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THORNFIELD 001 LIMITED

BARNES FARM ANAEROBIC DIGESTION FACILITY

OPERATING TECHNIQUES ADDENDUM

NOVEMBER 2022

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THORNFIELD 001 LIMITED

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OPERATING TECHNIQUES ADDENDUM

NOVEMBER 2022

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1 INTRODUCTION

- 1.1.1 Wardell Armstrong LLP has been commissioned by Thornfield 001 Ltd (“the operator”) to prepare an addendum to its Operating Techniques for its Barnes Farm Anaerobic Digestion Plant in Rowton, Telford, to support its application to vary the environmental permit (EPR/VP3506PE).
- 1.1.2 The facility treats up to 90,000 tonnes of biodegradable wastes and is permitted as an installation falling under Section 5.4 (1)(b)(i) activity under the environmental Permitted Regulations. The site is also permitted for a number of directly associated activities (DAAs) which support the process. The site generates biomethane (gas) for the National Grid and produces a PAS 110 compliant digestate, which is sold for land improvement applications.
- 1.1.3 The operator proposes to accept an additional waste code for glycerol, which is already permitted for acceptance under EWC 07 01 08* *glycerol*. Section 2 provides further details of the proposed change.
- 1.1.4 The variation also includes addition of a centrifuge oil separator to the process, which will separate oil from the biodegradable waste prior to pasteurisation. The collected oil will be sent for recycling into bio-fuel or similar. Section 3 provides a description of the process and how emissions will be controlled during processing, and section 4 sets out environmental controls for the storage of the bio-oils.
- 1.1.5 Additionally, as set out in section 5, the two permitted CHP biogas engines will be replaced with a single natural gas CHP engine, powered by upgraded gas sourced directly from the plant before it enters the National Grid.
- 1.1.6 This permit application has been prepared to demonstrate that the new activities will be operated in accordance with best available techniques (BAT), with stringent environmental protection measures in place to prevent risk to the environment and human health.

2 PERMITTED WASTE TYPES

- 2.1.1 The operator proposes to make an amendment to Table S2.2 ‘*Permitted waste types and quantities for anaerobic digestion*’ of its permit, to allow for the acceptance of an additional waste type.

- 2.1.2 It is proposed that glycerol falling under EWC 19 02 10 *combustible wastes other than those mentioned in 19 02 08 and 19 02 09* will be accepted on the site. This is considered to be a low-risk waste, and is listed in SR2021 Standard Rules No 6 'Anaerobic digestion facility, including use of the resultant biogas – installations'.
- 2.1.3 As in Standard Rules SR2021 No 6, it is proposed that glycerol may be accepted under the following description:
- EWC 19 02 10 *Glycerol not designated as hazardous – excludes 19 02 08.*
- 2.1.4 The site is already permitted to accept glycerol waste under waste code EWC 07 01 08* *glycerol waste from bio-diesel manufacture from non-waste vegetable oils only*, therefore the site already operates, and will continue to operate, the appropriate waste acceptance procedures, treatments and environmental protection measures for the acceptance of the additional waste type.

3 CENTRIFUGE OIL SEPERATOR PROCESS

3.1 Waste Treatment Description

- 3.1.1 Bio-oils recovered from plant matter and animal fats can be processed into useful products such as bio-fuels. The new waste treatment process at Thornfield 001 will be used to extract these oils for recycling at a permitted third-party facility.
- 3.1.2 The oils will be extracted prior to the pasteurisation process. Waste will be fed from the heat exchanger feed line to the oil-separation centrifuge. The higher temperatures reduce the viscosity of the oils and aid extraction. The system operates at between 70°C and 95°C. This is in line with the existing pasteurisation process which requires waste to be treated at a minimum temperature of 70°C in order to destroy pathogens that may be present in the waste.
- 3.1.3 The oils will be extracted using an oil recovery system installed by Alfa Laval. This will use centrifugal forces to separate the lighter oils from the heavier water and remaining food waste. The extracted oil will classify as an animal by-product falling under Category 3 of the Animal By-products Regulations (ABPR).
- 3.1.4 The food waste will be fed into the system via an enclosed pipeline, entering the decanter centrifuge through a stationary pipe. The centrifuge consists of a horizontal cylinder (the bowl) with an internal screw conveyor. These elements rotate at different speeds. The bowl has a maximum speed of 3,100 revolutions per minute

(rpm) and the speed can be adjusted to achieve the best separation of the oils and other waste.

- 3.1.5 Solids should be restricted to less than 12mm in diameter with an optimal range of 8mm to 10mm. This is in line with the requirements of the Animal By-Products Regulations. The incoming waste will be macerated to reach this particle size prior to being fed into the heat exchanger feed line, in order to achieve effective treatment during oil separation and pasteurisation.
- 3.1.6 As waste passes through the system the centrifugal force enhances the normally expected settlement with solid food waste settling on the inner wall and oils floating to the surface of the water in the system. The oils will flow off over an adjustable plate dam into the casing, whilst the screw auger will collect the solids and feed them to the de-oiled slurry outlet.
- 3.1.7 The solids and water will be recombined at the outlet and returned to the pre-pasteurisation circuit passing back via the pasteuriser before being batch fed to the digester in the normal way for treatment and gas recovery.
- 3.1.8 The oils leave the centrifuge via a rotary filter, which removes any floating particles, allowing them to be fed back to the AD plant. The clarified oil will be collected in the oil tank, awaiting collection for recycling at a permitted site.
- 3.1.9 Appendix 1 provides further detail of the centrifuge and associated equipment.
- 3.2 Control of Emissions to Water from the Centrifuge
 - 3.2.1 The centrifuge is supplied on a skid which includes a galvanised steel drip tray with a mesh top. Should there be any leakage or spillage this will run through the mesh and be collected in the drip tray. The drip tray is designed to fall to a 50mm drain point which will convey any spilled waste to back into the existing site drainage system, which feeds back into the start of the AD process.
 - 3.2.2 The centrifuge will be constructed of steel with tungsten carbide tiles forming a liner to guard against corrosion. All connections will be checked before the system is commissioned to ensure they are watertight.
 - 3.2.3 The centrifuge will be added to the Preventative Maintenance Programme for the site and will be inspected on a regular basis, with any necessary servicing and maintenance being carried out in accordance with Alfa Laval's recommendations.

3.2.4 All waste is therefore expected to be fully contained and there should be no emissions to land or water.

3.3 Control of Emissions to Air from the Centrifuge

3.3.1 Treatment of food waste has the potential to allow the release of volatile compounds to air. To manage this air will exit the fully enclosed system via vent connected to an odour control system.

3.3.2 The odour control system will consist of a carbon filter to ensure that odorous compounds are captured before air from the system is vented to atmosphere. These filters have been successfully used elsewhere on site and by other companies within the BioteCH4 group for several years, proving effective at controlling odour.

4 STORAGE OF BIO-OIL

4.1.1 Oil from the process will be stored in a 40,000 litre fully bunded tank pending transfer to the recycling site. The tank will have a working capacity of 40,000 litres and maximum capacity of 45,000 litres and will be insulated and clad to protect it during the winter months.

4.1.2 Construction of the tank will be as shown in the Appendix 2 “40,000 litre Stainless Steel Oil Storage Tank” provided by Elite Engineering.

4.1.3 The tank will be located within the existing site bund. This large concrete bund has been constructed to contain any spillage in the event of failure of one of the digesters and is more than adequate to contain any leakage from the bio-oil tank.

4.1.4 The tank has a breathing vent to manage the pressure during filling and emptying. To guard against odorous emissions to air this is vented via a carbon filter. All carbon filters will be checked monthly to ensure they are functioning correctly and the carbon will be replaced as required.

4.1.5 Oil will be collected by road tanker. Tankers will be filled in accordance with the written procedures for filling tankers that already form part of the Environmental Management System for the site.

5 CHP NATURAL GAS

5.1 CHP Gas Engines

5.1.1 The site is currently permitted to operate two biogas spark ignition engine CHP units, with a combined rated thermal input of 5.77MWth. However, the operator now proposed to operate a single natural gas fired engine with a rated thermal input of 2.4MWth .

5.1.2 Use of natural gas has the advantage of resulting in lower emissions. Unlike biogas, natural gas does not produce sulphur dioxide during combustion. It is a clean fuel with very low emissions compared to other fuels.

5.1.3 The CHP will be a new unit and will comply with the emission limit values for new gas engines as set out Annex II of the Medium Combustion Plant Directive. The engine supplier has confirmed that the sampling points from the engines conform with the Environment Agency's TGN M5 guidance, which is considered adequate.

5.1.4 Natural gas will be sourced directly from the site. Following treatment in the biogas upgrading plant, natural gas will be spurred off before entry to the National Grid to fuel the CHP via a pressure reduction unit.

5.2 Control of Emissions to Air

5.2.1 The gas engine will be operated in accordance with the Medium Combustion Plant Directive (MCPD) using best available techniques (BAT). Accordingly, the new engine will meet the emission limit for NO_x of 95mg/m³ when measurements are corrected to standard temperature and pressure and 15% oxygen.

5.2.2 Emissions from the natural gas engines will be monitored on commissioning and then once every three years to demonstrate that these standards are being met.

5.3 Monitoring of Emissions to Air

5.3.1 Emissions to air will continue to be monitored in accordance with the permit conditions. It is intended that emissions from the CHP will be monitored at least once every three years to monitor emissions of oxides of nitrogen in accordance with the Medium Combustion Plant Directive.

5.3.2 The Environment Agency released new guidance on monitoring emissions to air in the summer of 2022. For many installations this requires that monitoring points accord with BS EN 15259. This is particularly important in relation to monitoring of particulates.

- 5.3.3 A lesser standard is permitted for low risk MCP which is subject to the standard rules and similar plant. The engine supplier has confirmed that provision for sampling is in accordance with TGN M5, which maps across to this guidance for low risk MCP.
- 5.3.4 Although the plant is not eligible for standard rules, because it is used for production of electricity, the specification of the plant and associated emissions are expected to be similar. It therefore seems appropriate that this guidance should apply in this case.
- 5.3.5 Because the plant will burn natural gas, emissions of particulates will not be produced and the specifics around monitoring emissions of particulates do not need to be taken into consideration.
- 5.4 Air Quality
- 5.4.1 No Air Quality Assessment has been provided with this application as the site has been previously permitted for the use of 2 CHP units utilising biogas. A full air quality assessment was provided at the time of the original application and demonstrated that there would be no impact on air quality from the use of these two gas engines.
- 5.4.2 Effectively the variation will mean that, not only has the number of engines reduced, but the fuel in the remaining gas engine has been replaced with a different, cleaner fuel. The emissions to air are therefore expected to be lower than those previously approved and permitted by the Environment Agency.

6 SITE MANAGEMENT

- 6.1.1 The site will continue to operate an Environmental Management System, developed in accordance with the standard set out in the Environment Agency Guidance *Develop a management system: environmental permits*.
- 6.1.2 Written procedures will be reviewed ensure alignment with the methods set out in this Operating Techniques document and relevant legislation and EA guidance, including measures taken to minimise the risk of environmental harm from site activities.
- 6.1.3 Full training will be provided to site staff ensuring that they are familiar with the requirements of the environmental permit, their responsibilities and any written procedures relevant to their role.

APPENDICES

APPENDIX 1

Alfa Laval Proposal

Alfa Laval Ltd Quotation Ref No: QU-2111-FWD-0204804

Proposal for Food Waste Oil Recovery System

BioteCH4 Limited,
The Control Tower,
Hemswell Cliff Industrial Estate,
Gainsborough,
DN21 5TU





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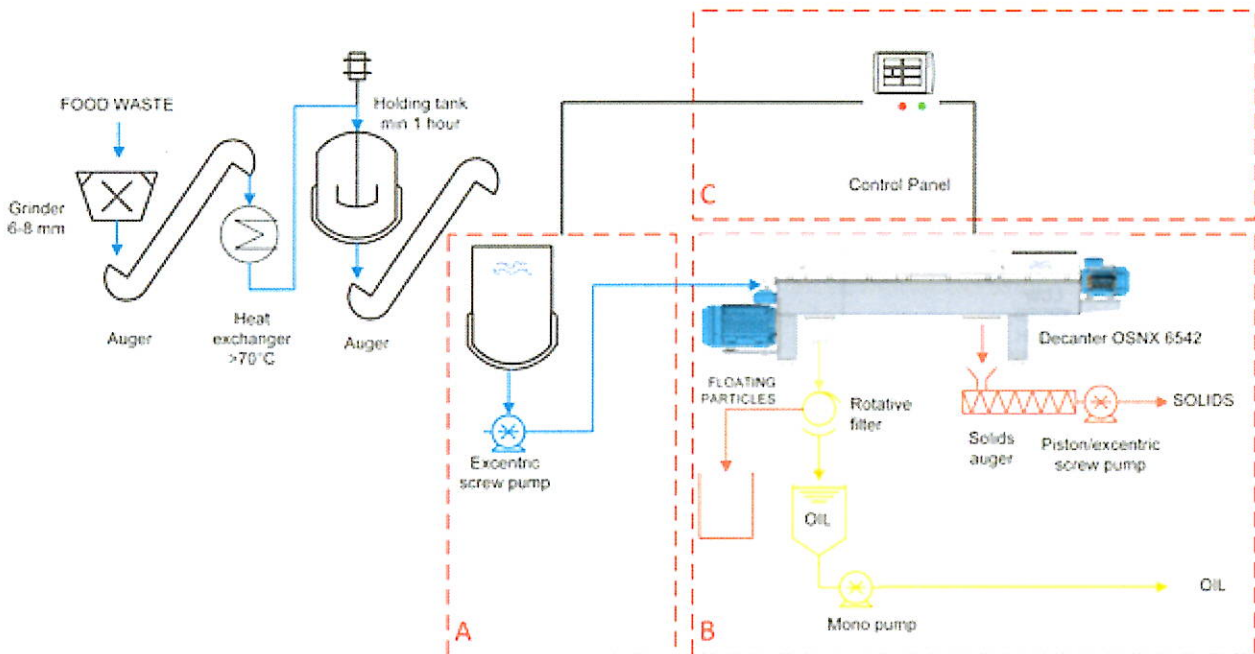
1. Executive summary

The proposal scope is for the design delivery and commissioning of four pre-assembled skids to recover waste oil from food waste built around Alfa Laval’s OSNX6542 decanter centrifuge (specifically designed for extraction of fats and oils), also including feed and discharge pumps, and an “on board” control panel together with all “on board” interconnecting cabling and pipework. In addition Alfa Laval will re-use the existing equipment delivered to Hemswell site to assemble a fifth “spare” skid, and will also deliver one spare rotating assembly for the centrifuge, comprising bowl, scroll, gearbox and main bearings.

The OSNX decanter centrifuge design ensures separation of the incoming food waste into two phases – oil (LLP – light liquid phase) and de-oiled slurry (combined HLP – heavy liquid phase + solids). The food waste is fed into the bowl through a stationary inlet tube and is then smoothly accelerated. Separation takes place in a horizontal cylindrical bowl equipped with an internal screw conveyor, which is fitted with tungsten carbide tiles for optimum erosion protection. Centrifugal force causes the oil to accumulate at the liquid surface in the decanter, while the solids settle on the inner wall of the bowl surrounded by the water separated out of the feed stream.

The conveyor rotates at a slightly different speed than the bowl, and conveys the solids to the outlet in the conical end. Separation takes place along the entire length of the cylindrical part of the bowl. Clarified oil/fat is discharged through the large end of the bowl by flowing over adjustable plate dams into the casing.

Max speed of the bowl is 3,100 rpm and is adjustable to ensure the best G force required for optimized balance between liquid clarity and solids discharge capacity;



Alfa Laval food waste oil recovery skids

Quotation No: QU-2111-FWD-0204804



Skid Description

Alfa Laval 'Food Waste Deoiling Skid' will receive the food waste slurry, with solids ground to pieces not larger than 12 mm (optimal is 8-10 mm), heated to 70°C. A progressive cavity pump equipped with a VFD will feed the decanter centrifuge. The feed to the centrifuge will be via a 3-way manifold to allow fast transition between production and flushing.

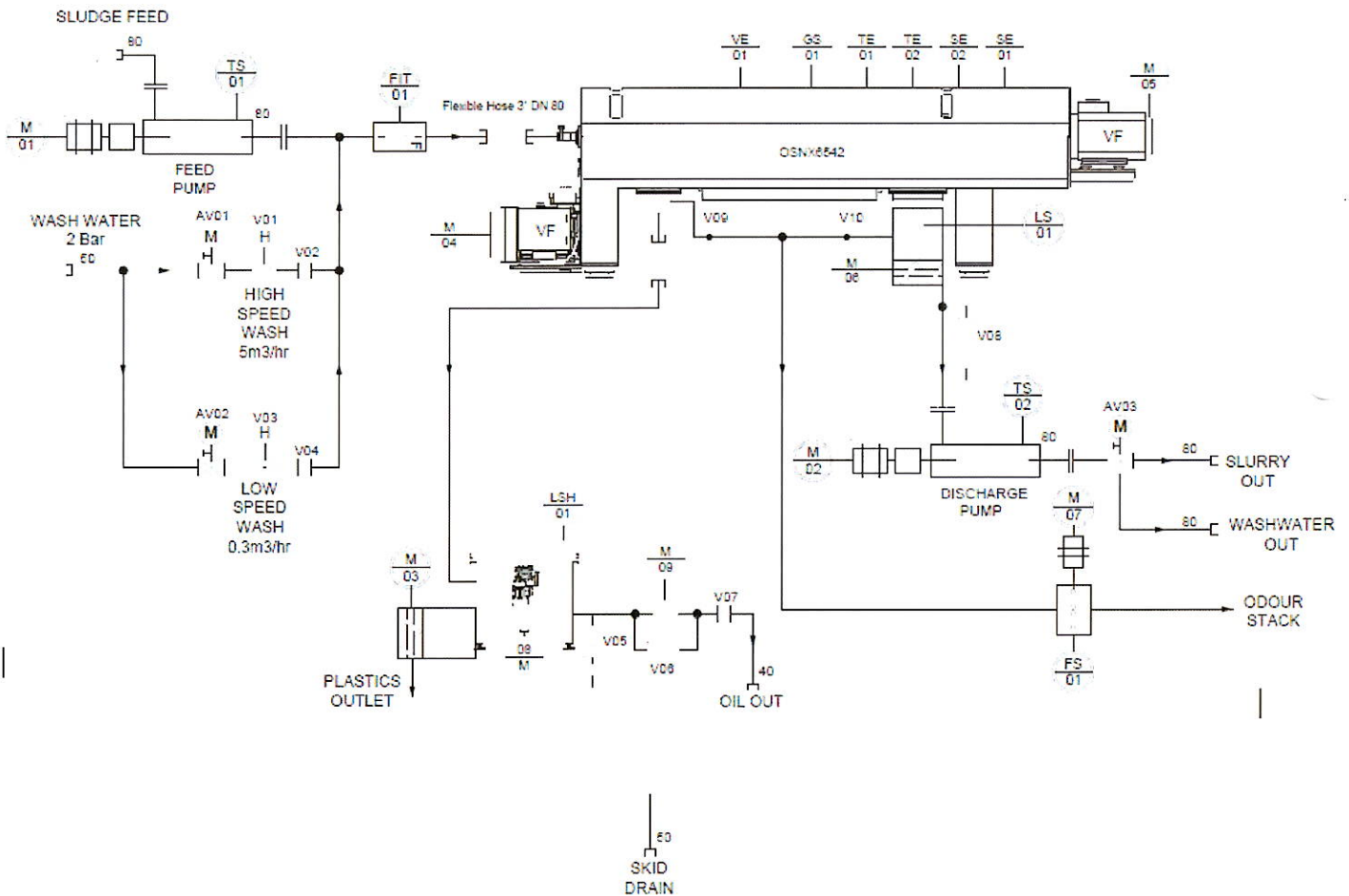
The centrifuge will have two outlets: oil and de-oiled slurry. De-oiled slurry will be collected in a tank and pumped forward by a progressive cavity discharge pump. The oil will pass through a rotary strainer and separated from floating particles before being pumped to a storage tank.

Air will be drawn from the centrifuge casing via an onboard odour extraction unit to minimise escape of odours.

The module is fully operated from a Control Panel and will need minimum supervision (see below in Automation description).

Battery limits

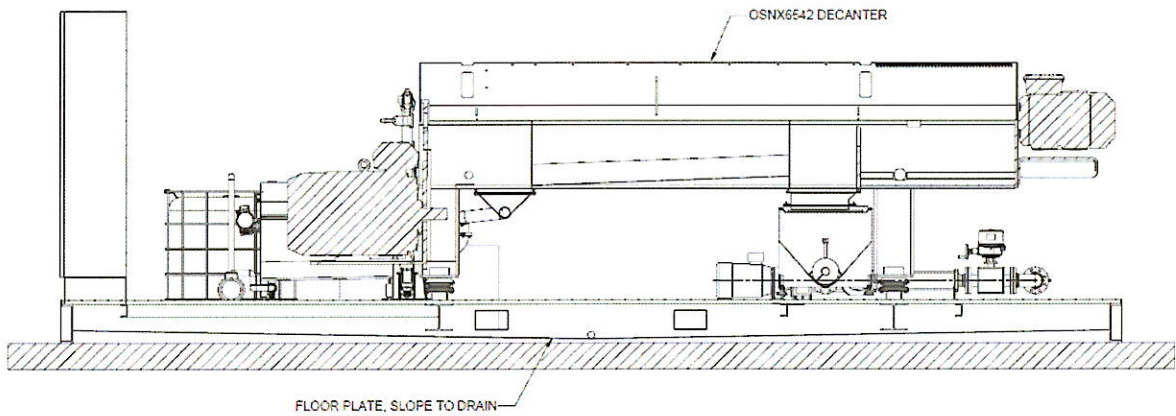
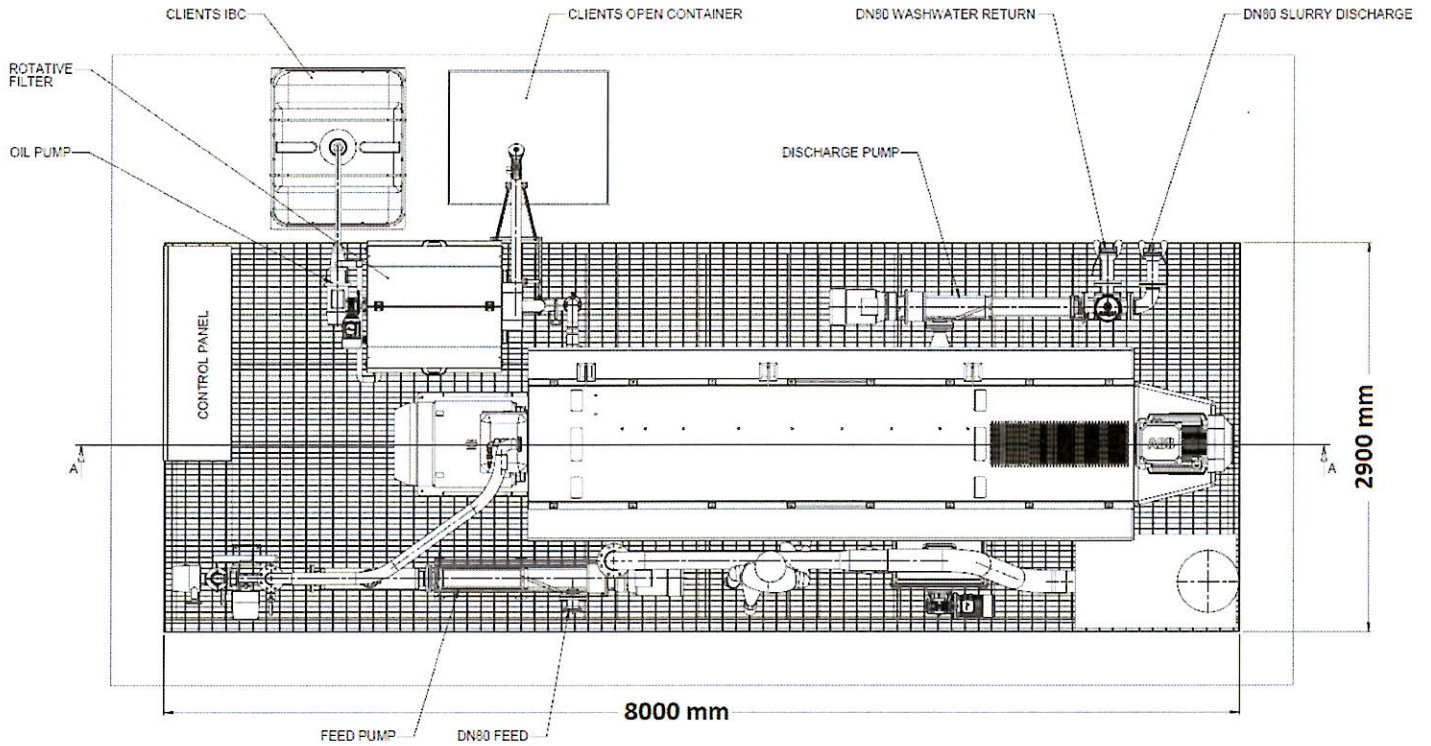
The P&ID below indicates the terminal points of the system/equipment to be supplied by Alfa Laval.





Skid Mechanical Arrangement

The equipment supplied will be pre-assembled and mounted on a galvanised steel skid that will include a drip tray to drain, and galvanised steel mesh flooring – see below.





2. Design basis

2.1. Capacities

The decanter OSNX6542 is capable of handling 10 to 16 t/h food waste slurry ground and heated for minimum 1 hour @ >70°C;

Feed temperature:	min. 70°C, max. 95°C
Inlet oil/fat content:	5 - 15 Vol.% free available oil/fat
Inlet solids content:	15 - 55 Vol.% suspended solids (SS)
Particles size:	max. 10 mm, optimal 8 mm

Feed to be expected to be free of emulsion.

2.2. Consumption data

The table below provides **indicative** consumption values for the proposed 'Food Waste De-oiling skid' (for the equipment indicated in the paragraph 3.1 of this document)

Ref	Equipment	Motor	Q	Voltage (V)	Phase	Power unit (kW)	Power total (kW)	C factor (%)	Power consumption (kW)	Start up
Progressive cavity pump NM650										
M01	Progressive cavity pump	Generator	2	400 50 Hz	3 Ph	5.5	5.5	70%	3.9	VFD
M02	Progressive cavity pump	Fan	2	230 50 Hz	1 Ph	0.1	0.1	60%	0.1	Direct
Decanter OSNX6542										
M01	Decanter	Main Drive	1	400 50 Hz	3 Ph	75	75	70%	52.5	VFD
M02	Decanter	Back Drive	1	400 50 Hz	3 Ph	37	37	20%	7.4	VFD
Solids collecting tank										
M01	Solids collecting tank	Auger	1	400 50 Hz	3 Ph	1.1	1.1	60%	0.7	Direct
Rotative Filter										
M01	Rotative Filter	Rotative Filter	1	400 50 Hz	3 Ph	0.37	0.37	70%	0.3	Direct
M02	Oil Pump	Oil Pump	1	400 50 Hz	3 Ph	1.1	1.1	50%	0.6	Direct
TOTAL						125.6			69.5	

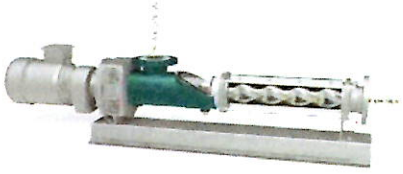
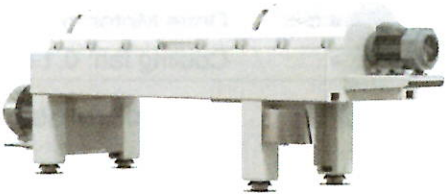
Total installed power ~ 126 kW, total consumed power ~ 70 kw

- Process water is assumed to contain max. 100 mg/l chloride ions (water < 80°C) or max. 8 mg/l chloride ions (water > 80°C) to avoid corrosion of the stainless steel. Max. 10°dH of calcium equivalent.
- The pH value of the process water shall remain within the range of pH 6 – pH 8
- Power consumption values are only valid for the equipment supplied by Alfa Laval within the agreed supply limits.



3. Scope of supply

3.1. Main equipment

<p>3.1.1. Progressive cavity pump NM090</p> <ul style="list-style-type: none"> • VFD controlled • Hygienic design • No internal pressure drops • Robust and compact design • Optimized for high accuracy • Drive Motor: 5,5 kW • Cooling fan: 0,1 kW 	
<p>3.1.2. Decanter OSNX6542</p> <ul style="list-style-type: none"> • Bowl in duplex Stainless-steel rotating assembly equipped with liquid outlets with interchangeable plate dams • Exclusive design 360° solids outlet equipped with tungsten carbide interchangeable wear liner especially designed to reduce the wearing and energy consumption • AISI 316 stainless steel special conveyor design to improve solids transportation and maximize oil recovery specially designed for oil/fat extraction with special flight for oil migration to the liquid outlet, designed to help optimize yield and oil clarification by avoiding turbulence • Fully protected conveyor with tungsten carbide tiles for enhanced wear protection. • Interchangeable tungsten carbide wear liners in feed zone • Stellite wear resistant ribs for solids transportation • Planetary 2 Stage Direct Drive 12 kNm Gearbox (Alfa Laval exclusive proprietary design) for heavy duty • Painted Mild steel RAL 9006 frame clad throughout in stainless steel • AISI 316 decanter cover equipped with hinges and springs to ease the opening, cleaning and inspection of decanter. • Speed sensors on both bowl and conveyor • VITON seals and gasket suitable for contact with fats and oils with high FFA content • "Cover open" switch for safety, cuts power • Electronic overload protection system • Junction box equipped for BASIC signal cabling • Main motor: 75 kW ABB IE3 Efficiency • Back drive motor for variable frequency drive 37 kW ABB IE3 efficiency 	



<p>3.1.3. Rotary strainer</p> <ul style="list-style-type: none"> • Rotative strainer equipped with internal conveyor to push out solids from the drum. • AISI 304 • Mesh size is variable based on customer/process demands, TBD upfront • Spare mesh • Oil Pump, to pump oil to customer accumulation tank. The system will be equipped with a bypass to divert some oil back to solids outlet • Rotary filter main motor: 0,37 kW • Oil Pump motor: 1,1 kW 	
<p>3.1.4. Solids collecting tank</p> <ul style="list-style-type: none"> • SS tank to collect solids from decanter • Auger to push solids out • DIN flange to connect piston pump or customer provided pump for solids • Gearmotor: 1,1 Kw 	
<p>3.1.5. Progressive cavity pump NM090</p> <ul style="list-style-type: none"> • VFD controlled • Hygienic design • No internal pressure drops • Robust and compact design • Optimized for high accuracy • Drive Motor: 5,5 kW • Cooling fan: 0,1 kW 	
<p>3.1.6. Control panel</p> <ul style="list-style-type: none"> • Alfa Laval Control Panel, using Allen Bradley automation and equipped with air-conditioning unit <p>IP65 outer enclosure in 316 SS with shower canopy above</p>	

All pictures in the above description are Example only

All equipment is designated for operation in a non hazardous area, and is not ATEX rated

Alfa Laval food waste oil recovery skids

Quotation No: QU-2111-FWD-0204804



Skid details

The equipment will be assembled on a skid frame, approximately 8m long and 2.9m wide, with frame components to be manufactured from mild steel standard sections and hot dipped galvanised.

The skid will be sectional to allow sizeable manufacture and galvanising processes. The final skid will be bolted together in sections and have a drain tray below the centrifuge to collect any overspill and direct to a separate drain point on the skid.

Skid will have open mesh flooring in either 25 x 3 - 34/100 mild steel hot dipped galvanised or GRP type

Skid will have a mild steel hot dipped galvanised mounting frames for control panel and odour extraction.

All fabrication carried out to execution class 2.

Galvanising to BS EN ISO 1461:2009.

Slurry Pipework

SS316 OD tube with plastic coated PN16 slip ring flanges

Oil Pipework

SS316/304 Sch 40 bsp screwed

Wash water Pipework

SS316/304 Sch 40 bsp screwed (PN16 flanges where appropriate.)

Odour pipe/duct

SS ducting with flexible connections from suitable material to decanter / fan and filter. Inline dampers will be included to balance air flow at machine.

Skid peripheral connections

Bauer type couplings

into skid male connection (female from customer)

away from skid female (male from customer)

Wash water DN50

Feed sludge DN80

Slurry outlet DN80

Washout DN80



3.2. Automation

Feed pump will constantly pump the product to the decanter. The feed permissive signal will automatically cause the feed pump to stop in the case of:

- o centrifuge high-torque
- o centrifuge overspeed
- o centrifuge cover-switch opened.
- o Centrifuge high vibration
- o Centrifuge high bearing temperature

Solids and water will be expelled from solids outlet and collected in the solids bin and will then be pumped onwards by the discharge pump to customer tanks. The discharge pump will be protected from running dry by a level sensor .

Oil and floating solids will be discharged from liquid outlet and be collected in the rotary strainer. The rotary strainer is equipped with a min/max level probe and a progressive cavity pump to convey the oil to customer tanks.

The decanter is controlled by our an Allen Bradley based automation system and it will be possible to remotely adjust decanter control parameters and to monitor other parameters via signal exchange, e.g. Profibus, Profinet or others.

The module will need supervision only during start up and running down.

Each piece of machine will be equipped with overflow probes, and process sensors connected with alarm system on main control panel.

Remote supervision and/or Integration with customer SCADA system is possible.

3.2.1. Controlled parameters

- Decanter Operation, including differential speed control
- Feed permissive
- Overpressure safety switch on solids piping
- Oil level on Rotary strainer
- Decanter main bearing temperature
- Decanter main bearing vibration
- Feed and discharge pumps operation
- Valves operation
- Flushing sequence
- Automatic / manual operating modes.



3.3. Engineering, project management and documentation

3.3.1. Project management

Alfa Laval will appoint a Project Manager, who will coordinate the execution and delivery of the project. Project Manager will maintain regular contact with the customer with respect to the project design, schedule and mutual coordination until the hand-over of the system.

3.3.2. Engineering

Project engineering will be executed by Alfa Laval's local engineering organization backed up by a competent Alfa Laval global engineering organization with extensive industry and application expertise, using best in class engineering tools to fulfill the requirements for this project.

3.3.3. Project change order

Any changes in the scope of supply, drawings and/or system functionality requested by the customer after the order acceptance by Alfa Laval shall be considered as Change Order. Change Order form shall outline the requested modifications of the original system design / functionality, as well as their technical, commercial and delivery time impact. Change Order form shall be signed by the customer and Alfa Laval.

3.3.4. Documentation

Digital format only, according to Alfa Laval standards:

- P&ID
- General Arrangement (2D)
- Control Philosophy
- Valve/Instrument schedule
- Motor schedule
- Panel Drawings and wiring diagram
- O&M Manual
- Commissioning Pack

All documentation supplied by Alfa Laval shall be considered as confidential. The customer shall not, without prior consent from the Alfa Laval, transmit or communicate any documentation to third parties or utilize the same other than for the purposes of using the equipment.

3.4. Installation scope

The customer will be responsible for the installation of the equipment on site.

The proposed skids will be delivered as individually prewired, preassembled systems for a fast installation, including:

- feed pump
- decanter centrifuge
- solids collection tank
- discharge pump
- plastic/floater strainer
- control panel
- odour control unit



3.5. Commissioning

Commissioning by Alfa Laval is not included. Alfa Laval can provide commissioning on a day rate basis at a rate of £975 per day inclusive of travel, accommodation and subsistence.

3.6. Applicable standards

The proposed system is designed in accordance with the following general standards / material standards / manufacturing standards:

- Machine Directive 2006/42/EC (documented only when supplied to EU / EEA countries)
- Low Voltage Directive 2006/95/EC
- Electrical design standard IEC 60204-1 (incl. IEC 60446 colour coding and other relevant IEC standards)
- BS EN ISO 1461:2009

3.7. Particular exclusions

Any equipment or services not specifically mentioned in this quotation are excluded from the scope of supply.

The below items are specifically excluded from the scope of supply:

- Offloading and Installation at site
- All civil work.
- Unloading, storage, hoisting, erection.
- Civil design of foundation construction.
- Any cranes or lifting devices.
- All pipe racks and supports outside of Alfa Laval supply limits.
- All valves, pipes, fittings and other components outside Alfa Laval supply limits
- Electrical installation, excluding "on-board" cabling
- Process and utility piping, its design and installation outside of Alfa Laval supply limits.
- Utilities supply to the supplied equipment (cooling water, seal water, steam, compressed air, electrical power, etc.)
- Utilities and product disposal (process streams, condensate, etc.)
- Insulation and trace heating
- Ongoing Calibration and/or calibration check of the instruments after commissioning
- Piping, instruments equipment labelling
- Lighting
- Lightning protection, grounding.
- Test certificates and/or documentation other than Alfa Laval standard.
- Materials for erection and mounting, bolts and nuts
- Chemicals and lubricants.
- Warning signs and/or labels not related to operation, access and/or maintenance of the equipment.
- All items not specifically mentioned in this quotation.



4. Performance warranties

Performance warranties

Success criteria is consistent operation without interruptions based on 10-15 t/h feed rate, whilst achieving an oil phase leaving the decanter which is min. 90 Vol.% oil/fat .

Product analysis methods

The product analyses shall be carried out in accordance with the following methods or equivalents:

Moisture in oil	Spin test as per annex instructions
Insoluble impurities	Spin test as per annex instructions
Oil content	Spin test as per annex instructions

4.1. Take over

Each skid installation will be subject to a 1 week post commissioning proving period. The equipment and/or its components shall be deemed as meeting required performance for take over on completion of the proving period .



5. Prices and terms and conditions

5.1. Prices

Item	Qty	Description
1	4	Design and Supply food waste oil recovery skids, generally as described in scope (pages 4 - 9) of this offer.
2	1	Assemble a "spare" oil recovery skid as per item 1 re-using free issue components taken from trial installation at Hemswell *
3	5	Delivery to site (not including off-loading)
4	1	Spare rotating assembly for centrifuge
Items 1- 4 TOTAL		£2,125,500

* Service and refurbishment of the existing decanter is included prior to assembly of the 5th skid.

Options

Commissioning is not included in the sum above.

Day rate for commissioning, training or supervision of installation by Alfa Laval is £975



5.2. Proposed Payment terms (subject to satisfactory financial assessment and guarantees)

Contract Amount, %	Description
30%	30% of the contract value to be paid on placement of order. Payment to be made within 10 days of receipt of invoice.
30%	30% of the contract value to be paid on successful completion of the factory testing of the decanter centrifuges. Payment to be made within 30 days of receipt of invoice.
30%	30% of the contract value to be paid on delivery to customer site, staged in line with actual deliveries. Payments to be made within 30 days of receipt of invoice.
10%	30% of the contract value to be paid on completion of commissioning or 6 months from delivery, whichever is the sooner. Invoices to be staged in line with the commissioning of the equipment. Payments to be made within 30 days of receipt of invoice.
	Title to the equipment will remain with Alfa Laval Ltd until the contract value is settled in full.

5.3. Delivery terms / Incoterms

INCO Term	Condition
DAP, UK	<p>Prices are based on stated supply conditions according to Incoterms 2010, unless agreed otherwise</p> <p>Export packing suitable for transport by lorry is included in the price.</p> <p>All above prices are exclusive of all local taxes, transport, insurance and freight to the customer's site</p>

5.4. Delivery time

Skid	Delivery Time	Notes
Skid 1	32 working weeks	Delivery to site from the date of receipt of purchase order .
Skid 2	36 working weeks	Delivery to site from the date of receipt of purchase order
Skid 3	40 working weeks	Delivery to site from the date of receipt of purchase order
Skid 4	44 working weeks	Delivery to site from the date of receipt of purchase order
Skid 5	10 working weeks	From receipt of free issue items at Alfa Laval's works.
		Any delays with payment milestones, as described in this quotation document, will consequently impact the delivery time of the equipment.



	Any Change Orders issued after the order acceptance by Alfa Laval might impact the delivery time of the equipment.
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6. General conditions

General	The general conditions ORGALIME S 2012 shall apply to all deliveries of equipment and/or modules (i.e. assembled items of equipment forming a unit or system). If the scope of the order/contract includes the supervision of installation, the supplementary conditions ORGALIME S 2012 S shall apply as well to the extent as not otherwise stipulated below.
Formation of contract	<p>This quotation is not binding. If, however, a contract will be formed on the basis of this quotation, before 24th December, then the price calculation shall remain unchanged.</p> <p>An individual contract is formed (formation of contract) (a) if the Customer's order fully conforms to Alfa Laval's quotation or (b) if Alfa Laval (by written order acknowledgement) accepts the order of the Customer which deviates from the quotation (deviating order).</p>
Prices	<p>The prices stated in the quotation are exclusive of VAT.</p> <p>VAT and other sales taxes applicable at the time of invoicing will be charged in addition. Prices contained in quotations for equipment or modules do not include installation or materials for this purpose unless specified in the quotation.</p>
Currency	The Alfa Laval equipment in this quotation is offered for sale in £ sterling , whilst some costs are incurred in euros. Therefore where the Euro to GBP exchange rate varies by more than 2.5% from today's rate (1.19 Euro per GBP), prior to acceptance of your order, Alfa Laval Ltd reserve the right to recalculate the sterling price based on the then current applicable exchange rate .
Payments	In case payment is not made in due time, default interest will accrue counting from the due date until the date of full payment. The rate of interest shall be 12% per annum.
Interfacing (compatibility)	Alfa Laval are not acting as Principal Contractor . It is the responsibility of the customer to ensure that equipment, machinery, plant, etc. not forming part of the scope of the order concerned will satisfactorily interface and hence be fully compatible with the equipment/modules supplied.
Utilities	It is the responsibility of the Customer to ensure that sufficient capacity will exist in Customer's plant to meet the utility requirements of the equipment/modules supplied.
Reservation of Ownership, Insurance	Ownership of the equipment/module to be delivered shall pass to the Customer only upon receipt of the full purchase price by the Alfa Laval. Moreover, until that date, the Customer will keep the equipment/module insured against all risks, in particular fire for an amount at least corresponding to the agreed purchase price.
Applicable Law	This agreement shall be governed by the laws of England



6.1. Additional conditions

<p>Installation</p>	<p>The Customer shall ensure that the installation is conducted according to Alfa Laval recommendations by competent and experienced personnel.</p>
<p>Documentation</p>	<p>Alfa Laval's obligation to deliver in accordance with the Contract is subject to the Customer's approval of documentation in accordance with below. Alfa Laval shall submit all documentation to the Customer for comments or approval, where the Customer's comments/approval is required under the Contract.</p> <p>The Customer's approval or comments must be given within 5 working days of Alfa Laval's submittal of the relevant documentation. The Customer shall give any approvals and comments in writing. The Customer may only disapprove documentation if the documentation contains an error or omission or if the documentation otherwise does not comply with the Contract. Documentation shall be deemed approved by the Customer in case the Customer has failed to give approvals or comments within the period of time specified above.</p> <p>Alfa Laval shall submit the revised documentation to reflect the Customer's comments. The re-submitted documentation shall be deemed approved by the Customer within 5 working days after submittal by Alfa Laval.</p> <p>In case the Customer, within the period of time stipulated above, objects to the revised documentation as still not complying with the Contract, the procedure for approving/commenting may be repeated one (1) more time. For the avoidance of doubt, the Customer may not (after the first round of comments) bring forward any new comments not directly related to comments previously issued.</p> <p>Alfa Laval shall again submit the revised documentation to reflect the Customer's additional comments. The re-submitted documentation shall be deemed approved by the Customer within 5 working days after submittal by Alfa Laval. For the avoidance of doubt, in case the Customer, after the Alfa Laval's second submission of the revised documentation, issues further comments and such comments have a negative effect on the Alfa Laval's time for delivery/completion, the following shall apply.</p> <p>If the Customer's giving of approval or comments, as the case may be, is delayed or the procedure above otherwise is not complied with, and such lack of approval or comments has a negative effect on Alfa Laval's time for delivery/completion, the agreed delivery date(s) shall be extended by a reasonable time. If the Customer gives further comments after the Seller has re-submitted the documentation a second time, Alfa Laval may, but is not obligated to, consider such comments. If Alfa Laval considers such comments Alfa Laval shall be entitled to compensation for costs incurred as a result of the delay caused by the Customer's further request.</p> <p>PID and GA layout drawings will be provided to the customer for approval within 3 working weeks after the receipt of the down payment.</p>



	<p>The customer shall approve the proposed PID and GA layout or come back with changes within max. 1 working week form the date of receipt of the PID and GA drawings.</p>
<p>Export control</p>	<p>Supply or export of the Equipment as envisaged by this Contract may be subject to a requirement of prior authorization by competent authorities. The Supplier reserves the right to unilaterally cancel this Contract without incurring any liability for damage or loss arising out of or relating to such cancellation, in the event any required authorization is not granted or subsequently revoked.</p> <p>Notwithstanding anything to the contrary set forth elsewhere in this Contract, the Supplier shall always be entitled to suspend and/or terminate this Contract if and to the extent performance of the Contract is impeded or made unreasonably onerous by any embargo, sanction or similar trade or export restriction, including all EU trade sanctions and/or restrictions, whether foreseen or unforeseen at the time of formation of this Contract. For the avoidance of doubt, the Supplier shall always be entitled to suspend and/or terminate this Contract if any such trade sanction or restriction, not applicable at the time of formation of this Contract, are recalled (e.g. by way of snapbacks) or in any other way adjusted by competent authorities, if and to the extent performance of this Contract is impeded or made unreasonably onerous thereof.</p> <p>The Customer agrees not to export or re-export the Equipment in violation of any applicable export restriction, embargo or sanction.</p>
<p>Reservations</p>	<p>The prices mentioned in this document need to be confirmed by Alfa Laval prior to the acceptance of the order.</p> <p>Orders are not binding to Alfa Laval before pricing is confirmed by Alfa Laval in writing.</p>
<p>Confidentiality</p>	<p>The information provided in this quotation document is confidential and only intended for parties directly involved in this project & who have already signed applicable NDA's.</p> <p>The information provided in this quotation, including but not limited to designs, drawings, process flow charts and equipment details shall not be disclosed to any third parties outside of this project, without prior written consent by Alfa Laval.</p>
<p>Brexit</p>	<p>Alfa Laval Ltd shall not be liable for a delay in the delivery of the goods and services to the extent that the delay is caused by any event or circumstances (including without limitation - any delay to, or refusal of, customs clearance resulting from tariff barriers or non-tariff barriers which come into effect at any date following the date of this offer) resulting from Brexit. In this context "Brexit" means either (i) the UK ceasing to be a Member State of the European Union, or (ii) altered trading arrangements taking effect between the UK and the remaining European Union countries pending a final agreement on the UK's future relationship with the European Union</p>



<p>COVID 19</p>	<p>As of the date of this Agreement, the Parties acknowledge that the potential development, scope and impact caused by or related to the novel corona virus (COVID-19) is unpredictable and may affect the performance of obligations hereunder. In consequence of this, the Parties agree that, should the Seller's performance of works, obligations, delivery or supply hereunder be impeded, hindered or made unreasonably onerous due or related to COVID-19 (and regardless of whether or not this would constitute Force Majeure or be considered as foreseeable), the Seller shall be released, without assuming any liability, from its obligations to perform any such works or obligations until the time when such performance is again reasonably possible and Seller is able to reassume performance. Without limiting the generality of the forgoing, such situation may, by example and without limitation, occur if Seller's workforce, supply chain, and/or production is affected by COVID-19, e.g. by way of: changes in law or regulations; authority recommendations; quarantines, travel restrictions or similar circumstances; or if the Seller is reasonably unable to source or deliver required materials; or in the event of material cost increases due or related to COVID-19</p>
<p>Impact of Global Supply Shortages</p>	<p>The Parties acknowledge the existence of a global capacity shortage – in particular within the electronics industry and the transportation sector. The Parties further acknowledge that the development and impact caused by or related to said shortage is unpredictable and may affect the Supplier's ability to timely perform its obligations hereunder. In consequence of this, the Parties agree that, should the Supplier's performance hereunder (or under any separate Order issued hereunder) be impeded, hindered or made unreasonably onerous due to or related to the above said shortage (and regardless of whether such shortage is considered foreseeable or not), the Supplier shall be released, without assuming any liability, from its obligations to perform any such works or obligations until the time when such performance is again reasonably possible and Supplier is able to reassume performance. During any suspension in accordance with the forgoing, the Parties shall loyally work together to reduce the impact thereof – including by striving to complete partial performance to the extent reasonably feasible.</p> <p>EU VAT This offer is based on shipment to UK or Ireland only. For alternative locations and/or collection of goods, please speak to your Sales Advisor as additional restrictions may apply.</p>
<p>Errors and omissions</p>	<p>Whilst care is taken to make sure that all relevant technical and price information included in this offer is correct, we acknowledge that unintended errors may be included. For this reason, this quotation is to be considered a non binding offer, and is subject to confirmation before we accept your order.</p>



7. Spare parts and services

The spare parts needed during installation and commissioning of the above-mentioned equipment are included in this quotation.

8. Warranty

Provided that the equipment is installed operated and maintained according to Alfa Laval instructions, the equipment is covered by the following warranty:

8.1. Equipment warranty

Alfa Laval warrants the customer that each item of the equipment is as specified in the quotation. Alfa Laval further warrants that each item of the equipment quoted is free from defects in design, materials and workmanship. This warranty also extends to any repairs or replacements of the defective equipment during the warranty period.

The warranty period on each item of the equipment is 12 months from the take-over date or 18 months from shipment, whichever occurs first. The warranty period for repairs or replacement parts is 6 months from the date of repairs or replacement but no longer than two years from the shipment of the original item to be replaced.

The seller shall repair, replace or, at its option, refund the price of any item of equipment found to be defective during the warranty period. This is the customer's sole and exclusive remedy for the equipment that does not meet the mechanical warranty above specified or any other mechanical warranty specified in the quotation.

The customer must notify the Alfa Laval in writing of the claimed defect promptly after the appearance thereof and in no event later than thirty days after the expiry of the warranty period.

Alfa Laval shall have no responsibility for :

- damage caused to the equipment by misuse, abuse, improper operation, inadequate maintenance including lubrication, inadequate cleaning and flushing,
- ordinary wear and tear; including erosion
- unauthorized repairs by the customer or by persons not under Alfa Laval supervision.

The customer shall at his own expense carry out dismantling and reinstallation of the repaired/replaced part of the equipment and any other dismantling and reassembly that is required.

We trust this quotation meets your expectations and we would welcome the opportunity to review and discuss the design and options presented.

For any questions, please contact the undersigned.

Yours faithfully


Alan Farr
Sales Engineer
Alfa Laval Limited


Ian Forrester
Business Unit Manager
Alfa Laval Limited



ORGALIME

ORGALIME S 2012

GENERAL CONDITIONS
for the
SUPPLY OF MECHANICAL, ELECTRICAL AND ELECTRONIC PRODUCTS

Brussels, March 2012

PREAMBLE

1. These General Conditions shall apply when the parties agree In Writing or otherwise thereto. Any modifications or deviations from them must be agreed In Writing.

DEFINITIONS

2. In these General Conditions the following terms shall have the meanings hereunder assigned to them:

- **“Contract”**: the agreement In Writing between the parties concerning supply of the Product and all appendices, including agreed amendments and additions In Writing to the said documents;

- **“Gross Negligence”**: an act or omission implying either a failure to pay due regard to serious consequences, which a conscientious contracting party would normally foresee as likely to ensue, or a deliberate disregard of the consequences of such an act or omission;

- **“In Writing”**: communication by document signed by both parties or by letter, fax, electronic mail and by such other means as are agreed by the parties;

- **“the Product”**: the object(s) to be supplied under the Contract, including software and documentation.

PRODUCT INFORMATION

3. All information and data contained in general product documentation and price lists shall be binding only to the extent that they are by reference In Writing expressly included in the Contract.

DRAWINGS AND TECHNICAL INFORMATION

4. All drawings and technical documents relating to the Product or its manufacture submitted by one party to the other, prior or subsequent to the formation of the Contract, shall remain the property of the submitting party.

Drawings, technical documents or other technical information received by one party shall not, without the consent of the other party, be used for any other purpose than that for which they were provided. They may not, without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to a third party.

5. The Supplier shall, not later than at the date of delivery, provide free of charge information and drawings which are necessary to permit the Purchaser to install, commission, operate and maintain the Product. Such information and drawings shall be supplied in the number of copies agreed upon or at least one copy of each. The Supplier shall not be obliged to provide manufacturing drawings for the Product or for spare parts.

ACCEPTANCE TESTS

6. Acceptance tests provided for in the Contract shall, unless otherwise agreed, be carried out at the place of manufacture during normal working hours.

If the Contract does not specify the technical requirements, the tests shall be carried out in accordance with general practice in the appropriate branch of industry concerned in the country of manufacture.

7. The Supplier shall notify the Purchaser In Writing of the acceptance tests in sufficient time to permit the Purchaser to be represented at the tests. If the Purchaser is not represented, the test report shall be sent to the Purchaser and shall be accepted as accurate.

8. If the acceptance tests show the Product not to be in accordance with the Contract, the Supplier shall without delay remedy any deficiencies in order to ensure that the Product complies with the Contract. New tests shall then be carried out at the Purchaser's request, unless the deficiency was insignificant.

9. The Supplier shall bear all costs for acceptance tests carried out at the place of manufacture. The Purchaser shall however bear all travelling and living expenses for his representatives in connection with such tests.

DELIVERY. PASSING OF RISK

10. Any agreed trade term shall be construed in accordance with the INCOTERMS® in force at the formation of the Contract.

If no trade term has been specifically agreed, the delivery shall be Free Carrier (FCA) at the place named by the Supplier.

If, in the case of delivery Free Carrier, the Supplier, at the request of the Purchaser, undertakes to send the Product to its destination, the risk will pass not later than when the Product is handed over to the first carrier.

Partial delivery shall not be permitted, unless otherwise agreed.

TIME FOR DELIVERY. DELAY

11. If the parties, instead of specifying the date for delivery, have specified a period of time within which delivery shall take place, such period shall start to run as soon as the Contract is entered into and all agreed preconditions to be fulfilled by the Purchaser have been satisfied, such as official formalities, payments due at the formation of the Contract and securities.

12. If the Supplier anticipates that he will not be able to deliver the Product at the time for delivery, he shall forthwith notify the

Purchaser thereof In Writing, stating the reason and, if possible, the time when delivery can be expected.

If the Supplier fails to give such notice, the Purchaser shall be entitled to compensation for any additional costs which he incurs and which he could have avoided had he received such notice.

13. If delay in delivery is caused by any of the circumstances mentioned in Clause 41, by an act or omission on the part of the Purchaser, including suspension under Clauses 21 and 44, or any other circumstances attributable to the Purchaser, the Supplier shall be entitled to extend the time for delivery by a period which is necessary having regard to all the circumstances of the case. This provision shall apply regardless of whether the reason for the delay occurs before or after the agreed time for delivery.

14. If the Product is not delivered at the time for delivery, the Purchaser shall be entitled to liquidated damages from the date on which delivery should have taken place.

The liquidated damages shall be payable at a rate of 0.5 per cent of the purchase price for each commenced week of delay. The liquidated damages shall not exceed 7.5 per cent of the purchase price.

If only part of the Product is delayed, the liquidated damages shall be calculated on that part of the purchase price which is attributable to such part of the Product as cannot in consequence of the delay be used as intended by the parties.

The liquidated damages shall become due at the Purchaser's demand In Writing but not before delivery has been completed or the Contract is terminated under Clause 15.

The Purchaser shall forfeit his right to liquidated damages if he has not lodged a claim In Writing for such damages within six months after the time when delivery should have taken place.

15. If the delay in delivery is such that the Purchaser is entitled to maximum liquidated damages under Clause 14 and if the Product is still not delivered, the Purchaser may In Writing demand delivery within a final reasonable period which shall not be less than one week.

If the Supplier does not deliver within such final period and this is not due to any circumstances which are attributable to the Purchaser, then the Purchaser may by notice In Writing to the Supplier terminate the Contract in respect of such part of the Product as cannot in consequence of the Supplier's failure to deliver be used as intended by the parties.

If the Purchaser terminates the Contract he shall be entitled to compensation for the loss he suffers as a result of the Supplier's delay, including any consequential and indirect loss. The total compensation, including the liquidated damages which are payable under Clause 14, shall not exceed 15 per cent of that part of the purchase price which is attributable to the part of the Product in respect of which the Contract is terminated.

The Purchaser shall also have the right to terminate the Contract by notice In Writing to the Supplier, if it is clear from the circumstances that there will occur a delay in delivery which, under Clause 14, would entitle the Purchaser to maximum liquidated damages. In case of termination for this reason, the Purchaser shall be entitled to maximum liquidated damages and compensation under the third paragraph of this Clause 15.

16. Liquidated damages under Clause 14 and termination of the Contract with limited compensation under Clause 15 shall

be the only remedies available to the Purchaser in case of delay on the part of the Supplier. All other claims against the Supplier based on such delay shall be excluded, except where the Supplier has been guilty of Gross Negligence.

17. If the Purchaser anticipates that he will be unable to accept delivery of the Product at the time for delivery, he shall forthwith notify the Supplier In Writing thereof, stating the reason and, if possible, the time when he will be able to accept delivery.

If the Purchaser fails to accept delivery at the time for delivery, he shall nevertheless pay any part of the purchase price which becomes due at the time for delivery, as if delivery had taken place at the time for delivery. The Supplier shall arrange for storage of the Product at the risk and expense of the Purchaser. The Supplier shall also, if the Purchaser so requires, insure the Product at the Purchaser's expense.

18. Unless the Purchaser's failure to accept delivery is due to any such circumstance as mentioned in Clause 41, the Supplier may by notice In Writing require the Purchaser to accept delivery within a final reasonable period.

If, for any reason which is not attributable to the Supplier, the Purchaser fails to accept delivery within such period, the Supplier may by notice In Writing terminate the Contract in whole or in part. The Supplier shall then be entitled to compensation for the loss he suffers by reason of the Purchaser's default, including any consequential and indirect loss. The compensation shall not exceed that part of the purchase price which is attributable to that part of the Product in respect of which the Contract is terminated.

PAYMENT

19. Payment shall be made within 30 days after the date of invoice.

Unless otherwise agreed, the purchase price shall be paid with one third at the formation of the Contract and one third when the Supplier notifies the Purchaser that the Product, or the essential part of it, is ready for delivery. The remaining part of the purchase price shall be paid when the entire Product is delivered.

20. Whatever the means of payment used, payment shall not be deemed to have been effected before the Supplier's account has been irrevocably credited for the amount due.

21. If the Purchaser fails to pay by the stipulated date, the Supplier shall be entitled to interest from the day on which payment was due and to compensation for recovery costs. The rate of interest shall be as agreed between the parties or otherwise 8 percentage points above the rate of the main refinancing facility of the European Central Bank. The compensation for recovery costs shall be 1 per cent of the amount for which interest for late payment becomes due.

In case of late payment and in case the Purchaser fails to give an agreed security by the stipulated date the Supplier may, after having notified the Purchaser In Writing, suspend his performance of the Contract until he receives payment or, where appropriate, until the Purchaser gives the agreed security.

If the Purchaser has not paid the amount due within three months the Supplier shall be entitled to terminate the Contract by notice In Writing to the Purchaser and, in addition to the interest and compensation for recovery costs according to this Clause, to claim compensation for the loss he incurs. Such compensation shall not exceed the agreed purchase price.

RETENTION OF TITLE

22. The Product shall remain the property of the Supplier until paid for in full to the extent that such retention of title is valid under the relevant law.

The Purchaser shall at the request of the Supplier assist him in taking any measures necessary to protect the Supplier's title to the Product.

The retention of title shall not affect the passing of risk under Clause 10.

LIABILITY FOR DEFECTS

23. Pursuant to the provisions of Clauses 24-39, the Supplier shall remedy any defect or nonconformity (hereinafter termed defect(s)) resulting from faulty design, materials or workmanship.

24. The Supplier shall not be liable for defects arising out of materials provided or a design stipulated or specified by the Purchaser.

25. The Supplier shall only be liable for defects which appear under the conditions of operation provided for in the Contract and under proper use of the Product.

26. The Supplier shall not be liable for defects caused by circumstances, which arise after the risk has passed to the Purchaser, e.g. defects due to faulty maintenance, incorrect installation or faulty repair by the Purchaser or to alterations carried out without the Supplier's consent In Writing. The Supplier shall neither be liable for normal wear and tear nor for deterioration.

27. The Supplier's liability shall be limited to defects which appear within a period of one year from delivery. If the use of the Product exceeds that which is agreed, this period shall be reduced proportionately.

28. When a defect in a part of the Product has been remedied, the Supplier shall be liable for defects in the repaired or replaced part under the same terms and conditions as those applicable to the original Product for a period of one year. For the remaining parts of the Product the period mentioned in Clause 27 shall be extended only by a period equal to the period during which and to the extent that the Product could not be used as a result of the defect.

29. The Purchaser shall without undue delay notify the Supplier In Writing of any defect which appears. Such notice shall under no circumstances be given later than two weeks after the expiry of the period given in Clause 27 or the extended period(s) under Clause 28, where applicable.

The notice shall contain a description of the defect.

If the Purchaser fails to notify the Supplier In Writing of a defect within the time limits set forth in the first paragraph of this Clause, he shall lose his right to have the defect remedied.

Where the defect is such that it may cause damage, the Purchaser shall immediately inform the Supplier In Writing. The Purchaser shall bear the risk of damage to the Product resulting from his failure so to notify. The Purchaser shall take reasonable measures to minimise damage and shall in that respect comply with instructions of the Supplier.

30. On receipt of the notice under Clause 29 the Supplier shall at his own cost remedy the defect without undue delay, as

stipulated in Clauses 23-39. The time for remedial work shall be chosen in order not to interfere unnecessarily with the Purchaser's activities.

Repair shall be carried out at the place where the Product is located unless the Supplier deems it more appropriate that the Product is sent to him or a destination specified by him.

If the defect can be remedied by replacement or repair of a defective part and if dismantling and re-installation of the part do not require special knowledge, the Supplier may demand that the defective part is sent to him or a destination specified by him. In such case the Supplier shall have fulfilled his obligations in respect of the defect when he delivers a duly repaired part or a part in replacement to the Purchaser.

31. The Purchaser shall at his own expense provide access to the Product and arrange for any intervention in equipment other than the Product, to the extent that this is necessary to remedy the defect.

32. Unless otherwise agreed, necessary transport of the Product or parts thereof to and from the Supplier in connection with the remedying of defects for which the Supplier is liable shall be at the risk and expense of the Supplier. The Purchaser shall follow the Supplier's instructions regarding such transport.

33. Unless otherwise agreed, the Purchaser shall bear any additional costs which the Supplier incurs for remedying the defect caused by the Product being located in a place other than the destination stated at the formation of the Contract for the Supplier's delivery to the Purchaser or – if no destination has been stated – the place of delivery.

34. Defective parts which have been replaced shall be made available to the Supplier and shall be his property.

35. If the Purchaser has given such notice as mentioned in Clause 29 and no defect is found for which the Supplier is liable, the Supplier shall be entitled to compensation for the costs he incurs as a result of the notice.

36. If the Supplier does not fulfil his obligations under Clause 30, the Purchaser may by notice In Writing fix a final reasonable period for completion of the Supplier's obligations, which shall not be less than one week.

If the Supplier fails to fulfil his obligations within such final period, the Purchaser may himself undertake or employ a third party to undertake necessary repair work at the risk and expense of the Supplier.

Where successful repair work has been undertaken by the Purchaser or a third party, reimbursement by the Supplier of reasonable costs incurred by the Purchaser shall be in full settlement of the Supplier's liabilities for the said defect.

37. Where the Product has not been successfully repaired, as stipulated under Clause 36,

a) the Purchaser shall be entitled to a reduction of the purchase price in proportion to the reduced value of the Product, provided that under no circumstances shall such reduction exceed 15 per cent of the purchase price, or

b) where the defect is so substantial as to significantly deprive the Purchaser of the benefit of the Contract as regards the Product or a substantial part of it, the Purchaser may terminate



ORGALIME

SUPPLEMENTARY CONDITIONS

for the

**SUPERVISION OF INSTALLATION OF MECHANICAL, ELECTRICAL AND ELECTRONIC PRODUCTS
DELIVERED UNDER ORGALIME S 2012**

Brussels, March 2014

PREAMBLE

1. These Supplementary Conditions shall supplement the Orgalime S 2012 General Conditions when the parties agree in Writing or otherwise thereto.

THE SUPPLIER'S OBLIGATIONS

2. The Supplier shall, upon notification by the Purchaser in accordance with Clause 4, provide the services of one or more competent supervisors

a) to give to the Purchaser or his site representative mentioned in Clause 13 of these Supplementary Conditions the necessary instructions for the installation of the Product and, if provided in the contract, for its commissioning by the Purchaser,

and

b) to supervise the manner in which the Supplier's instructions are carried out.

The number and qualifications of the Supplier's staff and the estimated duration of installation shall be agreed separately.

The Supplier's obligation shall cease if he has not received such notification from the Purchaser within one year following delivery under S 2012.

THE PURCHASER'S OBLIGATIONS

3. Installation shall be carried out by the Purchaser who shall at his own expense provide the skilled and unskilled labour, all equipment and everything necessary for the installation of the Product.

NOTIFICATION OF READINESS OF THE SITE

4. The Purchaser shall give the Supplier at least one month's notice of the date at which the site will be ready for the installation work and the commencement of supervision.

LOCAL LAWS AND REGULATIONS

5. The Purchaser shall in due time provide the Supplier with such information concerning local laws and regulations as is necessary for the proper execution of the Supplier's obligations.

The Supplier shall ensure that his staff complies with these laws and regulations.

WORKING CONDITIONS

6. The Purchaser shall ensure that the following conditions are satisfied:

a) The supervision shall not be carried out in unhealthy or dangerous surroundings. All the necessary safety and precautionary measures shall have been taken before supervision is started and shall be maintained during the time of supervision.

b) The Supplier's staff shall be able to obtain suitable and convenient board and lodging in the neighbourhood of the site and shall have access to internationally acceptable hygiene facilities and medical services.

c) The Purchaser shall make available to the Supplier free of charge necessary storage facilities, providing protection against theft and deterioration of the personal effects of the Supplier's staff.

d) The Purchaser shall make available to the Supplier free of charge sufficient offices on the site, equipped with telephone and access to the Internet.

e) The Purchaser shall give all necessary assistance to ensure that the Supplier's staff obtain in good time visas and any official entry, exit or work permits and (if necessary) tax certificates required in the Purchaser's country, as well as access to the site.

SAFETY REGULATIONS

7. Before commencement of supervision, the Purchaser shall notify the Supplier of all relevant safety regulations in force at the site and the Supplier shall secure the observance of such safety regulations by his staff.

8. If a breach of these regulations by the Supplier's staff come to the notice of the Purchaser, he may require them to be noted forthwith in the site register which the Supplier is obliged to keep in accordance with Clause 13.

9. The Supplier shall inform the Purchaser of any special risks which the execution of the installation may entail.

SUPERVISION PAID FOR ON A TIME BASIS

10. Where the parties have agreed that supervision shall be paid for on a time basis, the following shall apply:

10.1. The rates to be paid by the Purchaser are those stipulated in the contract. These rates shall be paid from the date of departure from the Supplier's premises until the date of return, including non-working days and the time needed for preparation and formalities incidental to the outward and homeward journeys.

10.2. Payment shall be made against monthly invoices concerning the supervision carried out. Payment shall be made within 30 days from the date of the invoice.

- 10.3. The following items shall be separately charged:

a) all travelling expenses incurred by the Supplier in respect of his staff and the transport of their equipment and personal effects using the means and class of travel specified in the contract;

b) cost of board and lodging and other living expenses, including any appropriate allowances, of the Supplier's staff for each day's absence from their homes, including non-working days and holidays. The daily allowances shall be payable even during incapacity caused by sickness or accident;

c) overtime and work on locally recognised days of rest and local public holidays and outside normal working hours shall be charged at special rates. The rates shall be as agreed in the contract, or, failing agreement, as normally charged by the Supplier;

d) time necessarily spent on daily travel between lodgings and the site if it exceeds half an hour each way;

e) any costs incurred by the Supplier in accordance with the contract, in connection with the provision of equipment by him;

f) any taxes or dues levied on the invoice and payable by the Supplier or his staff in the country where supervision takes place.

SUPERVISION PAID FOR BY A LUMP SUM

11. Where the parties have agreed that the supervision shall be paid for on the basis of a lump sum and the lump sum is not included in the price for the Product, the payment shall be made against invoices of 10% at the signature of the contract, 30% at the notification according to Clause 4 and the remaining part of the lump sum when the supervision has been finished.

12. The quoted lump sum price shall be deemed to include all the items mentioned in Clause 10.3. a) to e). If the supervision is delayed due to a cause for which the Purchaser or any contractor other than the Supplier is responsible, the Purchaser shall compensate the Supplier for:

a) extra work resulting from the delay;

b) waiting time and time spent on extra journeys to and from the site;

c) costs as a result of the Supplier having to keep his equipment at the site for a longer time than expected;

d) additional costs for journeys and board and lodging for the Supplier's staff;

e) other documented costs incurred by the Supplier as a result of changes in the supervision programme.

SITE REPRESENTATIVES AND SITE REGISTER

13.1. Each of the parties shall by notice In Writing appoint a representative to act on his behalf during the supervision. Such appointment shall be made at the latest on the date of notification under Clause 4.

Unless otherwise specified in the contract, they shall be authorised to act on behalf of their respective party in all matters concerning the installation work and the supervision.

Wherever these Supplementary Conditions stipulate that notice In Writing shall be given, the representative shall be authorised to receive such notice on behalf of the party he represents.

13.2. The Supplier shall keep a site register in which he shall note all installation and supervision work carried out and problems encountered. This site register shall be completed and signed daily by the representatives of the parties.

The representatives shall be authorised to sign the site register.

WORK NOT COVERED BY THE CONTRACT

14. The Purchaser shall not be entitled to use the Supplier's staff to perform any work not covered by the contract without the previous consent In Writing of the Supplier.

SUSPENSION OF SUPERVISION

15. The Supplier shall be entitled without prior notice, to suspend the supervision and withdraw his staff, if an invoice is not paid at the due date.

16. If the installation work is suspended for a cause for which the Supplier is not responsible:

a) the Purchaser shall be entitled to send home the Supplier's staff, provided he pays the expenses resulting therefrom;

b) the Supplier shall be entitled to recall his staff at the expense of the Purchaser if the suspension of installation work exceeds a period of two weeks.

If the Supplier's staff is sent home or recalled, the contract is not terminated and its performance is merely suspended until the Purchaser has required the return of the Supplier's staff to the site by giving at least one month's notice or as may be agreed.

If the suspension of the installation work lasts longer than three months the Supplier shall be entitled to terminate the supervision contract.

SUPPLIER'S LIABILITY

17. The Supplier shall be liable for any damage to the Product and to the property of the Purchaser caused by the Supplier's negligence during the supervision and for any defects in the installation work resulting from the Supplier's failure to adequately perform his obligations under Clause 2. The liability of the Supplier shall in this respect however be limited to the agreed price for the supervision work.

The Supplier shall in case of any extra installation work resulting from the Supplier's negligence or failure be obliged to perform any related supervision work at no charge.

18. Save as otherwise stated in these Supplementary Conditions there shall be no liability on the Supplier towards the Purchaser for loss of production, loss of profit, loss of use, loss of contracts or for any other consequential or indirect loss whatsoever.

APPENDIX 2

40,000 Litre Stainless Steel Oil Storage Tank

Stainless steel Tank Specifications

40,000 litre vertical stainless steel storage tank insulated and clad.
 40,000 litre vertical stainless steel storage vessel with dished top, conical bottom,
 insulated and clad in stainless steel. Standing on 4 off mild steel painted legs.
 Three sections of heating/cooling.

Design Code BS5500

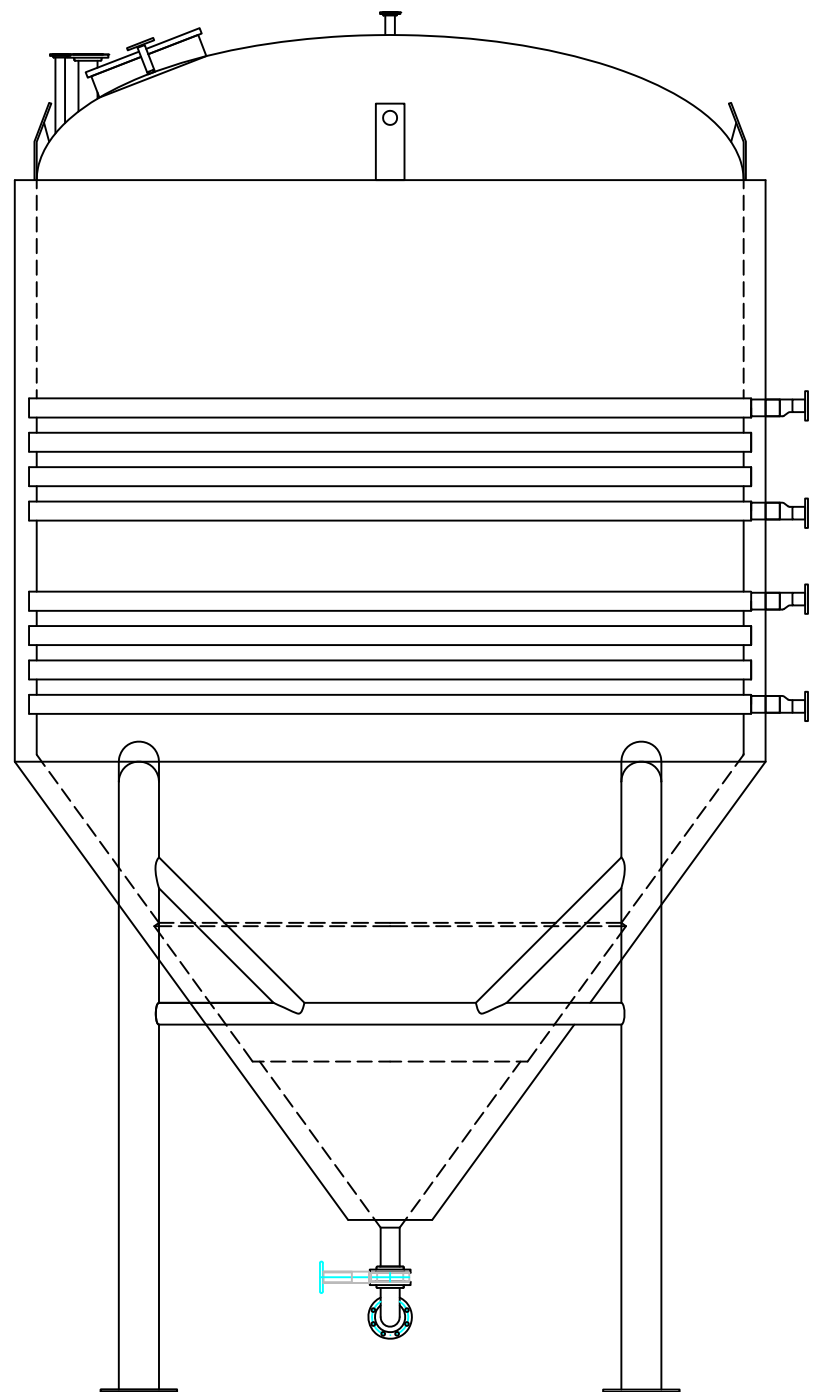
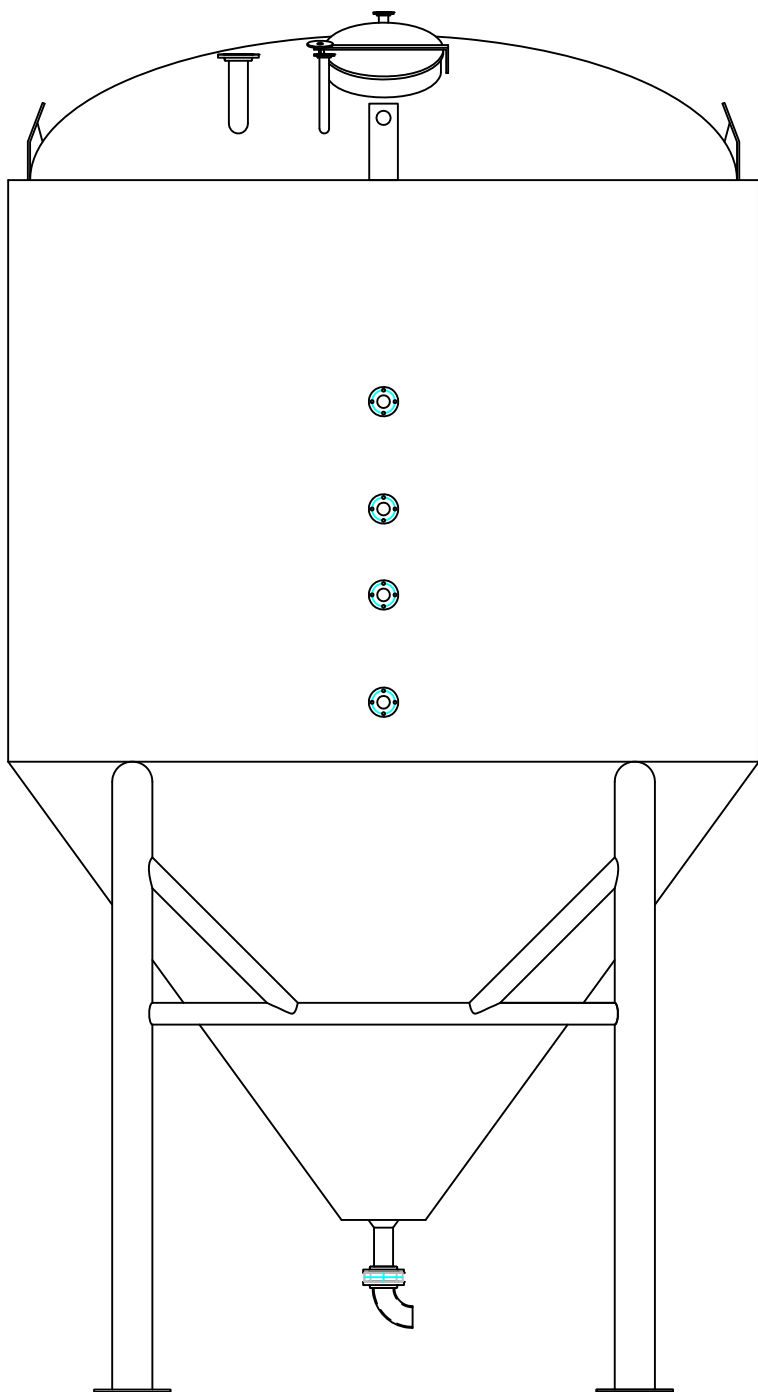
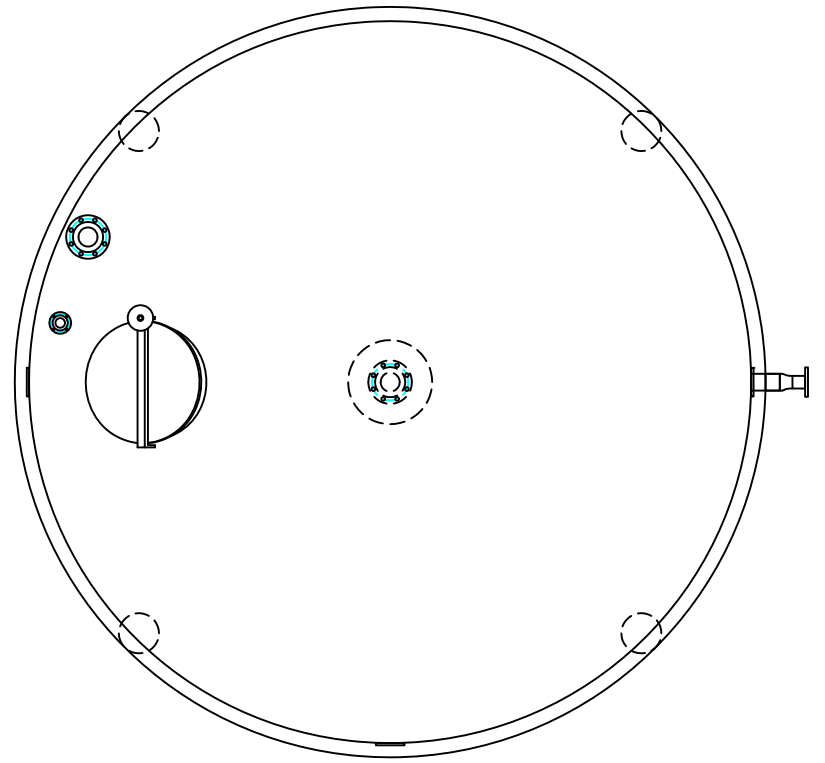
Vessel atmospheric + static head
 Jackets 2 bar WP 3 bar TP
 45,000 litre gross capacity
 40,000 litre working capacity.

Connections

2" Cip assembly, 500mm man access, 4" vent to carbon filter,
 2" inlet, 3" jacket connections and 4" outlet.

Overall dimensions

3.7m internal diameter
 3.9m outer diameter
 3.01m straight height
 2.8m deep con
 760mm top dish
 7.4m overall height



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