Open Expansion Tank

An expansion tank or expansion vessel is a small tank used to protect closed (not open to atmospheric pressure) water heating systems and domestic hot water systems from excessive pressure. The tank is partially filled with air, whose compressibility cushions shock caused by water hammer and absorbs excess water pressure caused by thermal expansion. In other words open Expansion tanks are used as safety accessories in the heating systems where, due to legal reason it is forbidden to install closed expansion tanks systems. Expansion tank is composed by a cover unit where all the security piping of outlet pipe for too full, supplying and systems charge, should arrive. Its rule is to merge the water in excess due caused by temperature increase. Expansion Tank should be placed on the highest point reached by the water and should have an expanding volume not less than the expansion volume developed by all the water contained into the system, whose value should be declared in the project.

Scan this code To access the Pakman product selection application and select this product.

Scan this code to receive a 3D product file.

More info about this product.

PACKMAN Open expansion Tank Properties

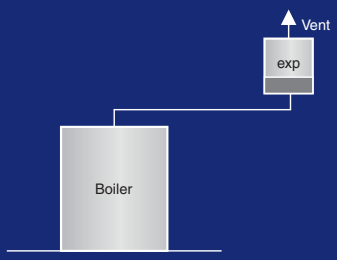
PACKMAN's open expansion Tanks are made of SA 36 (St 37.2 in accordance with DIN standard) with specified thicknesses.

Manufacturing Standards

ASME Sec VIII, Div. 1 is used in the construction of open expansion tanks.

Product Capacity Calculation & Selection:

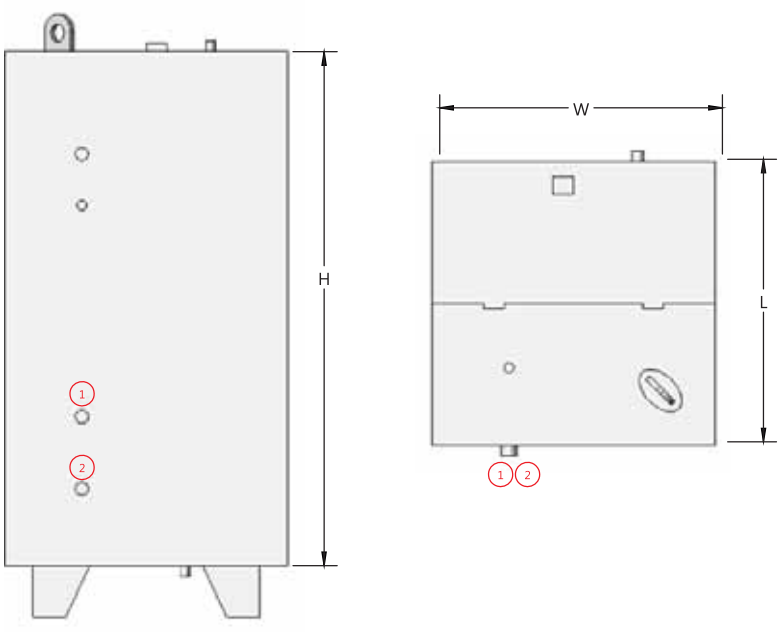
In order to select the capacity of open expansion tank, the volume change of the system should be calculated. The volume of the open expansion tank should be about two times a volume change of the system. There are some references for estimation of the system water content. By assuming the system water content, the expansion capacity could be calculated as the following:



Required volume of an open expansion tank can be expressed as

$Vet = k\,Vw\,[(v1 / v0) - 1]$

Vet = required expansion tank volume (gallon, liter)
k = safety factor (approximately 2 is common)
Vw = water volume in the system (gallon, liter)
v0 = specific volume of water at initial (cold) temperature (ft3/lb, m3/kg)
v1 = specific volume of water at operating (hot) temperature (ft3/lb, m3/kg)
Note that in an open expansion tank fresh air is constantly absorbed in the water and tends to corrode the system. Open expansion tanks must also be located above the highest heating element, in general on the top of buildings, where they may be exposed to freezing.
Another method is to select the open expansion tank capacity from the boiler thermal capacity and the following formula:
V = Q / 6400
Q =Capacity of boiler in terms of BTU / hr
V =the volume of open source expansion in gallons



Model	Capacity	Length	Height	Width	Working pressure range	Expansion	Circulating Water	TYPE
POET-200	200	500	800	500	ATM	3/4 "	3/4"	Cubic
POET-1300	300	550	1000	550	ATM	1 "	1"	Cubic
POET-500	500	720	1000	720	ATM	1, 1/4 "	1, 1/4 "	Cubic
POET-700	700	900	1000	900	ATM	1, 1/4 "	1, 1/4 "	Cubic
POET-800	800	900	1000	900	ATM	1, 1/4 "	1, 1/4 "	Cubic
POET-1000	1000	1000	1000	1000	ATM	1, 1/2 "	1, 1/2 "	Cubic
POET-1200	1200	1000	1000	1200	ATM	1, 1/2 "	1, 1/2 "	Cubic
POET-1500	1500	1500	1000	1000	ATM	1, 1/2 "	1, 1/2 "	Cubic
POET-2000	2000	2000	1000	1000	ATM	2"	2"	Cubic
POET-2500	2500	2000	1000	1250	ATM	2"	2"	Cubic
POET-3000	3000	2000	1000	1500	ATM	2"	2"	Cubic
POET-5000	5000	2000	1250	2000	ATM	2"	2"	Cubic