



INSTRUCTION MANUAL

ECOSTREAM™

Codes:

ECO255

ECO375

ECO500

ECO700



English

INSTR-ECO255-700



These instructions identifies a risk situation which could lead to serious injury. **MUST** read before operating the **ECOSTREAM®** tank system.

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1
Responsibilities

Responsibilities

General Responsibilities

These operating instructions allows you to use the **ECOSTREAM™** tank 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 Ecostream™ tank system for future consultation. Your Ecostream™ tank 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.

Manufacturers 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 Ecostream™ tank system is designed and manufactured to be operated in industrial applications. It is important that the operator(s) of the Ecostream™ tank system have read through these operating instructions thoroughly, and understand all safety instructions and regulations.

The Ecostream™ tank system 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

Technical Specifications

Specification Data

PRODUCT CODE	ECO375	ECO500
Country of Origin	United Kingdom	United Kingdom
Maximum Height	781mm	781mm
Maximum Length	1113mm	1353mm
Maximum Width	913mm	913mm
Dry Weight	91.5kg	113kg
Wet Weight	446kg	614kg
Min. Inlet Pressure Requirement	2.8 bar / 40 bar	2.8 bar / 40 bar
Optimum Operating Pressure	6.9 bar / 100 bar	6.9 bar / 100 bar
Standard Water Inlet Connection (Male hose lock)	3/4 inch	3/4 inch
Pure Water Outlet Connection (Male hose lock)	-	-
Electrical Power Supply	12v Battery / 230V mains	12v Battery / 230V mains
Optimum Water Quality	000ppm	000ppm
Water Quality Range	000ppm – 1000ppm	000ppm – 1000ppm
Pure Water Flow (optimum output)	3.8 Lpm Per Pump	3.8 Lpm Per Pump
Operating Time	Approx. 10hrs	Approx. 10hrs

Safety Regulations

Electrical Specifications and Safety



This applies to all Ecostream™ system configurations. 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 manufacturer'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 manufacturer 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 mmq. 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 manufacturer 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.

The innovative Ecostream™ is a vehicle mounted flat tank system designed to produce pure 000ppm water, through Reverse Osmosis and Deionising filtration, suitable for spot free cleaning.

The water tank is baffled to restrict water movement in transit. With a height of less than 450mm these tanks offer a safe, low centre of gravity tank system, while taking up minimal load space. By installing the optional secondary floor, the van load area can still be utilised for a multitude of purposes and the transport of other needed equipment.

With the equipment cabinet mounted at the front of the tank, at the door opening, operation has never been easier... pumps, controllers and filters are easily accessible, via the opening of the cabinet, maintenance and filter changes are simply and quickly achieved.

Safety Precautions

- It is always recommended to professionally install the Ecostream™ by the manufacturer or an approved installer. Speak to **VARITECH SYSTEMS Ltd** for more details.
- If being installed in a vehicle or trailer, always ensure the vehicle/trailer has a suitable payload for the Ecostream™ to be installed
- Do not use the Ecostream™ with telescopic poles in the vicinity of power lines, junction boxes, power sockets – Please read Streamline® OVA8® operating instructions
- Do not attempt to modify the Ecostream™ as this could cause a safety hazard or system breakdown
- Never use faulty components or if there is visible damage to the pole or fittings - replace them immediately with original spare parts

Personal Safety

Stay alert, watch what you are doing and use common sense when operating the Ecostream™ tank 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 Footware

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.

- 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 Ecostream™ tank system is manufactured with the safety of the operator in mind, including some key features such as;



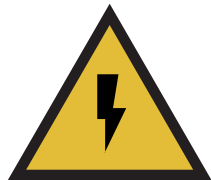
Over Pressure

- If the water pressure in the Ecostream™ filtration system rises above the maximum 100psi / 6bar pressure, the pressure switch valve shuts on the pump closing the system down, and not letting the pressure in the system rise any further.
- 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 Ecostream™ system, an activation switch is triggered and the system will automatically switch off.



Electrical Hazards

- As the Ecostream™ system is powered by an electrical source, never use expose 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 Ecostream™ system with a damaged cable.



Mechanical Hazards

- To avoid all mechanical hazards, ensure the **Ecostream™** system is safely secured in position before filling the water tank.

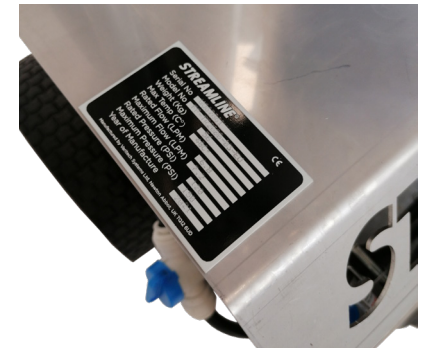
Stay alert, watch what you are doing and use common sense when operating the Ecostream™ tank system. Do not use the filtration system while you are tired or under the influence of alcohol, drugs or medication. A moment of inattention while operating the filtration trolley may result in serious personal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

Operating the Ecostream™ system

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

When purchasing the product, make sure it has an identification plate. If this is missing, notify the distributor / manufacturer where you purchased the unit from.

Use of an appliance without an identification plate absolves the manufacturer from all liability. Products without an identification plate should be considered as anonymous and potentially dangerous.



Unpacking of the Ecostream® system

Your Ecostream™ system has been carefully manufactured, checked through QC and packaged as a kit.

If your Ecostream™ is installed in a vehicle or trailer, please move to STORAGE OF Ecostream™ System.

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 your System

Short term storage: 2-4 weeks of no use

- i. Remove excess water.
- ii. Remove the DI resin cartridge housing and pour out the excess water.

Long term storage: 4 weeks plus of no use

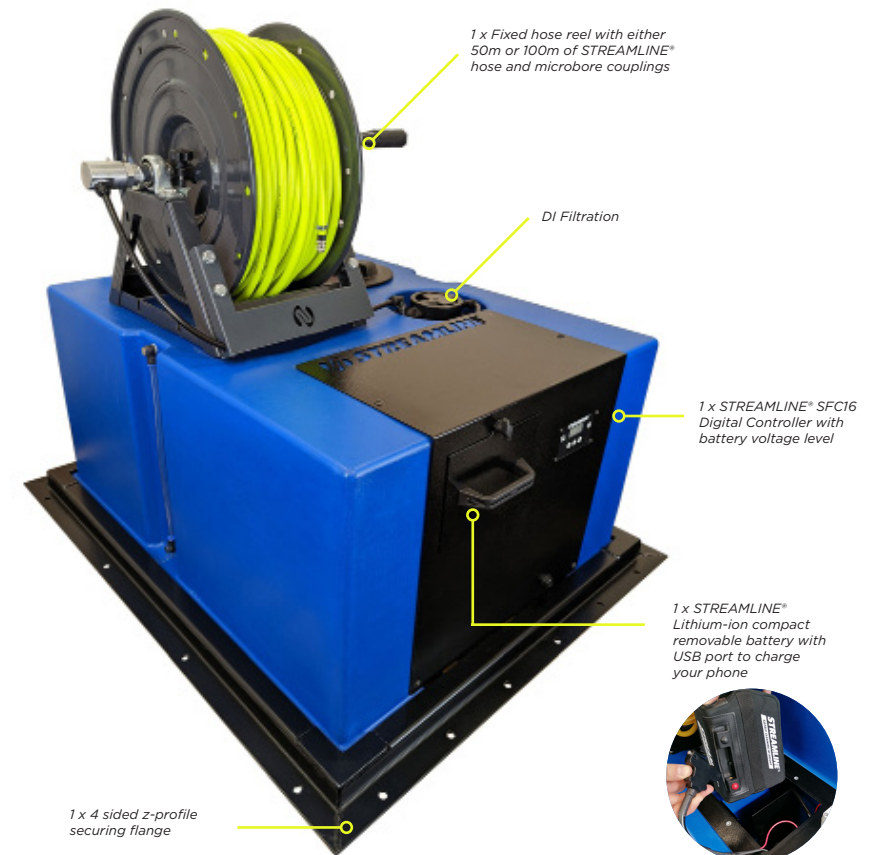
- iii. Remove excess water.
- iv. Remove the DI resin cartridge housing and pour out the excess water.
- v. Remove all filters from the Ecostream™ system, wrap in individual plastic bags and seal.
- ix. Remove all filters from the Ecostream™ system, wrap in individual plastic bags and seal.
- x. Replace all filter housings and membrane caps without any filters inside.
- xi. It is important to store the Ecostream™ system where it cannot freeze.
- xii. It is important for all filters to not be allowed to dry out when not in use.

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;

About your system



ECO255

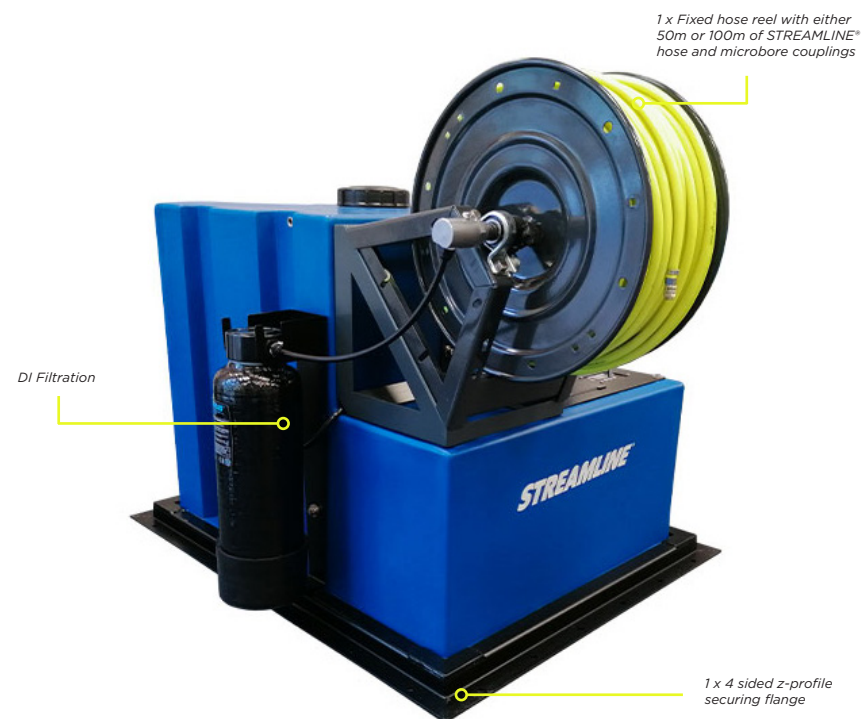
About your system

No Filtration



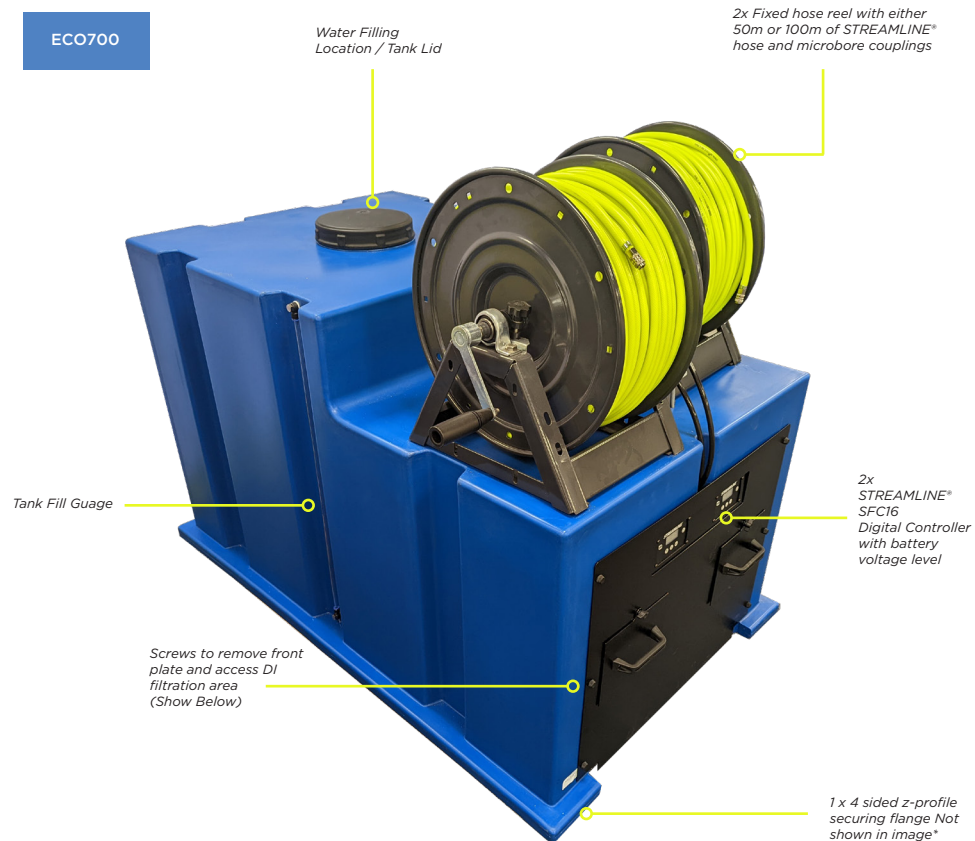
ECO375-02
ECO375-03
ECO500-02
ECO500-03

DI Filtration



ECO375DI-03
ECO500DI-03

ECO700



Charging your Battery

The Ecostream™ Range includes a Lithium Ion Battery set up. This Battery is to be charged with the charger supplied with the System. It is advised battery is charged after every day of use. Battery can be discharged fully, but is advised to be charged fully prior to every use.

1. Remove the battery from the Ecostream™ and charge in dry/warm conditions.
2. Plug the Mains plug on the charger into 230v Mains and lights will appear on the charger
3. Plug the Battery connection from charger into the battery
4. Battery Charge will indicate on the charger with green light as charging
5. Full charge will indicate as full green bars
6. Unplug and refit into Ecostream™
7. The battery charging cycle is approx. 8 hours to full charge. The run time of the battery is approx. 8 hours continual usage.

Important

Only use the Ecostream™ charger supplied with your Ecostream™ 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 over charging.

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



How to assemble the system

Filling the water tank on your Ecostream™ depending on what filtration specification.

No Filtration

When using the Ecostream™ with no filtration, is designed to be filled straight into tank lid and fast filling with a transfer nozzle.


Important

Your Ecostream™ does not have any filtration, therefore the operator MUST fill the tank with pure (000ppm) water.


DI Filtration

When using the Ecostream™ with DI filtration, you have the option of filling through the water inlet port which is connected to a float or opening the tank lid and fast filling with a transfer nozzle.

Turning your ECOSTREAM™ system on

- i. Switch the flow controller on by pressing the  button



- ii. You can adjust the water flow rate by increasing/decreasing the flow rate number until a desired flow rate is achieved. The average flow rate is usually set between 40-50 on the Streamline® controllers (approx. 2.5lpm). The pump MUST run continuously. If the pump is running intermittently whilst water is flowing to the telescopic pole, decrease the speed on the flow controller by pressing the  button until the pump runs continuously.



You are now able to use your Ecostream™ system.
Please ensure you regularly check the water quality with the TDS meter provided.

Important

Different cleaning applications may require different water flow rates, i.e. large glass areas with lots of rinsing will need more water than a small window.

Operating your ECOSTREAM™ system

The Ecostream™ system is designed for a single operator use only.

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 Ecostream™ 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. When cleaning windows, remember to pay special attention to the frames, especially if it is the first time this method of window cleaning is being used.

The most important part of the cleaning process is to rinse the glass thoroughly, after the window has been cleaned. To do this, lift the brush away from the glass and move the head from side to side working from top to bottom motion, allowing the water remove all particles from the glass.

If you are cleaning windows on a warm day, the rinsing procedure must be done meticulously, as warm, direct sunlight can cause spotting due to insufficient rinsing.

Turning your ECOSTREAM® system OFF

The Ecostream™ system is designed for a single or double operator use.

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



Malfunctions & Troubleshooting

Please see the filling instructions depending on what filtration specification you have on your Ecostream™

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 Ecostream™ filtration system directly to the telescopic pole
- c. Clean or replace the sediment filter
- d. Contact service centre

ii. High pure water TDS

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

iii. 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

iv. Controller flashing 'BAT' constantly

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

Controller Troubleshooting No Filtration

- **dE – A dead end has been detected.**
The pump has been turned off automatically by the controller, as there is a water stop some where in the system.
- **PS – The pressure switch has been activated.**
This means the pressure has exceeded the pressure switch rating. Check if there is no water blockage or reduce the pump speed to lower the resistance.
- **Bat (Pump still working) – Your battery voltage has dropped below 11.5V.**
Re-charge your battery as soon as possible, before your pump finally stops.
- **Bat (Flashing and pump stopped) – Your battery voltage has dropped below 11.0V.**
The pump has been stopped by the controller to prevent possible damage to the battery. Re-charge your battery as soon as possible. If you have a split charge relay fitted to your


ECOSTREAM® system, start your vehicle engine which will then start the charging process.

Adjusting the calibration on the controller



The Streamline® controller can automatically shut down the pump automatically

This is known as 'dead-end' and labelled 'dE' on the controller.

The sensitivity can be adjusted and set by the operator, if the controller is turning off too early or too late.

- Switch the flow controller on by pressing the  button




- To adjust dead-end detection, press and hold  and  at the same time. Wait for 'Cal' to display and flash on the screen.



- When 'Cal' displays on the screen, adjust dead-end detection up with (less sensitive, turns off at higher pressures) or down with (more sensitive, turns off at a lower pressure).



- Press  button to set and save the final calibration



Warning: Do not set the calibration too high

Setting calibration higher than necessary places extra strain on both the pump and the controller in a dead-end situation. This can result in damage to both the pump and your controller.

Maintenance & Replacing Filters

Care and maintenance of your Ecostream™ 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 Ecostream™ 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 inspection

- Drain tank completely to clean tank out

Warning

Ensure the ECOSTREAM® system is not operating or under pressure when maintenance or filter replacements are being undertaken.

De-ionising (DI) Resin Beads - Usage & Replacing

The DI filter is a vessel containing DI resin beads. The DI resin cannot be regenerated and needs replacing should the 'out' TDS reading rise above 006ppm.

To replace the DI resin filter

Remove the DI filter from the side of the Ecostream™ system, by unclipping it and disconnecting the pipes.

Unscrew the head from the filter body and tip out the old resin. Refill with new resin canister with resin $\frac{3}{4}$ full.



PRODUCT CODE: MB115

Warning

Disposing of resin beads can create a slippery surface. Care needed to dispose of resin beads effectively. Remove all over spill immediately

The Pump

The pump fitted to the Ecostream™ systems are protected by an in-line strainer filter, with a clear top allowing for visual inspection. If any debris accumulates in the strainers, unscrew the top and flush out with clean water.

The pump has a built in pressure switch. When switched on it will pump until it has reached the maximum pressure setting before cutting out. This is a safety feature. However, the pressure switch may burn out if the pump is allowed to run intermittently.

To avoid this happening, make sure that the pump speed is correctly set on the flow controller. The pump must not be stored under pressure as this will invalidate the warranty.



PRODUCT CODE: SFDP22-012-100-238

Disposing Of Filters & Machine

The Ecostream™ system is classified as special waste. It must be taken apart and divided into uniform sections which should be disposed of according to current legislation.

Do not use the components removed as spare parts. All filters are disposable as unarmful general waste.

Why Streamline?

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



Checked & tested
by quality control

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.

Notes

[illegible]This image shows a full page of white paper with horizontal dashed lines, typical of primary-ruled notebook paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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INSTR-ECO375-500