

Flash Recovery Vessels

Description

Flash steam, which is formed when a portion of the high pressure condensate discharged from a steam trap re-evaporates, is separated from the condensate and piped away from the top of the vessel. The remaining condensate drains from the bottom of the vessel to a steam trap. The flash is usually added to the low-pressure steam system.

Model	Flash recovery vessels
PMO	150 psi g
Sizes (body ø)	6", 8", 12", 16"
Connections	ANSI 150 RF & NPT
Construction	Mild steel

Limiting operating conditions

PMO	Maximum operating pressure	150 psi g (10 bar g)
	Maximum operating temperature	500 °F (260 °C)

Standards

These vessels are designed in accordance with ASME Code, Section VIII, Div. 1, and are ASME Code Stamped for 150 psi g steam service.

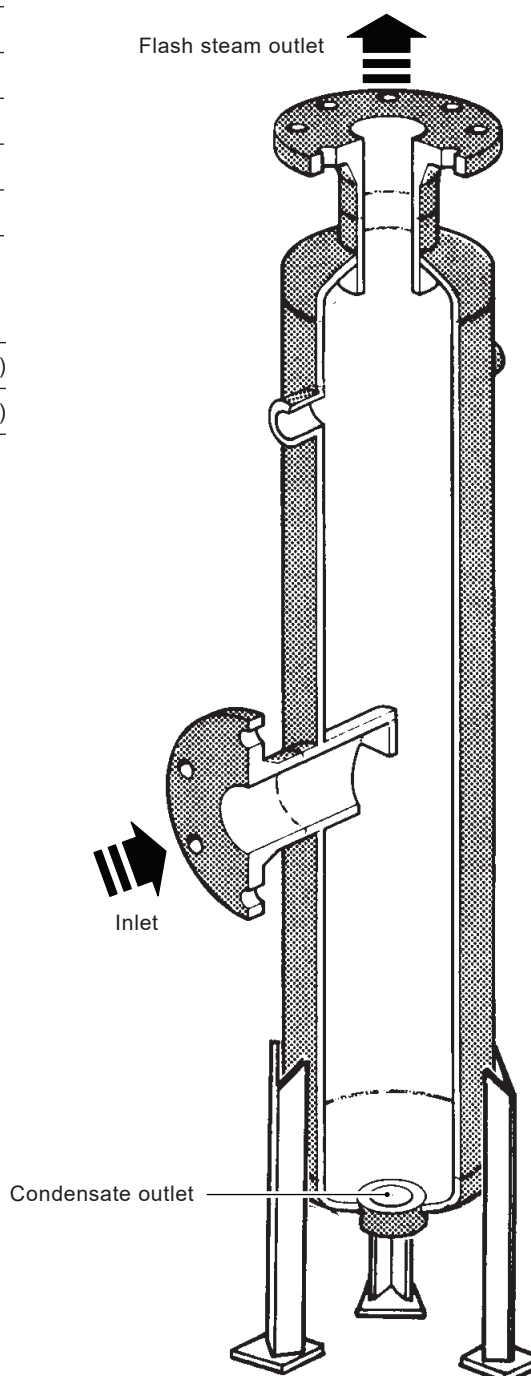


Fig. 1 Proportion of flash Steam

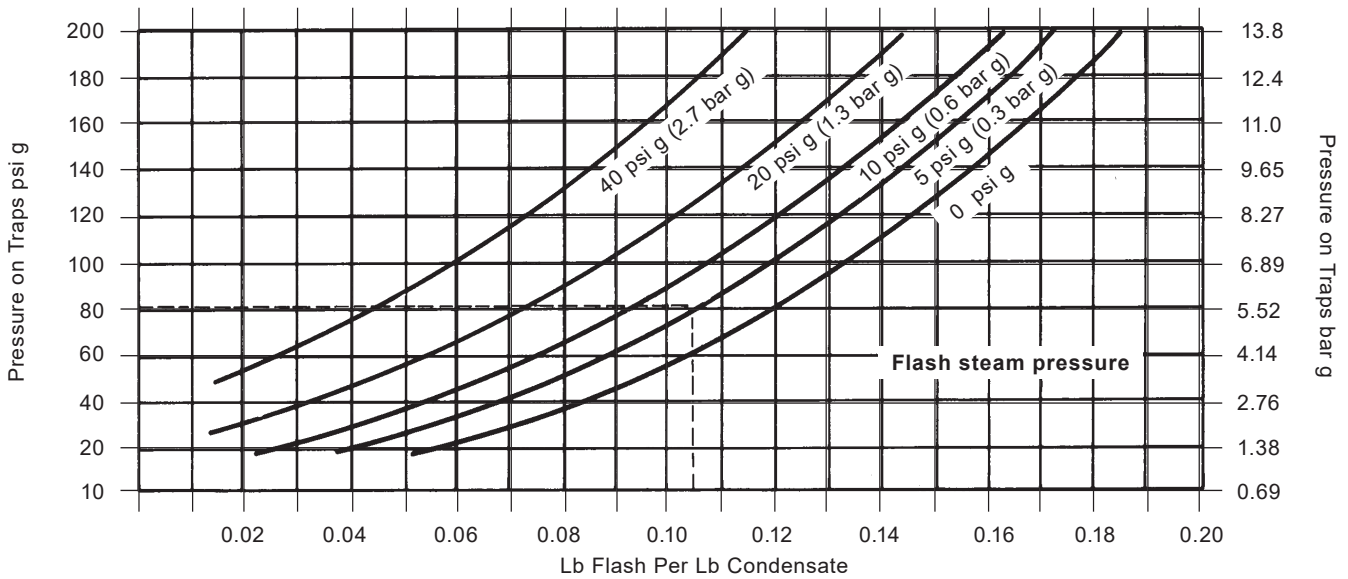
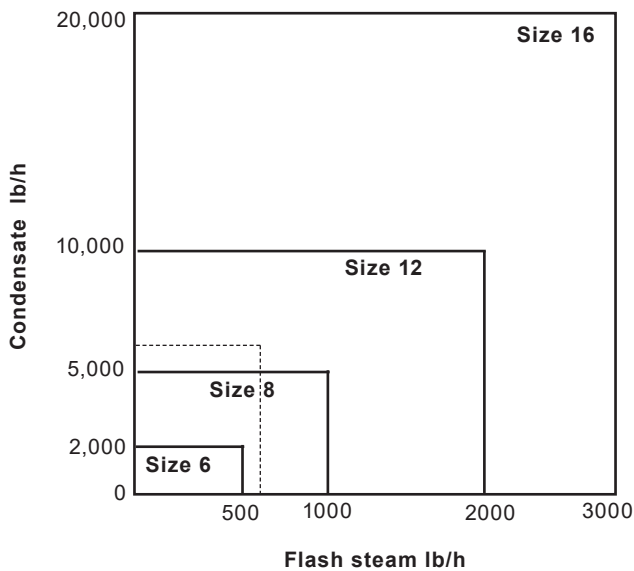


Fig. 2 Recovery vessel capacities



For kg/h, multiply above by 0.454

Example:

A plant operating at 80 psig (5.52 bar g) condenses 6000 lb/h of steam.

Flash steam from this is to be recovered at 5 psig. Fig. 1 shows that the condensate at 80 psig produces approximately .105 lb of flash steam per lb of condensate when the pressure is dropped to 5 psig (0.34 bar g).

From 6000 lb/h of condensate, 630 lb/h of flash steam will be produced.

From Fig. 2 it will be seen that 6000 lb/h of condensate meets the line of 630 lb/h of flash steam in the Size 12 area, so a Size 12 Flash Recovery Vessel is necessary for this duty.

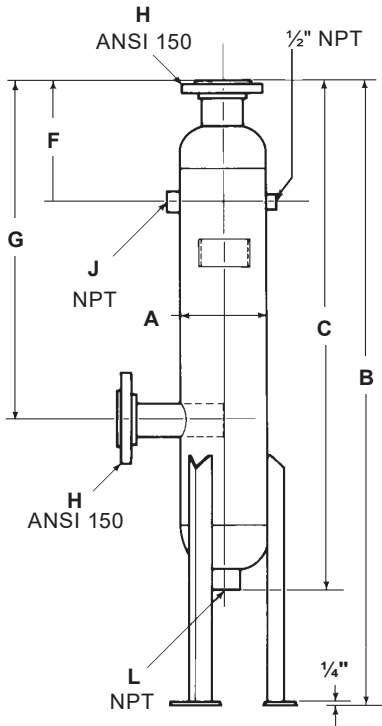
How to size

Fig. 1 shows the proportion by weight of flash steam formed from condensate with various pressure drops.

From Fig. 1, find the weight of flash per unit weight of condensate. Multiply this by the maximum condensing rate to get the maximum weight of flash steam expected from the flash vessel.

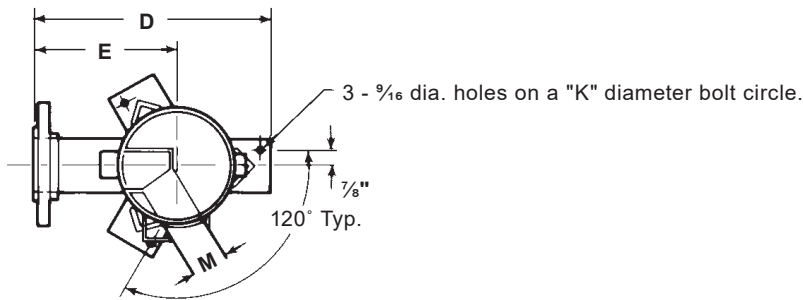
Select the appropriate size flash vessel from Fig. 2 by finding the area within which both the condensate rate and the flash steam weight fit.

Dimensions/weights (approximate) in inches (mm) and lbs (kg)



Size	A	B	C	D	E	F	G
6	6.6	47	38.6	13	8	9	25.5
	(168)	(1194)	(980)	(330)	(203)	(229)	(648)
8	8.6	48	39.6	14.6	8.6	9.5	25.8
	(218)	(1219)	(1006)	(371)	(218)	(241)	(655)
12	12.7	49.5	41.2	20	11.8	11.5	26.8
	(323)	(1257)	(1046)	(508)	(300)	(292)	(681)
16	16	58	49.7	23.5	13.4	12.5	32
	(406)	(1473)	(1262)	(597)	(340)	(318)	(813)

Size	H	J	K	L	M	Weight
6	2½"	¾"	8.8"	1½"	2.5"	75 lb
	(63.5)	(19.05)	(224)	(38.1)	(64)	(34 kg)
8	4"	¾"	10.8"	2"	3.5"	105 lb
	(101.6)	(19.05)	(274)	(50.8)	(89)	(47.6 kg)
12	5"	1½"	14.9"	3"	5"	165 lb
	(127)	(38.1)	(378)	(76.2)	(127)	(74.8 kg)
16	6"	2"	18.9"	3"	5"	215 lb
	(152.4)	(50.8)	(480)	(76.2)	(127)	(97.5 kg)



Installation

The vessel should be installed with the flash steam outlet at the top as shown. Each size vessel incorporates a ½" NPT connection for the fitting of a pressure gauge. If a Safety Relief Valve is required, it should be fitted in the NPT connection provided in the side of the shell. For drainage, a properly sized float type steam trap must be connected to the condensate outlet at the bottom of the vessel.

Sample specification

Flash Recovery Vessel shall be mild steel construction ASME Code Stamped for 150 psig steam service with ANSI 150 RF flanges. Connections for a pressure gauge and a Safety Relief Valve shall be provided in the shell.