

BALMORAL TANKS

BULK LIQUID STORAGE TANK INSTALLATION INSTRUCTIONS

Before installing your Balmoral bulk liquid storage tank please read the following guidelines carefully.

Unloading

- Upon receipt of tank, it is the responsibility of the client/installer to inspect for damage or missing parts. If observed, the tank should not be put into service and the carrier/manufacturer notified accordingly.
- Tanks up to 9,000 litre capacity may be hand carried or moved with a forklift using protected or rounded fork extensions. This will prevent forks from damaging the tank while providing adequate support.
- Larger tanks should be moved, loaded and unloaded by crane with a spreader beam and two nylon slings of appropriate size and rating positioned on each tank as shown in Fig 1.

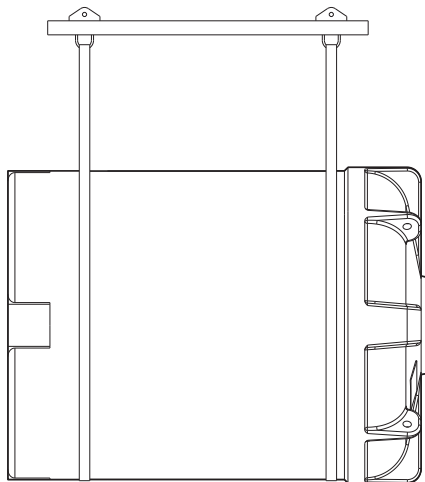


Figure 1
Unloading the tank

Tank lifting lugs are intended for moving the tank from a horizontal to a vertical position on a firm surface and should not be used to load or unload tanks from trailer because the tank is liable to roll off the trailer as the load is moved.

- Once the tank has been placed on a firm level surface, in a horizontal position, the lifting lugs

may be used to lift the tank into a vertical position using an appropriate support pad to relieve point loading at the knuckle of the tank.

The tank should be lifted using a spreader beam across the lifting lugs allowing clearance for top mounted fittings. See Fig 2.

Lifting from a central point will induce stress on lugs and slings may foul top fittings when lifting.

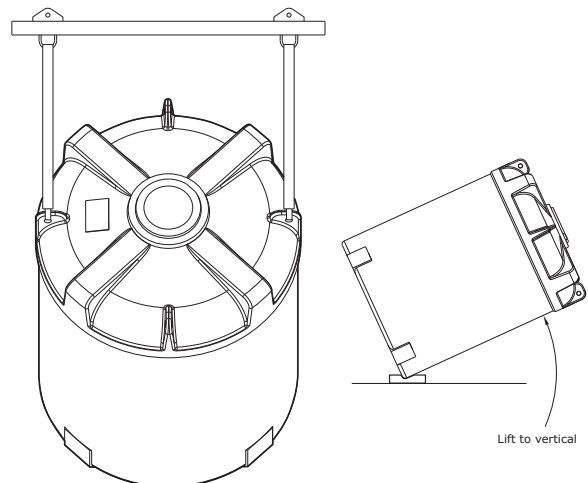


Figure 2
Lifting to vertical

A restraining rope should be secured around the circumference of the tank at the base to assist stabilising when lifting and reduce oscillation.

Once vertical, all four lugs should be used for positioning the tank.

Depending on site conditions, option of tandem crane lift may be preferable.

- Do not climb or stand on the tank as the outer surface can be a slip hazard.
- Insulated tanks must be moved with devices that have large padded contact surfaces to

prevent damage to the foam insulation. Never allow the tank to drop or roll on rough surfaces as this may damage the foam insulation.

- Take extreme care at all times - heavy impact may cause fractures.

Installation

- Before installation it is the end-user's responsibility to check for any legislation, regulations, planning approvals or safety guidelines that affect the site, its preparation and the design or application of the tank to suit their specific requirements.
- Position tank to allow best access for filling, maintenance and safety.
- Install in an upright position, supporting the entire base of the tank on a firm, flat, level surface ensuring the area is free from any sharp stones and debris. The surface or supporting structure should be able to withstand the total weight of the tank when full and be suitable for long term tank location.

When concrete bases are specified, departure from nominal level should not exceed $\pm 3\text{mm}$ per metre, and must be at least 200mm greater than the outside diameter of the tank.

- The most frequent cause of tank leakage is improper plumbing. Pipework and valves should be correctly aligned and supported independently from the tank. Flexible connections/couplings should be used wherever practicable to permit lateral and vertical expansion/contraction of the tank whilst also reducing stresses caused by the transmission of vibration by pumps, etc.

- Ensure all fill lines, vents and other connecting accessories are clear of any obstruction before attempting use.

- Ensure tank is protected from strong winds, especially when empty, using anchor points where appropriate.

- It is advisable that hydrostatic headwater testing of tanks and appropriate plant be carried out after installation and prior to first chemical fill.

- If relocating tank, only lift when completely empty as all Balmoral chemical tanks are designed for static application and are heavy when full.

Operation

- Balmoral bulk liquid storage tanks are not pressure vessels and normal atmospheric pressure should be maintained by venting to atmosphere.

- Due to the enclosed nature of Balmoral's bunded bulk liquid storage tanks it is critical that appropriate warning devices or regular inspection programmes are in place to monitor bund liquid levels and that any such levels are removed as soon as practicably possible.

This information is for guidance only and can form no part of any contractual agreement either with Balmoral Tanks or any third parties. Balmoral Tanks can accept no responsibility for any assumptions or agreements made as a result of this information.

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