



Engineering Specification BioWhale Food Waste Storage Unit

Body Configurations

- 10ft Shipping Container (**Compact**) Nominal Capacity: 4,000 Litres
Approx. 3.05m (l) x 2.4m (w) x 2.59m (h), Dry weight 3,440kg's
- 20ft Shipping Container (**Standard**) Nominal Capacity: 12,000 Litres
Approx. 6.1m(l) x 2.4m(w) x 2.59m(h)
- 40ft Shipping Container (**Large**) Nominal Capacity: 24,000 Litres
Approx. 12.2m (l) x 2.4m (w) x 2.59m (h)

System Control: Advanced Whale PLC Controller

Tank:

Material: [Stainless Steel](#)

Tank Ring Material: 50mm x 10mm stainless steel Stiffening Rings

Internal Finish/Coating: Self Colour - Natural Finish

Shape/Thickness: Cylindrical / 4.00mm

Specific Gravity: 1.0

Contents: Food Waste

Mountings: Fixed bar and flexi-mount at front

Fall over length: Parallel to floor

Baffles: None

Top Dish: Torispherical dished and flanged to BS EN 13445-3:2002

Bottom Door: Torispherical dished and flanged to BS EN 13445-3:2002

Manhole: 600mm, [304 Stainless Steel](#) manhole to allow internal inspection and cleaning

Manhole Interlock: Interlock so when manhole is open system is isolated

Burst Disc: 0.5 bar to prevent over pressurizing

Vacuum Gauges: Electronic vacuum sensor with vacuum displayed via LED display in loading control panel

Hydrolyser:

Fitted into the base of the barrel and controlled by PLC controller and manual override on master control panel

Contents Indicator:

Indicator: Electronic sensor showing contents level on graphical LED display

Sight Glass Dome: 75mm sight dome mounted just below manhole height for visual check tank is safe to open

Food Waste Loading:

Food Waste Intake: Funnel shaped [304 Stainless Steel](#) 50 Litre hopper with 100mm valve in the base and 125mm pipework

Food Waste Intake position: Left side of container from container doors

Food Waste Intake Door: Side hinged [Stainless Steel](#) doors with lock

Food in take Valve: 4" Pneumatically operated [Stainless Steel](#)



Sliding knife gate valve mounted to comply with UK regulations on guarding

Food Waste Valve Controls: Food intake switch

System ready warning light, flashing when not ready and waiting for vacuum to build up and notification on LED display

Food intake valve open warning light

Red warning light when completely full and flashing when 75% full and also visually displayed on LED screen

Macerator:

Fitted inline between the inlet valve and the tank inlet and driven by twin shafts supported both ends.

Drive: Electrically driven

Control: Automatically controlled from PLC when inlet valve is opened and manually over ride from master control panel

Optional Food intake wash: High pressure wash system rated at 4 litres per minute and 100 bar with spinning nozzle to wash food intake chute

Control: single push button mounted inside food intake funnel, system will operate for

15 seconds once button is pushed and door closed

Interlock: Doors must be closed for wash to start and if door opened before wash is complete the wash cycle shuts down

Water Supply: 400 Litre tank outed inside, filled externally with overflow piped outside

Vacuum System:

Exhauster: Vacuum pump rated at 175cfm, including low noise cooling fan

Drive: 415 volt electric IE3 motor

Primary Cut-off: Primary mounted on top of tank

Secondary Cut-off: Mounted on the side of the main tank

Secondary catch tank drain: Mounted on the base of the secondary catch tank automatically drained back into the main tank every 10 operations

Protection: Suction side grit strainer and check valve

Active Carbon Filter: Mounted between vacuum pump at atmosphere

Control: Vacuum controlled via the PLC controller in the master control panel,

: Vacuum to be maintained between -0.4 and -0.6 bar by means of pressure sensors

: Override in loading control panel to allow vacuum to be increased to clear a blockage in the pipework

: Emergency Stop at the Workstation

Valves:

Vent Valve: 50mm automatically operated valve

Vent Valve Control: Vent valve opened from master control panel and when the outlet valve is opened

Outlet Valve: 4" Pneumatically operated [Stainless Steel](#) sliding knife gate valve

Position: Mounted in base of tank or as close as possible

Outlet termination: Mounted on the outside of the container

Outlet Valve Connection: 4" Female Bauer, [Stainless Steel](#)

Outlet Valve Control: Mounted by outlet valve coupling with the following controls

: Outlet valve control mounted inside locked discharge door

: Outlet valve active warning light, which will illuminate when the vacuum is diminished and tank ready for emptying

: Outlet valve open/close switch

: Outlet open warning light



Lighting:

Cabin Illumination: Suitable lighting mounted inside the container, operated from master control panel

Compressor:

: 240 volt quiet compressor complete

: 40 Litre air reservoir

: 3.2 cfm

: 8 bar operating pressure

Power Supply:

: 415 volt

: 32amp commando socket fitted with RCD electric noise filter

: 240 Volt, 13amp for the compressor

: 24 volt for the control, lighting and actuator

Power Usage: Designed with high efficient motors, low power usage averaging 4-10kw/h per day depending upon usage

Control Panel: Master Control Panel with auto and manual operation operated control buttons, key operated isolation switch for maintenance

Emergency Stops: 3 off, one on master control panel, one on food intake panel and one on outlet panel

General: Regulations:

: The supply of machinery (safety) regulations 2008: SI 2008 No.1597

: Noise emission in the environment directive 2000/14/EC

: Noise measurement reading taken at 3 metres from loading point is 62dB (with an ambient sound of 57dB)

Data Plate: Equipment data plate (CE marked) as required by SI 2000 No.128 reg 5 (4)

Design/Operating vacuum: Vacuum - 1 bar (28"hg) and operating at 0.6 Bar

Certificates supplied:

: Declaration of conformity for fitness and quality

: Declaration of conformity to UK machinery (safety) regulations SI 2008 No.1597

: Certificate of noise emission measured / guaranteed power level

: Declaration of conformity (EMC) Electro magnetic compatibility

: Insurance: £15 million products liability cover

: Labels/ Handbook: Safety labels fitted to vehicle as required and Operator handbook supplied

: Commissioning: One day onsite installation and commissioning

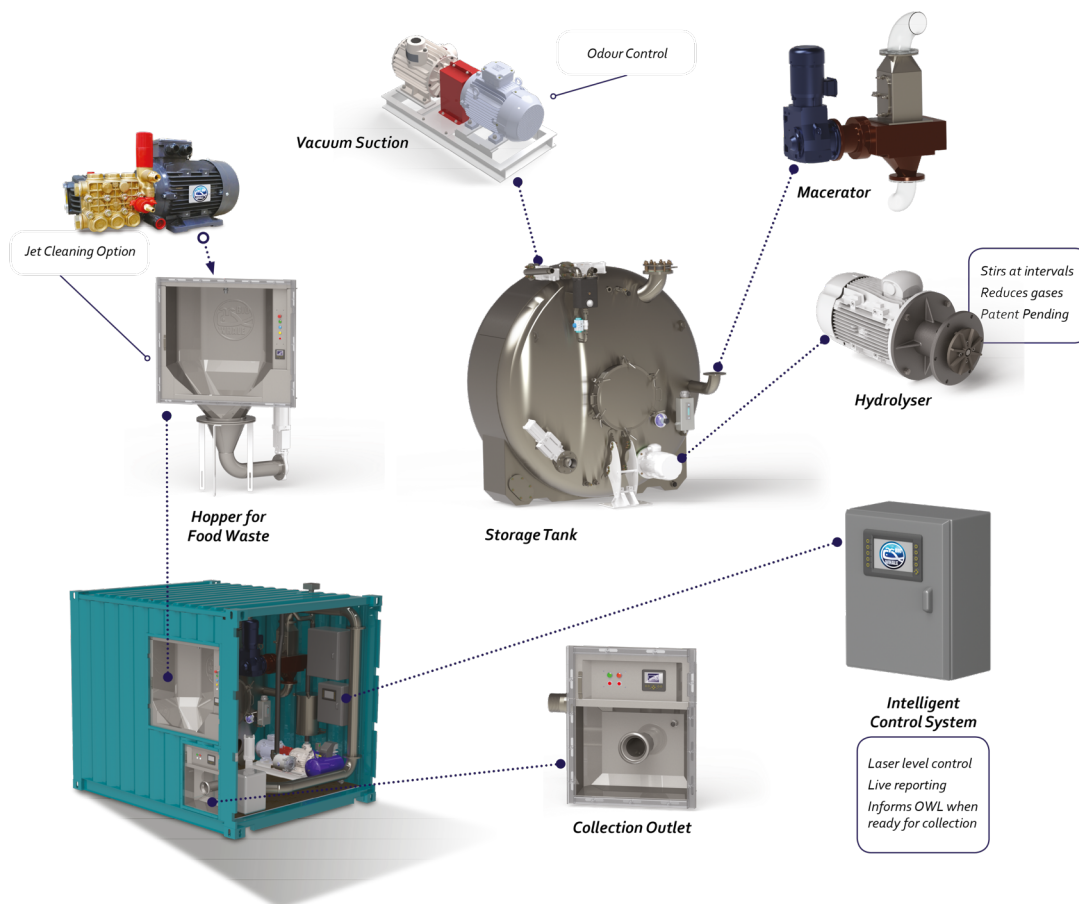
: Delivery: To site

: On Line Documentation

Technical file & certification available on secure on line application. (See enclosure) PDF File



The BioWhale Process



Paint Specification

Tank	
Internal:	Natural Finish Stainless Steel
External Tank	Natural Finish except in carbon steel parts painted Teal
Front Dish:	As Tank Finish
Rear Door:	As Tank Finish
Container:	Painted Teal or to customers specification
Paint Inspection:	100 microns dry film build (elcometer gauge)