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# ACO Building Drainage

Grease management



*Product catalogue*

**ACO Grease Separators**



## ACO Building Drainage

Our built environment is becoming ever more complex. Applications are becoming more sophisticated and the increasing pressure of regulations and standards make achieving design, performance and financial goals ever tougher.

ACO Building Drainage is a new concept within the ACO Group. Our mission: to eliminate design risk, to reduce installed and life cost and to deliver exceptional finish and performance in every product application. We achieve this through three factors:

- High performance materials
- Design experience and project support
- Global manufacturing capacity

Our global resources and fabrication capacity make it possible for us to deliver best value, both with our standard products and with our bespoke designs. Confidence is further assured with quality systems that are in accordance with ISO 9001-2008.

ACO Building Drainage's extensive portfolio includes:

- Stainless steel Modular Channel system
- Stainless steel EuroGully gully system
- Stainless steel and polymer composite access covers
- Biological Grease Management system
- Gravity Grease Separator system
- Sewer backflow protection valves
- Stainless steel socketed pipe system
- Rainwater outlets for flat roofs
- Wetroom and shower drainage systems

ACO Building Drainage is a division of ACO Technologies plc and part of the worldwide ACO Group. The Group has sales in excess of £400 million worldwide with production facilities in the UK, Germany, France, Switzerland, Denmark, Spain, Poland, Czech Republic, Australia and the USA. In total more than 3000 people are employed in 30 countries throughout the world.

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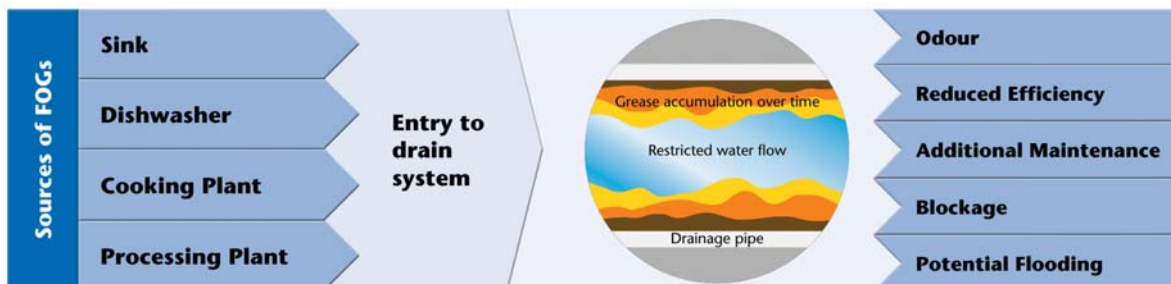
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## The Need for Fat, Oil and Grease Management

### Local effects of fats, oils and grease (FOGs)

One of the greatest drainage problems faced in kitchens and food processing areas is the accumulation of fats, oils and grease within the drainage system.



Note: As FOGs cool in the drainage system they can solidify. If untreated, accumulation eventually leads to drainage system failure with potential health hazards within the food preparation area.

### Regional effects



### Legislation and Regulation

The problem of FOG pollution is being addressed at a regional and national level. Recent incorporation into Building Regulations and the proactive stance from many Local Authorities require that the problem is, in part, managed at source.

Driver	Comment
Water Resources Act 1991	Offence to pollute watercourse
Water Industry Act 1991	Offence to impair operation of sewer
Building Regulation Part H1 (S2.21)	Effective means of grease removal from commercial hot food premises required
Local Authority	May stipulate specific performance requirements for FOG management

## Systems and Separator Process

### Process overview

All ACO separators are designed to BS EN 1825 Part 1 Grease Separators Principles of Design, Performance and Testing, Marking and Quality Control.

### Maintenance options available

(according to separator type).

- Pumped outlet connection using Bauer couplings
- Advanced high pressure (170 bar) cleaning system manual or automatic
- Integrated disposal pump to assist vacuum tanker

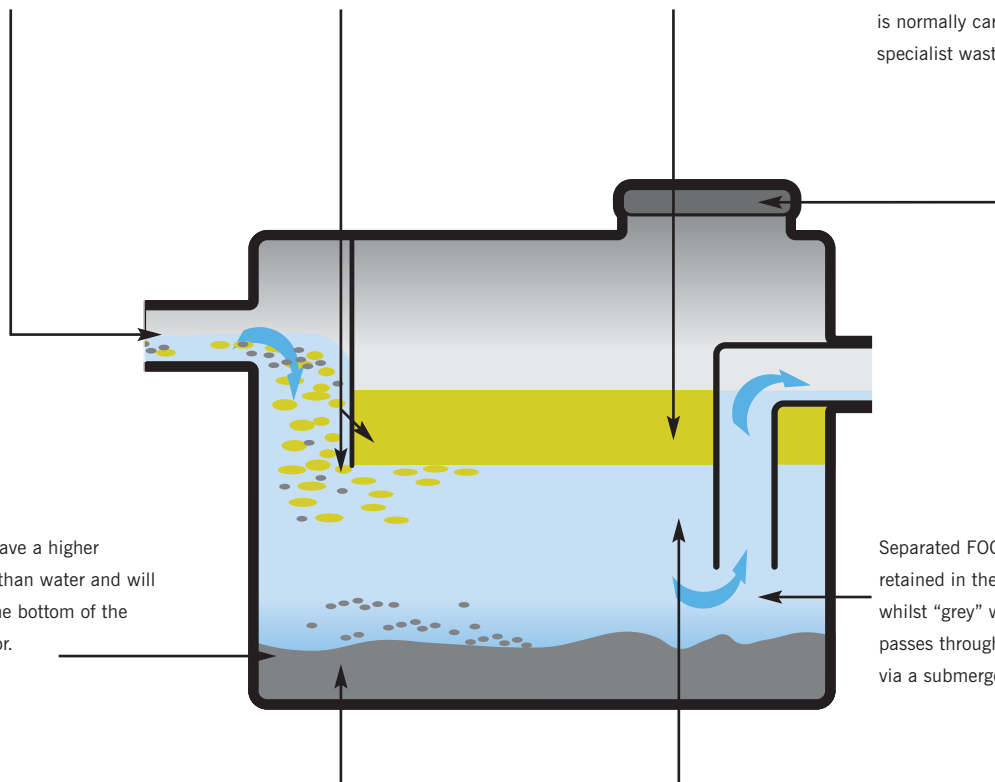
Wastewater from kitchens and food processing plants contains a mixture of water, FOGs and food residue solids.

FOGs have a density less than water. Under the correct conditions, these contaminants will naturally float on the water surface.

FOG storage capacity minimum 40 litres x NS (Nominal Size of separator),  
FOG surface = 0.25m<sup>2</sup> x NS.

Periodic maintenance is required to remove the entire contents of the separator for treatment at a sewage treatment plant and is normally carried out by a specialist waste contractor.

Solids have a higher density than water and will fall to the bottom of the separator.



Sludge capacity  
100 litres x NS (nominal size of separator) or 200 litres x NS for meat processing plants

Separation compartment capacity dependant on NS size.

Separated FOGs and solids are retained in the separator body whilst "grey" wastewater passes through the separator via a submerged outlet.

## Choosing a Grease Management System

### Factors to consider

Compared with some European countries, the UK has only recently addressed the problems arising from fats, oils and grease through national mechanisms such as the Building Regulations which now enforce control in specific businesses. Differences also exist in the extent of assessment and policing of output quality.

Without these key drivers, demand, and therefore supply of appropriate product has been limited, with subsequent variability in the performance of the alternate methodologies on offer.

ACO Building Drainage® offer a choice of grease management systems: a range of biological or enzyme based traps, or separators based on differential density, often referred to as gravity separators. There are a number of factors to be taken into account when deciding on a suitable system.

Factors	Biological	Gravity
Mode of operation - principal effect	Enzymes and bacteria break down long chain FOG molecules preventing drain blockage	Differential density causes FOGs to float and solids to sink. FOGs and solids retained in separator
Maintenance regime	<ul style="list-style-type: none"> <li>• Linked to automated enzyme injection system</li> <li>• Requires routine periodic enzyme replenishment</li> <li>• Requires periodic sludge removal</li> <li>• Allows large particle removal via sediment basket</li> <li>• Certain variables adjustable on site for example dosing frequency</li> </ul>	<ul style="list-style-type: none"> <li>• Requires periodic FOG removal by licensed waste disposal contractor</li> <li>• No user adjustable maintenance variables other than contractor visit frequency</li> <li>• Consideration of accessibility for maintenance</li> <li>• Manual, semi-automated or automated integrated servicing facilities</li> </ul>
Physical size and location	<ul style="list-style-type: none"> <li>• For equivalent 'meals per day' performance, biological traps are far smaller</li> <li>• Allows location in smaller premises or where space restrictions apply</li> <li>• Space saving 'under sink' units available</li> <li>• Internal or external location</li> </ul>	<ul style="list-style-type: none"> <li>• Physically large by comparison and unlikely to be to be sited in kitchen area</li> <li>• Access to free-standing systems located within the building</li> <li>• Internal or external location</li> </ul>
Design guidance	No British or European Standard exists for biological traps. Manufacturers offer own sizing methodologies	<ul style="list-style-type: none"> <li>• Physically large by comparison and unlikely to be to be sited in kitchen area</li> <li>• Access to free-standing systems located within the building</li> <li>• Internal or external location</li> </ul>
Size selection	Based on assessment of 'meals per day' production in kitchen or plant, making the method especially suitable where other data is not available	<p>BS EN 1825 offers both 'meals per day' as well as alternative sizing methods, such as specific plant output flow rates.</p> <p>BS EN 1825 also considers:</p> <ul style="list-style-type: none"> <li>• Influent temperature</li> <li>• FOG density variations</li> <li>• Use of cleaning or rinsing agents</li> </ul> <p>This allows precise sizing where such variables are known, for example in food processing applications</p>
Managing sludge, silt and other relatively dense particles	<ul style="list-style-type: none"> <li>• Allowance made within unit design and is a fixed volume</li> <li>• Larger particles or debris can be removed by silt basket</li> </ul>	Design criteria calls for a minimum sludge volume (litres) of 100 x nominal size (NS) with option for 200 x NS for meat processing plant and abattoirs

## Choosing a Grease Management System

### Further performance considerations

For soil/foul drainage applications.

Flow rates based on Colebrook-White formula.

Roughness Coefficient  $k_s = 1.5\text{mm}$  (calculation uses internal diameters for pipes).

### FOGs and specified output quality

Vegetable and animal fats are separated through the differential density mechanism in the separator. However some residual fats always remain in the output effluent.

Regulatory authorities may require specific output quality and may test the installation for performance.

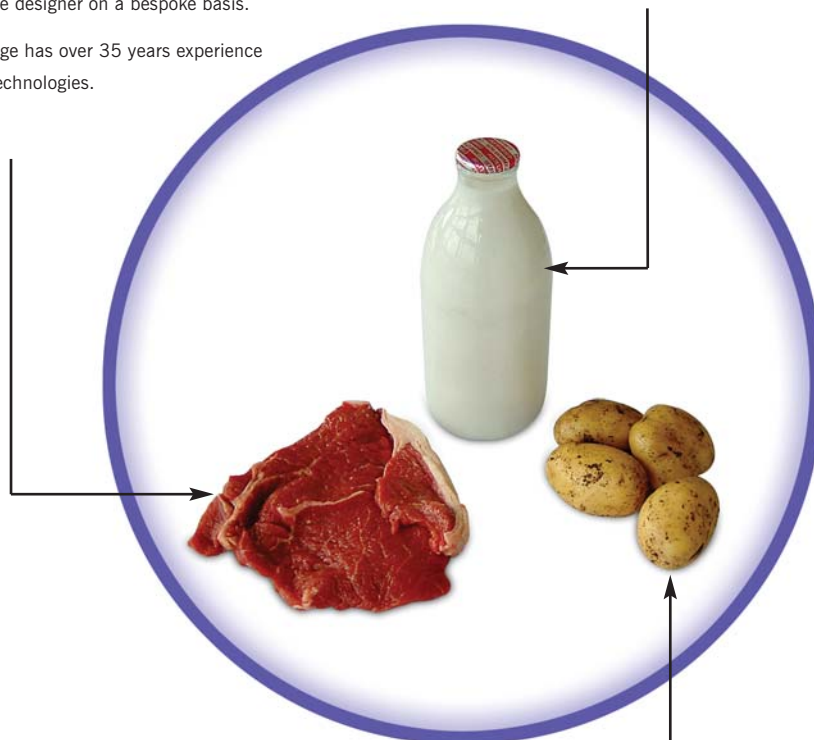
Increasing levels of sophistication are available and can be discussed with the designer on a bespoke basis.

ACO Building Drainage has over 35 years experience in water treatment technologies.

### Stable emulsions

Certain FOGs may form a stable emulsion, negating the differential density mechanism of a gravity separator. Such emulsions may be present in dairy production processes for example.

Stable emulsions are not suitable for treatment in gravity separators.



### Starch

Certain foods such as potatoes and rice produce high levels of starch. Excessive amounts of starch form an adhesive like gel, especially in turbulent water, potentially blocking or reducing flow in associated pipework.

ACO Building Drainage has a range of starch separators.

## Selection Process

### Stage 1

#### Consider wastewater contents

Although all separators accommodate silt, it is often necessary to remove coarse particles which might otherwise cause problems, for example fish waste, which will putrefy if allowed to enter the separator.

It is important to realise that gravity separators are not designed to accommodate output from macerators.



Such waste can be removed by use of pre-strainer (see page 35 for details)



### Stage 2

#### Establish separator size

Separator size can be established through the methodologies given in BS EN 1825 part 2.

This Standard considers either type of kitchen equipment in use or assesses throughput per day in terms of meals produced or in the case of abattoirs, the volume of meat produced.



For more information, please visit our website [www.acobuildingdrainage.co.uk](http://www.acobuildingdrainage.co.uk) or call us on 01462 816666 for any assistance.



## Selection Process

### Stage 3

#### Select separator type

##### 1. Grease separators for ground installation

ACO Building Drainage offer two families of below ground grease separators to BS EN 1825 both with Load Class D400 access covers to BS EN 124.

Our Liputec separator range provides an economical product where the separator body structure is non-load bearing and the cover load is borne by the surrounding structural detail. For further details refer to pages 12 and 13.

The ECO-FPI unit is a fully load bearing structure in its own right, significantly minimising installation time and cost. For further information refer to pages 14 to 17.



ECO-FPI Load Bearing Separator



ECO-JET-G Free Standing Split Design  
Separator including optional downstream  
sampling station

##### 2. Grease separators for free standing installation

All ECO-JET and HYDROJET models are designed and tested in accordance with BS EN 1825, and accommodate all aspects of access for installation and maintenance - including split design models for installation areas where access to basements, stairs etc. is limited. For more information please see pages 18-35.

## Sizing a Gravity Grease Separator

### Overview

BS EN 1825 describes 3 methods of calculating the nominal size (NS) of a grease separator:

- Per kitchen equipment and outlet valves
- Per quantity of meals
- Per meat processing unit

Sizing methods contained in this Design Guide cover the more common applications only. For other sizing methods, refer to BS EN 1825 part 2 or contact ACO Building Drainage.

### Step 1 - Select FOG density

Common FOG densities are:

Fat/Oil	Density (g/cm <sup>3</sup> )	Fat/Oil	Density (g/cm <sup>3</sup> )	Fat/Oil	Density (g/cm <sup>3</sup> )
Animal fat	0.85-0.94	Sesame oil	0.92	Corn oil	0.92
Butter fat	0.91	Sunflower oil	0.92-0.93	Fish oil	0.89-0.94
Coconut oil	0.92-0.93	Vegetable oil	0.95-0.97	Olive oil	0.91

### Step 2 - Select kitchen type

The table below details various types of kitchen, as listed in BS EN 1825.

Kitchen Type	Description	Typical kitchen characteristics
<b>A</b>	<b>Hotel</b> <ul style="list-style-type: none"> <li>• High variety of meals available</li> <li>• á la carte menu</li> </ul>	<ul style="list-style-type: none"> <li>• Market fresh produce</li> </ul>
<b>B</b>	<b>Restaurant</b> <ul style="list-style-type: none"> <li>• Average variety of meals available</li> <li>• Individual preparation of food with prepared cooking processes</li> </ul>	<ul style="list-style-type: none"> <li>• Market fresh, partly prepared produce</li> </ul>
<b>C</b>	<b>Hospital, clinics, care homes</b> <ul style="list-style-type: none"> <li>• Few main menus (2-4)</li> <li>• Prepared in large food containers</li> <li>• Many forms of special foods in small food containers</li> </ul>	<ul style="list-style-type: none"> <li>• Prepared, partly market fresh produce</li> </ul>
<b>D</b>	<b>Large catering establishment</b> (24h operation)	<ul style="list-style-type: none"> <li>• Market fresh produce, large proportion of canned food</li> <li>• Few menus per day (1-2)</li> <li>• Prepared in few, large food containers</li> </ul>
<b>E</b>	<b>Factory and office, canteens, student refectory</b>	<ul style="list-style-type: none"> <li>• Kitchen ready, if applicable portioned out and pre-cooked/deep frozen food</li> <li>• Few menus</li> <li>• Prepared in large kitchens and/or microwave ovens</li> <li>• Large proportion of disposable crockery</li> </ul>

**Sizing a Gravity Grease Separator**

Stage 1	Select kitchen type	A	B	C	D	E	Worked Example (Type B selected)	
2	Meals per day where 1 meal = 1 restaurant cover						170	
3	Multiply by: Water volume per meal in litres as stated in BS EN 1825	x 100	x 50	x 20	x 10	x 5	x50 =8500	
4	Multiply by: Peak flow coefficient as stated in BS EN 1825	x 5	x 8.5	x 13	x 22	x 20	x8.5 =722.50	
5	Multiply by: Temperature at inlet °C	1.3 ONLY if temperature is >60°C otherwise go to stage 6						x1.3 =93925
6	Multiply by: Factor for detergents, dishwasher powders and rinsing agents	- Never used? Go to stage 7 - Occasionally used? x1.3, - Special circumstances? (e.g hospital) x1.5					x1.3	=122102.5
7	Multiply by: Factor for fat/oil density in g/cm <sup>3</sup>	x 1.5 only if density > 0.94g/cm <sup>3</sup> , otherwise go to stage 8						Olive oil is mainly used therefore go to stage 8
8	Establish average daily kitchen operation in seconds (3600 seconds per hour)						11 hours =39600	
9	Take answer from stage 5 (or if used, stage 6 and 7) and divide answer by answer from stage 8						<u>122102.5</u> 39600 = 3.08	
10	Round up to available NS size Sizes available 1, 2, 3, 4, 1, 10						3.08 to NS 4	

**ACO Below Ground Grease Separators**  
**ACO Liputec Grease Separators**

**Features and benefits**



- 1** Load Class D400 cast iron access cover with single seal.
- 2** 600mm clear opening access cover for easy servicing access.
- 3** Raising tube easily cut on site to suit specific inlet/outlet pipe invert requirements.
- 4** Ø110mm or Ø160mm inlet/outlet spigots.
- 5** Highly corrosion resistant high density polyethylene construction.
- 6** Lightweight construction for easy of handling.
- 7** Tough, fully welded construction withstands site handling, concrete pour and groundwater pressures.
- 8** Concrete anchor flanges to arrest buoyancy in high water table applications.
- 9** Flat base ensures high stability during site movement, storage and installation.

ACO Liputec grease separators offer the most cost effective component system solutions. The separator body is not a load bearing structure therefore any wheel or traffic loadings must be supported via a suitable slab (designed by others) to support the applied loadings.

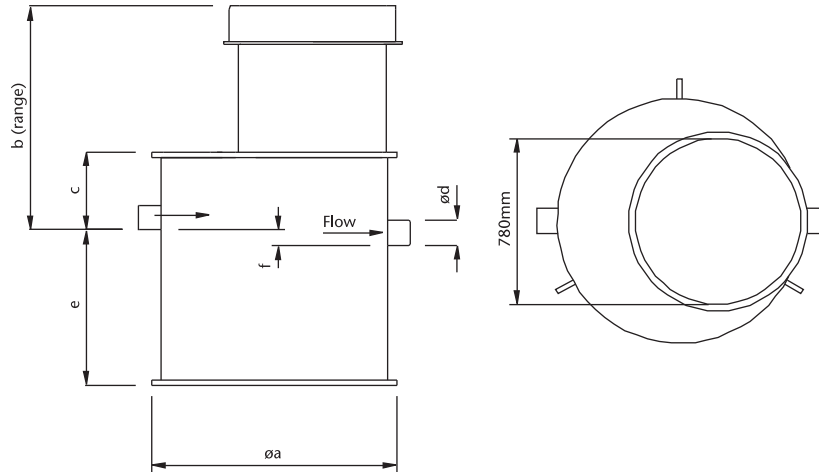


**NBS Specification**  
**Clause Reference**

For relevant NBS specification, refer to NBS section R12 Below Ground Drainage, Clause 630 Grease Traps/Converters and insert the appropriate model reference.

**ACO Below Ground Grease Separators**  
**ACO Liputec Grease Separators**

**Technical data**



Nominal Size NS	Part No D400 System Assembly	Flow Rate l/s	Grease Volume Litres	Sludge Volume* Litres	HDPE Body Only Weight kg	D400 Cover Weight kg
1	403660	1.0	180	100	96	165
2	403661	2.0	180	200	111	165
4	403662	4.0	210	400	119	165
7	403663	7.0	290	700	176	165
10	403665	10.0	400	1000	235	165

\* All ACO below ground grease separators are available with optional double sludge volume (200 x NS litres, the standard item is 100 x NS litres) capacities for abattoir and other high volume sludge applications as per BS EN 1825. Contact the ACO Building Drainage Helpline on 01462 816666 for further details.

Nominal Size NS	Dimensions mm					
	a	b	c	d	e	f
1	1100	738-1000	345	110	705	70
2	1100	743-1000	350	110	830	70
4	1100	798-1000	405	160	1145	70
7	1300	858-1000	465	160	1385	70
10	1600	740-1000	348	160	1367	100



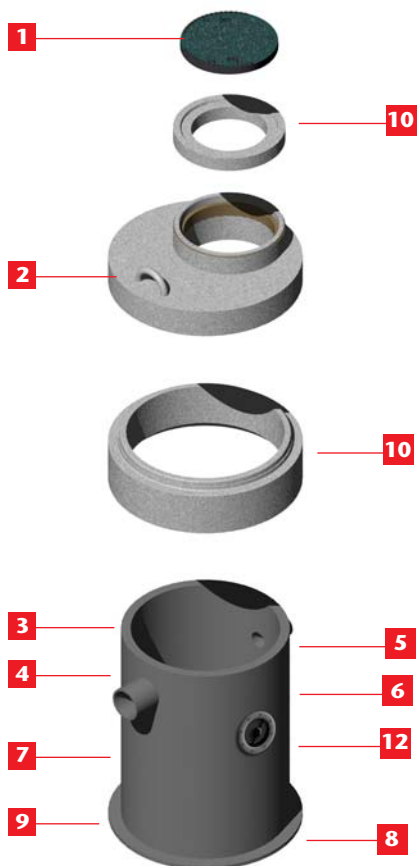
Part no.	Description	Weight kg
90495	Lifting key	0.8

**Note:** All Liputec separators are available with double sludge capacity for abattoir and meat processing applications. Contact the ACO Building Drainage Helpline on 01462 816666 for further details.



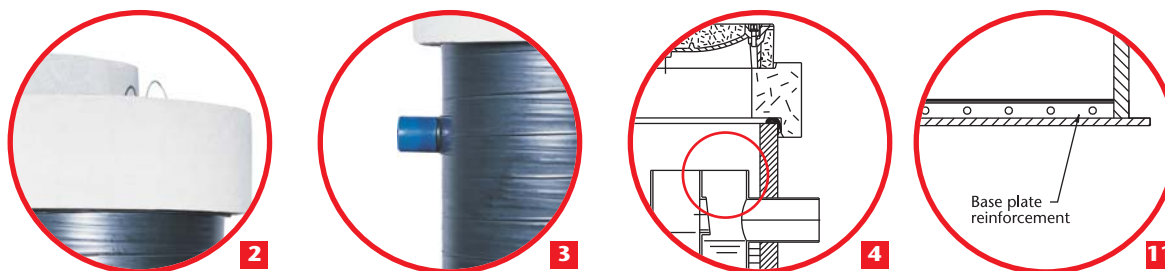
**ACO Below Ground Grease Separators**  
**ACO ECO-FPI Grease Separators**

**Features and benefits**



- 1** Load Class D400 airtight cast iron access cover with 600mm clear opening for easy servicing access with concrete cover plate.
- 2** Lifting hooks cast in to assist site manoeuvre.
- 3** Separator assembly is a structural element in its own right accommodating D400 Load Class without additional concrete support or reinforcement. Maximum installation speed with minimal installation cost.
- 4** Ø110mm Ø160mm inlet/outlet spigots. Integrated sampling station in outlet.
- 5** Highly corrosion resistant spiral-wound twin-walled high-density polyethylene (HDPE) construction for the ultimate in strength.
- 6** Lightweight body construction for easy handling.
- 7** Robust construction withstands site handling, concrete pour and groundwater pressures.
- 8** Concrete anchor flanges to arrest buoyancy in high water table applications.
- 9** Flat base ensures high stability during site movement, storage and installation.
- 10** Fine and course adjustment raising rings accommodate most site requirements
- 11** Optional baseplate reinforcement
- 12** Optional built-in suction pipe for contents removal

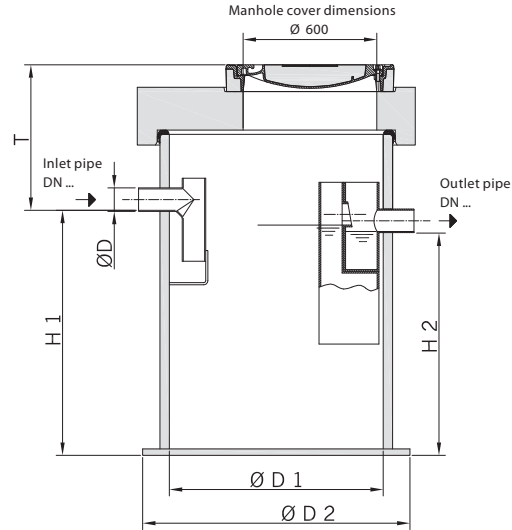
**Note.** All ACO ECO-FPI systems are load bearing units and therefore offer the minimum installation requirements in the fastest time saving the installing contractor both time and money.



**NBS Specification Clause Reference**

For relevant NBS specification, refer to NBS section R12 Below Ground Drainage, Clause 630 Grease Traps/Converters and insert the appropriate model reference.

**ACO Below Ground Grease Separators**  
**ACO ECO-FPI Grease Separators**



NS	Contents Capacity (litres)					Dimensions (mm)				Part No D400 System Assy
	Sludge Storage Volume	Grease Storage Volume	Total	H1	H2	D	D1	D2	T	
1	100	120	615	885	785	110	1000	1250	695	3201.55.01
	200	120	715	1010	910	110	1000	1250	570	3201.56.01
2	200	120	715	1010	910	110	1000	1250	570	3202.55.01
	400	120	915	1265	1165	110	1000	1250	560	3202.56.01
3	300	120	815	1140	1040	110	1000	1250	685	3203.55.01
	600	120	1115	1520	1420	110	1000	1250	815	3203.56.01
4	400	160	915	1265	1165	110	1000	1250	560	3204.55.01
	800	160	1315	1775	1675	110	1000	1250	560	3204.56.01
7	700	400	1950	1205	1105	160	1500	1800	650	3207.55.01
	1400	400	2660	1605	1505	160	1500	1800	650	3207.56.01
10	1000	400	2250	1370	1270	160	1500	1800	685	3210.55.01
	2000	400	3250	1940	1840	160	1500	1800	665	3210.56.01

Note: For abattoir and meat processing applications, select double sludge capacity model.

Nominal Size NS	Part No	HDPE Body Only Weight kg	Concrete Cover Weight kg	Access Cover Weight kg	Total System Dry Weight kg
1	3201.55.01	110	450	150	710
	3201.56.01	110	450	150	710
2	3202.55.01	110	450	150	710
	3202.56.01	125	450	150	725
3	3203.55.01	125	450	150	725
	3203.56.01	160	450	150	760
4	3204.55.01	125	450	150	725
	3204.56.01	160	450	150	760
7	3207.55.01	240	1150	150	1540
	3207.56.01	310	1150	150	1610
10	3210.55.01	275	1150	150	1575
	3210.56.01	365	1150	150	1665



## ACO Below Ground Grease Separators ACO ECO-FPI Grease Separators

### Direct Suction Operation

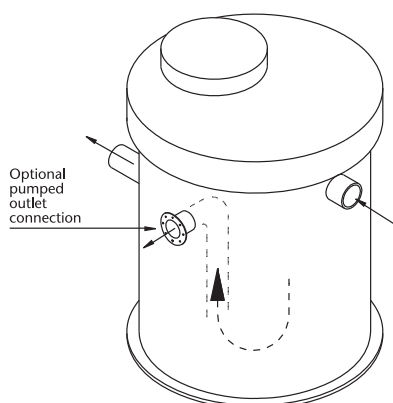
#### Areas of application

Below ground grease separators are designed for use outside buildings and preferably away from vehicle access routes to allow easy accessibility for servicing without inconveniencing other access road users.

Because of the nature of the effluent contained in a grease separator, unsavoury odours can be released when the access cover is removed for servicing. For installation locations where an odourless service is required for example, pedestrian areas or outdoor catering facilities, all ECO-FPI models can be supplied with a factory fitted direct suction option for hygienic, odourless servicing.



- Odourless disposal via direct suction pipe connection.
- Load Class D400 to BS EN 124 access cover.
- 30 metre maximum horizontal run for vacuum tanker disposal.
- Spiral wound twin-walled PE body is a structural element in its own right. No additional concrete support or reinforcement required.
- Maximum installation speed with minimum cost.



Angular orientation of direct suction connection to separator body determined by specifier.



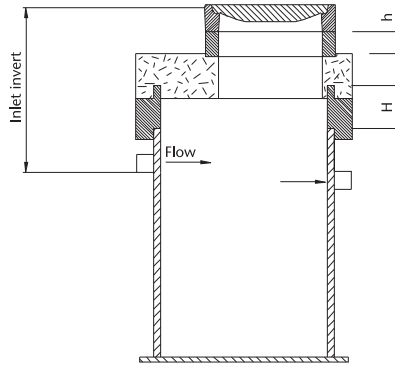
**ACO Below Ground Grease Separators  
Accessories - ACO ECO-FPI**

**Technical data**

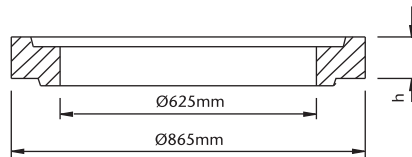
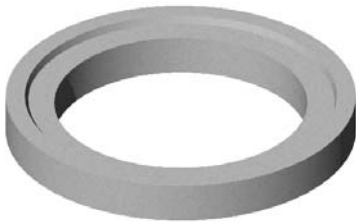
**Adjustment rings**

The inlet invert position for all ACO ECO-FPI gravity separators can be extended to suit specific requirements by the addition of raising rings for fine adjustment or coarse adjustment or combinations of the two.

**Note:** Fine adjustment rings can only be used up to a maximum of 200mm. For greater depth, use coarse adjustment raising rings.



**Fine adjustment raising rings  
(all ACO ECO-FPI separators)**



Part No	Description	h mm	Weight kg
8700.20.00	Fine adjustment raising ring	60	50
8700.20.10	Fine adjustment raising ring	80	60
8700.20.20	Fine adjustment raising ring	100	70

**Coarse adjustment raising rings**

Coarse adjustment raising rings are supplied complete with interconnecting seals



Part No.	Description	Separator size NS	H mm	ØD mm	Weight kg
8700.42.21	Coarse adjustment raising ring	1, 2, 3, 4	250	1000	240
8700.42.31	Coarse adjustment raising ring	1, 2, 3, 4	500	1000	500
8700.42.61	Coarse adjustment raising ring	1, 2, 3, 4	1000	1000	1000
8700.42.23	Coarse adjustment raising ring	7, 10	250	1500	480
8700.42.33	Coarse adjustment raising ring	7, 10	500	1500	931



## ACO Free Standing Grease Separators

### Concept overview and description

All ACO ECO-JET and HYDROJET free-standing grease separators are manufactured in corrosion resistant high density polyethylene and installed in frost-free buildings. They are available in a variety of formats to suit the application and project budget. Depending on the client operational needs, a wide choice of operating modes and facilities are available including the most sophisticated fully automated systems.



#### ECO-JET Split Series

- Ideal where access is problematic, i.e. stairs, narrow corridors etc
- Splits into 3 lightweight components
- Easy to transport and assemble
- Access covers removed for servicing
- Direct suction option to reduce odours during servicing



#### ECO-JET Oval

- Lowest cost option free-standing grease separator
- Oval design for convenient installation
- Basic separator design
- Access covers removed for servicing
- Direct suction option to reduce odours during servicing
- Optional retro-fit upgrades to HYDROJET specification



#### HYDROJET Oval

- Advanced separator design & facilities
- Direct suction facility prevents odours during servicing
- Grease level inspection window
- High pressure (175 bar) internal cleaning facility
- Manually operated ball valve cold water fill facility
- Optional disposal pump
- Fully automated control option



#### HYDROJET Round

- Facilities and features as HYDROJET Oval
- High hydraulic capacity - up to NS 20
- Circular tank easily dismantled into separate components for convenient installation

## ACO Free Standing Grease Separators ACO ECO-JET-G Split Design Series

### Areas of application

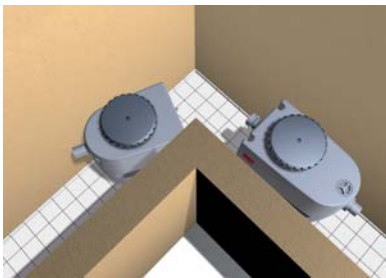
ECO-JET-G grease separators are manufactured from corrosion resistant polyethylene for use inside buildings that are free from frost.

The split design is particularly practical for refurbishment projects where clear access for installation is limited due to stairs or corridor limitations.

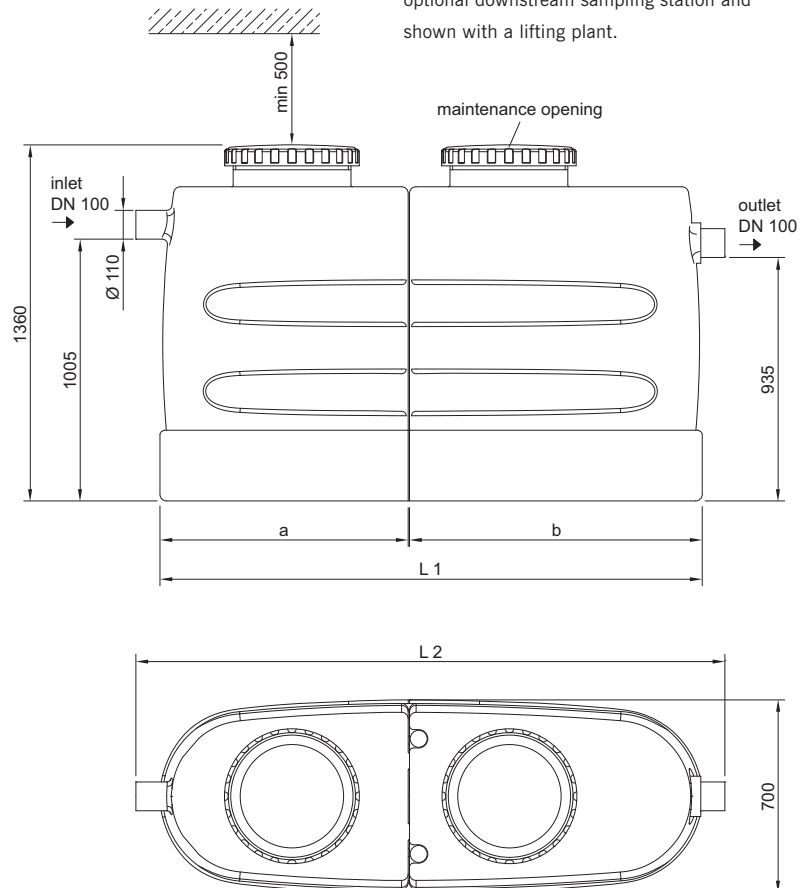
Access covers removed for servicing.

### Product advantages

- Problem solving product - separator splits into 3 components for easy installation in restricted access buildings
- Lightweight separate units



The model shown in an NS4 ECO-JET-G with optional downstream sampling station and shown with a lifting plant.



### Technical data

NS	Contents Capacity (litres)			Dimensions (mm)				Weight (kg)		Part No
	Sludge Storage Volume	Grease Storage Volume	Total	L1	L2	a	b	Empty	Full	
2	210	80	480	1180	1360	510	660	75	555	3802.00.00
4	420	160	880	2070	2250	945	1115	115	995	3804.00.00

### Accessories: (see page 35)

- Clean water filling unit
- Sampling station
- Viewing window

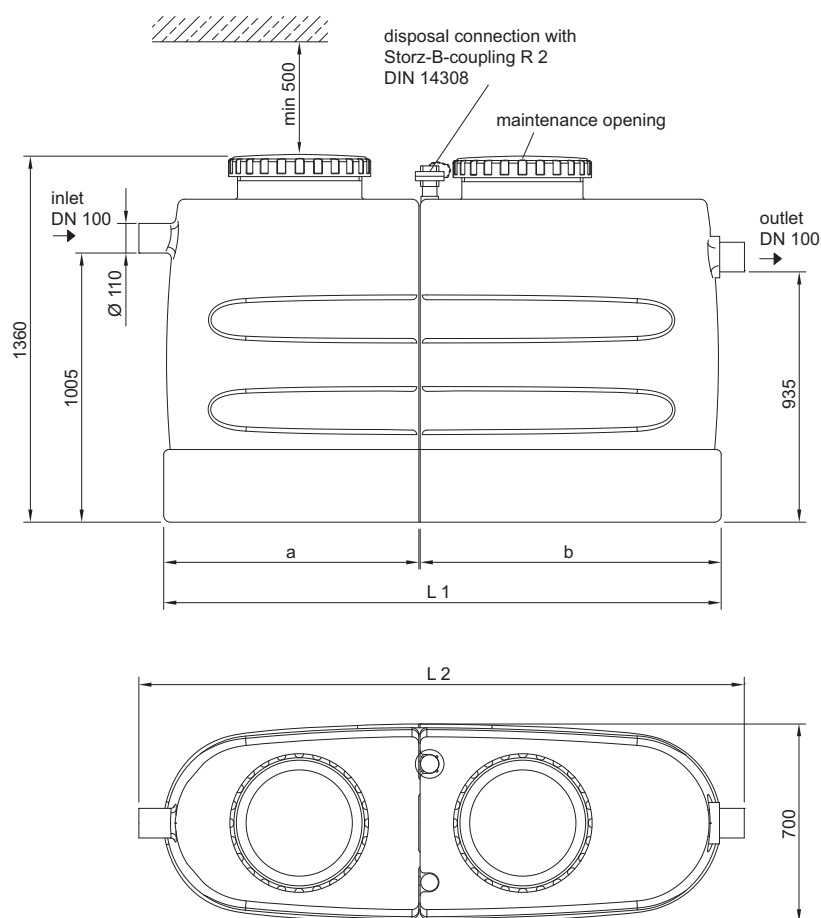
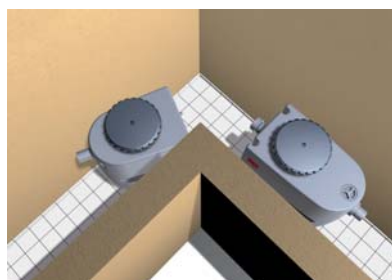
## ACO Free Standing Grease Separators ACO ECO-JET-GD Split Design Series with Direct Suction Extraction

### Product description

ECO-JET-GD grease separators are similar to the ECO-JET-G but are supplied with a direct suction facility to minimise odour release when serviced.

### Product advantages

- Problem solving product - separator splits into 3 components for easy installation in restricted access buildings
- Integrated direct suction facility to reduce odour emissions during disposal service
- Lightweight separate units



### Technical data

NS	Contents Capacity (litres)			Dimensions (mm)				Weight (kg)		Part No
	Sludge Storage Volume	Grease Storage Volume	Total	L1	L2	a	b	Empty	Full	
2	210	80	480	1180	1360	510	660	75	555	3802.50.00
4	420	160	880	2070	2250	945	1115	115	995	3804.50.00

### Accessories: (see page 35)

- Clean water filling unit
- Sampling station
- Viewing window

**ACO Free Standing Grease Separators  
ACO OVAL ECO-JET-O and HYDROJET-O Series**

**Areas of application**

ECO-JET-O and the more sophisticated HYDROJET-O oval grease separators are one piece rotationally moulded units manufactured from corrosion resistant polyethylene for use inside buildings that are free from frost. These separators can be easily upgraded in various stages to more advanced models to suit operational requirements.

**Product benefits**

- Rugged and durable lightweight corrosion resistant polyethylene construction
- Easy on-site upgrade to more sophisticated operation
- Wide range size availability to optimise space requirement

**ECO-JET nomenclature**

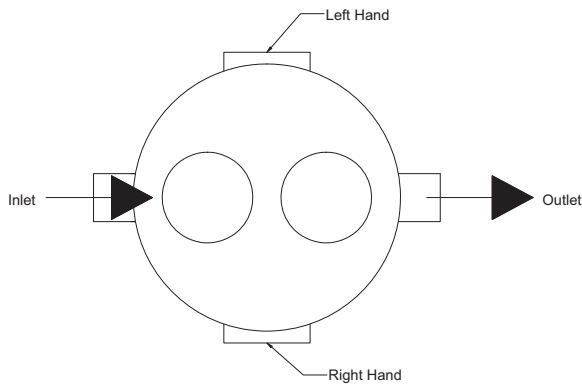
- O** Oval - basic model
- OD** - O with direct suction facility

**HYDROJET nomenclature**

- OS** - Direct suction & high pressure internal cleaning under manual control. Grease inspection window
- OSE** - as OS with manually controlled disposal pump
- OA** - as OS but with automatic program control
- OAE** - as OA but with disposal pump under automatic control

**Note** - disposal pump required when vertical suction lift exceeds 6m.

Separators fitted with a viewing window can be either right hand or left hand operation and is defined in the diagram below.



*Plan View*



Application shows HYDROJET-OAE with optional sampling station and lifting plant.



**ACO Free Standing Grease Separators**  
**ACO OVAL ECO-JET-O and HYDROJET-O Series**

**ECO-JET O (basic model)**

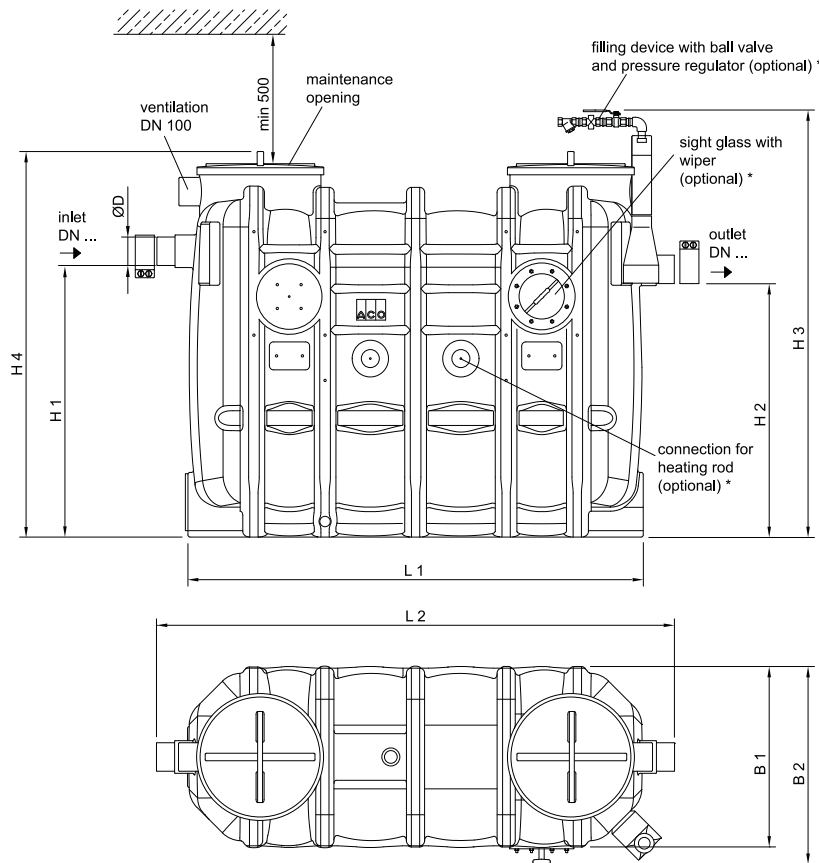
- Disposal & cleaning via open lids (potential odour emissions)
- Upgradeable to Stage 1 to 3

**Accessories:** (see page 35)

- Viewing widow
- Sampling station
- Clean water filling unit



NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No
		Sludge trap	Grease storage	Total	Dry	Full	
1	100	106	100	320	62	382	3551.34.00
2	100	210	100	440	70	510	3552.34.00
3	100	300	150	630	80	710	3553.34.00
4	100	400	200	830	95	925	3554.34.00
5.5	150	725	360	1430	170	1600	3555.34.00
7	150	800	400	1600	187	1787	3557.34.00
8.5	150	940	475	1900	208	2108	3558.34.00
10	150	1000	520	2000	220	2220	3560.34.00



displayed:  
 NS4, operating side right,  
 operating side left would show all components  
 (filling device, sight glass) positioned  
 mirror-inverted to axis.

\* not included in the scope of delivery

NS	Dimensions in mm								
	L1	L2	H1	H2	H3	H4	B1	B2	D
1	1100	1300	830	760	1480	1300	700	770	110
2	1100	1300	1055	985	1680	1500	700	770	110
3	1450	1650	1055	985	1680	1500	700	770	110
4	1760	2000	1055	985	1680	1500	700	770	110
5.5	1760	2000	1250	1180	1880	1700	950	1020	160
7	1960	2200	1250	1180	1880	1700	950	1020	160
8.5	2250	2485	1250	1180	1880	1700	950	1020	160
10	2450	2690	1250	1180	1880	1700	950	1020	160

**ACO Free Standing Grease Separators**  
**ACO OVAL ECO-JET-O and HYDROJET-O Series**



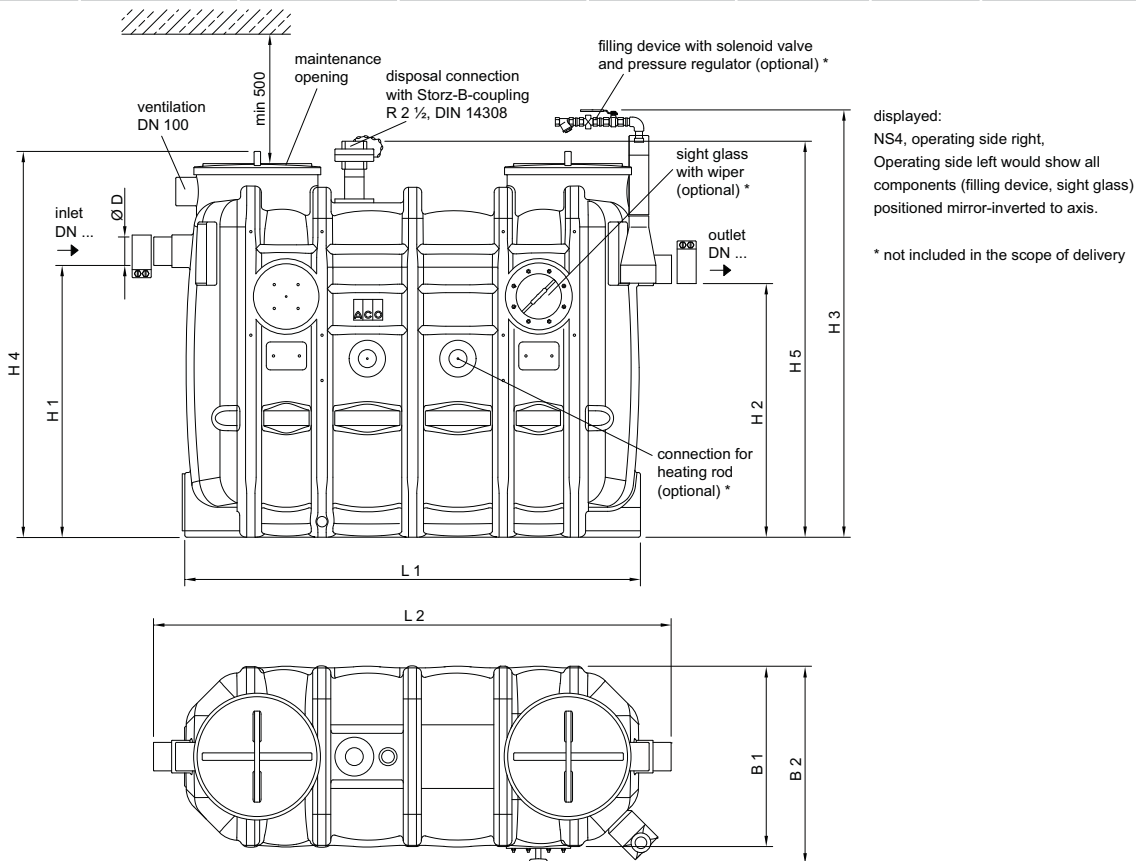
**ECO-JET OD (Stage 1)**

- Odour-free disposal via direct suction pipe
- Manual internal cleaning via open lid (minor odour emissions)
- Upgradeable to Stages 2 and 3

**Accessories:** (see page 35)

- Viewing widow
- Sampling station
- Clean water filling unit

NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No
		Sludge trap	Grease storage	Total	Dry	Full	
1	100	106	100	320	68	388	3551.64.00
2	100	210	100	440	75	515	3552.64.00
3	100	300	150	630	85	715	3553.64.00
4	100	400	200	830	100	930	3554.64.00
5.5	150	725	360	1430	175	1605	3555.64.00
7	150	800	400	1600	193	1793	3557.64.00
8.5	150	940	475	1900	214	2114	3558.64.00
10	150	1000	520	2000	226	2226	3560.64.00



NS	Dimensions in mm								
	L1	L2	H1	H2	H3	H4	B1	B2	D
1	1100	1300	830	760	1480	1300	700	770	110
2	1100	1300	1055	985	1680	1500	700	770	110
3	1450	1650	1055	985	1680	1500	700	770	110
4	1760	2000	1055	985	1680	1500	700	770	110
5.5	1760	2000	1250	1180	1880	1700	950	1020	160
7	1960	2200	1250	1180	1880	1700	950	1020	160
8.5	2250	2485	1250	1180	1880	1700	950	1020	160
10	2450	2690	1250	1180	1880	1700	950	1020	160



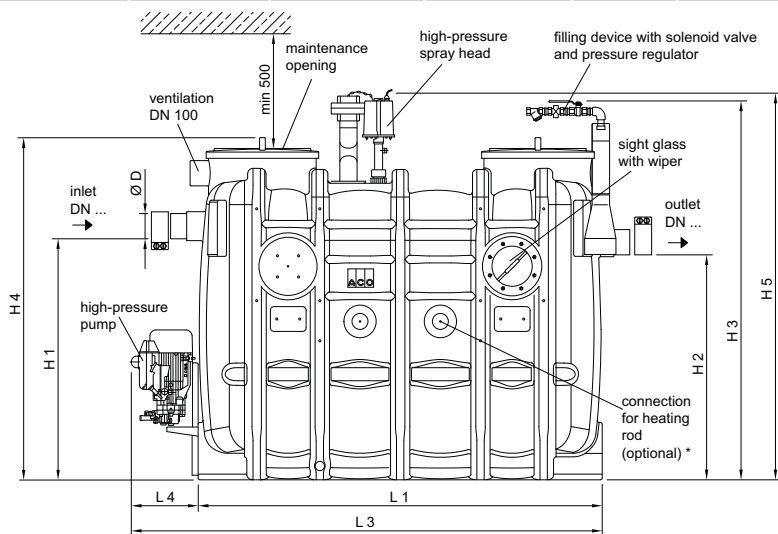
## ACO Free Standing Grease Separators ACO OVAL ECO-JET-O and HYDROJET-O Series

### HYDROJET OS (Stage 2)

- Manually controlled odour-free disposal and cleaning via direct suction and high pressure (175 bar) internal cleaning system
  - Upgradeable to Stage 3 and disposal pump
  - Supplied with viewing window and manually operated ball valve for clean water fill
- Accessories:** (see page 35)  
Sampling station

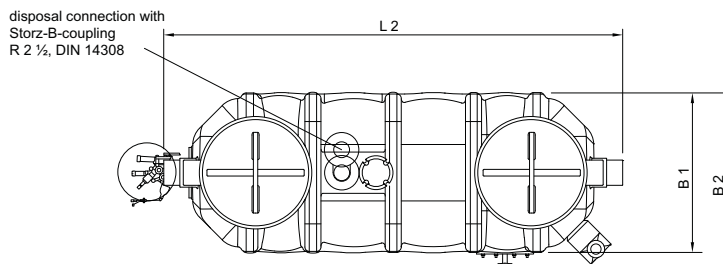


NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No right hand	Part No left hand
		Sludge trap	Grease storage	Total	Dry	Full		
1	100	106	100	320	95	415	3571.74.41	3571.74.31
2	100	210	100	440	100	540	3572.74.41	3572.74.31
3	100	300	150	630	120	750	3573.74.41	3573.74.31
4	100	400	200	830	135	965	3574.74.41	3574.74.31
5.5	150	725	360	1430	206	1636	3575.74.41	3575.74.31
7	150	800	400	1600	223	1823	3577.74.41	3577.74.31
8.5	150	940	475	1900	243	2143	3578.74.41	3578.74.31
10	150	1000	520	2000	255	2255	3580.74.41	3580.74.31



displayed:  
NS4, operating side right,  
operating side left would show all components  
(disposal connection, filling device, sight glass)  
positioned mirror-inverted to axis.

\* not included in the scope of delivery



NS	Dimensions in mm											
	L1	L2	L3	L4	H1	H2	H3	H4	H5	B1	B2	D
1	1100	1300	1400	300	830	760	1480	1300	1500	700	770	110
2	1100	1300	1400	300	1055	985	1680	1500	1700	700	770	110
3	1450	1650	1750	300	1055	985	1680	1500	1700	700	770	110
4	1760	2000	2060	300	1055	985	1680	1500	1700	700	770	110
5.5	1760	2000	2060	300	1250	1180	1880	1700	1900	950	1020	160
7	1960	2200	2260	300	1250	1180	1880	1700	1900	950	1020	160
8.5	2250	2485	2550	300	1250	1180	1880	1700	1900	950	1020	160
10	2450	2690	2750	300	1250	1180	1880	1700	1900	950	1020	160



**ACO Free Standing Grease Separators**  
**ACO OVAL ECO-JET-O and HYDROJET-O Series**

**HYDROJET OSE (Stage 2)**

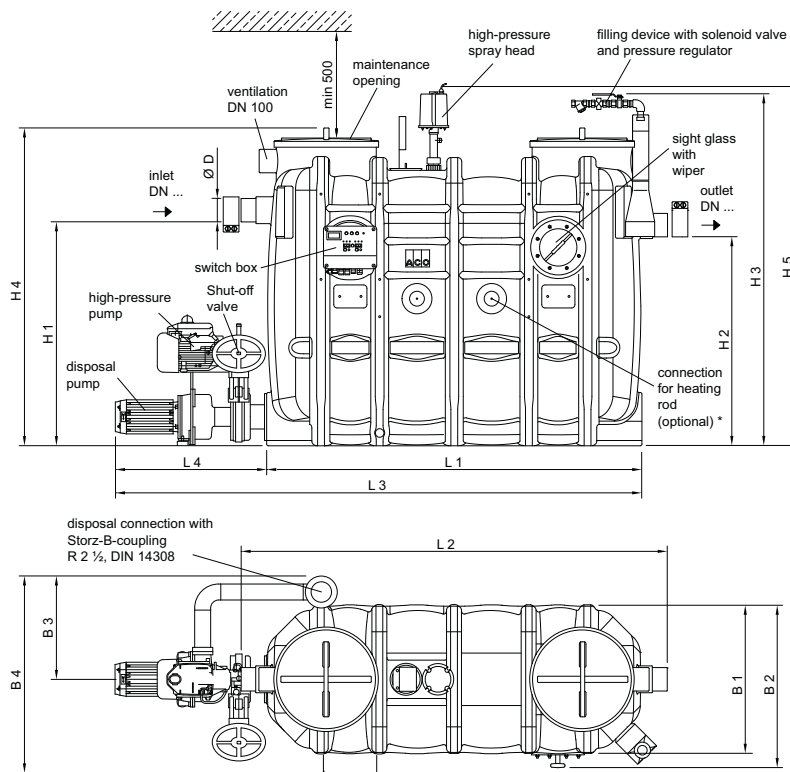
- As HYDROJET OS with manually controlled disposal pump (required when vertical height exceeds 6 metres)
- Upgradeable to Stage 3

**Accessories:** (see page 35)

Sampling station



NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No right hand	Part No left hand
		Sludge trap	Grease storage	Total	Dry	Full		
1	100	106	100	320	177	497	3571.84.41	3571.84.31
2	100	210	100	440	182	622	3572.84.41	3572.84.31
3	100	300	150	630	194	824	3573.84.41	3573.84.31
4	100	400	200	830	210	1040	3574.84.41	3574.84.31
5.5	150	725	360	1430	286	1716	3575.84.41	3575.84.31
7	150	800	400	1600	305	1905	3577.84.41	3577.84.31
8.5	150	940	475	1900	325	2225	3578.84.41	3578.84.31
10	150	1000	520	2000	337	2337	3580.84.41	3580.84.31



displayed:  
NS4, operating side right,  
operating side left would show all  
components (disposal connection, filling  
device, sight glass, shut-off valve, switch  
box) positioned mirror-inverted to axis.  
  
\* not included in the scope of delivery

NS	Dimensions in mm													
	L1	L2	L3	L4	H1	H2	H3	H4	H5	B1	B2	B3	B4	D
1	1100	1300	1800	700	830	760	1480	1300	1500	700	770	500	930	110
2	1100	1300	1800	700	1055	985	1680	1500	1700	700	770	500	930	110
3	1450	1650	2150	700	1055	985	1680	1500	1700	700	770	500	930	110
4	1760	2000	2460	700	1055	985	1680	1500	1700	700	770	500	930	110
5.5	1760	2000	2460	700	1250	1180	1880	1700	1900	950	1020	625	1180	160
7	1960	2200	2660	700	1250	1180	1880	1700	1900	950	1020	625	1180	160
8.5	2250	2485	2950	700	1250	1180	1880	1700	1900	950	1020	625	1180	160
10	2450	2690	3150	700	1250	1180	1880	1700	1900	950	1020	625	1180	160

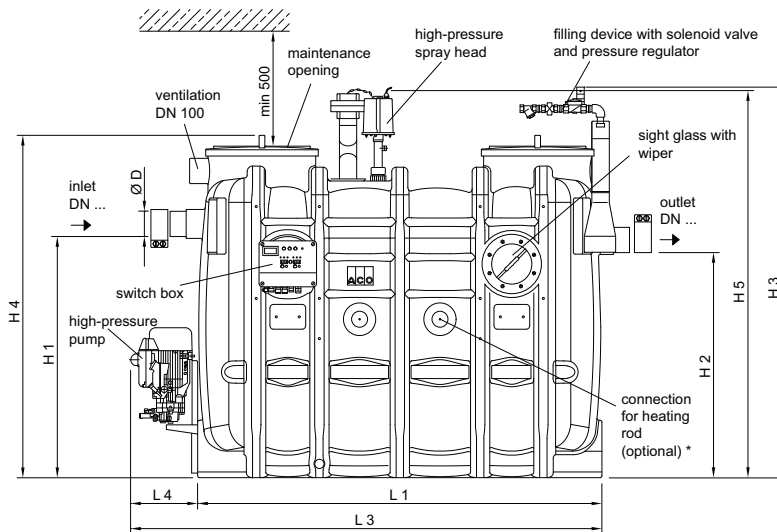
**ACO Free Standing Grease Separators**  
**ACO OVAL ECO-JET-O and HYDROJET-O Series**

**HYDROJET OA (Stage 3)**

- Programme controlled odour-free disposal & cleaning via direct suction and high pressure (175 bar) internal cleaning system
  - Upgradeable with disposal pump
  - Supplied with viewing window and automatically operated solenoid valve for clean water fill
- Accessories:** (see page 35)  
 Sampling station  
 Remote control

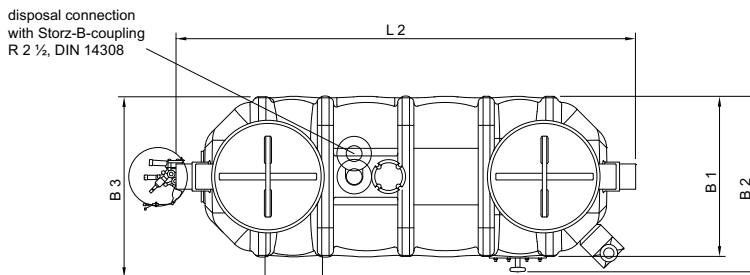


NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No right hand	Part No left hand
		Sludge trap	Grease storage	Total	Dry	Full		
1	100	106	100	320	100	420	3551.74.42	3551.74.32
2	100	210	100	440	105	545	3552.74.42	3552.74.32
3	100	300	150	630	120	750	3553.74.42	3553.74.32
4	100	400	200	830	135	965	3554.74.42	3554.74.32
5.5	150	725	360	1430	210	1640	3555.74.42	3555.74.32
7	150	800	400	1600	226	1826	3557.74.42	3557.74.32
8.5	150	940	475	1900	247	2147	3558.74.42	3558.74.32
10	150	1000	520	2000	259	2259	3560.74.42	3560.74.32



displayed:  
 NS4, operating side right,  
 operating side left would show all components  
 (disposal connection, filling device, sight  
 glass, switch box) positioned mirror-inverted  
 to axis.

\* not included in the scope of delivery



NS	Dimensions in mm												
	L1	L2	L3	L4	H1	H2	H3	H4	H5	B1	B2	B3	D
1	1100	1300	1400	300	830	760	1510	1300	1500	700	770	800	110
2	1100	1300	1400	300	1055	985	1710	1500	1700	700	770	800	110
3	1450	1650	1750	300	1055	985	1710	1500	1700	700	770	800	110
4	1760	2000	2060	300	1055	985	1710	1500	1700	700	770	800	110
5.5	1760	2000	2060	300	1250	1180	1910	1700	1900	950	1020	1050	160
7	1960	2200	2260	300	1250	1180	1910	1700	1900	950	1020	1050	160
8.5	2250	2485	2550	300	1250	1180	1910	1700	1900	950	1020	1050	160
10	2450	2690	2750	300	1250	1180	1910	1700	1900	950	1020	1050	160



**ACO Free Standing Grease Separators**  
**ACO OVAL ECO-JET-O and HYDROJET-O Series**

**HYDROJET OAE (Stage 3)**

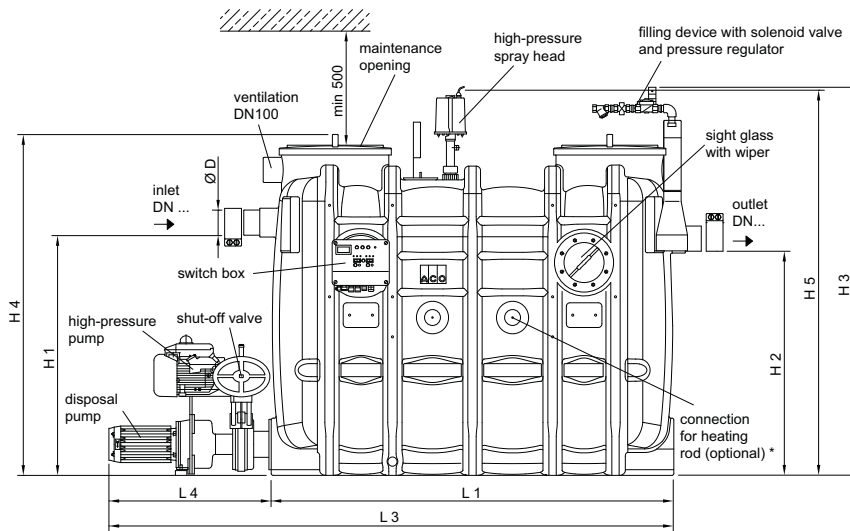
■ As HYDROJET OA with automatically actuated disposal pump (required when vertical height exceeds 6 metres)

**Accessories:** (see page 35)

Sampling station  
 Remote control

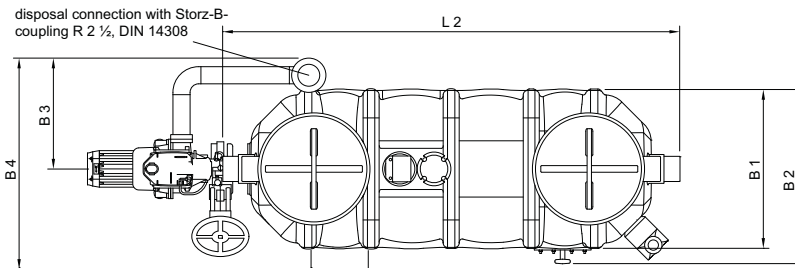


NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No right hand	Part No left hand
		Sludge trap	Grease storage	Total	Dry	Full		
1	100	106	100	320	177	497	3551.84.42	3551.84.32
2	100	210	100	440	182	622	3552.84.42	3552.84.32
3	100	300	150	630	194	824	3553.84.42	3553.84.32
4	100	400	200	830	210	1040	3554.84.42	3554.84.32
5.5	150	725	360	1430	286	1716	3555.84.42	3555.84.32
7	150	800	400	1600	305	1905	3557.84.42	3557.84.32
8.5	150	940	475	1900	325	2225	3558.84.42	3558.84.32
10	150	1000	520	2000	337	2337	3560.84.42	3560.84.32



displayed:  
 NS4, operating side right  
 operating side left would show all components (disposal connection, filling device, sight glass, shut-off valve, switch box) positioned mirror-inverted to axis.

\* not included in the scope of delivery



NS	Dimensions in mm													
	L1	L2	L3	L4	H1	H2	H3	H4	H5	B1	B2	B3	B4	D
1	1100	1300	1800	700	830	760	1480	1300	1500	700	770	500	930	110
2	1100	1300	1800	700	1055	985	1680	1500	1700	700	770	500	930	110
3	1450	1650	2150	700	1055	985	1680	1500	1700	700	770	500	930	110
4	1760	2000	2460	700	1055	985	1680	1500	1700	700	770	500	930	110
5.5	1760	2000	2460	700	1250	1180	1880	1700	1900	950	1020	625	1180	160
7	1960	2200	2660	700	1250	1180	1880	1700	1900	950	1020	625	1180	160
8.5	2250	2485	2950	700	1250	1180	1880	1700	1900	950	1020	625	1180	160
10	2450	2690	3150	700	1250	1180	1880	1700	1900	950	1020	625	1180	160



## ACO Free Standing Grease Separators ACO ROUND ECO-JET-R and HYDROJET-R Series

### Areas of application

ECO-JET-R and the more sophisticated HYDROJET-R round grease separators manufactured from corrosion resistant high-density polyethylene for use inside buildings that are free from frost.

This range of separators is available optionally in stainless steel. Contact the ACO Building Drainage Helpline on 01462 816666 for further details.

These separators can be easily upgraded in various stages to more advanced models to suit operational requirements.

### Product benefits

- Rugged and durable lightweight corrosion resistant high-density polyethylene construction
- Multi-part construction quickly dismantles for installation in areas with limited access
- Easy on-site upgrade to more sophisticated operation
- Available up to Nominal Size 20 for large catering establishments

### ECO-JET nomenclature

- R Round – basic model
- RD – R with direct suction facility

### HYDROJET nomenclature

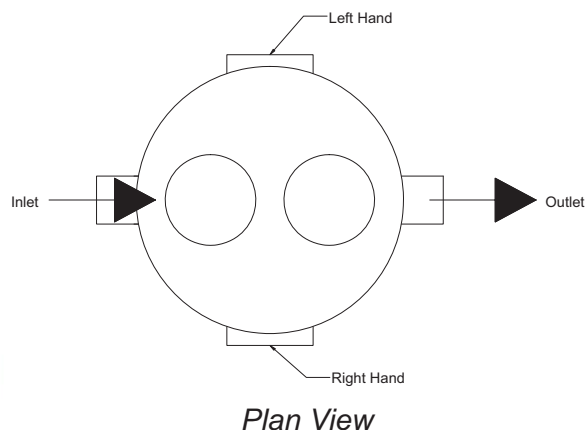
- RS – direct suction & high pressure internal cleaning under manual control. Grease inspection window
- RSE – as RS with manually controlled disposal pump
- RA – as RS but with automatic program control
- RAE – as RA but with disposal pump under automatic control

**Note** – disposal pump required when vertical suction lift exceeds 6m.

Separators fitted with a viewing window can be either right hand or left hand operation and is defined in the diagram below.



HYDROJET RAE grease separator



**ACO Free Standing Grease Separators**  
**ACO ROUND ECO-JET-R and HYDROJET-R Series**

**ECO-JET R (basic model)**

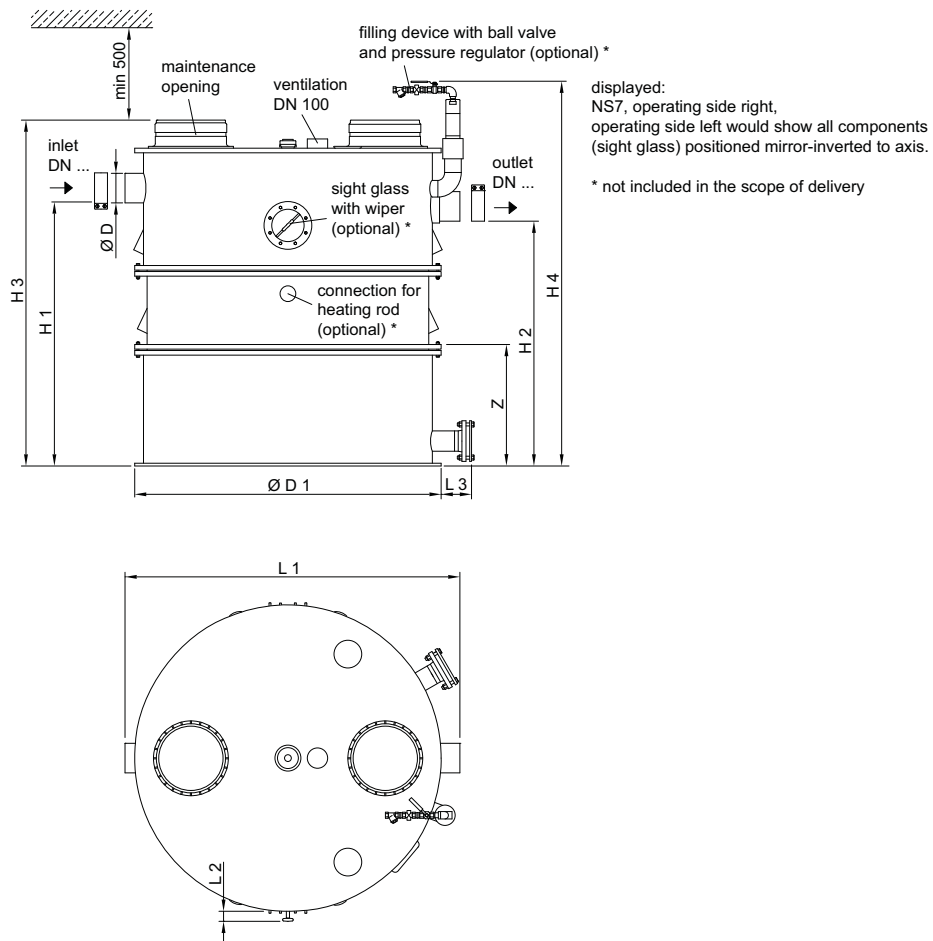
- Disposal & cleaning via open lids (potential odour emissions)
- Upgradeable to Stage 1 to 3

**Accessories:** (see page 35)

- Viewing widow
- Sampling station
- Clean water filling unit



NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No
		Sludge trap	Grease storage	Total	Dry	Full	
2	100	290	120	680	119	799	3502.32.30
4	100	500	160	890	134	1024	3504.32.30
7	150	830	400	2120	301	2521	3507.32.30
10	150	1150	400	2450	311	2761	3510.32.30
15	200	1950	800	3610	357	3967	3515.32.30
20	200	2440	800	4070	358	4428	3520.32.30



NS	Dimensions in mm									
	L1	L2	L3	H1	H2	H3	H4	D	D1	Z/n
2	1255	60	170	975	905	1320	1520	110	1150	795/2
4	1255	60	170	1240	1170	1580	1780	110	1150	820/2
7	1820	60	170	1430	1330	1880	2080	160	1660	785/3
10	1820	60	170	1600	1500	2050	2250	160	1660	785/3
15	2130	60	170	1765	1665	2200	2400	200	1920	880/3
20	2130	60	170	1955	1855	2400	2600	200	1920	880/3

Z = largest separate component (mm)  
n = number of separable components

**ACO Free Standing Grease Separators**  
**ACO ROUND ECO-JET-R and HYDROJET-R Series**

**ECO-JET RD (Stage 1)**

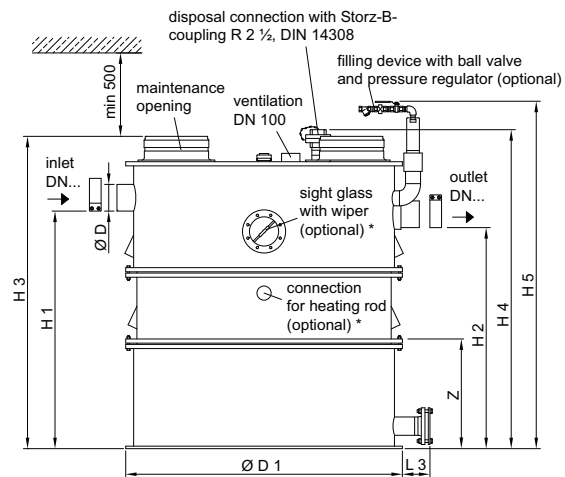
- Odour-free disposal via direct suction pipe
- Manual internal cleaning via open lid (minor odour emissions)
- Upgradeable to Stages 2 and 3

**Accessories:** (see page 35)

- Viewing widow
- Sampling station
- Clean water filling unit

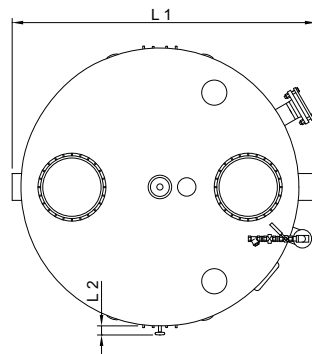


NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No
		Sludge trap	Grease storage	Total	Dry	Full	
2	100	290	120	680	123	803	3502.62.30
4	100	500	160	890	139	1029	3504.62.30
7	150	830	400	2120	310	2430	3507.62.30
10	150	1150	400	2450	321	2771	3510.62.30
15	200	1950	800	3610	358	3968	3515.62.30
20	200	2440	800	4070	360	4430	3520.62.30



displayed:  
 NS7, operating side right  
 operating side left would show all components  
 (disposal connection, sight glass) positioned  
 mirror-inverted to axis

\*not included in the scope of delivery



NS	Dimensions in mm										
	L1	L2	L3	H1	H2	H3	H4	H5	D	D1	Z/n
2	1255	60	170	975	905	1320	1370	1520	110	1150	795/2
4	1255	60	170	1240	1170	1580	1630	1780	110	1150	820/2
7	1820	60	170	1430	1330	1880	1930	2080	160	1660	785/3
10	1820	60	170	1600	1500	2050	2100	2250	160	1660	785/3
15	2130	60	170	1765	1665	2200	2250	2400	200	1920	880/3
20	2130	60	170	1955	1855	2400	2450	2600	200	1920	880/3

Z = largest separate component (mm)

n = number of separable components



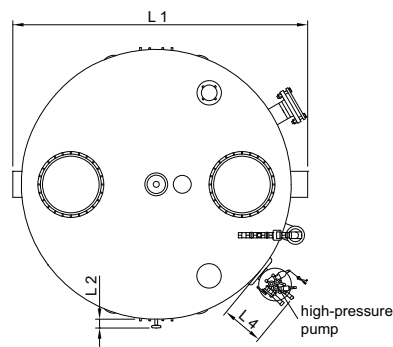
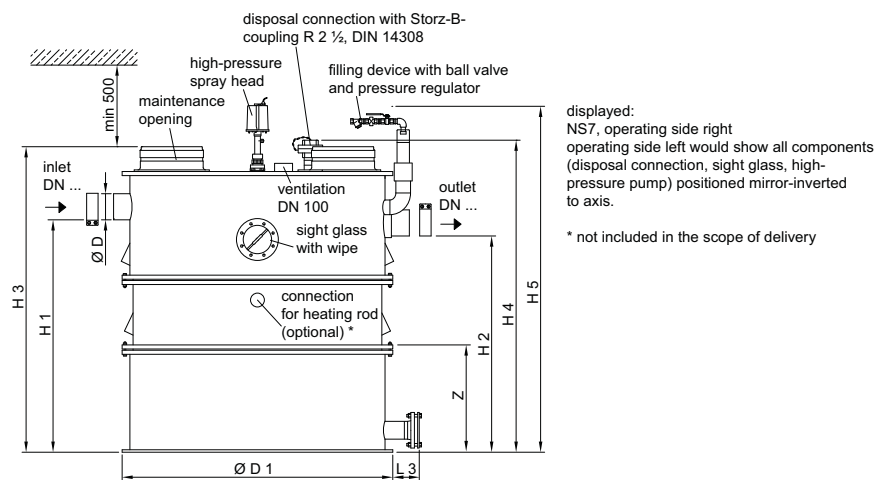
**ACO Free Standing Grease Separators**  
**ACO ROUND ECO-JET-R and HYDROJET-R Series**

**HYDROJET RS (Stage 2)**

- Manually controlled odour-free disposal and cleaning via direct suction and high pressure (175 bar) internal cleaning system
  - Upgradeable to Stage 3 and disposal pump
  - Supplied with viewing window and manually operated ball valve for clean water fill
- Accessories:** (see page 35)  
 Sampling station



NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No right hand	Part No left hand
		Sludge trap	Grease storage	Total	Dry	Full		
2	100	290	120	680	156	836	3502.73.41	3502.73.31
4	100	500	160	890	172	1062	3504.73.41	3504.73.31
7	150	830	400	2120	344	2464	3507.73.41	3507.73.31
10	150	1150	400	2450	355	2805	3510.73.41	3510.73.31
15	200	1950	800	3610	391	4001	3515.73.41	3515.73.31
20	200	2440	800	4070	392	4462	3520.73.41	3520.73.31



NS	Dimensions in mm											
	L1	L2	L3	L4	H1	H2	H3	H4	H5	D	D1	Z/n
2	1255	60	170	260	975	905	1320	1370	1520	110	1150	795/2
4	1255	60	170	260	1240	1170	1580	1630	1780	110	1150	820/2
7	1820	60	170	260	1430	1330	1880	1930	2080	160	1660	785/3
10	1820	60	170	260	1600	1500	2050	2100	2250	160	1660	785/3
15	2130	60	170	260	1765	1665	2200	2250	2400	200	1920	880/3
20	2130	60	170	260	1955	1855	2400	2450	2600	200	1920	880/3

Z = largest separate component (mm)  
 n = number of separable components

**ACO Free Standing Grease Separators**  
**ACO ROUND ECO-JET-R and HYDROJET-R Series**

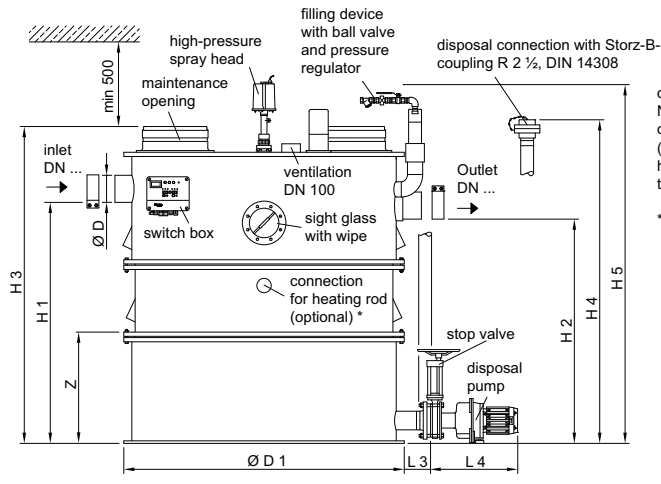
**HYDROJET RSE (Stage 2)**

- As HYDROJET RS with manually controlled disposal pump (required when vertical height exceeds 6 metres)
- Upgradeable to Stage 3

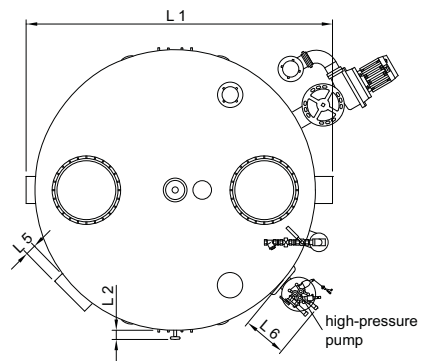
**Accessories:** (see page 35)  
 Sampling station



NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No right hand	Part No left hand
		Sludge trap	Grease storage	Total	Dry	Full		
2	100	290	120	680	189	869	3502.73.81	3502.73.71
4	100	500	160	890	205	1095	3504.73.81	3504.73.71
7	150	830	400	2120	377	2497	3507.73.81	3507.73.71
10	150	1150	400	2450	388	2838	3510.73.81	3510.73.71
15	200	1950	800	3610	424	4034	3515.73.81	3515.73.71
20	200	2440	800	4070	437	4507	3520.73.81	3520.73.71



displayed:  
 NS7, operating side right,  
 operating side left would show all component  
 (disposal connection, switch box, sight glass,  
 high-pressure pump) positioned mirror-inverted  
 to axis.  
 \* not included in the scope of delivery



NS	Dimensions in mm														
	L1	L2	L3	L4	L5	L6	H1	H2	H3	H4	H5	D	D1	Z/n	
2	1255	60	150	520	65	260	975	905	1320	1370	1520	110	1150	795/2	
4	1255	60	150	520	65	260	1240	1170	1580	1630	1780	110	1150	820/2	
7	1820	60	150	520	65	260	1430	1330	1880	1930	2080	160	1660	785/3	
10	1820	60	150	520	65	260	1600	1500	2050	2100	2250	160	1660	785/3	
15	2130	60	150	520	65	260	1765	1665	2200	2250	2400	200	1920	880/3	
20	2130	60	150	520	65	260	1955	1855	2400	2450	2600	200	1920	880/3	

Z = largest separate component (mm)  
 n = number of separable components



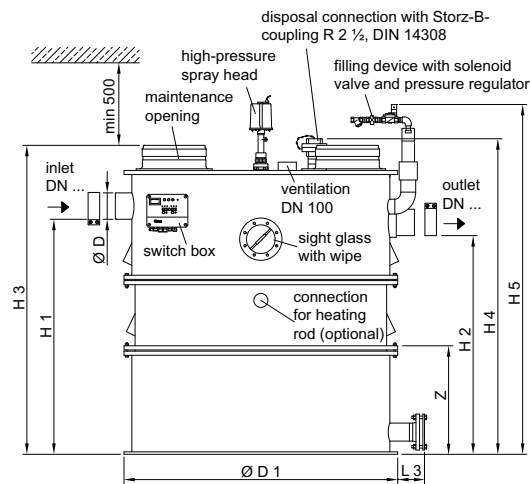
**ACO Free Standing Grease Separators**  
**ACO ROUND ECO-JET-R and HYDROJET-R Series**

**HYDROJET RA (Stage 3)**

- Programme controlled odour-free disposal and cleaning via direct suction and high pressure (175 bar) internal cleaning system
  - Supplied with viewing window and automatically operated solenoid valve for clean water fill
  - Upgradeable with disposal pump
- Accessories:** (see page 35)  
 Sampling station  
 Remote control

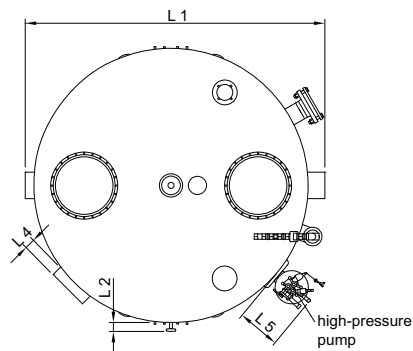


NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No right hand	Part No left hand
		Sludge trap	Grease storage	Total	Dry	Full		
2	100	290	120	680	165	845	3502.73.42	3502.73.32
4	100	500	160	890	181	1071	3504.73.42	3504.73.32
7	150	830	400	2120	353	2473	3507.73.42	3507.73.32
10	150	1150	400	2450	364	2814	3510.73.42	3510.73.32
15	200	1950	800	3610	401	4011	3515.73.42	3515.73.32
20	200	2440	800	4070	401	4471	3520.73.42	3520.73.32



displayed:  
 NS7, operating side right  
 operating side left would show all components (disposal connection, switch box, sight glass, high-pressure pump) positioned mirror-inverted to axis.

\* not included in the scope of delivery



NS	Dimensions in mm												
	L1	L2	L3	L4	L5	H1	H2	H3	H4	H5	D	D1	Z/n
2	1255	60	170	65	260	975	905	1320	1370	1520	110	1150	795/2
4	1255	60	170	65	260	1240	1170	1580	1630	1830	110	1150	820/2
7	1820	60	170	65	260	1430	1330	1880	1930	2130	160	1660	785/3
10	1820	60	170	65	260	1600	1500	2050	2100	2300	160	1660	785/3
15	2130	60	170	65	260	1765	1665	2200	2250	2450	200	1920	880/3
20	2130	60	170	65	260	1955	1855	2400	2450	2650	200	1920	880/3

Z = largest separate component (mm)  
 n = number of separable components

**ACO Free Standing Grease Separators**  
**ACO ROUND ECO-JET-R and HYDROJET-R Series**



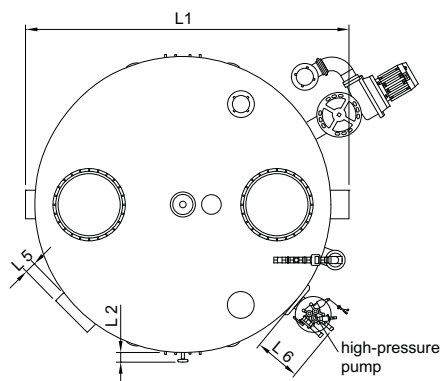
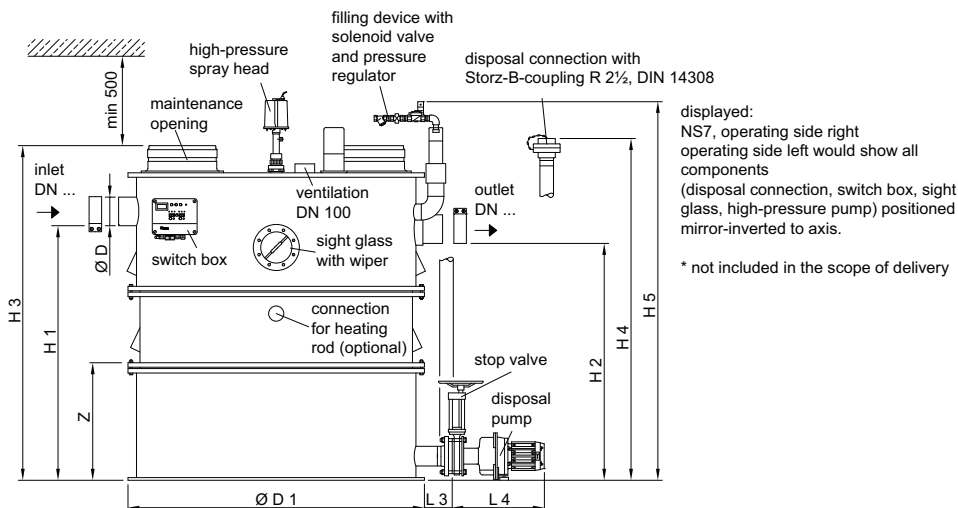
**HYDROJET RAE (Stage 3)**

- As HYDROJET RA with automatically actuated disposal pump (required when vertical height exceeds 6 metres)

**Accessories:** (see page 35)

- Sampling station
- Remote control

NS	Spigot Nominal Size DN	Capacities litres			Weight kg		Part No right hand	Part No left hand
		Sludge trap	Grease storage	Total	Dry	Full		
2	100	290	120	680	194	874	3502.73.82	3502.73.72
4	100	500	160	890	210	1100	3504.73.82	3504.73.72
7	150	830	400	2120	382	2502	3507.73.82	3507.73.72
10	150	1150	400	2450	393	2843	3510.73.82	3510.73.72
15	200	1950	800	3610	442	4052	3515.73.82	3515.73.72
20	200	2440	800	4070	443	4513	3520.73.82	3520.73.72



NS	Dimensions in mm													
	L1	L2	L3	L4	L5	L6	H1	H2	H3	H4	H5	D	D1	Z/n
2	1255	60	150	520	65	260	975	905	1320	1370	1570	110	1150	795/2
4	1255	60	150	520	65	260	1240	1170	1580	1630	1830	110	1150	820/2
7	1820	60	150	520	65	260	1430	1330	1880	1930	2130	160	1660	785/3
10	1820	60	150	520	65	260	1600	1500	2050	2100	2300	160	1660	785/3
15	2130	60	150	520	65	260	1765	1665	2200	2250	2450	200	1920	880/3
20	2130	60	150	520	65	260	1955	1855	2400	2450	2650	200	1920	880/3

Z = largest separate component (mm)  
n = number of separable components

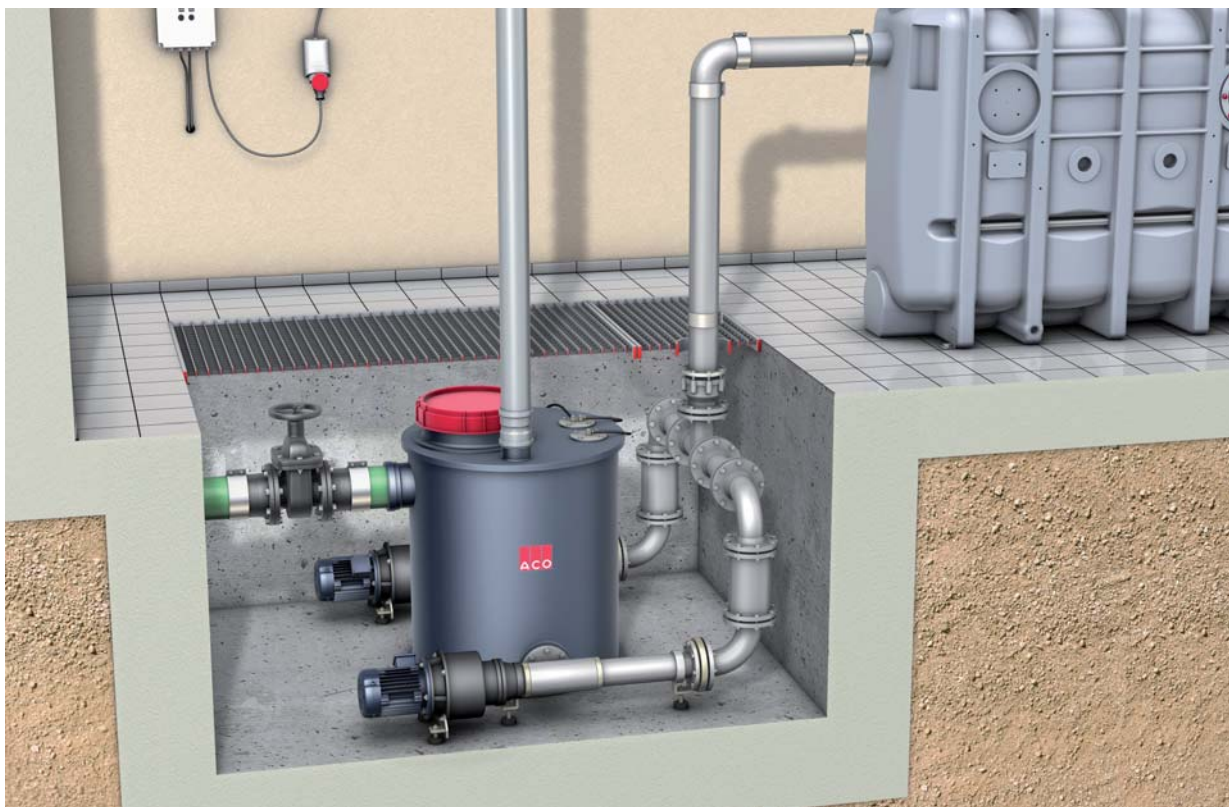
Accessories for Free Standing Grease Separators

Product Description	Model	Part Number
<b>Sampling station</b> Polyethene for installation in horizontal pipe runs	DN 100 for separators NS 1 to NS 4	3300.09.11
	DN 150 for separators NS 5.5 to NS 10	3300.09.21
	DN 200 for separators NS 15 and NS 20	3300.09.31
<b>Sampling station</b> Polyethene for installation in vertical pipe runs	DN 100 for separators NS 1 to NS 4	3300.10.11
	DN 150 for separators NS 5.5 to NS 10	3300.10.21
	DN 200 for separators NS 15 and NS 20	3300.10.31
<b>Coarse trap</b> Polyethene body with stainless steel basket for installation in horizontal pipe runs	DN 100 for separators NS 1 to NS 4	3667.00.04
	DN 150 for separators NS 5.5 to NS 10	3667.00.05
	DN 200 for separators NS 15 and NS 20	3667.00.06
<b>Viewing window</b> With window wiper, for checking thickness of grease layer	For free-standing polyethene separators	3300.11.10
<b>Manual filling unit</b> Separator filling unit for connection to clean water supply. Manually operated ball valve	ECO-JET O/R	3300.11.22
	ECO-JET G/GD	0153.06.76
<b>Remote control unit</b> IP54 rated remote control unit. Client to supply 7 x 10mm <sup>2</sup> cable	For grease separator types OA/RA	0150.02.86
	For grease separator types OAE/RAE	0150.03.40



## Special Solutions

### Application example - kitchen wastewater pipe invert below separator inlet



For some applications where the kitchen or food preparation area is located on the ground floor or in the basement of a building, it may not be possible to connect kitchen wastewater to a gravity separator in the conventional manner because the inlet to the separator is above the wastewater pipe from the kitchen.

For this application, dedicated plant is required to pump the wastewater into the separator. Conventional lifting stations are not applicable for this up-stream pumping application because the pump action will create turbulence of the wastewater fluid and create emulsions that will be difficult to separate efficiently.

The solution is to fit a positive displacement pumping station to deliver the wastewater into the separator.

ACO positive displacement pumping stations are configured into an up-stream buffer tank manufactured from polyethylene or stainless steel that collects the incoming wastewater from the kitchen.

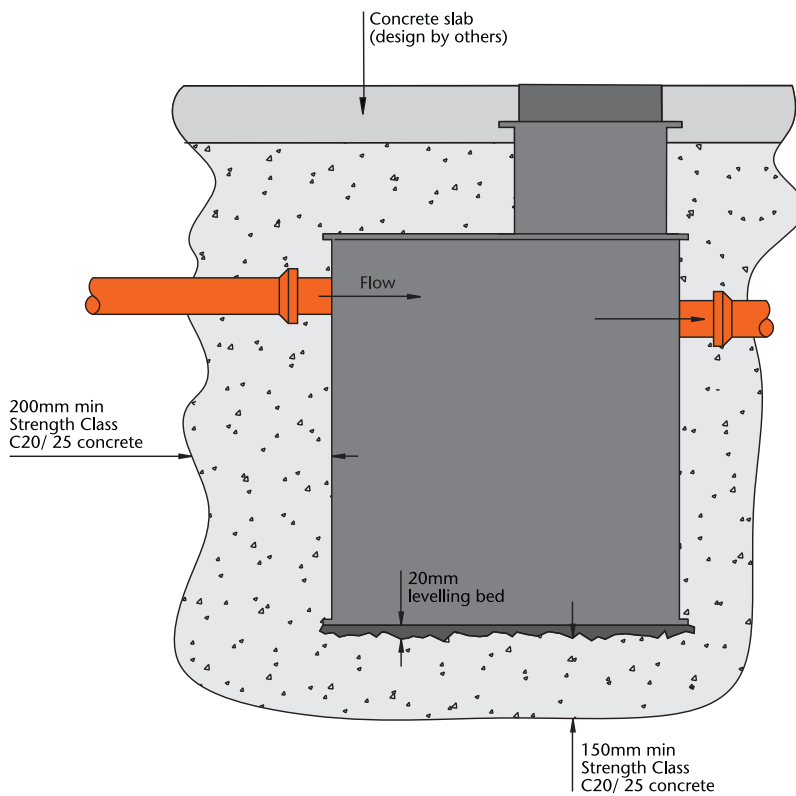
A pneumatic pressure switch installed in the buffer tank is triggered when the wastewater reaches a pre-determined level and activates the positive displacement pump to deliver the wastewater to the separator without detrimental turbulence. The pumps used by ACO for this application are not affected by grease.

All up-stream positive displacement pumping stations are custom made for each project. Contact the ACO Building Drainage Helpline on 01462 816666 for further assistance.

## Installation - Below Ground Separators

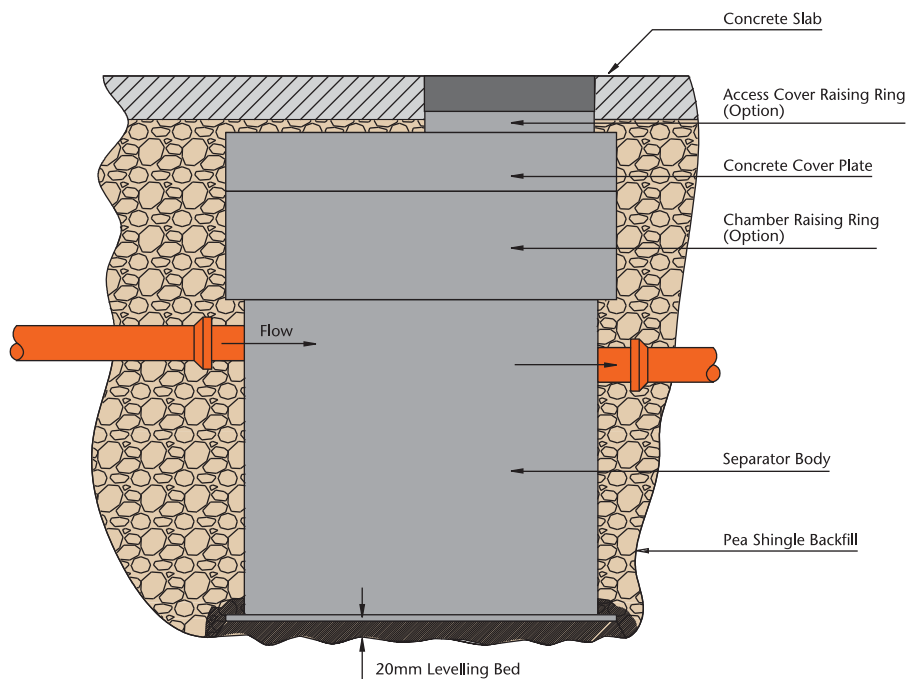
### ACO Liputec

1. Ensure ground conditions are suitable. Engineering advice may be required.
2. Determine falls and ventilation requirements as per BS EN 1825 Part 2 if appropriate to the separator. Assess pipe levels and lay a concrete bed (Strength Class C20/25 min) minimum 150mm thick to level. Allow for a mortar levelling bed 15 to 20mm thick.
3. Lower the separator body on the mortar bed and make inlet and outlet pipe connections according to flow direction of separator.
4. Fill the separator with water to help resist floatation during concrete pour and test pipe joints.
5. Pour a minimum of 200mm thick (Strength Class C20/25 min) concrete around body of separator. Ensure the body cannot float during the concrete pour. A two-stage concrete pour sequence may help control buoyancy.
6. The top of the access cover must be positioned level with the finished slab or a maximum of 3mm below it. Trim the HDPE raising piece so that the access cover does not bear directly on the raising piece as the separator body is not a load bearing element.
7. A reinforced concrete slab (designed by others) must be provided to suit ground and loading conditions. Pour slab to engineers' detail.
8. Clean the rubber seal and fix the access cover with the screws provided.



## Installation - Below Ground Separators

### ACO ECO-FPI



### High Water Table Baseplate Reinforcement

For installations where the water table is at least one metre above the base of the separator, optional integrated baseplate reinforcement may be required to withstand the hydrostatic pressure.

Baseplate reinforcement is only available as a factory fitted option.

### Use of fine and coarse adjustment rings.

Access cover raising rings are not supplied with seals. Interconnecting joints require bed of mortar during assembly for airtight operation. For stability during installation, a maximum of three access cover raising rings should be used. Additional invert depths can be achieved with combinations of course raising rings.

### Installation

1. Ensure ground conditions are suitable. Engineering advice may be required.
2. Determine falls and ventilation requirements as per BS EN 1825 Part 2 if appropriate to the separator. Assess pipe levels and lay a lean mix mortar levelling bed 15 to 20mm thick.
3. Lower the separator body on the mortar bed and make inlet and outlet pipe connections according to flow direction of separator.
4. Fill the separator body with water to test pipe joints and to assist stabilisation.
5. Lower chamber raising ring(s) on to separator body if required, ensuring seals are free from detritus.
6. Lower concrete cover plate in position ensuring seal is free from detritus.
7. Fit access cover raising rings if required using a suitable mortar grout between joints.
8. Lower access cover into position ensuring the top is level with the finished slab or a maximum of 3mm below it and grout.
9. Backfill with 10mm pea shingle or to engineers detail to slab level.
10. Pour slab to engineers' detail.
11. Clean the rubber seal and fix the access cover with the screws provided.

## Installation - Free-Standing Separators

### General notes for all free-standing separators

In the absence of prevailing Local Authority regulations, refer to BS EN 1825 Part 2: Grease Separators - Selection of Nominal Size, Installation, Operation and Maintenance for detailed description of installation requirements.

### Place of installation

Separators should be located as close to the FOG source as possible, but should not be located in unventilated rooms, car parks, or storage areas. To prevent odour nuisance, separators should not be located close to habitable buildings, especially to opening windows and air intakes.

Protect the separator and inlet/outlet pipes from frost and ensure adequate space for maintenance and service access.

**Note:** The Separator should be placed out of direct sunlight.

### Drainage to and from the separator

Grease separators are designed to operate with a free-running outlet without backflow.

Separators operating below the backflow/flood level (usually the street level) should be fitted with an appropriate lifting station.

To prevent the build up of fats and grease in pipes upstream of the separator, the inlet pipe should be laid at a minimum gradient of 2% to the separator. Additional measures such as thermal insulation and trace heating may also be required.

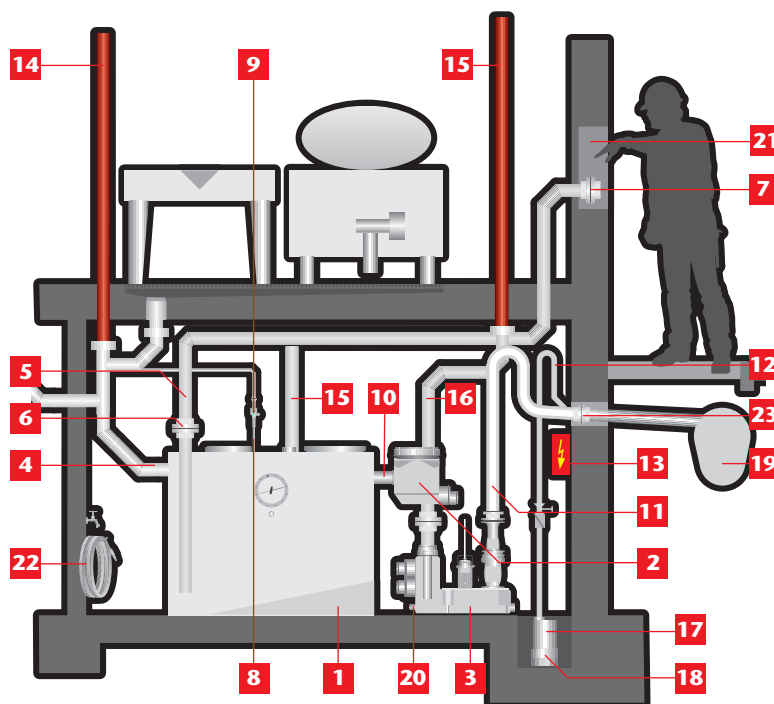
Transition from vertical to horizontal inlet pipes may be achieved using two 45° bends between which a length of pipe, at least 250mm long, is placed. This is followed by a stilling section that has a length (in mm) equal to at least 10 times the nominal size of the inlet supply pipe. For example, an inlet pipe size of 110mm, the stilling section should be at least 1100mm long before connection to the separator inlet.

### Ventilation

Upstream and downstream pipe connections to the separator must be adequately ventilated. Provide the discharge pipe with a stack vent and provide a branch vent to all upstream branch pipes greater than 5 metres long.

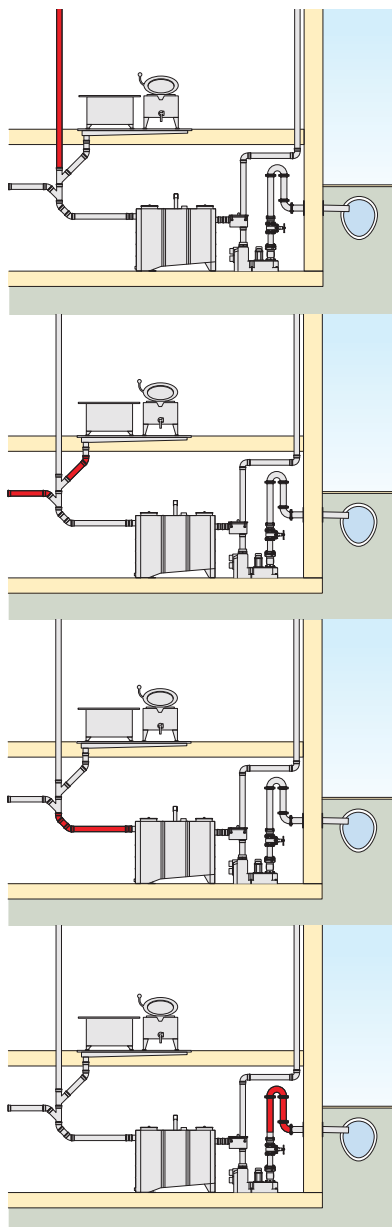
### Typical installation schematic

HYDROJET system installed in the basement of a catering establishment. Schematic depicts ancillary equipment and fittings supplied by others



- 1 Grease separator with direct suction device
- 2 Sampling station
- 3 Lifting station
- 4 Separator inlet
- 5 Direct suction pipe/connections
- 6 Bauer 3" connector
- 7 Bauer 3" connector for external servicing
- 8 Clean water fill supply pipe
- 9 Clean water shut-off valve
- 10 Separator outlet/lifting station inlet
- 11 Lifting plant outlet
- 12 Backflow loop
- 13 Lifting plant controller
- 14 Inlet ventilation
- 15 Separator ventilation (if required)
- 16 Lifting plant ventilation
- 17 Basement drainage pump
- 18 Basement sump
- 19 Foul sewer
- 20 Manual diaphragm pump connection
- 21 In-situ wall box for external suction connection
- 22 Flexible hose for cleaning purposes
- 23 Wall seal/bushing

## Installation - Free-Standing Separators



### Venting

- Inlet and outlet pipes must be ventilated.
- Vent stack should pass through the roof. Connecting pipes with lengths exceeding 5m require dedicated vent stacks.
- Inlet pipes longer than 10m without intermediate vented connection pipes must be vented at the separator inlet point.

### Preventing upstream grease build-up

- Inlet pipes passing through unheated rooms must be thermally insulated.
- Install trace heating on inlet pipes at risk of freezing, i.e. underground car parks.
- No additional measures required in heated rooms or where inlet pipes run in frost-free rooms.

### Inlet stabilisation

- Transition to horizontal pipe run into the separator provided with two 45° pipe bends with an intermediate section at least 250mm long. Upstream connection to the separator then via a stilling section whose length in mm is at least x10 the nominal pipe size connection, i.e. DN 100 pipe:  $100 \times 10 = 1000\text{mm}$  stilling section.
- Inlet pipe must have a minimum gradient of 2% (1:50).

### Backflow loop

- The invert of the backflow loop must be positioned higher than the backflow level.

### Lifting stations

- A variety of dual pumped lifting stations are available for all applications where the separator is below the main sewer connection. Contact the ACO Building Drainage Helpline on 01462 816666 for further details.

### Useful references:

BS EN 1825 Grease separators - Part 2:

Selection of nominal size, installation, operation and maintenance.

BS EN 12056 Gravity drainage systems inside buildings - Part 4: Wastewater lifting plants - layout and calculation.



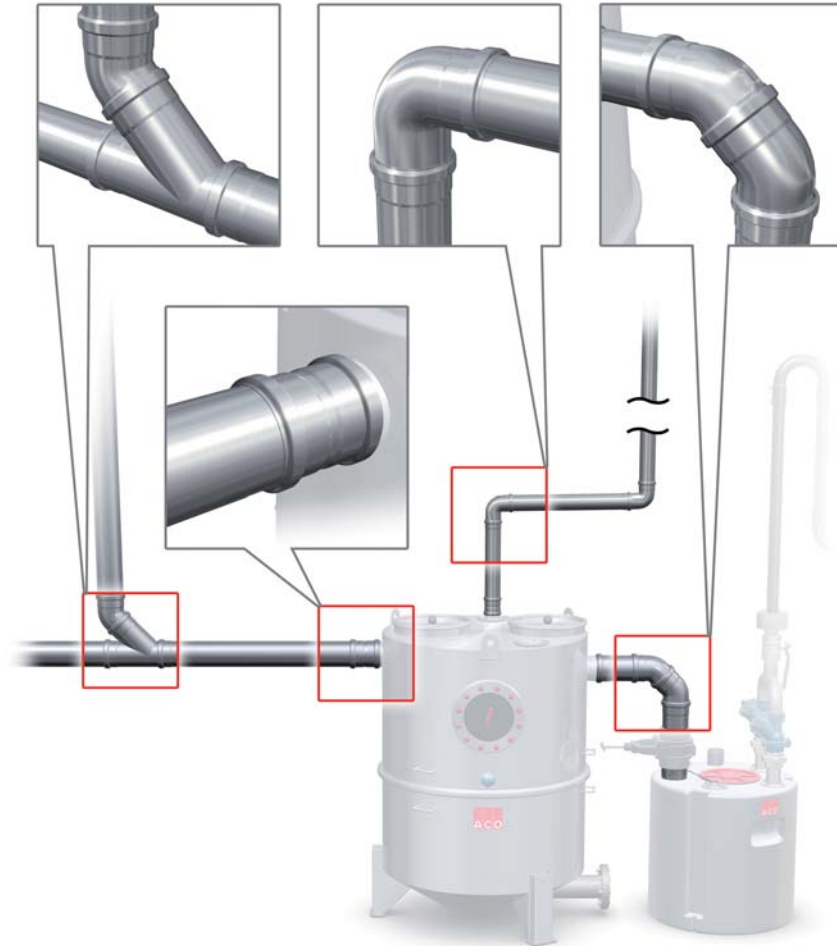
## ACO Pipe® Systems for Building Services

ACO PIPE® stainless steel pipe systems  
ACO PIPE® stainless steel push-fit pipe  
system is ideal for professional connection to  
grease separator systems.

Contact the ACO Building Drainage Helpline  
on 01462 816666 for further assistance.

### Benefits

- Highly corrosion resistant
- Durable
- Lightweight
- Wide range of pipe sizes and fittings



## Operation, Maintenance and Accessories

### General Information

All gravity grease separators require periodic maintenance to remove the fats, oils and grease (FOGs) together with sludge deposits that have been separated from the wastewater. Such maintenance is usually undertaken by a specialist waste contractor.



The frequency of maintenance will depend on the volume of FOGs and the volume of sludge that is generated in the food production process. Sludge volume can be significantly reduced by effective use of strainers on sink outlets.

Note. Only wastewater containing organic FOGs shall be discharged to a grease separator. Effluent from the following should NOT be connected to the separator:

- Toilets
- Macerators
- Rainwater
- Light liquids e.g. grease or oil of mineral origin

Macerators have the effect of artificially consuming the sludge capacity of the separator and thereby shortening the service interval to the separator. Additionally, under certain conditions, the process of maceration can emulsify waste products and prevent them from separating via the natural gravity process, thereby reducing the separation efficiency of the unit.

### Start Up and System Characterisation

Before using the separator for the first time, fill with clean water. When first commissioned, it is recommended that the separator is emptied and cleaned/refilled ideally every 2 weeks, or on a monthly basis in order to characterise the system to assess volumes of separated matter for that installation.

As soon as the separator is emptied, fill with clean water to allow the separation process to continue immediately. The waste disposal contractor should be able to recommend the optimum servicing frequency.

Thick encrustations of FOG residues can form within the separator body and may therefore require vigorous cleaning methodologies to remove them during the cleaning process.

### Disposal

Sludge trap and separator must be completely emptied and cleaned at least once a month, preferably every two weeks. The separators must subsequently be refilled with water (such as drinking water, process water, treated water from the grease separator), which corresponds with the local inlet regulations.

### Operating log

An operating log should be maintained for each grease separator. The following should be entered in the log: Completed inspections, maintenance, checks and disposals. The operating logs should be stored by the operator and should be presented to the locally responsible authority upon request.

### Maintenance

The separator must be maintained annually by a competent person according to the manufacturer's specifications.





## ACO Technologies plc

- ACO Water Management  
Civils + Infrastructure  
Urban + Landscape
- ACO Building Drainage
- ACO Technic
- ACO Sport
- ACO Wildlife

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### The ACO Group: A strong family you can depend on.

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