



AQUAZONE

Buffer tanks for chilled and heating
water circuits

MASTERFLOW

AQUAZONE: BUFFER TANKS FOR CHILLED AND HEATING WATER CIRCUITS

Aquazone buffer tanks are often incorporated into a chilled water system that has insufficient water volume throughout the piping network in relation to the chiller capacity. By adding a buffer tank to the system, extra volume is created which provides additional "buffer" capacity and eliminates the problems such as excessive compressor cycling, poor temperature control and erratic system operation.

In some instances when a large building is undergoing refurbishments or extensions,, the capital expenditure of a larger chiller can be deferred, by installing large buffer tanks and utilizing the existing chiller. These tanks are insulated so that the stored water maintains it's chilled temperature. This allows the tank to charge up during off peak periods, thus reducing the chillers work load during peak periods throughout the next day.

With the addition of sparge pipes and baffles the Aquazone tanks can be used as Thermal Energy Storage Tanks. As a storage system the Aquazone tank allows the chiller to operate at off-peak times of the day providing the Facility Manager with an effective strategy for energy cost reductions.

Aquazone tanks can also be utilized in heating water systems. Refer to our Sales Department for further information. Aquazone tanks can be provided with internal sparge pipes so that incoming liquid is dispersed evenly throughout the tank. The resulting temperature stratification coupled with correctly sized insulation provides an effective Thermal energy Storage Tank for use in chilled and heating water applications.

APPLICATIONS

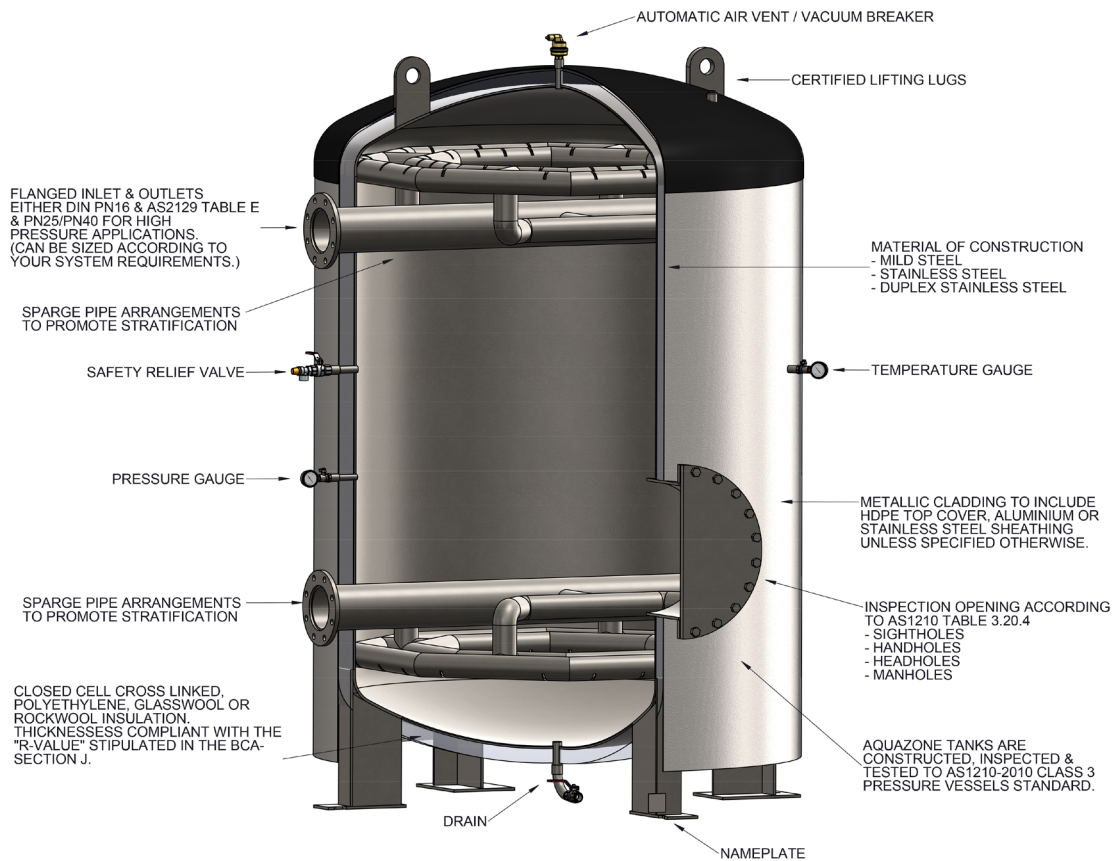
- Chilled water
- Refrigeration process systems
- Heating water circuits
- Data Centres
- Hospitals
- Commercial
- Government projects



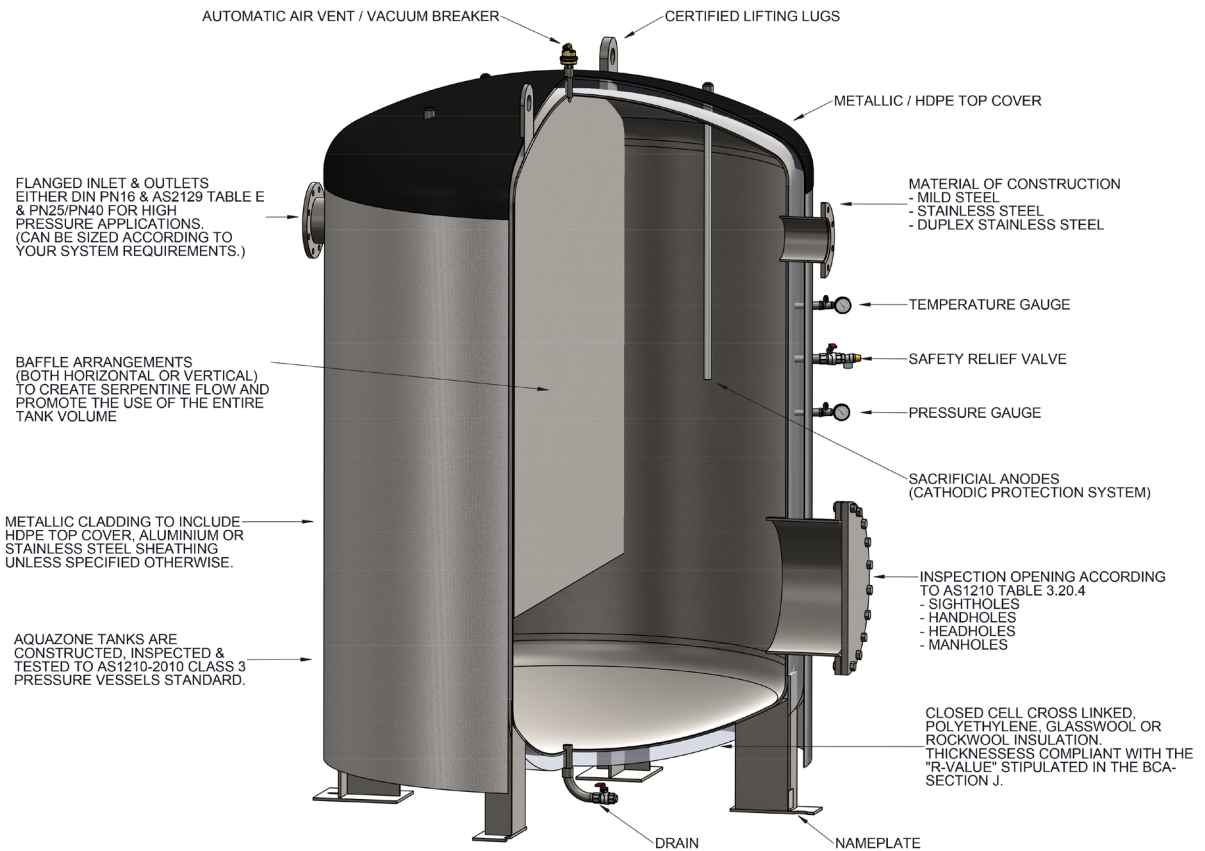
DESIGN FEATURES - THERMAL ENERGY

Features typically include:

- Relief valve supplied loose to suit system pressure – please specify.
- Standard shell construction is carbon steel (stainless available on request)
- Temperature limits: 4°C - 99°C.
- Working pressures vary from 6 Bar to 10 Bar.
- Higher pressure ratings of 16 and 25 Bar available if required.



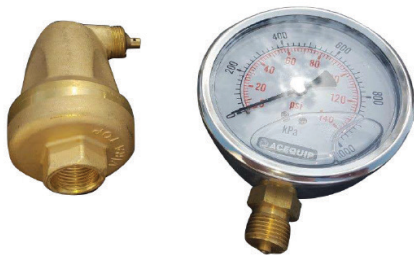
DESIGN FEATURES - BUFFER TANK



AQUAZONE BUFFER TANKS - OPTIONAL EXTRAS INSTRUMENTATION PACKAGES

All Aquazone Buffer Tanks can be supplied with a range of accessories. As standard a Relief Valve will be supplied loose and should always be installed to provide protection against over pressurisation. Other accessories which are always quoted as Optional Extras include Cathodic Protection and Instrumentation Packages. Refer to our separate Technical Bulletin for information on Cathodic Protection.

Two different Instrumentation Packages are available. Deluxe and Economy.

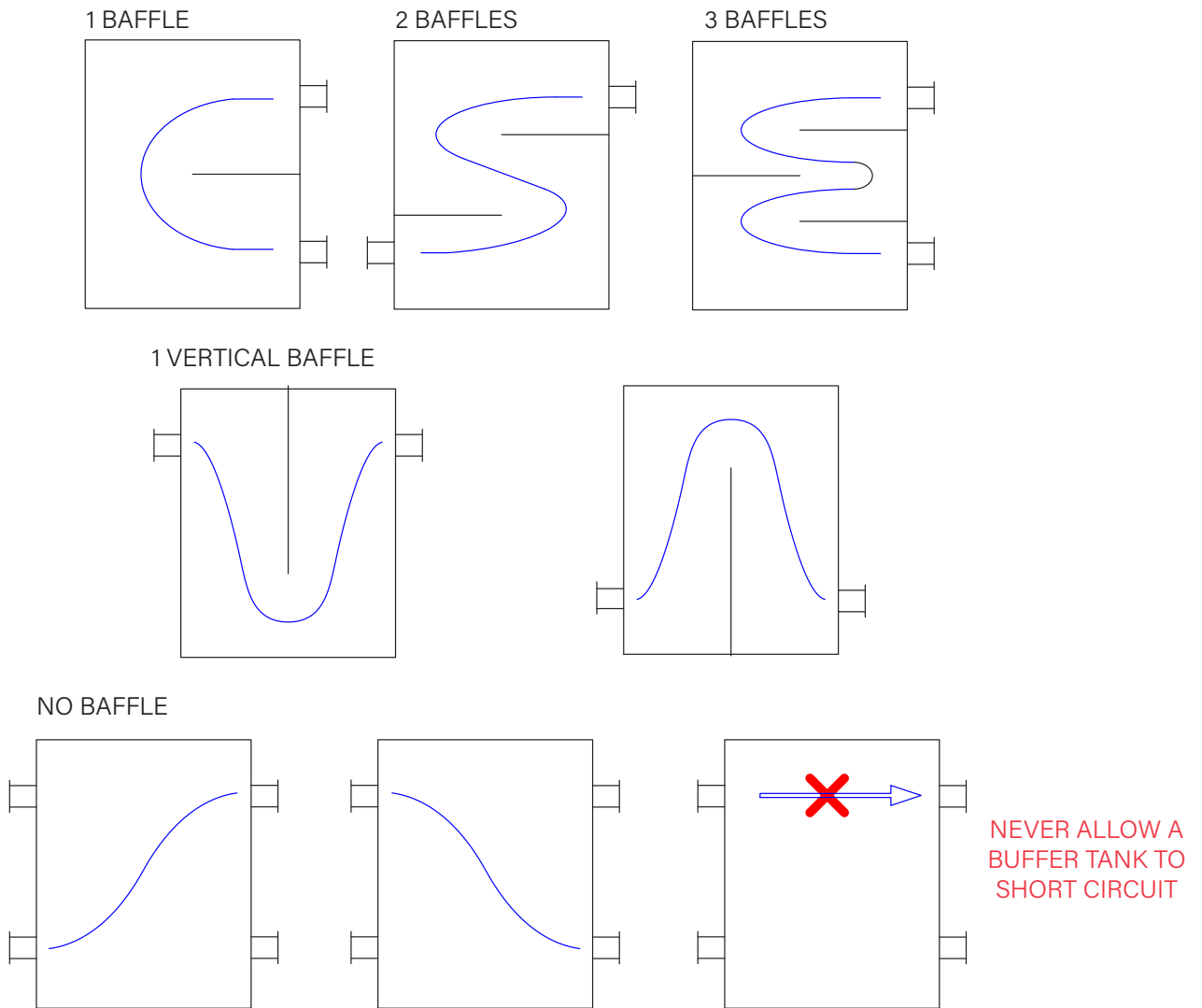


Economy Package Includes the pressure gauge and Air Release Valve only.



Deluxe Package includes Temperature Gauge, Thermowell, Auto Air Release Valve with large throat and 1/2 connection and Pressure Gauge with 100mm face in accordance with AS1210

BUFFER TANK – INTERNAL BAFFLE ARRANGEMENTS



INSTALLATION RECOMMENDATIONS

For tanks with no internal baffle/s, it is important to ensure diagonal pipe connections to avoid chiller short cycling. If the Tank is being used as a Buffer Tank to add additional volume to the circuit, we recommend installing on the return line. This will ensure the warmest water is delivered to the chiller (or in the case of a boiler/heat pump, the coldest water is delivered).

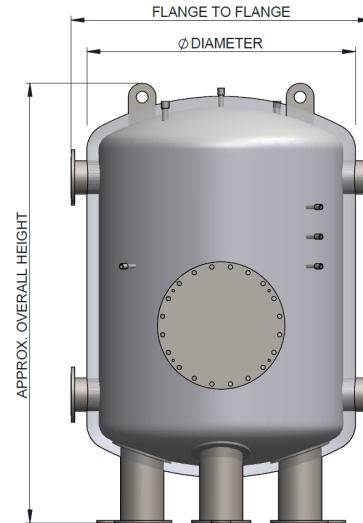
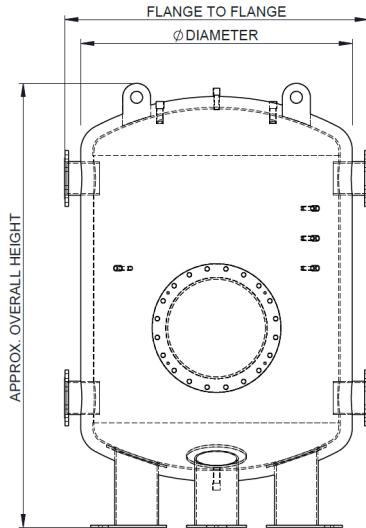
If the Tank is being used as a Storage Tank or Thermal Energy Tank, it must be installed on the supply line so it is charged by the heat source (chiller/boiler).

This will ensure the tank is always 'charged' with water equal to the output temperature of the heat source.

INSTALL LOCATION	HEATING WATER		INSTALL LOCATION	CHILLED WATER	
	INLET	OUTLET		INLET	OUTLET
Return Loop	High	Low (to the boiler)	Return Loop	Low	High (to the field)
Supply Loop	Low	High (to the field)	Supply Loop	High	Low (to the boiler)

DIMENSIONAL DATA: STANDARD VERTICAL AQUAZONE BUFFER TANK

**NEVER ALLOW A
BUFFER TANK
TO SHORT CIRCUIT**



SIZE (L)	BASE MODEL NO.	INLET/ OUTLET	DIAMETER	FF	APPROX. OVERALL HEIGHT
300	AVBT300-C0	80NB	670	830	1790
500	AVBT500-C0	80NB	770	930	1910
750	AVBT750-C0	80NB	880	1040	2260
1000	AVBT1000-C0	100NB	1080	1240	2010
1500	AVBT1500-C0	100NB	1220	1380	2180
2000	AVBT2000-C0	150NB	1360	1520	2230
2500	AVBT2500-C0	150NB	1550	1710	2180
3000	AVBT3000-C0	150NB	1550	1710	2490
3500	AVBT 3500-C0	150NB	1550	1710	2790
4000	AVBT4000-C0	150NB	1800	1960	2490
5000	AVBT5000-C0	200NB	1800	1960	2870
5000	AVBT5000 (SQT)	200NB	1950	2110	2490
6000	AVBT6000-C0	200NB	1850	2010	3280
7500	AVBT7500-C0	200NB	1950	2330	3590
7500	AVBT7500 (SQT)	200NB	2170	2330	3000
10000	AVBT10000-C0	200NB	2170	2330	3810
15000	AVBT15000-C0	200NB	2170	2330	5370
20000	AVBT20000-C0	200NB	2170	2330	6910

*FF: Flange to flange dimension.

*Above dimensions include insulation and cladding.

*Please note: All sizes can vary and this table must not be used for construction purposes. Always confirm with Sales Office.

The above table contains dimension for our chilled water buffer tanks, C0 design.

Please contact our sales team for alternative variations.

The above is subject to change without prior notice.



MASTERFLOW

Better by Degrees®

Head Office

New South Wales
184 Newton Road,
Wetherill Park 2164
+61 (2) 9748 2022

Victoria

8-10 Parkhurst Drive
Knoxfield 3180
+61 (3) 9012 9751

Queensland

161 Railway Parade
Thorneside 4158
+61 (7) 3103 7055

masterflow.net.au

sales@masterflow.net.au

All content is subject to change without notice.