

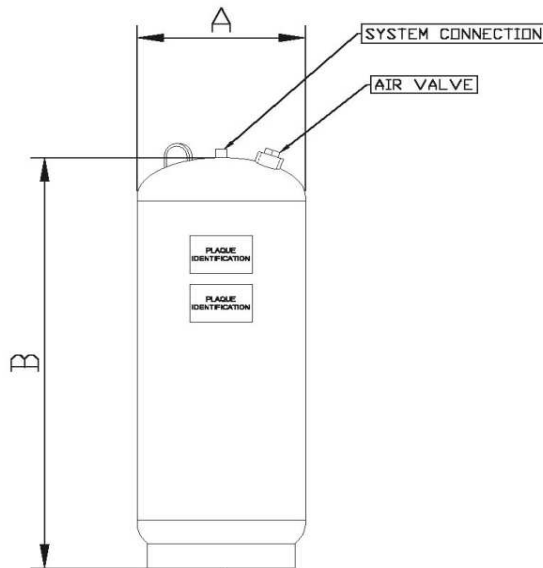
STANDARD CHARACTERISTIC

- CONSTRUCTED IN ACCORDANCE WITH THE ASME CODE, SEC VIII 2010 11a, DIV.1, PARAG. UW-12(C)
- CONSTRUCTED IN ACCORDANCE WITH CSA B.51
- DESIGNED PRESSURE : 150 PSI (1034 kPa)
- EXTERNAL FINISH : CLEANED WITH SOLVENT AND APPLICATION OF ONE COAT OF GREY PRIMER
- DESIGNED TEMPERATURE : 240 °F (115°C)
- CARBON STEEL CONSTRUCTION
- BUTYL DIAPHRAGM
- 304 STAINLESS STEEL SYSTEM CONNECTION

OPTIONS

- HORIZONTAL WITH STRAPS (CEILING MOUNTING) (suffix C)
- HORIZONTAL WITH SADDLES (FLOOR MOUNTING) (suffix F)
- ANTI-SEISMIC BRACKETS (suffix AB)
- 316 STAINLESS STEEL CONNECTION (suffix Y)
- SIGHT GLASS (suffix X)
- EXTERNAL EPOXY FINISH (suffix E)
- OTHER DESIGNED PRESSURES (suffix SPE)
_____ PSI (_____ kPa)

DIMENSIONS



QUANTITY : _____
 MODEL: TRD- _____
 OPTIONS (suffix) : _____
 PRECHARGE : _____

MODEL	VOLUME				DIMENSIONS		SYSTEM CONNECTION		WEIGHT	
	TOTAL		ACCEPTANCE		A X B		in.	mm	lbs	kg
	gal.	lts	gal.	lts	in X in	mm X mm				
TRD-5V	3.5	13	2.1	8	12 X 11	305 X 279	1	25,4	30	14
TRD-12V	5	19	3.75	14	12 X 15	305 X 381	1	25,4	43	20
TRD-20V	8	30	3.75	14	12 X 21	305 X 533	1	25,4	56	25
TRD-30V	15	57	10.4	39	16 X 25	406 X 635	1	25,4	93	42
TRD-42V	22	83	15.75	60	16 X 31	406 X 787	1	25,4	130	59
TRD-60V	26	98	15.75	60	16 X 36	406 X 915	1	25,4	141	64

PROJECT INFORMATION

REPRESENTATIVE: _____

JOB NAME: _____

TAGGING INFO: _____

ENGINEER: _____

CONTRACTOR: _____

ORDER No: _____

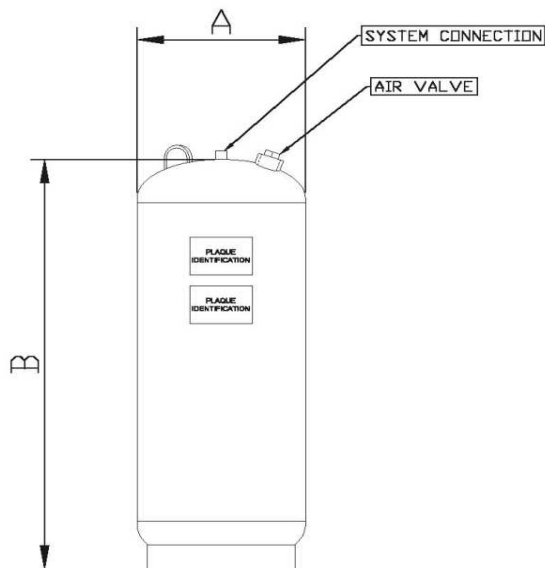
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DIMENSIONS



QUANTITY : _____
 MODEL: TRD- _____
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 PRECHARGE : _____

MODEL	VOLUME				DIMENSIONS		SYSTEM CONNECTION		WEIGHT	
	TOTAL		ACCEPTANCE		A X B		in.	mm	lbs	kg
	gal.	lts	gal.	lts	in X in	mm X mm				
TRD-80V	35	132	15.75	60	16 X 46	406 X 1168	1	25,4	170	77
TRD-100V	45	170	22.4	85	20 X 39	508 X 991	1.25	32	190	86
TRD-125V	60	227	22.4	85	20 X 50	508 X 1270	1.25	32	226	103
TRD-160V	70	265	38	144	24 X 43	610 X 1092	1.25	32	281	128
TRD-180V	80	303	38	144	24 X 48	610 X 1220	1.25	32	301	137
TRD-210V	90	341	38	144	24 X 54	610 X 1372	1.25	32	325	148

PROJECT INFORMATION

REPRESENTATIVE: _____

JOB NAME: _____

TAGGING INFO: _____

ENGINEER: _____

CONTRACTOR: _____

ORDER No: _____



THERMAL DIAPHRAGM
EXPANSION TANK, TRD SERIES

SIZING OF THERMAL DIAPHRAGM EXPANSION TANKS

REQUIRED INFORMATION :	SELECTION:
1) VOLUME OF HOT WATER TANK : _____ GALLONS _____ L	5) TANK VOLUME : _____
2) MAXIMUM TEMPERATURE : _____ °F _____ °C (maximum temperature setting)	(LINE 1)
3) MINIMUM PRESSURE : _____ PSIG _____ KPAG (minimum pressure at tank)	6) EXPANSION FACTOR : _____ (SEE TABLE 1 OR 2)
4) MAXIMUM PRESSURE : _____ PSIG _____ KPAG (relief valve less 10%)	7) MULTIPLY LINE 5 BY LINE 6 : _____ (EXPANDED VOLUME)
	8) ACCEPTANCE FACTOR : _____ (SEE TABLE 3 OR 4)
	9) DIVIDE LINE 7 BY LINE 8 : _____ (TOTAL VOLUME REQUIRED)

CHOICE

LINE 9 IS THE TOTAL TANK VOLUME REQUIRED _____

LINE 7 IS THE ACCEPTANCE VOLUME REQUIRED, FOR DIAPHRAGM EXPANSION TANK ONLY. _____

LINE 3 IS THE PRECHARGE REQUIRED IN EXPANSION TANK FOR A PROPER OPERATION _____

MODEL TRD- _____ V- _____ (OPTIONS IF REQUIRED) PRECHARGE _____ PSI OR KPA
(LINE 3)

TABLE 1

EXPANSION FACTOR (°F)								
120°F	130°F	140°F	150°F	160°F	170°F	180°F	190°F	200°F
0,0100	0,0124	0,015	0,0179	0,0209	0,0242	0,0276	0,0313	0,0351

TABLE 2

EXPANSION FACTOR (°C)								
50°C	55°C	60°C	65°C	70°C	75°C	80°C	85°C	90°C
0,0104	0,0126	0,015	0,0176	0,0203	0,0232	0,0262	0,0294	0,0327

TABLE 3

MAX. PRES. psig	ACCEPTANCE FACTOR MINIMUM PRESSURE psig								FOR THE PRESSURES NOT SHOWN, USE FORMULA $1 - (\text{MIN. PRESSURE} + 14,7) / (\text{MAX. PRESSURE} + 14,7)$								
	5	10	12	15	20	25	30	35	40	45	50	55	60	65	70	75	80
30	0,560	0,447	0,403	0,336	0,224	0,112	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
40	0,640	0,548	0,512	0,457	0,366	0,274	0,183	0,091	-----	-----	-----	-----	-----	-----	-----	-----	-----
45	0,670	0,586	0,553	0,503	0,419	0,335	0,251	0,168	0,084	-----	-----	-----	-----	-----	-----	-----	-----
50	0,696	0,618	0,587	0,541	0,464	0,386	0,309	0,232	0,155	0,078	-----	-----	-----	-----	-----	-----	-----
60	0,736	0,669	0,643	0,602	0,536	0,469	0,402	0,335	0,268	0,201	0,134	0,067	-----	-----	-----	-----	-----
70	0,767	0,708	0,685	0,649	0,590	0,531	0,472	0,413	0,354	0,295	0,236	0,177	0,118	0,059	-----	-----	-----
75	0,780	0,725	0,702	0,669	0,613	0,558	0,502	0,446	0,390	0,333	0,279	0,223	0,167	0,117	0,056	-----	-----
80	0,792	0,739	0,718	0,686	0,634	0,581	0,528	0,475	0,422	0,370	0,317	0,264	0,211	0,158	0,106	0,053	-----
90	0,812	0,764	0,745	0,716	0,669	0,621	0,573	0,525	0,478	0,430	0,382	0,335	0,287	0,239	0,191	0,143	0,096
100	0,828	0,785	0,767	0,741	0,698	0,654	0,610	0,567	0,523	0,479	0,436	0,392	0,347	0,305	0,261	0,218	0,174
110	0,842	0,802	0,786	0,762	0,723	0,682	0,642	0,601	0,561	0,521	0,481	0,441	0,401	0,361	0,321	0,281	0,241
125	0,859	0,823	0,809	0,787	0,752	0,716	0,680	0,644	0,608	0,573	0,537	0,501	0,465	0,429	0,394	0,358	0,322

TABLE 4

MAX. PRES. kPa man	ACCEPTANCE FACTOR MINIMUM PRESSURE kPa man.								FOR THE PRESSURES NOT SHOWN, USE FORMULA $1 - (\text{MIN. PRESSURE} + 101,36) / (\text{MAX. PRESSURE} + 101,36)$								
	20	35	40	60	80	83	100	160	200	260	300	360	400	460	500	560	600
200	0,597	0,548	0,531	0,465	0,398	0,388	0,332	0,133	-----	-----	-----	-----	-----	-----	-----	-----	-----
300	0,698	0,660	0,648	0,598	0,548	0,541	0,498	0,349	0,249	0,100	-----	-----	-----	-----	-----	-----	-----
310	0,705	0,669	0,656	0,608	0,559	0,552	0,511	0,365	0,267	0,122	0,024	-----	-----	-----	-----	-----	-----
345	0,728	0,695	0,683	0,638	0,594	0,587	0,549	0,415	0,325	0,190	0,101	-----	-----	-----	-----	-----	-----
400	0,758	0,728	0,718	0,678	0,638	0,632	0,598	0,479	0,399	0,279	0,199	0,080	-----	-----	-----	-----	-----
500	0,798	0,773	0,765	0,732	0,698	0,693	0,665	0,565	0,499	0,399	0,333	0,233	0,166	0,067	-----	-----	-----
520	0,805	0,781	0,773	0,740	0,708	0,703	0,676	0,579	0,515	0,418	0,354	0,258	0,193	0,097	0,032	-----	-----
600	0,827	0,806	0,799	0,770	0,741	0,737	0,713	0,627	0,570	0,485	0,428	0,342	0,285	0,200	0,143	0,057	-----
690	0,847	0,828	0,821	0,796	0,771	0,767	0,746	0,670	0,619	0,543	0,493	0,417	0,366	0,291	0,240	0,164	0,114
700	0,849	0,830	0,824	0,799	0,774	0,770	0,749	0,674	0,624	0,549	0,499	0,424	0,374	0,300	0,250	0,175	0,125
800	0,865	0,849	0,843	0,821	0,799	0,795	0,777	0,710	0,666	0,599	0,555	0,488	0,444	0,377	0,333	0,266	0,222
862	0,874	0,858	0,853	0,833	0,812	0,809	0,791	0,729	0,687	0,625	0,583	0,521	0,480	0,417	0,376	0,313	0,272