RENOKREW
TORONTO | OTTAWA

46 Le Page Court | Toronto | Ontario | M3J 1Z9

RFI No. 03

Date: July 19, 2024
To: Shin Chiu & Alla Prutkin
Company: Workshop Architecture
Phone: 416 901 8055

Sent: Via email
From: Hassan Ghaemi
Company: RENOKREW
Phone: 647 606 0391

Project: SSHA Scarborough Warming Centre Phase 2

Please see below from mechanical trade and advise asap.

Request for Information

200 Tesma Way,
Concord, ON, L4K 5C2
(905) 738-1400

Request For Information 24-247 - 001

Jul 15, 2024

PROJECT NAME	PROJECT ADDRESS
Scarborough Warming Centre Phase 2	-

To

NAME	EMAIL
Taranjeet Singh	taranjeet@renokrew.com

COMPANY	ADDRESS
1568796 ONTARIO INC. C/A RENOKREW	130 INDUSTRY ST., SUITE 25, TORONTO, ON, M6M 5G3

From

NAME	EMAIL
Inzaman Khan	inzaman@consultmechanical.com

COMPANY	ADDRESS
Con-Sult Mechanical Inc	54 Audia Ct, Unit #2, Vaughan, ON, L4K 3N5

Subject

ET-1/2 & DHWT-1 Alternative and Specs clarification

IMPACT TO TIMELINE	IMPACT TO COST	SPEC REF	DRAWING REF	DETAIL REF
probable	probable	-	-	-

TO MITIGATE DELAYS, RETURN BY Jul 16, 202407

Information Requested

DHWT-1: The vendor requires the form to be filled out. Please complete the attached form and return it to us at your earliest convenience.

ET-1/2: The Model ST-8 listed on the schedule has been discontinued by the supplier and replaced by Model ST-12. Please review the attached specs for ST-12 and advise.

AMTROL INC.
Hydronic Technologies

THERM-X-TROL®

THERMAL EXPANSION ABSORBERS

The Best Solution for Controlling Thermal Expansion

As Seen On Ask This Old House

AMTROL INC.

THERM-X-TROL® Expansion Tanks

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What Is Thermal Expansion?

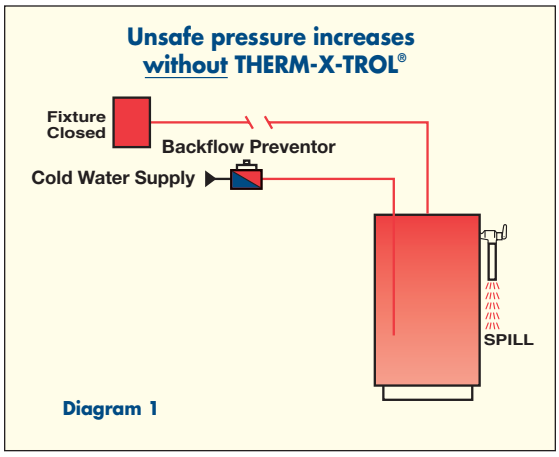
With modern plumbing codes mandating backflow prevention, thermal expansion can cause pressure buildup in domestic water systems. When demand is put upon a potable water system, hot water is drawn from the water heater. Cold water from the supply line enters the water heater to replenish it. The cold water is heated to replace the hot water used. With the installation of a backflow preventer, check valve or pressure reducing valve on the supply line, the water heater and the system piping form a closed plumbing system under pressure. As the water is heated, thermal expansion occurs. Pressure increases until the relief valve opens and the expanded water spills from the water heater. This spillage results in wasted energy and a potential safety hazard. (See Diagram 1)

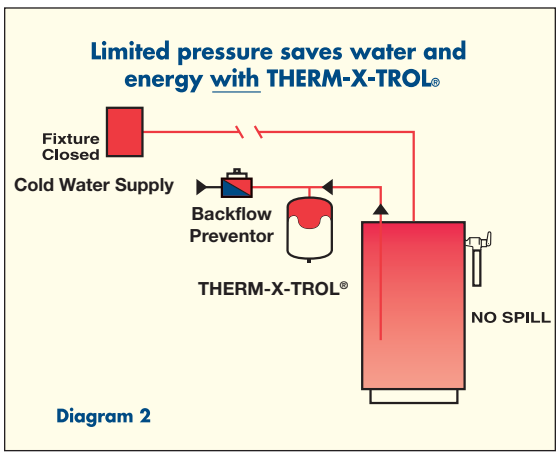
Closed Potable Hot Water System without THERM-X-TROL®

Backflow preventer, pressure reducing valve or other one-way device causes expanded (heated) water to build pressure causing the relief valve to open resulting in…

- Wasted energy
- Shortened water heater life
- Wasted municipal water and sewer dollars
- Potential safety hazard

The THERM-X-TROL® is designed to eliminate this problem by providing control of maximum pressures at a level below the relief valve setting. It also provides an additional space in the system to accommodate the increased volume of water created by thermal expansion, returning it to the system when hot water delivery is demanded. Maximum pressure is kept well below the relief valve setting by the THERM-X-TROL®, with its pre-charged air cushion that is separated from system water. The relief valve does not open, therefore spillage is eliminated (Diagram 2).





Closed Potable Hot Water System with THERM-X-TROL®

Expanded (heated) water is absorbed by THERM-X-TROL® which means…

- Water heater and fixtures are protected
- Eliminates energy and water waste, saving money
- No dangerous pressure build up in the system
- Relief valves will not open
- Potential safety hazard reduced

THERM-X-TROL®: The Market Leader

- #1 choice of Professional Installers
- Safest and most cost effective way to control Thermal Expansion
- Easy to install
- The innovator of Thermal Expansion Control in Closed Potable Hot Water Systems
- Broadest line of sizes and models
- Recognized Industry leader in Quality, Design, Manufacturing, Delivery and Service
- Extensive Network of Plumbing & Heating Distributors
- First to obtain NSF/ANSI 61, IAPMO, SBCCI & City of Los Angeles listings
- First to offer 5 year limited warranty

Product Features

High-grade connector

Deep Drawn Steel Domes for maximum strength & pressure rating

Rigid Polypropylene Liner for corrosion resistant reservoir

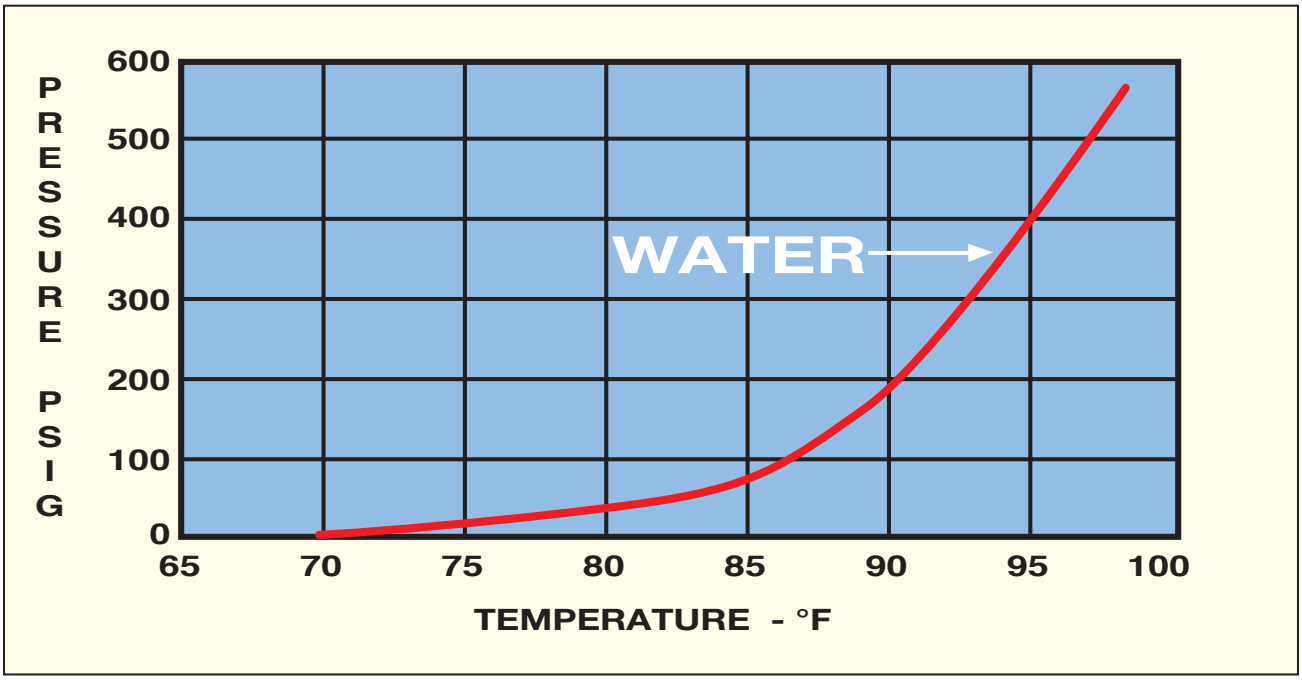
Butyl diaphragm for long life expectancy

Diaphragm Hoop Ring mechanically grooved for permanent air-tight seal

Welded Steel Construction

Welded Air Charge Fitting with protective plastic cap for corrosion resistance and maximum air-tight seal

Pressure Increase in Closed Piping System



Precise Sizing Procedure - For Special Applications

The procedure for sizing the Therm-X-Trol® for any application depends on four (4) vital pieces of information:

1. ASME or non-ASME requirement
2 Calculated thermally expanded water volume
3. Minimum water pressure experienced at the tank location
4. Maximum water pressure allowable at the tank location

The tank required for any application can be sized with the following equation:

Tv = Design Pressure Factor X expanded water

Where Tv is the total Thermal-X-Trol® volume required in gallons.

Example: A 240 gallon water heater with a 150°F aquastat setting is installed with a 125 psi maximum pressure requirement. For a static supply line pressure of 60 psi, what Therm-X-Trol® model is required for critical protection?

Critical Sizing AMTROL® Therm-X-Trol®
1. Total Water Heater Volume (Gallons)
2. Water Expansion Factor (Table I)
3. Calculate Expanded Water (Gallons) (Line 1 x Line 2)
4. Design Pressure Factor (Table II)
5. Therm-X-Trol Volume Required (Gallons) (Line 3 x Line 4)
6. Select Therm-X-Trol® Model (pg. 6 & 7)

Critical Sizing AMTROL® Therm-X-Trol®: *EXAMPLE*	
1. Total Water Heater Volume (Gallons)	240
2. Water Expansion Factor (Table I)	0.0179
3. Calculate Expanded Water (Gallons) (Line 1 x Line 2) = (240 x .0179)	4.3
4. Design Pressure Factor (Table II)	2.1
5. Therm-X-Trol Volume Required (Gallons) (Line 3 x Line 4) = (4.3 x 2.1)	9.0
6. Select Therm-X-Trol® Model (pg. 6 & 7)	ST-25V ST30V-C

Note: The Therm-X-Trol® air pressure should be equal to static line pressure.

For conditions not shown in table, use equation:

$$DPF = \frac{\text{Max. Allow. Pressure + 14.7}}{\text{Max. Allow. Pressure - Line Pressure}}$$

TABLE I Expansion Factor

Operating (Design) Temperature of Water Heater (Tank)	Expansion Factor* (Percentage of Water Volume Increase)	
100˚F	0.0062	0.6%
120˚F	0.0100	1.0%
130˚F	0.0124	1.2%
140˚F	0.0150	1.5%
150˚F	0.0179	1.8%
160˚F	0.0209	2.0%
170˚F	0.0242	2.4%
180˚F	0.0276	2.8%

** Based on the initial temperature of 40˚F*

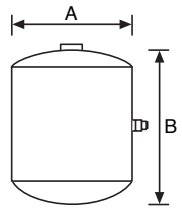
TABLE II Design Pressure Factor: DPF

Maximum Allowable Pressure	Line Pressure psi	Design Pressure Factor (DPF)
100	40	1.9
	50	2.3
	60	2.9
	70	3.8
	80	5.7
125	40	1.6
	50	1.9
	60	2.1
	70	2.5
	80	3.1
150	40	1.5
	50	1.6
	60	1.8
	70	2.1
	80	2.4

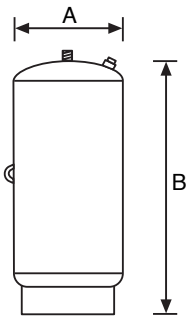
ASME THERM-X-TROL®

Code Applications

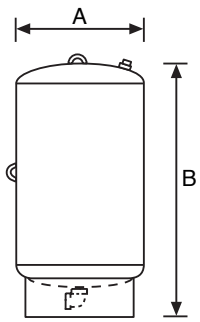
- Commercial Water Heaters
- Laundromats
- Hospitals and Nursing Homes
- Car Washes
- Dishwashers
- Plant Washrooms
- Hotels and Motels
- Restaurants
- Schools and Dormitories
- Other Applications as Required by Code



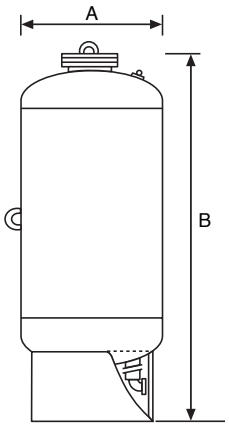
ST-5-C, ST-12-C



ST-20V-C to ST-70V-C



ST-80V-C to ST-210V-C



ST-447-C to ST-457-C

THERM-X-TROL® ASME Specifications

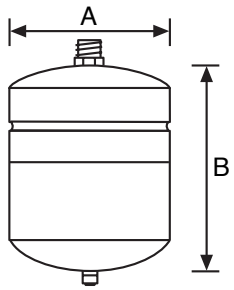
Model No.	Max. Working Pressure (PSIG)	Total Volume (Gals.)	Maximum Acceptance Factor	Diameter (A)	Height (B)	System Connection	Ship Weight (lbs)
ST-5-C	150	2.1	.42	10”	10 3/8”	3/4” NPT	21
ST-12-C	150	6.4	.50	12”	15 5/8”	3/4” NPT	26
ST-20V-C	150	8.0	.40	12”	19 1/2”	3/4” NPT	41
ST-30V-C	150	14.0	.64	16 1/4”	19 1/8”	3/4” NPT	84
ST-42V-C	150	17.5	.64	16 1/4”	24 1/4”	3/4” NPT	90
ST-60V-C	150	25.0	.45	16 1/4”	34”	3/4” NPT	96
ST-70V-C	150	34.0	.33	16 1/4”	45 3/4”	3/4” NPT	123
ST-80V-C	150	53.0	.64	24”	40 1/2”	1 1/4” NPT	229
ST-120V-C	150	66.0	.51	24”	47 3/4”	1 1/4” NPT	258
ST-180V-C	150	77.0	.44	24”	52 5/8”	1 1/4” NPT	288
ST-210V-C	150	90.0	.38	24”	60”	1 1/4” NPT	318
ST-447-C	125	53.0	.65	24”	45 1/4”	2” NPT	263
ST-448-C	125	80.0	.65	24”	59 1/8”	2” NPT	308
ST-449-C	125	106.0	.65	24”	73 1/8”	2” NPT	353
ST-450-C	125	132.0	.65	24”	86 5/8”	2” NPT	391
ST-451-C	125	158.0	.65	30”	73 1/4”	2” NPT	508
ST-452-C	125	211.0	.65	30”	91”	2” NPT	760
ST-453-C	125	264.0	.65	36”	85 5/8”	3” NPT	810
ST-454-C	125	317.0	.65	36”	98”	3” NPT	914
ST-455-C	125	370.0	.65	36”	110 3/8”	3” NPT	1,018
ST-456-C	125	422.0	.65	48”	81 7/8”	3” NPT	1,655
ST-457-C	125	528.0	.65	48”	97 1/4”	3” NPT	1,925

Maximum Allowable Working Temperature: ST-5-C through ST-210V-C: 200°F; ST-447-C through ST-457-C: 240°F Standard Factory Precharge: 55 PSIG.

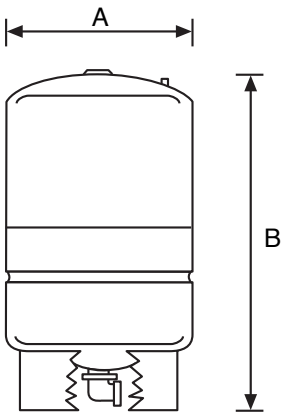
Non-ASME THERM-X-TROL®

General Usage

- Residential Water Heaters
- Office Buildings
- Apartment Buildings
- Dormitories
- Elderly Housing
- Extended Care Facilities
- Condominiums/Multiple Residential
- Food Service
- Laundromats
- Hospitals
- Other General-Use Hot Water Systems



ST-5, ST-8, ST-12



ST-25V through ST-210V

Please review and confirm

THERM-X-TROL® Non-ASME Specifications

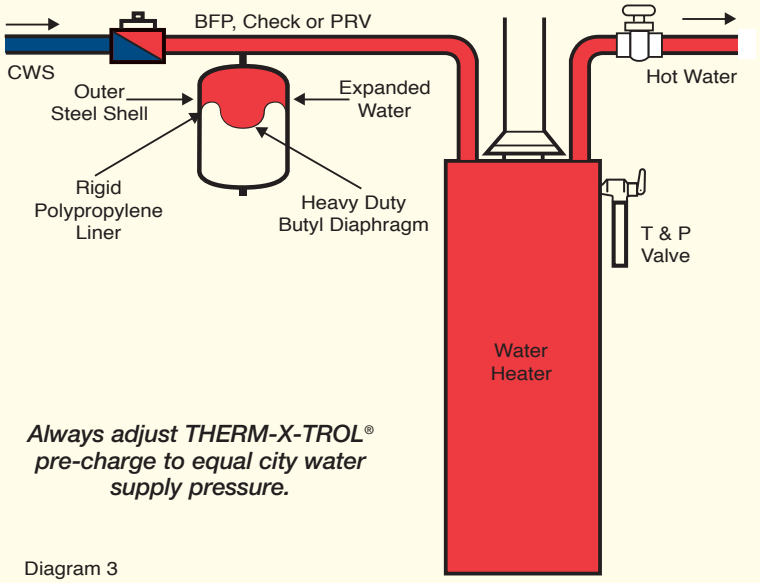
Model No.	Total Volume (Gals.)	Maximum Acceptance Factor	Diameter (A)	Height (B)	System Connection	Ship Weight (lbs)
ST-5	2.0	.45	8”	12 5/8”	3/4” NPT	5
ST-8	3.2	.45	9”	15”	3/4” NPT	7
ST-12	4.4	.55	11”	15”	3/4” NPT	9
ST-25V	10.3	1.0	15 3/8”	19 1/4”	3/4” NPT	23
ST-30V	14.0	.81	15 3/8”	23 7/8”	3/4” NPT	25
ST-42V	20.0	.57	15 3/8”	31 5/8”	3/4” NPT	33
ST-60V	34.0	.35	22”	29 5/8”	1 1/4” NPT	61
ST-80V	44.0	.77	22”	36”	1 1/4” NPT	69
ST-180V	62.0	.55	22”	46 3/4”	1 1/4” NPT	92
ST-200V	81.0	.41	22”	56 3/8”	1 1/4” NPT	103
ST-210V	86.0	.54	26”	47 1/4”	1 1/4” NPT	123
ST-451	158.0	.65	73 1/4”	30”	2” NPT	508
ST-452	211.0	.65	91”	30”	2” NPT	760
ST-453	264.0	.65	85 5/8”	36”	3” NPT	810
ST-454	317.0	.65	98”	36”	3” NPT	914
ST-455	370.0	.65	110 3/8”	36”	3” NPT	1,018
ST-456	422.0	.65	81 7/8”	48”	3” NPT	1,655
ST-457	528.0	.65	97 1/4”	48”	3” NPT	1,925

Maximum Working Pressure: 150 PSI. All Models listed by NSF 61 (excluding ST-451 – ST-457); Maximum Allowable Working Temperature: ST-5 through ST-210V: 200°F; ST-451 through ST-457: 240°F; Standard Factory Precharge: 40 PSIG (ST-5 – ST-210V); 55 PSIG (ST-451 – ST-457)

THERM-X-TROL®

THERM-X-TROL®

The THERM-X-TROL® from AMTROL is designed to protect domestic water heaters from the effects of thermal expansion. Installation is easy; just tee it into the cold water inlet (before the water heater) as shown in Diagram 3.



Always adjust THERM-X-TROL® pre-charge to equal city water supply pressure.

Diagram 3

If your Plumbing Code requires a Backflow Preventer,Check Valve or Pressure Reducing Valve... You Need a THERM-X-TROL® on Every Job!

THERM-X-TROL® Quick-Sizing Chart

Sizing Charts are based on 40°F incoming water temperature and a 150 psi T & P safety relief valve.

Water Heater* Size (gals.)	Static Supply Pressure (psi)**		
	40	60	80
40	ST-5	ST-5	ST-5
50	ST-5	ST-5	ST-5
60	ST-5	ST-5	ST-8
80	ST-8	ST-8	ST-12
120	ST-12	ST-12	ST-25V

Max. Temp. Setting 140°F

Water Heater* Size (gals.)	Static Supply Pressure (psi)**		
	40	60	80
40	ST-5	ST-5	ST-5
50	ST-5	ST-5	ST-8
60	ST-8	ST-8	ST-8
80	ST-8	ST-8	ST-12
120	ST-12	ST-12	ST-25V

Max. Temp. Setting 150°F

Water Heater* Size (gals.)	Static Supply Pressure (psi)**		
	40	60	80
40	ST-8	ST-8	ST-8
50	ST-8	ST-8	ST-12
60	ST-8	ST-12	ST-25V
80	ST-12	ST-25V	ST-25V
120	ST-25V	ST-25V	ST-25V

Max. Temp. Setting 180°F

* For multiple heater, use the total volume of the heaters plus any storage tanks.

** Therm-X-Trol Precharge must be set to equal Static Supply Pressure prior to installation.

AMTROL INC.®

w w w . a m t r o l . c o m

Corporate Headquarters

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275 Shoemaker Street, Kitchener, Ontario N2E 3B3
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NSF/ANSI 61

MC# 4090 (06/09)

SUBMITTAL SHEET

CUSTOM HD STORAGE TANKS

Job Name 24-247 Scarborough Warming Center

State/Province ON City Scarborough

Engineer

Wholesaler

Mech. Contractor Consult Mechanical

Model No. HD-30-300A

Dimensional Restrictions

Notes

Standard Features:

- 5 Year Limited Warranty
- Magnesium Anode
- PERMAGLAS® lining
- Ring Base (for vertical tanks)
- ASME Certified
- 125 PSI Working Pressure
- Steel Tank Construction
- Openings: (3) Circulation; (1) Temp. Sensor; (1) Hot Water Outlet; (1) Drain; (1) T&P

Optional Equipment/Features: (please indicate on pages 3 & 4):

- ☐ 150 PSI Working Pressure
- ☐ Other Working Pressure (specify)_____
- ☐ Vertical Orientation
- ☐ Horizontal Orientation
- ☐ Saddles (for horizontal tanks)
- ☐ T&P Gauge
- ☐ Manhole (only on tanks 30" diameter and above)
- ☐ Handhole
- ☐ Lifting Lugs
- ☐ Seismic Bracing (not available under 250 gallons)
- ☐ Insulation & Jacket (available up to: 125" height/length or 2500 USG)
- ☐ Bare (paint applied as rust inhibitor until tank can be field insulated per ASHRAE standards)

Lining Options:

- ☐ Glass Lining (standard)
- ☐ Cement Lining (only on tanks 30" diameter and above)
- ☐ U Code Certification (unlined)

Special Tappings:

NPT: Size _____" Quantity _____

Size _____" Quantity _____

Flanged: Size _____" Quantity _____

Size _____" Quantity _____

(please indicate locations on pages 3 & 4)

SUBMITTAL SHEET

CUSTOM HD STORAGE TANKS

Tube Bundle Sizing Questions

(For units with a heating coil the below must be completed)

Minimum of 5 data points are required in order to complete a tube bundle sizing

Tank Side:

Tank Capacity _____

Inlet Water Temp _____ *Required

Stored or Tank Set Point _____ *Required

Recovery Rate (GPH) _____ *Required

Design Pressure (125 PSI or 150 PSI) _____

Coil Material (if other than copper) _____

Double or Single Wall Coil _____

Coil Side Heating Source (Choose Steam or Boiler Water)

Steam:

Steam Pressure _____ Steam Available (lbs/h) _____ *Required

Steam Inlet Pressure _____ *Required

Steam Outlet Pressure _____ *Required

Boiler:

Boiler Water Entering Temp. _____ *Required

Boiler Water Leaving Temp. _____ *Required

Boiler Water Available (GPH) _____ *Required

Glycol (yes ☐ no ☐)

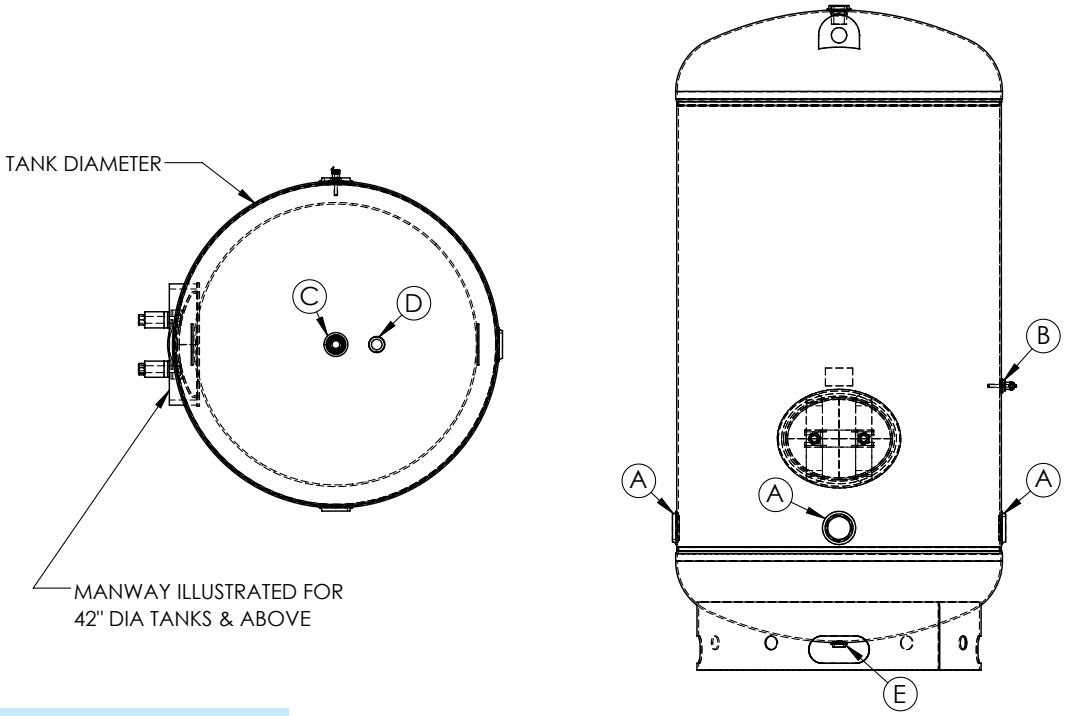
If yes, Type of Glycol _____ and % of glycol _____%

All models that include a tube bundle will ship with a Recirc Pump unless otherwise stated 1/25hp (120V/1PH)

SUBMITTAL SHEET

CUSTOM HD STORAGE TANKS

VERTICAL TANK



Base Model_____

***Consult Factory For Additional Options**

Standard Connections (Illustrated)			
Opening	**Size**	**Description**	**QTY**
A	3″ NPT	Inlet / Circulating	3
B	3/4″ NPT	Aquastat	1
C	2″ NPT	Outlet	1
D	1-1/4″ NPT	T&P (Relief Valve)	1
E	1″	Drain	1

Standard Connections (Illustrated)		
Size	**QTY**	**Specify Fitting Type NPT Threaded or Bolting Flange**

NPT THREAD

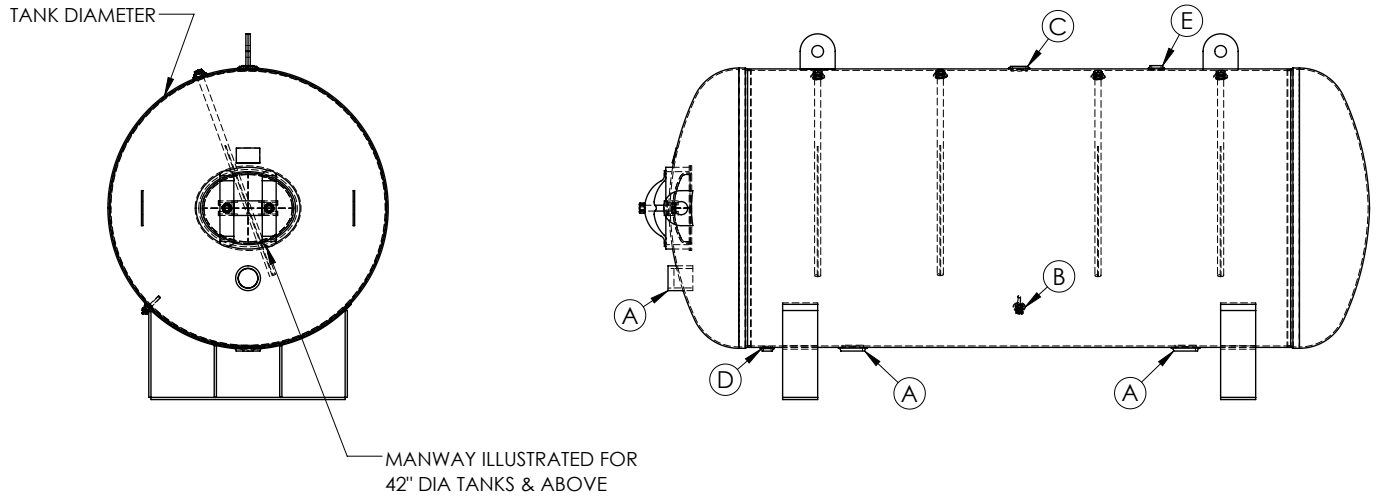
BOLTING FLANGE
(FFSO, CL150)

DIR: 2000557168

SUBMITTAL SHEET

CUSTOM HD STORAGE TANKS

HORIZONTAL TANK



Base Model_____

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Standard Connections (Illustrated)			
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A	3" NPT	Inlet / Circulating	3
B	3/4" NPT	Aquastat	1
C	2" NPT	Outlet	1
D	1" NPT	Drain	1
E	1-1/4" NPT	T&P (Relief Valve)	1

Alternate Additional Connections		
Size	**QTY**	**Specify Fitting Type NPT Threaded or Bolting Flange**

NPT THREAD

BOLTING FLANGE
(FFSO, CL150)

DIR: 2000557168

HEAVY-DUTY LARGE VOLUME STORAGE TANKS MODEL HD CUSTOM BUILT

Large volume tanks are designed for storing potable water.

FEATURES

SIZES FROM 120 TO 4,000 GALLONS

All tanks are constructed to the requirements of the ASME Code. These ASME Code tanks are available at 125 and 150 psi working pressure. Consult factory for tanks with special configurations.

LINING AND COATINGS

Each lining and coating has particular capabilities and limitations. Thorough investigation on the service life of steel tanks with protective coatings or linings has led to the recommendation of the following linings:

- Glass Lined — All internal surfaces exposed to water are glass lined per ASME HLW Code procedures.
- Cement Lined — Cement lining consists of a specially formulated cement applied over the interior of the vessel. Cement lined tanks are recommended when storing water at 180°F or higher.

Please consult the factory for recommendations on the uses of linings for specific applications. All tanks receive one prime coat of paint on external surface.

CATHODIC PROTECTION

Glass lined tanks are furnished with anodes designed for maximum protection.

CUSTOM TANK OPENINGS

All tanks will be supplied with the fittings located as indicated on the drawings unless specified otherwise. Custom tank opening sizes and locations can be provided to your specification.

INSPECTION OPENINGS

- 4″x 6″ handhole are available as options on diameters 36″ and below.
- Two 2″ ASME inspection openings are standard on tanks 36″ diameter and below.
- 12″x 16″ manhole is standard on tanks with 42″ diameter and above and optional for tanks with a diameter of 30" & 36.

TANK OPTIONS

- Manholes / Handholes
- Additional / Custom Tank Openings
- Lifting Lugs
- Horizontal Tank Saddles
- Factory Jacketing and Insulation
- Tube bundles
- Cement lining or unlined

MODELS
HD-24-120 THROUGH
HD-72-4000

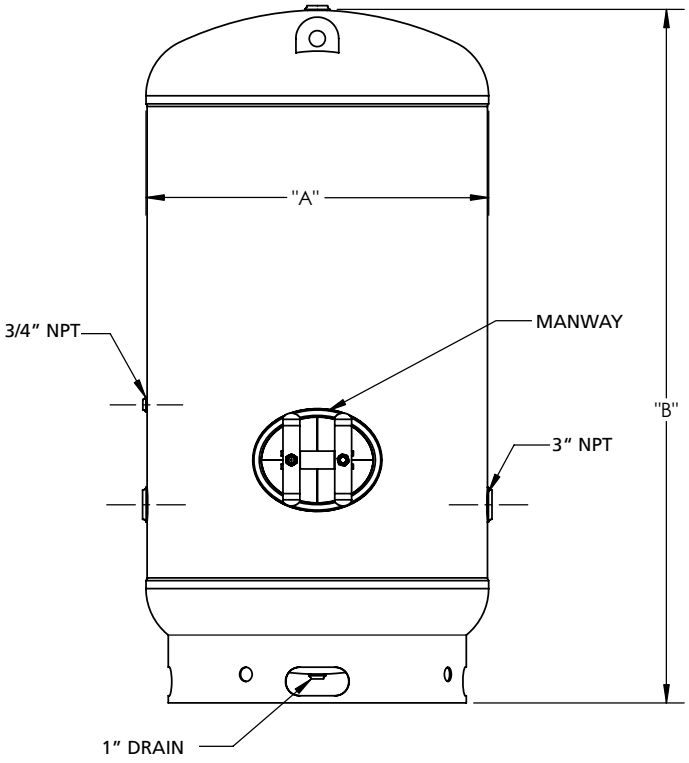
ASME U OPTIONAL

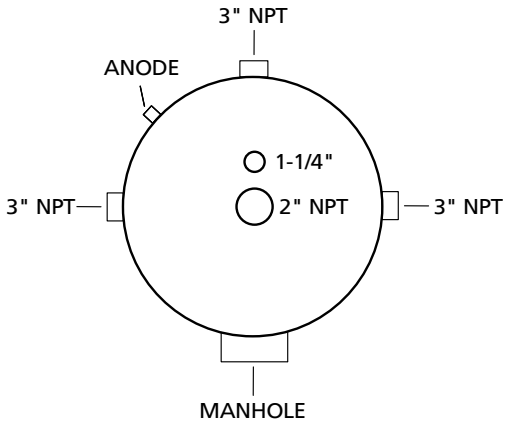
ASME HLW

STORAGE TANK SELECTION

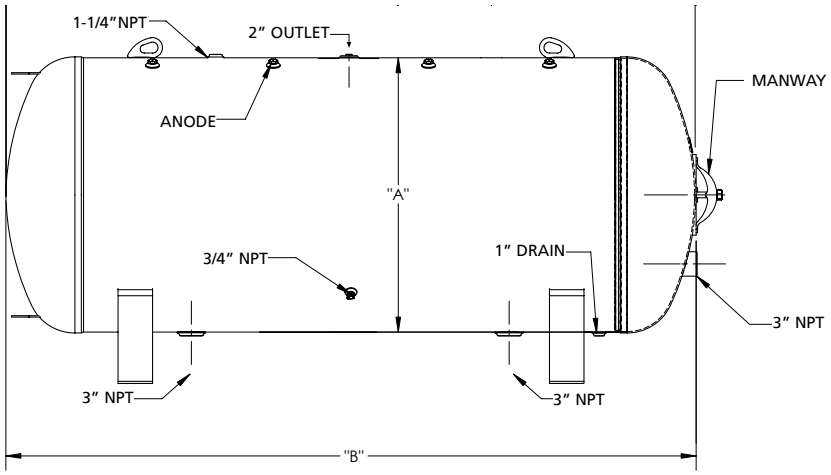
MODEL NUMBER	TANK CAPACITY		DIMENSIONS IN (CM)			SHIPPING WEIGHT LB (KG)		
	USG	L	DIAMETER ("A")	VERTICAL HEIGHT ("B")	HORIZONTAL LENGTH ("B")	125 PSI	150 PSI	CEMENT LINED
HD*24-120A	118	447	24 (61)	64 (163)	60 (152)	368 (167)	368 (167)	-
HD*24-140A	141	534	24 (61)	76 (193)	72 (183)	428 (194)	428 (194)	-
HD*24-200A	188	712	24 (61)	100 (254)	96 (244)	556 (252)	556 (252)	-
HD*24-250A	235	890	24 (61)	124 (315)	120 (305)	684 (310)	684 (310)	-
HD*28-175A	175	662	28 (71)	65 (165)	-	353 (160)	353 (160)	-
HD*28-200A	200	757	28 (71)	76 (193)	-	488 (221)	488 (221)	-
HD*30-150A	147	556	30 (76)	52 (132)	48 (122)	400 (181)	400 (181)	695 (315)
HD*30-185A	184	697	30 (76)	64 (163)	60 (152)	468 (212)	468 (212)	812 (368)
HD*30-220A	220	833	30 (76)	76 (193)	72 (183)	548 (249)	548 (249)	958 (435)
HD*30-250A	257	973	30 (76)	87 (221)	83 (211)	628 (285)	628 (285)	1,103 (500)
HD*30-300A	294	1,113	30 (76)	100 (254)	96 (244)	701 (318)	701 (318)	1,242 (563)
HD*30-375A	367	1,389	30 (76)	124 (315)	120 (305)	868 (394)	868 (394)	1,540 (699)
HD*36-275A	265	1,003	36 (91)	64 (163)	60 (152)	577 (262)	577 (262)	995 (451)
HD*36-325A	318	1,204	36 (91)	76 (193)	72 (183)	673 (305)	673 (305)	1,173 (532)
HD*36-400A	370	1,401	36 (91)	87 (221)	83 (211)	770 (349)	770 (349)	1,343 (609)
HD*36-425A	423	1,601	36 (91)	100 (254)	96 (244)	866 (393)	866 (393)	1,513 (686)
HD*36-500A	528	1,999	36 (91)	124 (315)	120 (305)	1,058 (480)	1,058 (480)	1,861 (844)
HD*42-450A	432	1,635	42 (107)	76 (193)	72 (183)	795 (361)	909 (412)	1,385 (628)
HD*42-500A	504	1,908	42 (107)	88 (224)	84 (213)	908 (412)	1,050 (476)	1,587 (720)
HD*42-600A	576	2,180	42 (107)	100 (254)	96 (244)	1,020 (463)	1,190 (540)	1,790 (812)
HD*42-750A	720	2,726	42 (107)	124 (315)	120 (305)	1,245 (565)	1,470 (667)	2,195 (996)
HD*42-900A	864	3,271	42 (107)	148 (376)	144 (366)	1,470 (667)	1,751 (794)	2,601 (1,180)
HD*42-1000A	1,008	3,516	42 (107)	172 (437)	168 (427)	1,695 (769)	2,031 (921)	3,006 (1,363)
HD*48-500A	504	1,908	48 (122)	73 (185)	69 (175)	1,062	1,062	1,856
HD*48-700A	658	2,491	48 (122)	88 (224)	84 (213)	1,346 (611)	1,346 (611)	2,124 (963)
HD*48-750A	752	2,846	48 (122)	100 (254)	96 (244)	1,507 (684)	1,507 (684)	2,392 (1,085)
HD*48-950A	940	3,558	48 (122)	124 (315)	120 (305)	1,828 (829)	1,828 (829)	2,918 (1,324)
HD*48-1150A	1,128	4,270	48 (122)	148 (376)	144 (366)	2,150 (975)	2,150 (975)	3,444 (1,562)
HD*48-1300A	1,315	4,978	48 (122)	172 (437)	168 (427)	2,471 (1,121)	2,471 (1,121)	3,970 (1,801)
HD*54-1000A	951	3,560	54 (137)	100 (254)	96 (244)	1,721 (781)	1,972 (894)	2,729 (1,238)
HD*54-1200A	1,189	4,501	54 (137)	124 (315)	120 (305)	2,083 (945)	2,423 (1,099)	3,320 (1,506)
HD*54-1450A	1,427	5,402	54 (137)	148 (376)	144 (366)	2,451 (1,112)	2,881 (1,307)	3,919 (1,778)
HD*54-1700A	1,665	6,303	54 (137)	172 (437)	168 (427)	2,807 (1,273)	3,326 (1,509)	4,511 (2,046)
HD*54-1900A	1,903	7,204	54 (137)	196 (498)	192 (488)	3,168 (1,437)	3,777 (1,713)	5,102 (2,314)
HD*54-2150A	2,141	8,105	54 (137)	220 (559)	216 (549)	3,530 (1,601)	4,228 (1,918)	5,701 (2,586)
HD*60-1500A	1,469	5,561	60 (152)	124 (315)	120 (305)	2,784 (1,263)	3,221 (1,461)	4,177 (1,895)
HD*60-1750A	1,763	6,673	60 (152)	148 (376)	144 (366)	3,267 (1,482)	3,823 (1,734)	4,913 (2,228)
HD*60-2000A	2,056	7,783	60 (152)	172 (437)	168 (427)	3,749 (1,701)	4,425 (2,007)	5,658 (2,566)
HD*60-2400A	2,350	8,896	60 (152)	196 (498)	192 (488)	4,231 (1,919)	5,026 (2,280)	6,394 (2,900)
HD*60-2650A	2,644	10,009	60 (152)	220 (559)	216 (549)	4,713 (2,138)	5,628 (2,553)	7,130 (3,234)
HD*72-2100A	2,115	8,006	72 (183)	124 (315)	120 (305)	3,416 (1,549)	3,904 (1,771)	5,104 (2,315)
HD*72-2500A	2,538	9,607	72 (183)	148 (376)	144 (366)	3,995 (1,812)	-	5,995 (2,719)
HD*72-3000A	2,961	11,209	72 (183)	172 (437)	168 (427)	4,575 (2,075)	-	6,885 (3,123)
HD*72-3400A	3,384	12,810	72 (183)	196 (498)	192 (488)	5,154 (2,338)	-	7,767 (3,523)
HD*72-4000A	3,807	14,411	72 (183)	220 (559)	216 (549)	5,733 (2,600)	-	8,658 (3,927)

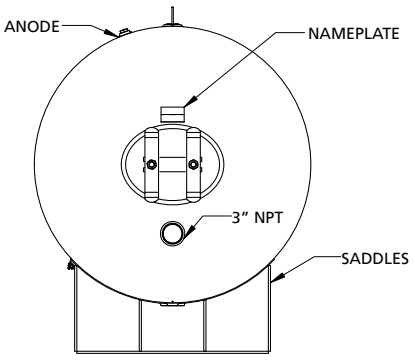
* For H e.g. (HDH48-1500A) or V e.g. (HDV48-1500A)
Specify Horizontal or Vertical installation H or V (after the HD)
For Jacketed models, the J will follow the orientation: HDVJ48-1500A.
For linings other than glass, use the suffix after the number and the A - HDHJ42-1000AC for Cement lined. U = Unlined.
For 150 psi ASME working pressure, insert M at the end - HDV42 - 1000AM.





NOTE:
SPECIFY FOR HORIZONTAL OR VERTICAL INSTALLATION.
2 each 2" ASME inspection openings are standard on tanks 36" diameter and below.
12"x16" ASME inspection openings are standard on tanks with 42" diameter and above.

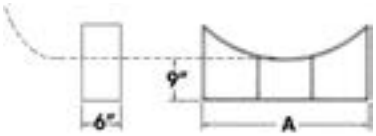




30" - 72" DIAMETER HORIZONTAL TANKS

TANK SADDLE DIMENSIONS

Tank Diameter
30 36 42 48 54 60 72
A 21" 25" 29" 34" 48" 52" 62"



NOTE: Alternate saddle heights are available. (Consult factory)

TANK SADDLES

A.O. SMITH PART NO.	SADDLE DESCRIPTIONS
100170345	SADDLE,TANK,24",9"CLR,P-1
100170349	SADDLE,TANK,30",9"CLR,P-1
100170338	SADDLE,TANK,28",9"CLR,P-1
100170352	SADDLE,TANK,36",9"CLR,P-1
100170355	SADDLE,TANK,42",9"CLR,P-1
100170358	SADDLE,TANK,48",9"CLR,P-1
100170361	SADDLE,TANK,54",9"CLR,P-1
100170365	SADDLE,TANK,60",9"CLR,P-1
100170371	SADDLE,TANK,72",9"CLR,P-1

FACTORY INSULATION OPTIONS

Factory Jacketed and Insulation

- **INSULATION** — Entire tank is surrounded with insulation.
- **CABINET** — Heavy gauge painted steel.
- Adds 4" to the round jacketed and 6□ to the square jacketed diameter of the tank, and 2" to the height.
- Units with length/height greater than 125" cannot be jacketed and insulated at the factory.

SUGGESTED SPECIFICATION

SAMPLE SPECIFICATION FOR CUSTOM-LINE STORAGE TANKS

When jacketed or insulated these models meet or exceed the thermal efficiency and standby loss requirements of ASHRAE 90.1b (current standard).

ASME storage tank to be A. O. Smith Custom-Line model _____. Capacity to be _____gallons with a diameter of _____ inches. Tank(s) shall be constructed and stamped according to ASME specifications for _____psi working pressure. Manhole (12" x 16"), handhole (4" x 6") or inspection openings (2-2") shall be installed in accordance with ASME code requirements and manufacturer(s) standard practice. Tank to be constructed of (carbon steel) _____. Lining shall be glass, cement, or unlined_____. Tank(s) lined with (glass, cement or unlined) _____lining shall be equipped with the number and size of anode rod(s) sufficient to provide adequate protection for the tank lining. Tank shall be (vertical, horizontal) _____ design and provided with _____ ring base, _____ saddles.

For Technical Information call 888-599-2837. A. O. Smith Enterprises Ltd. reserves the right to make product changes or improvements without prior notice.