

WHAT IS THE FUNCTION OF THE TANK IN A HYDRONIC SYSTEM?

The tank could arguably be considered the most important component part to the hydronic system. The tank allows for thermal expansion within the hydronic heating or cooling system. The tank absorbs the expansion and contraction of system fluid due to changes in system temperature. Whether the tank is a bladder type, which contains the system fluid inside the bladder, isolating it completely from the air and prevents waterlogged tanks, or the plain steel type which absorbs the expansion while mixing the air and water, American Wheatley has the correct tank for your application.

WFA Series

Available in sizes 36 - 3963 gallon
Full acceptance removable and replaceable
replaceable heavy duty butyl rubber bladder
NSF approved bladder
125PSI ASME constructed and stamped

WBF SERIES

Available in sizes 36 - 2640 gallon
Full acceptance removable and replaceable
heavy duty butyl rubber bladder
NSF approved bladder
125PSI ASME constructed and stamped

OPTIONS AVAILABLE

Higher working pressures available
Epoxy coated or S.S. covers, bulls eye sight glass, seismic clips
Larger sizes available

BDT Series

Available in sizes 6 - 211 gallon
Full acceptance removable and
replaceable heavy duty butyl
rubber bladder
Suitable for potable water
150 ASME constructed and stamped

WPS SERIES

Available in sizes 15-500 gallon
125/150 ASME stamped
Tank fitting and gauge glass available

AIR ELIMINATION METHOD

The first method is typically known as the “air elimination” method. In this case the air and water are physically separated by a flexible membrane, known as diaphragm or bladder. The hydronic system should be completely vented of all air during the initial system fill, any added or entrained air must later be removed and vented to atmosphere by use of an Air Separator and high capacity air vent.

American Wheatley offers a large range and many types of bladder tanks:

The Wheatley WFA Series, ASME rated, top entry bladder tank is offered in sizes from 36 gallons through 3963 gallons. Larger sizes are available.

The Wheatley WBF Series, ASME rated, bottom entry bladder tank is offered in sizes from 36 gallons through 2640 gallons. Larger sizes are available.

The Wheatley BDT Series, ASME, bottom entry tank is offered in sizes 13 gallon through 3963 gallons.

**Bladder Type
Expansion Tanks**

Standard Features:

- Removable and replaceable heavy-duty Butyl rubber bladder
- “Full Acceptance” Series for large expanded fluid volumes
- ASME constructed and stamped. National Board registered
- Maximum design pressure 125 psi

Optional Features:

- Higher working pressures available
- Epoxy-coated covers on full acceptance models
- California sight glass. Seismic mounting clips.



Tangential Air Separators

Standard Features:

- ASME constructed and stamped. National Board registered
- Tangential design results in smaller unit
- Provides air-free fluid flow which protects against damage and system noise
- Helps prevent waterlogged compression tanks

Optional Features:

- Grooved inlet and outlet connections
- Higher working pressures available
- Air and dirt separators available





AIR CONTROL METHOD

In the second method, typically called the “air control” method, the system water and air touch one another. During the initial system fill and pressurization, all excess air is vented to atmosphere, leaving behind only the necessary volume of air needed inside the compression tank. Due to the change in air and water solubility as temperature and pressure increase, air and water “pass” each other in and out of the compression tank.

American Wheatley offers the WPS series, ASME compression tanks for this type of air control system. The WPS is available in sizes 15 gallon through 500 gallons.

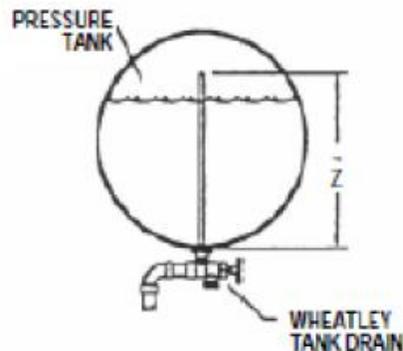
WPS Series Plain Steel Expansion Tanks

Standard Features:

- ASME constructed and stamped
National Board registered
- Design pressures
2" – 20" diameter: 150 psi, 225 psi test
24" – 30" diameter: 1125 psi, 198 psi test
- Accurately-positioned opening
- Manufacturer's data report for pressure vessels, Form U-1 available

Optional Features:

- Complete accessory package – liquid level sight glass, tank fittings, drainer
- Hot dipped galvanized
- Saddles for horizontal installation
- Customized sizes, pressures and materials



Accessories

TF series air control tank fitting

Gauge glass assemblies

Tank saddles



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WHEATLEY TANGENTIAL AIR SEPARATORS

Every hydronic heating or cooling system requires an air removal device of some type to adequately control system efficiency.

The American Wheatley TA Series

- Maintains system efficiency
- Decreases system corrosion
- Reduces noise caused by air in the system
- Alleviates problems with air-bound systems
- Prevents water logged compression tanks
- Improves heat transfer

As centrifugal force spins the air entrained water around the outside of the vessel, the air molecules are forced to the center of the vortex created, rises to the top of the vessel and is expelled through the air vent either to atmosphere or to a specified tank. While the operation seems simple, it is a must for all hydronic systems.

American Wheatley offers a tangential design construction that is constructed and stamped in accordance with ASME VIII, Division 1, they are also National Board registered and recognized.

American Wheatley tangential air separators are available in sizes 2" through 40", with standard carbon steel construction. Stainless steel construction is also available. The American Wheatley Tangential air separator is also available with an optional, removable, stainless steel strainer with 3/16" perforations. Standard construction of 2" through 8" are rated 150psi, 10" and larger are rated 125 psi. Higher pressure ratings are available. American Wheatley air separators are also available in stainless steel construction. Consult factory for pricing.

The Wheatley TA Series tangential air separator is available with or without an integral perforated strainer. More to come on air separation in the next installment.

Tangential Air Separators

Standard Features:

- ASME constructed and stamped
- National Board registered
- Tangential design results in smaller unit
- Provides air-free fluid flow which protects against damage and system noise
- Helps prevent waterlogged compression tanks

Optional Features:

- Grooved inlet and outlet connections
- Higher working pressures available
- Air and dirt separators available



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