

Grease Guardian[®]

Frontline Engineering

PRODUCT CATALOGUE





About Us

The FM Environmental Group, incorporating its Malta, Malaysia and New York Sales office is one of the world's longest established water and wastewater engineering companies.

Headquartered in Northern Ireland, FM Environmental exports its products and services worldwide; constantly evolving its technologies to suit the diverse and demanding international marketplace.

With a history going back to the early 1970's, FM Environmental is internationally recognised for providing design, manufacture, installation and servicing of grease management technologies. Grease Guardian is an international success story in the area of drainage and grease management, with over 20,000 units installed globally. Through our chain of distributors, we can offer a personalised service and individually design units to suit your needs.





Our Philosophy

FM ENVIRONMENTAL'S CORPORATE VISION IS TO BE A COMPANY THAT CONTINUOUSLY INSPIRES, INNOVATES AND EXCELS AT EVERYTHING IT DOES

INSPIRATION

The Company is committed to developing and fostering an enthusiastic and motivated workforce with staff who can inspire each other as well as the customer through their energy, expertise and excellence. Rather than merely selling the features and benefits of FM's range of products and services it will also be our objective to inspire in customers the desire to work only with FM. This will come from developing close relationships with customers through slick service, value-orientated products and services and customer-driven staff.

INNOVATION

The Company will apply an innovative approach to its products and processes in an effort to gain and maintain a competitive advantage over other companies. This will involve: inventing new and better ways of providing value and service to employees and customers; reinventing ourselves and how we do things to give a fresh and competitive edge to our daily operations; stimulating and liberating a culture of innovation within the organisation that will enable us to face the challenges of a rapidly changing and developing marketplace.

EXCELLENCE

It is the Company's over-riding strategic objective that staff become operationally excellent at everything they do, from how they deal with customers and work with suppliers to how they interact with each other on a daily basis. The Company will strive to refine processes and procedures, to work closely with approved suppliers and to perfect the customer supply chain so that we can deliver what we promise when we promise it. The ISO 9001:2008, OHSAS 18001 and ISO 14001 Quality Control Procedures, along with our Investors In People Accreditation will be used as tools to achieving this goal.



www.greaseguardian.com

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Corporate and Social Responsibility

Contributing to society, the local economy and the environment in which it operates is fundamental to FM Environmental's corporate and social responsibilities. As a family-owned business FM Environmental is proud of the contribution it makes to society and endeavours to ensure that its corporate values are in sync with the world around it.

Over the last 35 years the company has recruited locally in the markets it operates, has sourced equipment and services from local suppliers and has reinvested in local communities. The company regularly contributes to community improvement projects in Ireland and the UK as well as social development projects in Malta and Russia. It sponsors environmental awards for schools, supports local business start-ups through mentoring programmes and contributes annually to youth schemes and personal development programmes for staff.

FM Environmental – as its name depicts – is an environment-focussed organisation which prides itself on how its technological developments benefit the world about it. Through its Mediterranean and North African operations the company has pioneered wastewater recycling for reuse and has introduced innovative recycling technologies to the UK and mainland Europe.

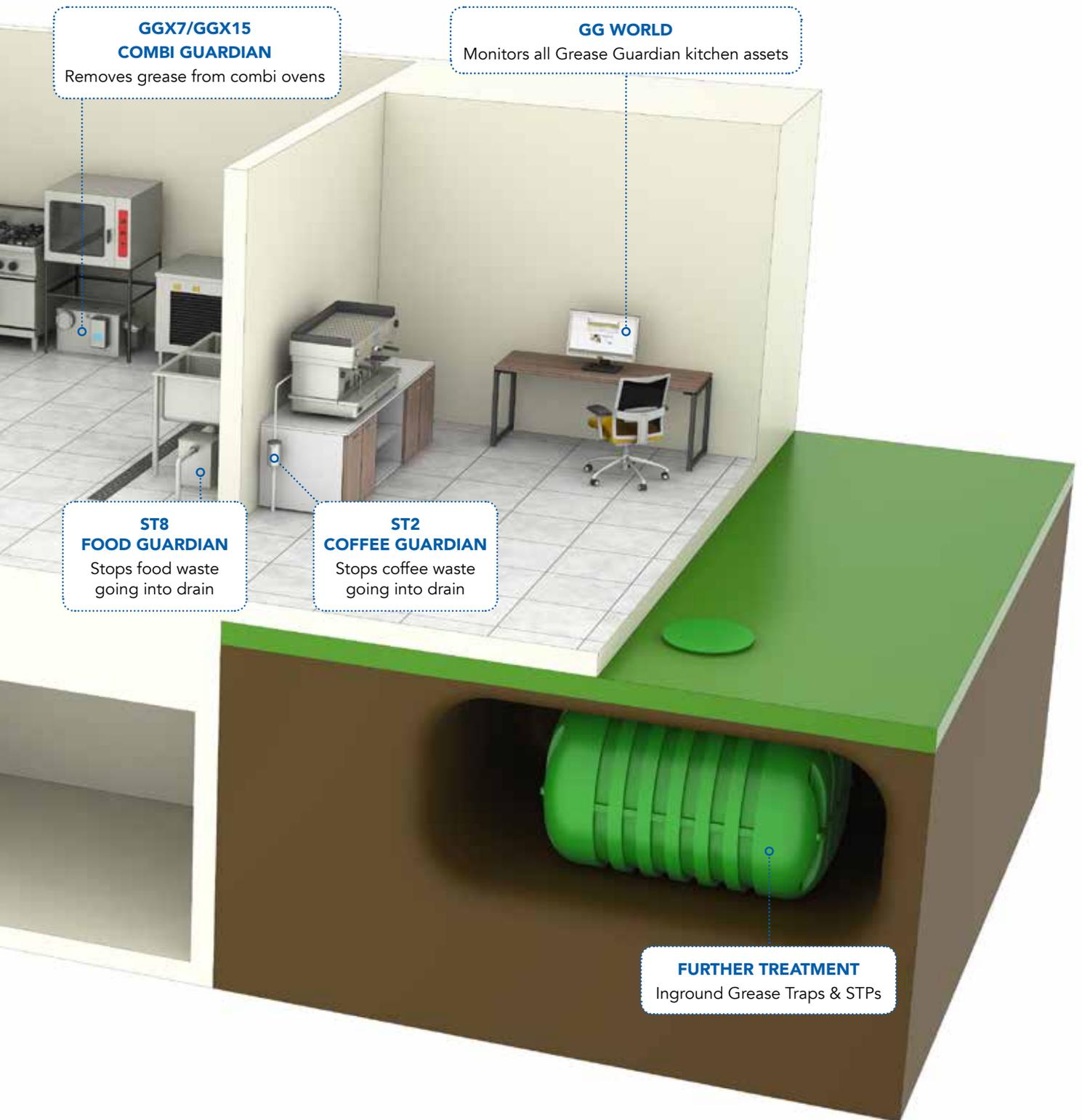
Its Fats, Oils and Grease (FOG) management systems also contribute to the sustainable reuse of FOG in bio-diesel and renewable energy production worldwide from Dublin to Sydney to the state of Penang in Malaysia. The company is also certified to the Environmental Management Accreditations ISO14001, ISO 9001:2008 and OHAS18001.

FM Environmental is committed to a sustainable approach to its business operations ensuring that stakeholders enjoy the lasting benefits of a business that understands and respects its social, economic and environmental responsibilities.

KITCHEN SOLUTIONS:

A holistic approach to trapping grease







Why Trap Grease?

WE CAN HELP!

GREASE RECOVERY DEVICES:

Typically installed under sinks or in basements. Trap and remove grease automatically.

SINK STRAINERS & SOLIDS

TRAPS: Designed to fit onto sinks to strain food waste.

COFFEE FILTERS: Connected to sinks or the coffee machine itself.

MANUAL UNDERSINK GREASE

TRAPS: A basic system that fits under sinks. Needs to be pumped out regularly to maintain efficiency.

UNDERGROUND GREASE

TRAPS: Large grease trap that must be pumped out at least once a month.

WHY IS FOODWASTE AND GREASE SO PROBLEMATIC?

Each year nearly half a million tonnes of grease and fat enter the UK and Ireland's sewerage system. Grease will stick to pipe walls and eventually cause blockages. Fats and oils get just about everywhere and can seriously damage waste water treatment equipment, costing municipalities millions in repairs every year. Fats, oils and grease (FOG) allowed to enter a natural water course will cause damage to the environment.

Grease is a problem for most city municipalities and consequently legislation to prevent FOG pollution is being enforced. Polluters face large fines or closure if they fail to manage their FOG waste effectively. Luckily there are numerous systems for handling FOG. Grease traps and grease removal units can be installed by kitchen operators to trap FOG at source and remove it before any damage is caused.

WHAT SYSTEM IS FOR ME?

There are many ways to trap and remove grease. The traditional method is to install a large grease trap into the ground outside the kitchen. This trap then needs to be emptied every month by a licensed pumper/recycler. If there is no space outside then the option to install a grease trap inside the kitchen exists. A manual grease trap can be installed under a sink but must be emptied at least once a month, depending on how busy the kitchen is.

In some cases the grease inside the trap can be treated with chemicals, enzymes or bacteria. For busier kitchens it is advised to install an automatic grease removal unit, capable of trapping and removing the FOG waste on a daily basis. Both manual and automatic traps can be installed in basements when there is no space in the kitchen or outside. Use the table below to help you decide which system suits best.

BEST KITCHEN PRACTICES

Follow this guide to improving food and grease management at your premises

FIT SINK STRAINERS: The addition of good quality sink strainers can dramatically reduce the amount of food waste entering the drain, which not only attracts vermin but can cause blockages.

SCRAPE FOODWASTE OFF PLATES: Scrape all food waste off plates into a solid waste bin rather than allow them to be rinsed down the drain where they can cause blockages.

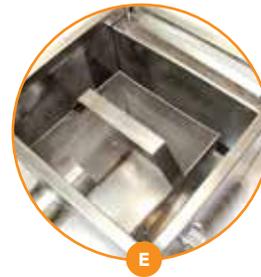
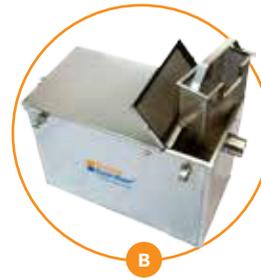
DO NOT MISUSE FLOOR DRAINS: Do not use floor gullies and drains for disposal of liquid waste or other food waste.

RECYCLE COOKING OIL: Pour any used cooking oil into liquid waste drums for collection by recycling companies.

AVOID USING ENZYMES: Do not rely on enzymes to remove grease from clogged pipes. Enzymes only move grease down the line, where it can reform as a blockage.

INSTALL A GREASE TRAP: Prevention is better than cure. Stop grease at source, install a grease trap or grease removal device.

MAINTAIN YOUR GREASE TRAP: A grease trap must be maintained otherwise it will start to lose efficiency within a matter of weeks. Manual grease traps must be emptied at least once a month (smaller systems once a week) and grease removal units have daily checks that must be carried out.



System	Grease Removal	Solids Filter	Location	Pump Out
A Grease Recovery Device	Automatic skimming	Basket strainer	Under-sink or basement	2-4 times per year
B Above Ground Grease Trap	Pump out or dosing	Basket strainer	Under-sink or basement	1-2 times per month
C In-Ground Grease Trap	Pump out required	Pump out required	External below ground	1-2 times per month
D Sink Strainer	-	Basket strainer	Under-sink	-
E Food Waste	-	Basket strainer	Under-sink or basement	-
F Coffee Filters	-	Bag or sock strainer	Under-sink or added - to coffee machine	-

We can help you

OUR PRODUCT RANGE



www.greaseguardian.com

Grease Guardian®

X Range

"Grease Guardian outperforms any passive grease trap"

THOMAS MILLER
CHEF

GREASE REMOVAL UNIT (UNDERSINK)

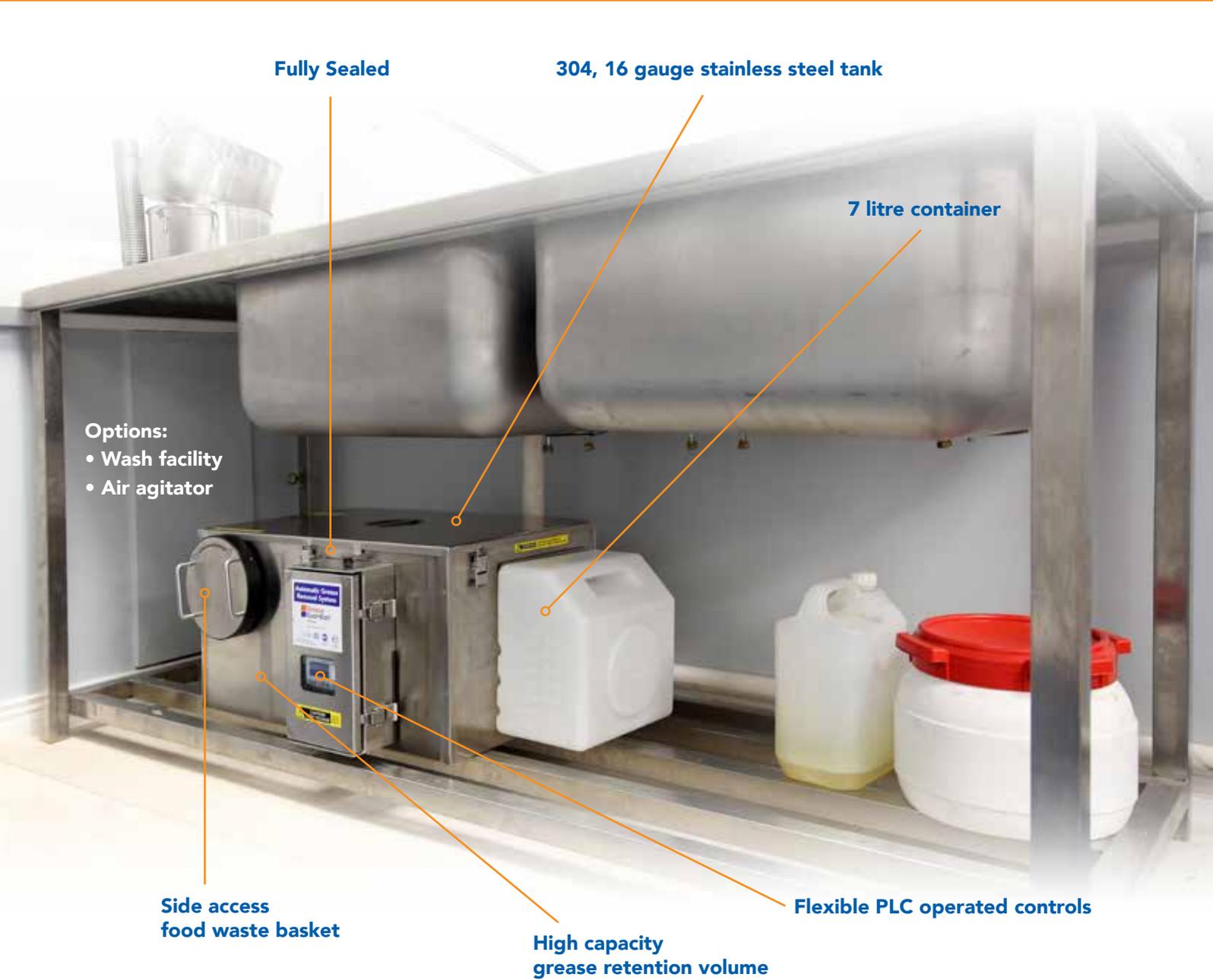


- Traps grease & foodwaste
- Removes grease automatically
- Reduces pump out requirements
- Robust stainless steel construction
- Easy to install and maintain
- Protects drains (point of source)
- Collected waste can be recycled
- Programmable digital controls
- Tested and approved internationally
- Self-cleaning options available
- Side mounted solids filter
- No need to open main lid
- No enzymes or bacteria dosing needed
- Extended warranty options



www.greaseguardian.com





TESTIMONIALS

"We have installed Grease Guardians in all McDonald's Russia restaurants over 20 years. We are very satisfied with the performance and reliability of the product." **McDonalds Russia**

"I would like to take this opportunity to confirm that we are very pleased with the operation of the Grease Guardian supplied by FM Environmental Group and installed at the Hilton, Malta. Considering the excellent performance of the units I have no hesitation in recommending the Grease Guardian to anyone who needs grease traps." **Andrew Forte, Chief Engineer, Hilton Malta**

CUSTOMERS





X SERIES CONFIGURATION - SIDE BASKET & DRUM

THREE-STAGE OPERATION SYSTEM

STAGE 1 Solids Collection

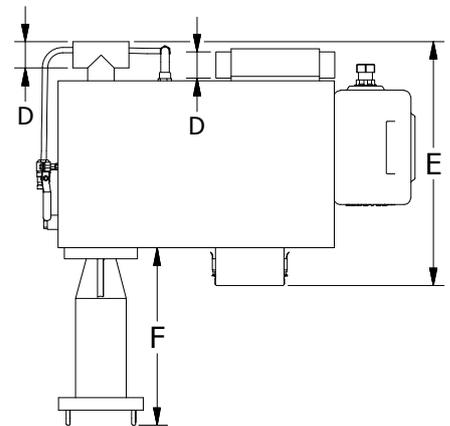
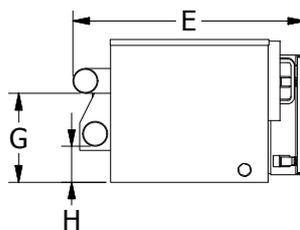
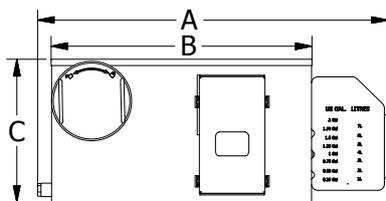
Wastewater from the kitchen is directed through the inlet of the **Grease Guardian®** where a side mounted removable strainer basket collects any solid debris.

STAGE 2 Grease & Oil Separation

Grease in the wastewater floats to the surface and is trapped while the clear water leaves the unit and enters the drainage system.

STAGE 3 Self Cleaning & Grease Removal

The PLC programmed heating element is activated to liquefy grease, which is then removed by the skimming drum and deposited into a portable container for recycling. Can be connected to: pot wash sinks, pre-rinse sinks, combi ovens, Asian woks and floor drains.



Model	Length (A) INCLUDES CONTAINER	Length (B) TANK ONLY	Height (C)	Inlet/Outlet (D)	Width (E) INCLUDES PANEL	Basket (F) CLEARANCE NEEDED	Inlet Height (G) INLET	Outlet Height (H) OUTLET	Max Flow
GGX7(S)	662	443	344/444	48	516	405	321	251	0.50 l/sec
GGX15	842	623	346	60	557	405	215	87	1.00 l/sec
GGX25	870	657	423	60	570	405	298	170	1.58 l/sec
GGX35	1092	873	422	89	577	405	281	170	2.21 l/sec

All dimensions in mm. Inlet / outlet height from the bottom of the pipe. Please note dimensions are subject to change without notice. Always request the latest drawings from your suppliers.

Specification: Automatic grease trap with inbuilt FOG treatment, FOG removal and self cleaning mechanisms. 16 Gauge 304 Stainless Steel with bright finish, 25 Watt, 230VAC; 50Hz Motor. 600-Watt Heater X7, X15, X25; 1000-Watt X35 Heater with Thermal Cut Out included. Logic Controller with Backlit Display. Skimming Drum is nominally capable of skimming 5 l per hour. Can be connected to pot wash sinks, pre-rinse sinks, combi ovens, Chinese cookers, floor drains and most grease producing kitchen appliances. UL, PDI, CSA, and ASME tested.

Combi Guardian®

"A smart solution for a big problem"

GARETH EDWARDS
CHEF



GREASE REMOVAL UNIT (STEAM OVENS & WOKS)



- Traps grease and food waste
- Automatically separates & removes fat from oven
- Solids filtration as standard
- Stainless steel construction
- Automatic wash down as standard
- Easy to install & maintain
- Collected waste can be recycled
- Programmable logic control
- Full customer support
- Up to 3 years warranty
- Side access to basket & wiper blade



www.greaseguardian.com





FOUR-STAGE OPERATION SYSTEM

STAGE 1 Solids Collection

Wastewater from the kitchen is directed through the inlet of the **Grease Guardian®** where a removable strainer basket collects any solid debris.

STAGE 2 Grease & Oil Separation

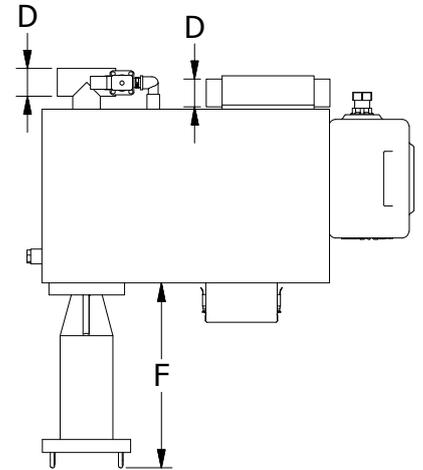
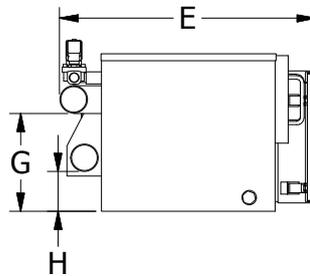
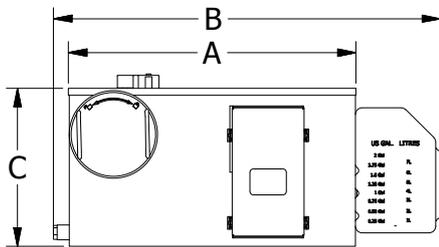
Grease in the wastewater floats to the surface and is trapped while the clear water leaves the unit and enters the drainage system.

STAGE 3 Self Cleaning & Grease Removal

The PLC programmed heating element is activated to liquefy grease, which is then removed by the skimming wheel and deposited into a portable container for recycling. Can be connected to: pot and single bowl sink fixtures.

STAGE 4 Automatic Spray System

An automatic spray system activates to clean unit and replenish water level for continuous skimming of grease.



Model	Length (A) INCLUDES CONTAINER	Length (B) TANK ONLY	Height (C)	Inlet/Outlet (D)	Width (E) INCLUDES PANEL	Basket (F) CLEARANCE NEEDED	Inlet Height (G) INLET	Outlet Height (H) OUTLET	Max Flow
GGX7(C)	662	443	344	48	539	405	221	151	0.5 lps
GGX15(C)	842	623	346	60	557	405	215	87	1.0 lps

All dimensions in mm.

Specification: Automatic grease trap (AGRU) with built in automatic grease removal and dry, front-loading solids strainer. 16 Gauge 304 Bright Finish Stainless Steel. Sealed, Stainless Steel Top. 25 Watt, 230v; 50Hz Motor. 600-Watt Heater with Thermal Cut Out. User friendly Logic Controller with Backlit Display. Skimming Drum is capable of skimming 5 litres per hour. Can be connected to combi ovens. Automatic solenoid valve for spray wash as standard. Please note dimensions are subject to change without notice.

Grease Guardian[®]

Centralised Units



CENTRALISED AUTOMATIC GREASE REMOVAL RANGE



- Removes all trapped grease
- Grease can be collected and recycled to create bio-fuels
- Minimal maintenance required
- Easy to install and maintain
- Suitable from 3.5 up to 20l/s flow
- Full customer support



www.greaseguardian.com



FOUR-STAGE OPERATION SYSTEM

STAGE 1 Solids removal (Manual/Automatic options)

Waste enters the Grease Guardian through the rear inlet. Food waste is either screened (IS) in a solids basket or pumped away (AST) depending on option selected.

STAGE 2 Grease Trapped

After entering the main tank grease which is lighter than water separates naturally and remains trapped. The heavier "clean" water leaves the tank under a baffle before being discharged to drain.

STAGE 3 Grease Removal Programme

A preprogrammed removal cycle starts by first agitating the trapped grease waste. This helps suspended grease globules to further separate and directs the waste towards the skimming mechanism. The waste is then heated and the grease liquefies. The liquefied grease is then skimmed and transferred to external receptacles to await recycling.

STAGE 4 Self Cleaning

A wash down programme is automatically activated to ensure the screening and skimming system remains clean.



Model	Length	Width	Height	Inlet/Outlet	Flow Rate
D5 IS	1396	595	597	115	3.50 l/s
GGX75 IS	1100	756	548	115	4.75 l/s
GGX75 AST	1100	800	548	115	4.75 l/s
GGX125 IS	1500	756	624	115	7.91
GGX125 AST	1500	802	624	115	7.91
D10 AST	2451	1315	1355	115/160	10 l/s
D10 AST + IS*	2584	1315	1355	115/160	10 l/s

*Includes 5mm solids screening before pumping

All dimensions in mm.

All drawings in this brochure are guidelines and are subject to change.

For full specifications and latest drawings on individual models please refer to www.greaseguardian.com or contact your local supplier.

For invert levels please contact your local supplier.

Marine Guardian®

*"State-of-the-art technology
built for sea vessels"*

J MATTHEWS
MARINE ENGINEER



D2 Marine



GREASE REMOVAL FOR MARINE APPLICATIONS

Stainless steel fabrication in SS316

Traps and removes fats, oil & grease
on Marine Vessels

Intelligent design saving on costs

Automatically removes 99% of grease and food waste

Self cleaning facility

Product ranges from 1L to 20L per second

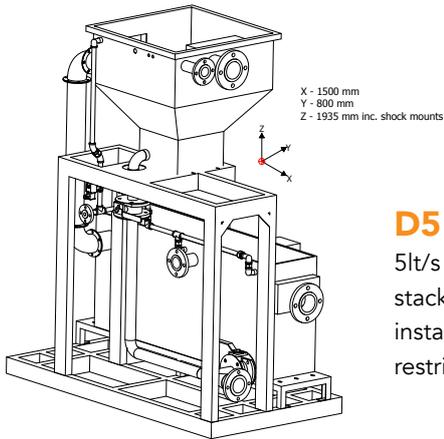
Easy to install and maintain, BMS remote monitoring

Full customer support

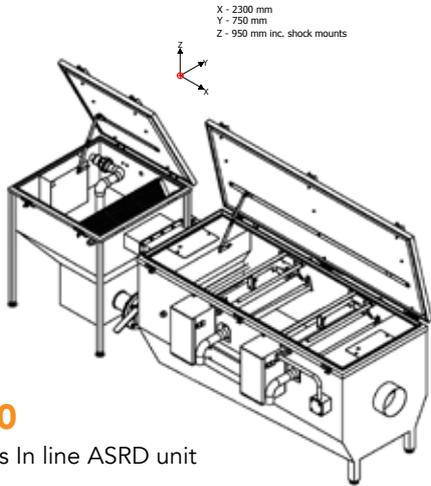
Can fit in confined spaces

Custom design unit available on request

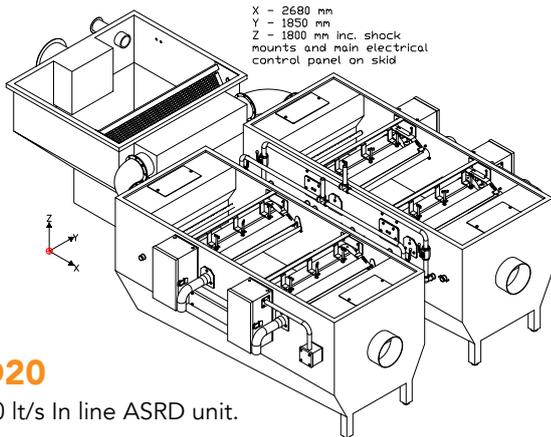
Products layout and combinations



D5
5lt/s In line or stackable for easy installation in restricted space



D10
10lt/s In line ASRD unit



D20
20 lt/s In line ASRD unit.

FOUR-STAGE OPERATION SYSTEM

STAGE 1 Solids Filtration and Transfer (ASRD)

Kitchen waste water enters the unit and any large food particles are trapped by a large screen based in the hopper, where they settle at the bottom. The liquid waste now free of solids continues into the main tank. The settled solids are periodically pumped away by pump into a secondary tank on board for storage (usually available on the ship).

STAGE 2 Grease Trapped

After entering the main tank grease which is lighter than water separates naturally and remains trapped. The heavier clean water leaves the tank under a baffle before being discharged to drain.

STAGE 3 Grease Removal Programme

A pre-programmed removal cycle starts by first agitating the trapped grease waste using diffused air. This helps suspended grease globules to further separate and directs the waste towards the skimming mechanism. The waste is then heated and the grease liquefies. The liquefied grease is then skimmed and transferred to external receptacles to await recycling.

STAGE 4 Self Cleaning

A wash down system is automatically activated to ensure the system remains clean.

OTHER FEATURES

- Grease waste can be recycled or sold
- Service log and reminder alarms as standard
- Compact modularized system that can be disassembled for easy transport on board with possibility of stackable version, skid mounted, with manual or automatic solid removal options
- Designed to limit smell, avoid spillages, in 316 SS 16 and 14 gauge according to the model.



Grease Guardian®

Frontline Engineering

"Grease Guardian lets me focus only on my job"

JESSICA SMITH
PASTRY CHEF



MANUAL GREASE TRAP RANGE

Suitable for coffee shops, confectioneries, snack bars, patisseries and other small catering applications

Stainless steel fabrication

Intelligent design

Traps food waste & grease

Small foot print and portable

Easy to install and maintain

Full customer support



www.greaseguardian.com



THREE-STAGE OPERATION SYSTEM

STAGE 1 Solids Collection

Wastewater from the kitchen is directed through the inlet of the **Grease Guardian®** where a removable strainer basket collects any solid debris.

STAGE 2 Grease & Oil Separation

Grease in the wastewater floats to the surface and is trapped while the clear water leaves the unit and enters the drainage system.

STAGE 3 Fat- Bio Dosing (Optional)

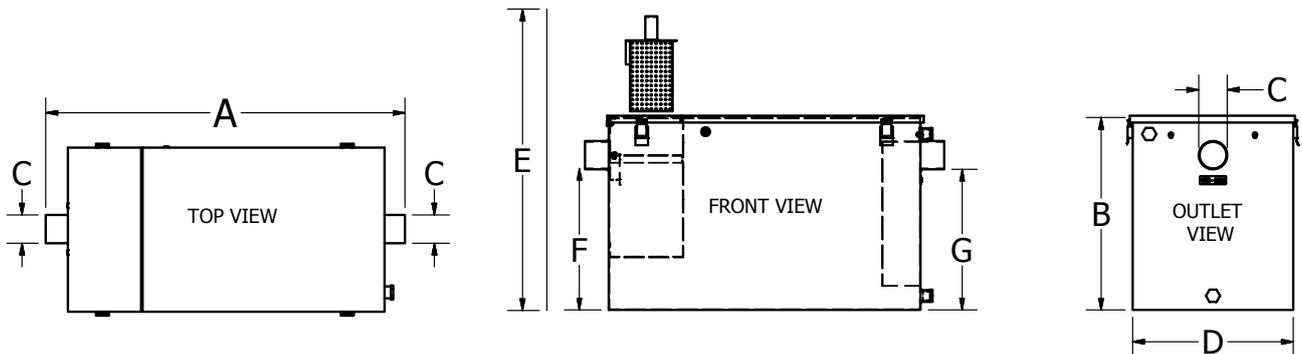
The trapped grease can be treated by using the FatBio solution which combines a lipase producing non pathogenic bacteria with nutrients and enzymes.

- Unique liquid biological formulation
- Completely bio-degradable with minimal environmental impact
- Complies with (EC) No 648/2004 Regulation
- Product requires no hazard labelling and is therefore safe to transport, to store and to use.

MANUAL GREASE TRAP RANGE WITH FAT-BIO DOSING OPTION

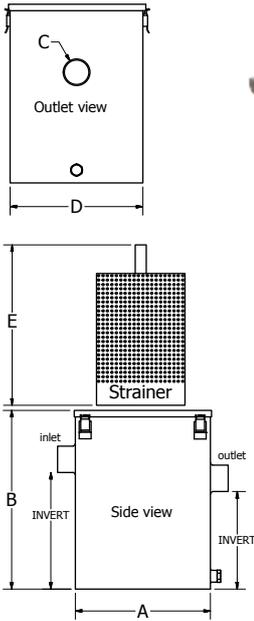
Fat-Bio Grease Solution

- Unique liquid biological formulation
- Completely bio-degradable with minimal environmental impact
- Complies with (EC) No 648/2004 Regulation
- Product requires no hazard labelling and is therefore safe to transport, to store and to use



Model	Length (A) <small>INCLUDES CONNECTIONS</small>	Height (B) <small>TANK ONLY</small>	Inlet/Outlet (C)	Width (D)	Basket clearance (E)	Inlet Height (F)	Outlet Height (G)	Max flow (litres/sec)
GT1	700	323	60	340	488	205	205	0.75l/s
GT2	760	395	60	340	595	300	300	1.25l/s
GT3	800	428	60	340	683	340	300	2.00l/s
GT4	943	455	89	360	710	331	231	2.75l/s
GT5	1000	455	89	400	735	331	231	3.5l/s
GT100	740	520	50/110	500				

All dimensions in mm. Inlet / outlet height from the bottom of the pipe.
All drawings in this brochure are guidelines and are subject to change. Always request the latest drawings from your suppliers.



FOOD WASTE FILTERS

Prevents food waste blockages

Stainless steel fabrication

Interchangeable filter options

Small footprint and portable

Easy to install and maintain

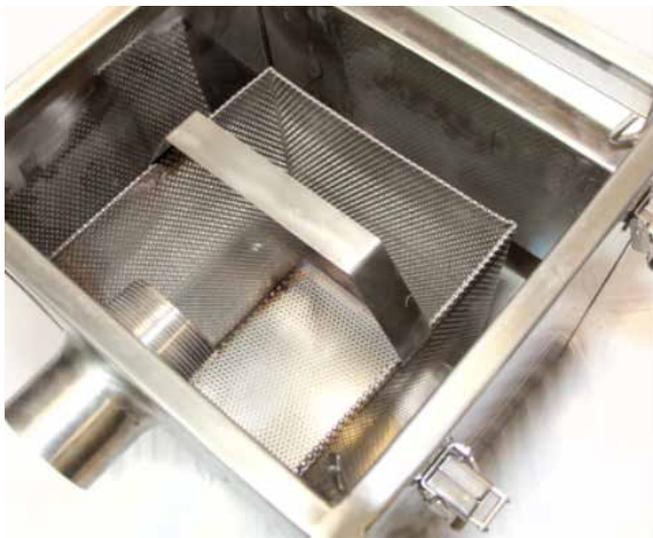
Full customer support

Under sink installation

STANDARD OPTION (BASKET)

For general food waste the ST8-23 range with removable filter basket is the perfect option. Ideal for food preparation sinks, meat counters and positioning upstream from grease traps.

Also available in a low outlet version (dry basket in ST8 and ST23).*



FINE FILTER OPTION (BAG)

The ST8 Trap offers the option of a removable polyethylene filter bag to screen fine solid waste found during food preparation in commercial kitchens.



COFFEE FILTER OPTION

The ST8 can also be upgraded to serve as a dedicated coffee grounds filter for installation at sinks in cafes. For this purpose a kit is available comprising of an ultra fine fabric mesh filter and bracket

Model	Length (A)	Height (B)	Inlet/Outlet (C)	Width (D)	Basket (E)	Capacity (LITRES)	Options (INLET/OUTLET (F))	Invert Levels
FGST8	300	400	60	300	360	8	Basket/Coffee Filter/Bag	320 / 220*
FGST12	300	500	90	300	460	12	Basket only	340/340
FGST23	400	560	115	300	467	23	Basket only	420/20mm*

Specification: Floor standing sediment trap. 1.2mm/1.5mm, 304 Stainless Steel with bright finish.

*Note: low outlet level of 25mm is standard for ST23 models and optional on request for ST8 and 12 models



COFFEE WASTE FILTER

Stainless steel fabrication

Installed under sink and/or coffee machine

Prevents blockages

Filters coffee grounds

0.6, 4 & 8 litre capacity options

Easy to install & maintain

Compact in size

Full customer support

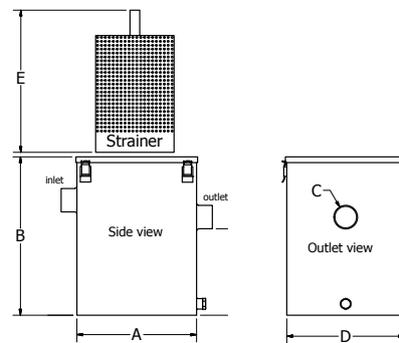


INLET/OUTLET connections available for 16mm and 20mm ID. Allow minimum clearance required for servicing as per table below (E).

ST2 Coffee machine waste filter

The ST2 is a filter for industrial coffee machines, specifically designed to treat the waste flow of the backwash before going to the drain. Coffee grounds are strained through an ultra fine fabric mesh filter.

The ST2 is easy to fit and comes with pipe fittings and wall brackets for easy installation. The ultra fine fabric mesh filter can be used to strain the grounds.



ST4 & ST8 Undersink Solid Strainer with coffee filter attachment

The ST4 and ST8 coffee waste filters can be installed under sinks used in cafes to strain coffee grounds and other fine sediment. The under-sink option can take the waste from the sink as well as the coffee machine itself.

With the ST8 floor mounted trap, several filtration methods are available to choose from, including mesh bags, ultra fine fabric mesh filter and stainless steel basket options.

Maintenance is easy. Once a day or when a reduced flow is noticed from the sink, simply open the tank and remove the filtration device, empty and replace.

Model	Length (A)	Height (B)	Inlet/Outlet (C)	Width (D)	Min. Clearance (E)	Strainer Capacity Litres	Invert Level	Filter options
ST2	115	220	16/20	n/a	135	0.6	235/35	CF
ST4	250	355	50	250	210	4	278/55	CF/MS
ST8	300	400	60	300	360	8	320/220	CF/MS/MB

All dimensions in mm. All drawings in this brochure are guidelines and are subject to change. Always request the latest drawings from your suppliers.

Have your Global Presence



WHAT IS GG WORLD?

GG World is an interactive online register of all Grease Guardian branded products uploaded and managed by approved Grease Guardian distributors and partners.

As an approved Grease Guardian distributor you will have access to the GG World (Distributor) Portal.

Use the administration page to add sub distributors, customers, sites and product installations or to set up service partners and allocate users.



www.greaseguardian.com



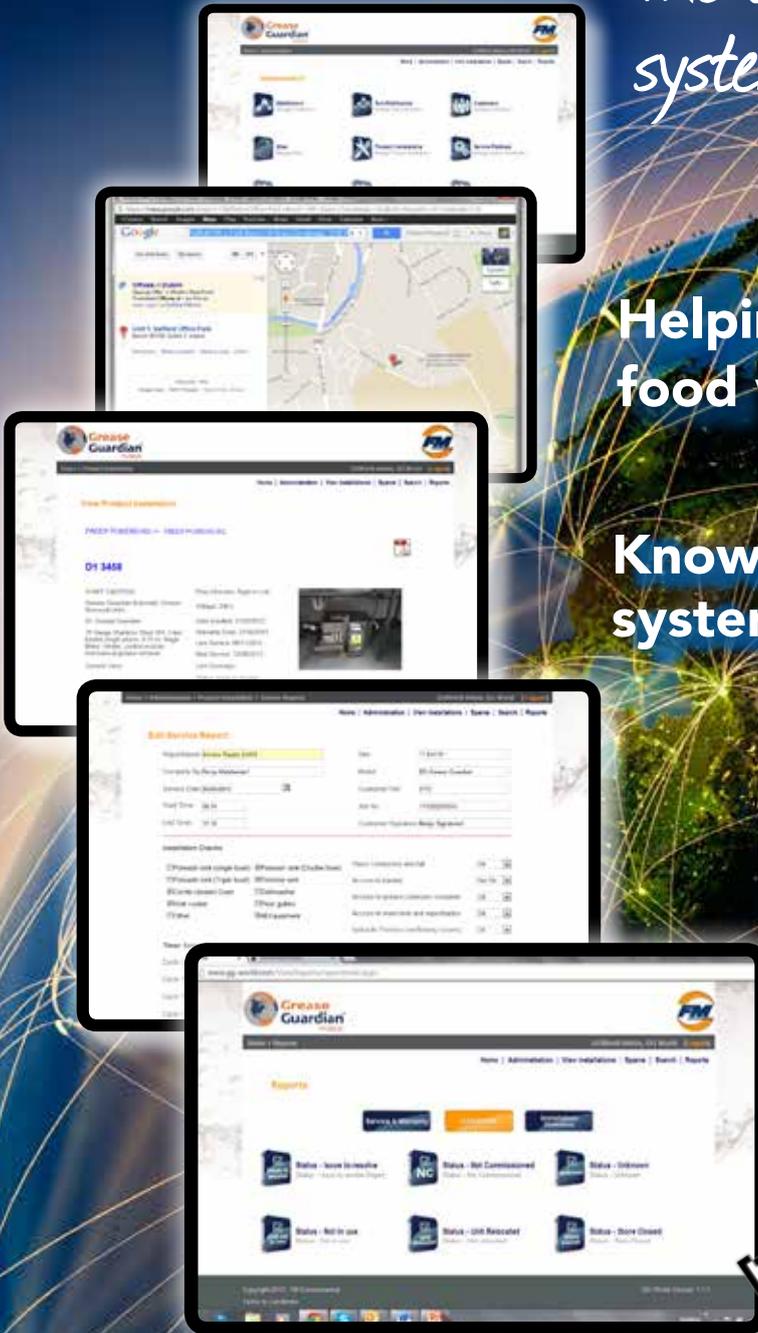
The online asset management system for your stock

Helping you manage your food waste control equipment

Know everything about the system you have installed

Check full report from technician

Keep track of the status of units



Global Presence



GRAND CENTRAL TERMINAL
NEW YORK



EMIRATES STADIUM
LONDON



THE MALL
ATHENS



HILTON HOTEL
MALTA



TD GARDEN
BOSTON



THE NAVY
WORLDWIDE



CHANGI AIRPORT
SINGAPORE



EMIRATES TOWERS HOTEL
DUBAI



PALACE OF VERSAILLES
VERSAILLES



BANYAN TREE
MALAYSIA

AND THOUSANDS OF UNITS ALL AROUND THE WORLD



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