

HANDLING & INSTALLATION INSTRUCTION MANUAL





HANDLING AND INSTALLATION INSTRUCTIONS

TABLE OF CONTENTS

ABOVE GROUND STORAGE TANKS	Page 2
INSPECTION	Page 2
INHERENT CHARACTERISTICS	Page 2
HANDLING	
General	Page 3
Handling Skidded Tanks	Page 3
Lifting / Handling Lugs	Page 3
FLAT or SLOPED BOTTOM TANKS	Page 4
Tank Bottom Support Pad	Page 5
Bottom Buffer Pad	Page 5
Side Bottom Flange Pad Cut Out	Page 6
Hold Down Lugs	
Standard Lugs	Page 7
Anchor Dogs / Load Ledge	Page 8
DISHED or CONE BOTTOM TANKS	Page 9
Leg Supported or Sidewall Lug Supported	Page 10
HORIZONTAL TANKS	Page 11
INSTALLATION	
Fitting Connections	Page 12
Water Fill Test	Page 12
Tanks For Food Application	Page 12



HANDLING AND INSTALLATION INSTRUCTIONS

ABOVE GROUND STORAGE TANKS

The following handling and installation instructions are intended to help customers install tanks properly and efficiently.

Handling and installation instructions are only recommendations. They do not relieve the purchaser from full responsibility for proper inspection, handling and installation. Improper handling or installation, which results in damage or tank failure, is the sole responsibility of the purchaser. Failure by the customer to comply with the handling or installation instructions will void the tank warranty. Unknown situations or conditions are also the burden of the purchaser.

The presence of BELDING TANK TECHNOLOGIES personnel or an authorized representative at the installation site does not relieve the purchaser of their responsibilities.

INSPECTION

At the time of delivery the customer shall be responsible for inspecting the tank for damage during transit. Both the inside and the outside of the tank must be inspected. All manhole bolts should be removed to allow for proper inspection. For your convenience, we have installed a minimum number of bolts in the manhole(s). See BELDING TANK TECHNOLOGIES Operation & Maintenance Instructions for proper sequence and torque settings for manhole bolting.

If damage has occurred it should be noted on the delivery receipt prior to signing acceptance, whether it be a BELDING TANK TECHNOLOGIES truck or common carrier. In the case of a common carrier, claim should be immediately filed by the customer with the delivering carrier. If delivery is made by a BELDING TANK TECHNOLOGIES truck, the factory should be immediately contacted prior to unloading or acceptance. The customer accepts all future responsibility for a damaged tank if the procedures set forth are not followed.

Minor damage can be repaired at the delivery site.

INHERENT CHARACTERISTICS

In the manufacturing process, resin / gel coat may adhere to the steel lugs. This interface between steel and resin / gel coat does not bond, which allows for separation between the two dissimilar materials. This separation is cosmetic in nature ONLY, and in no way affects the structural integrity or operation of the tank

For minor cracks in the insulation case, an exterior expandable caulk may be used.

None of the inherent characteristics are considered damage.



HANDLING AND INSTALLATION INSTRUCTIONS

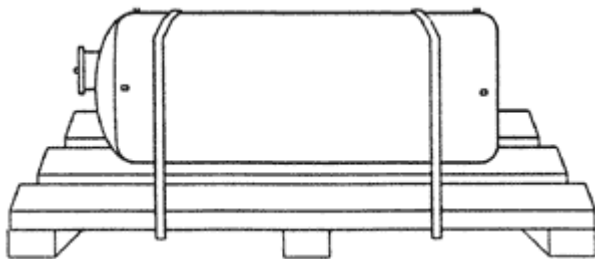
GENERAL

BELDING TANK TECHNOLOGIES tanks are designed to withstand normal handling. Note the following handling precautions.

1. NEVER roll or slide a tank. Lift the tank using a crane or other approved method.
2. Operators of hoist equipment should follow proper rigging procedures at all times. NEVER allow tank to swing out of control.
3. Do not drop or allow hard impact from tools, spreader bars, etc.
4. Avoid the use of equipment inside the tank that could scratch or damage the inner corrosion barrier
5. NEVER use cables or chains around tank.
6. NEVER lift tank by using fittings. Use designated lifting lugs.
7. If tanks are being stored prior to installation, be sure to lay on padded surface and tie down securely.

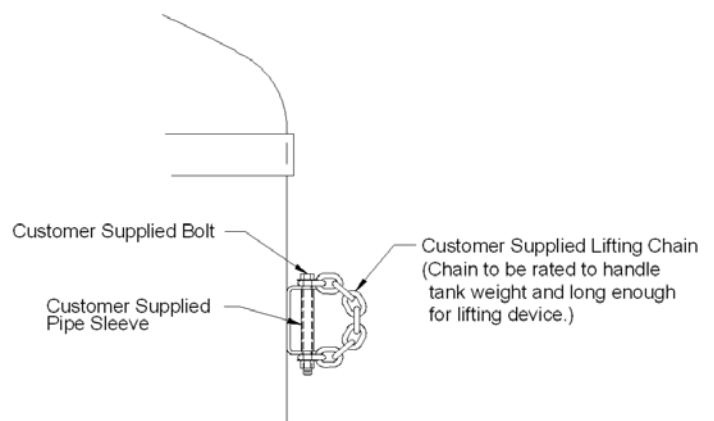
HANDLING SKIDDED TANKS

Small tanks shipped by common carrier are palletized to facilitate handling by forklift. To remove tank, pull on the bottom of the skid. **DO NOT PULL ON THE TANK.**



LIFTING / HANDLING LUGS

The lugs are designed for equal load on both ear tabs of the lug. BELDING TANK TECHNOLOGIES recommends using a pipe spacer between the ear tabs to achieve equal load and lifting chain to allow the tank to easily rotate from horizontal to vertical.





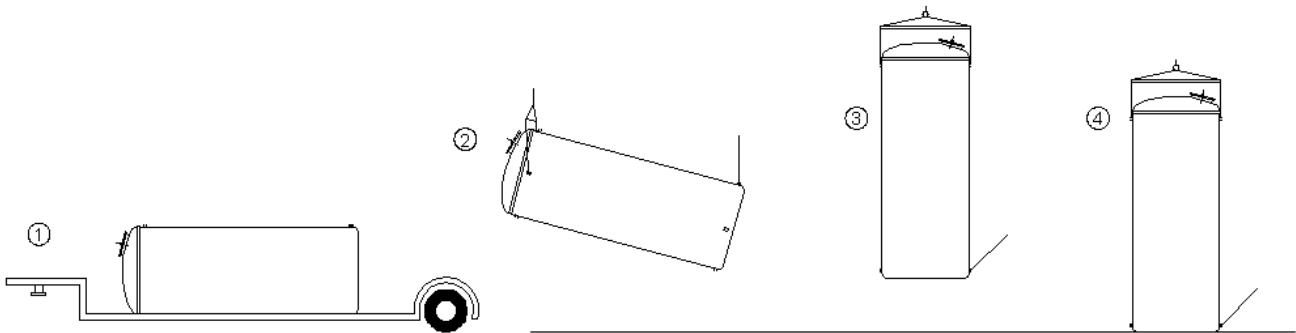
“Quality Is Our Standard...Customer Service Is Our Specialty”

HANDLING AND INSTALLATION INSTRUCTIONS

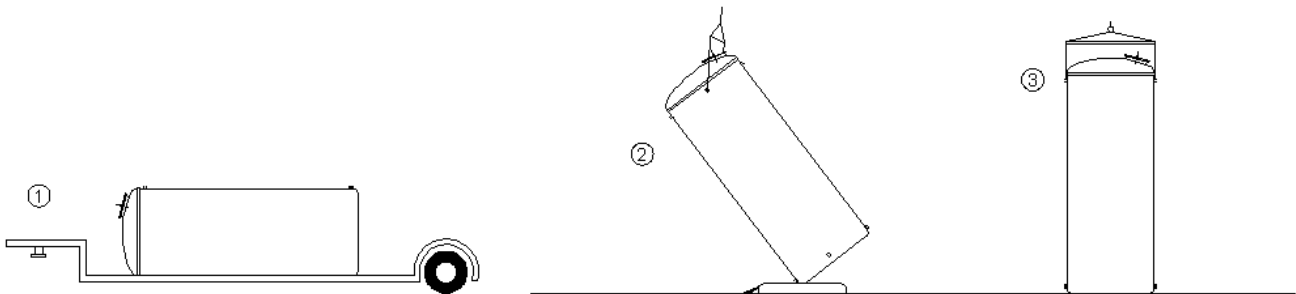
FLAT OR SLOPED BOTTOM TANKS

Larger tanks shipped by BELDING TANK TECHNOLOGIES truck and special built trailers, require a spreader bar and tail hook lines attached to the appropriate lifting lugs to unload tanks. Use a guide line to keep the load under control.

Use a spreader bar and lines attached to appropriate lifting lugs to hoist the tank to an upright position and place the tank on its foundation. Control the tank with guide lines to ensure the tank is gently set on its base.



Recommended Method



Alternative Method

CAUTION: When a tail hook is unavailable and the tank rest on a pivot point, proper care should be taken to protect the pivot point by means of excessive padding.



200 N. Gooding Street – P.O. Box 160 – Belding, MI 48809-0160
Phone: (616) 794-1130 Toll Free: (800) 253-4252 Fax: (616) 794-3666
E-Mail: sales@beldingtank.com Website: www.beldingtank.com

"Quality Is Our Standard...Customer Service Is Our Specialty"

HANDLING AND INSTALLATION INSTRUCTIONS

TANK BOTTOM SUPPORT PAD

BELDING TANK flat bottom and slope bottom tanks require continuous bottom support. The most common support pad is a concrete slab. However, any other support structure with sufficient strength to support the combined weight of the tank and its contents without deflection, plus a reasonable factor of safety, is acceptable. Design for bearing strength of support pad is the responsibility of the purchaser. The support pad must exceed tank diameter by 6" minimum, and be flat within +/- 1/16".

INSTALLATION NOTE: Support pad must be clean and free of all foreign objects prior to settling tank in place.

TANK BOTTOM BUFFER PAD

Liquid grout such as concrete, epoxy, etc., MUST NOT be used under standard flat bottoms. BELDING TANK recommends a buffer pad between the tank support and tank bottom: flexible elastomer or a minimum of two layers of 30 pound roofing felt. When applying the roofing felt, be sure there are no overlaps or wrinkles causing ridges under the bottom. It is the responsibility of the purchaser to see that tanks are properly installed. Any deviation from the above outlined procedure must be approved by BELDING TANK TECHNOLOGIES or it will void your warranty.



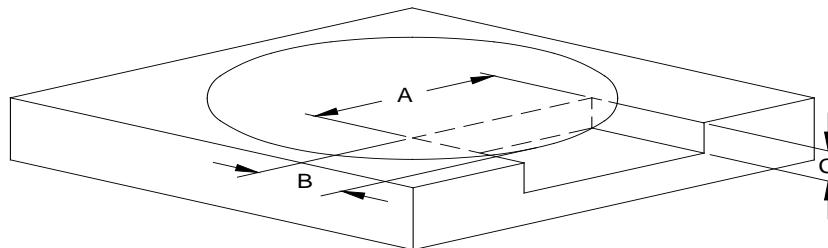
“Quality Is Our Standard...Customer Service Is Our Specialty”

HANDLING AND INSTALLATION INSTRUCTIONS

SIDE BOTTOM FLANGE PAD CUT OUT:

CAUTION: When installing any BELDING TANK TECHNOLOGIES tank with a side bottom flange, your pad cut-out dimensions must conform to the specifications as detailed below. Any deviation without the written consent of BELDING TANK TECHNOLOGIES may cause serious damage and will void warranty.

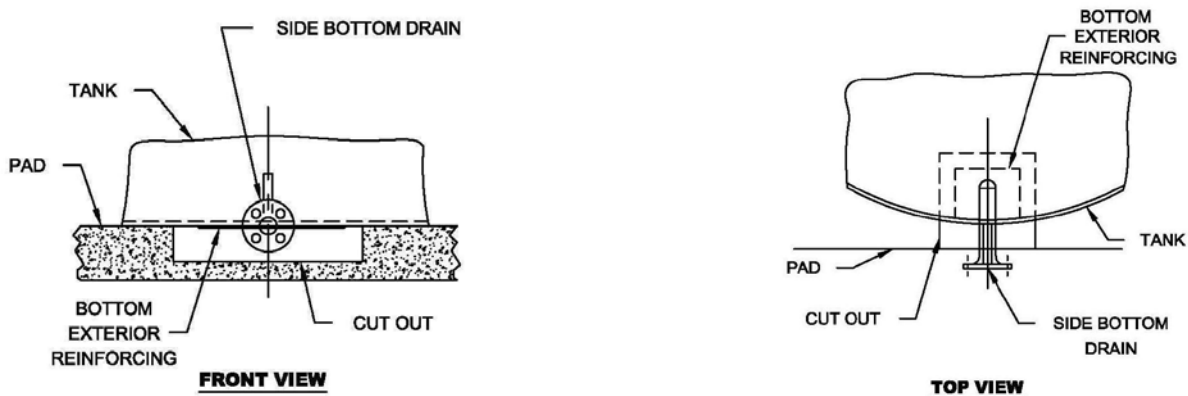
Consult the factory if you have any questions. 1-800-253-4252.



Dimension “B” is taken from the sidewall of the tank.

Drain Size	A	B *	B **	B ***	C
2"	12	8	9	10-1/2	4-1/4
3"	12	8	9	10-1/2	4-3/4
4"	12	8	9	10-1/2	5-3/4
6"	14	8	9	10-1/2	6-3/4
8"	18	8	9	10-1/2	8
10"	22	8	9	10-1/2	9-1/4
12"	26	8	9	10-1/2	10-3/4

* Tank Diameter < 120” ** Tank Diameter 120” to 144” *** Tank Diameter > 144”



The bottom exterior reinforcing MUST BE within the pad cut out.

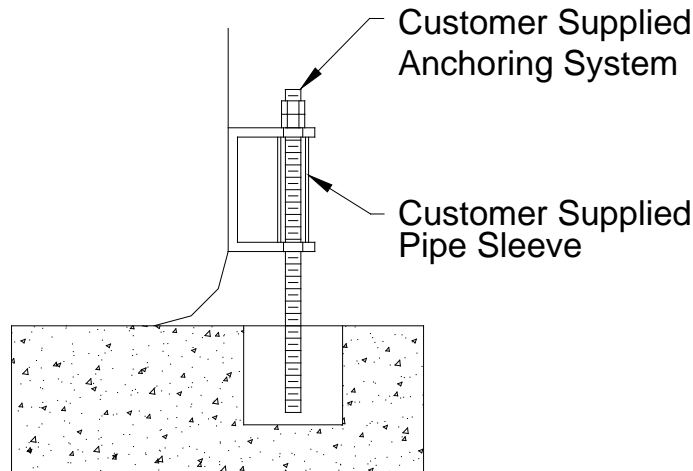


HANDLING AND INSTALLATION INSTRUCTIONS

HOLD DOWN LUGS - Standard

The required hold down lugs are supplied as standard equipment on all BELDING TANK TECHNOLOGIES tanks. Anchor bolts and hold down hardware are supplied by the customer.

Preferred Method of Anchor Installation:



Expansion anchor or resin capsule anchor.

Belding Tank recommends the use of two nuts on the top of the lug. When the tank is EMPTY, hand tighten the first nut onto the top of the lug. Hand tighten the second “JAM” top nut onto the bottom nut. Then, using two wrenches lock the bottom nut onto the top nut. Do not adjust after the tank is filled.

Do not over tighten hold down lugs.

INSTALLATION NOTE: Do not locate or pre-set anchor holes/bolts in the tank pad before receipt of tank. BELDING TANK will not be responsible for pre-set anchor holes/bolts.

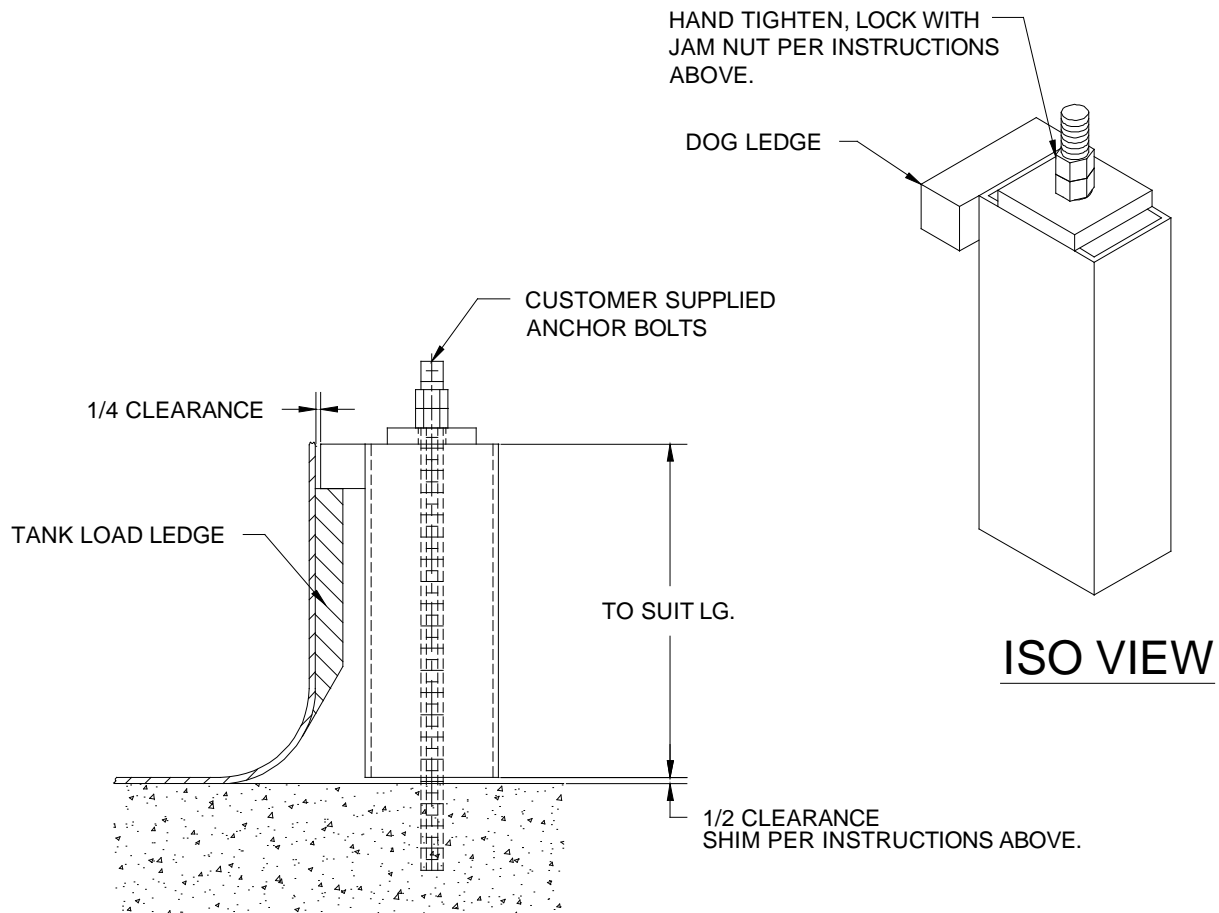


“Quality Is Our Standard...Customer Service Is Our Specialty”

HANDLING AND INSTALLATION INSTRUCTIONS

HOLD DOWN LUGS – Anchor “DOG” / Load Ledge

1. Position & set Anchors -- See Tank Drawing for position.
2. Minimum height of anchors above tank base = height of “DOG” + top plate + height of (2) nuts + ½” minimum.
3. Position anchor “DOGS” over anchor bolts; locate dog ledge ¼” away from sidewall and on top of load ledge & level “DOGS”; -- shim if needed.
4. When tank is empty fill anchor “DOG” box with non-shrink grout.
5. Put cover plate over anchor “DOG” box and hand- tighten bottom nut.
6. Hand tighten second “JAM” top nut onto the bottom nut.
7. Lock bottom nut onto the top nut. Do not adjust after tank is filled.



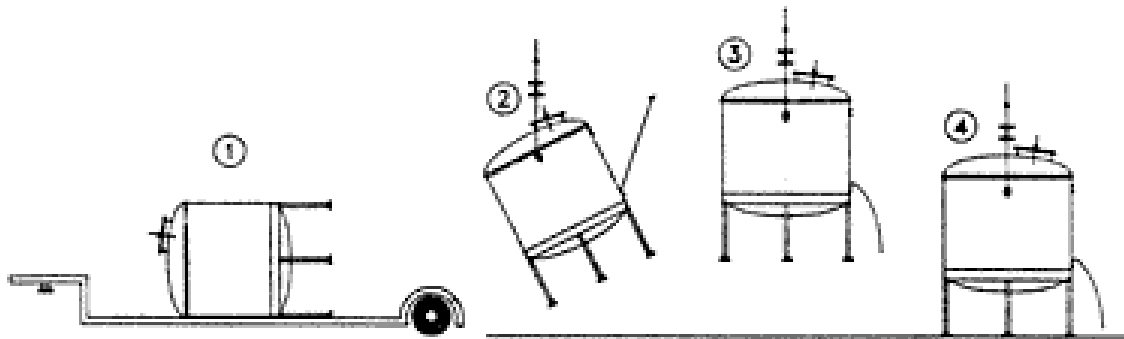


"Quality Is Our Standard...Customer Service Is Our Specialty"

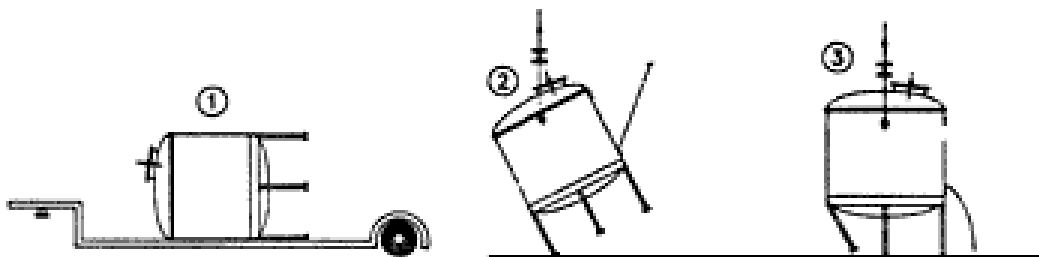
HANDLING AND INSTALLATION INSTRUCTIONS

DISHED OR CONE BOTTOM TANKS

NOTE: When up righting a tank with legs, DO NOT pivot tank on legs. Lift the entire tank. Rotate to a vertical position. Set straight down on all legs.



Proper



Improper

CAUTION: If a fork truck is being used to offload the tank, the forks MUST NOT come in direct contact with the fiberglass tank.



200 N. Gooding Street – P.O. Box 160 – Belding, MI 48809-0160
Phone: (616) 794-1130 Toll Free: (800) 253-4252 Fax: (616) 794-3666
E-Mail: sales@beldingtank.com Website: www.beldingtank.com

“Quality Is Our Standard...Customer Service Is Our Specialty”

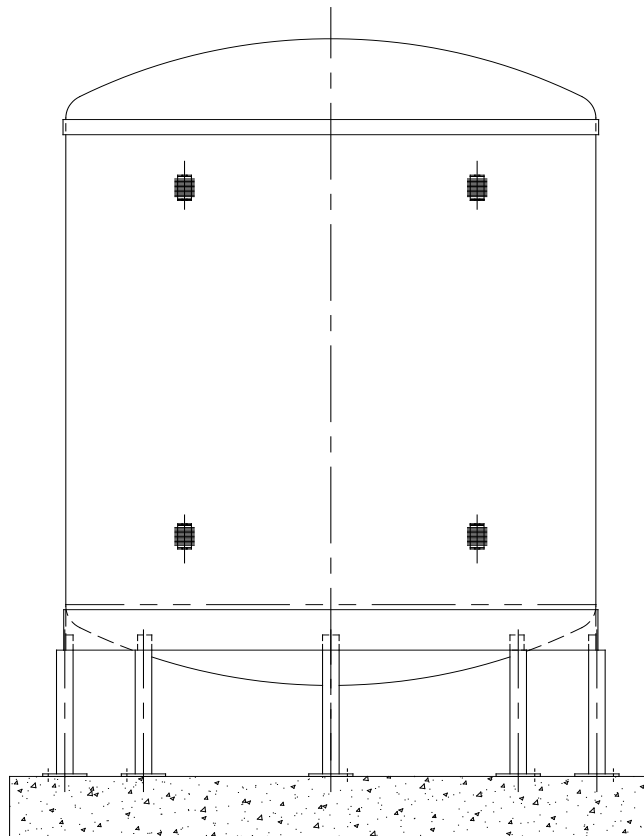
HANDLING AND INSTALLATION INSTRUCTIONS

LEG SUPPORTED / SIDEWALL LUG SUPPORTED TANKS

The pad surface must be smooth and level. Consideration must be given to the concentrated nature (4-12 points) of the loading, the magnitude of which could require footings beneath each leg / lug to spread the load over a larger area. The design of footings is the responsibility of the purchaser.

The tank is designed to rely upon firm even support at each of its legs / lugs. In order to allow for uneven pads, floors, and legs / lugs, the floor pads on each leg or base plates on each lug may require shims to insure uniform support. Once uniformly supported, the floor plates / base plates are to be anchored.

Consult factory if you have any questions. (1-800-253-4252)

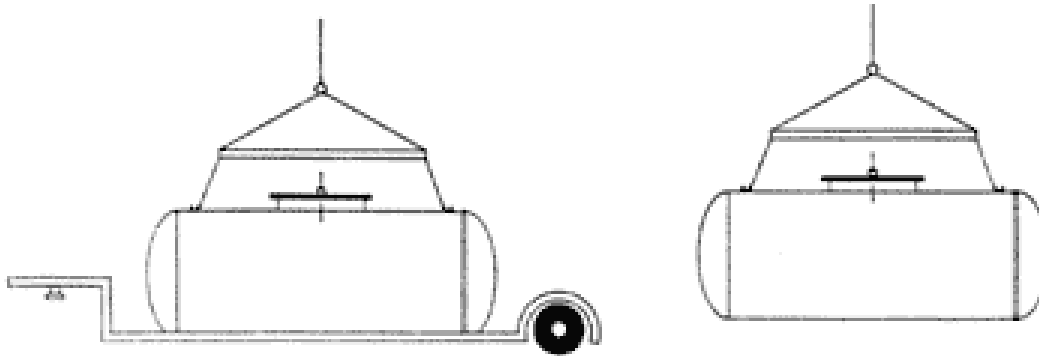




“Quality Is Our Standard...Customer Service Is Our Specialty”

HANDLING AND INSTALLATION INSTRUCTIONS

HORIZONTAL TANKS

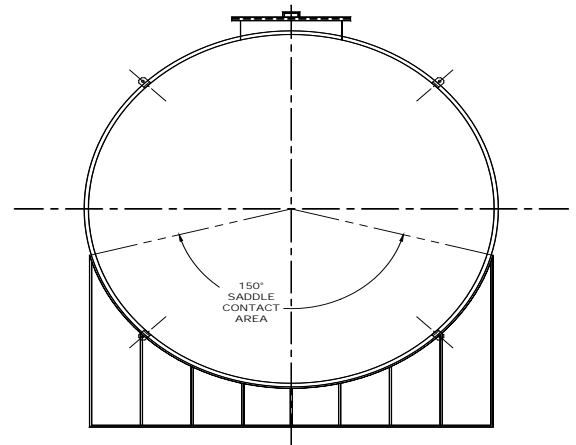
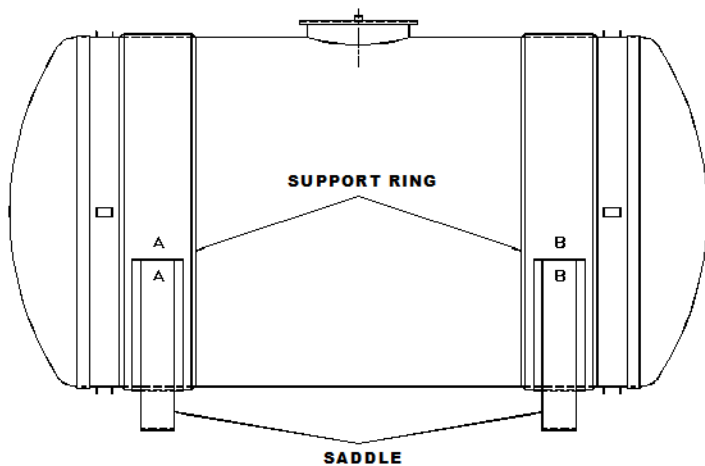


Proper

HORIZONTAL TANK INSTALLATION

Installation of horizontal tanks is much the same as the dished bottom. Tanks are supplied with the required number of steel support saddles. These saddles are to be placed under the designated support rings. The saddles should be centered on the support ring and through the centerline of the tank. Caution must be taken to insure that the tank support rings are in contact with the bottom of the saddles.

The tank is designed to rely upon firm even support at each of its saddles. In order to allow for uneven pads and floors, the saddles may require shims to insure uniform support. Once uniformly supported, the saddles are to be anchored.



Caution: Modification of saddles in any way voids your warranty.



200 N. Gooding Street – P.O. Box 160 – Belding, MI 48809-0160
Phone: (616) 794-1130 Toll Free: (800) 253-4252 Fax: (616) 794-3666
E-Mail: sales@beldingtank.com Website: www.beldingtank.com

“Quality Is Our Standard...Customer Service Is Our Specialty”

HANDLING AND INSTALLATION INSTRUCTIONS

FITTING CONNECTIONS

Fiberglass tanks will move due to hydrostatic pressure and temperature fluctuations. Because of this movement, Belding Tank strongly recommends the use of flexible pipe connections. The flexible connection should be attached to the tank fitting. If rigid piping is used and results in damage to the tank and/or fitting, your warranty will be void.

CAUTION: METALLIC FITTINGS MUST NOT BE USED ON FRP NIPPLES OR COUPLINGS.

BELDING TANK recommends that you do NOT use raised face flanges. If raised face flanges must be used, a flange spacer **MUST BE USED** when bolting FRP flanges to raised face flanges. Use only full face gaskets. Do NOT over torque the flange bolts.

WATER FILL TESTING

BELDING TANK recommends that each tank be water filled (hydro tested) for a minimum 2 hour period at atmospheric pressure, after the tank is installed and prior to use.

TANKS FOR FOOD APPLICATION

See BELDING TANK TECHNOLOGIES Operation & Maintenance Instructions for tanks requiring FDA approval.