

Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
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Date: 12/1/2022

Return Request: 12/11/2022

Project: New Dormitories – Bldg. 6

Supplier: Little Rock Winnelson

Manufacturer: Wilkins

Submittal: Plumbing Equipment

Submittal Number: 22 00 00-01

Drawing # and Installation: Plumbing Drawings

ARCHITECT

Stocks Mann Architects
401 W. Capitol, Suite 402
Little Rock, AR 72201
501-370-9207

ENGINEER

Bernhard TME
1 Allied Drive #2600, Building 2
Little Rock, AR 72202
501-666-6776

GENERAL CONTRACTOR

Alessi Keyes Construction
10623 Maumelle Blvd.
N. Little Rock, AR 72113
501-225-6699

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.
9924 Landers Rd.
N. Little Rock, AR 72117
501-834-3320

Notes:

CSUSA PROJECT NO.

22-102

jon@comfortar.com

ALESSI KEYES CONSTRUCTION
REVIEWED FOR GENERAL COMPLIANCE
WITH CONTRACT DOCUMENTS
Charley Dawson 1/19/2023

ET-1 EXPANSION TANK

Model WTTA

ASME Thermal Expansion Tank



□ Installation □ Maintenance Instructions

INSTALLATION MAINTENANCE INSTRUCTIONS

Connect the thermal expansion tank to be cold water supply line between the backflow preventer or check valve and the water heater. This location is preferred for two reasons: a cool bladder will last longer, and the air charge will not thermally expand. Piping Detail below illustrates the suggested configurations.

Checking and charging instructions

1. Close the isolation valve.
2. Slowly open the drain valve. Caution must be taken when opening the drain valve as it is under system pressure. The drain valve must remain open while checking and adjusting the tank pre-charge pressure
3. Check the air charge pressure using an accurate pressure gauge. The tank has a standard tire fitting (.302" - 32 valve). There are special pressure gauges fitted with the required air chuck available or a good quality tire air gauge may be used.
4. Adjust air charge pressure if required. The air charge pressure should be equal to the supply water pressure.

Air may be released from the tank by depressing the stem of the tire fitting until supply water pressure is equaled. There are a number of ways to get more air pressure in the tank.

Manual pump. A common bicycle air pump can be used. This is practical only when a small amount of additional air is required or if your in great shape and have several hours to kill.

Oil-free air compressor. A portable oil-free air compressor can be used. Most portable compressors can deliver 40-60 psig air, this may not be adequate.

Gas station fill-up. Almost all gas stations have air available at over 100 psig.

Bottled nitrogen. Rental tanks are inexpensive and 70 cu/ft, at 2000 psig, sizes are available. This size will fill even the largest thermal expansion tank. Nitrogen is not required and there is usually an extra cost for the required fitting.

5. Close the drain valve.
6. Open the isolation (System) valve.

Check the air charge pressure at least once a year. Tanks can lose charge from a leaking air valve, through the bladder or diaphragm membrane, or from a loose fitting.

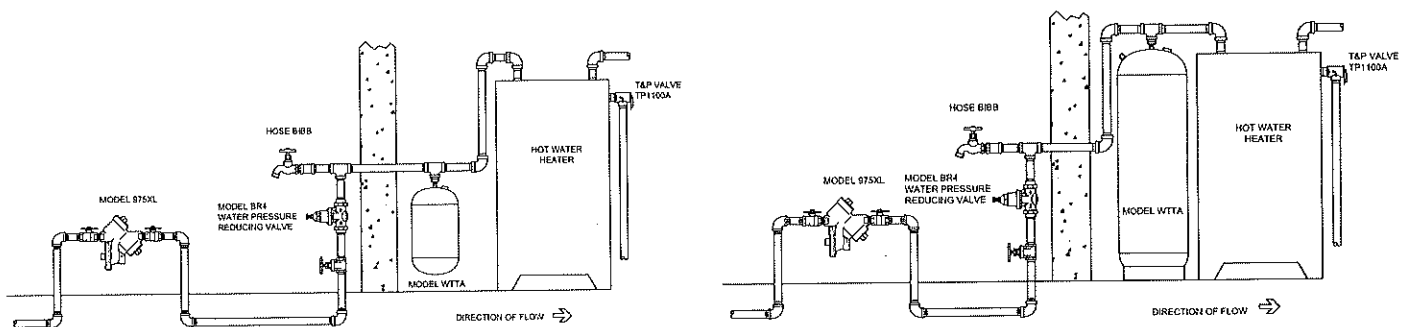
The Thermal trap shown on the ceiling-hung tank, as shown in the Piping Detail, prevents the tank from being heated due to convection.

SUGGESTED SPECIFICATIONS

Furnish and install a thermal expansion tank for hot potable water as shown on the drawings. The tank shall be: (choose one)

The tank shall have a stainless steel NPT system connection and a .302" charging connection. The contractor shall field adjust the pre-charge pressure to equal the cold water supply pressure. The final adjusted pre-charge pressure to equal the cold water supply pressure. The final adjusted pre-charge pressure shall be reported in writing to the engineer. A pressure reducing valve shall be installed if the cold water supply pressure exceeds 80 psig. An FDA approved heavy duty butyl bladder shall prevent the water from coming in contact with the tank shell. Diaphragm type tanks with a water side lining shall not be acceptable.

The tank shall be connected to the cold water supply line. This line is to be piped with a thermal trap and fitted with an isolation valve and drain valve to allow for periodic checking and adjusting of the pre-charge pressure.



WARRANTY: ZURN WILKINS Valves are guaranteed against defects of material or workmanship when used for the services recommended. If in any recommended service, a defect develops due to material or workmanship, and the device is returned, freight prepaid, to ZURN WILKINS within 12 months from date of purchase, it will be repaired or replaced free of charge. ZURN-WILKINS' liability shall be limited to our agreement to repair or replace the valve only.

⚠ **WARNING:** Cancer and Reproductive Harm - www.P65Warnings.ca.gov
⚠ **ADVERTENCIA:** Cáncer y daño reproductivo - www.P65Warnings.ca.gov
⚠ **AVERTISSEMENT:** Cancer et néfastes sur la reproduction - www.P65Warnings.ca.gov



ISWTTA (REV. B 6/17)

1747 Commerce Way, Paso Robles, CA 93446 Phone: 855-663-9876, Fax: 805-238-5766

ZURN WILKINS

www.zurn.com

LETTER OF TRANSMITTAL

To: Randy Stocks, AIA
 Stocks – Mann Architects, PLC
 401 W Capitol, Suite 402
 LITTLE Rock, Arkansas 72201
 501.370.9207

From: Garrett, Thompson, BTME

Date: 01/23/23 **Project #** 01-20-0003

Subject: Booneville Human Development Center – Building #6
 22 00 00 Plumbing Equipment Submittal
 SubComm_012323

- | | | | |
|----------------------------------------------|--------------------------------------------|------------------------------------------|------------------------------------------|
| <input checked="" type="checkbox"/> Attached | <input type="checkbox"/> Prints | <input type="checkbox"/> Issued Drawings | <input type="checkbox"/> Specifications |
| <input type="checkbox"/> Shop Drawings | <input type="checkbox"/> Existing Drawings | <input type="checkbox"/> O & M Manuals | <input type="checkbox"/> Record Drawings |

Copies	Date	Ref No.	Description
1-Email	01/23/23	22 00 00	Plumbing Equipment Submittal and Comments.

Attached Documents

- | | | | |
|---------------------------------------|--------------------------------------------------|--------------------------------------------------|---------------------------------------------|
| <input type="checkbox"/> For Approval | <input checked="" type="checkbox"/> For Your Use | <input checked="" type="checkbox"/> As Requested | <input type="checkbox"/> For Review/Comment |
|---------------------------------------|--------------------------------------------------|--------------------------------------------------|---------------------------------------------|

Remarks If you have any questions, please contact our office.

Signature: Chay Slater

Submittal Comment Sheet

To: Randy Stocks, Stocks-Mann Architects
From: Rob Adams, BTME
Date: January 23, 2023
Project: Booneville HDC Building #6
Project #: 01-20-0003
Ref: 22 00 00 Plumbing Equipment Submittal
Submitted By: Alessi Keys Construction

APPROVED	<input type="checkbox"/>
REJECTED	<input type="checkbox"/>
REVISE AND RESUBMIT	<input type="checkbox"/>
REFER TO SUBMITTAL COMMENT SHEET	<input checked="" type="checkbox"/>

This review performed by Bernhard TME, LLC, is only for general conformance with the design concept of the project and general compliance with the information provided in the Contract Documents. Corrections or comments made on the submittal and/or shop drawings during this review do not relieve the Contractor from compliance with the requirements of the plans, specifications, and other contract documents. Approval of a specific item shall not indicate an approval of an assembly of which the item is a component. Contractor is responsible for the following: all quantities; configuration of components; dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication process or to the means, methods, techniques, sequences, and procedures of construction; coordination of the work with that of all other trades; and, for performing all work in a safe and satisfactory manner.

Bernhard TME

DATE: 01/23/23 BY: R. Adams

Below find our response for the submittal received on Wednesday January 18, 2023.

1. ET-1

APPROVED

- End of Submittal Comments -

THIS REVIEW PERFORMED BY BERNHARD TME, LLC, IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS. CORRECTIONS OR COMMENTS MADE ON THE SUBMITTAL AND/OR SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS, AND OTHER CONTRACT DOCUMENTS. APPROVAL OF A SPECIFIC ITEM SHALL NOT INDICATE AN APPROVAL OF AN ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING: ALL QUANTITIES; CONFIGURATION OF COMPONENTS; DIMENSIONS TO BE CONFIRMED AND CORRELATED AT THE JOBSITE; INFORMATION THAT PERTAINS SOLELY TO THE FABRICATION PROCESS OR TO THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION; COORDINATION OF THE WORK WITH THAT OF ALL OTHER TRADES; AND, FOR PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER.



SUBMITTAL SHEET

Alessi Keyes Construction Co.
AKC-505 - Booneville HDC New Dorm

Project: AKC-505
Booneville HDC New Dorm

Spec Section Num: 22 00 00
Submittal: 22.21
Revision: 0
Package: Plumbing
Date: 1/19/2023 UTC

Submittal Title: Plumbing Equipment
Submittal Detail:
Response Due By: 2/22/2023 UTC

Contractor:
Charley Dawson
Alessi-Keyes Construction Co.

Contractor's Stamp

Architect:
Trey Tassin
Stocks-Mann Architects

Architect's Stamp

Response:
Comment:

ET-1 EXPANSION TANK
WILKINS WTTA30 ASME POTABLE WATER
EXPANSION TANK

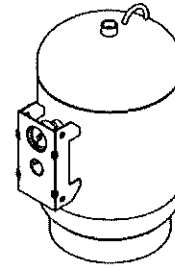


Model WTTA

ASME Thermal Expansion Tank

Application

Designed for installation on hot water systems to protect against thermal expansion. All WTTA tanks are ASME fixed bladder type for commercial and industrial applications. When system pressure increases due to thermal expansion, water enters the tank's bladder which expands into the pre-charge air chamber, keeping system pressure below the relief valve setting. Conforms to all lead-free requirements and acceptable for use on drinking water systems.



LEAD FREE

Standards Compliance

- ASME Section VIII

Materials

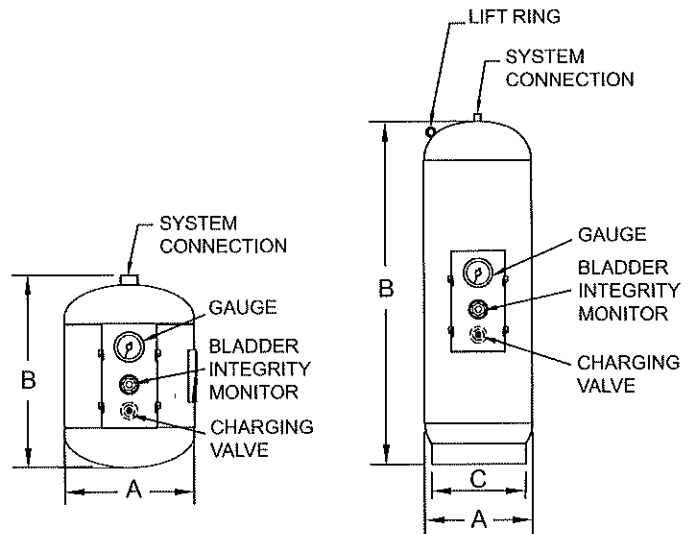
Outer shell	Carbon Steel
System Connection	Stainless Steel
Bladder	Heavy-duty Butyl (FDA Approved)
Heads	Carbon Steel
Exterior	Red Oxide Primer

Accessories

- NR3XL - water pressure reducing valve
- TP1100A - temperature & pressure relief valve
- P1000AXL - pressure relief valve
- P3000CI - pressure relief valve
- P3000BR - pressure relief valve
- 375XL - reduced pressure backflow preventer

Features

Maximum working water pressure:	150PSI
Temperature range	-20°F to 240°F
End connections	Threaded NPT ANSI B1.20.1
Factory Pre-charge (adjustable)	40 PSI



MODELS
WTTA-5 thru WTTA-12

MODELS
WTTA-20 thru WTTA-210

Dimensions & Weights (do not include pkg.)

TANK SPECIFICATIONS									
MODEL NUMBER	MAXIMUM WORKING PRESSURE	TOTAL VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	FACTORY PRE-CHARGE (PSI)	DIMENSIONS (INCHES)				
					"A" DIA.	"B" HEIGHT	"C" DIA.	SYSTEM CONN.	WEIGHT (LBS)
WTTA-5	150 PSIG	3.5	2.3	40	10	14	-	3/4" FNPT	22
WTTA-12	150 PSIG	5	3.3	40	12	14	-	3/4" FNPT	28
WTTA-20	150 PSIG	8	5.3	40	12	20	10	3/4" FNPT	34
WTTA-30	150 PSIG	15	10.0	40	16	24	14	1" FNPT	50
WTTA-42	150 PSIG	22	14.5	40	16	31	14	1" FNPT	57
WTTA-60	150 PSIG	26	17.5	40	16	34	14	1" FNPT	62
WTTA-80	150 PSIG	35	23.5	40	16	45	14	1" FNPT	80
WTTA-100	150 PSIG	45	30.0	40	20	39	18	1" FNPT	110
WTTA-125	150 PSIG	60	40.0	40	20	50	18	1" FNPT	134
WTTA-160	150 PSIG	70	47	40	24	47	22	1 1/2" FNPT	177
WTTA-180	150 PSIG	80	53	40	24	50	22	1 1/2" FNPT	184
WTTA-210	150 PSIG	90	60	40	24	53	22	1 1/2" FNPT	193

Sizing Chart

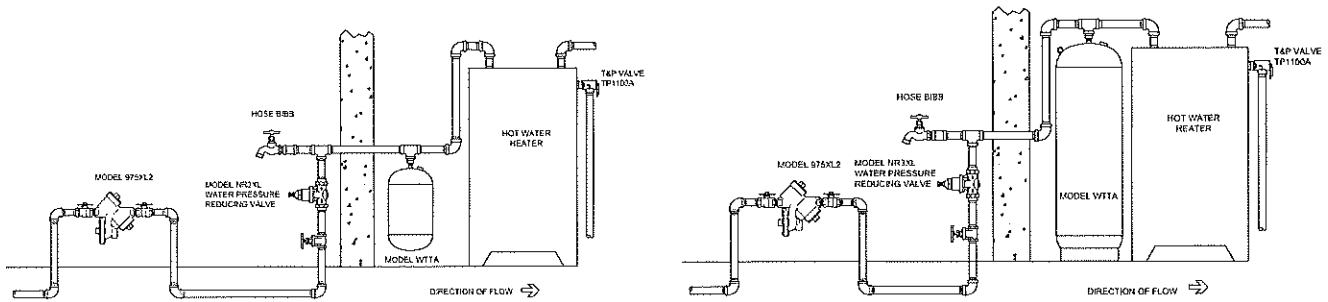
SUPPLY PRESSURE (PSIG)	TOTAL WATER HEATED (U.S. GAL)										
	20	30	40	50	60	80	100	120	150	175	200
40	WTTA-5	5	5	5	5	5	5	5	12	12	12
50	5	5	5	5	5	5	5	5	12	12	20
55	5	5	5	5	5	5	5	5	12	12	20
60	5	5	5	5	5	5	5	12	12	20	20
70	5	5	5	5	5	5	5	12	20	20	20
80	5	5	5	5	5	5	12	12	20	20	30
90	5	5	5	5	5	12	12	20	20	30	30
100	5	5	5	5	12	20	20	20	30	30	30
110	5	5	12	12	20	20	30	30	30	42	42

SUPPLY PRESSURE (PSIG)	TOTAL WATER HEATED (U.S. GAL)										
	240	260	280	300	350	400	450	500	600	800	1000
40	20	20	20	20	30	30	30	30	30	42	60
50	20	20	20	20	30	30	30	30	42	42	80
55	20	20	20	30	30	30	30	30	42	60	80
60	20	20	30	30	30	30	30	30	42	60	80
70	30	30	30	30	30	30	42	42	42	80	80
80	30	30	30	30	30	42	42	42	60	80	100
90	30	30	30	30	42	42	60	60	80	100	125
100	42	42	42	42	60	60	80	80	100	125	160
110	42	60	60	80	80	100	100	100	125	180	WTTA-210

Tank pressurized to match water inlet pressure.
 Sizing for heating from 40°F to 140°F
 Maximum pressure 135 psi

Typical Installation

Local codes shall govern installation requirements. Unless otherwise specified, the assembly shall be mounted at least 18" from the cold water inlet to the heater. NOTE: Pre-charge should be adjusted to match incoming water pressure after installation (adjust pre-charge with no water pressure in tank).



Specifications

The Water Thermal Expansion Tank shall be constructed in accordance with Section VIII of the ASME Boiler and Pressure Vessel Code. The outer shell shall be carbon steel. The bladder shall be FDA approved butyl rubber and prevent water from contact with shell interior. The assembly shall have a top NPT stainless steel system connection and a 0.301"-32 charging valve connection (standard tire valve) to facilitate the on-site charging of the tank to meet system requirements. The Water Thermal Expansion Tank shall be a ZURN WILKINS Model WTTA.