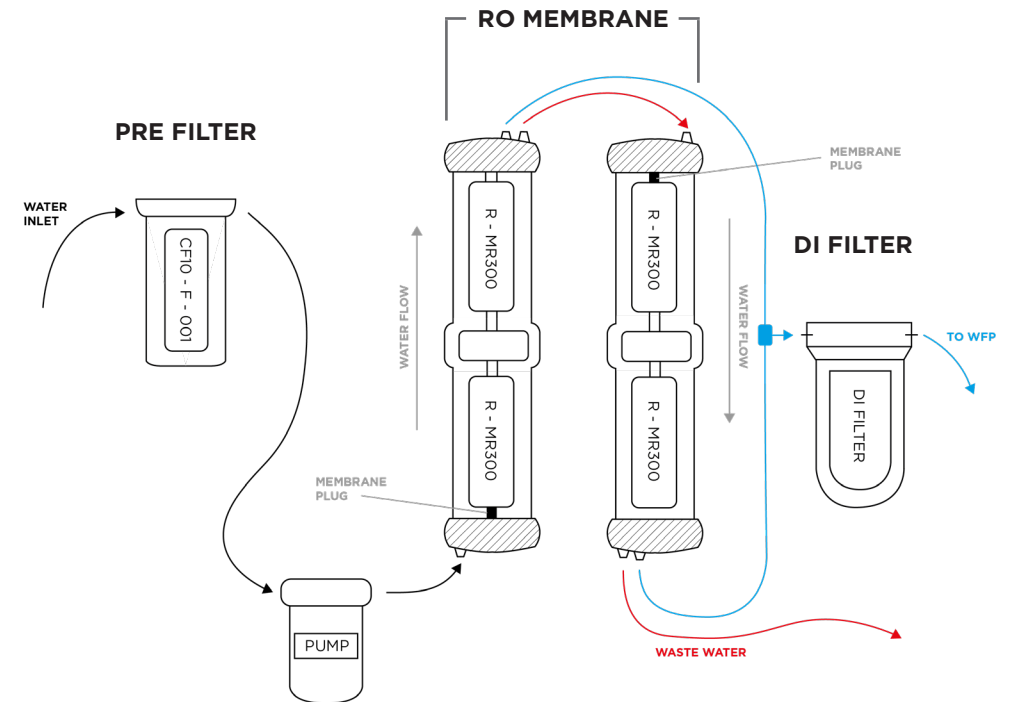
Parts and Accessories

The **FILTERPLUS® MOBI®** filtration system will include the following parts:

- 1x 3mtr length of black Standard Water Inlet hose with stainless steel connections
- 1x 3mtr length of red Waste Water Outlet hose with stainless steel connection
- 1x 3mtr length of blue Pure Water Outlet hose with stainless steel connections
- 12v intelligent battery charger with 230V plug (only if chosen FP-TR1200-02 model)
- SPAN3 filter spanner for changing filters
- Handheld TDS meter for accurate water readings



The plumbing specification is as follows:




5 Safety Regulations

Safety Regulations

The **FILTERPLUS® MOBI®** filtration system is intended solely for the production of pure water used for cleaning windows, vehicles, solar panels and other hard washable surfaces typically through standard and optional accessories provided by **STREAMLINE®**.

The water cannot be used for human consumption.

Electrical Specifications & Safety



Important
This applies to all **FILTERPLUS® MOBI®** filtration systems.

Electrical connections must be carried out in respect of current legislation (in compliance with the provisions of the IEC 60364-1 standard) and in accordance with the manufacture's instructions.

Please check that the installation and sockets are adequate for the maximum power of the appliance indicated on the rating plate. If in doubt, consult a qualified electrician. The correct plug should be fitted by a qualified electrician.

- **VARITECH SYSTEMS Ltd**, the manufacture of **STREAMLINE®** declines all liability for damage to persons, animals or things caused by faulty or incorrect connection.
- Before connecting the equipment, check that the specification given on the rating plate corresponds to that of the mains electrical supply.
- If the equipment is connected via an extension, use cables with an adequate cross section, never less than 1,5 mm. The plug and socket must be watertight.
- The electrical safety of the equipment is guaranteed only when correctly and efficiently earthed as specified in current electrical safety legislation (in compliance with the provisions of the IEC 60364-1 standard). This fundamental safety requisite should be verified. If in doubt, ask a professionally qualified electrician to check the system thoroughly.
It is recommended that the electric supply to this machine should include a residual current device that will interrupt the supply if the leakage current to earth exceeds 30 mA for 30ms or a device that will prove the earth circuit.


VARITECH SYSTEMS Ltd, the manufacturers of **STREAMLINE®**, declines all liability for damage caused by faulty earthing of the appliance.

- The equipment can be disconnected from the mains only by unplugging the plug from the mains socket.
- When using any electrical appliance, certain fundamental rules should be respected:
 - Do not touch the appliance with wet hands or feet;
 - Do not touch the appliance with bare feet or unsuitable clothing;
 - Do not pull the power cable or appliance itself to unplug the plug from the mains.


Personal Safety

Stay alert, watch what you are doing and use common sense when operating the **FILTERPLUS® MOBI®** filtration system. Do not use the filtration system while you are tired or under the influence of alcohol, drugs or medication. A moment of inattention while operating the filtration trolley may result in serious personal injury.


Use personal protective equipment to avoid personal injury:



Protective Gloves



Safety Goggles



Protective Footwear

Additional protective equipment such as a dust mask, non-skid safety shoes, hard hat or hearing protection may be required depending on the safety regulations in the operator surroundings.

System Safety

The **FILTERPLUS® MOBI®** filtration trolley is manufactured with the safety of the operator in mind, including some key features such as; result in serious personal injury.



Over Pressure

- If the water pressure in the **FILTERPLUS® MOBI®** filtration system is above the standard 10bar pressure, the pressure relief valve opens on the pump allowing a greater flow through the waste water outlet, reducing the pressure in the system and through the pure water outlet
- It is important to never open the filter vessels or membrane housings during operation or whilst under pressure



Over Heating

- If the powerful booster pump overheats on the **FILTERPLUS® MOBI®** filtration system, an activation switch is triggered and the system will automatically switch off.



Electrical Hazards

- As the **FILTERPLUS® MOBI®** filtration system is powered by an electrical source, never use the equipment in the rain, snow or strong winds.
- Never use the filtration system to clean people and/or animals.
- Before each use, undertake a visual check on all electrical cables for damage. Never use the filtration system with a damaged cable.



Mechanical Hazards

- To avoid all mechanical hazards, place the **FILTERPLUS® MOBI®** filtration trolley on an even surface only, and ensure sufficient stability.

Use only original accessories that come with the **FILTERPLUS® MOBI®** filtration system, offering maximum quality and security. Failure to use original accessories absolves **VARITECH SYSTEMS Ltd**, the manufacturer from all liability.



Operating the FILTERPLUS® MOBI® Filtration System

Use only original accessories that come with the **FILTERPLUS® MOBI®** filtration system, offering maximum quality and security. Failure to use original accessories absolves **VARITECH SYSTEMS Ltd**, the manufacturer from all liability.

Unpacking of the FILTERPLUS® MOBI® filtration system

Your **FILTERPLUS® MOBI®** Filtration System has been carefully manufactured, checked through QC and packaged as a kit.

Carefully unpack your new **FILTERPLUS® MOBI®** Filtration System and carry out a thorough visual check on all parts. If in doubt, do not use the system. Contact your dealer and/or manufacturer.

Packaging (bags, boxes, nails, tape etc.) should be kept out of reach of children as they may represent a potential hazard. Packaging can be recycled according to your local legislation.

Storage of the FILTERPLUS® MOBI® filtration system

Short term and long term storage is an important issue. The **FILTERPLUS® MOBI®** filtration system must be protected from algae and bacteria growth in the pressure vessels caused by stagnant water. The reverse osmosis (RO) membranes and de-ionising (DI) resin must not dry out wither.

Important:
The unit must be protected from freezing.

The following procedures should be followed to protect the unit from bacteria fouling and damage from freezing;

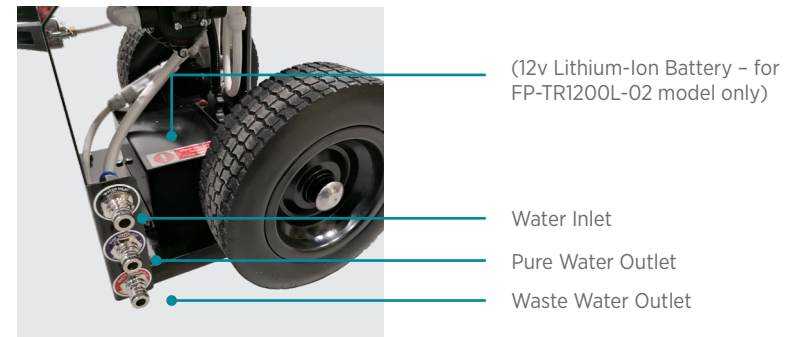
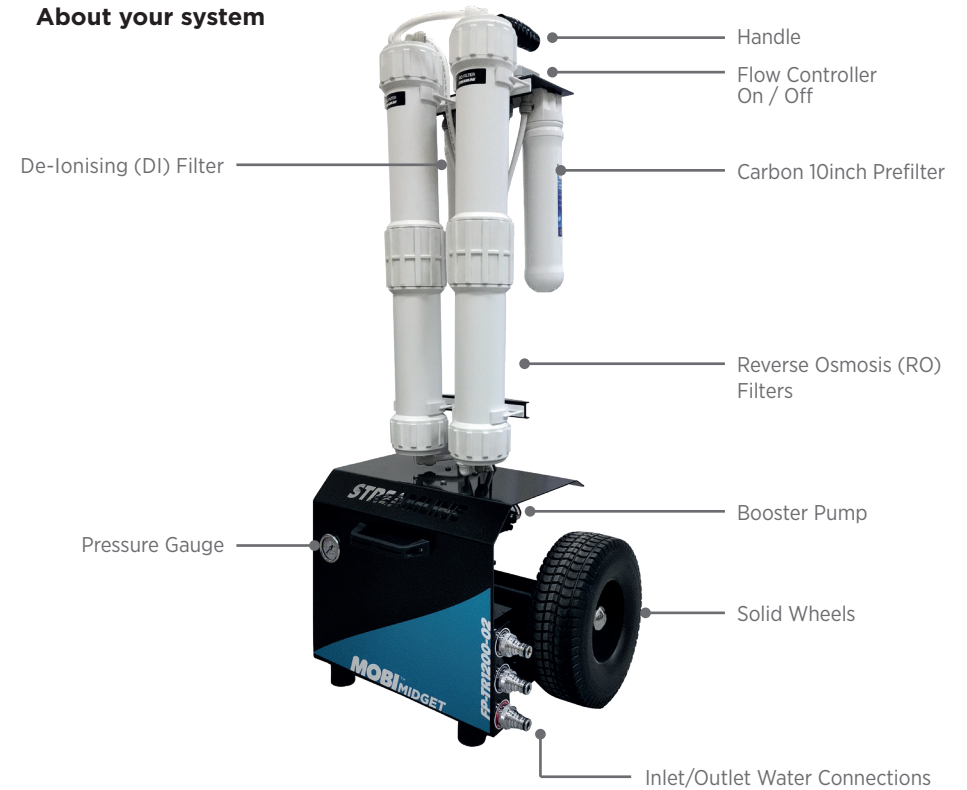
Short term storage: 2-4 weeks of no use

- i. Remove the prefilter housing and pour out the excess water.
- ii. Remove the DI resin cartridge housing and pour out the excess water.
- iii. Remove the RO membrane caps and lay down the trolley unit for the excess water to drain from the membranes.
- iv. Ensure you reinstall the top caps on RO pressure vessels. Do not allow them to dry out.
- v. Ensure you reinstall the prefilters and DI resin cartridge. Do not allow them to dry out.

Long term storage: 4 weeks plus of no use

- vi. Remove the prefilter housing and pour out the excess water.
- vii. Remove the DI resin cartridge housing and pour out the excess water.
- viii. Remove the RO membrane caps and lay down the trolley unit for the excess water to drain from the membranes.
- ix. Remove all filters from the trolley system, wrap in individual plastic bags and seal.
- x. Replace all filter housings and membrane caps without any filters inside.
- xi. It is important to store the trolley system where it cannot freeze.
- xii. It is important for all filters to not be allowed to dry out when not in use.

About your system



To operate the **FILTERPLUS® MOBI®** filtration system, there needs to be access to a water supply and mains electricity (unless using the FP-TR1200-02 model with 12V battery).

The water enters the **FILTERPLUS® MOBI®** filtration trolley system through the water inlet connection, and then passes through the carbon block pre-filter removing the largest particles in the water before the water enters the membrane.

The reverse osmosis (RO) membrane filters remove up to 98% of the impurities in the water, before it reaches the de-ionising (DI) resin filter where the water is polished and reaches a 000ppm result.

From the RO membrane filters, waste water is discharged through the waste water outlet. This water is not harmful to the environment or skin, however full of impurities therefore not suitable for cleaning.

Depending on the **FILTERPLUS® MOBI®** filtration trolley system you have purchased, the booster pump is either powered by 230V mains electricity or the 12V battery.

Charging your Battery

FP-TR1200-02

- i. Plug charger into an electrical socket



- ii. Insert the charger socket into the battery terminal



FP-TR1200L-02

- i. Plug charger into an electrical socket



- ii. Insert the charger socket into the battery terminal



The battery charging cycle is approx. 5 hours to full charge. The run time of the battery is approx. 12 hours continual usage.



Important:

Only use the **STREAMLINE®** charger supplied with your **FILTERPLUS® MOBI®** filtration system. If misplaced, contact your dealer of manufacture immediately.

The charger will never over heat. This has a safety function to prevent the battery from overcharging.

You can operate the system and keep the battery on charge. Pay special attention to the mains electrical supply when operating with water.



Assembling the System

All main parts and safety devices are assembled by the manufacture. Some other secondary parts may be supplied separately.

These parts must be assembled by the user following the assembly instructions.

If you have purchased a **FILTERPLUS® MOBI® Midget** with a 12V battery, FP-TR1200-02, please read 'Chargng Your Battery' before proceeding:

To use your FILTERPLUS® MOBI® filtration system:

- i. Ensure the trolley system is safely secure and stable on a level surface



- ii. Connect the **BLACK** hose from the mains water supply the water inlet connection (do not turn water supply on yet)



- iii. Connect the **RED** hose from the waste water outlet and direct to a drain or nearby Soakaway



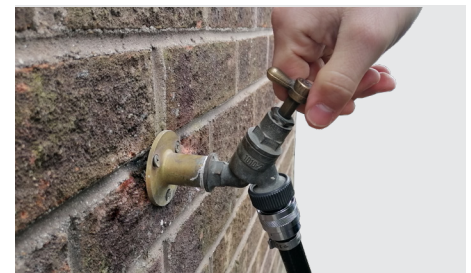
- iv. Connect the **BLUE** hose from the pure water outlet to your water-fed pole (it is possible to add a **STREAMLINE®** 100mtr hose reel)



Turning your FILTERPLUS® MOBI® Filtration System ON

Once the final position of the **FILTERPLUS® MOBI®** filtration system has been reached, you are now ready to switch on the water supply and power up the booster pump.


- i. Switch on the water supply at the mains water tap and allow the **FILTERPLUS® MOBI®** filtration trolley to pressurised



- ii. The pressure gauge should be around 30-45 psi (2-3 bar)





FP-TR1200L-02 / FP-TR1200-02

- iii. When pure water is following out from the waterfed brush, switch on the booster pump by pressing the  button on the flow controller and hold for 2-seconds



- iv. The pressure gauge should now be around 80-100 psi (4-5 bar)




- v. Now you can adjust the speed of the water flow through the booster pump by using the  and  arrows



You are now good to use your **FILTERPLUS® MOBI®** filtration trolley system. Please ensure you regularly check the water quality with the handheld TDS meter provided.

FP-TR1200-03

- iii. When pure water is following out from the waterfed brush, switch on the booster pump by pressing the  button on the controller



- iv. The pressure gauge should now be around 80-100 psi (4-5 bar)



Operating your **FILTERPLUS® MOBI®** Filtration System

The **FILTERPLUS® MOBI®** filtration system is designed for a single operator use. If more than 1x operator is needing to use a filtration system, please see the **STREAMLINE® FILTERPLUS® MAXI™** range.

The water supply can sometimes be interrupted for short lengths of time i.e. when the operator moves from window to window. However if the **FILTERPLUS® MOBI®** filtration system is interrupted for long periods of time, it is best to switch off the pump to save overheating and/or over pressurising, and potentially damaging the system.

If the operator is using 4x jets with the waterfed brush, it is advised to turn up the speed of the controller, to give sufficient water flow for quality cleaning and rinsing.



Turning your FILTERPLUS® MOBI® Filtration System OFF

To switch off the FILTERPLUS® MOBI® filtration system after completing the cleaning task, simply:

FP-TR1200L-02 / FP-TR1200-02

- i. Press and hold the button on the STREAMLINE® flow controller, switching off the booster pump



- ii. Remove all hoses and safely store in storage box



FP-TR1200-03

- i. Press the button on the STREAMLINE® controller, switching off the booster pump



- ii. Disconnect the mains power supply before disconnecting the mains water supply



- iii. Remove all hoses and safely store in storage box



Malfunctions and Troubleshooting

During the usage of the FILTERPLUS® MOBI® filtration system, there may be some small troubleshooting to undertake:

i. Low water pressure or water supply at waterfed brush

- a. Check for any blockages or kinks in hose
- b. Disconnect all extension hose/hose reels and connect the FILTERPLUS® MOBI® filtration system directly to the telescopic pole
- c. Clean or replace the sediment filter
- d. Contact service centre

ii. High waste water flow and low pure water flow

- a. Check if membrane has the plug installed – if so, replace membrane
- b. Contact service centre

iii. High pure water TDS

- a. Check membrane quality – replace membrane
- b. Check DI filter – replace resin beads in DI cartridge
- c. Contact service centre

iv. Booster pump will not start

- a. Check battery charge – see '12.1 How to charge your battery'
- b. Check fuse on battery charger
- c. Check fuse on mains power
- d. Contact service centre

v. Controller stating 'DE' or 'PS' constantly

- a. Check for any blockages in hose or telescopic pole tubing
- b. Check for any blockages in membrane
- c. Raise the calibration on the controller
- d. Contact service centre

vi. Controller flashing 'BAT' constantly

- a. Plug in battery charger immediately before the battery is flat
- b. Contact service centre



Important:

As with all technical appliances, your equipment should always be used according to the instructions.

8 Maintenance and Replacing Filters

Maintenance and Replacing Filters

Care and maintenance of your **FILTERPLUS® MOBI®** filtration system will ensure it is well looked after and running smoothly every time.

It is recommended to run a weekly, monthly and quarterly examination on the **FILTERPLUS® MOBI®** filtration system to ensure all filters are adequate and effective for producing pure 000ppm water quality.

Weekly inspection

- Keep a check on the pure water TDS by using the handheld TDS meter. This measures in parts per million (ppm). If the output reads higher than 3ppm, it is recommended to change the de-ionising (DI) filter, and make a note in the back of the inspection booklet
- Keep a check on the battery voltage by running through the controller function until you reach 'BAT'. A good healthy battery will read between 11V and 12.4V.

Monthly inspections

- Each month it is recommended to flush through the reverse osmosis (RO) membranes and reset the ratio between pure water output and waste water output.
- The waste water valve should be opened 100% to allow waste water to flow out for approx. 5mins. Gradually reset to 60% pure and 40% waste water.

Quarterly inspections

- Depending on the usage, however, it is advised to change the carbon pre-filter at least 1x a quarter.
- Complete a check on all membranes to ensure performance is still acceptable.

Prefilters – usage and replacing

The sediment and carbon block 10inch prefilter are the first initial filters the feed water will pass through.

Usage

Either quarterly replacement or approx. 25,000ltrs of mains water running through, whichever ever comes quickest


How do I change the carbon prefilter on FP-TR1200-02 FP-TR1200-03

With the use of the spanner which comes with the **FILTERPLUS® MOBI®** filtration system, simply unscrew the clear prefilter housing and dispose of the used carbon prefilter.

Slide in the new CF10-F-001 **STREAMLINE®** 5micron prefilter into the prefilter housing and reattach to the filtration system. Ensure you safely and securing tighten up the housing to ensure the system is safe under operating pressure.

Replacement Code: CF10-F-001





WARNING
Ensure the **FILTERPLUS® MOBI®** filtration system is not operating or under pressure when maintenance or filter replacements are being undertaken.

De-ionising (DI) Resin Beads – usage and replacing

The DI resin filter is the last polishing filter that the RO pure water will pass through.



Usage

Either quarterly replacement or approx. 25,000ltrs of mains water running through, whichever comes quickest

How do I change the DI resin cartridge on FP-TR1200-02 FP-TR1200-03

With the use of the spanner which comes with the **FILTERPLUS® MOBI®** filtration system, simply unscrew the white DI housing and remove the resin cartridge. Open the cartridge and dispose of the used resin beads.

Refill the cartridge with new MB115 Tulsion resin beads from **STREAMLINE®**, ensuring you reposition the sponge ends before tightening up the cap.

Ensure you safely and securing tighten up the housing to ensure the system is safe under operating pressure.

Replacement Code: FH2CR-10

Reverse Osmosis (RO) Membrane Filters – usage and replacing

The RO membranes are the core part of the water filtration – produce up to 98% of water filtration.

Usage

Either yearly replacement or approx. 250,000ltrs of pure water running through, whichever comes quickest.

How do I change the RO membranes? on FP-TR1200-02 FP-TR1200-03

With the use of the spanner which comes with the **FILTERPLUS® MOBI®** filtration system, simply unscrew the membrane housing caps and remove the membranes one by one. Replace the 4x membranes with the R-MR300 from **STREAMLINE®**.

Please pay special attention to the flow direction on the membrane housings and on the membranes themselves.

Replacement Code: R-MR300



Warning

Don't lose the RO membrane plugs! Carefully insert 2x in the water inlet side. If in doubt speak to your **STREAMLINE®** technician.



Hamilton House, 8 Fairfax Road,
Heathfield Industrial Estate,
Newton Abbot
Devon, TQ12 6UD
United Kingdom

Telephone: +44 (0) 1626 830 830

Email: sales@streamline.systems

Visit: www.streamline.systems

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