

EDITION 3.0
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Thermex TSSUZ Series Buffer Storage Tanks for Heating & Cooling



Thermex TSSUZ Series 316 Stainless Steel Buffer Tanks 500L - 4,000L*

Thermex TSSUZ Series 316 Stainless Steel Buffer Storage Tanks are ideal for applications requiring large volume chilled water storage in heating or chilled water circuits.

They can be used with chillers and boilers which do not have water volumes of sufficient size in relation to the chiller or boiler. The insufficiently sized systems do not have enough buffer capacity for the system water causing poor temperature control, erratic system operation and excessive chiller or boiler cycling.

Thermex TSSUZ Series Buffer Storage Tanks solves this problem by adding water volume to buffer the system and reduces the rate of change of the return water.

Chillers are designed to be useful in systems with a minimum water volume. The minimum water volume is based upon the chiller manufacturer's requirements. When chiller systems are properly sized, the chiller compressor will not short cycle. Without the proper amount of system water, the source temperature will be reached quickly and the compressor will shut off. Many chiller compressors can only start 3 times per hour. Insufficiently sized system problems can cause excessive compressor cycling, poor temperature control and erratic system operations.



Features

- When insulated, Thermex tanks comply to the BCA Section J insulation requirements
- Are suitable for indoor and outdoor situations
- Designed to AS1210 Unfired Pressure Vessels
- Low profile to facilitate installation in low roof plant-rooms
- Available in various materials and pressure ratings
- Standard designs in sizes from 500L to 4,000L*
- 316 Stainless Steel Construction
- Inlet, Outlet, Drain and Vent Connections
- MAX Working Pressure 6 Bar

*Custom sizes available on request, please enquire for details.

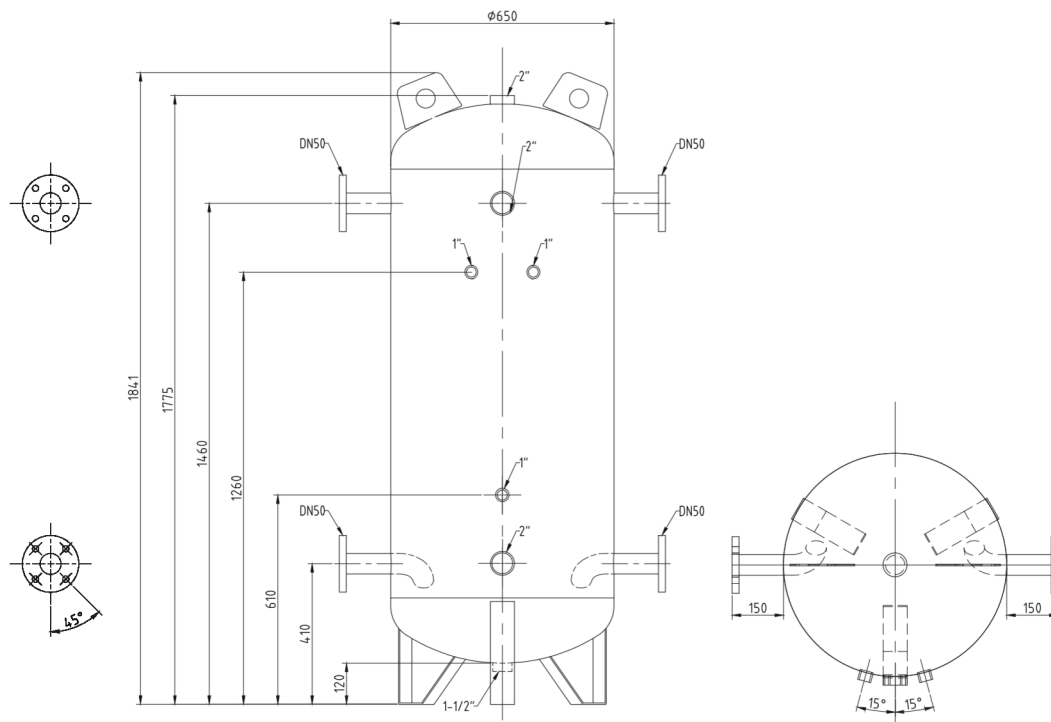
Product	Quick		
Check	Product	TSSUZ Buffer Storage Tanks	Outdoor Suitable Yes (when insulated and clad)
Material Range		316 Stainless Steel	Max Pressure 6 Bar
		500-4,000L*	Building J Code Yes
Suitable HVAC Systems		Chilled or Heating	2019 Compliant

Dimensional Data

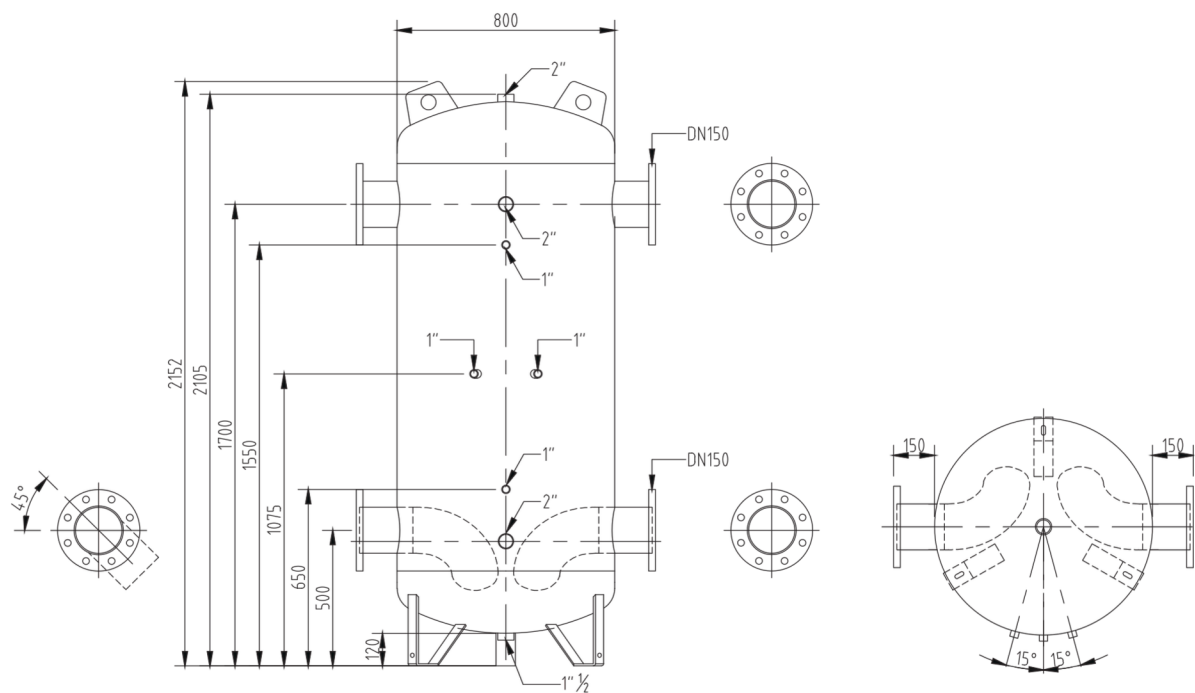
Model	Volume (L)	Height (mm)	Diameter (mm)	Flanged Connections
TSSUZ0500L0650	500	1841	650	4 x 50mm
TSSUZ1000L0800	1000	2152	800	4 x 150mm
TSSUZ1500L1200	1500	1740	1200	4 x 150mm
TSSUZ2000L1250	2000	2002	1250	4 x 200mm
TSSUZ2500L1400	2500	2164	1400	4 x 200mm
TSSUZ3000L1600	3000	2124	1600	4 x 200mm
TSSUZ4000L1600	4000	2582	1600	4 x 200mm

Technical Drawings

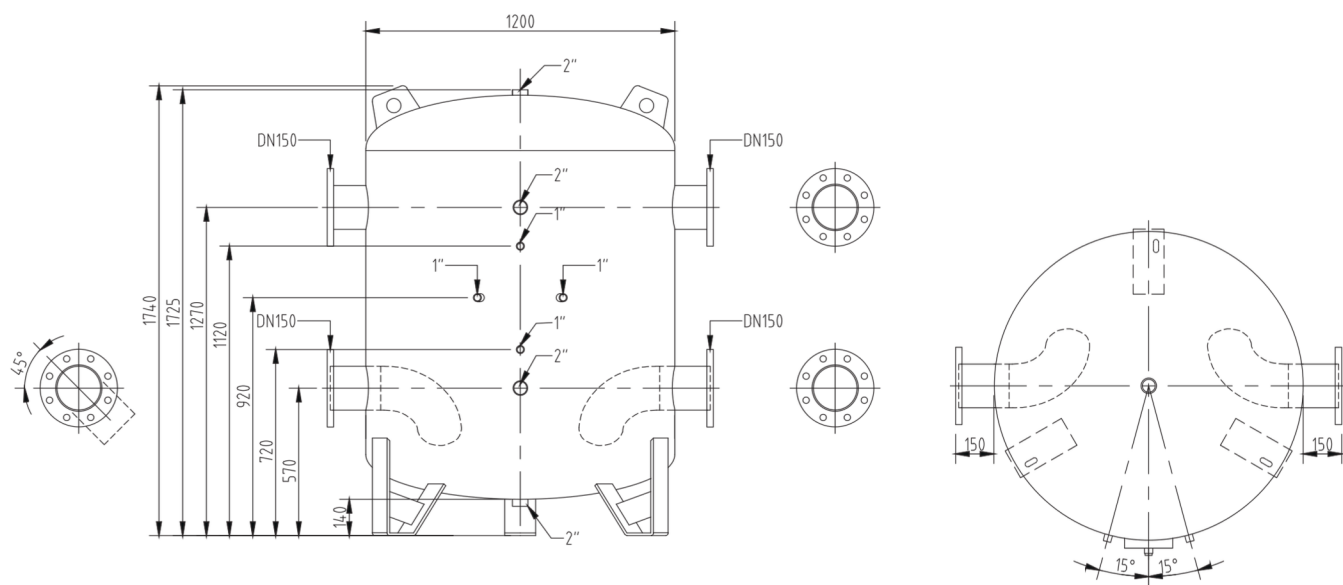
500L - TSSUZ500L0650



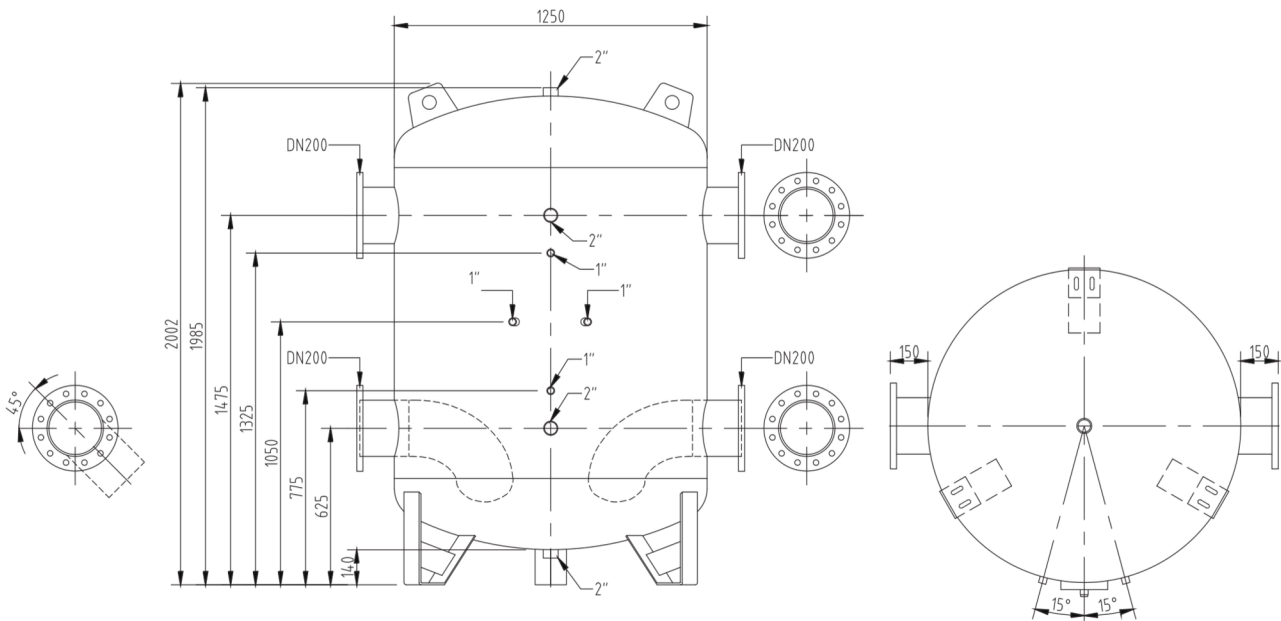
1000L - TSSUZ1000L0800



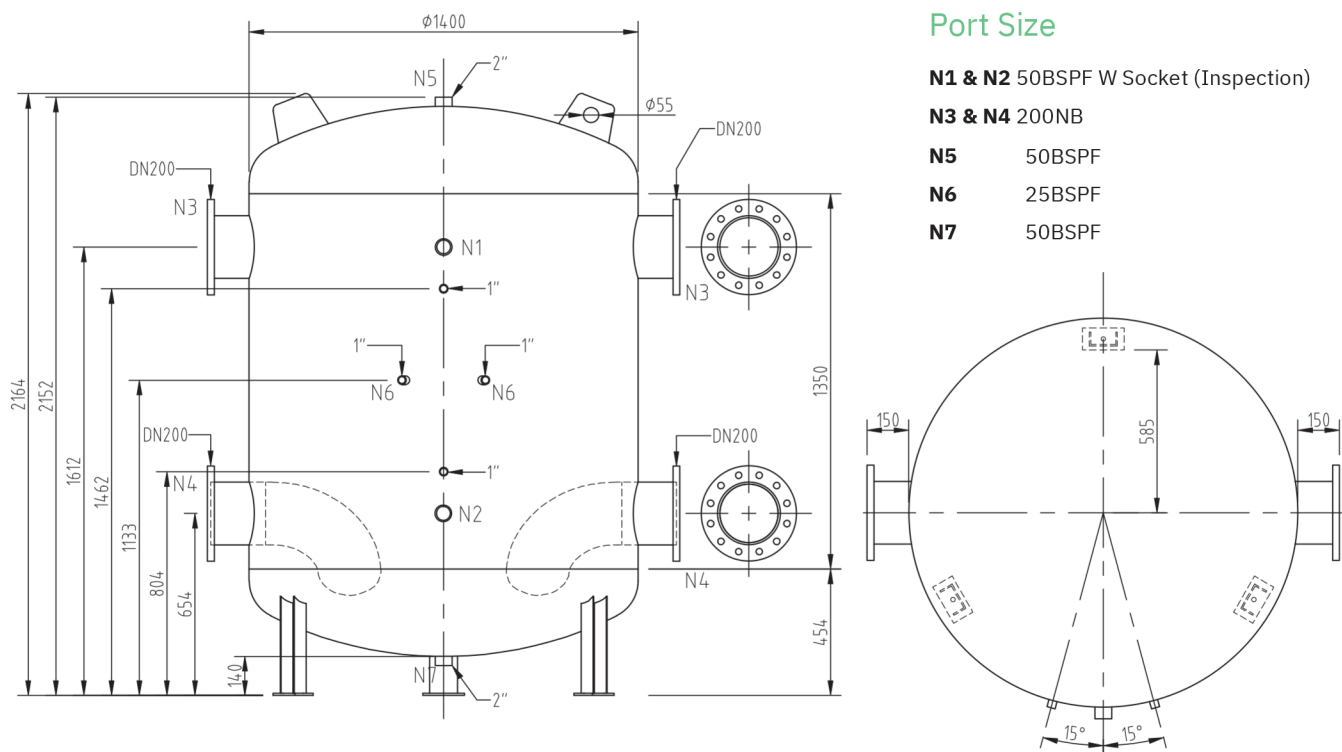
1500L - TSSUZ1500L1200



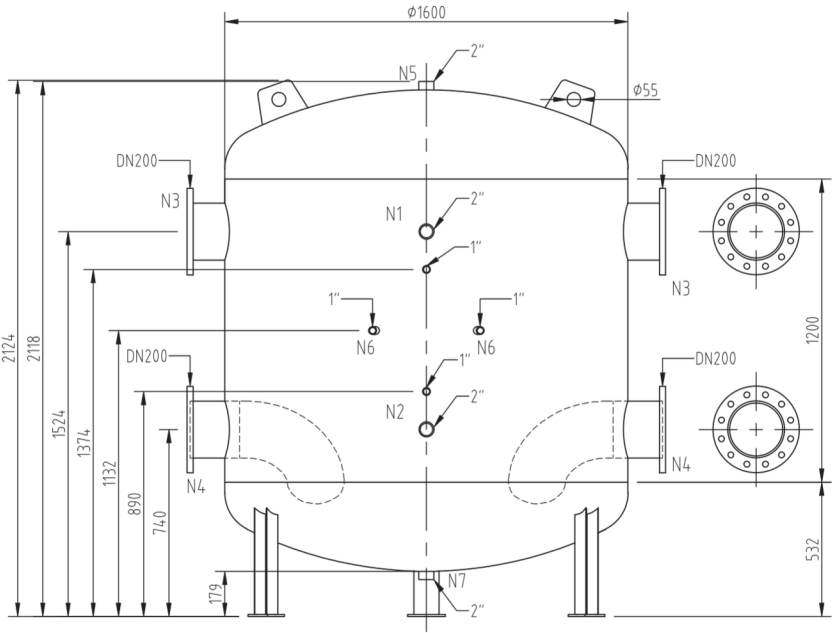
2000L - TSSUZ2000L1250



2500L - TSSUZ2500L1400

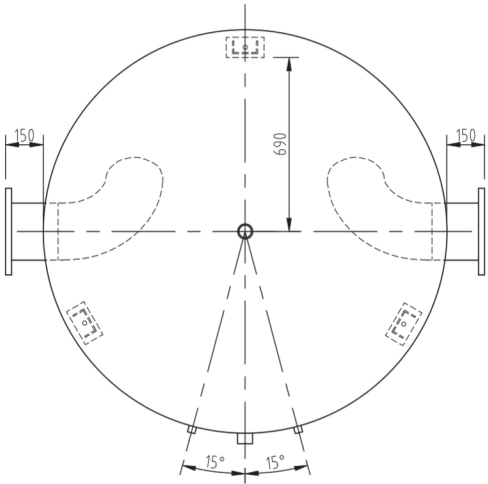


3000L - TSSUZ3000L1600

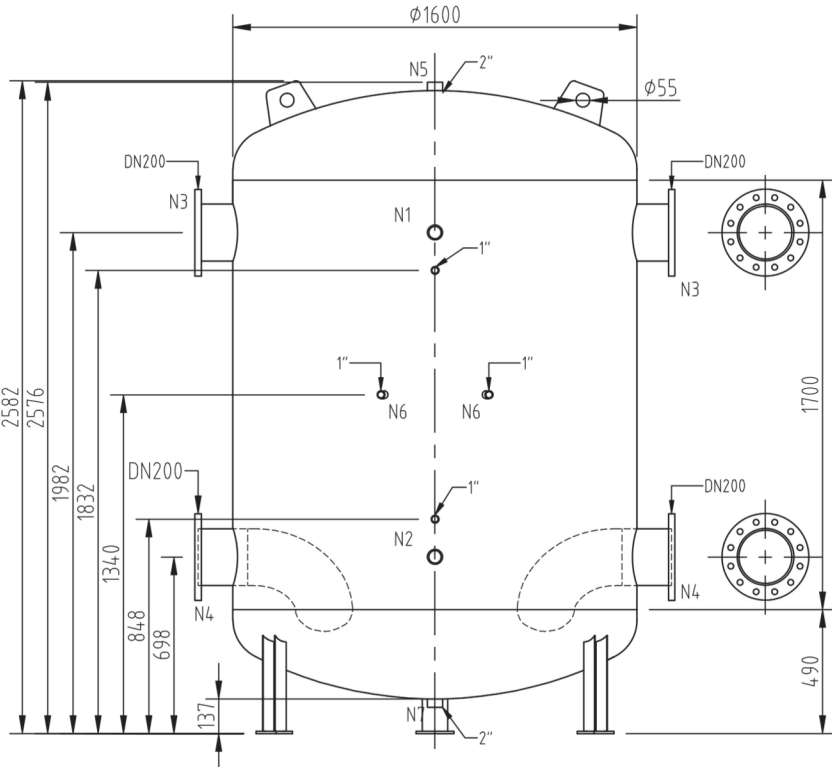


Port Size

- N1 & N2 50BSPF W Socket (Inspection)
- N3 & N4 200NB
- N5 50BSPF
- N6 25BSPF
- N7 50BSPF

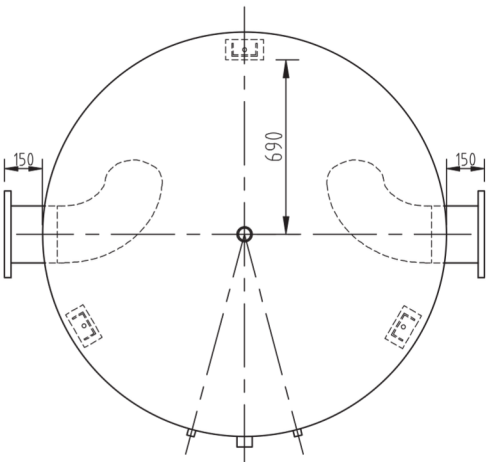


4000L - TSSUZ4000L1600



Port Size

- N1 & N2 50BSPF W Socket (Inspection)
- N3 & N4 200NB
- N5 50BSPF
- N6 25BSPF
- N7 50BSPF



Sizing of a Buffer Storage Tank

The necessary volume for a buffer storage tank can be calculated based on a few parameters. The only factors needed here are the thermal output (heating or cooling output), the storage time and the temperature difference between the feed and return. This information is entered into the following formula:

$$V_{st} = \frac{P \times t}{c \times \Delta T}$$

V_{st} = Storage volume in m³

P = Heating/cooling rating in kW

t = Storage time in h

c = Heat capacity of the carrier fluid, in this case 1.163 kWh/(m³ × K)

ΔT = Temperature difference in K

Example: The minimum rating of a water chiller of 50 kW at a temperature difference of 5 kelvin between feed and return is intended to be stored for a period of 20 minutes (cycle frequency).

$$V_{st} = \frac{P \times t}{c \times \Delta T}$$

$$V_{st} = \frac{50 \text{ kW} \times 1/3 \text{ h}}{1.163 \text{ kWh}/(\text{m}^3 \times \text{K}) \times 5 \text{ K}}$$

$$V_{st} = 2.87 \text{ m}^3$$

Therefore, the storage volume required here is 2.87 m³, or 2,870 litres.

Buffer Storage Tank
Piping Diagram

