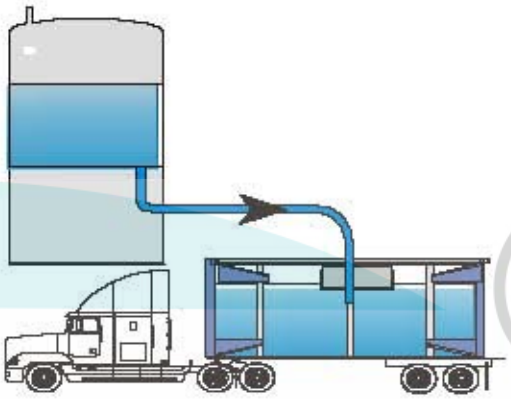
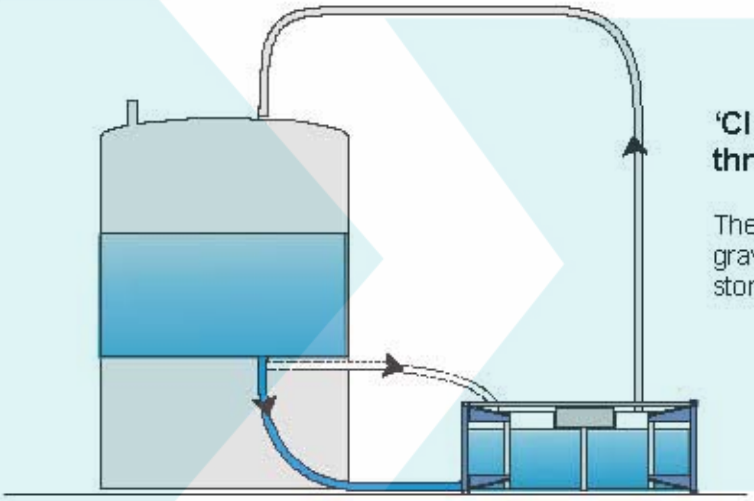
Loading methods

Gravity loading through manhole

The cargo flows freely from an overhead storage tank through the manhole into the tank container.



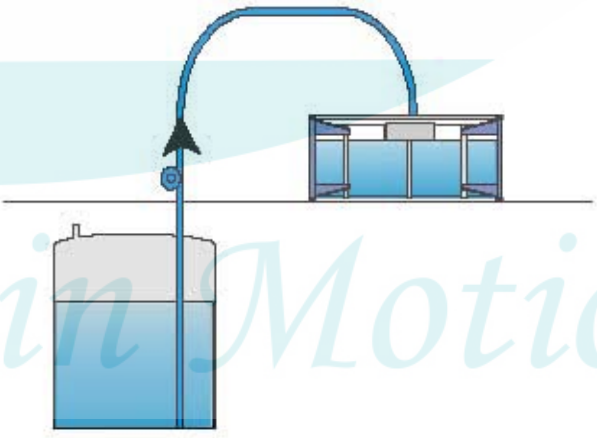


'Closed system' gravity loading through top or bottom inlet

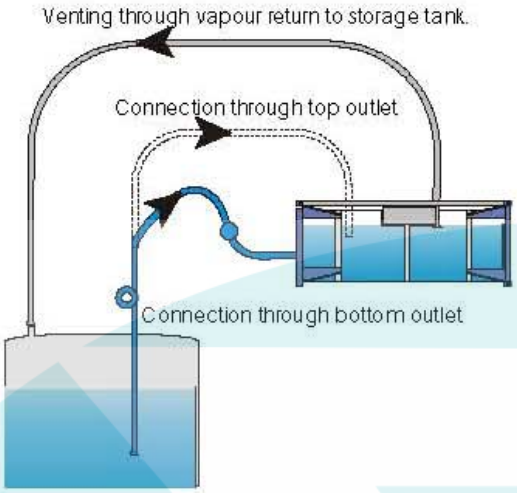
The cargo flows into the tank container under gravity, with vapours vented back to the storage tank via the airline connection.

Pumped loading through manhole

The cargo is pumped from the storage tank through the manhole into the tank container.



Operation

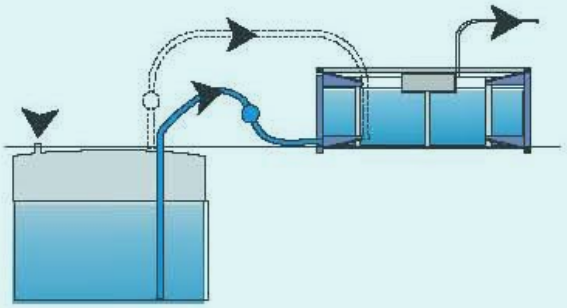


'Closed system' pumped loading through top or bottom inlet

The cargo is pumped into the tank container, with vapours vented back to the storage tank via the airline connection.

Pressure loading through top or bottom inlet

The cargo is loaded by top pressure in the storage tank. For sensitive or hazardous cargoes, vapours are vented via the airline connection to a vent tank.



Safety points to note during loading and discharge

There will always be a pressure difference between a closed tank and atmosphere. Valves must be opened carefully. Always relieve pressure before opening the man-lid. Do not stand on the man-lid when loosening swingbolt assemblies and ensure that the seal is cracked before removing all swing-bolts. When using the bottom outlet always open or close the foot valve first. Man-lid swing-bolt assemblies need only be hand-tight if the seal is in a serviceable condition; further tightening will not be necessary.

Never enter a tank until all the safety recommendations have been complied with.

Loading procedures

Procedure before loading

In addition to the local on-site safety regulations and procedures the following must all be noted:

1. Ensure that the vehicle is securely braked, choking the wheels if necessary.
2. Ensure that the cargo is of correct specification and quantity. The quantity must be within the capacity of the tank.
3. Ensure that safety or fire-fighting equipment (including adequate water and showers, if required) is positioned upwind of the tank.
4. Ensure that the earth connection is made from the tank earthing point to a local earth position before making the hose connections.

5. Ensure that hose connections have the same thread or fitting as the tank connections, correct joint rings and gaskets are used and they are compatible with the cargo.

NOTE: The loading personnel will usually make hose connections but the driver must ensure that this is properly carried out.

6. Ensure that appropriate facilities exist for the draining of hoses and valves.

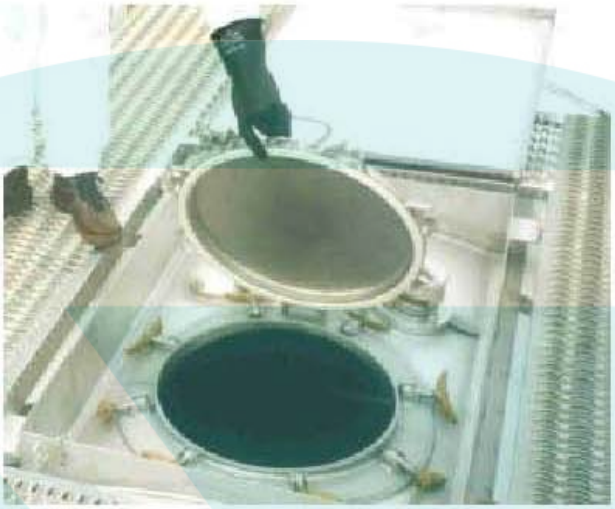
Additional checks for loading only:

7. Check the cleanliness Certificate and/or Gas-Free Certificate.
8. Open man-lid and examine tank interior and inlet/outlet valves for cleanliness after satisfying (7.)
9. Check vacuum relief valves (if fitted) for freedom of movement. Where a plastic plug is fitted to the valve, remove plug and depress vacuum valve poppet using rod or pencil, ensure poppet reseats and replace plug.

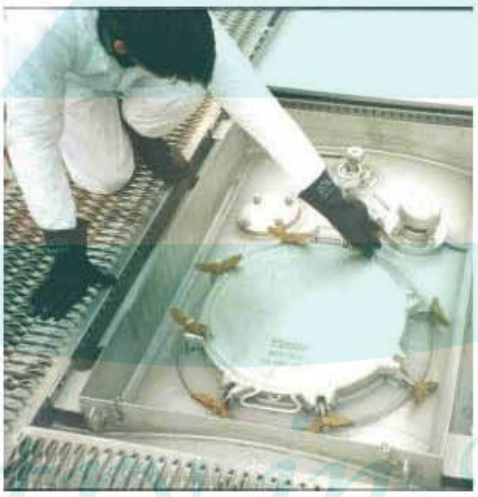
NOTE: *For cargoes being carried under an inert gas blanket, see section on gas blanketing.*

Loading through manhole

1. Refer to "Procedure before loading" section.
2. Check that all tank bottom valves are closed.
3. Open man-lid and insert hose into tank, taking care not to damage the shell interior with the hose coupling.



4. Secure hose to stop possible whiplash
5. Load tank to required level. Check constantly for leaks in hoses and connections.
6. Drain hose and remove from tank.
7. Close man-lid and tighten down.



8. Refer to "Procedure after loading" section.

Loading through top inlet

1. Refer to "Procedure before loading" section.
2. Check that all tank bottom valves are closed.
3. Remove top inlet blank flange. Bolt hose coupling to top inlet flange ensuring connection is correct and tight.
4. Connect vapour return line to airline connection and open valve to vent tank.
5. Open top inlet valve and load tank to required level. Check constantly for leaks in hoses and connections.
6. Drain hose, close top inlet valve and remove hose from tank. Replace top inlet blank flange.
7. Close airline valve, disconnect vapour return line and replace blanking cap.
8. Refer to "Procedure after loading" section.

Loading through bottom inlet

1. Refer to "Procedure before loading" section.
2. Remove bottom inlet blank flange or cap, connect hose ensuring connection is correct and tight.

3. Connect vapour return line and open valve to vent tank.

4. Open foot valve (if fitted) and then the external valve. Load tank to required level.

Check constantly for leaks in hoses and connections.

For tanks with single bottom-outlet valve:

Close valve and then drain hose. Disconnect hose and replace blanking cap.

For tanks with foot valve and external valve:

Close foot valve. Drain hose. Close external valve, disconnect hose and replace blanking cap or flange. This sequence is to ensure that no product remains between foot valve and external valve.

5. Close airline valve and disconnect vapour return line and replace blanking cap.
6. Refer to "Procedure after loading" section below.

Procedure after loading

1. Clean and stow the supply and return hoses, replacing caps and blanks.
2. Ensure that all tank fittings are correctly closed and capped and any cargo spillage is removed, including any spillage on the tank.
3. Remove earth connection.
4. Replace safety equipment.
5. If required, seal tank and fittings in accordance with customs and customer requirements.
6. Check that the tank is properly labelled for the product loaded.