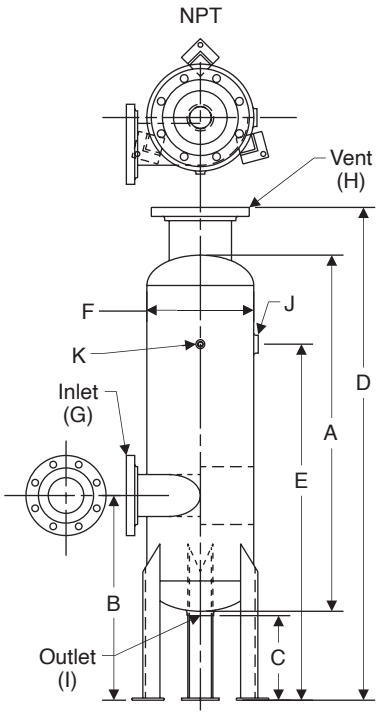
Vertical Flash Tanks (VAFT)

Armstrong



Features

- ASME coded and stamped vessels
- Standard pressure rating 150 psi (other pressure ratings available upon request)
- Standard models are designed and sized to cover a wide range of applications and loads
- Flash vessels are designed to provide low velocity flash steam with no water carryover
- Quick payback for flash recovery investment
- Special tanks available upon request

For a fully detailed certified drawing, refer to CDF #1023.

Physical Data—Standard Design Model VAFT

Model No.	AFT-6		AFT-8		AFT-12		AFT-16	
	in	mm	in	mm	in	mm	in	mm
A	36	914	36	914	40	1,016	48	1,219
B	21	533	21	533	23	584	26	660
C	9-1/2	241	9-1/2	241	9-1/2	241	9-1/2	241
D	51	1,295	52	1,321	55-3/8	1,407	63-1/2	1,613
E	36	914	36	914	40	1,016	48	1,219
F	6	150	8	203	12	305	16	406
G	2	50	3	80	4	102	6	150
H	2-1/2	65	4	102	6	150	6	150
I	1-1/2	40	1-1/2	40	2	50	2	50
J	3/4	20	1	25	1-1/2	40	2	50
K	1/2	15	1/2	15	1/2	15	1/2	15

NOTE: Connections “G” and “H” are 150 lb. flanges. All others are NPT. All flash tanksare ASME coded for 150 psig (10 bar). Special sizes available upon request.

Flash Steam Savings Analysis

Part I: Determining the amount of flash steam produced

A. Condensate Load — A = _____ lb/hr.

B. Annual hours of operation — B = _____ hrs/yr.

C. Steam Cost — C = _____ $/1,000 lbs.

D. Flash steam percentage from chart (on page 264) — D = _____ %

E. Flash steam produced:

D x A = flash steam produced — E = _____ lb/hr.

Part II: Determining dollar value of the flash steam

F. Annual flash steam savings:

$$F = \frac{E \times B \times C}{1{,}000}$$

F = _____ $/yr.

Capacities—Standard Design Model VAFT

Model No.	Maximum Condensate Load		Maximum Flash Load	
	lb/hr	kg/hr	lb/hr	kg/hr
AFT-6	2,000	907	500	227
AFT-8	5,000	2,268	1,000	454
AFT-12	10,000	4,536	2,000	907
AFT-16	20,000	9,072	3,000	1,361

Flash Recovery Vessels

How much flash steam is available?

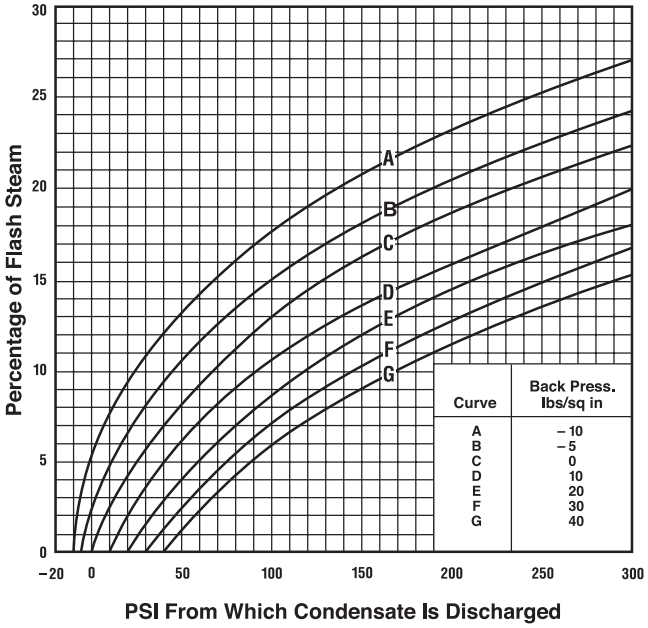
1. Follow horizontal axis right to primary discharge pressure.
2. Follow vertically up to secondary pressure curve.
3. Move left to “Percentage of flash steam.”

Example:
Condensate load = 10,000 lb/hr
Primary pressure = 100 psig
Secondary pressure = 10 psig

Percentage of flash = 10.6%
Secondary steam load = 1,060 lb/hr
(10,000 lb/hr x .1060 = 1,060 lb/hr)

Selection:
Model AFT-12

Percentage of Flash Steam Formed When Discharging Condensate to Reduced Pressure



Application Information

A. Condensate Load to Flash Tank **6,000** lb/hr
B. Pressure of Incoming Condensate **100** psig
C. Flash Tank Pressure **20** psig
D. Flash Percentage **9.5**%
E. Flash Amount = A x (D/100) = **570** lb/hr
F. Low Pressure Steam Required **2,500** lb/hr
G. High Pressure Steam **200** psig
H. Back Pressure **5** psig

Flash tank will accommodate (A) **6,000** lb/hr of condensate at (B) **100** psig, resulting in (E) **570** lb/hr of flash steam at (C) **20** psig. The flash tank shall be Armstrong Model AFT-12.

The back pressure regulator shall pass (E) **570** lb/hr of steam from (C) **20** psig to atmosphere. The back pressure regulator shall be Armstrong Model **1" GP-2000R.**

The pressure reducing valve shall pass (F) **2,500** lb/hr of steam from (G) **200** psig to (C) **20** psig. Pressure reducing valve shall be **3/4" GP-2000.**

The steam trap shall be an inverted bucket type with large vent and internal check valve. The steam trap will be sized using a 3:1 safety factor. The steam trap shall pass 3 x (A - E) **16,290** lb/hr at a (C - H) **15** psi differential. The steam trap shall be an Armstrong Model **2" 816 CV.**