Honeywell

Commercial Size Hydro-Pneumatic Expansion Tanks

PRODUCT DATA

GENERAL

The TL and TAX tanks are designed to absorb hot water expansion in closed heating systems for large installations. They are equipped with butyl diaphragms to separate the air from the system water (glycol). The tanks are welded, they are not a clamp design. Pre-pressurized at 12 psi (83 kPa), the tank keeps fluids circulating and maintains minimum system pressure. Honeywell tanks resist waterlogging, loss of pressure through relief valve spills, loss of BTU's and reduce circulator running time. Use the efficient Honeywell SuperVent or air vents to remove air and micro-bubbles from the system for maximum performance.

SPECIFICATIONS

ASME Construction: Per ASME Section VIII, Div.1.

Materials: Steel shell, heavy duty butyl diaphragm.

System Conn.: Forged steel.

Maximum Working Pressure:
TL: 125/175/250 psi (862/1206/1724 kPa).
TAX: 125 psi (862 kPa).

Maximum Operating Temp.: 240° F (115° C).

Factory Precharged Pressure: 12 psi (83 kPa).

Minimum Clearance for Piping: 18 in. (460 mm).

INSTALLATION

1. Note the location of system connection, air charge valve and drain connection on tank.
2. Remove the pipe plug or pipe cap from the system connection.
3. Remove the 1 1/2 in. NPT plug covering the air charge valve.
4. Before making any connections to the tank, check the tank air charge (use an accurate pressure gauge). The air pressure must be equal to the minimum system pressure at the tank location.
5. After making sure the air charge is correct, replace the 1 1/2 in. plug over the air valve.
6. The tank may now be piped to the system.
7. Using the table select pipe size; connection to each tank must have a lock shield gate valve and union to allow isolation and removal if required. Make up fill valves, wether manual or automatic, should be tied into the connecting line. This will ensure that pump operation will not affect valve operation.

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Table 1. Boiler Connection Sizing

Firing Rate of Boiler in MBTU/H	Length of Pipe Connecting Tank to System in inches (mm)		
	< 11 ft (3.4 m)	11-30 ft (3.4-9.1 m)	31-100 ft (9.2-30.5 m)
2000	1/2 (13)	3/4 (19)	1 (25)
4000	3/4 (19)	1 (25)	1 1/4 (32)
8000	1 (25)	1 1/4 (32)	1 1/2 (38)

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	< 11 ft (3.4 m)	11-30 ft (3.4-9.1 m)	31-100 ft (9.2-30.5 m)
12000	1 1/4 (32)	1 1/2 (38)	2 (51)
16000	1 1/4 (32)	2 (51)	2 1/2 (64)
20000	1 1/2 (38)	2 (51)	2 1/2 (64)

Table 2. TL Series Expansion Tanks

Product Number 125 psi models	Total Volume Gal. (liter)	Height in inches (mm)	Diameter in inches (mm)	Connection Size in inches	Ship Weight lbs. (kg)		
					125 psi	175 psi	250 psi
TL 125-200-L	53 (201)	38 3/8 (975)	24 (610)	1	192 (87)	283 (128)	379 (172)
TL 125-300-L	80 (303)	52 3/8 (1330)	24 (610)	1	238 (108)	358 (162)	494 (224)
TL 125-400-L	106 (401)	66 1/4 (1683)	24 (610)	1	283 (128)	435 (197)	607 (275)
TL 125-500-L	132 (500)	80 1/4 (2038)	24 (610)	1	328 (149)	510 (231)	720 (327)
TL 125-600-L	158 (598)	65 (1651)	30 (762)	1 1/2	510 (231)	611 (277)	851 (386)
TL 125-800-L	211 (799)	83 (2108)	30 (762)	1 1/2	640 (290)	729 (331)	1030 (467)
TL 125-1000-L	264 (999)	74 (1880)	36 (914)	1 1/2	760 (345)	910 (412)	1419 (644)
TL 125-1200-L	317 (1200)	88 1/4 (2242)	36 (914)	1 1/2	864 (392)	1033 (469)	1613 (732)
TL 125-1400-L	370 (1401)	100 5/8 (2556)	36 (914)	1 1/2	968 (439)	1169 (530)	1808 (820)
TL 125-1600-L	422 (1597)	71 (1803)	48 (1219)	1 1/2	1580 (717)	2094 (950)	2311 (1048)
TL 125-2000-L	528 (1999)	85 (2159)	48 (1219)	1 1/2	1810 (821)	2386 (1082)	2677 (1214)
Note: For 175 psi use model no. TL 175-200-L; for 250 psi use model no. TL 250-200-L; etc.							

Table 3. TAX Series Expansion Tanks

Product Number		Total Volume Gal. (liter)	Accept Volume Gal. (liter)	Dimensions in inches (mm)		Dia. in inches (mm)	Conn. Size in inches	Shipping Weight in Lbs. (kg)	
TAX	TAXV			TAX Length	TAXV Height			TAX	TAXV
TAX-15	TAXV-15	7.8 (29.5)	2.5 (9.5)	19 (483)	19 1/4 (488)	12 (305)	1/2	46 (21)	48 (22)
TAX-20	TAXV-20	10.9 (41.3)	2.5 (9.5)	25 3/4 (654)	26 (660)	12 (305)	1/2	59 (27)	61 (28)
TAX-40	TAXV-40	21.7 (82.1)	11.3 (42.8)	29 1/8 (740)	29 1/2 (749)	16 1/4 (413)	1/2	114 (52)	116 (53)

ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Honeywell Automation and Control Products Sales Office (check white pages of your phone directory).
2. Honeywell Customer Care
   1885 Douglas Drive North
   Minneapolis, Minnesota 55422-4386

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Toronto, Ontario M1V 4Z9.
International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

Table 3. TAX Series Expansion Tanks

Product Number		Total Volume Gal. (liter)	Accept Volume Gal. (liter)	Dimensions in inches (mm)		Dia. in inches (mm)	Conn. Size in inches	Shipping Weight in Lbs. (kg)	
TAX	TAXV			TAX Length	TAXV Height			TAX	TAXV
TAX-60	TAXV-60	33.6 (127.2)	11.3 (42.8)	42 1/2 (1080)	45 1/8 (1146)	16 1/4 (413)	1/2	139 (63)	145 (66)
TAX-80	TAXV-80	44.4 (168.1)	22.6 (85.6)	55 1/4 (1403)	56 (1422)	16 1/4 (413)	1/2	196 (89)	201 (91)
TAX-100	TAXV-100	55.7 (210.8)	22.6 (85.6)	68 1/4 (1734)	69 (1753)	16 1/4 (413)	1/2	231 (105)	237 (108)
TAX-120	TAXV-120	68.0 (257.4)	34.0 (128.7)	40 1/4 (1022)	44 1/4 (1124)	24 (610)	1	233 (106)	285 (129)
TAX-144	TAXV-144	77.0 (291.5)	34.0 (128.7)	45 1/8 (1146)	49 1/8 (1248)	24 (610)	1	256 (116)	299 (136)
TAX-180	TAXV-180	90.0 (340.7)	34.0 (128.7)	52 1/2 (1334)	56 1/2 (1435)	24 (610)	1	286 (130)	305 (138)
TAX-200	TAXV-200	110.0 (416.4)	34.0 (128.7)	63 (1600)	67 (1702)	24 (610)	1	326 (148)	335 (152)
TAX-240	TAXV-240	132.0 (499.7)	46.0 (174.1)	49 1/8 (1248)	53 7/8 (1368)	30 (762)	1	435 (197)	456 (207)

CRITICAL SIZING PROCEDURE

1. Total System Water Content (1) ____ gallons
2. Minimum System Temperature (2) ____ °F
3. Maximum System Temperature (3) ____ °F
4. Minimum Operating Pressure at Tank (4) ____ psi
5. Maximum Operating Pressure at Tank (5) ____ psi
6. Find and enter 'Net Expansion Factor" (See Table 4) (6) ____
7. Amounted of Expanded Water = line (1) x line (6) (7) ____ gallons
8. Find and enter "Acceptance Factor" (See Table 5) (8) ____
9. Minimum total Tank volume = line (7) ÷ line (8) (9) ____gallons
10. Select a Tank that is at least equal to line (9) for "Total Volume" and line (7) for Maximum Expanded Water Acceptance gallons.

Table 4. Net Expansion of Water

Maximum System Temperature in °F (°C)	Minimum System Temperature in °F (°C)						
	40 (4)	50 (10)	60 (16)	70 (21)	80 (27)	90 (32)	100 (38)
60 (16)	.00050	.00049	-	-	-	-	-
70 (21)	.00149	.00143	.00094	-	-	-	-
80 (27)	.00260	.00254	.00204	.00111	-	-	-
90 (32)	.00405	.00399	.00350	.00256	.00145	-	-
100 (38)	.00575	.00569	.00520	.00426	.00315	.00170	-
110 (43)	.00771	.00765	.00716	.00622	.00511	.00366	.00196
120 (49)	.01000	.00990	.00950	.00860	.00740	.00600	.00430
130 (54)	.01240	.01230	.01180	.01090	.00980	.00830	.00650
140 (60)	.01500	.01490	.01450	.01350	.01240	.01100	.00930
150 (66)	.01790	.01780	.01730	.01640	.0153	.01330	.01210
160 (71)	.02090	.0208	.02040	.01940	.01810	.01650	.01480
170 (77)	.02420	.02410	.02360	.02270	.02160	.02010	.01840
180 (82)	.02760	.02750	.02710	.02610	.02500	.02360	.02190
190 (88)	.03130	.03120	.03070	.02980	.02870	.02720	.02550
200 (93)	.03510	.03500	.03460	.03360	.03250	.03110	.02940
210 (99)	.03910	.0390	.03860	.0760	.03650	.03510	.03340
220 (104)	.04340	.04330	.04280	.04190	.04080	.03930	.03760
230 (110)	.04760	.04750	.04710	.01610	.04500	.04360	.04190
240 (116)	.05220	.05210	.05170	.0507	.04960	.04820	.04650

Table 5. Acceptance Factors

Maximum Operating Pressure at Tank psi (kPa)	Minimum Operating Pressure at Tank psi (kPa)										
	5 (34)	**10 (69)**	**12 (83)**	**15 (103)**	**20 (138)**	**30 (207)**	**40 (276)**	**50 (345)**	**60 (414)**	**70 (483)**	**80 (552)**
27 (186)	.527	.408	.360	.288	.168	-	-	-	-	-	-
30 (207)	.50	.447	.403	.336	.224	-	-	-	-	-	-
35 (241)	.604	.503	.463	.403	.302	.101	-	-	-	-	-
40 (276)	.640	.548	.512	.457	.366	.183	-	-	-	-	-
45 (310)	.670	.586	.553	.503	.419	.251	.084	-	-	-	-
50 (345)	.696	.618	.587	.541	.464	.309	.155	-	-	-	-
55 (379)	.717	.646	.617	.574	.502	.359	.215	.072	-	-	-
60 (414)	.736	.669	.643	.602	.536	.402	.0268	.13	-	-	-
65 (448)	.753	.690	.665	.627	.565	.439	.314	.188	.062	-	-
70 (483)	.767	.708	.685	.649	.590	.472	.354	.236	.118	-	-
75 (517)	.780	.725	.702	.669	.613	.502	.390	.279	.167	.056	-
80 (552)	.792	.739	.718	.686	.634	.528	.422	.317	.211	.106	-
90 (621)	.812	.764	.745	.716	.669	.573	.478	.382	.287	.191	.096
100 (689)	.828	.785	.767	.741	.698	.610	.523	.436	.347	.261	.174
110 (758)	.842	.802	.786	.762	.723	.642	.561	.481	.401	.321	.241

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