INSTALLATION MANUAL

TANKS AND FILTERS

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RECEPTION OF MATERIAL

Upon reception of tanks, and before to unload from truck, it must be inspected that no damages have been suffered in transport. If any incidence is detected it must be registered in delivery note from forwarder. Otherwise, it will be understood that has arrived in perfect conditions.

It is possible that due to external factors occurred during transportation, such as vibrations, temperature changes, handling, etc... it will be necessary a VISUAL inspection and CHECKING of tightness of components installed in tanks, BEFORE to run any operation with the equipment.

Manholes will be checked with correct installation of O-rings / flat gaskets, and appropriate tightness of screws.

In case of other accessories such as valves, sight glass, manometers and others, its installation must be checked. Connection of each component will be according particular recommendations for each case. Our Technical Department will give you especial recommendations.

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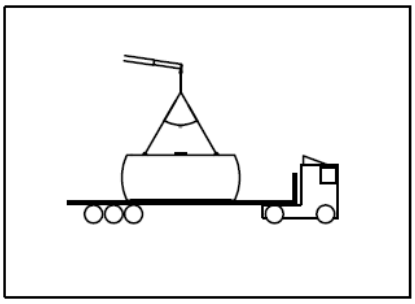
HANDLING AND INSTALLATION: SURFACE TANKS AND FILTERS

HORIZONTAL TANKS AND FILTERS

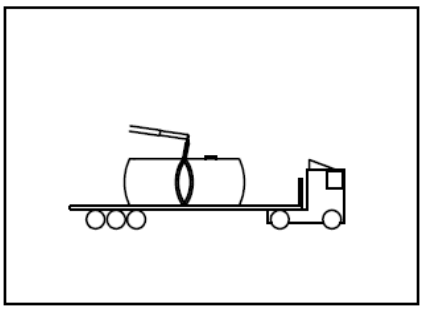
With lifting lugs:

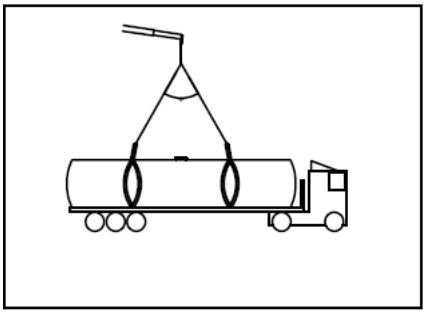
If the equipment is supplied with lifting lugs, it will be lifted using polyester slings (never chains or metallic cables) in an angle close to 60º.



Without lifting lugs:

It will be lift using polyester slings (never chains or metallic cables).
Tank / Filter will be lift from the centre, lacing the tank from the centre of gravity.
In large tanks, it is recommended to use two (2) slings and hang the tank at the ends, joining them with another sling at an angle close to 60º.





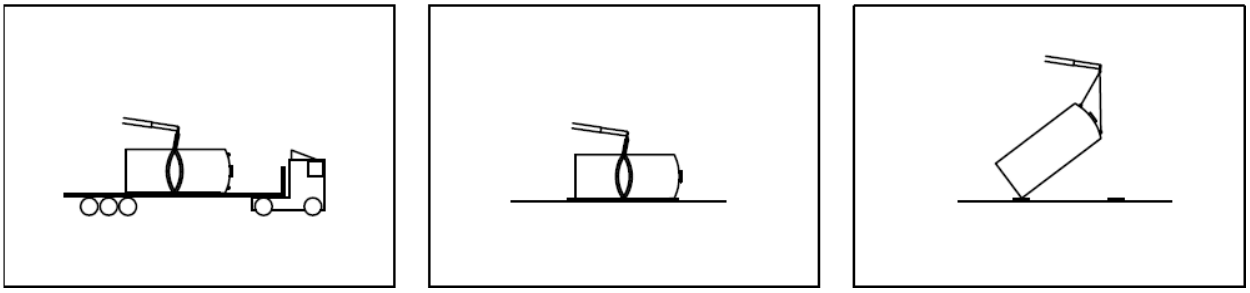
VERTICAL TANKS AND FILTERS

With Lifting Lugs:

It will be used polyester slings. Never chains or metallic cables.

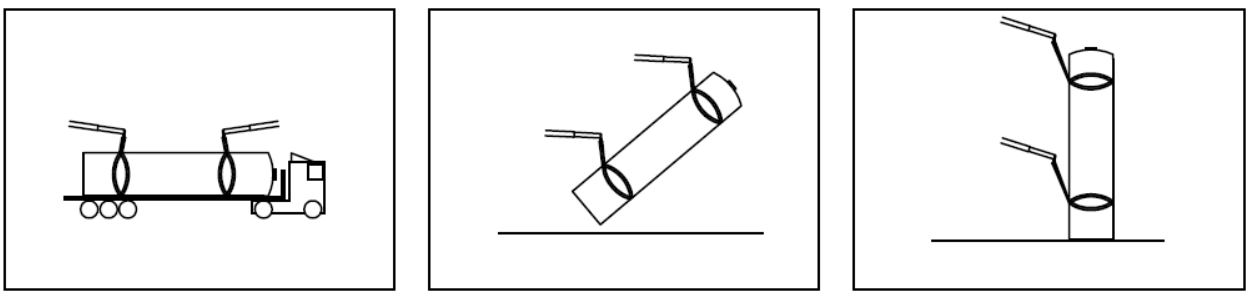
- If tank is in vertical position, it will be lifted through lifting lugs with slings in an angle close to 60º.
- If tank is in Horizontal position, it will be lift from the centre, lacing the tank from the centre of gravity. Tank will be deposited on two pallets on the floor at distance equivalent to total length of tank. For the elevation and install in vertical position, all lifting lugs must be used. with the slings at an angle of 60º. **It will never be pulled only from one lifting lug.**

It is necessary to support the base of tank at any time during this process avoiding dragging the tank or hitting it.



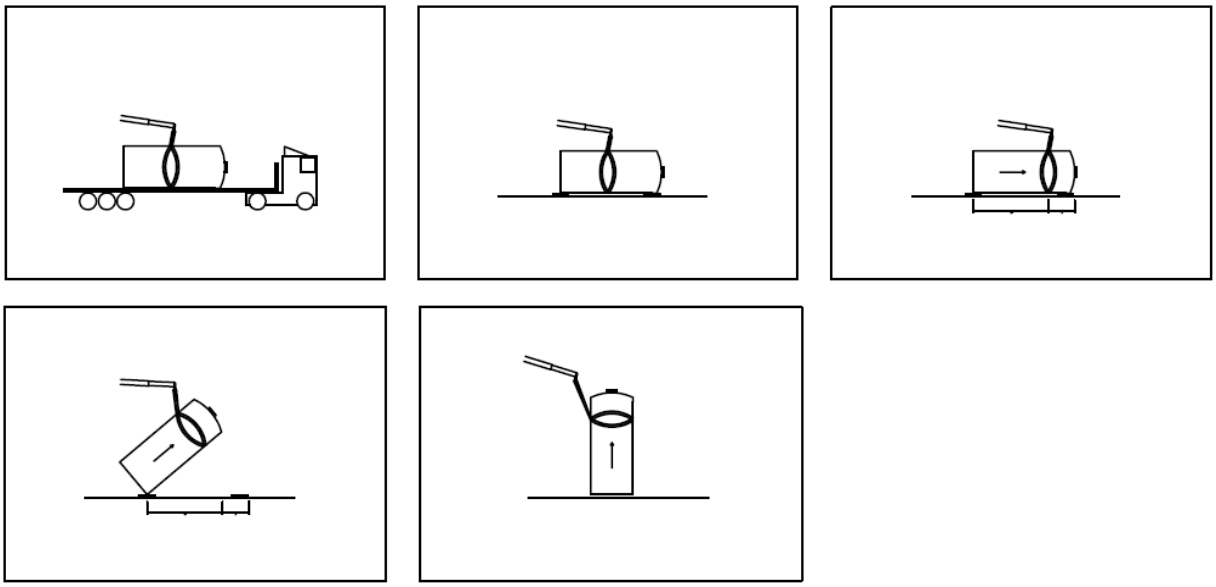
For Large Tanks and /or tanks with top railings.

For large tanks is recommended to use two (2) cranes, lacing tank from both sides with polyester slings. If will be lifted at once by both cranes avoiding any contact / impact against floor. Once in vertical position it will be subjected using lifting lugs for installation on its position in Plant. To finalize installation works it will be necessary a lifting platform.



Without lifting lugs:

It will be used polyester slings. Never chains or metallic cables.
For unload tanks from truck, it will be lift from the centre, lacing the tank from the centre of gravity. Tank will be deposited on two pallets on the floor at distance equivalent to total length of tank.
For the elevation and installation of tank / filter in vertical position, sling position will be moved towards a third of the height of the tank (upper part) and it will be lifted carefully, always with something under the lower end, avoiding dragging the tank or hitting it.



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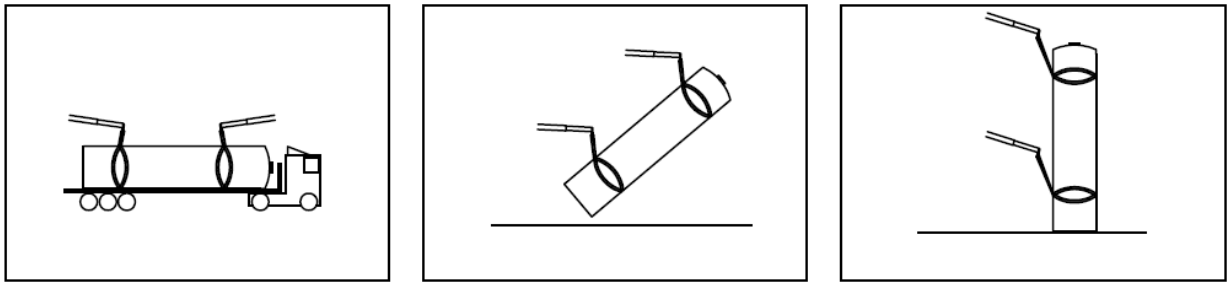
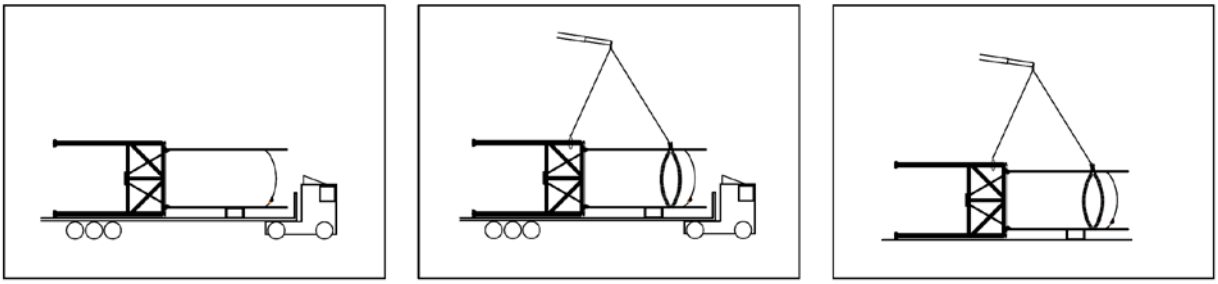
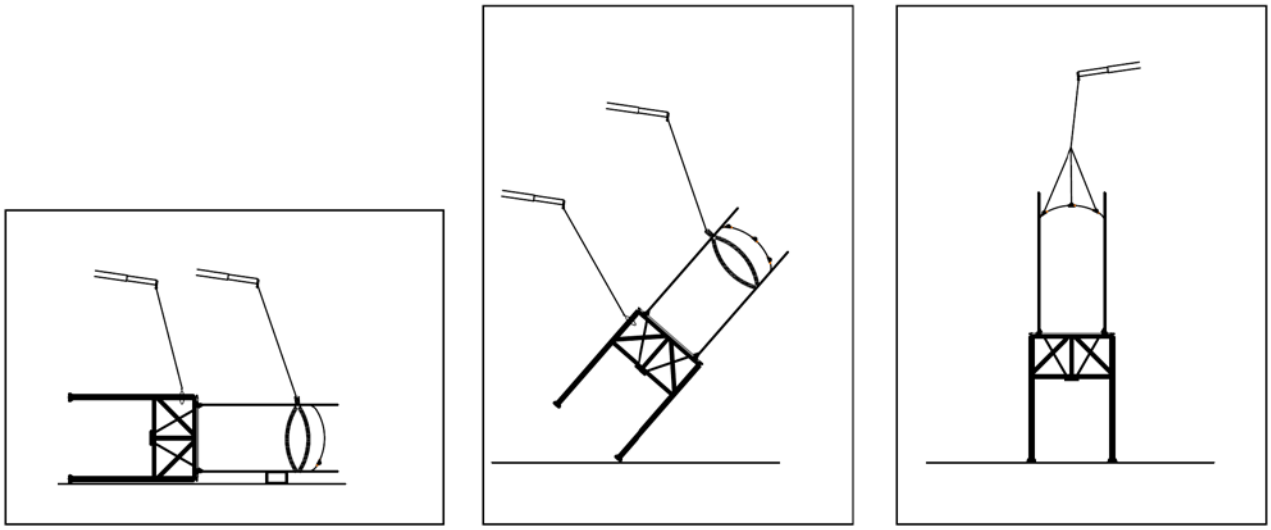


SILOS AND BIG VERTICAL TANKS WITH METALLIC LEGS

Silo is transported in horizontal position of Truck. In a first stage It will be placed in Horizontal position on floor. For this operation is necessary to fix two (2) polyester slings:
-One will be laced around upper side of cylinder of tank.
-Another will be fixed on 2 or 3 legs on the Steel Structure.
Slings will be fixed to a mobile crane at an angle of 60º, lifted from truck and placed on some pallets on the floor.



To put Silo in vertical position, it will be necessary two (2) mobile crane, one for each of slings fixed at the tank. Carefully lifting the tank, it will be placed in vertical position, avoiding dragging the tank or hitting it, which could damage it.
Once in vertical position, slings will be now connected to the lifting lugs, at an angle of 60º and installed at final place / position. It will be necessary an elevation platform to access top lifting lugs.



IMPORTANT REMARKS

- Base where tank will be installed must be reinforced concrete, completely smooth and levelled (**max tolerance ± 3 mm for each linear meter**).
- Fixing anchors will never be pulled.
- In case of filters or tanks with legs, they will never be lifted by pulling legs.
- If lifting lugs are installed, lifting must be from all of them at once, never from only one.
- Elevation of tank must be done smoothly, avoiding impacts on the ground.
- For tanks with flat base or horizontal with legs, it can be deposited some raw cement on the base to correct possible deviations on the floor, and ensure complete support on the platform.

For such proposal, it will be used especial cement that do not loose volume while curing.

In case of doubt, do not hesitate to ask to our technical department.

- If the tank has ladders or metal footbridges, it needs to be studied in particular for each case if assemble before or after lifting. If it is possible to damage them, it will be better to assemble the ladder after lifting the tank.

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UNDERGROUND SEWAGE TREATMENT PLANTS (SWT)

1.- Dig a ditch with extended dimensions 100 cm respect to tank dimensions (large and width). Check that bottom end is flat, regular with no steps.

2.- Build a concrete layer proportionate to the weight of tank to be supported. Such layer will be responsibility of plant installer (not Trepovi). Only as reference and with the intention to give an idea, for standard tanks 2000 mm diameter, it would be necessary a thickness of 15 cm, while should be 20 cm for bigger diameters.
Concrete, should have a resistance of 175 kg/cm^2. Surface must be levelled, smooth and regular without impurities or defects in shape. In case of any doubt, please ask to our technical department.

3.- For unload equipment from trucks / lifting, use ONLY lifting lugs, designed and installed for such proposal. Lifting will be done with polyester slings at an angle of 60º - 90º respect to the axis of tank. It is strictly forbidden use of chains or metallic cables. Additionally is necessary to avoid support any weight on the equipment during operations.

4.- Once concrete layer is totally cured / dry, it will be prepared a layer of 10 cm of clean gravel (**particle size, <5mm**). Tank will be carefully positioned and levelled over such layer.

5.-Deposit additional 300 mm thickness layers of gravel (**particle size <15mm**) flatten successively, till 1/3 of the height of the tank.

6.-Continue sequence of deposition of other 300 mm gravel layers, followed by increasing addition of water into the tank. Finally cover completely tank surface with gravel.

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Never use sand or soil.

Be sure that all layers are correctly compacted without empty areas.

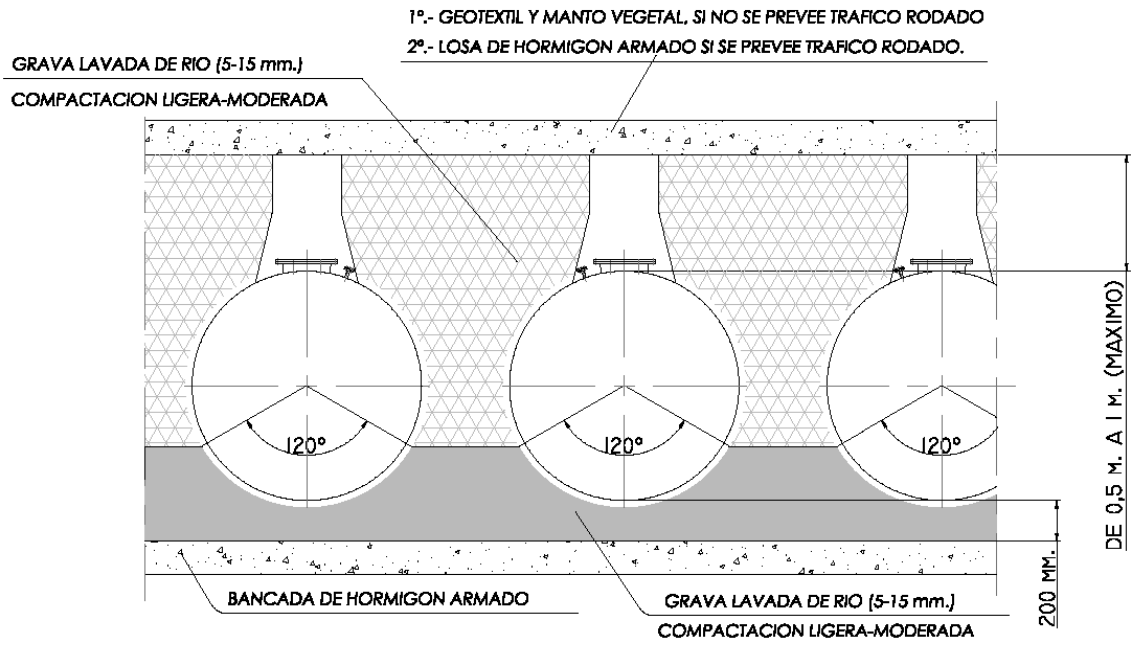
Optionally, it could be used concrete instead of gravel. In such case, it is necessary to prevent possible flotation of tank over concrete. For such proposal sequence should be add 50 cm of water in the tank and after 50 cm of concrete until curing. Once dry (cured), operation can be repeated with not more than 50 cm each charge, until half of tank is covered.

7.- In case of presence of underground water, is possible that tank tends to float. If this happen, ask immediately advice to our technic department, and **NEVER try to fix the tank using metal cables, or fixing it through lifting lugs**.

8.- Install screening basins on each all opening for access to the tanks. It cannot be in direct contact with the tank.

9.- **Level of sand coverage above tank must not be bigger than 50 cm.**

10.- If is expected, or possible, that cars can run above tank, is necessary to construct a 20 cm thick concrete slab, with dimensions extended 50 cm in each side of tank installed (large and width) and supported of solid land. If terrain is soft, or if is possible that concrete slab can move or displace, it should be supported on four consistent pillars. Construction of all this parts must be revised and approved by specialists because it can be affected by nature of terrain. Trepovi refuse any responsibility related to construction of concrete layer.



COMPACTACION MODERADA	COMPACTACION LIGERA
85-95% PROCTOR 40-70% DENSIDAD RELATIVA	<85% PROCTOR <40% DENSIDAD RELATIVA

REMARKS FOR SEWAGE TREATMENT PLANTS AND HYDROCARBON SEPARATORS

- Blower in sewage treatment pants must be installed beside the plant.
- Blower must be installed in a clean place, protected from dust and cold air, preferably in a ventilated room.
- To avoid any temperature transfer from compressor, in the first section of pipe from the compressor material used must be: Flexible Polyethylene (minimum PN16) / Copper / or Stainless Steel (PVC could be melt, so is not recommended).
- For Hydrocarbon separators, valve flotator will be blocked / subjected during process of fill with water. Once filled, it will be allowed to take its correct position (floating on water).

WARRANTY

TREPOVI SL warrants that Products and Parts manufactured supplied are free from defects in materials and workmanship under normal use and service.
This warranty applies only to original purchaser and begin on the date of delivery of the material for a period of 2 years.
Terms, limitations and obligations are described below:

Obligations:

Should a material defect in workmanship, materials or products covered by this warranty become evident during the applicable warranty period, Trepovi S.L. will remedy, repair or replace the defective Product or Part with a limit value not exceeded the purchase price paid. Terms of this warranty are subject to laws and regulations of our country. Any legal procedure will be only competent at the Solsona (Lleida) tribunal.

Procedure:

In all instances of a Product or Part warranty claim, and prior to providing any warranty remedy, you shall:
1.- Notify us in written form a warranty claim within five (5) business days of your receipt of the claim, stating the serial number and a brief description of the problems encountered.
For warranty claim that includes property damage or bodily injury you shall notify us in written form, to allow us act accordingly.
2.- Investigate the claim, which may include digital photographs of the installed Product, verifying proper installation, or other means of validating the claim and verifying the damages claimed.
3.- In case not material defect can be demonstrated from previous data, Trepovi will request return the defective product to us freight prepaid, no later than the expiration date of the warranty period provided in this Limited warranty.

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Exclusions of this Warranty:

1.- Defects not reported to us within the applicable warranty period.
2.- Any items manufactured by other companies.
3.- Problems resulting from failure to comply with installation, operation or maintenance instructions.
4.- Damage caused by acts of nature or problems resulting from abuse. misuse, negligence or accident.
5.- Problems resulting in whole or in part from alteration, modification or attempted repair of these Products or Parts.
6.- Damage or failure of a Product or Part caused by friction, wear, chemical attack or debris build-up on wear parts. "wear parts" include, but are not limited to: filter-nozzles, distributors, adapters and connectors, nuts and washers, as well as parts requiring replacement under recommended maintenance procedures, such as cartridge filters, filter elements, O-rings and gaskets.
7.- Noncompliance with applicable codes and ordinances
8.- Damage due t impacts, corrosive liquids, gases or chemicals.
9.- Damages due to hydro-pneumatic or pneumatic use.
10.-Labour to install warranted parts and trip charges including mileage are the responsibility of the system owner.

Additional Exclusions:

1.- Failure to operate equipment in accordance with the limitations stated on the product label.
2.- Failure to properly size equipment to manufacturer recommendations.
3.-Use of products or parts with water containing sediment or chemicals.
4.-Injury to equipment or any part thereof caused by exposure to vacuum, freezing, external impact, chemical attack from liquid and gasses, fire, floods or lightning.
5.- Chemical Barrier abrasion caused by faulty distribution systems.
6.- Exposure of plastic surfaces to incompatible lubricants or sealants.

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