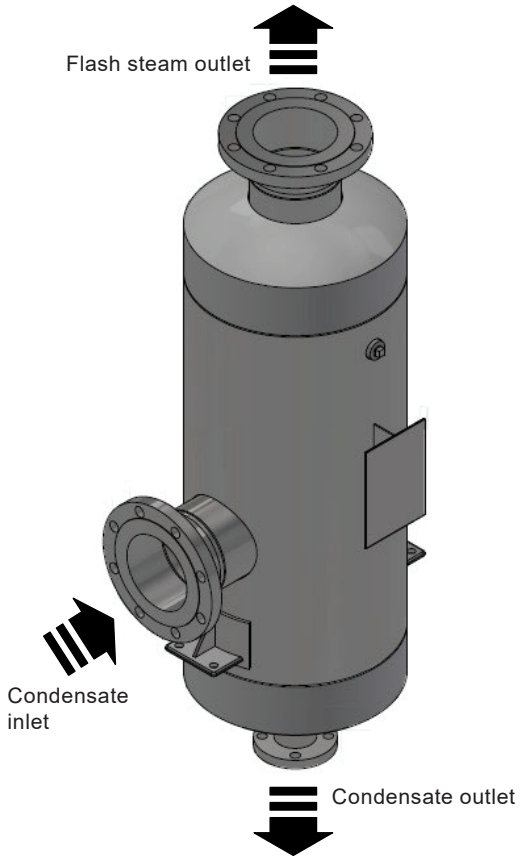
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In the interests of development and improvement of the product, we reserve the right to change the specification without notice. © Copyright 2026

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	190 psi g
Sizes	6", 8", 12", 16", 24"
Connections	ANSI 150 RF
Construction	304 Stainless Steel



Standards

These vessels are designed in accordance with ASME Code, Section VIII, Div. 1, and CSAB51 are stamped for 190 psig steam service.

Part number nomenclature:

- **FV** = Flash Vessel
- **Vessel Size** = 6", 8", 12", 16", 24"
- **NA** = North America
- **SS** = Stainless Steel
- **US** = National Board Registered
- **CA** = Canadian CRN Registered

Examples:

FV6NASS-US	FV	Vessel Size	NA	SS	US
	FV	6	North America	Stainless Steel	National Board

FV6NASS-CA	FV	Vessel Size	NA	SS	CA
	FV	6	North America	Stainless Steel	CRN

Installation

The vessel should be installed with the flash steam outlet at the top as shown above.
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.

Limiting operating conditions

Maximum operating pressure (PMO) 190 psi g (13.1 bar g)

Maximum operating temperature 400 °F (204.4 °C)

Sample specification

Flash Recovery Vessel shall be 304 Stainless construction ASME Code Stamped for 190 psig steam service with ANSI 150 RF flanges. Connections for a pressure gauge and a Safety Relief Valve shall be provided in the shell.

How to size

Use Table 1 (on page 3) to determine the amount of flash steam generated from hot pressurized condensate at the selected recovery pressure.

1. Using Table 1, determine the amount of flash steam produced per pound of condensate for the applicable pressure drop.
2. Multiply the condensate load by the flash steam factor to calculate the flash steam flow rate.
3. Using Table 2 (on page 4), select the smallest Flash Recovery Vessel with a capacity equal to or greater than the calculated flash steam flow at the desired recovery pressure.

Table 1 - Percent Flash Steam

Percent flash for various initial steam pressures and flash tank pressures.

Steam	Flash Tank Pressure										
Pressure (psi g)	**Atmosphere 0**	**2**	**5**	**10**	**15**	**20**	**30**	**40**	**60**	**80**	**100**
5	1.7	1.0	0								
10	2.9	2.2	1.4	0							
15	4.0	3.2	2.4	1.1	0						
20	4.9	4.2	3.4	2.1	1.1	0					
30	6.5	5.8	5.0	3.8	2.6	1.7	0				
40	7.8	7.1	6.4	5.1	4.0	3.1	1.3	0			
60	10.0	9.3	8.6	7.3	6.3	5.4	3.6	2.2	0		
80	11.7	11.1	10.3	9.0	8.1	7.1	5.5	4.0	1.9	0	
100	13.3	12.6	11.8	10.6	9.7	8.8	7.0	5.7	3.5	1.7	0
125	14.8	14.2	13.4	12.2	11.3	10.3	8.6	7.4	5.2	3.4	1.8
160	16.8	16.2	15.4	14.1	13.2	12.4	10.6	9.5	7.4	5.6	4.0
200	18.6	18.0	17.3	16.1	15.2	14.3	12.8	11.5	9.3	7.5	5.9
250	20.6	20.0	19.3	18.1	17.2	16.3	14.7	13.6	11.2	9.8	8.2
300	22.7	21.8	21.1	19.9	19.0	18.2	16.7	15.4	13.4	11.8	10.1
350	24.0	23.3	22.6	21.6	20.5	19.8	18.3	17.2	15.1	13.5	11.9
400	25.3	24.7	24.0	22.9	22.00	21.1	19.7	18.5	16.5	15.0	13.4

Example Condensate Pressure: **100 psi g**

Flash Tank Pressure: **20 psi g**

Condensate Load: **8,000 lb/h**

% Flash steam: **8.8% from chart**

Decimal Equivalent % Flash steam: 0.088

0.088 X 8000 = 704 lb/h of flash steam

Therefore, select: **FV8NA Flash Recovery Vessel**

Table 2 - Flash Vessels Selection Guide

Model	Connections	Vessel	0 psi g	5 psi g	10 psi g	15 psi g	20 psi g
	Inlet X Flash Steam Outlet	Diameter Vessel	Pressure Vessel	Pressure Vessel	Pressure Vessel	Pressure Vessel	Pressure Vessel
FV6NA	2 x 2½ in	6 in	295	390	480	570	660
FV8NA	3 x 4 in	8 in	505	670	825	980	1,135
FV12NA	4 x 6 in	12 in	1,120	1,480	1,825	2,165	2,512
FV16NA	6 x 6 in	16 in	1,780	2,355	2,900	3,445	3,994
FV24NA	8 x 8 in	24 in	4,030	5,330	6,560	7,790	9,036

Example:
A plant operating at 80 psig condenses 6000 lb/h of steam. Flash steam from this is to be recovered at 5 psi g.

Table 1 (on previous page) shows that the condensate at 80 psi g produces approximately 0.103 lb of flash steam per lb of condensate when the pressure is dropped to 5 psi g.

From 6000 lb/h of condensate, 618 lb/h of flash steam will be produced.

From Table. 2 at 5 psi g, FV8NA is rated for 670 lb/h, so select FV8NA for this duty.

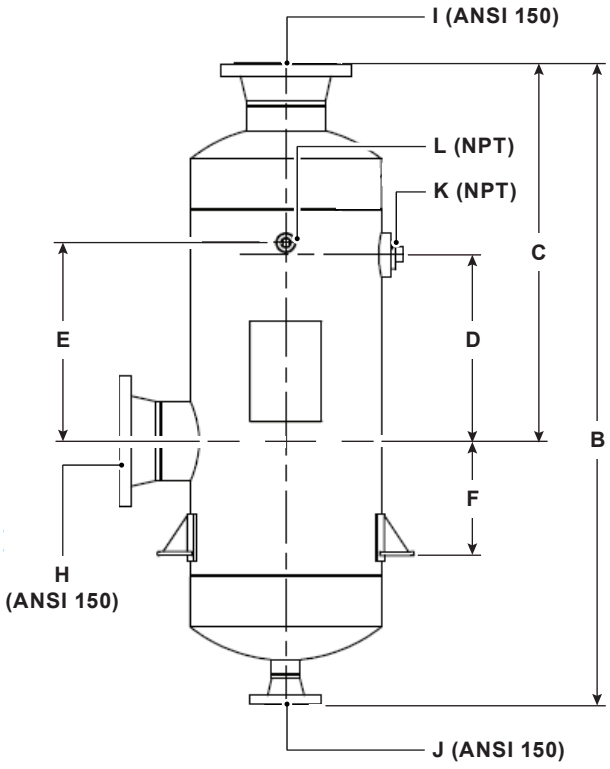
Dimensions/weights (approximate) in inches (mm) and lbs (kg)

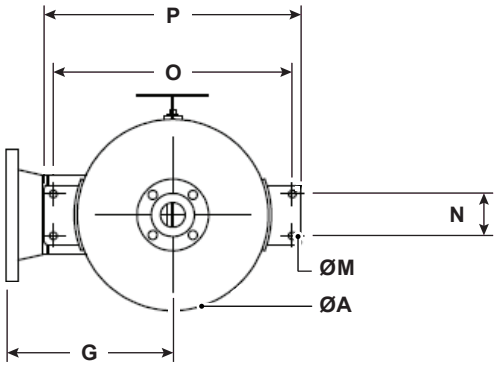
Model	ØA		B		C	
	inches	mm	inches	mm	inches	mm
FV6NA	6	168.0	41.50	1054.1	25.70	652.8
FV8NA	8	219.0	45.00	1143.0	25.90	657.9
FV12NA	12	324.0	49.75	1263.7	26.40	670.6
FV16NA	16	406.0	53.70	1364.0	31.60	802.6
FV24NA	24	406.0	68.40	1737.4	38.60	980.4

Model	D		E		F	
	inches	mm	inches	mm	inches	mm
FV6NA	15.75	400.1	15.75	400.1	7.75	196.9
FV8NA	14.50	368.3	14.50	368.3	9.25	235.0
FV12NA	11.50	292.1	11.50	292.1	11.00	279.4
FV16NA	15.60	396.2	16.60	421.6	9.60	243.8
FV24NA	16.00	406.4	16.00	406.4	11.25	285.8

Model	G		H		I	
	inches	mm	inches	mm	inches	mm
FV6NA	7.00	177.8	2	DN 50	2½	DN65
FV8NA	8.00	203.2	3	DN 80	4	DN100
FV12NA	10.00	254.0	4	DN 100	6	DN150
FV16NA	14.00	355.6	6	DN 150	6	DN150
FV24NA	20.00	508.0	8	DN 200	8	DN200

Model	J		K		L	
	inches	mm	inches	mm	inches	mm
FV6NA	1½	DN 40	¾	DN 20	½	DN15
FV8NA	1½	DN 40	1	DN 25	½	DN15
FV12NA	2	DN 50	1½	DN 40	½	DN15
FV16NA	2	DN 50	2	DN 50	½	DN15
FV24NA	2	DN 50	2½	DN 65	½	DN15





Model	ØM		N		O		P		Weight	
	inches	mm	inches	mm	inches	mm	inches	mm	lbs	kg
FV6NA	½	12.7	2.50	63.5	10.63	270.0	12.13	308.1	90	40.8
FV8NA	⅝	15.9	2.50	63.5	12.63	320.8	14.13	358.9	150	68.0
FV12NA	⅝	15.9	3.75	95.3	16.75	425.5	18.25	463.6	280	127.0
FV16NA	⅝	15.9	3.50	88.9	20.00	508.0	21.50	546.1	435	197.3
FV24NA	1	25.4	7.00	177.8	30.50	774.7	32.50	825.5	1035	469.5