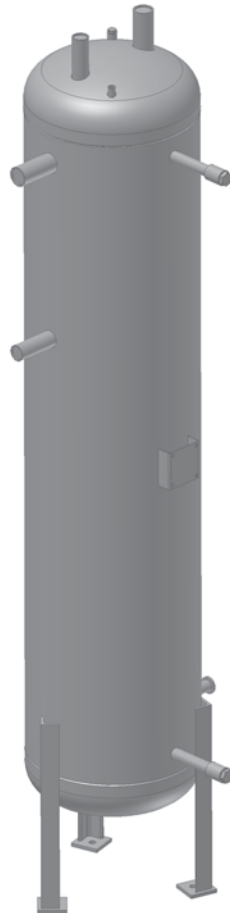


File: EQUIPMENT MANUAL - Section 120  
Replaces: 120-740 SED (MAY 2010)  
Dist: 1, 1a, 1b, 1c, 4, 4b, 4c

# ***VERTICAL HIGH PRESSURE THERMOSYPHON RECEIVER***



**DESCRIPTION**

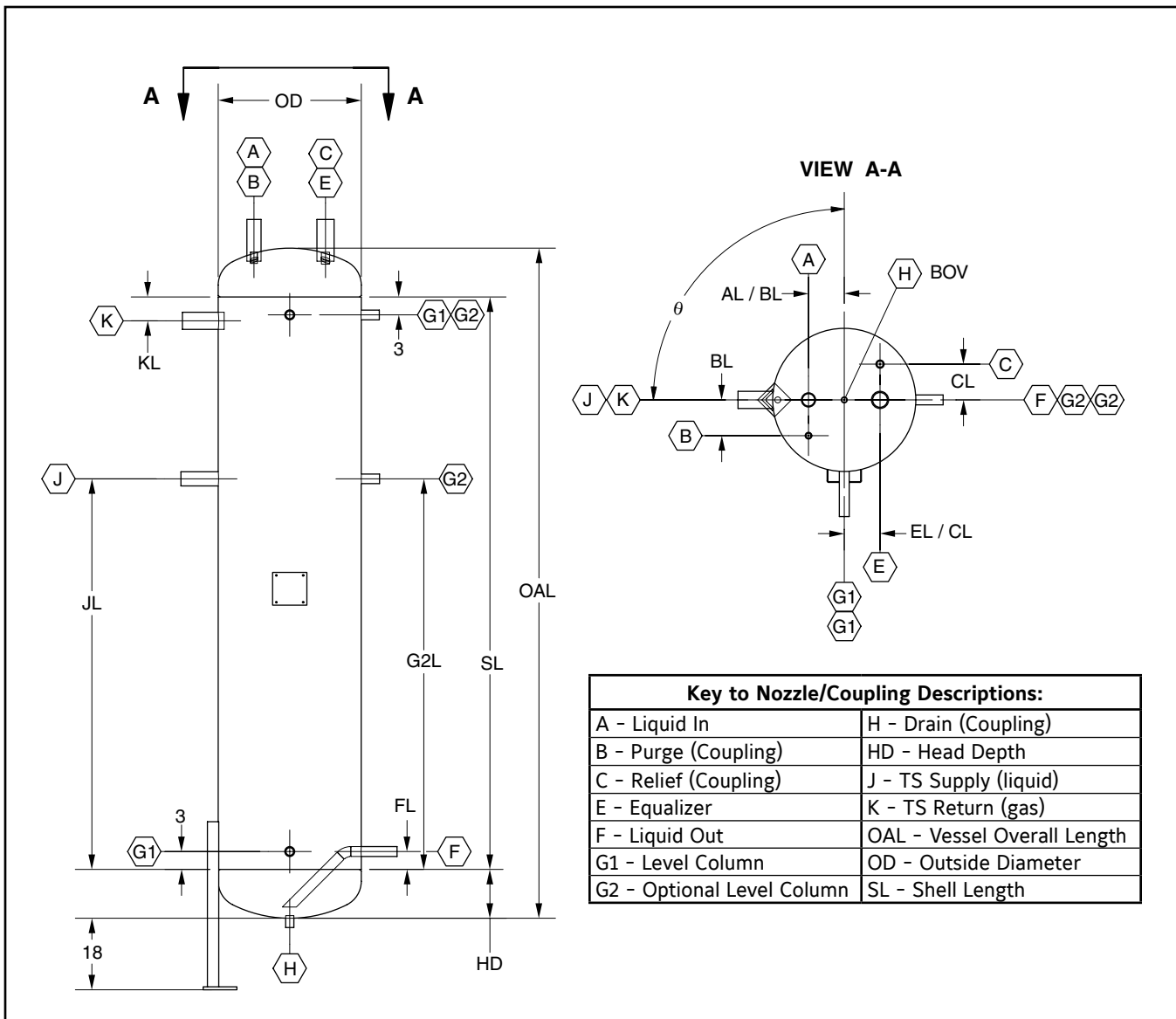
Vertical high pressure thermosyphon receivers serve as both the system high pressure receiver and as a thermosyphon receiver. In many systems this is a more cost effective approach compared to two separate vessels. At the top of the vessel is a sump that stores liquid refrigerant draining from the condensers. This sump preferentially feeds the thermosyphon oil coolers. Excess liquid not needed for oil cooling spills over a vertical weir plate and drains into the bottom of the vessel. This liquid refrigerant is then available for the rest of the system.

**FEATURES**

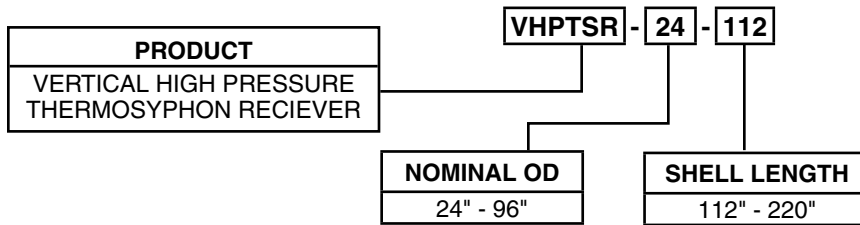
- Designed, Fabricated & Certified to the ASME BPV Code & Manufacturer’s Data Report registered with the National Board
- 250 psi standard design pressure (300 psi on 24 inch and smaller)
- Post weld heat treatment
- High quality, corrosion resistant, long lasting epoxy paint
- Customizable nozzle orientation, elevation and size etc. via CoolWare®
- Shipped fully sealed and pressurized with a nominal nitrogen charge to maintain cleanliness and protect internal surfaces

**OPTIONS**

- Post weld heat treatment deduct
- Higher design pressures for non-ammonia applications
- Ship loose level column with level eyes and level probe
- Corrosion allowance



**NOMENCLATURE**



**DIMENSIONAL DATA (1)**

MODEL NUMBER	MAWP	OD	OAL	HD	SL	Legs	Unin-sulated Dry Wt (lbm)	Total Volume (cu-ft)	R-717 <sup>(3)</sup> Maximum Charge (lbm)	Reser-voir (cu-ft)	Theta θ
VHPTSR-24-112	300	24	112 <sup>3</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>16</sub>	96	3	1,040	26.5	875	4.7	90
VHPTSR-24-136	300	24	136 <sup>3</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>16</sub>	120	3	1,260	32.4	1,069	4.7	90
VHPTSR-30-113	250	30	113 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>16</sub>	94	3	1,310	41.9	1,384	7.5	90
VHPTSR-30-137	250	30	137 <sup>3</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>16</sub>	118	3	1,580	51.2	1,693	7.5	90
VHPTSR-36-116	250	36	116 <sup>3</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>16</sub>	94	4	1,610	62.0	2,048	10.9	45
VHPTSR-36-140	250	36	140 <sup>3</sup> / <sub>8</sub>	11 <sup>3</sup> / <sub>16</sub>	118	4	1,940	75.5	2,496	10.9	45
VHPTSR-42-119	250	42	119 <sup>3</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>16</sub>	94	4	1,920	86.4	2,856	14.9	45
VHPTSR-42-143	250	42	143 <sup>3</sup> / <sub>8</sub>	12 <sup>1</sup> / <sub>16</sub>	118	4	2,310	105.0	3,470	14.9	45
VHPTSR-48-122	250	48	122 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>4</sub>	94	4	3,000	114.1	3,772	19.4	45
VHPTSR-48-146	250	48	146 <sup>1</sup> / <sub>2</sub>	14 <sup>1</sup> / <sub>4</sub>	118	4	3,590	138.2	4,568	19.4	45
VHPTSR-54-125	250	54	125 <sup>1</sup> / <sub>2</sub>	15 <sup>3</sup> / <sub>4</sub>	94	4	3,450	147.7	4,881	24.7	45
VHPTSR-54-149	250	54	149 <sup>1</sup> / <sub>2</sub>	15 <sup>3</sup> / <sub>4</sub>	118	4	4,120	178.3	5,894	24.7	45
VHPTSR-54-175	250	54	175 <sup>1</sup> / <sub>2</sub>	15 <sup>3</sup> / <sub>4</sub>	144	4	4,840	211.5	6,991	24.7	45
VHPTSR-60-152	250	60	152 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>4</sub>	118	4	4,670	224.1	7,408	30.5	45
VHPTSR-60-178	250	60	178 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>4</sub>	144	4	5,470	265.3	8,768	30.5	45
VHPTSR-60-202	250	60	202 <sup>1</sup> / <sub>2</sub>	17 <sup>1</sup> / <sub>4</sub>	168	4	6,210	303.2	10,023	30.5	45
VHPTSR-72-158	250	72	158 <sup>5</sup> / <sub>8</sub>	20 <sup>5</sup> / <sub>16</sub>	118	4	7,270	331.2	10,947	43.9	45
VHPTSR-72-184	250	72	184 <sup>5</sup> / <sub>8</sub>	20 <sup>5</sup> / <sub>16</sub>	144	4	8,470	390.4	12,903	43.9	45
VHPTSR-72-208	250	72	208 <sup>5</sup> / <sub>8</sub>	20 <sup>5</sup> / <sub>16</sub>	168	4	9,580	445.0	14,707	43.9	45
VHPTSR-84-164	250	84	164 <sup>3</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>8</sub>	118	4	10,560	462.5	15,286	59.7	45
VHPTSR-84-190	250	84	190 <sup>3</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>8</sub>	144	4	12,240	542.9	17,945	59.7	45
VHPTSR-84-214	250	84	214 <sup>3</sup> / <sub>4</sub>	23 <sup>3</sup> / <sub>8</sub>	168	4	13,790	617.2	20,399	59.7	45
VHPTSR-96-196	250	96	196 <sup>3</sup> / <sub>4</sub>	26 <sup>3</sup> / <sub>8</sub>	144	4	14,430	728.6	24,082	78.4	45
VHPTSR-96-220	250	96	220 <sup>3</sup> / <sub>4</sub>	26 <sup>3</sup> / <sub>8</sub>	168	4	16,200	826.0	27,302	78.4	45

1. All dimensions and nozzle nominal pipe sizes are given in inches unless noted otherwise.
2. Volume is given in total cubic feet of vessel.
3. R-717 volume estimated by using 90% total capacity filled with ammonia having a density of 36.7264 lbm/cu-ft (95°F).

**NOTE:** See additional data on page 4

**DIMENSIONAL DATA (1)**

MODEL NUMBER	Nozzle/ Coupling NPS (4) (5) (6)									AL	BL	CL	EL	FL	JL/G2L	KL
	A	B	C	E	F	G1	H	J	K							
VHPTSR-24-112	2	1/2	3/4	2½	1¼	1¼	3/4	2	2½	6	6	6	6	3	65½	4
VHPTSR-24-136	2	1/2	3/4	2½	1¼	1¼	3/4	2	2½	6	6	6	6	3	89½	4
VHPTSR-30-113	2½	1/2	3/4	3	1¼	1¼	3/4	2½	3	7½	7½	7½	7½	3	63½	4
VHPTSR-30-137	2½	1/2	3/4	3	1¼	1¼	3/4	2½	3	7½	7½	7½	7½	3	87½	4
VHPTSR-36-116	3	1/2	3/4	4	1½	1¼	3/4	3	4	9	9	9	9	3	63½	4
VHPTSR-36-140	3	1/2	3/4	4	1½	1¼	3/4	3	4	9	9	9	9	3	87½	4
VHPTSR-42-119	3	1/2	3/4	4	1½	1¼	3/4	3	4	10½	10½	10½	10½	3	63½	4
VHPTSR-42-143	3	1/2	3/4	4	1½	1¼	3/4	3	4	10½	10½	10½	10½	3	87½	4
VHPTSR-48-122	4	1/2	3/4	5	2	1¼	3/4	4	5	12	12	12	12	3	62½	5
VHPTSR-48-146	4	1/2	3/4	5	2	1¼	3/4	4	5	12	12	12	12	3	86½	5
VHPTSR-54-125	5	3/4	3/4	6	2½	1¼	1	5	6	13½	13½	13½	13½	4	61½	6
VHPTSR-54-149	5	3/4	3/4	6	2½	1¼	1	5	6	13½	13½	13½	13½	4	86½	6
VHPTSR-54-175	5	3/4	3/4	6	2½	1½	1	5	6	13½	13½	13½	13½	4	111½	6
VHPTSR-60-152	6	3/4	3/4	8	3	1½	1	6	8	15	15	15	15	4	84	8
VHPTSR-60-178	6	3/4	3/4	8	3	1½	1	6	8	15	15	15	15	4	110	8
VHPTSR-60-202	6	3/4	3/4	8	3	1½	1	6	8	15	15	15	15	4	134	8
VHPTSR-72-158	8	3/4	1	10	4	1½	1	8	10	18	18	18	18	5	82	10
VHPTSR-72-184	8	3/4	1	10	4	1½	1	8	10	18	18	18	18	5	108	10
VHPTSR-72-208	8	3/4	1	10	4	1½	1	8	10	18	18	18	18	5	132	10
VHPTSR-84-164	10	1	1	12	5	1½	1	10	12	21	21	21	21	6	80	12
VHPTSR-84-190	10	1	1	12	5	1½	1	10	12	21	21	21	21	6	106	12
VHPTSR-84-214	10	1	1	12	5	1½	1	10	12	21	21	21	21	6	130	12
VHPTSR-96-196	10	1	1	12	5	1½	1	10	12	24	24	24	24	6	106	12
VHPTSR-96-220	10	1	1	12	5	1½	1	10	12	24	24	24	24	6	130	12

4. Nozzle connections are supplied as pipe stubs unless otherwise specified as a coupling (Cplg).
5. Couplings are ASME B16.11 Class 3000 "full" couplings.
6. **Nozzles are sized for R-717 and should not be used with other refrigerants (e.g. R-507).**
7. Use minimum 2-inch standoff on nameplate bracket.
8. All dimensions are subject to change; please consult factory for certified drawings.
9. Vessels are built in accordance with ASME Boiler & Pressure Vessel Code, Section VIII, Division 1.