DOCUMENTATION TECHNIQUE

Séparateurs et traitement des eaux

Caractéristiques, plans et instructions du fabricant.
Pour le choix de votre équipement et la préparation d'une demande de devis.

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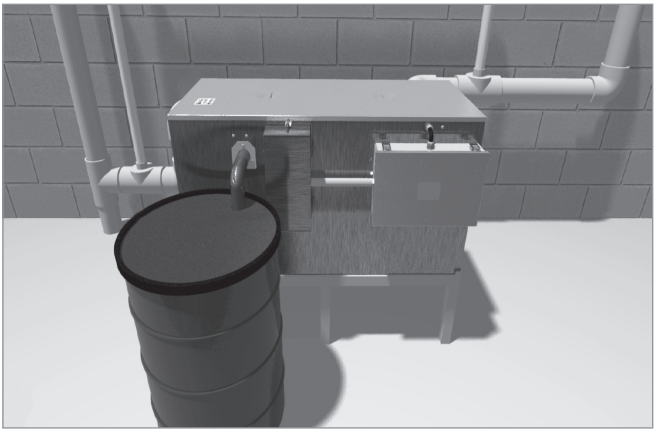
565 avenue du Prado - 13008 Marseille - France

Grease Guardian®

Frontline Engineering

Automatic Grease Removal Unit

MODELS GGX75, GGX125 AST
SYSTEM MANUAL 230 VAC



MANUFACTURED BY FM ENVIRONMENTAL

www.greaseguardian.com

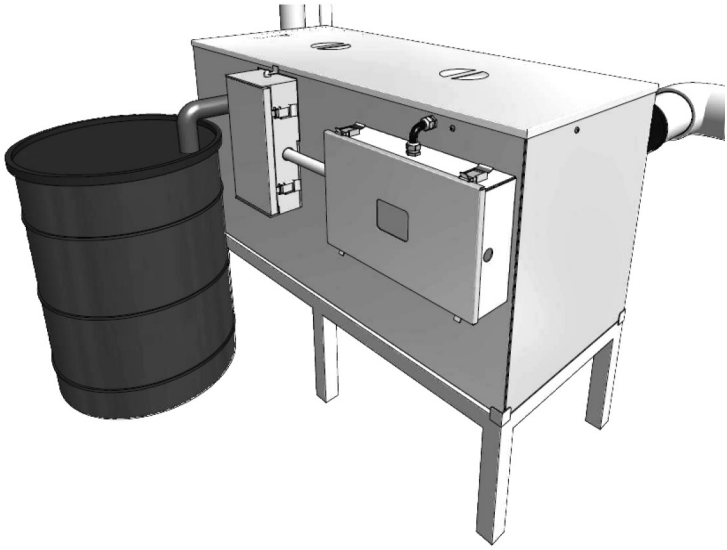
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GREASE GUARDIAN X 75/125 AST OVERVIEW

Thank you for choosing the FM Environmental Grease Guardian X AST series. The AST series (Automatic Solids Transfer) is a totally engineered system for separating free floating grease and oils from drain water flows. The separated grease and oils are trapped within the stainless steel tank and are automatically recovered by the system's skimming mechanism. Only the "cleaned" water is allowed to pass through the system into the drain lines.

Exclusively the AST series is equipped with an automatic solids pump system to macerate, remove and discharge solid food waste to drain thereby eliminating manual handling. Additionally AST systems are fitted with an automatic wash system for cleaning of key grease/solids handling components.



The Grease Guardian X can be used in a wide variety of applications from restaurants and food processing operations to many types of industrial operations. Uniquely the models within the 75/125 AST series are designed to serve entire kitchen lines from a single central location, thus offering 100% treatment for all source of fats, oils and greases.

In order to reduce staff maintenance interventions the 75/125 series systems are designed to work in conjunction with bulk oil containers to reduce frequency of container replacement. The systems are also supplied with a Building Management Connection as standard and can be further upgraded on request to include a motion sensor system to monitor frequency of maintenance and/or a high level oil container alarm system.

By design the 75/125 AST series provides complete peace of mind for your grease interceptor management program.

IMPORTANT CUSTOMER NOTICE

Prepare for commissioning by your market representative:

On completion of installation as described in this manual please ensure the following steps are taken before arranging system commissioning:

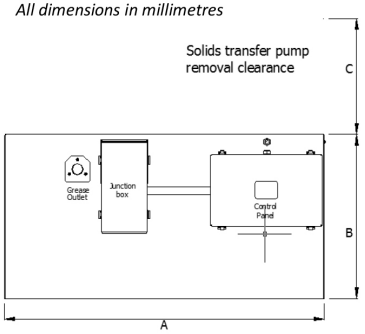
1. Ensure the unit is filled with water un3l the level is seen to stabilise at the skimming drum/outlet level.
2. Check for any pipe leaks during the filling process. Ensure the plumber seals up any leaks.
3. Ensure the power supply is installed and ready to be switched on by your representa3ve upon arrival..
4. Never power up the unit without the Grease Guardian representa3ve present to check water level and settings.
5. Ensure an in-house senior staff member is appointed for system training during the representative's visit. Such a person should either be a maintenance manager, or catering manager/chef.

a) daily and weekly maintenance tasks required for this system. Knowledge acquired by the senior member will in turn allow delegation of system tasks to other staff members during the system's lifespan.
b) Weekly waste oils handling and service requirements for the system.

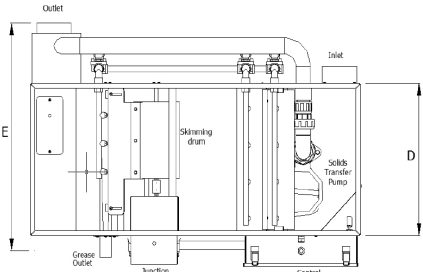
PRODUCT DIMENSIONS & SPECIFICATION 230VAC

AST Model	A	B	C	D	E	F	G	Inlet pipe	Outlet pipe
GGX75	1106	548	457	456	770	420	305	114	114
GGX125	1500	630	457	456	770	500	387	114	114

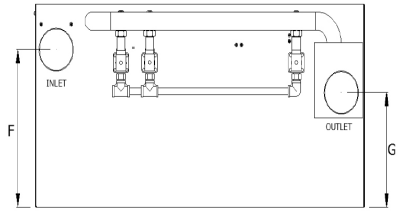
All dimensions in millimetres



Front view



Top view

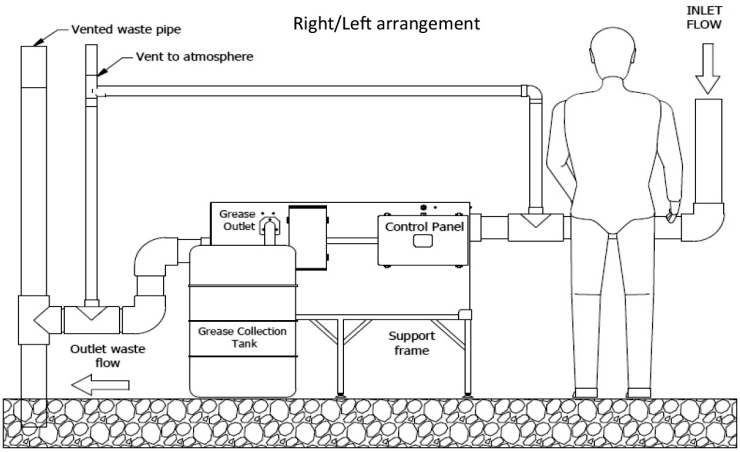


Rear view

AST Model	GGX75	GGX125
Hydraulic Flow litres/sec	4.75	7.9
Grease Retention Capacity litres	80	138
Net system weight (empty) kg	110	132
Weight full (in operation) kg	290	426
Electrical load (max)	9A	10.7A

Casing Material	16 Gauge for GGX75. 14 Guage for GGX125. AISI 304 Stainless Steel; Bright finish
Motor	25 Watt, 230v, 50 Hz 1.3 µF capacitor
Heater	1000 Watt - GGX75 2000 Watt - GGX125, (Thermal cut-out inc.)
Time Control	Progrmmable Logic Controller with programmable 4hr cycles and 7 day timer
Skimming	10 litres per hour
Solids transfer pump rate (flow/head max)	16m3h/9.5m
Hot wash water system operation requirements	0.75 litres/s @ 3-6 bar (temp 40-60 degrees C)
Power supply	230VAC, 50 Hz. 1 phase

INSTALLATION



Locate Internally

Do not install this system externally unless a weather proof shelter is used. Ensure the ambient temperature is maintained within a range of 10 to 35 degrees C (32 - 95 F). This is to ensure both electrical safety and to prevent cooling of skimmed grease on the grease outlet channel. Warranty is void unless these conditions are met.

Replacing an older grease trap?

It is imperative to clean drain lines of blockages or build up before installing this system, particularly when replacing older grease traps.

Unit Positioning

To plan a suitable position for the GGX first refer to "Product Dimensions and Specification" page in this manual to check available clearances. Position the unit as close as possible to the fixtures it is serving to minimize grease build-up in the piping. If the system is to be mounted on a frame ensure the additional height of frame is added to the standard table specification height. If using the FM Environmental frame option, the height of this frame is 1 ft (300mm)

If the unit's position is directly floor mounted, ensure that the floor is pre-lacquered and that the AST unit base is sealed to the floor around its perimeter by using an approved silicone sealant. Lacquering of the floor in any case will also ensure that any oils spills are easily cleaned later in the maintenance period. Consider installing floor gullies in the location to receive spillages.

Excluded Kitchen Fixtures

Do not connect the system to food grinders, potato peelers or waste disposal units. Such installations will void Grease Guardian's Warranty.

Inlet piping

Drain piping from the sinks/oven should be 2 inch Ø (50mm) minimum. Ensure that a fall of 1/3" inches per foot (1:40) is used and keep the inlet pipe as short as possible to avoid grease build-up before it reaches the unit. If the unit is serving more than one fixture ensure that the respective drain pipes and joined in a T-piece before they enter the unit piping. Install "P" or "U" Traps before inlet on sinks as normal. A Rubber Couplings with screw clasp are included.

Outlet piping

Keep the outlet piping as straight as possible, only use"sweep"connections and minimize the number of bends used. Do not reduce the size of the pipe used in the outlet, keep the outlet piping as short as possible and do not install any "P" or "U" traps (the units has an in-built internal gas trap). If the unit overflows during operation the problem normally lies with the size and layout of the outlet piping which is not fit to take the full flow freely.

Flow controller

If your plumbing code requires a vertical type flow regulator, and for high head height applications (over 6 ft, such as when installing units in basements) and to comply with PDI requirements, a proper flow control device with air intake must be fitted on the inlet piping. Suitable air intake pipework should be routed to the top of this component and connected to a vented waste stack within the building. Note that if the Grease Guardian is serving multiple fixtures, some plumbing codes ask that each fixture is equipped with its own flow control device.

Flow Control X75: Endura XL 4044275A

Flow Control X125: not yet available

Inlet and Outlet piping connections

Rubber Couplings with screw clasps are included.

Automatic spray wash

Each Grease Guardian X AST unit comes complete with three automatic wash spray bars, one located in the screenings chamber and the other two in the main grease collection chamber. A hot water supply is to beplumbed

to the water inlet connection on the manifold at the back of the unit. The hot water supply should preferably be filtered to avoid any particles from entering the solenoid valves provided. The plumber has to ensure that any plumbing of the tap water supply to the manifold conforms with the local plumbing codes in particular to the provision of any backflow prevention devices, assemblies and methods to be used.

Single Phase Connection

The power cord of AST unit is to be hardwired directly to a dedicated mains outlet rated to handle electrical loads as described in the specifications table of this manual. Hardwired outlet must be fitted with a double pole switch. CAUTION: to provide continued protection against risk of electric shock, connect to properly grounded outlets only. All electrical work must be carried out by a qualified electrician.

Venting

For the inlet piping, a pipe vent (or code approved air admitance valve) which is at least 1/2 the inlet pipe diameter should be connected. An additional pipe vent (or code approved air admitance valve) which is at least 1/2 the outlet pipe diameter should be connected to the outlet pipe of the system and located as close as possible to the Grease Guardian outlet connection. It is always preferable to have vent pipes used for each Grease Guardian system connected to one common vent pipe and venting directly to atmosphere rather than combining these with other waste pipe vents. This method eliminates the possibility that odors from other other fixtures making their way back into the Grease Guardian unit.

Room ventilation

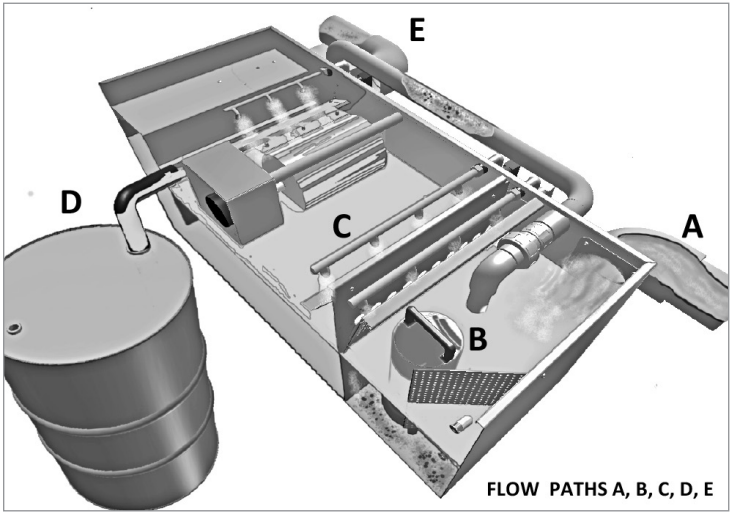
Odors will be minimised via the correct venting method above. However air extraction fan systems should be installed in more confined locations of less than 4m3. Such a system should also be installed in ANY location where personnel are working normal work hours within a 5 metre vicinity of the AST location.

Operating Temperature

Acceptable room temperature range for safe electrical operation of this system as required under the appropriate UL standard is between 0 and 35 degrees C (32 - 95 F). However for optimal grease removal the roomtemperature should be maintained at 10 and 35 degrees (50 - 95 F). This will reduce the risk of grease solidifying on the skimming mechanisms.

All instructions and drawings provided in this booklet are for reference only. The unit provided is tobe installed in compliance with the local legislation, regulation and codes. Installation by a qualified plumber knowledgeable with the local plumbing code is necessary.

DESCRIPTION OF OPERATION



In normal operation, the unit will require minimal operator input. The system has a number of automaic functions as described below, with the main manual task being limited to the removal of the collected grease from the colletion tank.

A Flow from the kitchen enters the inlet side of the unit

B The solids collection compartment. Solids will accumulate in this compartment, settleable solids falling to the tank base and floating solids and grease setting at the water surface. The solids at the base are transferred to the outlet pipe on a timer basis by a submersible pump.

C The operation of the submersible pump is controlled by a timer in the PLC and by two level sensors which stop the pump at low level and automatically start the pump at high level if the water level in the inlet compartment is too high due to blockages. Solids that settle on the surface are trapped by a stainless steel mesh and washed back into the solids compartment. Lighter free floating grease is allowed to pass through the mesh and into the grease collection compartment.

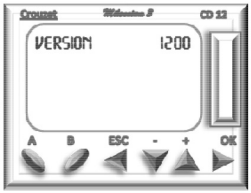
D The grease that passes to the grease collection chamber is periodically skimmed out of the unit by a rotating skimming drum The skimmed grease passes to a receiving waste container.

E An automatic spray bar activates for short bursts during the skimming cycle to aid movement of the grease towards the skimming drum. A further automatic spray bar operation washes the skimming blade and collection channel after the skimming cycle has completed. Grease separated water exits together with the pumped waste via the final outlet

ENSURING OPTIMAL SYSTEM EFFICIENCY

- The unit requires both weekly user maintenance and also Quarterly service by approved engineer to avoid performance issues.
- Do not use Hazardous detergents to clean unit, and do not pour detergents or chemicals directly into the unit.
- The unit is designed to trap and remove **free floating** grease oils and fats only.
- To help ensuring the highest grease removal efficiency, reduce solid food waste by installing primary strainers or scraping waste
- into bins. The unit is provided with an automatic solids transfer system to provide protection from solid food waste build up in the unit when properly maintained.
- Consult your supplier in the event of increased loadings to the Grease Guardian.
- Do not connect food grinders, potato peelers and/or waste disposal units or similar devices upstream of the Grease Guardian.

CONTROLLER SETTINGS - SETTING MAIN CYCLE



HOME SCREEN/START SCREEN

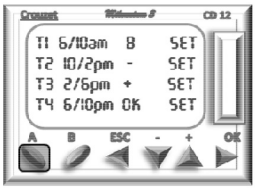
The Home Screen is shown onLeft. The following notifications are permanently displayed in the Home Screen.

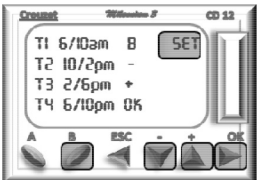
a. PLC program version on top leS

b. Time of Day on the top right.

On unit power up, the controller will also run the automatic TEST sequence and the Home screen displays each component under test.

(see User alerts detailed later in this sec"on)

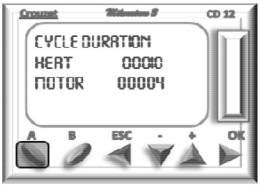


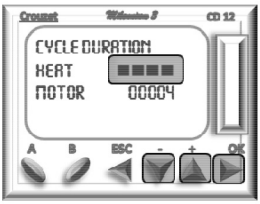


CYCLE ON ZONES SCREEN

Press "A" from the Home screen. The 4 main ON zone periods are displayed (T-zones). Should an alternative menu appear then re-press "A" until the correct screen is called up.

Each zone is of a fixed 4 hour duration. To set any zone to active press the corresponding keys indicated: "B", "-" , "+", "OK". The word "SET" displays for any active zone. To deactivate a zone simply re-press the corresponding key.





CYCLE DURATION SCREEN

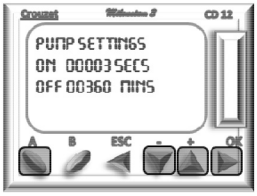
Pressing "A" again will call up the "CYCLE DURATION" display. This display sets separate ON time durations for the heater and skim motor components within any T1-T4 zone. A single value comprises of 15 minutes time duration, 10 minutes ON/5minutes pause. Note that the "Heater" values must be >= "motor" values or the controller will display the "INVALID PROGRAM" Alert. (see User Alerts page)

To adjust the value displayed use "-" OR "+" to navigate to the HEAT value. Then press "OK" to lock on to the value. Next use "-" OR "+" to increase or decrease the value. Confirm the setting by pressing "OK" again. Next move the cursor using "-" OR "+" to the Motor Step value and repeat the setting procedure, confirming setting with "OK"



SKIMMER DURATION SCREEN

Pressing "A" again will next call up the "SKIM DURATION" display. This display further optimises the ON/OFF duration for the skim motor component. The default is 600 secs ON (10 mins) and 300 seconds OFF (5 mins). To adjust: use keys "-" OR "+" to navigate to the ON value. Then press "OK" to lock on to the value. Next use "-" OR "+" again to increase or decrease the value. Confirm the setting by pressing "OK" again. Next move the cursor using "-" ORS "+" to the OFF value and repeat the setting procedure, confirming settings with "OK"



SLUDGE TRANSFER PUMP SETTING SCREEN

Applicable to All AST GGX systems Pressing "A" again will call up the "PUMP SETTINGS" display. this display sets time limits for operation of the internal pump for removal of sludge from base of GGX tank. To adjust: use keys "-" OR "+" to navigate to the ON value. Then press "OK" to lock on to the value. Next use "-" OR "+" again to increase or decrease the value. Confirm the setting by pressing "OK" again. Next move the cursor using "-" OR "+" to the OFF value and repeat the setting procedure, confirming settings with "OK".



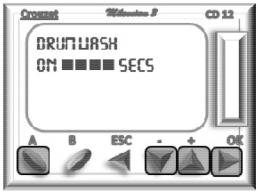
BLOWER SETTING SCREEN

Pressing "A" again will call up the"BLOWER SETTINGS" display. For systems fiJed with a blower system, this display sets time limits for air flow to the submerged aeration bar. To adjust: use keys "-" OR "+" to navigate to the ON value. Then press "OK" to lock on to the value. Next use "-" OR "+" again to increase or decrease the value. Confirm the setting by pressing "OK" again. Next move the cursor using "-" ORS "+" to the OFF value and repeat the se;ng procedure, confirming settings with "OK".



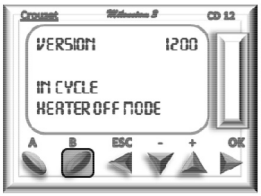
SURFACE WASH SETTING SCREEN

Pressing "A" again will call up the "SURFACE WASH SETTINGS" display. Surface wash is a standard feature in all ISW and AST units required to separate floating sediment form surface grease. The display sets time limits for water flowing to the spray bar. To adjust: use keys "-" OR "+" to navigate to the ON value. Then press "OK" to lock on to the value. Next use "-" OR "+" again to increase or decrease the value. Confirm the setting by pressing "OK" again. Next move the cursor using "-" OR"+" to the OFF value and repeat the setting procedure, confirming settings with "OK".



DRUM WASH SETTING SCREEN

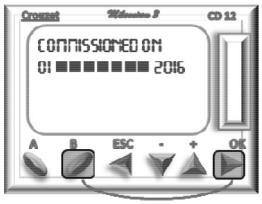
Pressing "A" again will call up the "DRUM WASH SETTINGS" display. This is a standard feature in all ISW and AST units. This feature cleans the skim drum of any debris and is automatically activated x 1 3me only, at the end of an active T zone. The display controls the duration of water flow to the spray bar. To adjust: press "OK" to lock on to the duration value. Next use "-" OR "+" again to increase or decrease the seconds value. Confirm the setting by pressing "OK" again.



HEATER OFF MODE

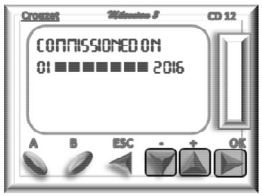
In locations where water temperature from drainage appliances is sufficiently hot there is less of a requirement to use the Grease Guardian heater. To preserve the heater element and reduce energy costs, the heater can be disengaged. This is achieved by pressing and holding key "B" for 10 seconds when in the Home screen. The heater is shut off for any future cycles. This setting is maintained even after a PLC power down/restart. To reengage the heater at any time re-press and hold "B" for for 10 seconds when in the Home screen.

CONTROLLER SETTINGS - EVENT LOGGING

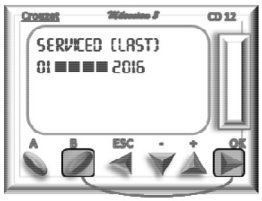


COMMISSIONED ON (DATE) SCREEN
Press "OK" and "B" together from the Home screen. The COMMISSIONED ON display should show. If an alternative menu shows, then re-press key "B" only until the screen left is called up.

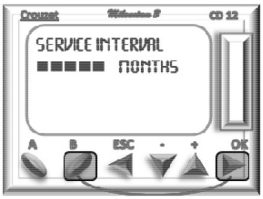
The "COMMISSIONED ON" display simply logs thecommissioning date for the Grease Guardian for general reference. To set this at commissioning, use "-" OR "+" to navigate to the day, month, or year value as required. Then press "OK" to lock on to the value. Next use "-" ORS "+" again to increase or decrease the value. Confirm the setting by pressing "OK" again in each case, before moving to the next value. Confirm se;ngs with "OK" before returning to Home Screen by pressing "ESC"



LAST SERVICED ON (DATE) SCREEN
Press "OK" and "B" together from the Home screen. Re-press key "B" only until the screen left is called up.



The "SERVICED LAST" display simply logs the last service of the Grease Guardian for future reference. To adjust, use "-" OR "+" to navigate to the day, month, or year value as required. Then press "OK" to lock on to the value. Next use "-" OR "+" again to increase or decrease the value. Confirm the se;ng by pressing "OK" again in each case, before moving to the next value. Confirm se;ngs with "OK" before returning to Home Screen by pressing "ESC"



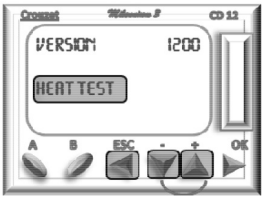
SERVICE INTERVAL REMINDER SCREEN
The "SERVICE INTERVAL" display is a control menu that sets the interval in months for the "service due" reminder. For full safety compliance the recommended setting is 3 months

To access press "OK" and "B" together from the Home screen. Re-press key "B" only until the screen left is called up.

The options that can be set range from 0-12 months. To adjust press "OK" to lock on to the flashing month value. Next use "-" OR "+" again to increase or decrease the value. Confirm the setting by pressing "OK" before returning to Home Screen by pressing "ESC"

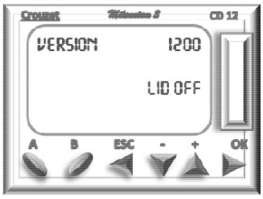
All settngs above are battery backed up in event of disconnection or a power outage

CONTROLLER SETTINGS - USER ALERTS



AUTOMATIC TEST OF COMPONENTS
On power up, the controller will run the automatic TEST sequence and the Home screen displays each component in sequence for an "ON" duration of 4 seconds. **FOR AST** series units, the TEST sequence is: **HEAT TEST > SKIMMER TEST > SURFACE WASH > DRUM WASH > SCREEN WASH > BLOWER > END.**

Later the TEST can be reactivated by pressing "-" and "+" together. Any TEST can be cancelled mid-test by pressing "ESC". Note that the internal pump is not tested via this controller, but via a separate panel mounted TEST button

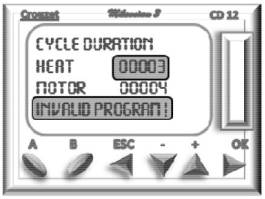


LID OFF ALERT
The display flashes a LID OFF alert if the main Grease Guardian tank lid is removed. Additionally if the unit is in a cycle, the heater and motor components are shut down to allow safe access inside the tank if required.



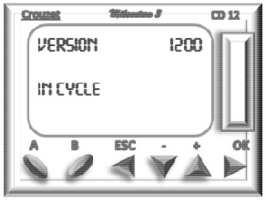
PIR REMOTE SENSOR - OPTIONAL

Weekly maintenance alert for ISW series and AST series units. A remote sensor alert feature is standard on all **ISW and AST units.** This feature registers prolonged inactivity near the unit exceeding 7 days. It then flashes a maintenance reminder. The feature is also linked to the BMS output on the controller. The message is cancelled and re-set for a further 7 days when activity is detected again. Note this sensor version does not interrupt any cycle operations and is for information only.



INVALID PROGRAM ALERT

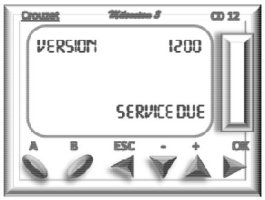
This message will flash within the Cycle Duration Menu if there is an attempt to set the skim motor values to greater than the heater values. Any cycle is prevented as a result, as there is a risk of insufficient grease liquefaction in the pre-warming period and also an increase chance of water being skimmed. To correct this issue the Heater value must be set either to the same value as the motor OR higher value. The values are normally advised by your representative at commissioning.



IN CYCLE ALERT

This message flashes at all stages of an active heater/motor cycle including the pause periods within a cycle. The message terminates after any skimming cycle completes

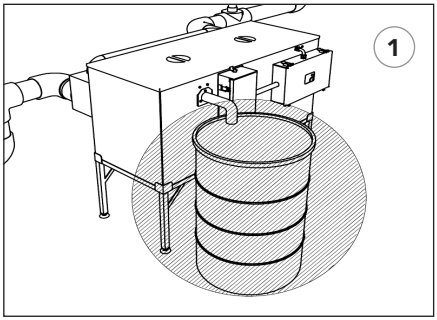
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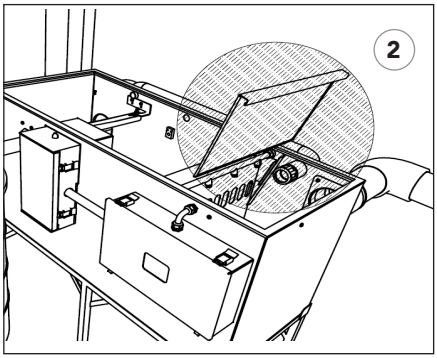
SERVICE DUE ALERT

If an outsourced service visit is not carried out on the date due this message will flash to indicate that a service is required. While the unit's operation is unaffected this alert it does require cancellation after the service by the approved engineer. If the unit has been recently serviced and the message still shows, it can be cancelled by entering the "SERVICE INTERVAL" display described in menu set B, then press and hold the "A" key for 5 seconds before pressing ESC to return to the home screen

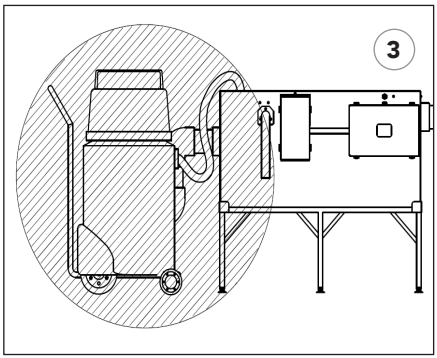
MAINTENANCE MAIN TASKS



WEEKLY
Remove the grease from the grease container and dispose of properly



WEEKLY/MONTHLY
Pull out the mesh screen and wash under hot water to remove any blockages obstructing the flow (Frequency depends on the level of contamination)



Outsourced Servicing
Quarterly Inspec"on and Pump Out carried out by a licensed waste collection company with prior training on the GGX product. The unit timer control and components are to be inspected and tested during each service visit. Any wear and tear parts are to be replaced if necessary.

MAINTENANCE IN DETAIL

1. In House Maintenance Of Your System

Minimal Maintenance

- Check the skimmed grease vessel **weekly** to monitor remaining capacity. This should be carried out partuticularly in early stages of system use.
- Check that there are no obstructions on the grease channel and exit hose **weekly.**
- Remove the mesh screen and wash under hot water to clean the screen perforations. Depending on level of sediment contamination this may be as much as once **weekly but no less than once monthly**.
- Open the main cover and check for any accumulated solids in the solids compartment **once monthly**. Force the solids transfer pump on by manually pressing the push-button located on the side of the control panel box. Sink Tap water may be needed to help push the solids towards the pump inlet.

Additional spot checks in cases of under-performance/low skimming:

- Ensure that the skimming blade is touching the skimming drum, evenly along it's surface and check the state of the plastic wiper blade.
- Perform a PLC program test to confirm that all the components are func3oning properly. This can be carried out by switching off at mains and repowering up. The test starts automatically on power up. (All settings baJery backe up) This test will also confirm the spray bars are operating correctly.

2. OUTSOURCED SERVICING QUARTERLY (90 DAYS.)

Quarterly Inspection and Pump Out

To guarantee maximum efficiency the unit should be inspected mechanically and pumped out quarterly throughout the year. This is to be carried out by a licensed waste collec"on company with prior training on the GGX product. During such a service the main lid is removed and the internal chamber walls are power/ steam cleaned. To allow transfer of water from the grease chamber to the pump chamber a flap needs to be opened by pulling the divider vertically upwards. Both chambers are then pumped out completely with a wet vacuum. The unit is refilled using the water flow from the sink. The unit timer control and components are to be inspected and tested during each service visit. Any wear and tear parts are to be replaced if necessary.

TROUBLESHOOTING

PROBLEM: Unit not removing grease

Is the power on?
Check that the power is on and that the time control is set correctly. If the power is being supplied and there is no display check fuses or contact your supplier.

Is wiper blade and wiper slot clean?
Clean any build-up present on the wiper blade assembly and the grease exit slot. Use the brush provided (see user maintenance part 2). Ensure the wiper blade is bolted in place and makes proper contact with skimming drum. Remove the main lid to check this if necessary. Replace wiper blade rubber if worn.

Check the cycle status
First check that "IN CYCLE" is displayed at the start of a cycle. Later in the cycle the skimming motor should be audible. Should there be no skimmed grease emerging during the cycle a further test can be conducted by entering TEST mode as described earlier in this manual. With the main lid removed and **with hands kept clear of the skimming drum** use this feature to check that the motor is running by pressing the B button when in the TEST mode.

Inadequate Heating?
With the lid removed press the B button when in TEST mode. If the drum is turning but grease is not being removed it may not be dissolving or separating out. If the grease appears hard or crusted, the GGX heater may require inspection or replacement as the grease may not be dissolving under heat.

Emulsified/starchy foods, or soaping problems in the waste flow?
If the surface grease layer is liquid or foam-like in appearance and grease is still not skimming out then it may contain high volumes of dairy waste such as mayonnaise, or starchy waste from rice or pasta. Ensure to reduce volumes of this waste entering the GGX unit. Also ensure to reduce the use of aggressive detergents and do not dispose any bleaching agents into the unit. Only neutral handwashable detergents should be used at the sink. Heavy oven cleaning agents can adversely affect performance if ovens are connected to GGX.

Check the main Lid and Lid-switch
The unit will not operate with the lid removed. This is a safety feature. With the exception of some maintenance tasks the lid must be fastened in place cor- rectly at all times so that the pushbutton switch is depressed by the lid pressure tab. If this is not the case then the controller display will blink a LID OFF message.

If the message continues to show but the lid seems secure then there may be a fault with the lid switch or magnet.

PROBLEM: Standing water inside the grease collection container

Check Timer Settings
The unit will skim off water if there is little or no grease left in the main tank. Excessive water will typically settle below the grease layer in the collector. Check the timer settings for excessive ON times. The ON time should be scaled back to reduce water being skimmed into the collector. The HIGH or MEDIUM Cycle Modes can be toggled back to LOW Cycle mode for example as described earlier in this manual.

PROBLEM: Surge Water in grease collector and/or spillages onto floor

Is either the AST outlet or the follow on pipework blocked?
In rare cases an obstructed exit from the unit may lead to level rises in the main tank which can spill into the grease collector suddenly and in turn onto the floor, if left unchecked. Ensure that there are no drain line blockages downstream from the unit. Ensure the unit is pumped out at least once quarterly so that sludge does not obstruct the passageways within the main tank.

Ensure the outlet pipe-work from the Grease Guardian is at a gravity fall of 1:40 minimum. Any restrictions in the outlet pipe due to a number of bends and T-pieces before it reaches the outlet end should be reduced. Ensure the outlet pipes from the unit are not smaller than the outlet pipe connection on the unit. Larger pipe sizes are more effective in prevent flow restrictions or obstructions.

Is the AST flow rate properly matched against all drainage fixtures connected?
Ensure that the water flow to the unit does not exceed its rated flow in gallons per minute.

Is the oil container filling with too much water?
Water entering the grease container could also result from a long wash cycle of the skimming drum. Reduce the time to minimise water ingress. With a hot water supply, the wash duration should be set at 4 seconds. Also ensure the oil container is emptied at the required frequency. The container needs to be checked at least once weekly for AST systems.

PROBLEM: Sink flow rate is suddenly reduced

Check for blockages in the inlet gasket located on the inlet side of the unit
Solids might accumulate on the inlet gasket of the system and require cleaning by accessing the inlet gasket from inside the pump compartment of the unit.

Check the operation of the solids transfer pump and the mesh screen
A high build-up in the solids collection compartment can result in a reduced flow in the inlet pipes. Check the solids pump operation, check that the level sensors are not covered in solids/grease, ensure that the mesh screen spray bar operation is functioning, clean the mesh screen by pulling screen out of the unit and wash using hot water. Refer to Mainteance guide in this manual.

PROBLEM: Odor reported

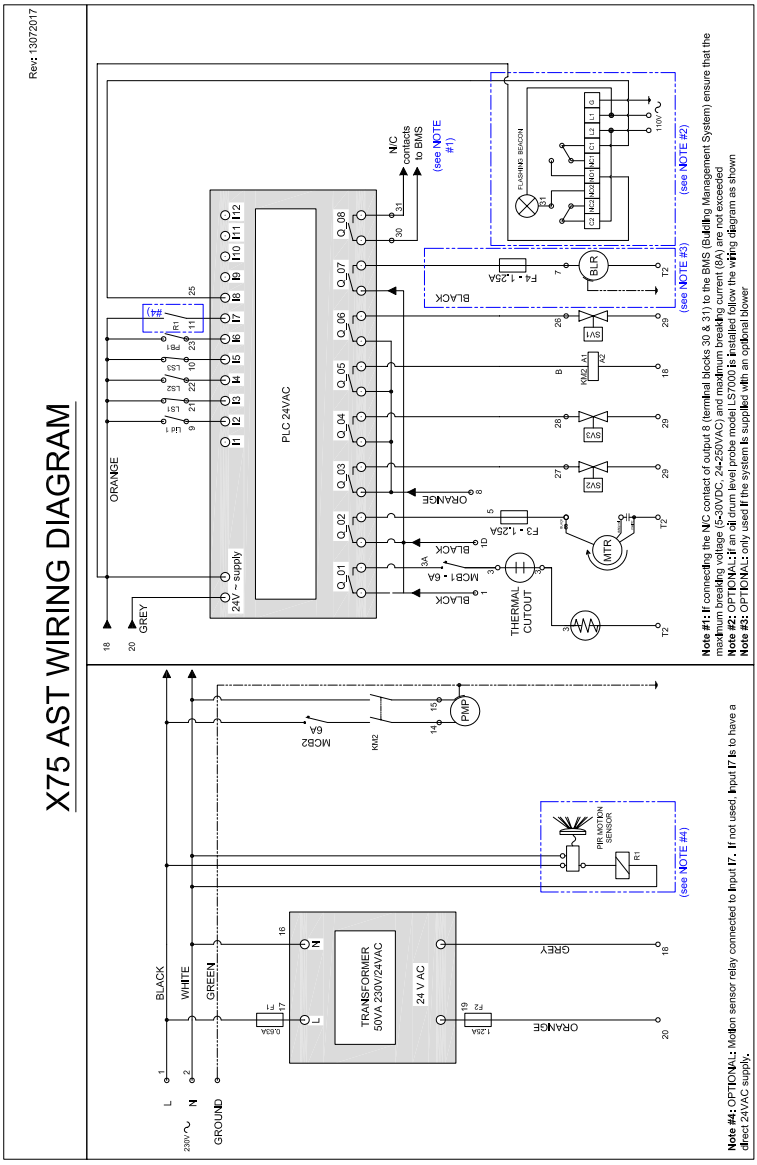
Has maintenance been carried out?
Ensure the daily strainer maintenance is carried out. Ensure the tri-monthly pump out (every 90 days) is carried out so that any standing sludge is removed. Also seek to prevent any non-skimmable waste from entering the unit as already advised earlier.

With grease removal devices it is always advisable to use best management practices to minimise solid food waste entering the unit, by for example plate scraping food to bins rather than washing this waste down the sink.

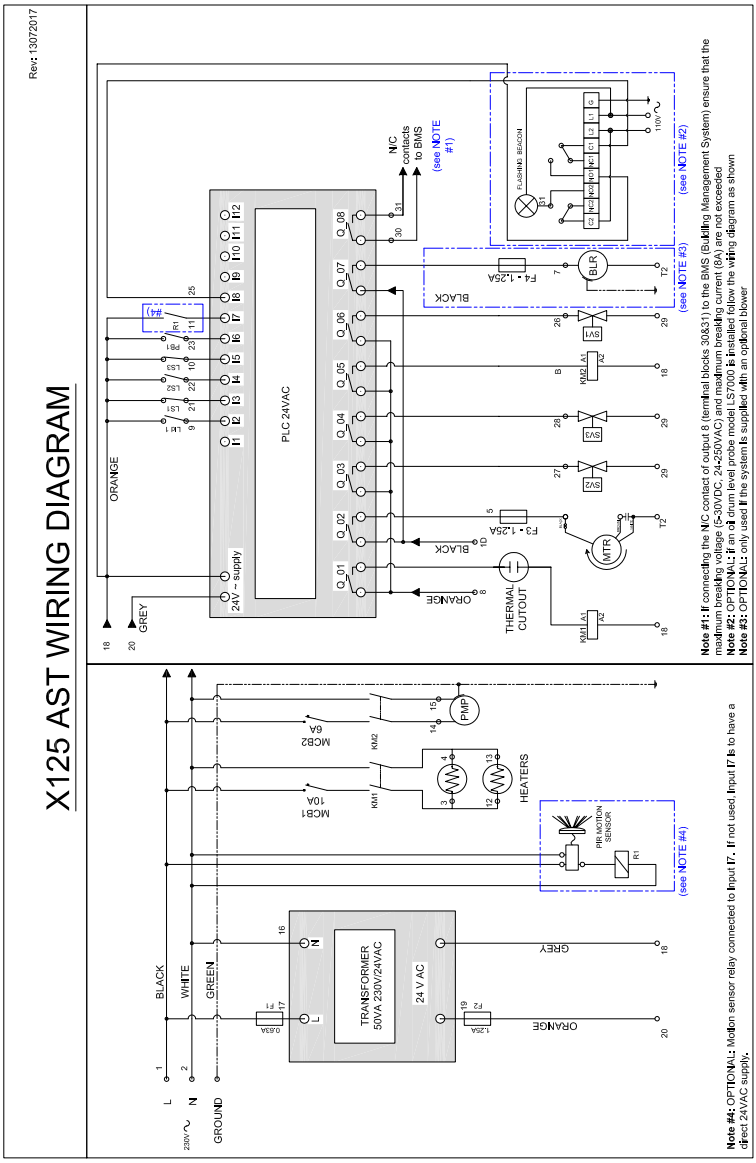
Stagnant Water
For applications where a connected sink or oven has a very low flow ensure to flush the Grease Guardian unit with fresh water weekly to reduce stagnant water.

WIRING DIAGRAMS AST RANGE

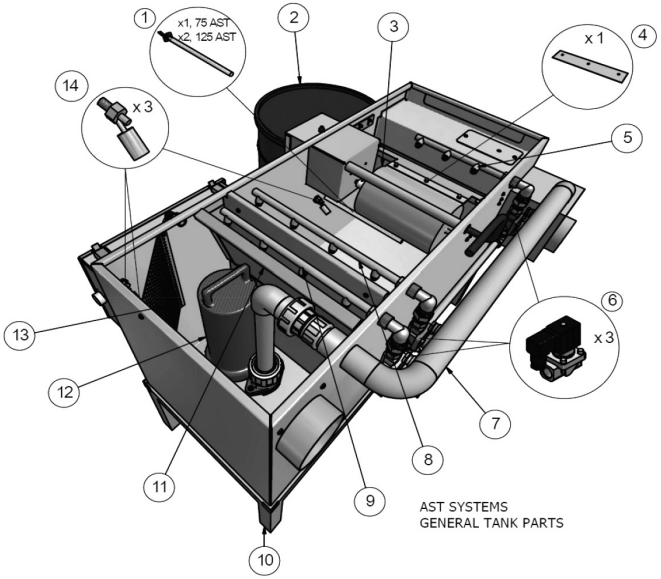
Every AST system is supplied with a UL approved power cord which must be connected to a double pole isolation switch. Mains supply should have a dedicated ground fault circuit breaker/interrupter (GFCI).



All electrical wiring connections must be performed by a qualified electrician and the local electrical standards for connecting up the system are to be followed at all times.

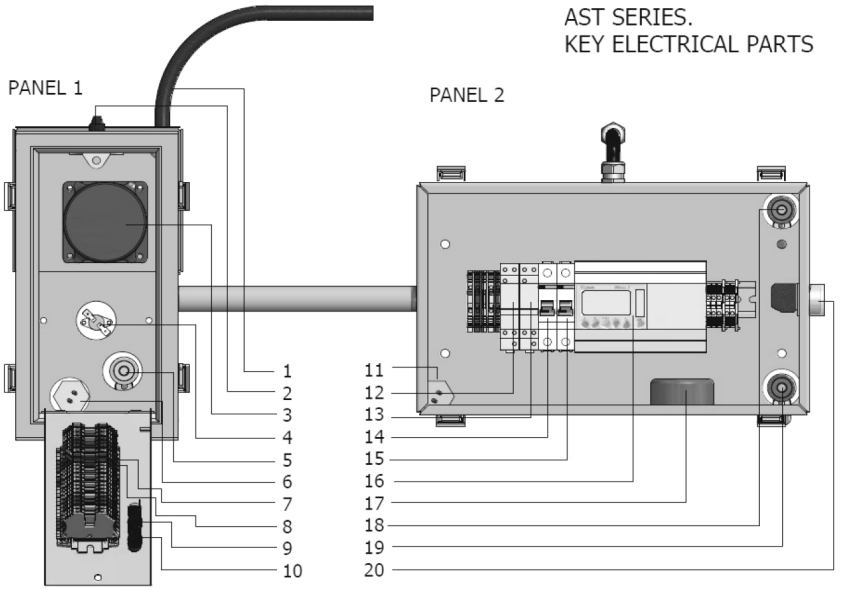


COMPONENTS -TANK MOUNTED PARTS



No.	Item	75 AST	125 AST
1	1000 W Heater. GGH240V/1000W	x1	x2
2	Oil Container 55gal. Not by FM. Check with sales representative	✓	✓
3	Skimming Drum c/w coupling & axle GGXPUMP 240V	✓	✓
4	Wiper Blade. GGX50-75 ISW/ASTWBPE	✓	✓
5	Wiper spray Bar complete GGSB3NZ	✓	✓
6	24 VAC Solenoid Valves. GGSV1/2	x3	x3
7	Solids transfer pipe. Not supplied as spare part	✓	✓
8	Surface Wash Spray bar. GGSB4NZ	✓	✓
9	Mesh screen Spray bar. GGSB4NZ	✓	✓
10	Optional Support frame. 300mm high	✓	✓
11	Solids Mesh Screen. Code	✓	✓
12	Maceratig Pump: GGXPUMP240V	✓	✓
13	Level Sensor Guard. Not supplied as spare part.	✓	✓
14	Level Sensor. GGDFLSW	x3	x3

COMPONENTS -CONTROL PANELS PARTS



No.	Item and Part Code	75 AST	125 AST
1	Mains Cable GGDCBL3C1.5	✓	✓
2	Magnetic Switch & Magnet. GGMS & GGLM	✓	✓
3	Motor & Gearbox GGDM/GGXGB	✓	✓
4	Thermal cut out. GGBIM45	✓	✓
5	Level Sensor (Heater). GGDFLSW	✓	✓
6	Heater 1. 1000W. GGH240V/1000W	✓	✓
7	Fuse 1.25 (for motor) GGF1A	✓	✓
8	Fuse 1.25A, blower. GGF1A	✓	✓
9	Fuse 1.25 A & Fuse Holder Level Sensors, Lid Switch & Pushbutton. GGF1A & GGFS	✓	✓
10	Fuse 630mA & Fuse Holder, Transformer Input GGF0.63A & GGFS	✓	✓

No.	Item and Part Code	75 AST	125 AST
11	Heater 2. GGH240V/1000W	×	✓
12	Contactor KM, Heaters. GGMODCON	×	✓
13	Contactor KM, Pump. GGMODCON	✓	✓
14	MCB 1 Heaters.GGMCB20A	×	✓
15	MCB 2 Pump.GGMCB10A	✓	✓
16	24 VAC PLC. GGPLCM3CD20	✓	✓
17	Solenoids Transformer GGTRN240V	✓	✓
18	High Level Sensor (pump) GGDFLSW	✓	✓
19	Low Level Sensor position (pump) GGDFLSW	✓	✓
20	Push button pump & clear cover GGPBSLG & GGPBCB	✓	✓

STANDARD WARRANTY

FM Environmental warrants, to the original user, that those products supplied by it and used in the service and in the manner for which they are intended shall be free from defects in materials and workmanship for a period of 1 YEAR.

a) The warranty period commences from the date goods are dispatched to original user or from the date unit is commissioned provided that commissioning form or other receipt is supplied with claim and that commissioning is carried out within three months of equipment being dispatched.

b) All warranty claims must be processed through the Dealer from whom the equipment was purchased. The Dealer will co-operate with the purchaser throughout the warranty claims procedure and will arrange any necessary repairs using genuine Grease Guardian parts.

c) If the original Dealer is no longer able to fulfill their obligations please contact FM Environmental Limited with full details of the claim and proof of purchase or commissioning so that this may be processed without delay.

d) Any warranty claim can only relate to a specific part that is proven to be at fault and for which a replacement will be supplied but cannot be extended to constitute a claim against the complete appliance.

e) FM Environmental Ltd will supply the Dealer with any warranty parts required subject to the claim being validated after return of the faulty items.

f) All replacement parts have a 60 day replacement warranty. Clean defective parts shall be returned, within the warranty period, with proof of purchase, to FM Environmental, transportation charges prepaid, for warranty evaluation At FM Environmental option, based on the determination of the warranty evaluation, FM Environmental may repair or supply a replacement part from its factory. Any and all items which may be returned shall include the serial number of the unit from which the item was removed, and a return goods authorization number issued by FM Environmental.

g) This warranty is void if the product has been damaged by its customer prior to acceptance or as a result of unreasonable use, neglect, flooding, alteration, improper installation, improper tri-monthly (4 times yearly) service, maintenance neglect, improper electrical service, installation and/or operation without timer controls, or other causes not arising out of defects in material or workmanship. Equipment must be installed according to manufacturer's guidelines. This warranty is void if equipment is used in excess of rated flow. FM Environmental products are intended to remove only free floating oils and grease. FM Environmental products do not remove emulsified fats and oils. FM Environmental shall not be responsible for damage to equipment

which results from vault flooding, sewer line back-up, pumping or lift station failure, ambient water flow or other sources of water damage. This warranty is void if the serial number on the product has been altered or defaced. FM Environmental will not replace eletrical parts which have been installed in under-ground vaults. This warranty is void should use, installation and application be contrary to a written agreement between FM Environmental and the user,

h) FM Environmental does not make any other representations or warranties, express or implied, including, but not limited to, any implied warranty or merchantability and any implied warranty of fitness or performance for a particular purpose.

i) The sole and exclusive remedy with respect to the above limited warranty or with respect to any other claim relating to defects or any other condition or use of the product supplied by FM Environmental, however caused, and whether such claim is based upon warranty, contract, negligence, strict liability or any other theory, is LIMITED to the repair or replacement of the part or product, excluding labour or any other cost to remove or install said part or product or, at FM Environmental option, to repayment of the purchase price. Notice of any such claim must be given in writing to FM Environmental within 15 months after the fault installation and / or use of the product

j) In no event shall FM Environmental be liable for special, direct, indirect, incidental, personal, property or consequential damages, including but not limited to, loss of use or profits or to interruption of business activity. FM Environmental neither assumes nor authorizes any representative or any other person to assume any liability in connection with the sale of its products. FM Environmental makes no warranties, express or implied, with respect to parts, accessories, components or other goods not in FM Environmental scope of supply. Alteration and/or substitution of FM Environmental parts, assemblies, accessories including electrical and/or mechanical components voids FM Environmental warranty.

10 YEAR ANTI - PERFORATION WARRANTY ON GREASE GUARDIAN STAINLESS STEEL TANK

FM Environmental Ltd warrants, to the original user, that the Grease Guardian main tank supplied and used in the service and in the manner for which it is intended shall be free from defects in materials and workmanship for a period of 10 YEARS. This Warranty is void should the product be damaged by the customer prior to acceptance or as a result of unreasonable use neglect, alteration, improper installation, improper service, maintenance neglect,installation or other causes not arising out of defects in material or workmanship.

The warranty is also void should any of the following conditions exist at any time prior to the defect becoming apparent on the box:

Salinity level exceeding 1000 ppm

Chloride level exceeding 250ppm

pH lower than 6 or greater than 9

Chlorine levels (from the use of bleach detergents or similar) exceeding 2ppm

Detergents poured directly into the tank or in high concentrations. The use of bleach (chlorine) and aggressive chemicals when poured in sinks and fixtures discharging into the Grease Guardian is to be limited, and the tank is to be flushed with running tap water for a minimum duration of 5 minutes after these are used in the sinks so to dilute their effect. Detergents are not to be poured directly into the tank.

Venting not provided on the outlet pipe as per the instructions given, thus inhibiting the venting out of any corrosive gases

Sludge emptying, if not happening on a regular basis will allow for the accumulation of heavy deposits at the bottom of the tank and these will create corrosion problems. The tank should be emptied, cleaned from sludge and refilled with clean water every 3 months

Water softeners and reverse osmosis system reject, if allowed to enter the tank will increase the salinity levels of the water and induce corrosion. Reject waters of water softeners and reverse osmosis units have to by-pass the unit and discharge in the discharge pipe after the outlet

Daily normal water discharge into the unit should not be inhibited, where regular discharge of water from sinks/ fixtures should happen for a minimum of 5 minutes daily so as to avoid static water conditions which in themselves might induce corrosion

Grease Guardian®

X Range

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ASME A112.14.3
ASME A112.14.4
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