

BALMORAL TANKS

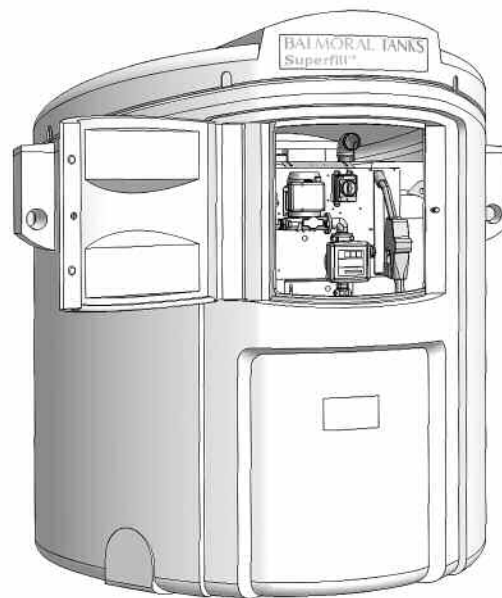
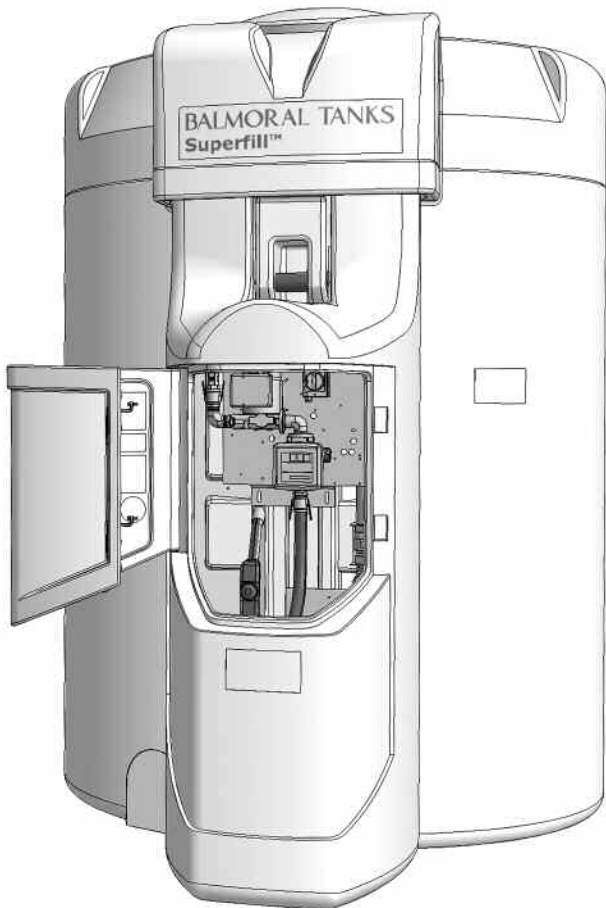
Installation and operating instructions

Balmoral Superfill™ integrated fuelling station

Vertical bunded tank with cabinet

Vertical bunded tank

2500, 5000, 7500 and 10,000 litre models



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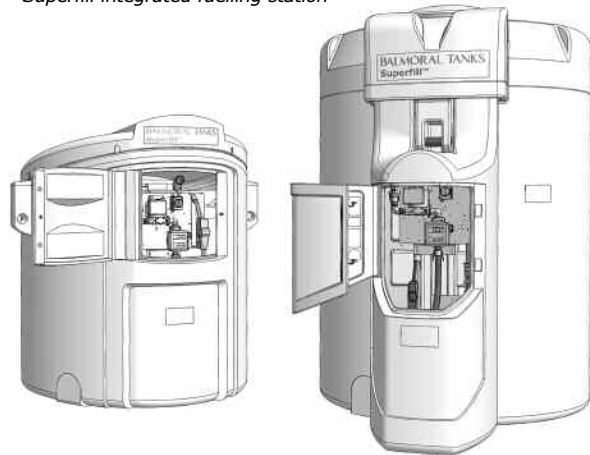
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Superfill™ integrated fuelling station (Figure 1)

- Ground-level tank filling
- Lockable cabinet
- Battery powered electronic contents measuring and bund alarm
- 50L/min. fuel delivery and analogue flowmeter

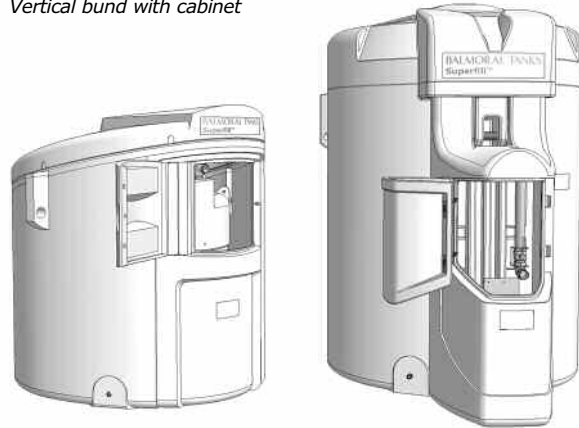
Figure 1
Superfill integrated fuelling station



Vertical Bund with cabinet (Figure 2)

- Ground-level tank filling
- Lockable cabinet
- 1" BSP gravity-fed base-empty (top-empty as option)
- Battery powered electronic contents measuring and bund alarm

Figure 2
Vertical bund with cabinet



Vertical Bund (Figure 3)

- Top tank filling (through manway access)
- 1" BSP gravity fed base-empty (top-empty as option)
- Battery powered electronic contents measuring and bund alarm

Figure 3
Vertical bund



All tanks are non pressurised and vent to air.

General information

Handling

Balmoral tanks are delivered on pallets which allow them to be handled efficiently by forklift. Superfills and vertical bunded tanks must be handled with care and stored upright at all times. Figure 4.

Balmoral Superfills and vertical bunded tanks incorporate moulded-in lifting points to allow crane handling on and off vehicles and into position when on-site.

Remember, integrally bunded tanks are effectively a 'tank-within-a-tank' and care must be taken not to disturb the inner tank in relation to the outer tank.

Tanks must be fully drained of contents before being lifted or moved

Installation

All plastic fuel oil storage tanks must be installed on a flat, level concrete base (extending 300mm beyond the perimeter of the tank) that is capable of withstanding the weight of a full tank throughout the life of the product.

Uneven bases, bases with gaps or tanks overhanging their base will cause stresses outside the tanks' design parameters and may cause premature failure.

In accordance with regulations and guidelines, ensure there is appropriate clearance from any obstructions surrounding the tank.

- 6m from tank to wall or boundary
- 1.8m from tank to 'Type C' screen/wall (of building)
- 1.8m from tank to doorway or window with appropriate heat resistance

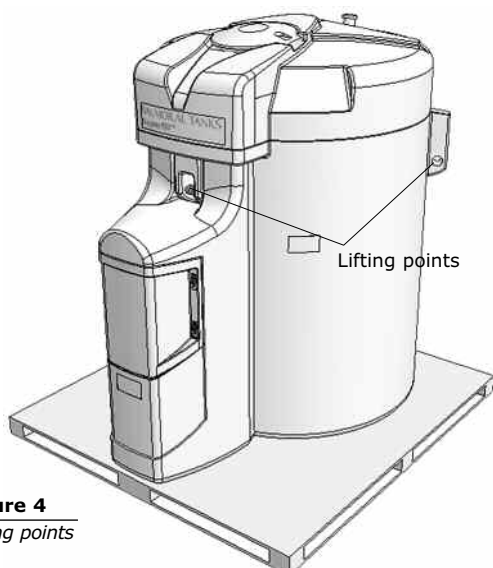


Figure 4
Lifting points

Tanks are designed with the expectation that they will be installed at ground-level. We recommend a full site inspection and risk assessment be completed prior to installation.

Please refer to the 'Quick Start Reference Guide' label affixed to the product and contact OFTEC, your local authority and environmental organisation for further information.

Materials containment

Superfill tanks and fuel delivery systems are designed to store and deliver agricultural fuel oil (A2) and diesel (D) to BS2869, and 5% mixture biofuel to BSEN14214 standards.

Vertical bunded tanks are designed to store all the above as well as kerosene (C1, C2) to BS2869, molasses and non-potable water.

Overfilling

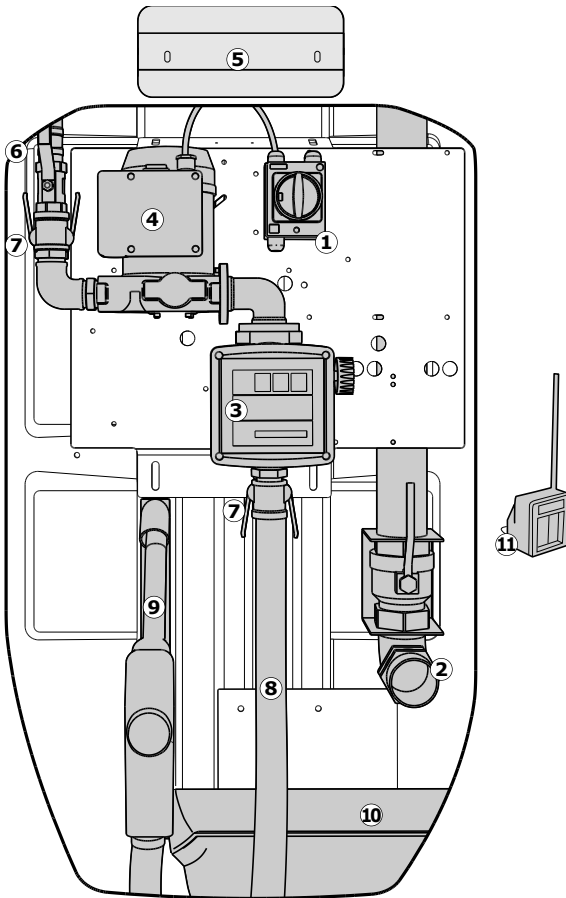
If the tank is overfilled with fuel then the excess will spill into the bund. This will cause no damage to the Superfill unit. Any fuel in the bund must be removed as a matter of urgency. Failure to remove fuel from the bund may cause the inner tank to float when there is a low level of fuel in the inner tank, and may cause damage to gravity fed base-empty tank connectors.

Regulations and guidelines

The following regulations and guidelines are applicable to the installation and maintenance of fuel delivery stations and fuel oil tanks and are available from their respective authorities:

- British Standards: BS5410-1/2
- Environment Agency: PPG2
- Scottish Environmental Protection Agency: PPG2
- OFTEC: TI/131, TI/136, T19, T32, T14
- Control of Pollution (oil storage) (England) Regulations 2001
- Water Environment (oil storage) (Scotland) Regulations 2006
- Groundwater Regulations 1998
- Local Building Regulations may also cover the site preparation and installation of integrally bunded tanks.

5000, 7500 and 10,000 litre models



2500 litre model

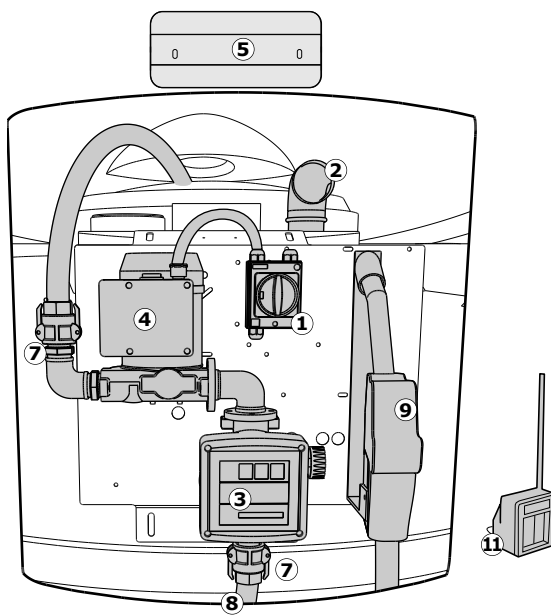


Figure 5

- 1 Double pole isolator switch
- 2 2" tank filling port
- 3 Analogue flow meter
- 4 Fuel pump
- 5 Cabinet lamp
- 6 1" valve (Not available on 2500 litre model)
- 7 Quick release couplings
- 8 1" fuel delivery line (6m maximum reach)
- 9 Nozzle
- 10 Drip tray (Not available on 2500 litre model)
- 11 Remote contents gauge (Available with all models)

Superfill™ Integrated fuelling station (Figures 1 & 5)

Electrics

There is a double pole isolator switch (1) mounted on the pump plate inside the cabinet which should be connected to a mains power source.

When connecting the Superfill to mains power source we recommend a 5A 'Type C' circuit breaker at the consumer unit to protect the supply.

You can choose to run the power supply cable into the cabinet from either the right or left hand side.

We recommend you drill a hole within either of the regions shown in Figure 6. Route the power cable so that it doesn't foul or obstruct access with the fuel delivery hose and fill port. A bulkhead connector should be used to secure the power cable.

All electrical work must be carried out by a qualified electrician.

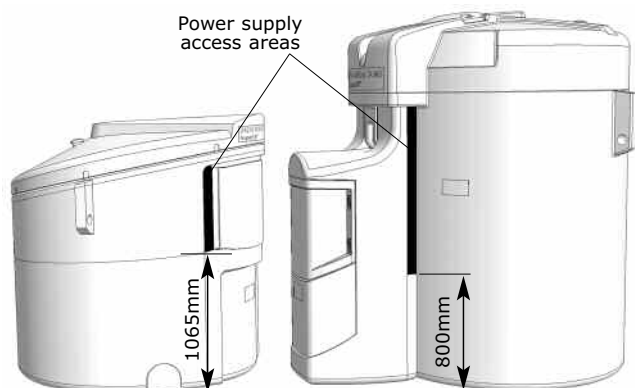


Figure 6

Power supply access areas

SUPERFILL AND VERTICAL BUNDED FUEL OIL STORAGE TANKS

Filling the Superfill

Superfills can be filled from ground level through a 2" BSP filling port (2). The 5000, 7500 and 10,000 litre models have a non-return valve to minimise drips when uncoupling after filling.

On the 5000, 7500 and 10,000 litre models, a lever-controlled ball valve is included for additional safety: ie, lever in-line (6) with hose = open; lever perpendicular to hose = closed.

The Superfill's fill line has a mechanical overfill prevention valve (OPV). The OPV limits are indicated on a label fixed inside the cabinet door. See figure 7.



Figure 7
OPV limits

Monitoring the Superfill contents

Electronic contents gauge

Balmoral Superfills are supplied with an electronic level monitoring gauge (11). The measurement reader is situated within the bund, on top of the inner tank, and has a leak detection device within the bund cavity. The display unit should be connected to a standard 3-pin socket, eg, in house.

This system is pre-set at the factory and, once activated, will display the tank contents in 1/10th's, and will also display a warning in the event of a spill or leak into the bund cavity.

Please refer to the specific product literature supplied in your document pack for further details.

Analogue flow meter

The analogue meter (3) on the delivery system has two readings:

- i 3-digit batch total which can be reset
- ii 6-digit totaliser which cannot be reset

Please refer to the specific product literature supplied in your document pack for further details.

Fuel dispensing

Switch on power at the isolator switch (1) ensuring there is an electricity supply already connected to your Superfill.

There is an additional 'on/off' switch on the pump (4). If this is illuminated, power is present. If not illuminated, move the switch to 'on'. You should then hear the pump running.

Ensure the system is attended at all times when in use

There is a return capillary feed from the pump into the inner tank. This protects the pump while the nozzle is closed and the pump is running. Please note, this provides protection of the delivery system for only a short period of time.

Please refer to the specific product literature supplied in your document pack for further details.

When the isolator switch (1) is activated a lamp (5) within the cabinet is automatically switched on. A maximum 40W bulb is recommended to minimise heat build up within the cabinet. If the lamp (5) does not illuminate when the system is switched on the bulb may require replacing. This will not affect the operation of the delivery system. Remove the lamp cover to replace the bulb.

The pump system* (4) is connected using quick release couplings (7). On the 5000, 7500 and 10,000 litre models, the coupling into the pump system is secured with a warranty tag which, if broken or tampered with without authorisation from Balmoral Tanks, invalidates the product warranty.

The delivery hose (8) running from the pump system is secured using a standard cable tie. This can be removed to allow replacement of the delivery hose, due to natural wear and tear, by the operator if required.

The Superfill is provided with six metres of delivery hose (8) as standard with a trigger-activated nozzle (9). With the delivery system switched on, fuel delivery is activated by pulling the trigger on the nozzle. Allow a few seconds for fuel to charge the delivery line, especially when the tank is filled and operated for the first time, or after maintenance.

* On 5000, 7500 and 10,000 models, ensure the 1" valve (6) is open

As an environmentally considerate precaution, and for good 'housekeeping' reasons, the nozzle should be replaced in the holster when not in use.

Switch the system off at the isolator switch (1) when not in use

On the 5000, 7500 and 10,000 litre models, a removable drip tray (10) is provided which catches drips from the 2" fill port (2). Please dispose of contents responsibly.

Vertical bunded tank with cabinet including integral cabinet on VB2500 (Figure 2)

Electronic contents gauge

An electronic contents gauge (11) is supplied with this product. See page 4.

Filling the tank

The vertical bunded tank with cabinet can be filled from ground level through a 2" BSP filling port (2). On the 5000, 7500 and 10,000 litre models, this has a non-return valve to minimise drips when uncoupling after filling.

On the 5000, 7500 and 10,000 litre models, a lever-controlled ball valve is also included for additional safety: ie, lever in-line (6) with hose = open; lever perpendicular to hose = closed.

The fill line has a mechanical overfill prevention valve (OPV). The OPV limits are indicated on the label fixed inside the cabinet door. Figure 7.

On the 5000, 7500 and 10,000 litre models, a removable drip tray (10) is provided which catches drips from the 2" fill port (2). Please dispose of contents responsibly.

Bottom-empty

The tank uses a 1" BSP connection. It is supplied with a connection kit which includes a valve, filter bowl and adapter. These items are to be fitted by the installer. Ensure the valve is closed unless required.

The bottom empty lock-nuts are factory fitted to a pre-set torque and must not be tampered with.

Top-empty

On the 5000, 7500 and 10,000 litre models, access to the top-empty outlet is by way of a manway on top of the bund. On the 2500 litre model, access to the top empty outlet is through the front door. A 10mm copper tube rises through the inner tank and terminates with a bulkhead fitting at the top of the tank.

An offtake pipe can be attached and run off to the installation as required.

Any pipeline from this must run through the bund lid.

Vertical bunded tank excluding VB2500 (Figure 3)

Electronic contents gauge

An electronic contents gauge (11) is supplied with this product. See page 4.

Filling the tank

Vertical bunded tanks are filled through the manway hatch on top of the tank directly into the 2" BSP filling point. This has a mechanical overfill prevention valve (OPV). The OPV limits are indicated on a label fixed inside the cabinet door. Figure 7.

Safe access must be provided to the top of the bund and through the manway hatch.

Bottom-empty

The tank uses a 1" BSP connection. It is supplied with a connection kit which includes a valve, filter bowl and adapter. These items are to be fitted by the installer. Ensure the valve is closed unless required.

The bottom empty lock-nuts are factory fitted to a pre-set torque and must not be tampered with.

Top-empty

On the 5000, 7500 and 10,000 litre models, access to the top-empty outlet is by way of a manway on top of the bund. On the 2500 litre model, access to the top empty outlet is through the front door. A 10mm copper tube rises through the inner tank and terminates with a bulkhead fitting at the top of the tank.

An offtake pipe can be attached and run off to the installation as required.

Any pipeline from this must run through the bund lid.

Maintenance

Balmoral Tanks advises a regular maintenance programme and highly recommends registering your tank with its Customer Service department to secure the initial 12 months' warranty support. Annual service and maintenance contracts are available direct from Balmoral Tanks. Please contact Customer Services to put this in place.

End user/owner maintenance and inspection

- Mop up drips from inside the cabinet
- Wipe down and keep delivery hose clean
- External visual checks of bund for impact damage and distortion which could be an indication of contents displacement
- Visual check of internal bund cavity, in addition to bund alarm, for any build up of overspilled oil or leaks
- Visual inspection of hoses. Check for cracks, abrasion, etc
- Check all connections for leaks

BALMORAL TANKS

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