

LIFTING & HANDLING INSTRUCTIONS FOR VERTICAL STORAGE TANKS

SCOPE:

These instructions are to be followed when lifting, handling, and installing all vertical storage tanks provided by Hamilton Tanks, LLC. These instructions are to be followed in order to move and install tanks as safely as possible and prevent damage to the tanks while avoiding injury to on-site personnel. Tanks should only be handled and installed by knowledgeable and experienced personnel. All equipment used in the handling of storage tanks should be adequately sized and operated by qualified personnel.

SITE AND FOUNDATION PROVISIONS:

- ❑ The foundation for the tank must be designed to support the tank plus 100% of the weight of the maximum amount of product the tank will be storing. The foundation may be comprised of concrete, asphalt, gravel or other stable material and must include provisions in its design to prevent tank movement. The foundation must include any provisions necessary for seismic design.
- ❑ The foundation design must include provisions for draining surface water away from the tank.
- ❑ Tanks located in areas subject to flooding must be protected against floatation.
- ❑ Aboveground tanks should not be located above underground utilities or directly beneath overhead power lines.

DELIVERY INSPECTION:

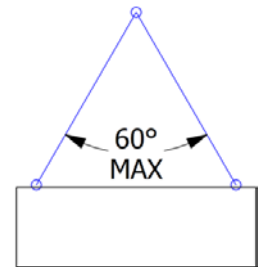
Before the tank or other accessory equipment is unloaded from a carrier, thoroughly inspect the exterior of the cargo for any damage that may have occurred in shipment. This should be done before accepting delivery of the equipment.

- ⚠ IF THERE IS ANY DAMAGE TO THE CARGO, THE CARRIER AND HAMILTON TANKS SHOULD BE NOTIFIED IMMEDIATELY. NOTE ALL DAMAGE ON THE SHIPPING PAPERS AND RETAIN A COPY FOR YOUR RECORDS. If possible, take photos of the cargo in the condition in which it was delivered to you. To a large extent, you, the customer, will make the decision whether the damage can be field repaired or if the cargo should be returned to the factory. Hamilton Tanks, LLC can be reached @ 614-445-8446.

LIFTING & HANDLING INSTRUCTIONS FOR VERTICAL STORAGE TANKS

LIFTING AND HANDLING PROVISIONS:

- ❑ Do not handle or install tanks without having knowledge and experience in procedures involved with the proper and safe installation of an above ground storage tank. Reliance on skilled and professional installers is an important factor in avoidance of tank damage and system failures.
- ❑ Equipment for handling the tank shall be of adequate size to lift and position the tank. **DO NOT DROP OR DRAG THE TANK.**
- ❑ Tanks shall be carefully handled using cables or chains of adequate length and size. Spreader bars **MUST BE USED** if there is any chance that the lifting cables may come into contact with the tank. Attach to the tank using the designated lifting lugs provided. **Care should be taken that the angle between the cables, at the lift point, shall be no greater than 60 degrees.**
- ❑ **ONLY LIFT THE TANK FROM LIFTING LUGS CLEARLY LABELED AS LIFT POINT.**
- ❑ **DO NOT HANDLE OR MOVE THE TANK UNLESS IT IS EMPTY.**
- ❑ This is a stationary tank. Do not use this tank for transport of any product.



UNLOADING THE TANK ON SITE:

After it has been determined that the tank is in good condition, you may proceed with unloading. A single crane is adequate for unloading the tank from the truck provided the proper equipment is on site. The crane must be of the proper size to handle the entire weight of the tank. Lifting lugs are provided to off load the tank from the truck. When setting the tank on the ground for temporary storage or while the cranes get into position, the tank should be set on solid ground so the tank is not capable of sinking or sliding.

After the truck is out of the area the tank can be set in place. For small vertical tanks shipped in vertical position a single crane can be used to set the tank in its final position. For vertical tanks shipped in the horizontal position two cranes will be required to set the tank in place.

TANK ERECTION WITH TWO (2) CRANES:

For vertical tanks shipped in the horizontal position setting the tank in place will require two cranes. A crane of adequate size and capacity is required to lift the full weight of the tank and a smaller crane at the bottom of the tank is needed as a guide. Both cranes will lift the tank at the same time until the tank is suspended in the air. The larger crane should be at the top end of the tank as it will be lifting the highest until the tank is in the upright position. The smaller crane is used to keep the base of the tank off the ground and act as a pivot point until the tank is lifted into a vertical position. Once the tank is vertical and upright the small crane can be disconnected and the tank set in place with the large crane. When the tank is in its final position, it will need to be secured to the foundation.

LIFTING & HANDLING INSTRUCTIONS FOR VERTICAL STORAGE TANKS

ANCHORING:

Once the tank is set in place it may need to be shimmed and leveled. Once level the tank will need to be anchored to the foundation using the anchor points provided. The top of some anchors are shipped loosed to allow for easier field install. The tank should be anchored securely to the foundation before any additional work on the tank proceeds.

- ❑ ALL ANCHORS WILL NEED TO BE **RE-TIGHTENED** AFTER THE INITIAL FILLING OF THE TANK TO ENSURE IT IS SECURE AND TIGHTLY ANCHORED.

POST TANK ERECTION PROCEDURES:

- ❑ **VISUALLY INSPECT THE INTERIOR OF THE TANK** - After the tank has been erected and secured to the foundation, if available, remove the tank manway cover to allow access to the inside of the tank. Inspect the interior of the tank for cleanliness and any loose material. If there is any material that came loose during shipping remove it from the tank and report it to Hamilton Tanks, LLC immediately @ 614-445-8446.
- ❑ **VISUALLY INSPECT THE EXTERIOR OF THE TANK** - After the interior of the tank has been inspected, visually inspect the exterior of the tank. Inspect the exterior of the tank for damage caused by the tank erection procedure. If there is any damage to the tank, take photos of the affected areas and report the damage to Hamilton Tanks, LLC immediately @ 614-445-8446.
- ❑ **REMOVAL OF SHIPPING SUPPORTS** – Some items may require shipping supports for transportation. These may be internal or external to the tank. Internal items typically include mechanical floats, mixer shaft straps, and large coil heaters. External items typically include gauge board targets, braces for tank legs, and angle braces for open top tanks. Contact Hamilton Tanks to confirm what supports should be removed before the tank is ready to go into service.
- ❑ **FIELD WELDING** – DO NOT weld on the tank, modify or penetrate the tank structure in any way without the express written permission of the Hamilton Tanks, LLC.
- ❑ **GROUTING AROUND THE BASE** – As with all vertical tanks, it is recommended and good practice to grout around the base of the tank or tank supports to prevent moisture from settling underneath.
- ❑ **BELOW LIQUID LEVEL FITTINGS** – Before putting the tank into service and filling the tank with product, all below liquid level openings must be double checked to ensure they are leak tight. All fittings below liquid level that are not tied into plant piping must have plugs, blinds, or valves in place to prevent product from leaking into the surrounding environment.



LIFTING & HANDLING INSTRUCTIONS FOR VERTICAL STORAGE TANKS

ON-SITE LEAK TESTING:

Hamilton Tanks tests every tank twice prior to shipment. However some customers and local authorities have procedures that require the tank to be retested prior to them being putting into service. Any additional testing of the tank on site should be done by knowledgeable personnel with proper training and experience. Improper testing of the tank may result in damage to the tank.

➤ **WARNING:** For double wall tanks do not apply air pressure to the interstitial space between the walls of the tank without air pressure in the primary tank. Do not apply air pressure to the interstitial space that is higher than the air pressure in the primary tank. Damage to the tank may result.

MIXER PROVISION:

If the tank provided has a top-mounted mixer installed, then the mixer shaft support inside the tank must be removed BEFORE TO ERECTING THE TANK. Metal supports and/or nylon straps are attached to the mixer shaft to prevent movement during shipment. These are to be removed at ground level for safety and to prevent damage to the equipment prior to lifting the tank in its vertical position.

BOTTOM HEADS:

The bottom head of Flat Bottom Tanks may be slightly bowed outward as it arrives on site. This is generally due to the pressure testing of the tank prior to leaving the shop to ensure the integrity of all welds and that the tank is leak tight. This is very common and is no cause for concern. The bottom will flatten once the tank is filled with product. All anchors will need to be re-tightened after the initial filling of the tank to ensure it is secure and tightly anchored.

FUTURE TANK RELOCATION:

Often aboveground storage tanks are moved within the plant or relocated to another site. The instructions above are to be followed whenever the tank is moved. All attachments are to be removed to prevent damage to them or the tank. The tank should be emptied entirely and may need to be cleaned before moving. The entire tank should be carefully inspected for signs of wear or damage to confirm that the tank is structurally sound enough to be moved. All steps are to be documented and the documentation is to be kept for the life of the tank.

Hamilton Tanks, LLC

2200 Refugee Road

Columbus, OH 43207

Phone: 614-445-8446

Toll Free: 800-627-8265

Fax: 614-445-7248