AS-I/O

SINCE 1908 wessels company

Wessels Hydropneumatic Storage & Maintenance

Product Storage and Handling Requirements

WARNING: Carefully read the Storage and Handling Requirements to avoid serious Personal injury and/or damage to property and to ensure safe use and proper care of this product

Wessels ASME tanks rigidly constructed and are designed to be easily handled by the end user. Upon receiving product, a visual inspection should be performed, as damage may have occurred during transit.

Handling:

All tanks should be moved using the lift lugs welded to the unit (if equipped). Lifting the tank by clipping an eye hook into the lift lugs is the safest and most effective way to move the unit. Note that not all lift lugs are placed at the center of gravity, the unit may shift once lift off the ground. Ensure that the weight of the unit does not exceed the rating of the rigging equipment.

Note: Bladder tanks are shipped from the factory with an air precharge. Damaging these tanks can be extremely dangerous.

Outdoor Storage:

- Cover all units with a tarp to protect from the elements.
- Do not store in potential flood plain.
- Cover all openings on the units to prevent foreign matter from entering the unit.
- Place in a safe location, away from heavy traffic.
- Bladder tanks are under pressure during shipment. Damaging these tanks could be extremely dangerous.

Indoor Storage:

- Cover all openings on the units to prevent foreign matter from entering the unit.
- Unit should be stored in a dry environment, away from any potential sources of moisture.
- Place in a safe location, away from heavy traffic.
- Bladder tanks are under pressure during shipment. Damaging these tanks could be extremely dangerous.

Operation:

A bladder pressure tank contains pressurized air and water, separated by a flexible bladder. These tanks are typically pre-charged with air at the factory. As water pressure changes, the volume of air in a bladder tank contracts and expands. Periodically, the amount of air in the tank should be measured and the tank recharged if the air is too low.

A bladder tank's water storage capacity, or drawdown, for a typical commercial water system will typically be 30-40% of the tank's total volume. This volume performs several important functions:

- It maintains the desired range of water pressure in the distribution system.
- It minimizes pump cycling, preventing frequent starts and stops and protecting pumps from motor burnout or other water system components from damage.
- It protects against water hammer.

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Preventative Maintenance:

The bladder tank should be checked periodically (at least once per year) to ensure the pre-charge pressure is properly maintained. Changes in pre-charge pressure can significantly alter the tanks performance, and reduce the life expectancy of the bladder. If it appears that a bladder tank is not operating correctly, check the tank's air pre-charge:

1. Disconnect electrical power to the pump.
2. Drain the tank by opening the closest faucet.
3. Check the tank's pressure by placing an air pressure gauge on the air charging valve on the top of the tank.
4. Add air if the pressure is more than 2-3 psi below the pump cut-in pressure. Use caution when using an air compressor or air pump, and follow compressor manufacturer's safety warnings. As air is added, note the discharge from the open faucet:
    a. If water, continue adding pressure as needed to fully evacuate the water from the tank. Re-check the pre-charge pressure and adjust to 2-3 psi below pump cut-in pressure.
    b. If air, there is a tear or hole in the bladder. The bladder will need to be replaced.
5. Release air if the pressure is equal to or above the pump cut-in pressure (lowest pressure in the operating range). There should always be a small amount of water in the bladder when the pump turns on to avoid a pressure "flat spot". A "flat spot" is defined as a dramatic pressure drop that occurs while waiting for the pump to deliver water to the system piping.
6. Check for leaks in the air charging system by dripping a soap solution on the air charging valve.
7. Re-start the pump and run through a normal cycle to verify the setting. If tank pressure drops abnormally, the bladder inside the tank may have a tear or hole in it.

Is the tank waterlogged?

You should also check a bladder tank to determine if it's waterlogged. A tank is waterlogged if it is completely filled with water or has too much water to function correctly. Waterlogged bladder pressure tanks contribute to the following problems:

- The pump motor cycles too often. Frequent cycling can shorten the lifespan of a pump.
- Because waterlogged tanks can contain stagnant water, there can be unsatisfactory coliform samples or taste and odor complaints.
- Premature tank failure: The inside walls of a waterlogged tank can corrode and weaken from the exposure to water.

Reasons for waterlogging

Bladder tanks can become waterlogged for many reasons. Some of the more common reasons are:

- Sediment, such as iron and manganese, can coat the surface of the bladder, causing it to harden and become less flexible.
- Sediments can plug the fill or draw line, preventing the tank from filling and emptying normally.
- Excessive levels of chorine can damage the bladder, causing it to become brittle and less flexible.
- Tanks sitting directly on the ground or on another surface that is continually moist can rust and lose structural integrity.
- Chlorinators can give off corrosive vapors that cause the tank to rust.

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