GREASE BOSS

MACTRAP

OPERATION AND SERVICE MANUAL
GREASE BOSS G5 COMBI AUTOMATIC GREASE REMOVAL UNIT

The Mactrap Grease Boss *Easy Clean* is designed as a low cost, low maintenance appliance that can be installed in restricted kitchen space, while maintaining a high grease removal efficiency.

The Grease Boss Easy Clean is an electromechanical Grease Removal Unit, removing fat, oil and grease (FOG) from wastewater. The G5 COMBI is specifically engineered for Combi Ovens, incorporating a very low profile, high heat tolerance, and an integrated Tundish.

NEW ZEALAND MADE

MACTRAP

Grease Traps • Fuel/Oil Traps • Lint Traps • Sediment Traps • Plaster Traps

Lift Pumps • Pumping Stations • Drainage

MACTRAP specialises in the design, manufacture, and distribution of wastewater separation systems and associated pumping solutions.

We supply the Grease Boss mechanical grease removal range and the Grease Converter chemical dosing range of under bench stainless steel systems for commercial kitchens.

We also supply a range of polymer separation systems for external inground or above ground installation in pedestrian or tafficable zones. Our separators are made from high-density polyethelene and have an underground life of more than 50 years.

All of our separation systems are supported by a range of pumping solutions designed to meet the unique demands of the wastewater industry. Mactrap has the technology and engineering support to resolve complex hydraulic distribution issues, from pumping to a separator, pumping from a separator, or pumping the waste from within a separator.

MACTRAP is based in the Bay of Plenty, with manufacturing operations in Auckland, Hamilton, and Napier. We are the New Zealand distributor for the world-leading Kessel range of waste water treatement systems.

www.mactrap.co.nz 0800 MACTRAP (6228727) info@mactrap.co.nz

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HOW THE GREASE BOSS G5 COMBI WORKS

Wastewater from the Combi Oven flows into the Grease Boss G5 Combi where fats, oils, and grease (FOG) rise to the surface. The surface FOG is attracted by a rotating FOG roller. The FOG adheres to the roller and is removed via a wiper blade and then flows into an external collection container. Laboratory tests have proven that over 98% of FOG is removed, well within the requirements of the New Zealand Foul Water Drainage code G13 AS/2.

A PLC controlled hot water injection programme ensures FOG is pliant and always recoverable by keeping temperature to a level that will not allow fats to solidify. The hot water jets also push the surface FOG towards the roller. Normal kitchen hot water pressures and temperatures are sufficient.

After the FOG is extracted from the wastewater, hot water jets within the Grease Boss clean the sides of the tank and another water jet washes the roller, the wiper blade, and the FOG chute. The result is a cleaner appliance, operating continuously with reduced maintenance.

The FOG extraction continues intermittently on a 24-hour cycle. Waste FOG can be collected in a disposable container (such as a plastic ice cream container) and put with other rubbish collection or alternatively, a washable collection container can be used.

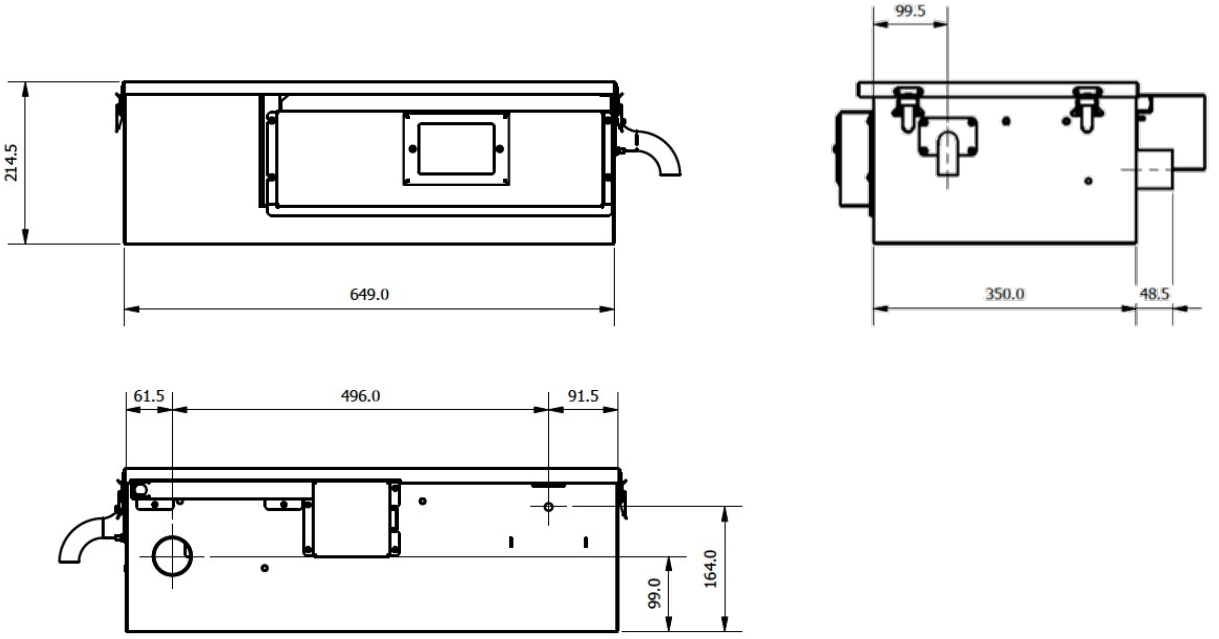
Where can the Grease Boss G5 Combi be used?

The Grease Boss G5 is specifically designed for Combi Ovens. It has a low profile to accommodate typically low Combi Oven outlets. The G5 is typically used when:

- Where there is no room for an external passive trap or plumbing to an external trap is not practical
- Where under bench height space is restricted.
- Where there are self-cleaning ovens

The low profile of the G5 limits the water flow that the system can accommodate and still effectively remove the FOG. The G5 is not designed to accommodate higher flow rates from sinks.

DIMENSIONS



MODEL	LENGTH	WIDTH	HEIGHT	INFLOW
G5	649 mm	395 mm	214.5 mm	<0.5 l/sec

SPECIFICATIONS

G5	
Material	304 Stainless Steel
Max Inflow Rate	<0.5 L/second
Static Capacity	40L
Treatment Capacity	<150L
Power Supply	240V
Controller	Crouzet PLC 24 Hour
Grease Retention	<7 Kg
Water Supply	min 45C Mains Pressure
FOG Removal Rate	<4.5 Kg/hour

INSTALLATION

First Things First

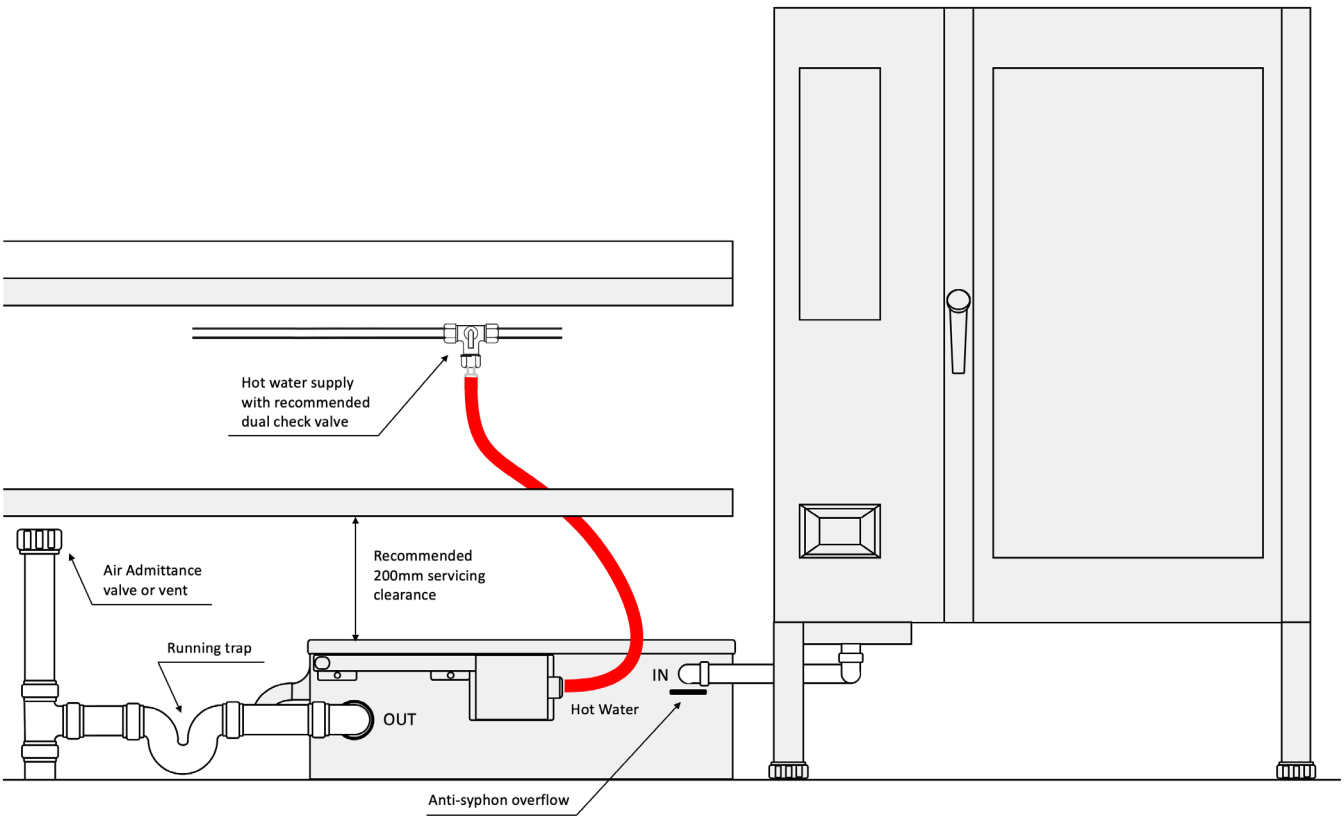
1. Unpack the Grease Boss and read all the documentation.
2. Ensure the Grease Boss has a current electrical test tag.
3. Ensure the power supply can be easily located and the Grease Boss can be easily disconnected or isolated from the power supply.
4. Do not connect power until the Grease Boss is fully installed and all plumbing connections have been checked.

Connections

The Grease Boss G5 Combi has three plumbed connections:

1. A hot water inlet of ¾ pipe fitting (standard laundry fitting).
2. An outlet socket of 50mm diameter stainless tube located at the rear of the Grease Boss. The outlet MUST be plumbed with 50mm.
3. An inlet connection as specified (typically a stainless steel bulkhead fitting).

The Grease Boss is supplied with a 90-degree Flexiplumb fitting for connection to the outlet socket.



Inlet and Outlet Connections

The outlet socket is a 50mm stainless tube and is located at rear of Grease Boss. The socket is easily connected with the supplied 90 degree flexible coupling or other satisfactory connection. A running trap or P-trap should be installed on the outlet to avoid any odour from the utility mains.

Hot Water Connection

The Hot Water connection is located at the rear of the Grease Boss. The Hot Water connection is labelled “HOT WATER” and supplies the internal cleaning jets and is essential to ensure the liquidity of the FOG. The connection is a ¾ pipe fitting suitable for a standard laundry hose or similar. Ensure that the Hot Water connection is connected to a constant supply of hot water in excess of 45°C at mains pressure.

The Grease Boss maintains an air gap between the hot water jets and the maximum operational water level. The G5 also has an overflow that protects the inflow from the Combi oven from syphoning with an air gap. It is however, theoretically possible for the internal water level to reach the jets if outlet flows are comprimised and inflow exceeds the overflow capacity.

MACTRAP RECOMMENDS A DUAL CHECK VALVE BE INSTALLED AT THE HOT WATER SOURCE

Grease Oil Outlet Nozzle

The grease/oil outlet nozzle is removed for freight purposes and is located in the Grease Boss tank. The outlet nozzle can be found by lifting the lid and removing it from inside.

1. The seal is already located on the outer left wall and held in place by four screws required to affix the nozzle.
2. Place the outlet nozzle over the seal on the external wall in position and firm up nuts to locate.
3. Lift lid and check the wiper blade and chute are located correctly and have not moved due to transport or handling.

Confirming Operation

1. Fill the Grease Boss with cold water and check that the flow from the outlet is unobstructed. Check for any leaks.
2. Close and secure the lid.
3. Turn on the hot water source and leave turned on.
4. Plug the Grease Boss into the power source and switch on. The PLC screen will power up with the time and its current state. The Grease Boss current state (based on time of day) could be any of the programmed states; cleaning, grease removal etc.
5. Check and adjust time to local if not correct (The Grease Boss does not correct for daylight savings time).
6. Leave switched on. The Grease Boss is ready to go.
7. Place the laminated User Maintenance instructions in a prominent position for staff to access.

GETTING STARTED

ALWAYS TURN OFF POWER PRIOR TO OPENING ELECTRICAL COVERS

STEP 1 Check the Grease Boss is plumbed in correctly and that all parts can be accessed.

STEP 2 Fill the Grease Boss with water.

STEP 3 Connect to the electrical supply outlet. Switch on the power.

STEP 4 The PLC screen will light to show that the power is on. The programme state will be displayed. The Grease Boss is pre-programmed so there is no need to set the timer and cycle programmes.

STEP 5 Carry out all housekeeping requirements outlined in this manual.

Do's and Don'ts

- If the Grease Boss is emptied or pumped out it is advisable to refill with cold water to at least 60% full. This ensures that the temperature of the Grease Boss will not exceed it's limits and that there is sufficient water in the unit to process incoming FOG.
- The Grease Boss is designed to trap and remove free floating fats, oils, and grease. It is not designed to process solids and will lose efficiency if not regularly cleaned. Solids build up in the bottom of the Grease Boss can cause the outflow to block and flooding may occur.
- Do not use solvents to clean the Grease Boss. Solvents will damage the seals and, if applied to the roller, can reduce it's ability to attract FOG.
- A service contract from an approved service agents is recommended. Service agents have the equipment and spares to keep your Grease Boss working efficiently.

Grease Boss Efficiency

The passing of solvent cleaners and self-cleaning oven waste through the Grease Boss may affect the efficiency of the roller attraction of FOG.

High use of certain emulsified oils and dairy products may also affect efficiency. Emulsified oils may not be collected as effectively as free flowing fats and oils, which can result in effluent testings showing a higher Mg/litre of fats and oils than specified. This problem occurs with all grease trap systems.

We recommend kitchen staff carefully check the allowable fats and oil effluent permitted in their specific local authority consent. Kitchen staff should adhere to simple management processes to reduce the amount of emulsified oils entering the Grease Boss to a minimum.

WARRANTY

A 12-month warranty applies to parts and materials for this Grease Boss. This warranty does not include any labour, cleaning out or maintenance. If the Grease Boss is not installed and operated as per these operation guidelines then the warranty will become void.

CLEANING YOUR GREASE BOSS

The Grease Boss is designed to minimise the daily effort required to service and maintain a Grease Removal Unit. However, the Grease Boss will still require some cleaning and servicing to maintain it in good operating condition and avoid unpleasant odours or overflowing.

Solids, including food scraps, bones, or any other particulate matter are the enemy of grease removal systems. If regular servicing is not carried out, then solids will settle to the bottom of the Grease Boss and slowly build up until the outlet is blocked. When the outlet becomes fully or partially blocked the Grease Boss cannot dissipate the incoming water.

Water flowing from the wiper chute nozzle or the overflow slot when a Combi Oven is draining is the first sign that the Grease Boss cannot dissipate water faster than it is entering and that a service is probably required. Another sign of a build-up of solids is unpleasant odours coming from the Grease Boss. Unpleasant odours are nearly always a result of rotting food (solids) in the water.

User Cleaning

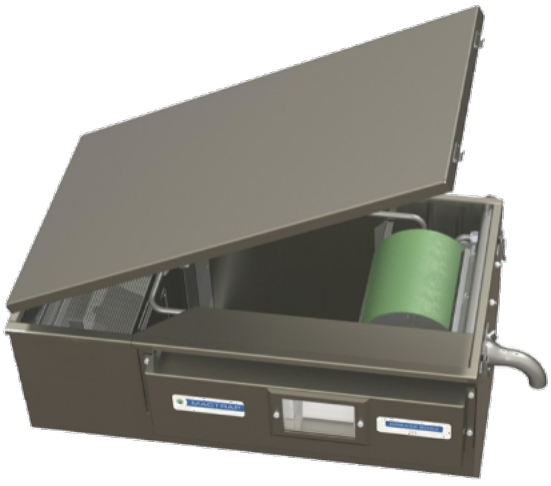
A weekly routine of cleaning of the Wiper Blade and a quick visual inspection of the Grease Boss will go a long way to avoiding the consequences described above. Mactrap recommends the following user servicing programme.

Weekly Clean of the Wiper Blade and Roller

The wiper blade should be cleaned weekly. Remove the lid and wipe across the wiper blade with a paper towel or cloth. Ensure that the wiper chute is clear of any solids and that the wiper chute nozzle is not blocked. The wiper chute can be removed for additional cleaning by lifting out while sliding toward the front of the cabinet.

Check that there is no build up of solids in or around the outlet.

DO NOT CLEAN THE ROLLER WITH DETERGENT OR SOLVENTS

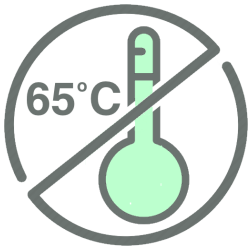


Clean the wiper blade weekly. Remove the lid and wipe across the wiper blade with a paper towel or cloth.

Ensure that the wiper chute is clear of any solids and that the wiper chute nozzle is not blocked.

General Usage Considerations

Avoid cleaning the Grease Boss with solvent based cleaners. Solvent based cleaners will prematurely damage the Grease Boss lid and door seal, potentially causing leaks. Solvent based cleaners may also reduce the effectiveness of the grease removal action.



Avoid consistent temperatures in excess of 65°C. Temperatures in excess of 65°C will prematurely damage the lid and door seal potentially causing leaks. Excessive temperatures may also create a dangerous scalding risk as the outer temperature of the unit increases.

SERVICING

The initial six monthly technician service is critical to the ongoing operation of the Grease Boss. Failure to carry out this service will result in the loss of warranty cover.

THE SIX MONTHLY SERVICE SHOULD BE CARRIED OUT BY A TRAINED SERVICE TECHNICIAN

Six Monthly Clean and Service

A six monthly clean and service should be carried out regardless of the perceived condition of the Grease Boss.

Your service technician should carry out the following checks:

1. Empty out the contents of the unit.
2. Check that any solids that may have collected in the bottom of the cabinet are removed.
3. Check for “high tide marks” that may indicate water levels are increasing (usually due to flow restrictions) that may indicate the potential for overflow.
4. Check the functioning of the Heat and Rinse nozzle jets, replace if blocked. Ensure there is sufficient hot water pressure for the jets to function correctly.
5. Check the function of the roller, ensure that the wiper is extracting oil and grease. Check that the wiper blade is smooth and flat, replace as required
6. Check that the lid and door seals are intact and not leaking, replace as required.
7. Check the motor gearbox seal and ensure there are no oil leaks.

SELF SERVICE

The Grease Boss requires regular servicing to maintain operational efficiency. Servicing can be carried out by service agents or can be carried out by the operator. Mactrap highly recommends that the first scheduled services be carried out by a service agent.

If the service is to be carried out by the operator then the self service process detailed below should be followed:

Equipment Required

1. Phillips head screwdriver
2. 3mm and 2.5mm hex drivers or allen keys
3. Wet and dry vacuum cleaner
4. Cloth or paper towels

Spares Parts Required

1. Door seal
2. Self adhesive lid seal
3. Silicon restrictor
4. Silicon spout gasket
5. Silicon wiper blade
6. Assorted M5 hex cap screws and grub screw
7. Replacement jet nozzle

Process

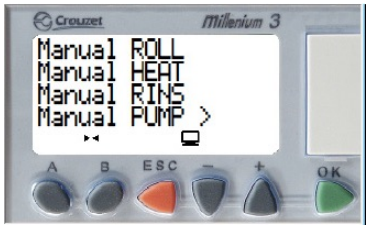
1. Empty the liquid from the Grease Boss.
2. Use the wet and dry vacuum cleaner to remove all of the sediment in the bottom.
3. Use a cloth or paper towel to wipe down all of the surfaces.
4. Use the Manual Control Mode to select the “ROLL” function and ensure that the roller is turning freely.
5. Check that the roller grub screw is secure. If necessary apply Loctite (or other thread locking compound) to the screw and tighten. When tight back the grubscrew out half a turn. There should be a small amount of play between the roller bush and the drive coupling.
6. Use the Manual Control Mode to select the “HEAT” function and ensure the jets are working.
7. Replace nozzle as necessary.
8. Use the Manual Control Mode to select the “RINS” function and ensure the wiper cleaning jet is working.
9. Replace nozzle as necessary.
10. Inspect the lid and door seals - replace as necessary.
11. Inspect the silicon restrictor - replace as necessary.
12. Fill the Grease Boss with water.
13. Ensure that the controller has been returned to automatic mode.

CONTROLLER OPERATION

Using Manual Functions

1. Enter manual mode

Press button “A” to place the controller in Manual Mode. The manual mode screen will display.



Manual Mode

2. Select the function

Press the “+” or “–“ button to select a function.

3. Activate the function

Press the “OK” button to activate the function. Press the “OK” button again to deactivate the function.

4. Return to automatic mode

Press the “ESC” button to return the Grease Boss to automatic mode.

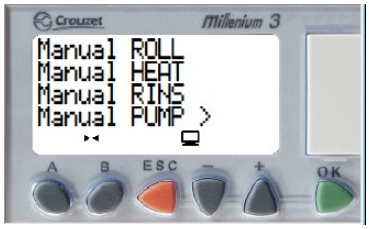
NOTE: The Grease Boss G5 Combi does not have a Pump Out function even though it is shown in the manual functions.

Remove the Overnight Cycle

In some circumstances, usually in low grease environments, it may be advantageous to remove the overnight cycle to prevent the collection container from overfilling.

1. Enter manual mode

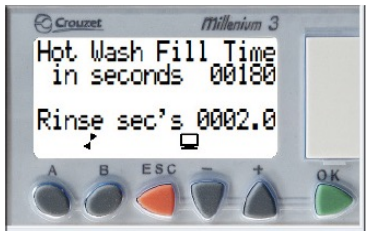
Press button “A” to place the controller in Manual Mode. The manual mode screen will display.



Manual Mode

2. Enter setup mode

Press and hold buttons “A” and “B” to place the controller into Setup Mode. The first setup screen with the “Hot Wash Fill Time” screen will display.



Setup Mode

3. Select cycle screen

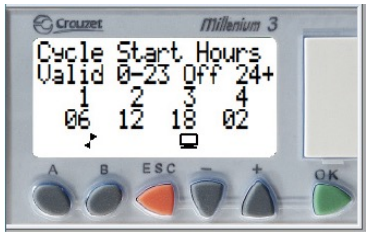
Press the “A” button 7 times and the “Cycle Start Hours” screen will display.

4. Select cycle 4

Press the “+” button to move the cursor to cycle 4. Press the “OK” button.

5. Change cycle 4 setting

Use the “+” button to set the time to “24”. A setting of “24” disables that cycle. Press the “OK” button to accept the change.



Cycle Start Hours

6. Exit setup mode

Press the “ESC” button to return the system to automatic.

TIME SETTINGS AND CONTROL SEQUENCES

The Grease Boss control sequences occur at pre-programmed intervals. There are six cycles that occur at 2:00 am, 6:00 am, 12:00 noon, 2:00 pm, 4:00 pm, and 6:00 pm. A higher frequency of cycles are programmed for the presumed busy period in the afternoon and early evening. These start times are approximate and depend upon the clock setting. The Grease Boss does not correct for daylight savings time.

0200 HRS PROGRAM CYCLE 4

Function	Display	Duration	Start
Heat	Z4-1	180 secs	0200 hrs
Roll	Z4-2	4 phases	0203 hrs
		35 mins	
Roll	DeFOG	2 phases	0238 hrs
		20 mins	
End			0258 hrs

0600 HRS PROGRAM CYCLE 1

Function	Display	Duration	Start
Heat	Z1-1	180 secs	0600 hrs
Rinse	Z1-2	2 secs	0603 hrs
Pump[1]	Z1-3	120 secs	0603 hrs
Heat	Z1-4	180 secs	0605 hrs
Pump[1]	Z1-5	120 secs	0608 hrs
Heat	Z1-6	180 secs	0610 hrs
Wait	Z1-7		0613 hrs
Roll	Z1-8	2 phases	0800 hrs
		15 mins	
Roll	DeFOG	2 phases	0815 hrs
		20 mins	
End			0835

1200 HRS PROGRAM CYCLE 2

Function	Display	Duration	Start
Heat	Z2-1	180 secs	1200 hrs
Roll	Z2-2	4 phases	1203 hrs
		35 mins	
Roll	DeFOG	2 phases	1238 hrs
		20 mins	
End			1258 hrs

1400 HRS PROGRAM CYCLE 5

Function	Display	Duration	Start
Roll	Z5-1	2 phases	1400 hrs
		15 mins	
Roll	DeFOG	2 phases	1415 hrs
		20 mins	
End			1435 hrs

1600 HRS PROGRAM CYCLE 6

Function	Display	Duration	Start
Roll	Z6-1	2 phases	1600 hrs
		15 mins	
Roll	DeFOG	2 phases	1615 hrs
		20 mins	
End			1635 hrs

1800 HRS PROGRAM CYCLE 3

Function	Display	Duration	Start
Heat	Z3-1	180 secs	1800 hrs
Roll	Z3-2	4 phases	1803 hrs
		35 mins	
Roll	DeFOG	2 phases	1838 hrs
		20 mins	
End			1858 hrs

[1] The Grease Boss G5 Combi does not have a pump out function. The program cycle will display “PUMP” but no activity is taking place.

TROUBLE SHOOTING (ELECTRICAL)

PROBLEM	CAUSE AND SOLUTION
Controller screen is in darkness	Check that there is power to the Grease Boss. Check that the internal circuit breaker located next to the controller is ON.
Extraction cycle either did not take place, or did not appear to take place	The extraction cycle will not take place while the controller is in manual or set up mode. Test the Roller works using the manual mode. Was the power off when the cycle should have started or drop out during the cycle? Is the display clock time correct to “Standard” time?
Roller will not run	Place in manual mode and select ROLL. Check for voltage at the controller output. **230V - THIS CHECK SHOULD BE CARRIED OUT BY A CERTIFIED TECHNICIAN** Check the grub screw and fix with loctite if necessaty. Check the motor gearbox seal, if oil is leaking from the seal then the gearbox is likely to have failed.
Hot water solenoid not working	Place in manual mode and select HEAT. Check for voltage at the controller output. **230V - THIS CHECK SHOULD BE CARRIED OUT BY A CERTIFIED TECHNICIAN** Check that the level in the Grease Boss has not been high and the nozzles have become blocked.
Rinse solenoid not working	Place in manual mode and select RINS. Check for voltage at the controller output. **230V - THIS CHECK SHOULD BE CARRIED OUT BY A CERTIFIED TECHNICIAN** Check that the level in the Grease Boss has not been high and the nozzles have become blocked.
Unpredictable sequence behaviour	Has the default program cycle sequence been modified? Care must be taken to not overlap any cycles or have any two cycles attempting to start at the same time, unpredictable behaviour can be expected.
The controller clock keeps reverting to year 2000 when powered up	The controller battery needs replacing.

TROUBLE SHOOTING

PROBLEM	CAUSE AND SOLUTION
Not extracting oil	Is the power on? PLC window will be illuminated when power is on. Check to be sure the power is on and the time control is set correctly. Check mains connection. If power is being supplied and there is still no display check the Grease Boss internal circuit breaker or contact your supplier.
	Is the wiper blade clean? Remove the lid and clean away any build-up that may be present in the wiper blades, collection chute or outlet tray. Ensure that the wiper blade is located properly in place with the wiper blade contacting the roller. Replace wiper blade when worn. **Warning: The Grease Boss contains 230V moving parts - turn off power before removing wiper or roller units**
	Check the skimming and heating cycles are working. The Grease Boss operates 4 cycles daily. Each cycle starts with a hot water wash then a timed FOG extraction period followed by a rinse. Make sure that you can hear the noise of the roller turning. If the motor can be heard but the roller is not turning, then check the axles and drive couplings that link the motor to the roller.
	Make sure wiper blade assembly is secure. Position wiper blade assembly over the oil chute guide and secure to locator plate. Check the condition of the wiper blade as some acids and cleaning liquids may cause deterioration over time and a new blade may be required.
No hot water supply	Check hot water connection to solenoid is on. Check spray functions are working. If water influent is too hot (over 65°C) collection efficiency will be affected.
Excessive water is observed in the grease collection container	Cycle Settings. Check the roller time Per Cycle settings are not set for too long a period. The Grease Boss should not run extensively after the grease and oils have been extracted. A cycle can be removed if necessary. Refer to page 12 of this manual or contact Mactrap for assistance.
	Check water flow. Make sure that the water flow to the Grease Boss does not exceed the rated flow and that there are no drain line blockages downstream from the Grease Boss.
	Low level of oil waste. If only a relatively small amount of FOG is present in the wastewater, the amount of water that is collected in the oil bin can be more than that of the FOG. Reduce the cycle duration. Check the wiper blade is in contact with roller.

TROUBLE SHOOTING

PROBLEM	CAUSE AND SOLUTION
Water overflows from the Grease Boss	Solids may have built up and blocked the outlet. Check that the outlet is not blocked. Clear the outlet. General overflowing can also result from a downstream blockage or restriction in the downstream pipe. Clean all possible blockages downstream of the Grease Boss.
	Has sediment been allowed to build up over time? Over time, depending on how the Grease Boss has been operated, sludge could build up at the bottom of the cabinet and block the path of the flow underneath the outlet baffle. Clean as per the maintenance instructions. The build-up of sludge may severely reduce efficiency of the Grease Boss and lead to overflow.
Unpleasant odour	Has maintenance been carried out? Ensure all recommended maintenance is carried out. Check backflow prevention from sewer line and vent the outlet. Check for scum adhesion especially sour milk froth around the liquid surface level, skim off occasionally or use sink shower to rinse inside with warm water. Check for solids sludge at the bottom of the Grease Boss. Flush, if necessary, with clear hot water.

COMMISSIONING CHECKLIST

INSTALLATION FUNCTIONS	CHECK	COMMENT
Electric input with removeable power lead.		
Permanent Sink filters in place.		
Lid and solids filter door accessible for service with suitable clearance.		
Mains pressure hot water is connected with control valve.		
Hot water supply is turned on with constant temperature between 45°C and 65°C.		
Correct fall on all plumbing connections.		
Roller correctly seated.		
Roller drive coupling grub screw in place.		
Wiper blade seated on roller.		
Solids filter seated behind door.		
Inlet flow restrictor undamaged.		
Unit filled with water.		
No leaks (check door seal).		

TRAINING	CHECK	COMMENT
Explain principles of operation.		
Explain wiper and wiper channel cleaning and weekly schedule.		
Explain solids filter cleaning and daily schedule.		
Note safety requirements for power isolation when opening lid and screwed covers.		
Note safety requirements for cleaning - DO NOT HOSE or allow indirect spray.		

Installed by: _____

Date: _____

Contact: _____

SERVICE AGENTS (4th Quarter 2021)

Please check www.mactrap.co.nz for updates.

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