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# PRESSURE TANKS

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## HANDLING & INSTALLATION INSTRUCTIONS

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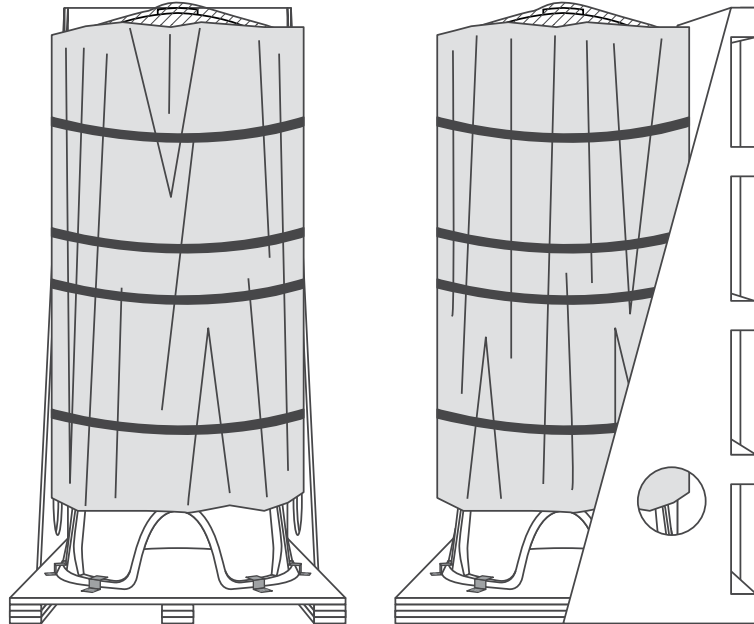
## TABLE OF CONTENTS

Receiving & Handling	3
Basic Handling Continued	4
Approved Lifting Methods	5
Installing Pressure Tanks	6
Flange Cover Assembly & Torque Ratings	7
UV Protections - Painting Pressure Tanks	8
Vacuum Protection Flex Connectors	9
Flexibility In Piping Diagrams	10
Product Specifications & Notes	11



**Receiving**

Pressure tanks from Aquatrol are protected during shipment by custom-size pallets and padding.

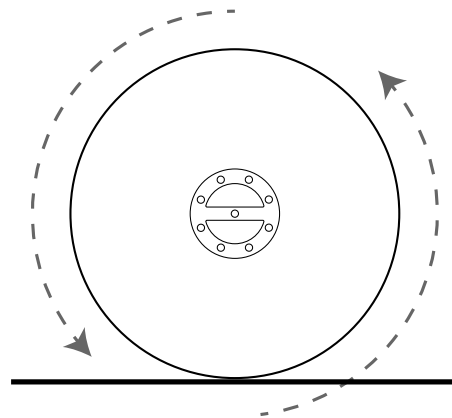
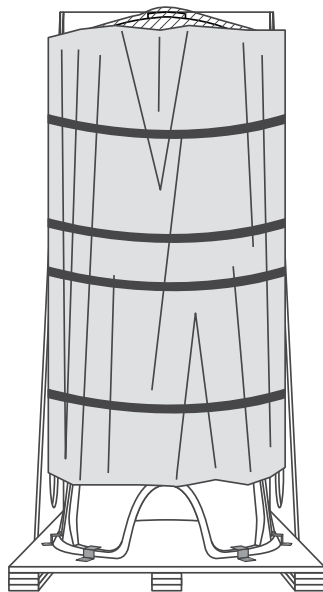


**Basic Handling Rules**

Pressure tanks should always be handled and installed properly. Improper handling or installation can result in damage or pressure tank failure.

1) If pressure tanks are being stored prior to installation, leave them in their protective shipping pallet until ready to install.

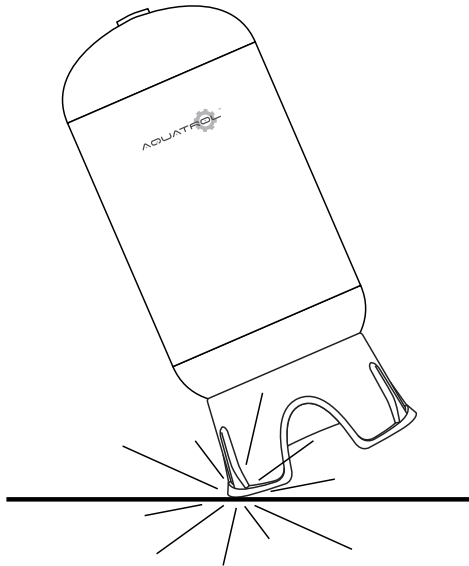
2) Never roll or slide a pressure tanks on its side.



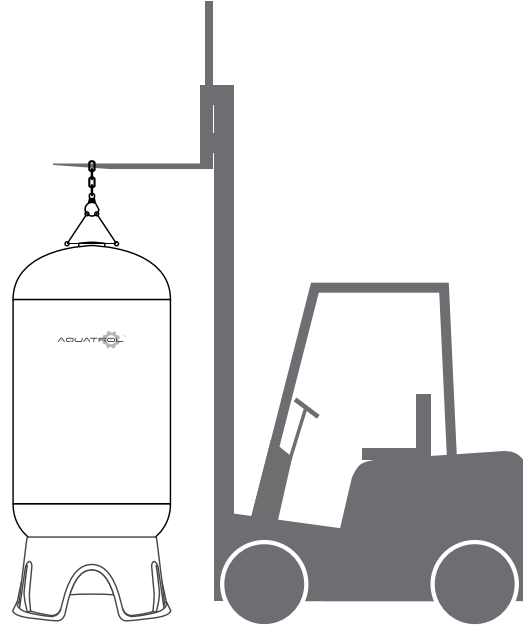
## Basic Handling Rules

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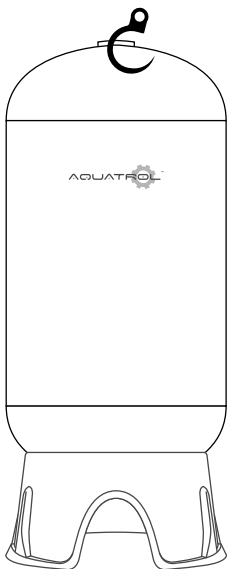
**3)** Never drop a pressure tank or allow hard impact or abrasion of the pressure tank.



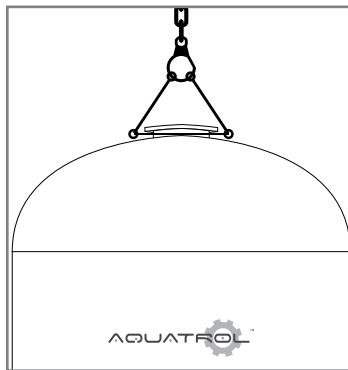
**4)** Always lift the pressure tank using a crane or forklift and the approved methods shown on page 5.



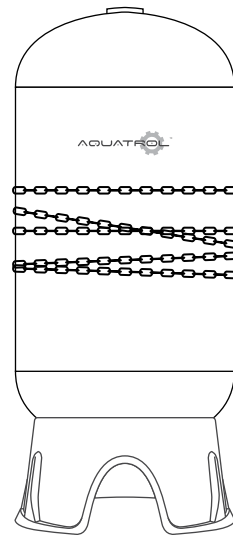
**4)** Do NOT use hooks or equipment on the inside of the pressure tank as this may result in damage not visible and lead to product failure.



**5)** Rigging to lift should always be done from outside. Inside rigging could damage the tank liner. Proper rigging procedures should be followed by hoist equipment operators.



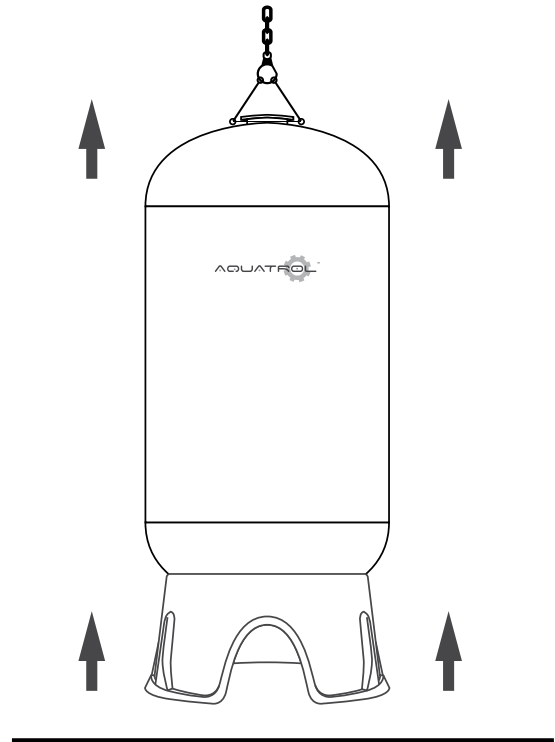
**5)** Never use cables or chains around pressure tanks. Use canvas or nylon straps to avoid damage to flange areas.



**By Flange**

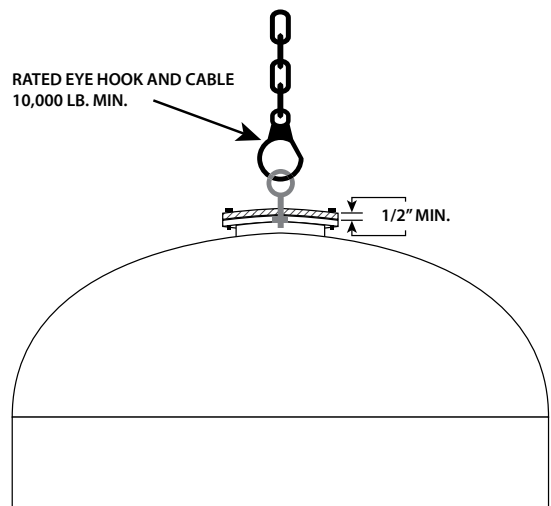
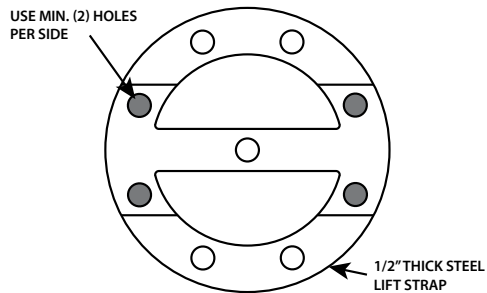
Only empty pressure tanks are to be lifted by placing a user-supplied, webbed nylon reinforced sling, Penco, or rated steel cable around the top flange. Sling must be rated at minimum of 10,000 lbs. (4,500 kg).

CAUTION: Steel cables must have protective coating to prevent scratching of the flange's coating.



**By Lift Strap**

Attach a 1/2" (12.7 mm) thick, user-supplied steel lift strap to the top flange, using at least two (2) holes per side. Then connect to a rated (10,000 lbs. / 4,500 kg min.) eye hook and cables



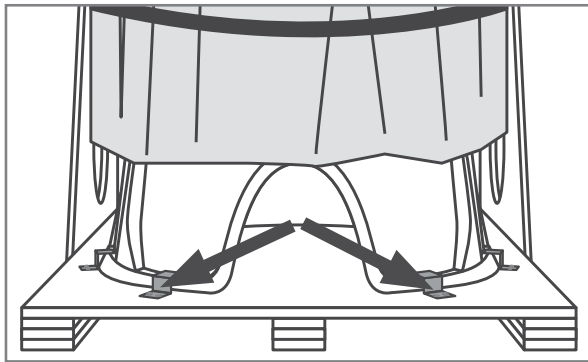
# Installing Pressure Tank

With Fiberglass Tripod or Skirt Base

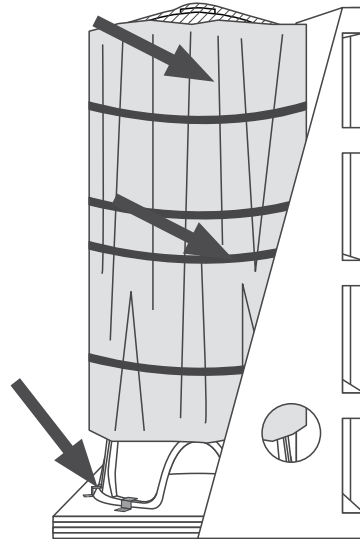


To prevent breakage of the fiberglass base, the following procedure is recommended for handling, unloading and installing these pressure tanks.

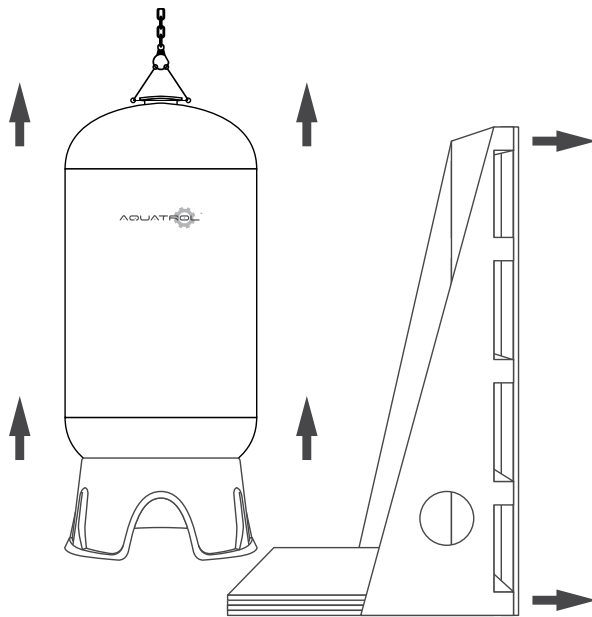
- 1) When delivered, the pressure tank and pallet will be in an upright position. Start by removing the leg bolts and Brackets which are holding the pallet to the base of the pressure tank.



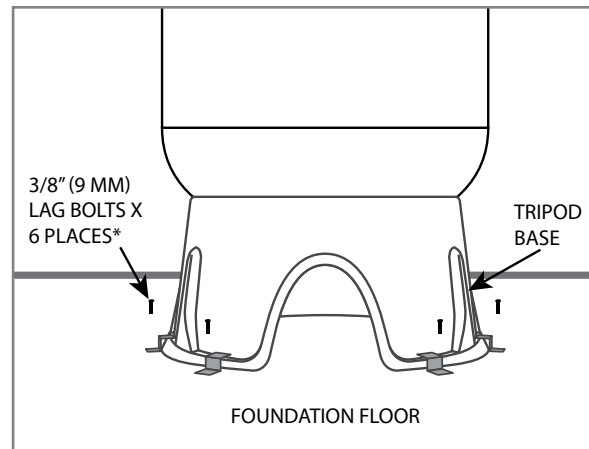
- 2) Remove all straps that secure the tank to the pallet. Remove the protective cardboard and padding. Make sure to check that all brackets and straps have been removed before continuing to step 3.



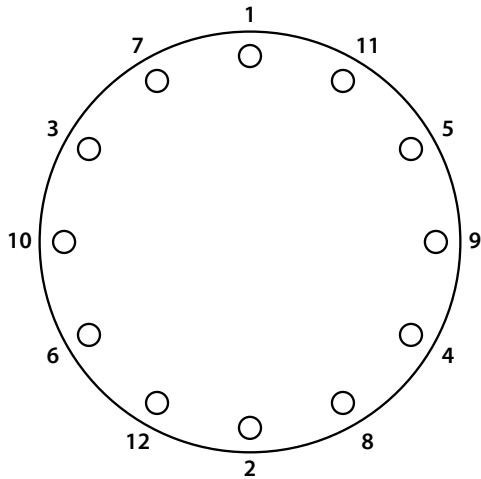
- 3) Using one of the approved lifting methods shown on page 5, lift the pressure tank from the pallet, and remove the pallet.



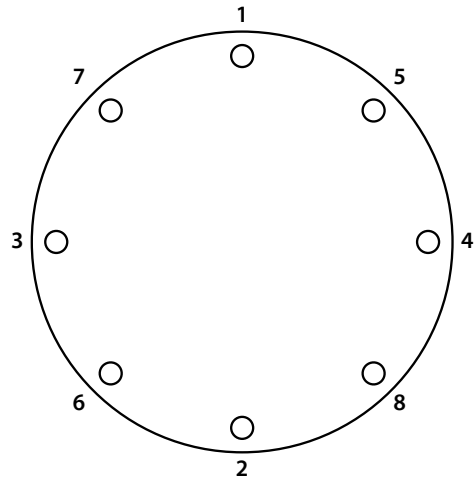
- 4) Lower the pressure tank to the floor, level the pressure tank and anchor it with 3/8" lag bolts and brackets to the floor.



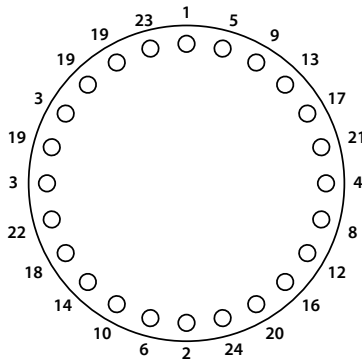
12 - bolt Flange Cover (6", 152 mm Flange)  
Tightening Sequence for 5/16" (7.9 mm) Stainless Steel Bolts.  
Torque to 11 ft.-lbs. (15 NM)



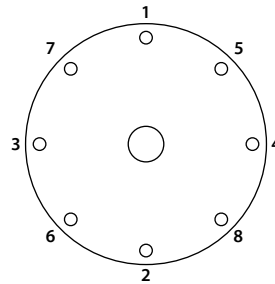
8 - bolt Flange Cover (4-1/2", 114 mm Flange)  
Tightening Sequence for 3/4" (19 mm) Stainless Steel Bolts.  
Torque to 130 ft.-lbs. (176 NM)



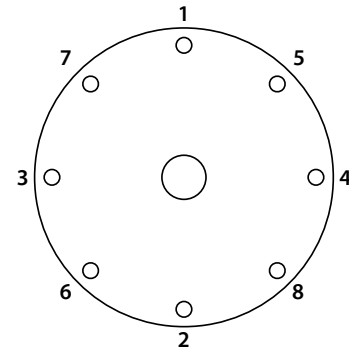
**For All Tanks Larger than 24" Diameter**



24 - bolt Manway Flange Cover  
Tightening Sequence for 1/2" (12.7 mm)  
Stainless Steel Bolts  
Torque to 45 ft. - lbs. (61 NM)



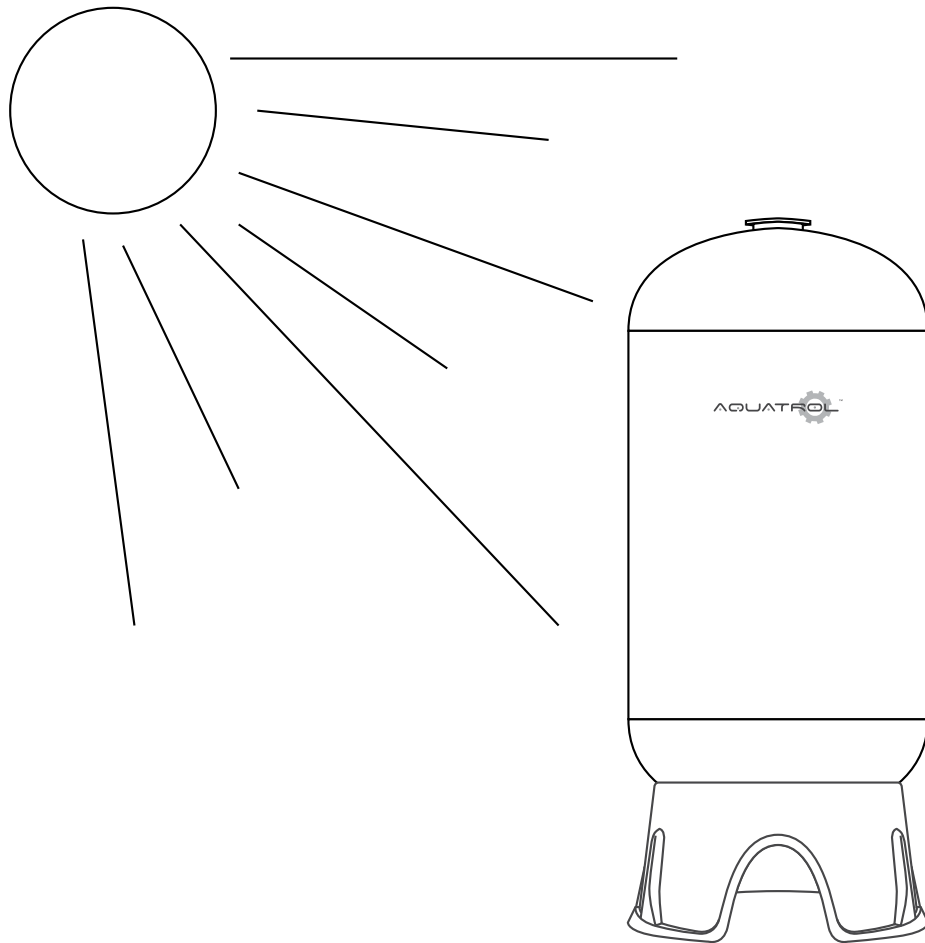
8 - bolt, 4" (102 mm) ANSI Flange  
Tightening Sequence for 5/8" (15.9 mm)  
Stainless Steel Bolts  
Torque to 90 ft. - lbs. (122 NM)



8 - bolt, 6" (152 mm) ANSI Flange  
Tightening Sequence for 3/4" (19 mm)  
Stainless Steel Bolts  
Torque to 130 ft. - lbs. (176 NM)

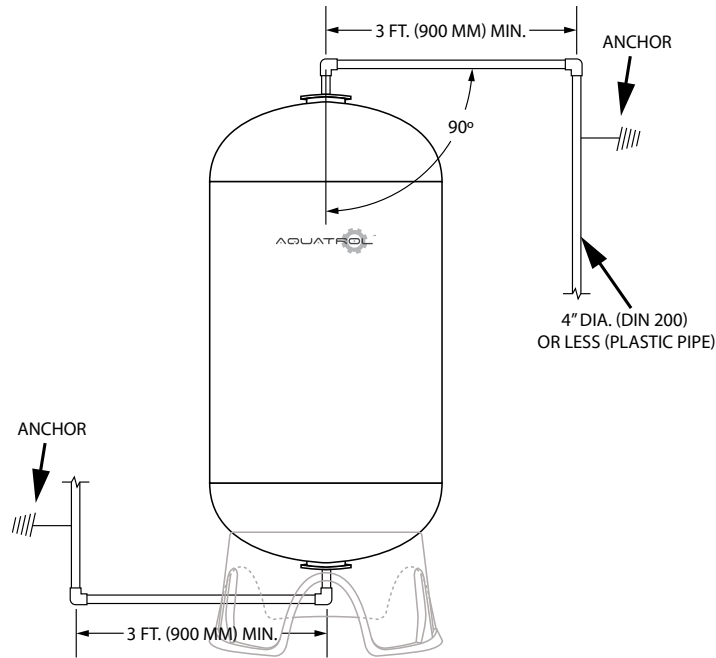
**Torque Chart**

Torque Chart	
5/16" (7.9 mm) s/s* Bolts	11 ft. lbs. (15 NM)
3/8" (9.5 mm) s/s* Bolts	18 ft. lbs. (24 NM)
1/2" (12.7 mm) s/s* Bolts	45 ft. lbs. (61 NM)
5/8" (15.9 mm) s/s* Bolts	90 ft. lbs. (122 NM)
3/4" (19 mm) s/s* Bolts	130 ft. lbs. (176 NM)

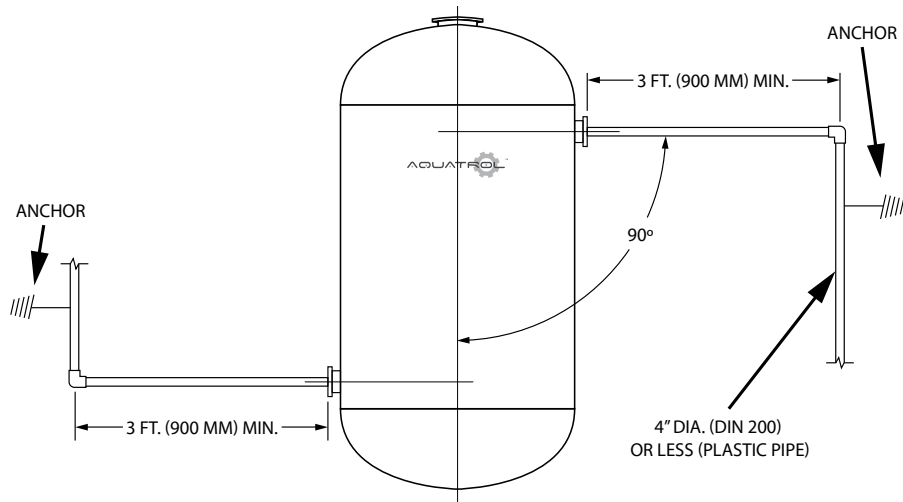


**Painting a Composite Pressure Tank for UV Protection**

- 1)** Wash the pressure tank with detergent and water, using a scrub brush. Use the brush actively over the pressure tank surface to remove oil and grim.
- 2)** Rinse the pressure tank several times with water to remove soap residue and let dry.
- 3)** In an open ventilated area use a clean rag wetted with acetone, rinse the pressure tank thoroughly with acetone. Make sure that the rag does not become grimy, and use as much acetone as is practical to perform a "wet rinse" over the pressure tank surface.  
**NOTE:** Acetone is extremely flammable. Should not be inhaled. Requires use of gloves.
- 4)** Pressure tanks can be painted using spray paint, roller or brush. A 100% interior/exterior acrylic latex enamel is preferred. The paint has a good adhesion and will not chalk. This is a one-step paint with water clean-up. The 100% acrylic latex enamel can be purchased at any local paint store.
- 5)** Coat the UV exposed areas first, such as the top of the pressure tank and the sides, where sun rays directly hit the pressure tank.
- 6)** A light colored pigmented paint is recommended. White paint provides the best protection against sun rays.



An effective alternative to flex connectors uses the inherent flexibility of right angle system design. By calculating the amount of cantilever over-hang needed to absorb the torsional effect created by the pressure vessel's vertical movement, it is possible to build the needed flexibility right into the piping system. This can be done with both top/bottom and side flow piping setups.



The figures shown here are the acceptable minimums for the pressure tank at its rated pressure of 150 psig. When using the pressure tank at lower pressure, the minimum pipe run length can be reduced, using this formula:

Minimum pipe Formula:

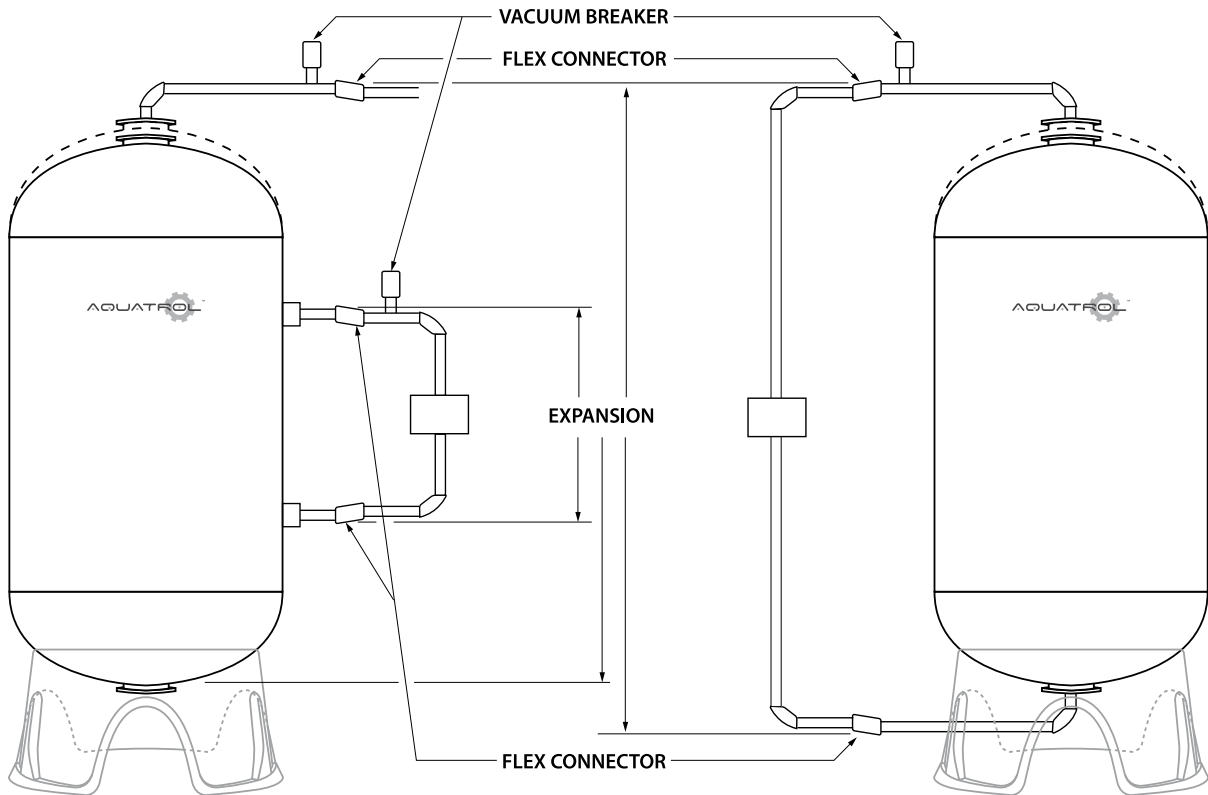
- a. Multiply pressure tank in psi x 36
- b. Divide above by 150
- c. Result is minimum span of horizontal piping in inches.

For example, if the pressure tank pressure is 29 inches:

- a.  $120 \times 36 = 4,320$
  - b.  $4,320 \text{ divided by } 150 = 28.8$
- Minimum span of horizontal piping is 29 inches

## Vacuum Protection

Flex Connectors

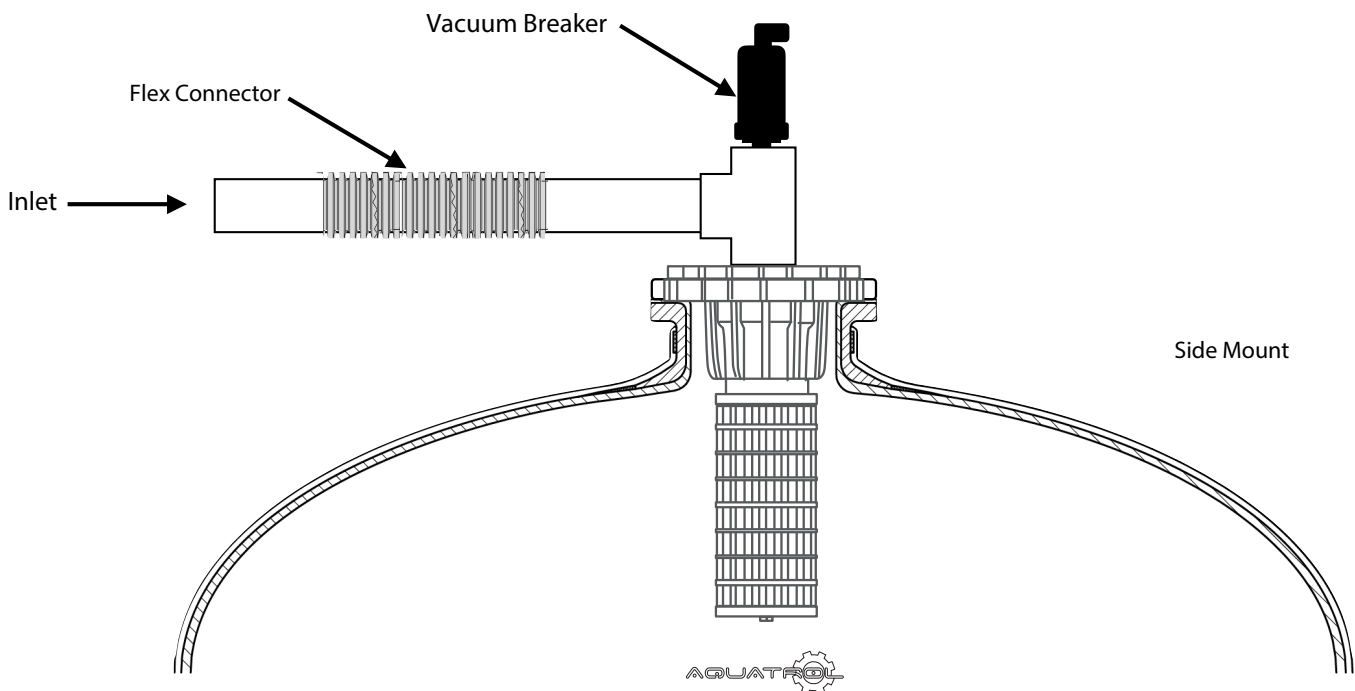
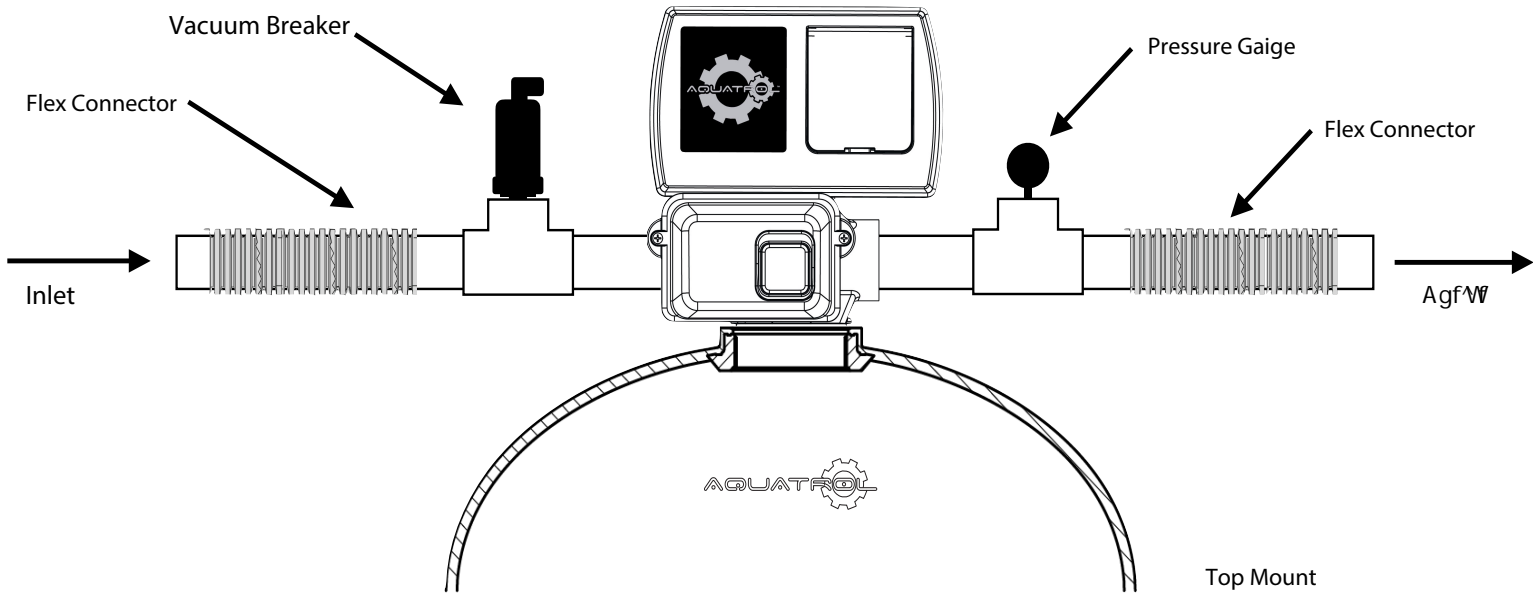


### **THE MAX. VACUUM PRESSURE THAT AQUATROL(R) TANKS CAN WITHSTAND IS 5" Hg (127 mmHg - 2.1 psi)**

The pressure tank is rated for an internal negative pressure of 5" Hg (127 mm Hg) vacuum below atmospheric. If negative pressure could ever exceed 5" Hg (127 mm Hg), an adequate vacuum breaker must be installed between the pressure tank inlet and any valves, as shown in the illustration above.

System connections to the pressure tank must accommodate vertical expansion between side, top and bottom openings. Either flexibility in piping, as shown on page 10, or flex connectors as shown above, are recommended.

Refer to page 11 and 12 for further installation diagrams depending on the installed valve position.



Vacuum often happen in water systems, for example, when high pressure pump is installed after the filtration system. Sometime low pressure switches in RO systems fails, keeping the pressure pump working sucking out water from the pre-filtration system. If water is no running through the pre-filtration system, vacuum will occur and tanks will implode. Another case of vacuum is the phenomenon of siphon in the water pipe. When a water pipe is trying to empty because gravity, check valve malfunction, no check valve, etc, water flowing in oposite direction from the pre-filtration system will generate a siphon and vacuum will occur thus.

## Tanks Pictures

Examples of Damages



**EXCLUSIONS FROM THIS LIMITED WARRANTY**

This warranty does not cover the following instances:

1. The warranty applies only to original purchaser;
2. Failure to operate a tank in accordance with the limitations stated on the Product label;
3. Failure to properly size a tank to manufacturer recommendations;
4. Use of Products or Parts with water containing sediment or chemicals;
5. Injury to tank or any part thereof caused by exposure to vacuum, freezing, external impact, chemical attack from liquid and gasses, fire, floods or lightning;
6. Defects not reported to us within the applicable warranty period;
7. Problems resulting from failure to comply with installation, operation or maintenance instructions or drawings, or improper installation, operation or maintenance;
8. Damage caused by acts of nature or problems resulting from abuse, misuse, negligence or accident;
9. Problems resulting in whole or in part from alteration, modification or attempted repair of these Products or Parts by any party other than us or a party we have approved in writing;
10. Noncompliance with applicable codes, and ordinances including without limitation, plumbing codes;
11. Damage due to impacts, corrosive liquids, gases, or chemicals;
12. Damage due to hydro-pneumatic or pneumatic use;
13. Liner abrasion caused by faulty distribution systems; and
14. Exposure of plastic surfaces to incompatible lubricants or sealants.

**OUR WARRANTY OBLIGATIONS**

Should a material defect in workmanship or materials in Products or Parts covered by this warranty become evident during the applicable warranty period, then as our sole obligation and in full satisfaction of any warranty claim, we will issue a credit in the amount of your original purchase price of the Product or Part, or, at our option, repair or replace the defective Product or Part (we will consider, in good faith, customer preference in determining whether to issue a credit or repair or replace). The terms of this warranty are subject to the laws and regulations of the country in which the Product or Part was purchased.

**PROCEDURE FOR OBTAINING WARRANTY**

- A. We extend warranties solely to direct transactional customers of Hydronix Water Technology, LLC. All secondary customers of these Products and Parts must submit warranty claims with their direct suppliers.
- B. In order to obtain the benefits of this Limited Warranty, defective Products or Parts must be returned to us as soon as possible after discovery of the material defect, but in no event later than the expiration date of the warranty period provided in this Limited Warranty. The subject Product or Part must be returned to the original point of shipment, freight prepaid, along with a letter stating the model number, serial number, if any, the date of purchase of the item which is claimed to be materially defective and a brief description of the problems encountered. We are not responsible under this Limited Warranty for any cost of shipping or transportation incurred in connection with the return of the Product or Part. Product returned in a manner that does not ensure integrity during shipment may not be covered by warranty.
- C. You shall be responsible for handling all Product and Part warranty claims that are remedied through repair or replacement of the Product or Part, or a refund of the price paid for such Product or Part, with the dealer or end user, as applicable. After you have settled such warranty claims, you shall seek your remedy from us; provided, however, that in no event shall the value of the remedy provided to you, whether in the form of repair, replacement, or account credit, exceed the purchase price paid by you. For Product or Part warranty claims that include property damage or bodily injury, you shall notify us of such claim and we shall work directly with the end user to remedy and settle any such claims in our sole discretion. You shall not, under any circumstances, settle any Product or Part warranty claim involving bodily injury or property damage without our written consent to do so.

D. In all instances of a Product or Part warranty claim, and prior to providing any warranty remedy, you shall: 1) notify us in writing of the warranty claim within five (5) business days of your receipt of the claim; 2) investigate the claim, which may include taking or requesting digital photographs of the installed Product or Part, verifying proper installation, or other means of validating the claim and verifying the damages claimed; 3) return the defective Product to us; and 4) for those claims involving bodily injury or property damage, cooperate with us and provide requested information for us to complete our investigation.



