Instruction Sheet
CA Expansion Tanks

SUPERSEDES: July 30, 2014 EFFECTIVE: December 1, 2014

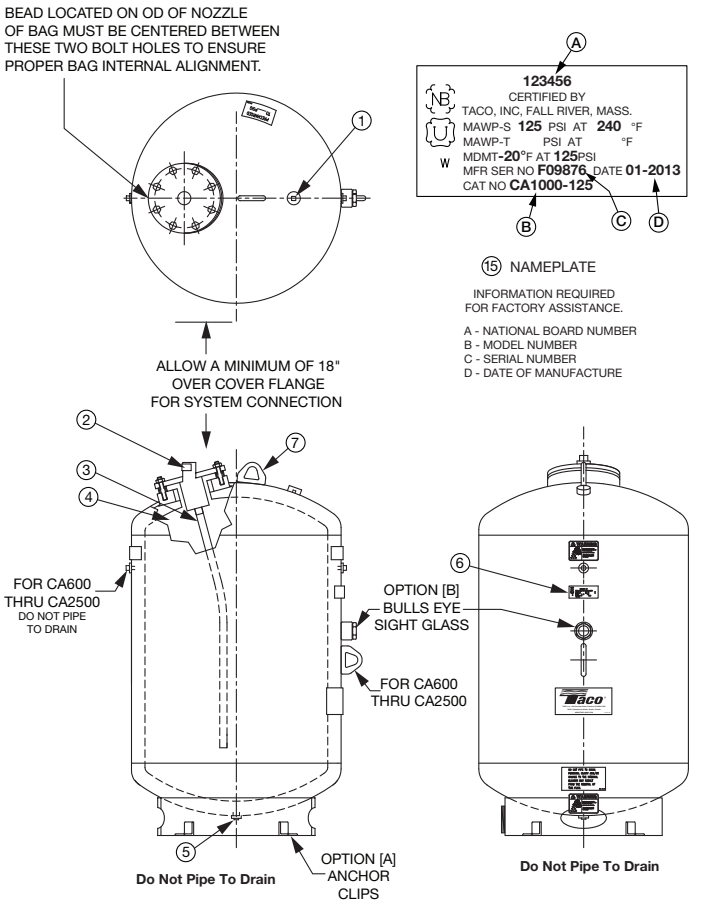
WARNING: FAILURE TO COMPLY WITH THESE INSTRUCTIONS REGARDING THIS PRODUCT CAN RESULT IN SERIOUS PERSONAL INJURY OR DEATH AND/OR SEVERE PROPERTY DAMAGE.

1. Note location of the system connection, charging valve, and the drain plug and labels on the tank. Refer to Diagram 1 for location of these tank fittings.
2. Carefully remove the shipping plug in the system connection coupling located at the center of the cover flange. Pause before completely removing to allow any trapped air to escape. There should not be much, if any, air pressure under the protective cover.

   WARNING: DO NOT REMOVE THE PIPE PLUGS LOCATED ON THE SIDE AND BOTTOM OF THE TANK (TANK DRAINS). THESE PLUGS SHOULD NEVER BE REMOVED UNLESS NECESSARY AND THEN ONLY AFTER THE AIR PRESSURE IN THE TANK HAS BEEN BLED OFF TO ZERO GAUGE PRESSURE. BEFORE BLEEDING OFF ANY OF THE AIR CHARGE, ALWAYS REMOVE AND DISCONNECT THE TANK FROM THE SYSTEM.
3. Prior to connecting this tank to the hydronic system the pre-charge pressure within the tank should be confirmed and if necessary adjusted to equal the minimum system pressure at the tank location. This measurement should be taken at the air valve located on the top of the tank. The tank was shipped from the factory with an initial pre-charge of 12 psi at 68 degrees. This may vary with changes in ambient temperature. Use Diagram 2 (below) - Air Charge Check Chart to correct the value read on the pressure gauge to adjust for changes in the ambient temperature. The fill pressure of the system should be indicated on the schedule file or within the job specifications. If not provided in either of these locations consult the design engineer for the proper fill pressure values prior to installation of this tank. Installation of the tank prior to adjusting the pre-charge can result in incorrect pre-charge readings.
4. The pipe connection to the system may now be made. The piping requirements for captive air tanks are different from those of plain steel expansion tanks. Note the Captive Air Tank Piping Diagrams. Piping and air elimination devices should be arranged so that air will not be trapped in the tank, above the tank or in the nozzle. Pitch the piping connection up away from the tank and use automatic air vents where necessary. Note the piping diagram.
5. Locate the CA tank connection as close as possible to the suction side of the pump. This ensures that the pressures realized from the pump head will be additive in the system. A combination shut-off and drain valve should be located in the connection piping to provide for tank isolation during the initial hydrostatic test.

- **STANDARD PRODUCT WITH 304 SS COVER MAY BE USED WITH POTABLE WATER. (CONSULT FACTORY FOR POTABLE WATER APPLICATIONS)**
- **MAY BE INSTALLED IN HORIZONTAL OR VERTICAL ORIENTATION.**
- Models certified to NSF/ANSI 61-G are required to be installed on the cold water side of the hot water heater.

SYSTEM CONNECTION	
CA90 TO CA215	1" NPT
CA300 TO CA2500	1½" NPT
CA3000 & CA5000	2" NPT
CA7500 & CA10000	3" NPT



1 - CHARGING VALVE CLOSURE (Schrader) 1½" NPT
2 - System Connection Label
3 - Hose Assembly
4 - Bag
5 - Sealed ½" NPT at factory - **Do Not Pipe To Drain** - Do Not Remove Plug - Removing plug voids tank Warranty. **Severe injury or death may result if a factory installed plug is removed without first isolating the tank from the system and reducing the internal pre-charge pressure to zero psi at the air valve.**
6 - ASME Name Plate
7 - Lug(s)

DIAGRAM 1 – LOCATION OF TANK FITTINGS

NSF/ANSI 61-G **[P] Option**, (Ex. P/N CA90-125P)

Models certified to NSF 61-G are required to be installed on the cold water side of the hot water heater.

Diagram 2 – Air Charge Check Chart

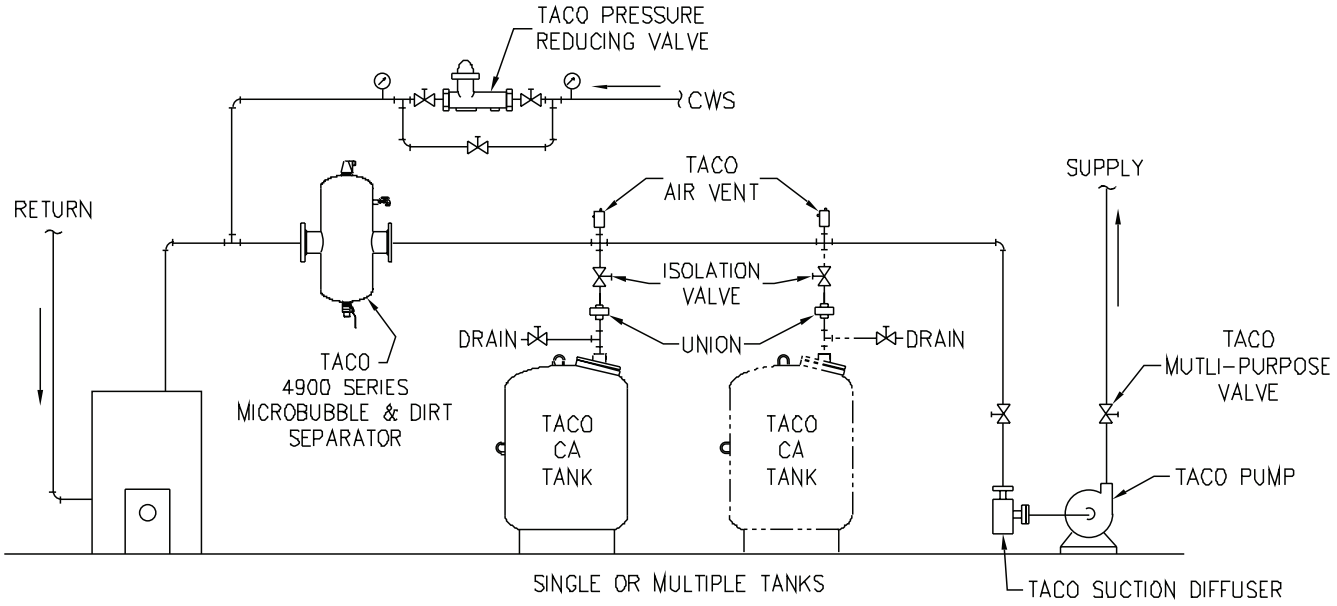
Specified Pre Charge Pressure P.S.I. (at 68ºF)	Ambient Temperature (ºF)								
	36	44	52	60	68	76	84	92	100
12	10.4	10.8	11.2	11.6	12.0	12.4	12.8	13.2	13.6
20	17.9	18.4	18.9	19.5	20.0	20.5	21.1	21.6	22.1
30	27.3	28.0	28.6	29.3	30.0	30.7	31.4	32.0	32.7
40	36.7	37.5	38.2	39.2	40.0	40.8	41.6	42.5	43.3
50	46.1	47.1	48.0	49.0	50.0	51.0	52.0	52.9	53.9
60	55.5	56.6	57.7	58.9	60.0	61.1	62.3	63.4	64.5
70	64.9	66.1	67.4	68.7	70.0	71.3	72.6	73.9	75.1

How to Use the Chart

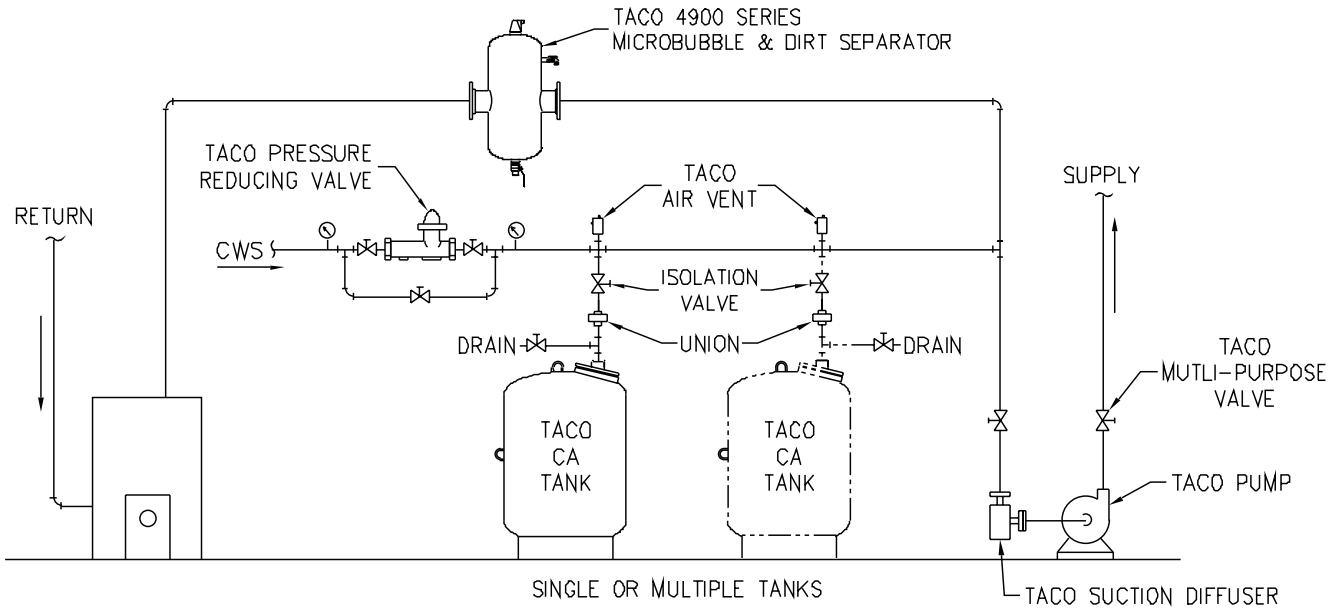
1. Determine ambient air temperature where the tank is being checked.
2. Locate the specified pre-charge pressure in the left-hand column.
3. Follow across horizontally to the number under the ambient air temperature.
4. The number found under Step No. 3 is the temperature corrected air charge pressure in p.s.i. and should agree with the gauge reading observed at the tank.
5. If the temperature corrected air charge pressure differs by more than 1 p.s.i. from the pre-charge pressure specified for the system, then correct it by bleeding pressure through the air charge valve or by adding pressure with an air compressor.

Captive Air Tank Piping Diagrams

RECOMMENDED INSTALLATION FOR HEATING SYSTEM OR CHILLED WATER APPLICATIONS



RECOMMENDED INSTALLATION FOR NSF/ANSI 61-G APPLICATIONS



See Related Documents:

400-1.2	**Catalog**
402-002	**CA Expansion Tank Instruction Sheet**
402-013	**Instruction Sheet, This Document**
401-083	**CA Expansion Tank Submittal**
401-083P	**CA Expansion Tank Submittal NSF**

For factory contact on Taco Fall River heat transfer products, please call 508-674-5353.

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402-013

Instruction Sheet

CA EXP Tank Replacement Bag

SUPERSEDES: December 1, 2014 EFFECTIVE: October 16, 2015

PLANT I.D. #001-952

WARNING: FAILURE TO COMPLY WITH THESE INSTRUCTIONS REGARDING THIS PRODUCT CAN RESULT IN SERIOUS PERSONAL INJURY OR DEATH AND/OR SEVERE PROPERTY DAMAGE.

Before proceeding with replacement, read instructions carefully and check that you have the required tools and supplies available:

- Plumbers tool box
- Source for compressed air
- Portable pump with 20 feet of suction hose
- 20 foot power cord
- Chain block
- Rope
- Pressure Gauge
- Air valve tool to remove valve core
- Replacement bag
- Long wooden stick, at least 1 foot longer than tank height
- Magic marker
- Vacuum cleaner

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TO REMOVE EXISTING BAG:

A. Isolate and disconnect tank from system.
B. Remove air valve core and bleed remaining air from tank.

NOTE: MARK FLANGES WITH A MAGIC MARKER IN ORDER TO RE-ASSEMBLE CORRECTLY.

C. When tank is at zero gauge pressure, remove head bolts, upper flange and head assembly and spacer washers where provided.
D. Siphon out any water remaining in bag.
E. Lubricate inner surface of nozzle and bottom inside corner of nozzle with soap or soapy water.

NOTE: DO NOT USE HYDROCARBON GREASE OR OIL, AS THEY ATTACK THE BAG MATERIAL.

F. Using a chain or power hoist, if necessary, lift bag out of tank with a twisting braid like motion. If the tank starts to lift, ease off hoisting and push the bag back 6 to 9 inches and re-twist for a smaller braid and try hoisting again.
G. Do not remove tank drains unless there is water in the tank.

NOTE: A METAL PLATE LOOSELY COVERS BOTTOM DRAIN.

H. If a drain plug is removed, re-install after draining, using a seal compound or equivalent. Connection must be absolutely air tight, otherwise, air charge will be lost.
I. Sweep inside of tank; vacuum up all residue; check surfaces for burrs.

NOTE: To install bag: follow steps A thru K below.

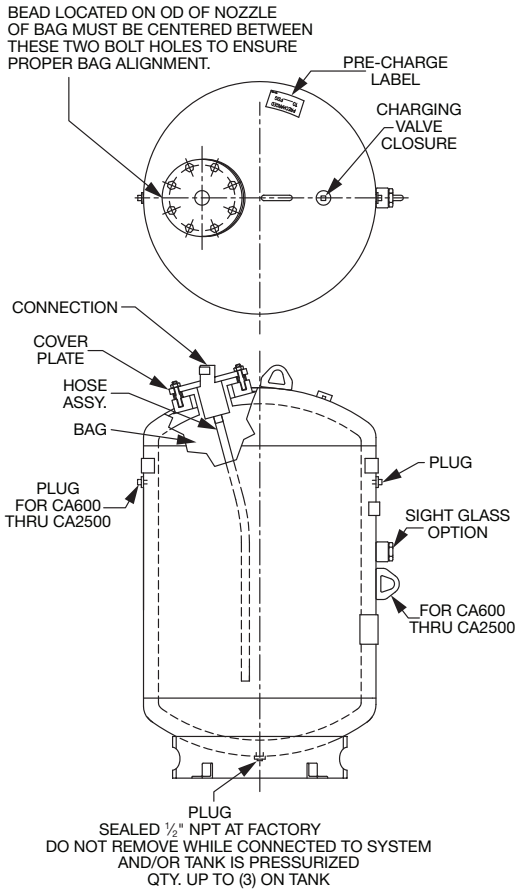


DIAGRAM 1 – LOCATION OF TANK FITTINGS

TO INSTALL NEW BAG:

A. Roll up new bag lengthwise so that roll is central to nozzle. Tie with twine at several evenly spaced locations along the length of the bag, to keep bag rolled during installation.
B. Position nozzle side of bag to face side of tank nearest tank nozzle. The top seam of bag should be positioned to run perpendicular to the tank nozzle, lifting ring and charging valve centerline.

NOTE: IF BAG HAS BEEN POSITIONED CORRECTLY, A RAISED BEAD ON THE OUTSIDE EDGE OF BAG NOZZLE FLANGE WILL BE POSITIONED BETWEEN THE TWO LOWEST TANK FLANGE HOLES.

C. Remove twine ties as they near tank opening.
D. When the bag has been inserted into the tank up to the nozzle, all that remains is to tuck the top of the bag into the tank, which will allow the bag flange to lie flat on the tank flange.

NOTE: A SMOOTH BLUNT ROD CAN BE USED TO HELP TUCK THE TOP OF THE BAG INTO THE TANK.

E. Insert a long smooth blunt stick down thru center of nozzle making clearance for hose assembly.
F. Check flange markings, as made before disassembly, to make sure upper and lower flanges line up.
G. Assemble upper flange lining up bolt holes. Install spacer ring between flanges, concentric with bolt holes. Install bolts and tighten evenly until flanges stop at spacer rings or $\frac{3}{16}$".
H. Connect an air supply to 1½" system connection on tank flange cover and charge bag to **1 psi air pressure** to ensure proper positioning of the bag, then relieve pressure.
I. Re-install air valve core and charge to fill pressure or minimum operating pressure.
J. Check the drain fitting, air valve and flange joint for leakage using soapy water.
K. Connect tank to system, open fill-valve and check operation. NOTE: ALWAYS PRE-CHARGE TANK BEFORE COMPLETING STEP K.

• **NSF/ANSI 61-G units labeled with** NSF Certified to NSF/ANSI 61-G

Diagram 2 – Air Charge Check Chart

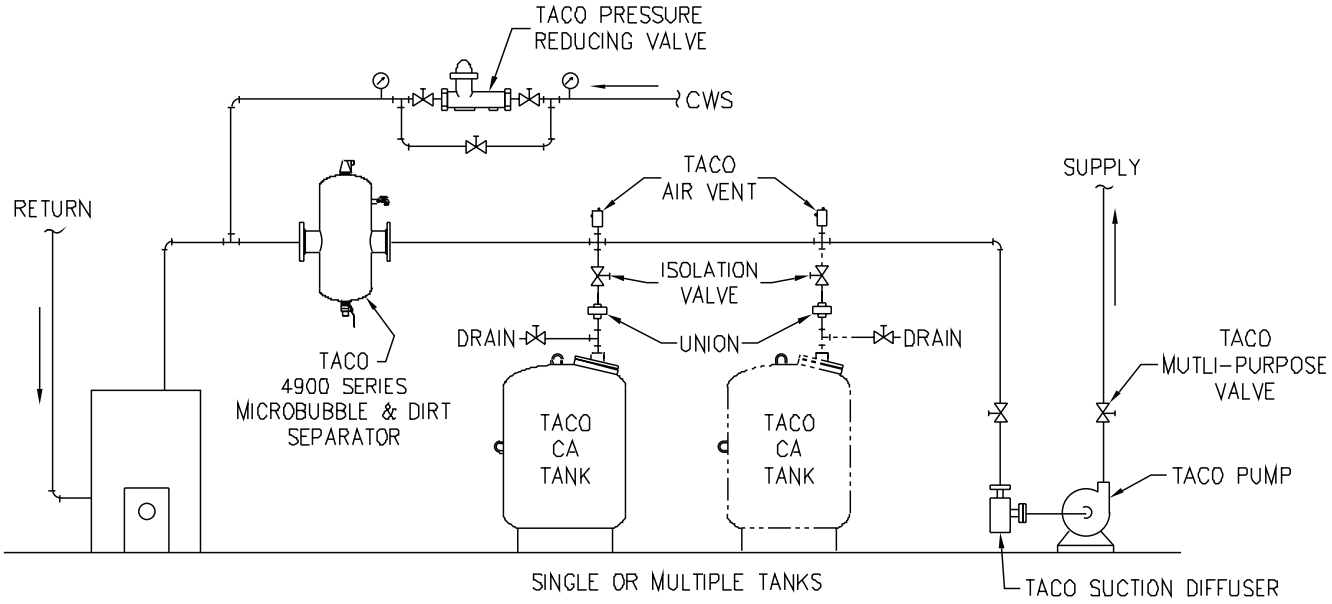
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40	36.7	37.5	38.2	39.2	40.0	40.8	41.6	42.5	43.3
50	46.1	47.1	48.0	49.0	50.0	51.0	52.0	52.9	53.9
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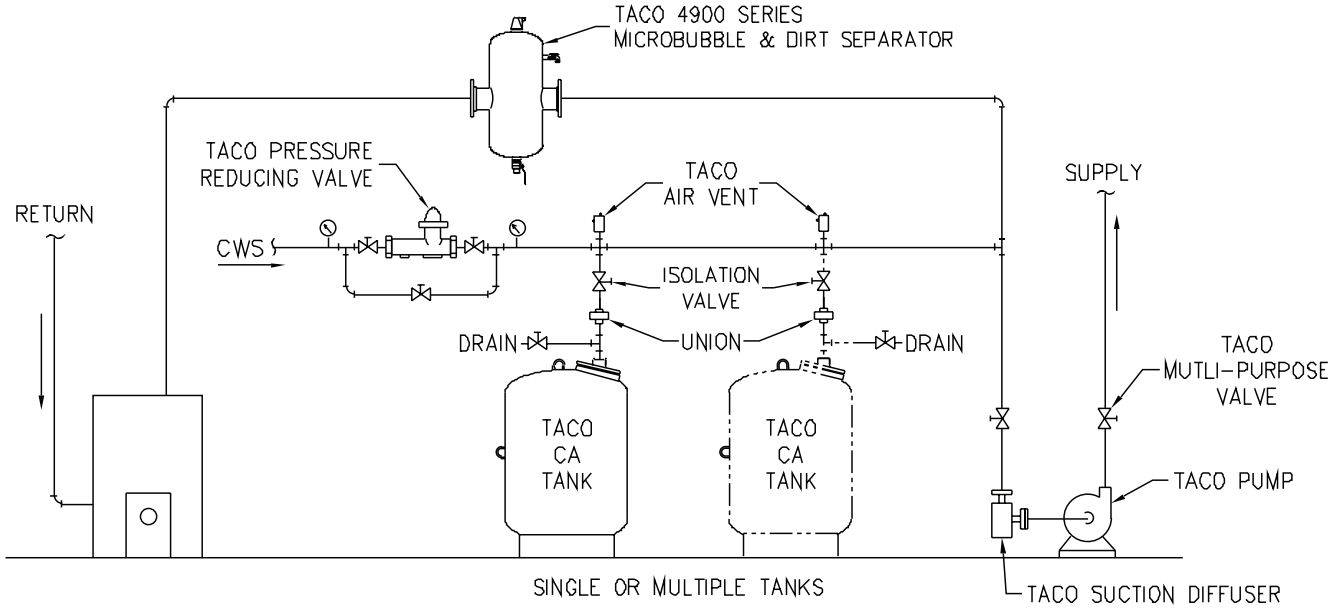
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