

# éndura<sup>®</sup>XL

## Grease Trap



[www.dux.co.nz](http://www.dux.co.nz)



## About Us



### Moulding a Better Future

Endura® is manufactured by Canplas, one of North America's leading producers of plastic products for the building and construction industries specialising in injection moulded products. With five decades of expertise and experience in the manufacturing and distribution of plastic plumbing products, they process multiple materials and produce millions of fittings and products on an annual basis.

Endura® Grease Management products have demonstrated effective, efficient and consistent performance with over a decade of field installation and operation. Endura® products are multi-patented and built to withstand the toughest environments, providing the flexibility of in-floor, on-floor and semi-recessed applications.

### Endura® Earth Friendly solutions for Grease Management

As an Aliaxis company, we are committed to the continuous improvement of our environmental performance and to meeting or exceeding the requirements of all applicable environmental laws and regulations.

#### Durability

- Fewer installations and replacements result in lower lifetime costs and less landfill waste.
- Injection moulded in engineered thermoplastics, Endura® Grease Traps will not corrode, chip or peel even under the most severe applications.
- Durability provides consistent operation – no compromise of effectiveness due to deterioration of parts.

#### Green by Design

- Light weight but durable grease trap units enable smaller carbon footprints and low-emissions transport.
- Injection and rotationally moulded thermoplastic requires less energy to produce than metal grease traps.
- Endura traps are manufactured using up to 100% re-compounded material.

## Product Overview

### Extended Capacity Hydromechanical Grease Traps



#### Endura® XL 75 Models

DGT75 – 598L Light Trafficable Lid

DGT75P – 598L Pedestrian Lid

Industry leading separation efficiency based on testing to national standards. Comparable operational grease capacity 253kg to 2839ltr Gravity GT (concrete)\*

Operation is based on dynamic inlet baffle (Pat. Pend.) with internal flow control device.

*\*based on 25% rule*



#### Endura® XL 100 Models

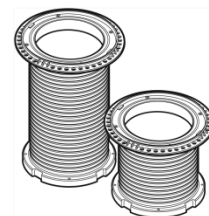
DGT100 – 973L Light Trafficable Lid

DGT100P – 973L Pedestrian Lid

Industry leading separation efficiency based on testing to national standards. Comparable operational grease capacity 480kg to 3790ltr Gravity GT (concrete)\*

Operation is based on dynamic inlet baffle (Pat. Pend.) with internal flow control device.

*\*based on 25% rule*



#### Endura® XL Riser Extensions

DGTR450 – 450mm Riser Extension

DGTR880 – 880mm Riser Extension

Cut to length riser system for burial up to 1828mm

## Grease Traps – Generic Types

The grease management industry has developed significantly in the past decade with not only more advanced and improved products but also development of performance standards and harmonisation of common terms and references.

**Traditionally the term “Grease Trap” is commonly applied and is still used in the industry today. This term is however progressively disappearing from technical references as the industry recognises that the term “trap” would suggest the presence of a water seal, integrally located within the interceptor. Modern traps are designed to be installed in conjunction with external water seal traps as a standard part of the system.**

**Generically the application of a Grease Trap regardless of type is defined as follows:**

**Grease Trap:** “A plumbing appurtenance or appliance that is installed in a sanitary drainage system to intercept non-petroleum Fats, Oils and Grease (FOG) from a waste water discharge.

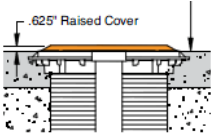
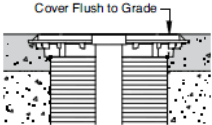
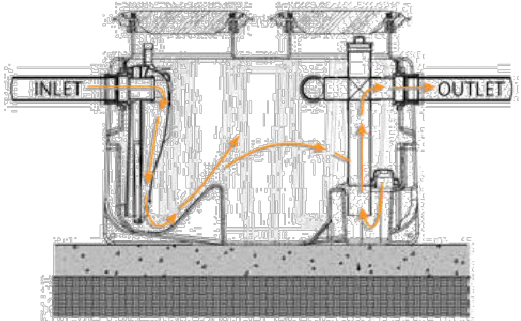
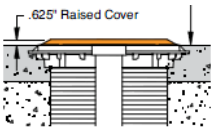
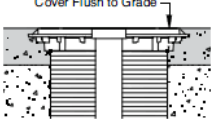
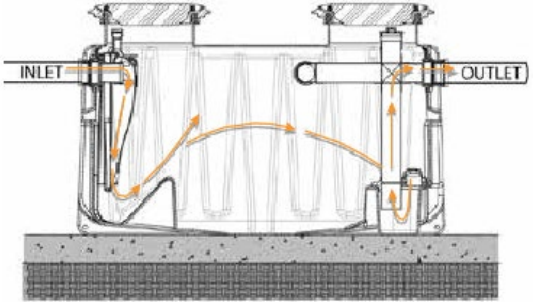
### Specific characteristics then define the three types of Interceptor

**Hydromechanical Grease Trap** – “is sized by flow rate (L/Sec) and qualified separation/retention efficiency, validated against national performance standards. An HGT incorporates a defined means of flow control, acts to entrain air to effluent, includes interior baffling, or barriers in combination or separately, working to promote hydromechanical separation”.

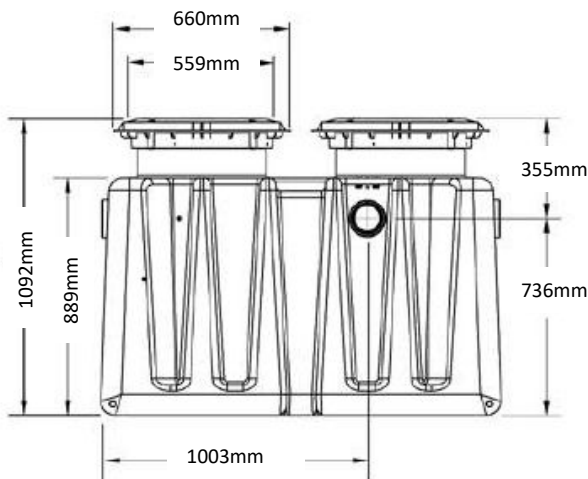
**Gravity Grease Trap** – “are characterised by volume, minimum 30min retention time, baffles, not less than two compartments, a total volume of not less than 500 litres and gravity separation.

**Grease Removal Device** – “are a hydromechanical grease trap that mechanically removes non-petroleum fats, oil and grease (FOG's) from the separation chamber, the control of which is either automatic or manually initiated and involves maintaining a liquefied state of intercepted FOG by heating”.



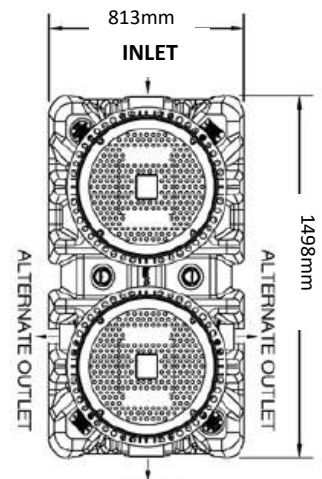
Product	Description	Access Covers	On Floor
DGT75 DGT75P	<ul style="list-style-type: none"> <li>Grease Capacity – 253kg</li> <li>&gt;98% Efficiency</li> <li>Dynamic Inlet Baffle – Internal flow control (supplied standard)</li> <li>Seamless Tank – rotationally moulded using up to 100% re-compounded material</li> </ul> <p>Load Rated Access Covers</p> <ul style="list-style-type: none"> <li>Light trafficable access cover                             <ul style="list-style-type: none"> <li>Load rating – 4,536kg</li> <li>Proof load test rating – 9,072kg</li> <li>Class B rating (AS3996)</li> </ul> </li> <li>Pedestrian access cover                             <ul style="list-style-type: none"> <li>Load rating – 907kg</li> <li>Proof load test rating – 1,814kg</li> <li>Class A rating (AS3996)</li> </ul> </li> <li>Mechanically secured</li> <li>Airtight/watertight cover, frame and adjustable riser system</li> <li>Limited warranty</li> </ul>	<p><b>Light Trafficable Access Cover Point Load - 4,536kg</b></p>  <p><b>Pedestrian Access Cover Point Load - 907kg</b></p> 	
DGT100 DGT100P	<ul style="list-style-type: none"> <li>Grease Capacity – 480kg</li> <li>&gt;98% Efficiency</li> <li>Dynamic Inlet Baffle – Internal flow control (supplied standard)</li> <li>Seamless Tank – rotationally moulded using up to 100% re-compounded material</li> </ul> <p>Load Rated Access Covers</p> <ul style="list-style-type: none"> <li>Light trafficable access cover                             <ul style="list-style-type: none"> <li>Load rating – 4,536kg</li> <li>Proof load test rating – 9,072kg</li> <li>Class B rating (AS3996)</li> </ul> </li> <li>Pedestrian access cover                             <ul style="list-style-type: none"> <li>Load rating – 907kg</li> <li>Proof load test rating – 1,814kg</li> <li>Class A rating (AS3996)</li> </ul> </li> <li>Mechanically secured</li> <li>Airtight/watertight cover, frame and adjustable riser system</li> <li>Limited warranty</li> </ul>	<p><b>Light Trafficable Access Cover Point Load - 4,536kg</b></p>  <p><b>Pedestrian Access Cover Point Load - 907kg</b></p> 	

## Dimensions – XL75 Models



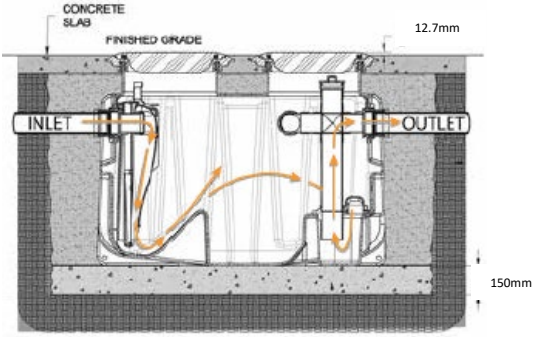
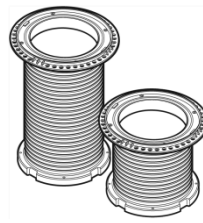
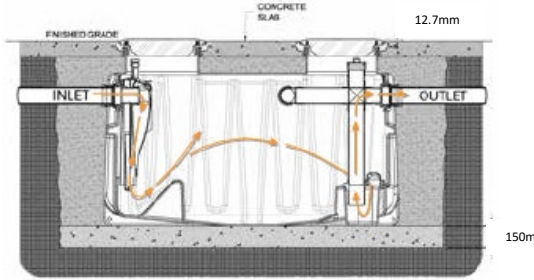
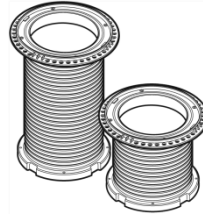
**FRONT VIEW**

**SIDE VIEW**

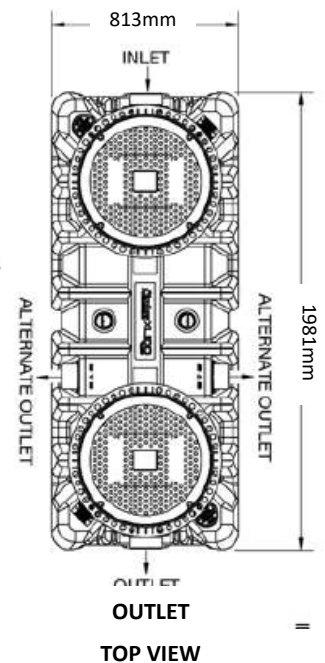
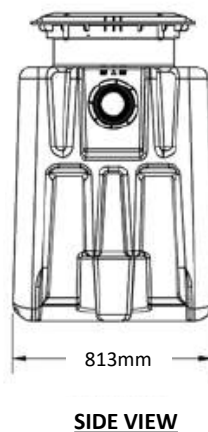
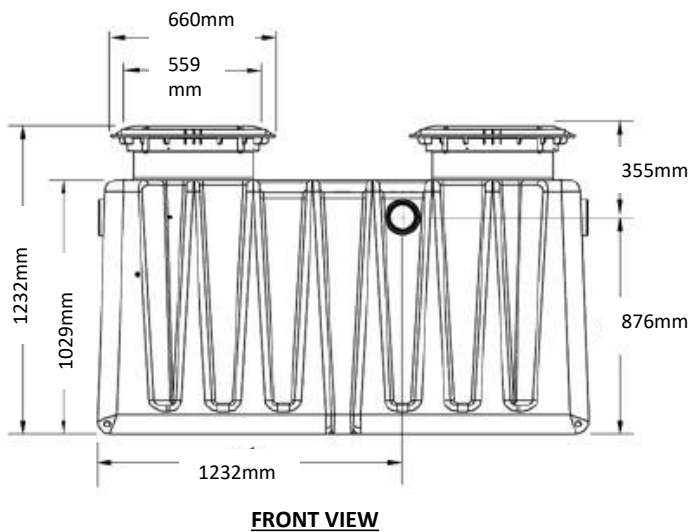


**OUTLET**

**TOP VIEW**

In-Floor	Extension Riser	Thermal Capability
 <ul style="list-style-type: none"> <li>• Check local codes for acceptance of in-floor installation</li> <li>• Finish to floor level accommodating requisite materials, E.G. Tile, mortar, etc.</li> </ul>	 <p>DGTR450 – 450mm Riser DGTR880 – 880mm Riser</p> <ul style="list-style-type: none"> <li>• Full accessories &amp; instructions supplied</li> <li>• Robust, airtight, watertight</li> <li>• 100% re-compounded riser</li> <li>• Integral guidelines for cutting</li> </ul>	<p>Prolonged intermittent discharge at 71°C</p>
 <ul style="list-style-type: none"> <li>• Check local codes for acceptance of in-floor installation</li> <li>• Finish to floor level accommodating requisite materials, E.G. Tile, mortar, etc.</li> </ul>	 <p>DGTR450 – 450mm Riser DGTR880 – 880mm Riser</p> <ul style="list-style-type: none"> <li>• Full accessories &amp; instructions supplied</li> <li>• Robust, airtight, watertight</li> <li>• 100% re-compounded riser</li> <li>• Integral guidelines for cutting</li> </ul>	<p>Prolonged intermittent discharge at 71°C</p>

## Dimensions – XL100 Models



# Key Design Considerations



## Sizing by Flow Rate

It is recommended that grease traps such as the 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 increased 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 reference in Litres per Minute, (LPM) or litres per second (L/S).

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

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 litres per minute flow rate. This number is rounded up to the next available size of trap.

Table A – Procedure for sizing Grease Traps

STEP	FORMULA	EXAMPLE
1	<b>Determine cubic content of fixture</b> 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	<b>Determine Capacity in Litres</b> $1 \text{ litre} = 1000 \text{ cm}^3$	<b>Contents in litres:</b> $90,000,000/1000 = 90 \text{ litres}$
3	<b>Determine actual drainage load</b>  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: $0.75 \times 90 = 67.5 \text{ litres}$
4	<b>Determine flow rate and drainage period</b>  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.  $\text{Flow rate} = \frac{\text{Actual Drainage Load}}{\text{Drainage Period}}$	<b>Calculate flow rate for one minute drainage period:</b> $67.5/1 \text{ min.} = 67.5 \text{ L/min}$ <b>Calculate flow rate for two minute drainage period:</b> $67.5/2 \text{ min.} = 33.75 \text{ L/min}$
5	<b>Select Interceptor</b>  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	<b>For a one minute drainage period:</b> 67.5 L/min flow rate suitable for Endura® XL75 <b>For a two minute drainage period:</b> 33.75 L/min flow rate suitable for Endura® XL75

Table B – Grease Trap 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

## Technical Data

### 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

## Internal Flow Control

### Flow Controls

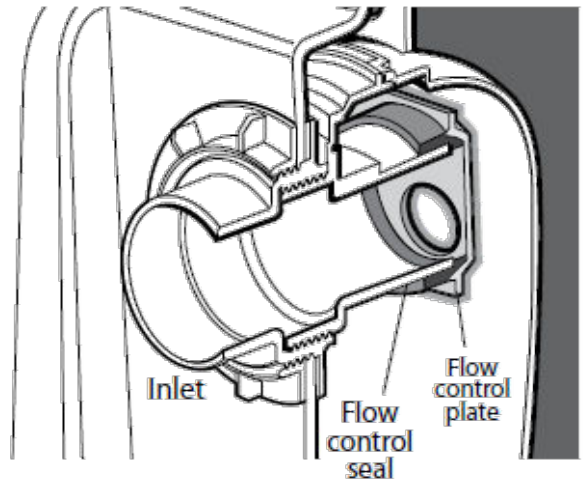
Depending on preference or requirement Endura® XL can be operated with an internal or external flow control. All models are supplied with an internal flow control.

#### 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.



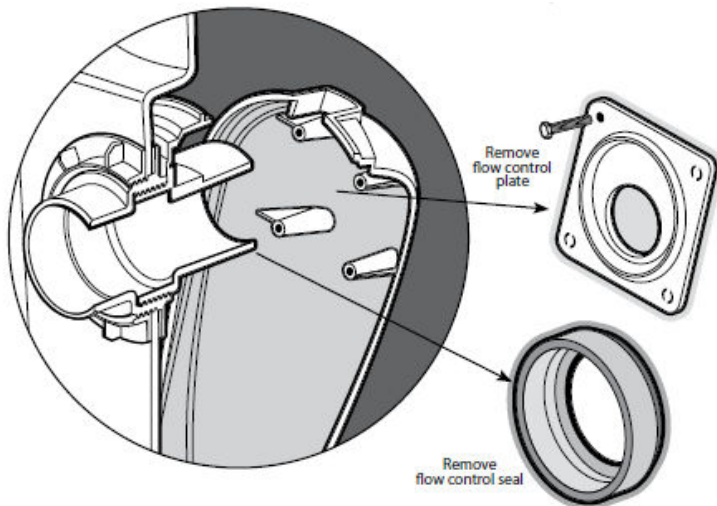
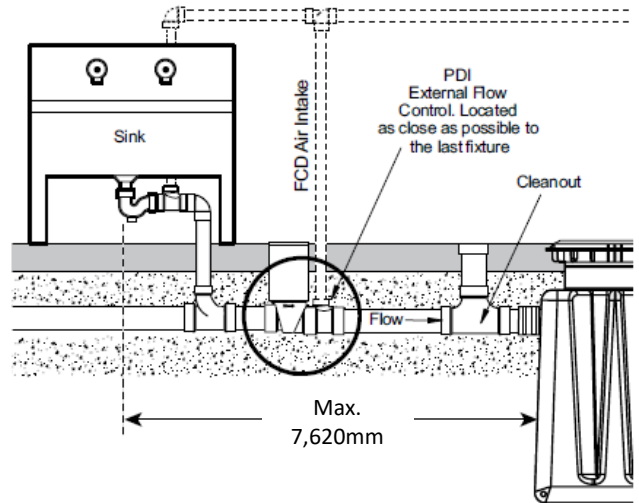
The flow control is an essential part of the hydromechanical grease trap and its function





## External Flow Control (Optional)

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.



**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.

## Tank Connections

All Endura® Grease Traps are supplied with standard no hub connections to accept locally approved/accepted MJ (Mechanical Joint) couplings. The Dux Flexible Coupling D156-44 is recommended.

This method allows resilience in the connections to prevent stress and a flexible means of integrating metallic or plastic plumbing systems. Should adaption of pipe connection be required, use appropriate mechanical joint reducers but do not allow decrease pipe diameter across the unit.



**Note:** Solvent cement is not an acceptable jointing method from the piping system to the trap. This will result in leakage. Dux Flexible Couplings are a mechanical joint and do not require solvent cement.

## Air-Balanced Operation

A hydromechanical grease trap is designed to operate as an air-balanced environment. This is vital to the function of the trap and as such no modification or removal of any parts should be made before, during or after installation unless specifically addressed in the respective Installation & Operation document.

## Venting

Unlike Gravity Grease traps, a Hydromechanical Grease trap tank is not required to be directly vented. This would be detrimental to the function of the trap. All connected appliances shall be individually trapped and vented in accordance with local code requirements. The downstream drain carrying effluent to the municipal waste system shall also be vented to atmosphere in compliance with applicable local codes.

## Drain Cleanouts

For installations below grade, most codes require the installation of a two way cleanout immediately before and after the respective inlet and outlet connections. These cleanouts will be extended to grade so as to remain accessible once the trap is operational.

## Head Effect

An installation above or below grade that sees a fall equal to or in excess of 2.4m, when measured from the outlet of the highest appliance to the invert of the trap SHALL require the installation of a secondary flow control device to neutralise the effect of head pressure. The first flow control will be located as close as possible to the last appliance discharging to the trap, the second being located externally immediately before the trap or by utilising the manufacturers internal flow control device where available.

## Accessibility for Maintenance

All grease traps regardless of generic type, require regular maintenance. Any design and subsequent installation shall make due consideration to the provision of access for the same as defined in the respective installation documentation. Installation documents are supplied with every trap.

Copies are also available on the Dux website [www.dux.co.nz](http://www.dux.co.nz)

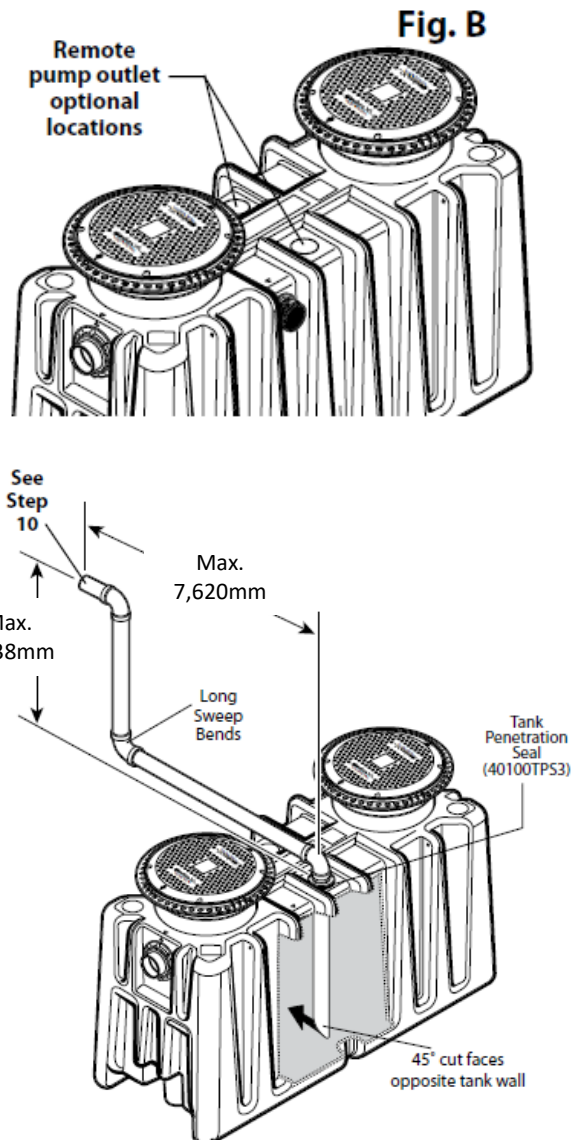
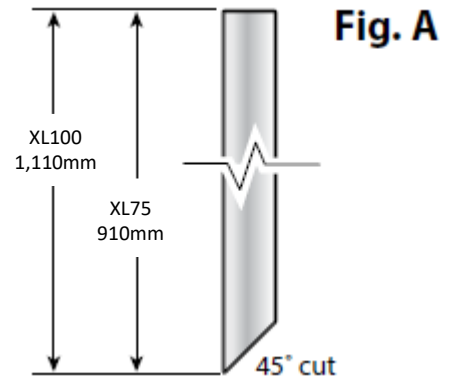


# Remote Pump XL Models

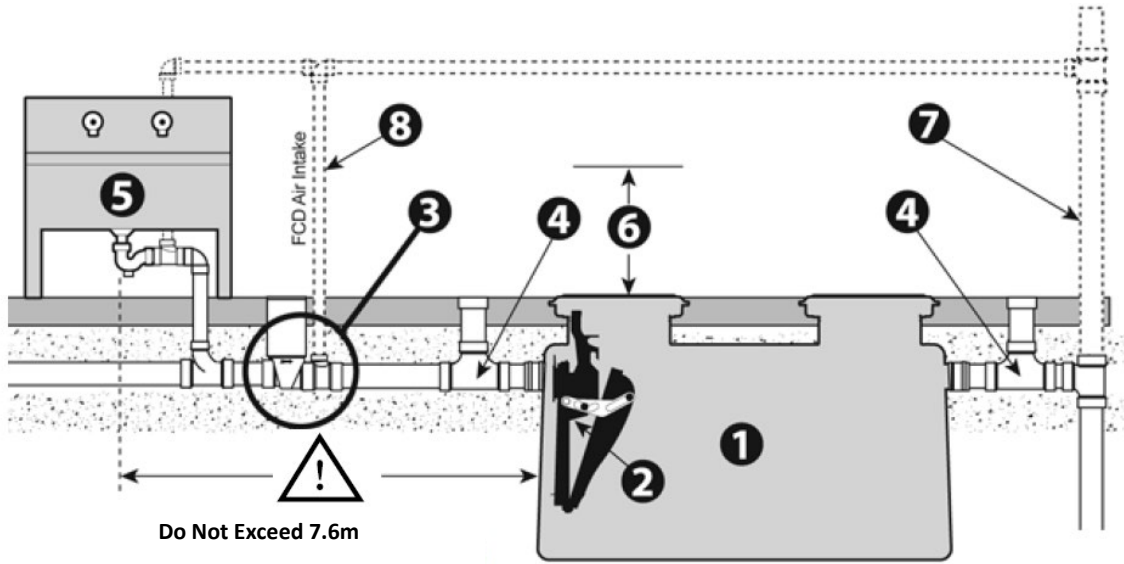
## Remote Pump (Optional):

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.
3. 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.
5. 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.
7. 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.
10. 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.



## In Floor – Extended Capacity



- |  |   |                       |
|--|---|-----------------------|
| <b>1</b> XL Grease Trap  | <b>4</b> Cleanout (recommended)             | <b>7</b> Vented Waste |
| <b>2</b> Internal Flow Control and Baffle                                | <b>5</b> Sink                               | <b>8</b> Air Intake   |
| <b>3</b> External Flow Control (optional) required for PDI Installations | <b>6</b> <b>CAUTION: CLEARANCE REQUIRED</b> |                       |



When backfilling in-floor, the trap must have both the covers fitted and be filled with water to the inlet/outlet level. This will ensure the tank itself will not move during backfilling, pouring and/or floor finishing. When backfilling in particular, care should be taken to do so evenly around the unit and with light manual pressure only.



Ensure that the trap is clearly defined to flooring contractors to prevent it from being covered with flooring material. Taping cardboard to the covers is generally effective.



### Caution: Clearance Required

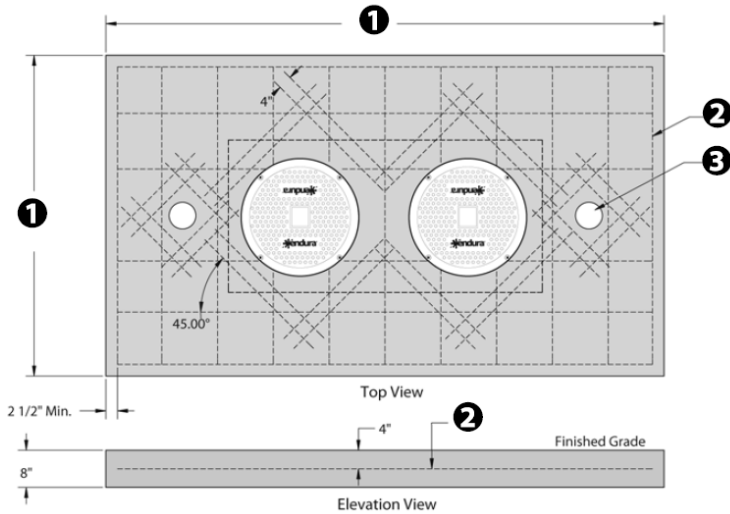
Locate the trap so as to allow for accessibility when conducting maintenance and regular cleaning. Set the trap on a firm, level surface ensuring the tank is equally supported.



**Risers Available where deeper installation is necessary to accommodate drainage.**  
450mm and 880mm Cut to Length riser pairs , Max extension 1.8m

- DGTR450 – 450mm Riser
- DGTR880 – 880mm Riser
- Full accessories & instructions supplied
- Robust, airtight, watertight
- 100% re-compounded riser
- Integral guidelines for cutting

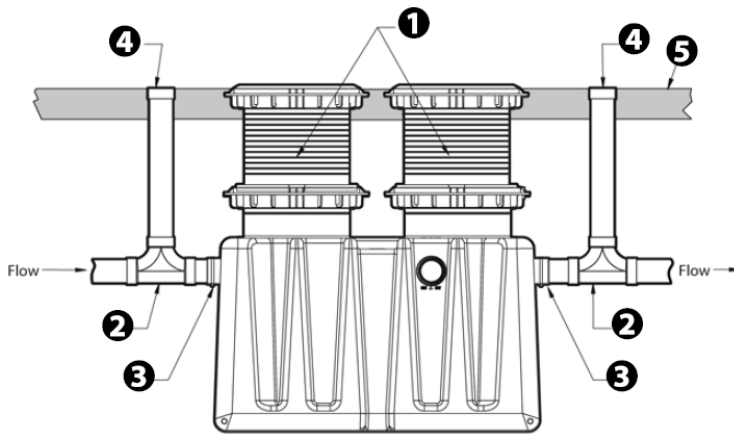
# Interior or Exterior Below Grade Installations – Extended Capacity



## Concrete Slab Detail For Traffic Loading

Concrete to be 28 day compressive strength to 4,000 PSI.  
 Reinforcement with N. 4 rebar (1.89mm) grade 60 steel per ASTM A615: connected with tie wire.  
 Rebar to be 64mm from edge of concrete.  
 Rebar spacing 300mm x 100mm spacing around access openings.

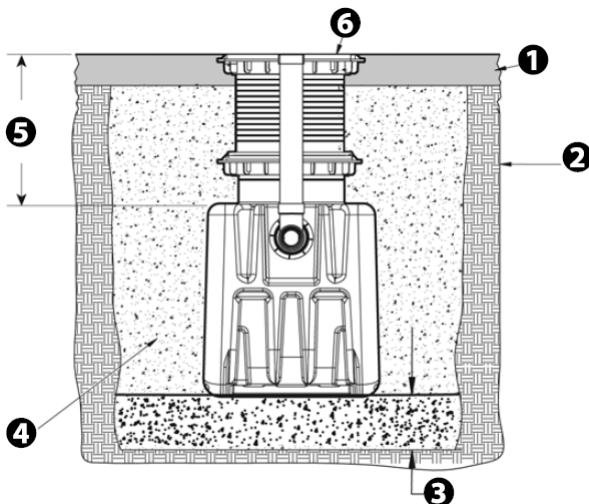
- 1** Concrete Pad must extend min. 460mm outside the unit footprint
- 2** No. 4 rebar (1.89mm)
- 3** 2 Way cleanout tee



## Side View Detail

For Unit details see specification sheet for selected unit

- 1** Risers to grade
- 2** 2 Way cleanout tee
- 3** Standard D156-44 Dux Flexible Coupling
- 4** Clean out to grade on outlet pipe of each unit
- 5** Concrete slab



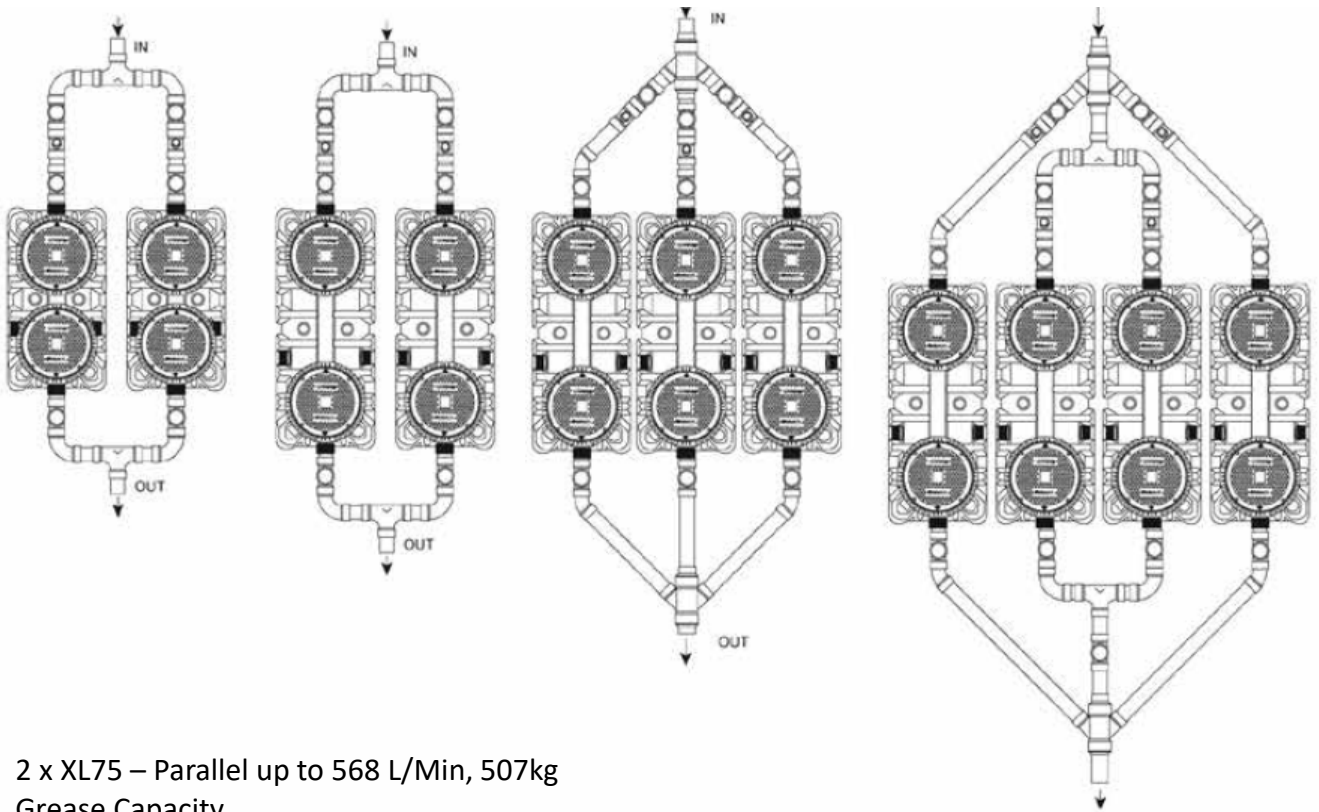
## Excavation and Backfill Detail

- 1** Concrete slab
- 2** Native Soil
- 3** 150mm Min. base crushed aggregate material Approx. 20mm size rock, pea gravel or sand
- 4** Crushed aggregate material approx. 20mm size rock, pea gravel or sand
- 5** 1.828mm Max. Burial depth
- 6** M Rated cover shown flush to grade (**Light vehicle/pedestrian traffic only**)

## Multi-Unit Parallel Installations – Extended Capacity

### Parallel Installation:

- Parallel configurations shown are considered optimal for application and should be followed
- Intended for installations with high flow rate (greater than 60% of rated flow capacity) per unit
- External flow controls installed upstream or internal flow control in each trap



2 x XL75 – Parallel up to 568 L/Min, 507kg Grease Capacity

2 x XL100 – Parallel up to 757 L/Min, 960kg Grease Capacity

3 x XL100 – Parallel up to 1,136 L/Min, 1,440kg Grease Capacity

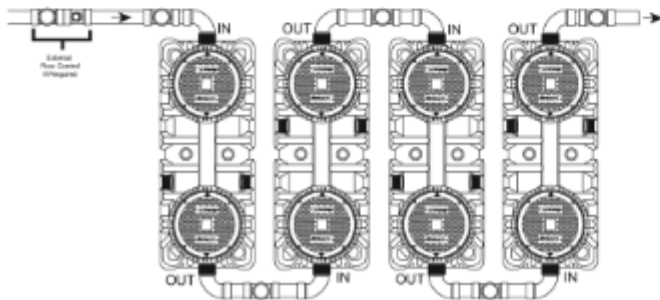
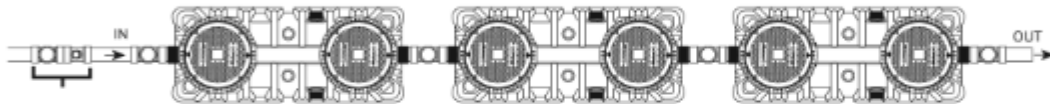
4 x XL100 – Parallel up to 1,514 L/Min, 1,920kg Grease Capacity



## Multi-Unit Series Installations – Extended Capacity

### Series Installation:

- Series configurations shown are considered optimal for application and should be followed
- Intended for installations with low to medium flow (less than 60% of rated flow capacity)
- External flow control upstream/installed only on first trap. All other flow controls removed at installation



2 x XL75 – Series up to 284 L/Min, 507kg Grease Capacity

2 x XL100 – Series up to 378 L/Min, 960kg Grease Capacity

3 x XL100 – Series up to 378 L/Min, 1,440kg Grease Capacity

4 x XL100 – Series up to 1,514 L/Min, 1,920kg Grease Capacity

4 x XL100 – Series up to 1,514 L/Min, 1,920kg Grease Capacity

## General Information



Endura® Grease Traps are manufactured in an ISO 9001 and 14001 registered facility. Our quality management system has been registered for the design, manufacture and distribution of high quality injection molded products used in plumbing, industrial, ventilation and central vacuum applications

Dux Industries Limited - Distributor  
33 Mahia Road, Manurewa  
Auckland 2102  
New Zealand

