Instruction Sheet
CBX Expansion Tanks

402-020

SUPERSEDES: July 9, 2001 EFFECTIVE: January 28, 2013

DO NOT HANDLE WITHOUT FIRST READING ALL INSTRUCTIONS.

CONTENTS UNDER HIGH PRESSURE AND HIGH TEMPERATURE.

1. Note location on the tank of the system connection (13), charging valve (2) and the MANUFACTURING DRAIN PLUG. Refer to piping diagram "DRAIN". Note labels on the tank or refer to Diagram 1 for location of tank fittings.

2. Carefully remove the shipping plug (14) in the system connection coupling located at the bottom center of the tank. There should not be much, if any, air pressure under this plug. Tank is precharged to 12 psi.

CAUTION: ITEM #4, ALWAYS ISOLATE THE TANK FROM THE SYSTEM WITH A SHUT-OFF VALVE. DO NOT REMOVE THE PIPE PLUG (4) LOCATED ON THE SIDE OF THE TANK. REMOVAL OF PLUG VOIDS WARRANTY. IF REMOVED, COULD CAUSE BLADDER/BAG TO BURST. THIS PLUG 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.

INSPECTION PLUG MAY BE FORCEFULLY PROPELLED AT INSPECTION WHEN REMOVING IT FROM A PRESSURIZED TANK.

DEPRESSURIZE AIR SIDE OF TANK BY OPENING CHARGING VALVE PRIOR TO REMOVING PLUG. TANK MUST BE REMOVED FROM THE PIPING SYSTEM.

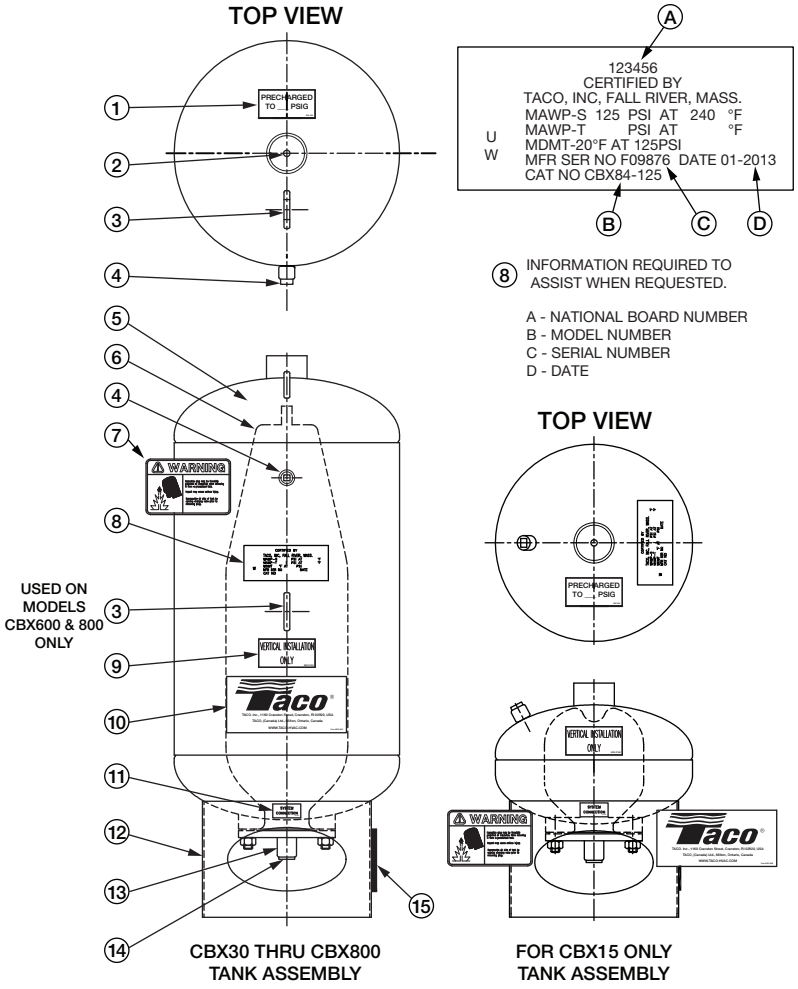
FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN SERIOUS PERSONAL INJURY, DEATH OR PROPERTY DAMAGE.

3. Before making any connections to the tank, check the tank air charge. Use an accurate automotive or similar type gauge on the air valve located at tank top. **The air charge pressure must be equal to the pre-charge pressure specified for the system. Refer to the label on the tank for the factory provided pre-charge pressure. In most cases the specified tank pre-charge pressure is equal to the system fill pressure at the tank location.** Use Diagram 2 – Air Charge Check Chart to correct the value read on the pressure gauge for the ambient temperature at the tank location.

4. After making sure that the air charge is correct, 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, page 2.

5. Locate the CBX 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.

- **NOT FOR USE WITH POTABLE WATER.**
- **VERTICAL INSTALLATION ONLY.**



BAG SUPPORT POST NOT SHOWN
BAG SUPPORT POST CBX84 THRU CBX800 ONLY

1 - PRECHARGE TO ____ LABEL
2 - CHARGING VALVE CLOSURE
3 - LUG (s)
4 - SEALED ½" NPT - DO NOT REMOVE
5 - TANK
6 - BAG
7 - WARNING LABEL
8 - ASME NAME PLATE
9 - VERTICAL INSTALLATION ONLY LABEL
10 - TACO LABEL
11 - SYSTEM CONNECTION
12 - BASE RING
13 - SYSTEM CONNECTION ¾" NPT
14 - SHIPPING PLUG
15 - THIS INSTRUCTION SHEET

Diagram 1 – Location of Tank Fittings

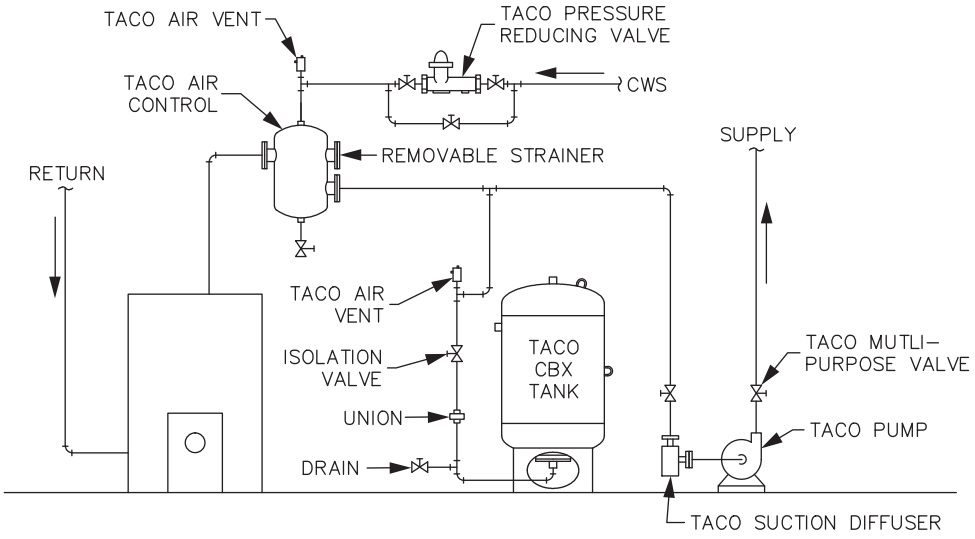
Diagram 2 – Air Charge Check Chart

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

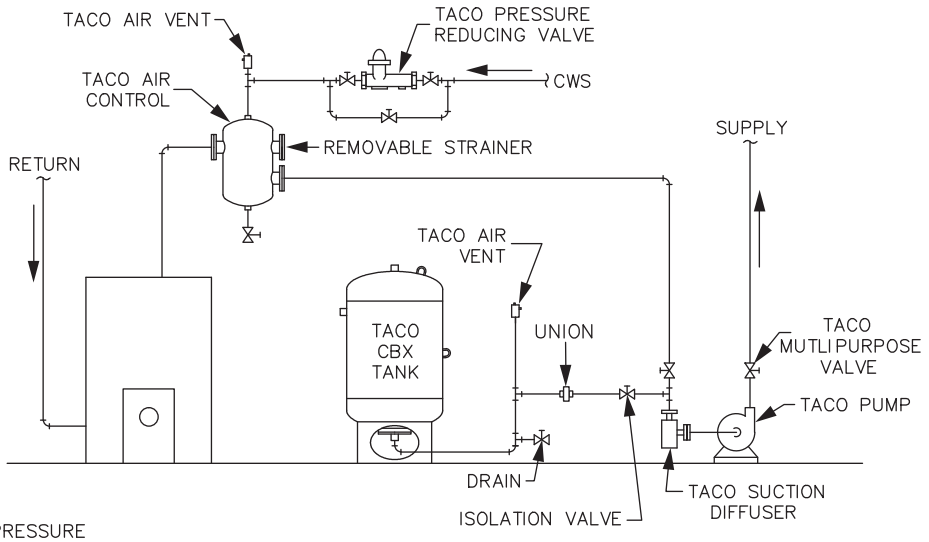
How to Use the Chart

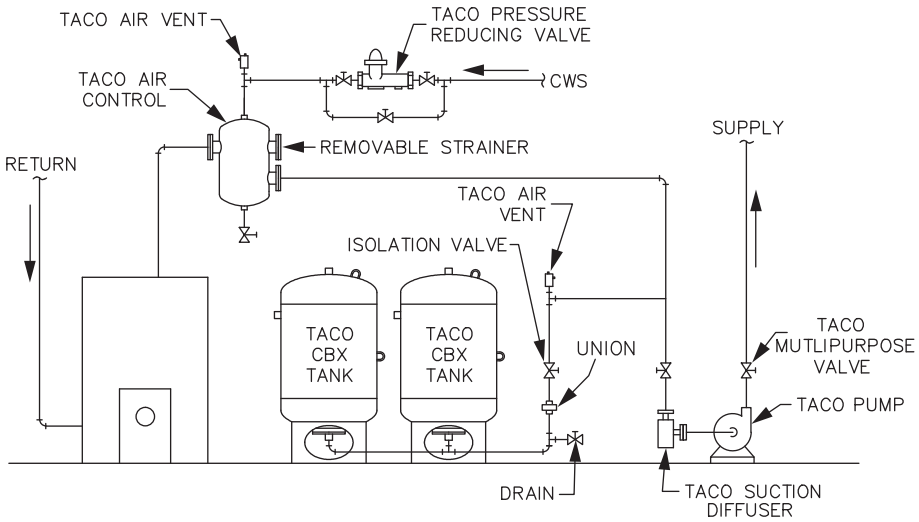
1. Determine ambient air temperature where the tank is being checked.
2. Locate the specified pre-charge pressure in the left-hand column.
3. Follow across horizontally to the number under the ambient air temperature.
4. The number found under Step No. 3 is the temperature corrected air charge pressure 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.

CBX Tank Piping Diagrams – Recommended Location



CBX Tank Piping Diagrams – Alternate Locations





See Related Documents:

400-2.6 Catalog
401-054 Submittal
402-020 This Instruction Sheet
402-090 Bag Replacement Instructions

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Instruction Sheet

CBX Expansion Tank Bag Replacement

402-090

SUPERSEDES: New

EFFECTIVE: July 1, 2004

Plant ID No. 001-3818

Before proceeding with the bag replacement, read instructions carefully and check that you have the required tools and supplies available.
Suggested tools: Source of compressed air, tire valve air chuck, extension cord, hand lamp, pressure gage with air chuck, valve core removal tool, wrenches or sockets- (CBX15-42) 1 1/16", (CBX84-130) 1 1/16" & 1 7/16", (CBX170-600) 7/8" & 1 7/16", pipe wrenches.

To Remove Existing Bag

1. Isolate tank from system.
2. Disconnect or cut line to tank and allow water to drain from system connection (22). Check air charge at Schrader valve (13) to see if there is any air pressure in the tank. If the reading is 0 add air to collapse the bag to expel water from the bag.
3. When water stops flowing from the system connection, remove valve core to bleed air from tank.

   CAUTION: AIR PRESSURE IN TANK COULD CAUSE VALVE CORE TO BE A PROJECTILE. WEAR SAFETY GLASSES. NO OTHER PLUGS ARE TO BE REMOVED FROM THE TANK. WARNING: FAILURE TO COMPLY WITH THESE INSTRUCTIONS REGARDING THE AIR CONNECTIONS CAN RESULT IN SERIOUS PERSONAL INJURY OR DEATH AND/OR PROPERTY DAMAGE.
4. Lay tank on its side to make system connection/cover assembly accessible.
5. When tank is at 0 psi, remove the nuts (20) securing the cover assembly to the tank.
6. Separate the cover assembly away from the rubber flange several inches and separate rubber flange of the bag away from the tank flange.
7. Pull the cover/support post and bag from the tank.

   Note: The smaller sizes do not have a support post. (CBX15-42)
8. Remove the spacer rings (17) from the studs and put aside for reuse.

   CAUTION: DO NOT DROP IN TANK
9. Wipe out the inside of the tank, making sure it is dry and check all tank flange and interior surfaces for any sharp edges. Smooth any rough surfaces.
10. Remove 7/8" heavy hex nut (15B) from the end of the support post (15A). (Used with CBX84-600)
11. Remove the washer (15D).
12. The old bag can now be removed from the support post.
13. Clean the fixed sealing flange (15C) which is welded to the bag support post and the holes in the post.

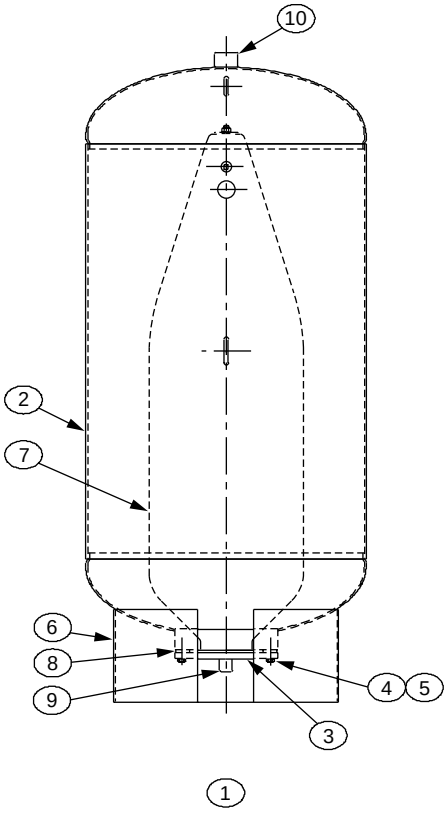
To Install New Bag

Note: CBX15-42 Expansion Tanks do not use a support post so disregard steps 1-3.

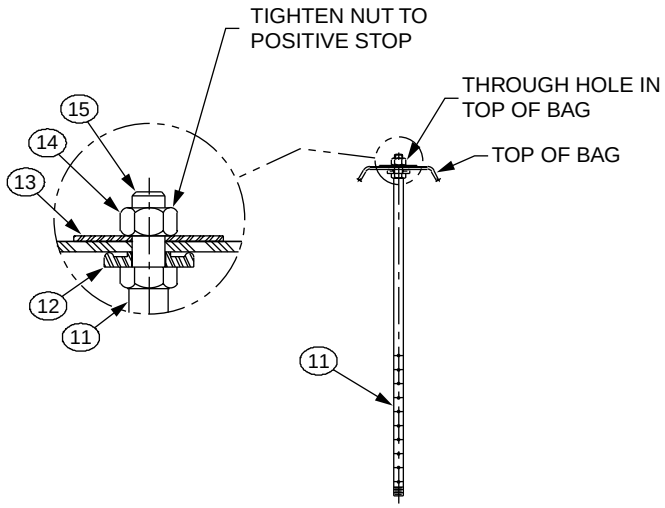
1. Install new bag over support post (CBX84-600 only) engaging the 7/8" screw with the hole in the end of the bag.
2. Install the washer over the 7/8" screw.
3. Run the 7/8" hex nut down and tighten to a positive stop.
4. Make sure the sealing surface of the tank flange, the cover plate sealing surface and both sides of the rubber flange of the bag are clean.
5. Install spacer rings over the studs.

CBX Expansion Tank Bag Replacement

6. Insert the bag & cover assembly (CBX15-42), bag/support post/cover assembly (CBX84-600) into tank with system connection in the same direction as original, which would be in line with the window in the base ring.
7. Install the cover plate retaining nuts and tighten them equally in a star pattern until the cover assembly is positive against the spacer rings.
8. Right the tank and position tank so that it can be reconnected to the system.
9. If seismic constraints were used, re-secure the seismic constraints.
10. Reinstall the valve core to the charging connection.
11. Connect an air chuck to an air hose and re-pressurize the tank to the fill pressure of the system or minimum operating pressure of the system at the elevation of the installation of the tank in the system.
12. Make a soap and water solution and check all connections for air leaks.
13. Connect tank to system and open system valve.
14. Check for leaks.



CBX TANK ASSEMBLY



1 – Tank Assembly
2 – Shell
3 – Cover Assembly
4 – Stud
5 – Nut
6 – Base Ring
7 – Bag
8 – Spacer Ring
9 – System Connection
10 – Air Charging Valve
11 – Support Post
12 – Sealing Flange
13 – Washer
14 – $\frac{7}{8}$" Nut
15 – $\frac{7}{8}$" Bolt

Do it Once. Do it Right.™

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