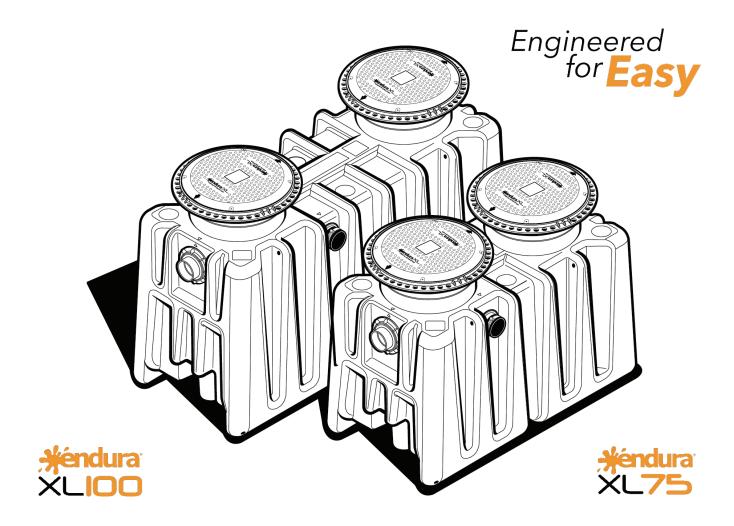
Hendura XL Grease Trap



INSTALLATION, OPERATION & MAINTENANCE

As a plumbing accessory your Endura Grease Trap MUST be isolated from the drainage system in the event that final drain testing or other system pressure testing is required.

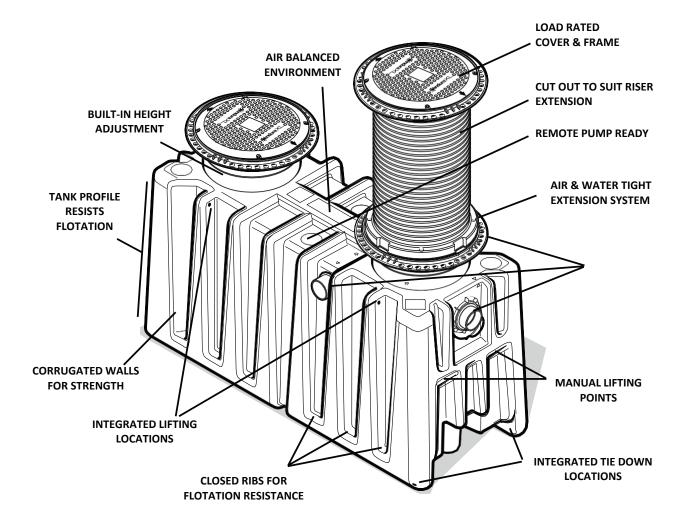
DO NOT under any circumstance subject your trap to pressure test (Air, Water or Otherwise). This action will result in damage to the unit, invalidate your warranty and could cause serious bodily injury.







Features Overview



About Your Purchase:

Developed in North America the Endura® XL Grease Trap and it's associated products are the latest addition to the proven line of Endura® Grease Management products.

Endura XL Grease Traps are the result of many thousands of hours spent in development. The aim is simple – to produce the industry's best Hydromechanical Grease Trap.

From the ground up, Endura® XL has been 'Engineered for Easy'. Working with distributors, installers, engineers, jurisdictional officials, pumpers and of course restaurant operators across North America, all of the feedback gained has been rolled into one comprehensively designed solution to meet as broad a range of these requirements as possible.

Endura® XL is the most widely evaluated and approved hydromechanical trap in the current marketplace, being successfully tested by independent third parties to meet all requirements of PDI G-101, ASME A112.14.3 (Type A & C)/NSF ES15741 and CSA B481.1.

* Endura brand products manufactured by Canplas Industries Ltd., an Aliaxis company





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Glossary of Terms

HGT: Industry abbreviation for Hydromechanical Grease

Trap. By definition an HGT is designed to use managed flow, air entrainment and specifically designed features to provide an enhanced level of separation efficiency, removing non-petroleum FOG (Fats, Oils & Grease) from a transition flow of waste water, generated by commercial foodservice activities (restaurants, cafeterias, institutional kitchens, sandwich shops and coffee houses for example). HGT's are performance tested for efficiency of grease separation based on National Standards.

GCT: Industry abbreviation for Gravity Grease Trap. By definition a GCT has a minimum of 1324 litres capacity and in operation 1892 to 5678 litres of capacity are most common. No flow control device. Separation of FOG based on capacity and retention time of water (minimum 30 min. to exchange volume). At this time no performance standards are published for GCT's.

GRD: Industry abbreviation for Grease Removal Device.

Designed firstly as an HGT, a GRD uses a heat source and a timed or sensor based skimming (or draw off) device to remove accumulated FOG from the separation chamber into an external container for collection and disposal. These units require daily maintenance for management of food solids.

25% Rule: The rule of thumb, sometimes mandated by councils, used to determine frequency of pump out for GRAVITY GREASE TRAPS. The 25% refers to the combined volume or retained FOG and food solids which shall not exceed 25% of the working volume of the trap. This rule should not typically be applied to HGT's particularly those with extended capacity.

Air Entrainment: Mixing of air with effluent using a flow control device. Air and grease are attracted to each other, the air wanting to separate more easily than grease. Because they become mixed together the air increases the air efficiency of separation.

Effluent: Waste water containing little to no FOG, being discharged out of the trap.

Influent: Waste water entering the trap and containing uncontrolled, or variable levels of FOG based on the nature and practices of the food service operation.

Separation Chamber: Zone inside the trap where grease separates from water and is retained.

AHI: Authority Having Jurisdiction. This can be one or more government departments – for example plan check/review, building, plumbing, pre-treatment, sewer and waste water. Bottom line..... those who enforce the rules and regulations.

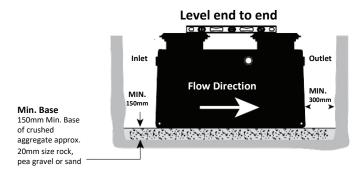


Quick Start Guide 🔨

Before you begin, be sure to review this document in full for important information regarding the installation process. Also, ensure the trap purchased is correctly specified and sized for the intended installation. Be sure to reference and be familiar with local code and municipal FOG program requirements.

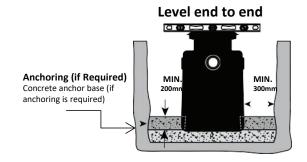
1. Prepare your Installation Area

If installing in-floor or below grade excavate as required to accommodate the trap and ensure safe working practices. Refer to installation specification section of this document. (See page 10-13)



2a. In ground/floor

Remove all packaging , including the skid. Confirm flow direction, lower in and level trap accounting for anticipated surface finish requirements. Note: For installations where high ground water is anticipated, once located pour at least 200mm of concrete on top of your prepared base, to fill an area around the perimeter of the tank. This will prevent floatation. For alternative methods of anchoring (See page 10 - 13)



2b. On floor/floor below

Remove all packaging including the skid. Locate the trap so as to allow for accessibility when conducting maintenance and regular cleaning.

When full the weight of the tank is significant (XL75 – 590kg, XL100 – 975kg)

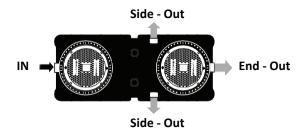
For suspended application engineering service by a qualified engineer will be necessary.

A minimum safety factor of 2 shall be applied in calculation/design.



3. Select preferred outlet connection

Connect your influent drain to the tank inlet ("IN"). Select the preferred outlet connection from the pre-plumbed connection ports offered – marked "OUT". Side connection is accessed by removal of the caps supplied, that cap then being used to seal the end outlet.

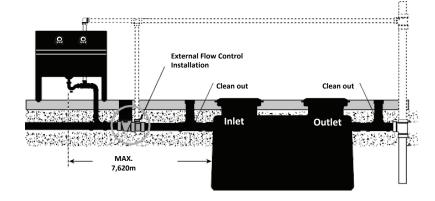




4. Installations with External Flow Control

When installing an External Flow Control device (purchased separately) upstream, after the last branch connection discharging into the trap. A maximum of 7,6m from the last branch to the entry of the trap is required to meet published recommendations. See page 15 for connection formats.

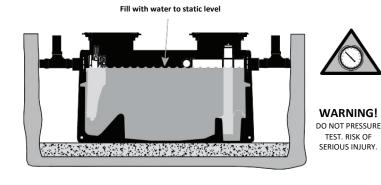
NOTE: External flow control devices are not sold by Marley.



5. Fill Tank

Fill tank with water to static water level, this provides stability and crush resistance during backfilling. Check connections made for any leaks.

For inspection testing DO NOT PRESSURE the tank. Plug lines inside trap to test upstream and downstream integrity.



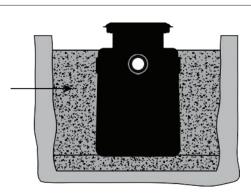
6. Replace Cover(s) and Backfill

Replace Cover(s) and protect with cardboard or similar during backfill. Backfill per specification (See page 10).

If installing Remote Pump option do so now.

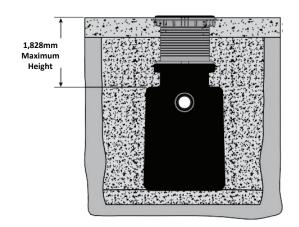
Continue fill of crushed aggregate material approx. 20mm size rock, pea gravel or sand.

For spec see Page 8 - 9



7. Riser Extensions (Optional)

Depending on your application, extend the tank risers (using DGTR880) to grade/floor level. Be sure to account for finishing. Refer to Manual DGIRINST – Riser Extension Installation Guide).

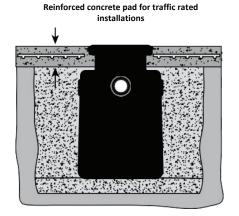




8. Finish to grade/floor

For in ground applications with vehicular traffic, the upper 200mm requires a reinforced concrete slab. Refer to the installation specification section of this document (See page 10-11). This details backfill materials and concrete reinforcement requirements.

If installing in internal application with tiled floor, ensure adequate protection to prevent mortar from covering bolts and/or entering around cover perimeter.



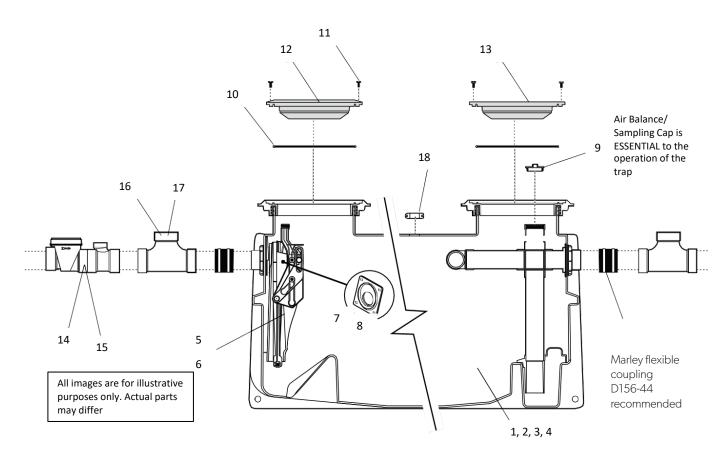
9. Completion Documentation

Having completed the installation and successful inspection, hand-over to the client all installation documentation, with page 17 completed. Fill out your sections of the Limited Warranty registration (See page 27).

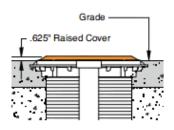
If submitting on behalf of your client you can do so at info@marley.co.nz or by sending to the location shown on the back cover of this document.



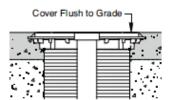
Technical Information



Light Trafficable Access Cover Point Load - 4,536kg



Pedestrian Access Cover Point Load - 907kg



Parts Overview

Endura XL Tank Components			
ltem#	Description	Qty.	
1	Endura XL75 Grease Trap with Light Trafficable Access Cover	1	
2	Endura XL75 Grease Trap with Pedestrian Access Cover	1	
3	Endura XL100 Grease Trap with Light Trafficable Access Cover	1	
4	Endura XL100 Grease Trap with Pedestrian Access Cover	1	
5	XL75 Replacement Dynamic Baffle Assembly	1	
6	XL100 Replacement Dynamic Baffle Assembly	1	
7	Internal Flow Control Plate - 4.7 l/sec	1	
8	Internal Flow Control Plate - 6.3 l/sec	1	
9	Endura XL Air Balance / Sample Port Cap	1	
10	Cover Seal	2	
11	Tamper Resistant Cover Fastners	2	
12	Endura XL Light Trafficable Access Cover - Class B	2	
13	Endura XL Pedestrian Access Cover - Class A	2	
External Flow Control - for PDI/ASME Type A Applications			
14	Endura XL External Flow Control - 75pgm	1	
15	Endura XL External Flow Control - 100pgm	1	
Parts Purchased - Recommended Installation			
16	100mm 2-Way Cleanout - Sewer x Sewer x DWV	1	
17	100mm 2-Way Cleanout - Sewer	1	
Parts Purchased - Remote Pump Application			
18	Remote Pump Pipe Seal (optional)	1	



Capacities	Endura XL75	Endura XL100
Part Numbers	DGT75 DGT75P	DGT100 DGT100P
Litres per Second	4.74	6.3
Min. Grease Capacity	68.2kg	90.8kg
Grease Capacity Actual (ASME A112.14.3)	253kg	480kg
Average Efficiency % (ASME A112.14.3)	>98%	>98%
Operating Temperature Capabilities	71°C	71°C
Access Cover - Load Rating	Class A – 907kg Class B – 4,536kg	Class A – 907kg Class B – 4,536kg
Access Cover – Proof Load Test Rating	Class A – 1,814kg Class B – 9,072kg	Class A – 1,814kg Class B – 9,072kg
Unit Weight (Empty)	106kg	128kg
Liquid Capacity	598 litres	973 litres
Connection Size (Mechanical joint only)	100mm	100mm

Air intake can be connected to building vent system or be independently open to the atmosphere based on local code.







For full CAD, BIM Models and 3 Part Master Format Specs visit www.arcat.com Search keyword "Endura"

Sample Specification Clause:

Contractor shall install an Endura® XL Hydromechanical Grease Trap (HGT), part no. DGT100, DGT75,
DGT100P, DGT75P (See page 7 table), and rated to 6,3 L/Sec, 4,74 L/Sec, (Indicate as applicable) independently
third party certified to the current version of PDI G-101, ASME A112.14.3, NSF E15741 and CSA B481.1. Approved alternate is permissible providing
written compliance to the following is provided and validated.

Where an internal flow control is desirable and acceptable to the Authority Having Jurisdiction (AHJ), the trap shall be rated and approved to ASME A112.14.3 Type C. the flow control shall be accessible for cleaning and inspection up to the maximum burial depth of 1828mm regardless of the application and when requiring a Riser Extension, the installing contractor will extend the opening device according to manufacturers published instructions. The outlet system will provide facility for connections to be made perpendicular to the inlet connections. Connection formats will be compliant with requirements of the AHJ and the performance standards identified above. Contractor shall provide mechanical joint connectors, (Recommended Marley Flexible Coupling D156-44) or requisite materials to connect the grease trap to the drainage system, additionally making adequate provision for management of food debris and solids. The trap shall be furnished with two access covers, maximising internal visibility for inspection and maintenance when removed. These covers shall be capable of withstanding a proof load of 9,072 kg, approved for application at temperatures from -29°C to +38°C and will be mechanically secured when operational.

The trap tank shall be constructed with seamless engineered thermoplastics, evaluated and approved to the material performance requirements of AS3996.

The trap shall additionally; operate with an air balance d environment to equalise variation in internal pressures being controlled and maintained with an appropriately sized air balance means; be supported by a Limited Warranty against manufacturing defects.

External Flow Control Installation:

If an external flow control device is recommended by the local council to be installed upstream of the trap, the internal flow control should be removed. The trap will be located within 7.6m developed pipe run of the last connected appliance for standard compliance. Where applicable a secondary flow control will be employed in installations where there is greater than 2.4m of vertical elevation between the kitchen discharge appliances and the trap inlet.





Endura[®] XL 75 & 100 – Exterior Below Grade Installation Instructions Below Grade Installations Instructions

1. EXCAVATION

- > Install the Endura® XL unit(s) as close as possible to the fixtures being serviced, ideally within 7.6m of developed pipe run from the last fixture to the inlet of the trap.
- Width and length of the excavation shall be a minimum 305mm greater than the tank dimensions on all sides.
- > Depth of excavation shall be at least 150mm deeper than the tank bottom.
- > IMPORTANT: Maximum burial depth 1,828mm measured from the air balance channel (Endura® XL logo) to finished grade/floor level. riser extensions available (DGTR880) see below.
- > Set the tank on well packed crushed aggregate material approx. 20mm size rock, pea gravel, or sand. When setting Endura® XL units they must be levelled laterally and longitudinally.
- > Endura XL tanks are specifically designed to resist buoyancy in high water table conditions. Additional anchoring may however be necessary as determined by the specifying engineer. Tie down locations are incorporated into the tank and can be used in conjunction with coated stainless steel cable and an applicable anchor method based on the subsoil. Specific requirements to be determined by the specifying engineer.

2. BACKFILLING & FINISHED CONCRETE SLAB (TRAFFIC LOAD RATED)

Endura® XL is supplied as standard with traffic rated covers designed in accordance with AASHTTO 304 - H20 and approved to CSA B481.0 Class 'S' -29°C to +38°C

- > Preparation of sub grade per local jurisdictional recommendations.
- > Stabilise and compact sub grade to 95% proctor per excavation information above.
- > Fill the tank with water (to discharge level) to prevent movement during backfilling process and to resist backfill load.
- > Before backfilling and pouring of slab, install risers if necessary, cover assembly to suit finished floor/grade level.
- > Backfill using crushed aggregate material approx. 20mm size rock, pea gravel or sand.
- > Place minimum 150mm aggregate base beneath poured structural slab. Aggregate should be 20mm size rock or pea shingle.
- > Thickness of concrete around covers to be determined by the specifying engineer, recommendations and/or local code requirements. Note: Concrete slab dimensions shown for illustration purposes only.
- > Concrete to be 28 day compressive strength to 4,000 PSI. Reinforcement with No. 4 rebar 12.5 grade 60 steel per ASTM A615: connected with tie wire. Rebar to be 63mm from edge of concrete. Rebar spacing 300mm grid. 100mm spacing around access openings.

3. PIPING CONNECTIONS

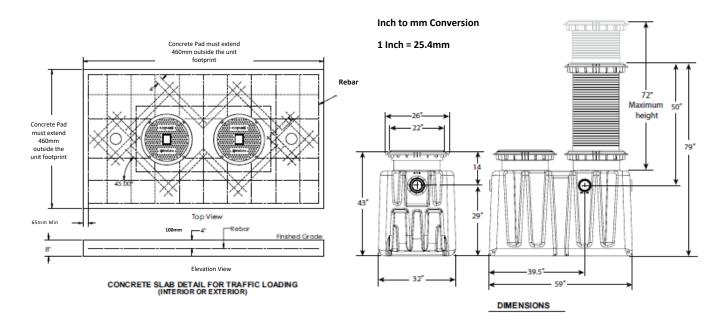
- All Endura® XL Grease Traps are manufactured with connections suitable for flexible coupling joints. The Marley Flexible Coupling code D156-44
 is recommended.
- > Review all field connections for leaks before backfilling begins. Isolate the tank from the system both up and down stream, fill the tank with water, submersing the inlet and outlet fully below the water level. DO NOT PRESSURE TEST Risk of serious injury or death.
- DO NOT decrease pipe diameter across the unit, (i.e. 100mm inlet 80mm outlet) if the piping system needs to be resized, use appropriate mechanical joint reducers consistent with the direction of flow and installed in compliance with local codes.

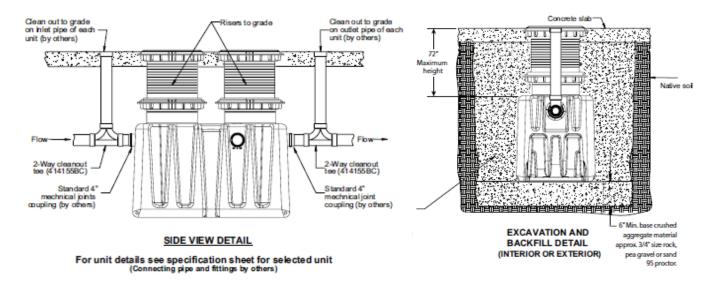
4. EXTENSION RISERS (OPTIONAL)

- > Endura® XL Extension Risers provide a maximum of 890mm extension per riser. Base d on maximum installation depth up to a maximum of 1828mm depth of burial can be achieved., adding Extension Risers (or part thereof) during installation. risers are cut to length on site to suit the installation.
- > Remove both covers from the trap. Set aside for use at finished grade/floor level.
- > Secure riser to tank (frame remains in place) using fixings provided. Ensure seal is correctly located.
- > Secure the 1 ½" adaptor fitting supplied with the extension kit to the thread on the top of the handle mechanism. Cut and extend a length of 1 ½" DWV pipe per instructions supplied.
- > For custom riser length measure from tank frame to finished grade/floor level. subtract 38mm, cut cleanly by hand or mechanical means using guide rings molded into the riser to give clean straight cut. Note horizontal surface of cover will be 12.7mm above finished floor/grade.
- > Fit riser seal provided over the cut edge of the riser and locate frame (supplied) over the seal making sure it is fully seated. Secure with lag screws (provided) using the pre-drilled locations in the frame.
- > Repeat process for additional risers if/as required.
- > With frame installed and verified at the correct height, pass the handle extension support over the 1 ½" DWV and secure the support to the frame with the screws provided. Solvent weld a 1 ½" vent tee on top of the pipe to act as the handle.
- Re-fit the original cover(s) provided with the trap.





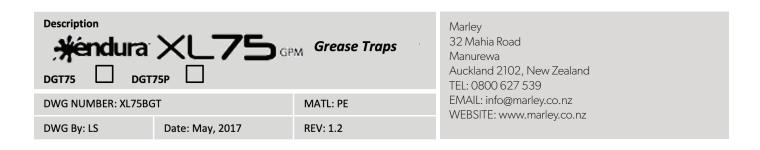




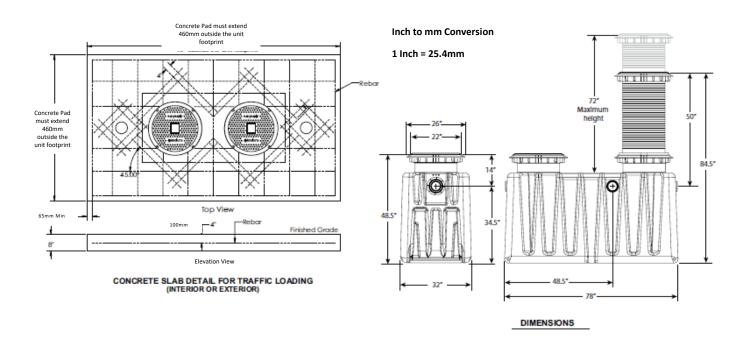
NOTES:

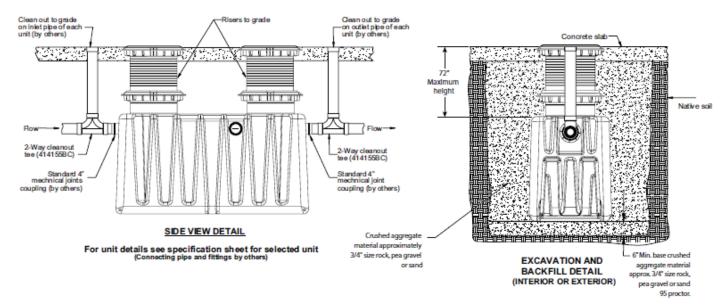
Endura® XL grease traps are rated and supplied with an internal flow control system already in place. They do not require an external flow control system or air intake vent unless specified by local code requirements or being operated as a PDI G-10 installation. Endura XL grease traps are only to be installed in the manner and for the application shown. Consult local codes for separate trapping requirements, cleanout locations and additional installation instructions. Full instructional information supplied with every trap.

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NOTES:

Endura® XL grease traps are rated and supplied with an internal flow control system already in place. They do not require an external flow control system or air intake vent unless specified by local code requirements or being operated as a PDI G-10 installation. Endura XL grease traps are only to be installed in the manner and for the application shown. Consult local codes for separate trapping requirements, cleanout locations and additional installation instructions. Full instructional information supplied with every trap.

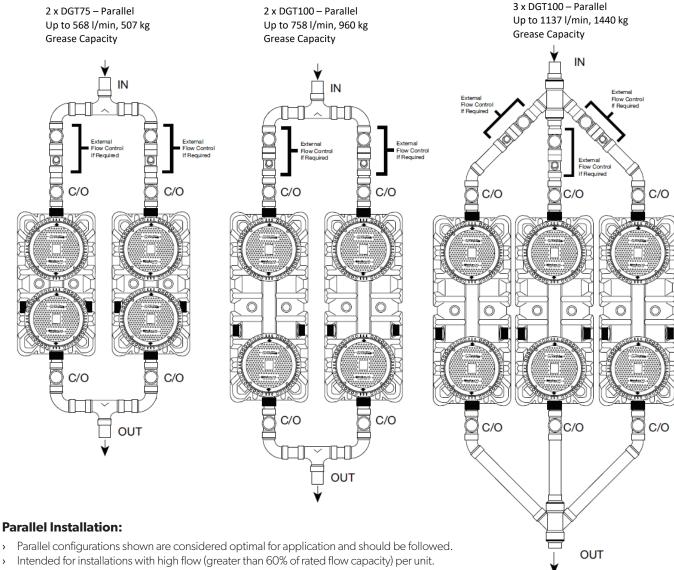
Proprietary and Confidential - © Canplas 2017

Description GPM Grease Traps DGT100 DGT100P		Marley 32 Mahia Road Manurewa Auckland 2102, New Zealand TEL: 0800 627 539 EMAIL: info@marley.co.nz
DWG NUMBER: XL75BGT MATL: PE		
DWG By: LS Date: May, 2017	REV: 1.2	WEBSITE: www.marley.co.nz





Parallel Installation Examples



- Where external flow control is not required or preferred, the parallel configuration can be operated with internal flow controls managing flow to the respective trap.
- Where preferred or required, installation of a correctly rated external flow control shall be made upstream of the interceptor inlet but downstream of any division of flow. Flow control shall be accessible (from grade as applicable) once operational.
- Adequate provision for drain access is essential. Two way cleanouts extended to grade are required before all tank inlets and following all outlets. Access between tanks is also recommended if pipe length is greater than 900mm.
- Connections to tank made with approved mechanical joint couplings.
- Manufacturer's instructions supplied with units must be followed

Notes:

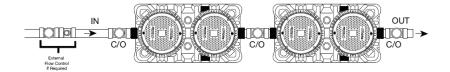
Endura® XL grease traps are rated and supplied with an internal flow control system, they do not require an external flow control system or air intake unless specified by local code requirements or being operated as a PDI G-101 installation. Endura® XL grease traps are only to be installed in the manner and for the application shown. Consult local codes for separate trapping requirements, clean out locations, and additional installation instructions. Full instructional information supplied with every trap.





Series Installation Examples

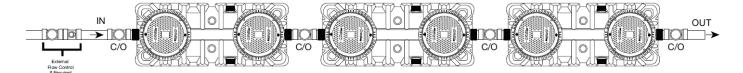
2 x DGT75 - Parallel Up to 285 l/min, 507 kg Grease Capacity



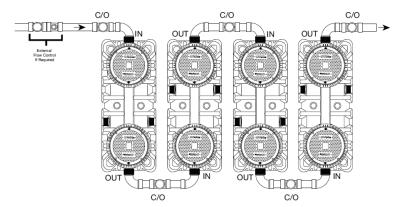
2 x DGT100 - Parallel Up to 380 l/min, 960 kg Grease Capacity



3 x DGT100 – Parallel Up to 380 l/min, 1440 kg Grease Capacity



4 x DGT100 – Parallel Up to 1515 l/min, 1920 kg Grease Capacity



Series Installation:

- > Parallel configurations shown are considered optimal for application and should be followed.
- > Anticipated as installations with low to medium flow (less than 60% of rated flow capacity).
- > Where preferred or required, installation of a correctly rated external flow control shall be made upstream and with reference to PDI G-101 where applicable. A single flow control shall be located upstream of any flow division and vented accordingly. Location shall be accessible once operational.

IMPORTANT: Internal flow control plates are to be removed in this operational format.

- > Adequate provision for drain access is essential. two way cleanouts extended to grade are required before the first tank inlet and following the final outlet. Access between the tanks is also recommended if pipe length is greater than 900mm.
- > Connections to tank be made with approved mechanical joint couplings.
- Manufacturer's instructions supplied with units must be followed.





INSTALLATION

Safety First! All installations shall be conducted under the applicable Health and Safety regulations in force within the jurisdiction. Plumbing operatives shall be adequately trained and appropriately licensed to conduct the installation. All installations will be made respective and in compliance with applicable plumbing codes and any locally published by-laws. Installation and approval of the same is subject to the appropriate officials or representatives of the Local Council.

Scope of Application:

Endura® XL Grease traps are designed for application in the efficient and effective separation and retention of non-petroleum Fats, Oils and Grease as a by-product of commercial foodservice activities. The Endura® XL traps models are approved and intended only for use in the specified application and shall not be installed in any manor or application except as tested and rated.

Accessibility:

Installations shall be made in such a manner that full access for maintenance and cleaning is maintained once the trap is commissioned. A zone based on a column 915mm out from the cover perimeter and extending 2,133mm vertically is recommended.

Inlet (IN) and Outlet (OUT) connections are indicated on the trap itself. Ensure that the trap is in the correct orientation and flow in the intended direction before backfilling (when in ground) or connection to the respective drain system.

Location:

A grease trap should be installed as close as possible to the fixtures it serves to avoid accumulation of FOG between the source and the trap. Adequate provision for rodding and service access is particularly important upstream of the trap. Please refer to local code requirements. Drain lines servicing the trap shall be laid at a minimum 1 in 120 gradient, (more gradient promotes good drainage flow and reduces the risk of blockages).

Piping Connections:

The primary bulkhead-style connections (in-line) of Endura® XL are injection molded in Polypropylene (PP). PP does not accept solvent weld cement and will not provide a serviceable connection. DO NOT SOLVENT WELD these drain connections.

Best practice and most codes typically require the use of locally approved Mechanical joint couplings for the connections to and from the trap. This method provides some flexibility for any ground movement or settling that may occur.

Flow Control:

Where required or preferred an External Flow Control can be installed. In this configuration the installation has the opportunity to meet the requirements of PDI G-101, assuming that the applicable venting and installation criteria are met (See page 12). Refer to the currently published version of PDI G-101 available online at www.pdionline.org for verification.

Trapping:

All connected appliances and fixtures must be individually trapped by a permanently installed water seal trap or approved equivalent, in compliance with applicable plumbing code requirements.

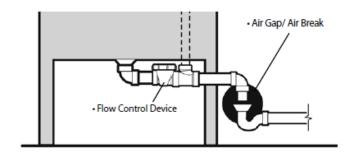
Venting:

The installation of the grease trap shall be vented downstream in accordance with local code requirements – typically within 3m max.

Indirect Connections/Air Gap/Air Brake:

Some local jurisdictions require warewashing installations to be made on an indirect basis incorporating an air gap.

This is to prevent the back up of contaminated waste water into the sinks /appliances in the event of a blockage. As the flow control device provides a restriction within the system it must be incorporated before the indirect connection to prevent the risk of overflow occurring during high/maximum waste water discharge. If an air gap/air break is located within 150mm of the Flow Control device, installation of the air intake tee is optimal.







Flow Controls

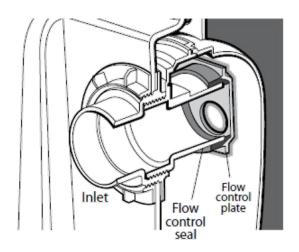
Depending on preference or requirement Endura® XL can be operated with an internal or external flow control. All models are supplied with an internal flow control.

Internal Flow Control:

The internal flow control is located inside the dynamic inlet baffle, affixed to the downstream part that moves forward when the baffle is opened.

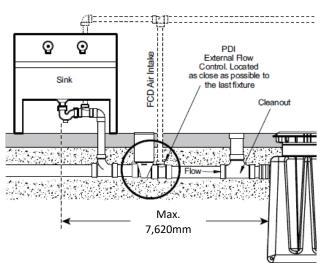


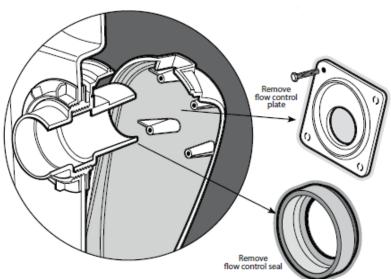
The flow control is an essential part of the hydromechanical grease trap and its function



External Flow Control:

With the internal flow control plate removed, the flow control function will now be performed by a separate device that will be installed upstream from the trap. This is located as close as possible to the appliances and fixtures being served, but after the last branch connection to the main drain line connected to the trap. The flow control shall be installed so as to remain accessible for maintenance and will typically be recessed into the floor. The location of the cleanout should be recorded in your Installer Hand Over Checklist. (See page 17)





When installed with an External Flow Control, the internal flow control plate and seal shown are removed during installation.

With the internal flow control in particular, it is important that it be opened and checked periodically (min. twice annually) to ensure there is no build up or blockage occurring that will restrict the flow.

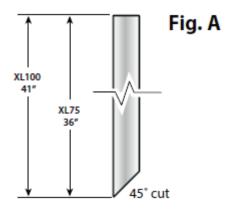


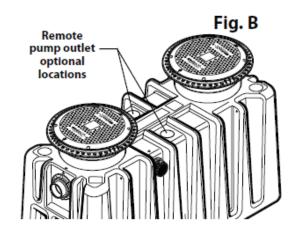


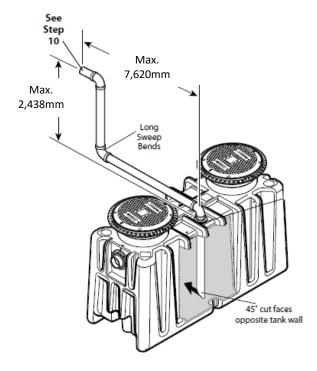
Remote Pump (Optional)

Endura® XL incorporates a method for installation of a Remote Pump function where desirable or required. The simplicity of this change is such that it can be conducted in the field with minimum materials. The installation is based on the use of an 80mm DWV pipe which is passed into the tank by means of a tank penetration shown in Fig. B.

- 1. Cut the end of the pipe at an angle that is no less than 45 degrees.
- 2. Good preparation of this pipe end is essential to avoid damaging any seals used to seal the pipe. The outer edges must be chamfered to at least 45° around the full length of the pipe end.
- Now measure from the end of the pipe to the following length depending if you are installing an XL75 or XL100 respectively. For an XL75 pipe length - 910mm; for XL100 pipe length 1,110mm Fig. A
- 4. On the top surface of the tank at the centre position and on either side of the air balance channel there are two "Remote Pump Ready" details, both of which include a drill centre (Fig. B). Select which of the two locations best suits your application and using a correctly sized hole saw, open the respective hole.
- Fit penetration tank seal into the opening prepared and lubricate well using silicone pipe lubricant.
- 6. As the orientation of the pipe when installed is important, mark or identify on the top of the pipe so as to indicate that the angled face of the pipe will be facing laterally across the trap when installed. i.e. the angled face is pointed toward the opposite tank wall.
- Take your prepared length of pipe and liberally apply silicone lubricant to at least the first 150mm of the pipe ensuring that the angled surface is also well lubricated.
- 8. Introduce the pipe to the rubber seal and with even pressure and a rotating motion, push the pipe through the seal and into the tank. Once onto the full diameter of the pipe apply more lubricant to the next 300 450mm and continue to push the pipe downward into the tank until the tip bottoms out, with the angled face in the correct position.
- 9. Develop your pump out line connecting to the pipe stub now extending from the tank using long sweep bends and fittings, making provision for adequate cleanout access as required. All joints must be solvent welded or of threaded format. Maximum developed pipe run shall be no greater than 7,620mm with a vertical rise of 2,438mm max.
- At the extent of the remote pump system where the pumping service will be connected, typically a capped male camlock fitting will be provided to allow compatibility with vacuum service connection.









Installer Handover Checklist

The following checklist completed by your installer provides key information regarding your XL grease trap and the way it has been installed. If it is not completed contact your installer and complete with them by phone or other appropriate means.

Installation made by (Company)				
Installer (Name)				
Installer Contact (Tel)				
Completed on (Date)				
Model Installed DGT75	DGT75P		DGT100	DGT100P
Installation Format Floor Below (e.g. E	Basement)	In Floor – Ins	de Building	In-Ground – Outside
Slab poured per specification for YI Traffic Rated install	ES	NO		
Flow Control Format Intern	al (Inside inlet baffle)	External (upstream of Inter	ceptor)
If external flow control Internal Flow Control Plate removed	ES	NO		
Flow Control Location(s)				
Connections & Cleanouts (Mark where	installed):	External Flow Control		OUT Cleanout
Extension Risers added:	YES	If yes approx. Lengt	h of Riser	mm
Flow Control Handle Extended:	YES	NO	(See Riser Extension Instruct	tions)
Air Balance/Sampling Cap in place:	YES	NO	(If No, Replacement require	d)
Entered Information on Warranty Page:	YES	NO		

Have Feedback? Email: info@marley.co.nz





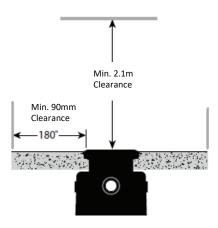
Operation

Safety First! Ensure that any operatives or employees that attend to the grease trap are adequately protected. As a minimum it is recommended that protective gloves, eyewear and a mask are provided and used.

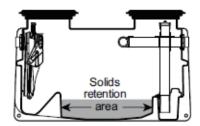


Accessibility:

It is the responsibility of the restaurant operator to maintain safe, clear and unobstructed access to the interceptor at all times. This facilitates inspection by local officials, emergency access in the event of an issue and for the regular maintenance of the trap required to keep it in good working order.



IMPORTANT: The key to effective and trouble free operation of your Endura XL trap is regular and effective maintenance. You should consider your facility to be in partnership with the local authorities, providing an effective means of FOG management that is mandated to protect your business, your community and the environment.



Food Solids and Debris:

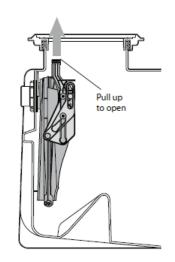
Endura® XL is designed to manage up to 15% of its volume for solids management. Remember however that your grease trap is an engineered system that is not designed to accommodate large amounts of solid material. This will impact the operational capacity and performance of the unit and cause the foul odours often associated with grease traps if not removed regularly.

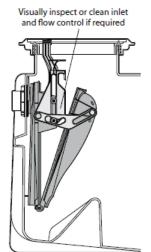
It is strongly recommended that a solids trap be installed upstream of the grease trap and that all entry points to the drains running to the trap be adequately protected with appropriate screens to prevent debris finding its way into the system. Likewise, best kitchen practice recommends that all plates, crockery, pans, etc. be scraped to remove loose food debris prior to washing. Again sinks should have in-sink screens fitted. If you are experiencing frequent issues in regard to blockages or accumulation in your interceptor you must address the appropriate kitchen practices. DO NOT MODIFY THE TRAP OR MEANS OF FLOW CONTROL IN ANY MANNER. Doing so voids the performance approval required by your local council and will leave your operation exposed to the risk of significant fines and non-compliance citations.

Dynamic Inlet Baffle:

The inlet baffle design in your Endura® XL Trap is uniquely accessible once in service. Having removed the cover above the inlet, a simple pull/push motion on the handle opens and closes the front shell, allowing access for maintenance and cleaning. This action also opens the inlet drain to its full diameter allowing the upstream drains to be cleaned without obstruction.

This baffle can be extended to maintain its function and value even when buried at full depth below grade. Refer to installation instructions for riser extension, Manual DGTRINST.







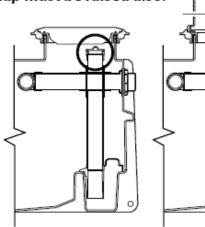


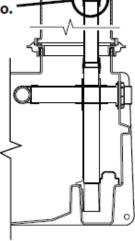




Air
Balance/Sampling
Cap is ESSENTIAL to
the operation of the
trap and must be
kept free of debris

If extending height, sampling/air balance cap must be raised also.







IF YOU DO NOT SEE A GREY CAP ON TOP OF THE OUTLET SYSTEM, CONTACT YOUR INSTALLER/MAINTENANCE CONTRACTOR IMMEDIATELY AND IF NECESSARY PURCHASE A REPLACEMENT.

Air Balanced Operation:

Endura® XL is designed to function based on a balanced air environment. This feature ensures that the high operating efficiency is maintained. During the maintenance of your trap, it is important to check that the breather hole in the outlet vent (see diagram) is unobstructed. The smallest restriction can drastically impact the performance of your trap and can cause the accumulated contents of the trap to be discharged to the downstream drain system particularly if discharge rates are toward the maximum rated flow. If installed in-floor or in ground outside your facility this air balance access/breather cap must be relocated upward as close as possible to the underside of the cover to maintain its function.

Maintenance

IMPORTANT: The key to effective and trouble free operation of your Endura XL trap is regular and effective maintenance. You should consider your facility to be in partnership with the local authorities, providing an effective means of FOG management that is mandated to protect your business, your community and the environment.

Regular Removal of Fat, Oil and Grease:

Due to the capacity of your Endura® XL Grease Trap it is necessary to have a licensed and locally approved service provider manage the regular removal, cleaning and disposal of the Fats, Oils and Grease that is captured in your trap.

Every installation is different based on factors such as operational hours, menu, seasonality of business, staff changes, etc. as a rule of thumb your interceptor should be cleaned every 8-12 weeks. You should anticipate a minimum of 4-6 cleans per year.

SAFETY FIRST! ALL ACCESS COVERS SHALL BE FULLY AND COMPLETELY SECURED (all bolts in place and tightened accordingly) at the completion of maintenance procedures, regardless if the covers were accessed or not. Missing bolts shall be reported to management and replaced immediately.

Ensure that any operatives or employees that attend to the grease trap are adequately protected. As a minimum it is recommended that protective gloves, eyewear and a mask are provided and used.

Where a third party contractor or service is responsible for the regular maintenance of the trap (strongly recommended) it is their responsibility not only to ensure that their own protective practices and procedures are maintained and followed, but that they also protect those with access to the vicinity of the trap when it is undergoing maintenance. in addition they will be stewards of the environment, promptly and effectively identifying to premise management issues with for example, but not limited to, trap operation, damages, spills etc.



Maintenance Procedures:

Remember: Every installation is different based on factors such as operational hours, menu, seasonality of business, staff changes, etc. As a rule of thumb your trap should be cleaned every 8-12 weeks. you should anticipate a minimum of 4-6 cleans per year.

Removal of Access Covers:

The covers that provide access to the XL traps are retained with four (4) standard hex head bolts which are removed with a ½" socket/driver. These bolts have a retaining washer on the reverse to prevent them falling out of their location when the cover is removed from the trap. Covers incorporate pry points for ease of removal. Each cover weighs approx. 10kg so take care when lifting and moving the cover. Always set aside the cover on a flat surface when removed.

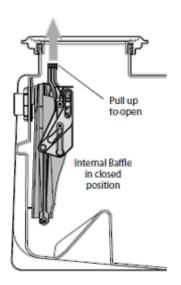
On re-installation visually check the seal recessed in the underside of the cover and when satisfied refit the cover being sure to not overtighten the bolts. Max. torque is $108-135\,\mathrm{Nm}$.

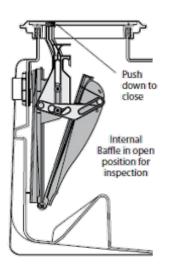
Access to the Dynamic Inlet Baffle (Internal Flow Control where used):

The Dynamic Inlet Baffle is a unique element of Endura® XL allowing access to the internal surfaces for maintenance, inspection and cleaning. To open the baffle , take a firm grip on the handle and pull vertically upward. The handle will move approx. 150mm in the vertical direction. In doing so the front shell of the baffle moves away from the fixed rear portion providing access to the internal flow control plate (where fitted). The flow control plate is securely retained but is intended to be removable during installation, should an external flow control be the preferred format of installation.

Once open, visual inspection can be made inside the baffle. Any debris is best removed with a low pressure source of warm water – approx.

To close the baffle, push vertically downward on the handle until it returns to the full closed and locked position.





Drain Cleaning/Inspection:

For cleaning and inspection of the upstream drain, it is strongly recommended that the inlet baffle be in the open position. This will reduce the risk of damage to the internal flow control (where fitted) by rooting or other equipment.

Access to the outlet well:

Although essentially a closed area, the outlet system is able to be accessed by removal of the sampling/air balance cap. once removed the vertical pipe is able to be visually inspected all the way to the bottom (with the unit pumped out), and in the event of any accumulation can be cleaned by vacuum or pressurised water, either withdrawing debris out or back into the tank respectively.

Pumping and Cleaning:

The complete removal of grease and water should be done at every pump out. This ensures all solids , grease and water are removed allowing visual inspection and removal of any residue.

Any reside is best removed with a hot water source rinsing the walls and internal components into the tank before making a final vacuum extraction.

NOTE: The tank must be re-filled to static water level on completion of pumping. A trap cannot function without water.

Remote Pump Out (Optional)

An installation fitted with the remote pumping option offers convenience for the pumper and the restaurant operator, but also presents risk.

Where installed and operated with a remote pump facility, the trap should be physically opened and inspected at least every third pumping, or twice a year, whichever is sooner. This is to ensure that the internal parts are in good working order and that there is no undue build-up of residue or solids remaining in the tank once it has been emptied. This also presents opportunity to open and inspect the inside of the inlet baffle system, and clean/inspect the outlet well. Any residue will be removed with a warm water source.





Pumper Checklist:

Trap Operating at:	(Enter Facility Name)
Address:	
Serviced By (Name):	
Company:	
Company Contact (Tel):	
About This Pump Out:	
Service Date:	
Format: Full Access (Covers Removed)	Remote Pump
Last Full Access Pump?	
Note: At a minimum of every third remote pun inspection is required.	np or twice annually (whichever is sooner) full access cleaning and
Trap Fully Pumped (Water/FOG & Solids): YE	ES NO
Approx. Volume of Waste Removed:	Litres
Inlet Baffle Opened/Inspected	YES NO
Flow Control Checked/Cleaned	YES NO NO
Note: The flow control device (internal or external annually (whichever is sooner)	rnal), shall be inspected and cleaned a minimum of every third pump or twice
Cover(s) secured on completion of pumping?	YES NO NO
Important Note: If covers are in an area that is even if you did not remove the covers(s) as par	accessible to the public, always check to ensure that covers are fully secured t of this pump out.
Any Concerns, Issues or Comments to Report:	

Have Feedback? Email: info@marley.co.nz



Trouble Shooting

Symptoms	Cause	Corrective Actions
Strong Pungent Odour	Cover not replaced and/or properly secured	Secure cover fully – check that there is no dirt/debris in the threaded inserts
	Cover seal missing or damaged	Replace appropriate seal
	Insufficient or incorrect venting	Verify installation is made per manufacturers instructions and local plumbing code
	Insufficient cleaning frequency	Reduce interval between cleaning $6-8$ weeks is typical for extended capacity, but each installation is different
Sink or drain has backed up with water	Trap maintenance is overdue	The grease trap close to, at or beyond its capacity of solids and/or grease
	Accumulation of grease/debris between kitchen and trap	Seek emergency plumbing assistance to remove restriction/blockage. Consider moving the trap closer to the kitchen
	The flow control orifice is blocked	Isolate drain, open accessible flow control and clear blockage
	The flow control and grease trap was improperly sized	Close the ball valve or plug the sink and remove the obstruction by removing the flow control access lid. Install a properly sized grease trap
	The grease trap is full of solids and/or grease	Increase cleaning frequency
I think I have missing parts	Parts have been removed or lost during prior servicing	Check exploded drawing in this manual to confirm the parts that are supposed to make up your trap
Excessive solid/grease accumulation	The grease trap is full/requires cleaning	Increase cleaning frequency
	Food waste on pots, plates & utensils are not being scraped into the garbage & is being flushed down the sink. This food waste accumulates on the bottom of the tank	Train staff as to importance of good kitchen practices Install a solids interceptor in or upstream of the trap. Use screens on floor drains and sinks
	Grease trap has remained dormant for a period of time	Contact a licensed service professional to re-commission your interceptor
My indirect connection leaks all over the floor when I empty the sink(s)	Incorrectly installed/located flow control device	Move flow control device to a location upstream of the indirect connection
The XL inlet baffle is not working/is broken	Damaged/broken parts	Contact Marley to source new part(s) info@marley.co.nz
I can't get the bolts to thread back in	Bolt cross threaded Grit/debris in threaded insert	Examine and clear any debris in threaded insert Use light lubricating oil as applicable If thread is damaged replace insert





Frequently Asked Questions

Following are just a few of the common questions regarding Grease Management.

How do I size a Grease Interceptor correctly?

A grease trap can be sized using two primary methods – flow rate or capacity

Sizing by Flow Rate

It is recommended the HGT's such as Endura® Traps are sized by flow rate. The use of flow control with a Hydromechanical Grease Trap is considered mandatory. Without a properly sized flow control, the discharge rate through into the trap may exceed the design rating of the unit, causing lower efficiencies and increase the risk of grease passing into the downstream system. be careful not to confuse liquid capacity and flow rate. Liquid capacity is stated in litres while flow rate is referenced in litres per second (L/Sec).

Fixture Capacity: Most commonly used and recommended method for Hydromechanical Grease Traps. This method looks at the maximum capacity of fixtures connected to the interceptor and the time taken to discharge that volume of waste water through the trap. Units are expressed in litres per Second (L/Sec)

Calculation takes 75% of maximum capacity of all fixtures and based on a 1 or 2 minute period of time taken to discharge, results in a L/Sec flow rate. This number is rounded up to the next available size of trap.

Table A – Procedure for Sizing Grease Interceptors			
STEP	FORMULA	EXAMPLE	
1	Determine cubic content of fixture by multiplying length x width x depth	A sink 600 mm long by 500mm wide by 300mm deep Cubic content: $600 \times 500 \times 300 = 90,000,000 \text{mm}^3$	
2	Determine Capacity in Litres 1 litre = 1000 cm ³	Contents in litres: 90,000,000/1000 = 90 litres	
3	Determine actual drainage load The fixture is normally filled to approx. 75% of capacity with water as the items being washed displace about 25% of the total content. Actual drainage load = 75% of fixture capacity	Actual Drainage load: $0.75 \times 90 = 67.5$ litres	
4	Determine flow rate and drainage period In general, good practice dictates a one minute drainage period; however where conditions permit, a two minute drainage period is acceptable. Drainage period is defined as the actual time required to completely drain the fixture. Flow rate = Actual Drainage Load Drainage Period	Calculate flow rate for one minute drainage period: 67.5/1 min. = 67.5 L/min Calculate flow rate for two minute drainage period: 67.5/2 min. = 33.75 L/min	
5	Select Trap From Table B select the trap with a flow rating at least equal to the calculated flow rate. When calculated flow rate falls between two sizes, select the larger of the two interceptors	For a one minute drainage period: 67.5 L/min flow rate suitable for Endura® XL75 For a two minute drainage period: 33.75 L/min flow rate suitable for Endura® XL75	

Table B – Grease Interceptor Rating			
Grease Trap	Flow Rate L/Sec	Flow Rate L/Min	
Endura® XL75	4.74 L/sec	284.4 L/min	
Endura® XL 100	6.3 L/sec	378 L/min	





Do Endura XL tanks need to be directly vented?

The practice of venting grease trap directly is typically related to Gravity Grease Traps (GCT). Unless specifically mandated by local code or bylaw, with no variance allowed, a Hydromechanical Grease Trap (HGT) DOES NOT require the tank to be directly vented. Venting is however required on the downstream drain the same as most plumbing appliances, fixtures to allow effective and unrestricted discharge of effluent.

Do I need to install a clean out before or after an trap?

Most plumbing codes require an upstream and downstream cleanout immediately before and after the trap. This is good practice and gives a positive indication of which outlet is used.

Do I have to install the flow control device?

For an HGT, the flow control is essential to the high performance operation of the trap. It must be installed as indicated and without it the trap is no longer meeting the requirements of its appropriate approvals. This is not acceptable to the local council and they should be asking for the installation to be rectified before approval is granted.

My local council requires effluent sampling via a downstream access. What do I do?

As an HGT approved to National performance standards and although common for GCT Endura® XL does not typically require a separate sampling location. For those jurisdictions that do require the capability to sample, Endura® XL incorporates a sampling port within the outlet assembly. This is accessed by the simple removal of the air balance/sample port cap (See page 19) allowing water quality samples to be taken for analysis. Some local councils may require a separate downstream sampling point.

What can be connected to a trap in respect of wastewater discharge?

A grease trap under no circumstances will receive sanitary wastewater discharge – i.e. that from WC flushing for example.

Wastewater discharge to a grease trap will be from foodservice activities only, its application being to separate non-petroleum Fats, Oils and Grease from wastewater.

The requirements for appliances and fixtures that must and must not be connected to a grease trap is typically defined by your local plumbing codes and/or jurisdictional by-laws. You should consult a licensed plumbing professional or your local city council officials for clarification regarding the right schedule of maintenance for your application/premises.

How often should a trap be cleaned?

Cleaning of a trap is a case by case situation. Each facility will have many different factors impacting the need for maintenance and cleaning. A licensed contractor will have the experience and equipment necessary to help establish the right schedule of maintenance for your facility.

How much will it cost to maintain my Endura® XL installation?

In terms of comparison Endura® XL units are significantly more compact (less internal volume) than their equivalent GCT counterparts. As pumping is typically charged by the volume of litres removed the ongoing maintenance will be proportionally less too. Rates will vary significantly by region and by contractor. Always use a licensed or approved contractor to maintain your trap. Marley recommends Ecoworld NZ to maintain your trap (o800 109 202).

Can I install more than one Endura® XL unit if my jurisdiction needs a minimum capacity by code?

In principle yes you can. It will be necessary for you to contact your local council and have your engineer submit a proposal based on the reference information provided on page 12 and 13 of this document. Full spec drawings (BIM and Master Specs) are available for download at www.arcat.com using the search term "Endura".

How does a compact HGT replace the function of a 3,790 litre (1000 gallon)concrete tank?

A GCT (your typical concrete tank) will be sized on capacity and therefore typically a number between 1895L and 5685L is commonly seen. This number can however be substantially higher based on local requirement or application. In most jurisdictions, a method called the 25% rule is employed as the means to indicate or mandate the cleaning frequency. The 25% is the percentage of the total working volume of the trap which can be occupied by a combination of FOG's and food solids.

For example: a GCT tank with the capacity of 3,790 litres can only function to a point where 947.5 litres (25%) of its volume is occupied by solids and grease. That equates to 495.5kg of grease. If we assumed that 379 litres of this is solid material, that leaves 568.5 litres of grease capacity before cleaning is "required". On average this translates to approximately 8-10 weeks on average. Now compare this to an XL100 HGT. Based on independent third party testing to determine qualified performance and efficiency, the Endura® XL100 has a significantly smaller 973 litre total capacity, but a qualified efficiency exceeding 98%. This translates to a 480 kg actual grease capacity essentially the same grease capacity as a 3,790 litre GCT.





I heard that plastic tanks can float in high water table areas, particularly when pumped down for cleaning. Is this true?

Yes it is, however the Endura® XL is specifically designed to address this challenge. If you look at the XL tanks from the end you will see that the top is narrower than the bottom and that there are along the sides corrugations that are closed toward the bottom of their profile. This profile is the reverse of an ice cube sitting in a freezer tray. Typically some upward force is applied around or beneath the ice cube and out it pops. now reverse that principle to the form of the tanks - the broad base not only provides stability but also has substantial resistance to being forced upward by water or freeze – thaw action. This is in conjunction with the closed corrugations which positively captures the tank in the excavation once backfilled. For areas of particular concern a 200mm concrete slab can be poured around the base to introduce further resistance. Provision is also made for the use of ground anchors or alternates that will need to be specified locally by an engineer respective of local ground conditions.



Have Feedback? Email: info@marley.co.nz



Limited Warranty

Canplas Industries Ltd. hereafter referred to as "Manufacturer" and Marley hereafter known as "Distributor" warrants to the original purchaser ("Original Purchaser") of Endura® XL Grease Management Products (hereafter referred to as "Products") that the Manufacturer (through the Distributor) will:

- replace any Products that are found by the Distributor to be defective in materials or workmanship; or
- refund the purchase price to the Original Purchase, if the Manufacturer or Distributer determines that replacement is not commercially practical or cannot be made in a timely manner.

The warranty is for a period as designated for the components of the product below from the date of purchase of the Products by the Original Purchaser and subject to the terms of this warranty.

Lids and Internal Components – 5 years Body – 20 years

Any Products believed to be defective by the Original Purchaser must be returned (with proof of purchase and with freight pre-paid) to the Distributors facility located at 32 Mahia Road, Manurewa, Auckland, or, at the Distributors discretion, an onsite inspection may be arranged. The Manufacturer (through the Distributor) reserves the right to inspect all allegedly defective Products and request other evidence to assist in assessing whether the warranty or any limitations/exclusions apply. Following the Distributor's inspection, the Distributor, at its sole discretion, will determine if any of the Products are defective in materials or workmanship. If defective, any replaced Products will be sent to the Original Purchaser freight pre-paid. The Manufacturer or Distributor can elect to either retain or return any defective Products that are replaced or refunded. If any of the Products are not covered by this warranty, those Products will be promptly returned to the Original Purchaser.

The Manufacturer and/or Distributor reserves the right to discontinue or modify any of the Products at their absolute discretion, and shall not be liable as a result of such discontinuation or modification. The Manufacturer (through the Distributor) may however replace any Products under this warranty, at its absolute discretion, with substitute Products of comparable quality and/or price range in the event the original Products have been discontinued or modified.

Limitations

This warranty does not cover:

Products that have not been installed, maintained or operated in strict compliance with the Manufacturers written instructions, as published from time to time, and in accordance with any applicable codes and standards:

Products installed in a non-commercial application;

Products without proof of purchase information;

any labour, installation or repair costs, including those required for field repair or replacement or removal of any allegedly defective Products; any damage or defects as a result of normal wear and tear, improper operation, abuse or alterations to the Products;

Products that have been used in more than one installation or installed in improper applications;

acts of nature, building settling, structural failures of constructed walls or foundations:

improper installation, storage, handling, failure to properly care for and maintain the Products;

Products used outside of New Zealand;

any other cause outside the control of the Manufacturer and/or Distributor; and

any consequential losses of any kind arising directly or indirectly from any defective Products.

Exclusion of any other warranties

This express warranty is in lieu of and excludes all other warranties, liabilities and obligations of the Manufacturer and Distributor (whether expressed, implied or statutory) to the fullest extent permissible by law, including:

implied warranties of merchantability or fitness for a particular purpose; the application of part 3 of the Contract and Commercial Law Act 2017 (previously the Sale of Goods Act 1908); and

the United Nations Convention on Contracts for the International Sale of Goods.

Transferability

In the event of a change in ownership the warranty may be transferred by the Original Purchaser of the Product to the first subsequent owner, subject to the terms and conditions of this warranty. This warranty is therefore only transferable once and is not transferable to any owners after the first subsequent owner.

Other Conditions

In no event, shall the Manufacturer or Distributor be liable for consequential or incidental damages of any kind, including any damage to property or any persons, resulting from the breach of any warranty, liability or obligation of the Manufacturer or Distributor, unless such exclusion is prohibited by law.

No representative of the Manufacturer or Distributor or any other person is authorised to make any offer to an Original Purchaser or change or modify this Warranty, unless authorised by the Manufacturer or Distributor in writing.

The purchase of the Products and this warranty is governed by the laws of New Zealand. The New Zealand courts shall have jurisdiction to settle any dispute or claim arising out of or in connection with the Products or this warranty.





Limited Warranty Registration Card

Congratulations on your purchase of the Endura® XL Grease Trap. This product is supplied with a Limited Warranty (see page 26), valid only when this warranty card is filled out and returned to the Manufacturer/Distributor (Marley) within one month of the installation.

Scan and email the below completed registration form to **info@marley.co.nz** or complete online at **www.marley.co.nz/grease-trap-warranty**

Installation Location	*Grease Trap Installe	d
*Name:	DGT75	
*Address:	☐ DGT75P ☐ DGT100	
Tel:	DGT100P	
Mob:	Flow Control Format	
Purchased From:	Internal	External
*Merchant Name:	Is this a new installation	on?
Address:	Yes	No
	Where was it installed	d
Tel:	On Floor	In Floor - inside building
	Floor Below	In Ground - outside
Installer Details:	\A/I P. I	
*Name:	Where did you hear a	bout the product?
Address:		
		ura® XL Grease Trap you have
*Email:	_ Yes	No
Tel:		Tuduwa VI, baaadan
*Mob:	rion do yourate the i	
*Date of Install:		
Please send more information about Marley Products		

Note: Installation workmanship is not covered by this warranty and should be discussed with the installer.

Installation Notes	