

Grease Management at Sea





CORPORATE VIDEO

About Us

The FM Environmental Group, incorporating its Ireland, UK, Malta, Malaysia and United States sales offices 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 almost 30,000 units installed globally.

**THROUGH OUR CHAIN OF DISTRIBUTORS,
WE CAN OFFER A PERSONALISED SERVICE AND
INDIVIDUALLY DESIGN UNITS TO SUIT YOUR NEEDS**

Global Presence



MILITARY VESSELS
LHD, FREMM



SUPER/MEGA YACHTS
UP TO 150M



SPECIALISED VESSELS
AMERIGO VESPUCCI



WORK BOATS
SERVICE, FIRE, COASTGUARD



RIVER BOATS
BATEAUX MOUCHES
BATOBUS



FERRIES & CRUISE SHIPS
WORLDWIDE

AND THOUSANDS OF UNITS WORLDWIDE





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VIDEO ON MARINE GUARDIAN



Be Compliant at Sea

Grease is a common byproduct of cooking in the galley of a ship. When left unmanaged, this grease can lead to various issues, ranging from environmental harm to operational disruptions. To address these concerns, vessels rely on effective grease management solutions such as Marine Guardian. View the many benefits a grease management solution has for you and your vessel.

Marine Guardian operates with a four-stage system that ensures compliance with environmental regulations while promoting sustainable and responsible management of grease and oil waste in marine environments. We aim to protect the marine ecosystem, enhance operational efficiency, and contribute to a cleaner, more sustainable future for the maritime industry.

BENEFITS OF MARINE GUARDIAN

- ✓ Compliance with Regulations
- ✓ Environmental Protection
- ✓ Maintains Kitchen Efficiency
- ✓ Cost Savings
- ✓ Sustainable Practices
- ✓ Health and Safety
- ✓ Compact Solution
- ✓ Maintain Wastewater Treatment Plant (WTP) efficiency

MARITIME LAW

Marpol 73/78 ANNEX IV and V: 5.4.4 Galley wastes state:

"All galley wastes that may contain grease should flow through grease traps to a retaining box prior to discharge overboard with a distance of 3 N.M. from the closets line of land (territorial sea – 12 N.M.) or to treatment aboard ship"

How does Marine Guardian Offer a Better Solution?

Grease Management Simplified

Space is a precious commodity on ships, and downtime comes at a high cost. Marine Guardian's Automatic Grease Recovery Devices excel in space optimisation, significantly reducing the necessity for frequent dock visits.



STAY AT SEA LONGER



Efficiently manage and store grease, allowing you to extend your time at sea without interruptions.

SPACE EFFICIENT DESIGN



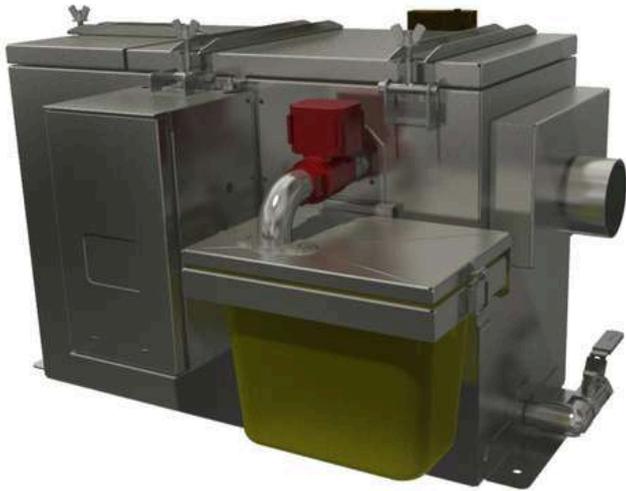
Marine Guardian can be retrofitted seamlessly into your galley or below deck, ensuring no space is wasted.

HASSLE FREE MAINTENANCE



Easily empty the external container as needed, saving you time and money.

Marine Guardian Product Range



MGD1 - 4

FLOW: 0.75 to 2.25 l/s

Compact Grease Removal Unit with manual solids handling.



How Does Marine Guardian Work?

FOUR STAGE OPERATION SYSTEM

STAGE 1



SOLIDS FILTRATION AND TRANSFER (ASRD)

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

STAGE 2



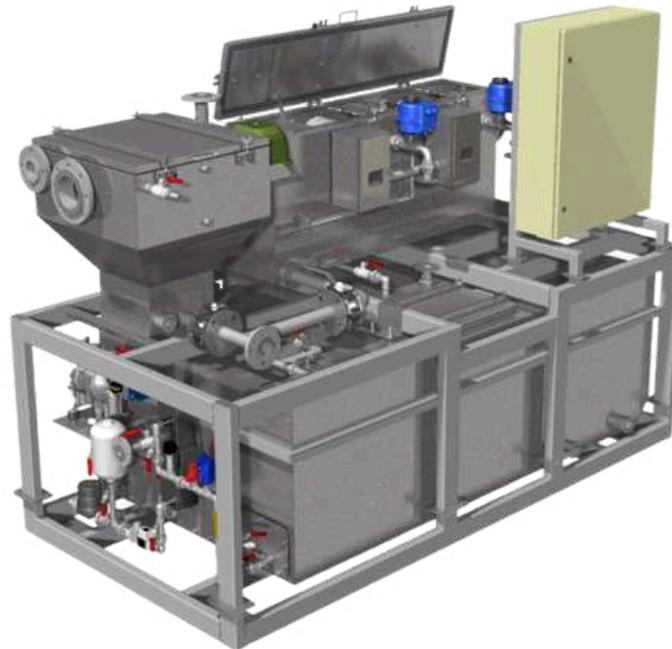
GREASE & OIL SEPARATION

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.

D4M ASRD Stackable

FLOW:
2.25 to 5 l/s

D4 Grease Removal Unit with automatic solids handling system stacked.



ASRD with Oil Tank

FLOW:
3.5 to 20 l/s

Centralised ASRD (Automatic Solids Removal Device) is an automatic handling system with liquids waste heated storage unit and a Grease Removal Unit.

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 & AUTOMATIC SPRAY SYSTEM

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

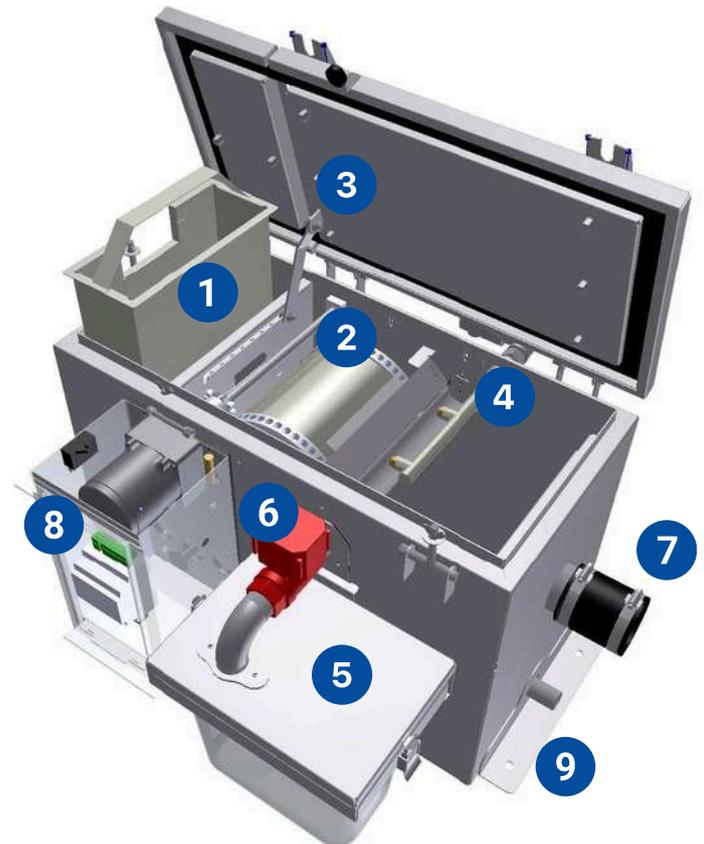
Separate water supply needed.

Marine Guardian Features

Auto-Skim



- 1 Food Strainer**
Collects Solid Food Particles
- 2 Grease Removal Drum**
Automatically skims grease from wastewater.
- 3 Marine Lid**
Designed to limit smell, avoid spillages, in 316 S/S, 14 and 16 gauge according to the model.
- 4 Automatic Spray System**
Self Cleaning System.
- 5 Grease Collection Container**
Secure lid and motorised valve stops the removal of grease in high seas.
See upgrade option.
- 6 Motorised Valve**
Designed to open during skimming cycle.
- 7 Outlet**
Flanged kit and upgrade options available.
Client to specify PN rating.
- 8 Control Centre - PLC**
Plug and Play.
- 9 Anchoring Points**
Ground anchors secure the unit.



Marine Upgrade Kits

We have a range of upgrade kits for our marine units, ensuring enhanced functionality both at the source and through centralised systems. Additional features are detailed on page 13. These features not only elevate performance but also safeguard your marine infrastructure against potential issues.



Scan Here to View Marine Applications

Grease Collection Kit

MOST POPULAR

- Three 25 Litre Jerry Can Grease Collection Containers
- Flange Set
- Anchor Base Spare Parts (2-5 years) for autonomous sailing
- Paint Application

Not sure which grease system is right for you and your vessel? We offer a range of customisable options to suit your needs. For specific requirements such as higher flow rates, naval applications, monitoring systems, shock-mounted equipment, sludge handling, and more, reach out to your supplier for details.



Choosing the Best Marine Guardian For Your Vessel



SPACE

If space is limited on board, our '**Compact**' options are the perfect solution, minimising the amount of space required. Installing it at source also ensures it's placed near the problem area, such as in the galley or below deck, **offering better protection for your pipes**. However, if more space is available, you may want to consider centrally locating the grease trap.



SIMPLICITY

For the most basic option select '**Manual**'. Manual grease traps require no power and are emptied manually, by using a wet vac or licensed grease trap cleaning company.



STORAGE

If the vessel has onboard food waste storage tanks for holding waste during long voyages, select the **Automatic Solids Transfer options. (AST)**



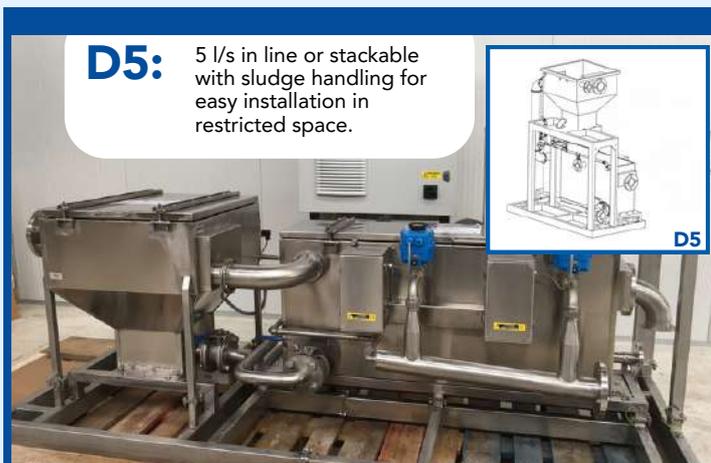
EMPTYING

If emptying the grease trap is problematic due to the trap's location, facilities at port or safety on board, then select the **Auto-Skim** option. This removes the trapped grease into an easy to transport / store collection container.

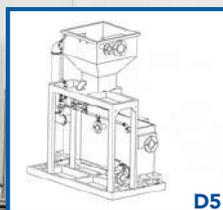


NAVAL VESSELS

For naval vessels with specific needs, contact your supplier to discuss options.



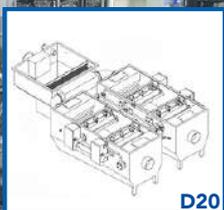
D5: 5 l/s in line or stackable with sludge handling for easy installation in restricted space.



D5



D20: 20 l/s in line Automatic Solids Removal Device (ASRD)



D20

For larger flow layouts, sludge handling options and combinations such as D5, D10 and D20 Marine, Contact your supplier.

Grease Recovery Units

COMPACT

MANUAL / AUTO-SKIM



Product Features

- Galley and centrally located grease traps for vessels
- Manual emptying or automatic grease removal options
- 316 stainless Steel
- High efficiency levels
- 0.75 L/s to 2.25 L/s options
- Easy to install including retrofit
- Designed for high seas
- Compact footprint for confined spaces
- Internationally tested and certified
- 3mm solid filtration included
- Service log and reminder alarms as standard

Grease Management Solutions at Sea

We are the leading provider of grease management solutions for super-yachts, commercial vessels, cruise ships and navies worldwide. We understand the critical importance of environmental sustainability in the maritime industry. That's why we have developed innovative grease recovery units that effectively capture and separate grease and oil from wastewater, ensuring compliance with regulatory standards.

Case Study

An 85m long Superyacht had problems optimising their wastewater treatment system due to the accumulation of fats, oils and grease.

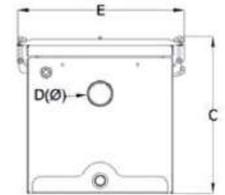
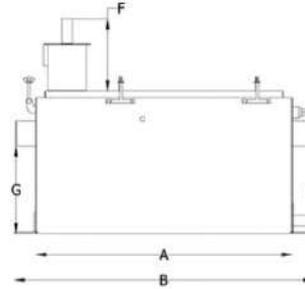
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TO FIND OUT MORE



COMPACT GREASE TRAP (MANUAL)

- ▶ 316 Stainless steel grease traps from 0.75 to 1.75 l/s for under-sink or compact locations.

- ▶ Traps grease and solids allowing only cleaner water through.

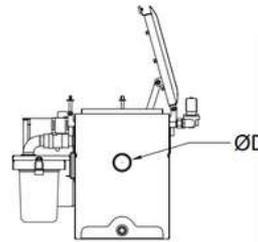
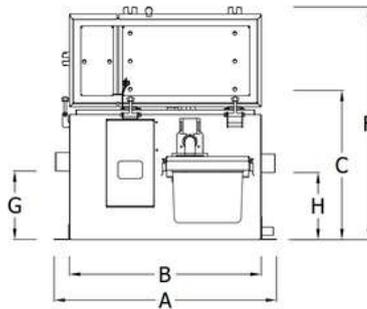


Model	Length (A)	Length (B)	Height (C)	Inlet/ Outlet (D)	Width (E)	Basket (F) CLEARANCE NEEDED	Inlet Height (G) INLET	Outlet Height (H) OUTLET	Max Flow
TANK ONLY									
MGT1	600	700	370	60.3 DN50	380	170	205	205	0.75 l/s
MGT2	660	760	460	60.3 DN50	380	210	302	302	1.25 l/s
MGT3	700	800	490	60.3 DN50	380	260	340	300	1.75 l/s

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

COMPACT GREASE TRAP (AUTO-SKIM)

- ▶ 316 Stainless steel grease traps from 0.75 to 2.25 l/s for under sink or compact locations.
- ▶ Traps grease and filters solids allowing only cleaner water through.
- ▶ Captured grease automatically skimmed to external collection point.



Model	Length (A)	Length (B)	Height (C)	Inlet/ Outlet (D)	Width (E)	Basket (F) CLEARANCE NEEDED	Inlet Height (G) INLET	Outlet Height (H) OUTLET	Max Flow
INCLUDES MOUNTING TANK ONLY INCLUDES PANEL CLEARANCE NEEDED									
MGD1	643	543	380	60.3 DN50	610	665	150	150	0.75 l/s
MGD2	723	623	466	60.3 DN50	610	760	225	220	1.25 l/s
MGD3	812	664	515	88.9 DN80	610	806	314	267	1.75 l/s
MGD4	764	864	515	114.3 DN100	610	793	302	224	2.25 l/s

All dimensions in mm. Inlet / outlet height from the bottom of the pipe.
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Grease Recovery Units

CENTRALISED

MANUAL / AUTO-SKIM



Product Features

- Centrally located grease traps for vessels
- Manual emptying or automatic grease removal options
- 316 Stainless Steel
- High efficiency levels
- 1 L/s to 20 L/s options
- Easy to install including retrofit
- Designed for high seas
- Compact footprint for confined spaces
- Internationally tested and certified
- 3mm solid filtration included
- Additional feature options



Additional features for the Marine Guardian Centralised unit are featured on page 13.

Case Study

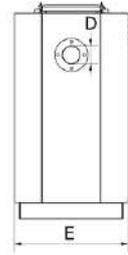
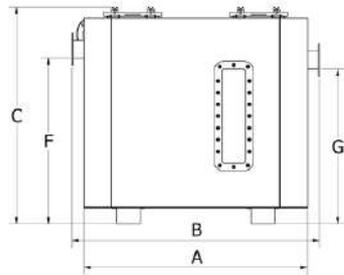
Scan the QR code to read how Marine Guardian safeguarded wastewater equipment on naval ships.

SCAN THE QR CODE
TO FIND OUT MORE



CENTRALISED GREASE TRAP (MANUAL)

- 316 Stainless steel grease trap for centrally located applications on vessels.
- Traps grease and solids allowing only cleaner water through.

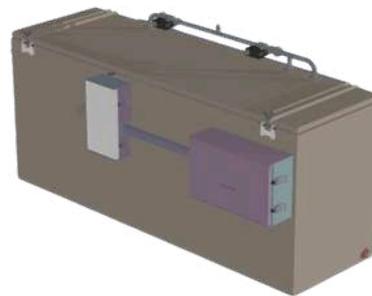
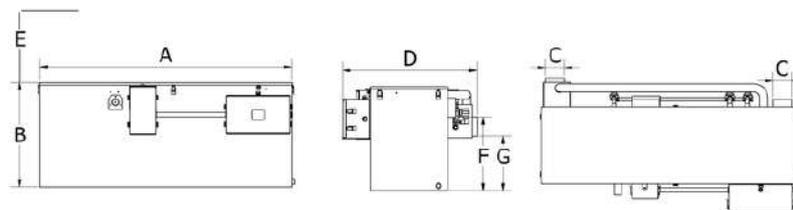


Model	Length (A)	Length (B)	Height (C)	Inlet/ Outlet (D)	Width (E)	Inlet Height (F)	Outlet Height (G)	Max Flow
TANK ONLY								
						INLET	OUTLET	
MGNS1	1204	1352	892	114.3 DN100	660	602	532	1 l/s
MGNS2	1415	1565	1380	114.3 DN100	765	1057	987	2 l/s

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

CENTRALISED GREASE TRAP (AUTO-SKIM)

- 316 Stainless steel grease traps from 3.5 to 20 l/s.
- Traps grease and solids allowing only cleaner water through.
- Captured grease is automatically skimmed to external collection point.
- Automatic Solids Transfer (AST) option.

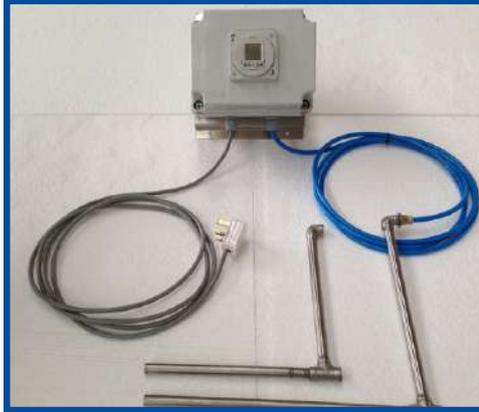


Model	Length (A)	Height (B)	Inlet / Outlet (C)	Width (D)	Basket (E)	Inlet Height (F)	Outlet Height (G)	Max Flow
		TANK ONLY		INCLUDES PANEL	CLEARANCE NEEDED	INLET	OUTLET	
MGD5	1251	1395	114.3 DN100	870	936	407	334	3.5 l/s
MGX75*	1100	1100	114.3 DN100	1060	1045	363	249	4.7 l/s
MGX125*	1500	1500	114.3 DN100	1060	1125	445	328	7.9 l/s

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.

* Available with Solid Strainer Basket (IS) or Solid Removal Pump (AST).

For higher flow rates, solids and sludge handling, contact your supplier.



BLOWER KIT

Blower kits are installed on higher flow models to assist with the oil recovering process by moving the oil towards the skimming wheels. This will be at timed intervals during the recovery process. *Available for units larger than the MGD4.*



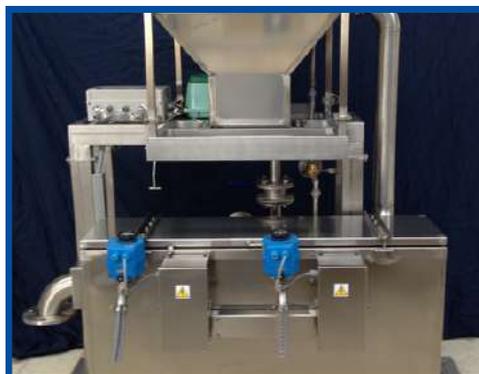
TELEMETRY CONTROL

Telemetry control collects, stores and transmits data in real time. There is a volt free terminal available only for 110 volt BMS - Building Management System. *Available on 110 Volt only.*



SHOCK MOUNTS & FLEXIBLE JOINTS

Advanced technical solutions are recommended for navy installations. Shock absorbing mounts and flexible joints can be incorporated to effectively endure motion and physical stress.



COMPACT SOLUTIONS

A compact modularised system that can be disassembled for easy transport on board with possibility of stackable version, skid mounted, with manual or automatic solid removal options.



SINK SCREEN

Sink screens, crafted from stainless steel, act as the first line of defence for pipeline efficiency. They function as in-sink food strainers, collecting food waste and safeguarding plumbing from clogs caused by food debris, ensuring smooth drainage and preventing blockages.



Register Your Account with Grease Guardian

Scan the QR Code to register for a Grease Guardian account on www.greaseguardian.com
This will give you access to a personalised dashboard and extend your warranty by 6 months.
You will also receive a monthly newsletter with **sales and offers**.



FM Environmental's corporate vision is to be a company that continuously inspires, innovates and excels at everything it does.

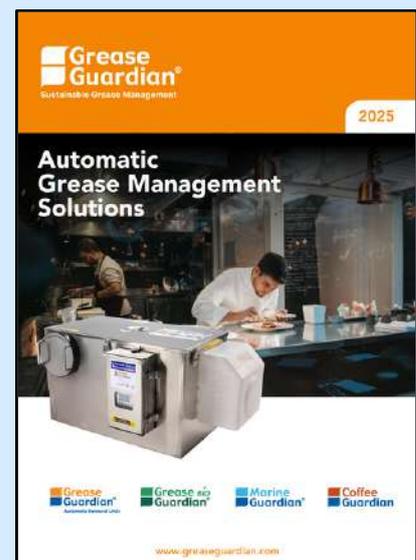
INNOVATION

FM Environmental Ltd. 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.

Explore The Full Range

Discover our complete range of automatic grease removal devices, designed for any commercial kitchen - From small establishments to high-capacity operations, we have a solution that fits.

Explore the Full Grease Guardian range for grease management solutions tailored to the needs of your kitchen, providing reliable and efficient grease removal for food service establishments. Request our full catalogue or visit our website to find the ideal solution for your needs.





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* Please consult Grease Guardian for specific models tested, certified and/or listed by these organisations.

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