FLO FAB inc

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

Description

Each Air Separator is a fabricated steel vessel with tangentially located system connections designed to eliminate air from heating and chilled water systems.

Performance Limitations

Maximum Design Temperature: 450° F

Maximum Working Pressure: 125 PSIG *

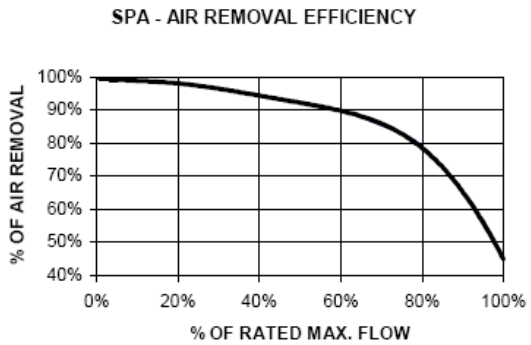
*Alternate working pressures may be supplied. Verify rating from nameplate information or National Board registration.

Operation

Air laden water flows into the top tangential connection, promoting a low velocity centrifugal vortex affect within the vessel. Natural centrifugal forces allow the heavier air-free water and sediment to move towards the outer edges of the vessels while entrained air is captured within the "eye" of the vortex. As the air bubbles merge in the eye of the vortex, they enlarge and buoyantly move to the top of the separator where they are released to the atmosphere through a float type air vent. The water then exits near the bottom of the unit, bubble free, protecting the system against the noise, corrosion, and damage commonly caused by entrained air.

Models that incorporate a strainer have the added benefit of sediment being capturing with subsequent removal through a field installed blow-down valve.

During initial start-up, it may take multiple passes to remove all air from your system. However, once this initial volume of air is removed, your air separator will sufficiently maintain an air free heating or cooling loop regardless of the addition of make-up water. Removal efficiency is shown in the chart below.



Installation

WARNING: This air separator should be installed by qualified personnel. Failure to follow basic installation principles may result in personal injury or damage to property.

Visually inspect the air separator for damage that may have occurred during transit. Use a wire brush or steel wool pad to remove any obvious and accessible surface rust. In some instances nameplate information may have been painted over prior to shipping to protect against corrosion. If necessary, remove paint from nameplate with a chemical solution or a wire brush and record nameplate information for future reference.

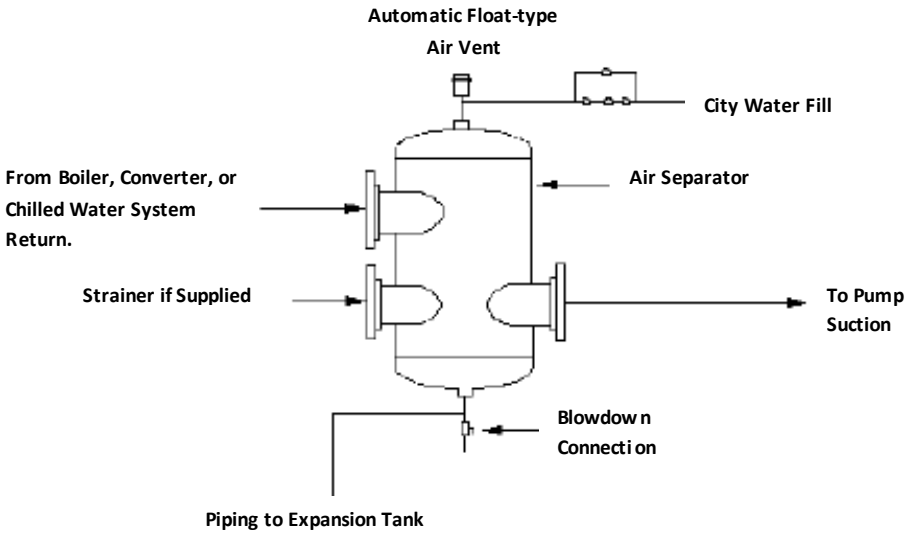
Use the below guide for minimum recommended clearances necessary for strainer removal.

Table # 1 – Strainer Removal Clearances

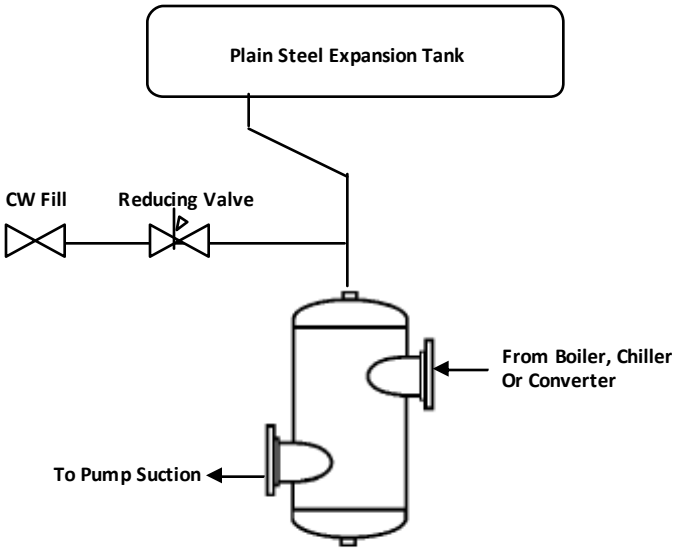
Connection Size	Minimum Clearance	Connection Size	Minimum Clearance
2"	9"	12"	35"
2½"	9"	14"	40"
3"	12"	16"	44"
4"	14"	18"	55"
5"	17"	20"	58"
6"	20"	22"	60"
8"	25"	24"	65"
10"	30"	30"	81"

Install the air separator per system drawings locating the unit as close to the boiler as practical. A manual drain should be added to facilitate purging sediment from the separator. A float air vent should also be installed at the top outlet when installed in systems employing a bladder style tank. Ensure the air valve cap is loose to permit air to escape. Typical installations are shown below.

Typical Hydronic Installation with Bladder Style Tank



Typical Hydronic Installation with Plain Steel Tank



SPA-STYLE
AIR SEPARATOR

Air Separator supports must ensure flooded weight of air separators may exceed strength of supports. Ensure provisions are made to support flooded weights per table below. SPA sizes through SPA-8 or SPA-8S can be supported in the piping system as long as pipe hangers or other supports are attached to the tangential nozzles as close to the SPA shell as possible. Units larger than the SPA-8 or SPA-8S should be installed with the basering/skirt resting on the ground. If this is not possible, the unit should be supported at the basering/skirt or by factory installed support brackets. Welding on non-pressure bearing parts, such as the basering/skirt, is acceptable. All supports and methods of supporting should be determined based on local jurisdictions and required building codes.

Table # 2 – Estimated Wet Weight in Pounds

Size Inches	2	2½	3	4	5	6	8	10	12	14	16	18	20	22	24
SPA-S w/strainer	70	81	125	205	370	490	1172	1913	3472	6068	8905	13349	19355	24045	29961
SPA w/o strainer	65	75	119	195	353	471	1135	1853	3377	5900	8675	13025	18845	23430	28430

Service Information

Models supplied with strainers must have the strainer removed and cleaned after 24 hours of operation. Frequent cleanings are recommended during initial start-up periods. Subsequent cleaning should be performed periodically per user's maintenance schedule. The need to clean the strainer may be evidenced by a higher pressure drop across the unit or by pump cavitation problems.

To clean the strainer

a. Allow system water temperature to cool to below 100° F
b. Open the blow-down drain valve. This should dislodge accumulated dirt from the strainer. If not, the strainer will need to be removed for cleaning.

To remove the strainer for cleaning

a. Shut the air separator isolation valve to isolate the unit from the system
b. Ensure system water temperature has cooled to below 100° F
c. Open the blow-down valve and drain the unit.
d. Remove the flange bolts that house the strainer.
e. Remove the cover and strainer and clean as necessary.
f. Reverse the process to place the air separator back on line.