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| **FLASH SEPARATORS   Sizing, Selection, and Dimensions** |
| lash Separators   |  |  |  | | --- | --- | --- | | **"I"** | **Inlet** | **Specify Size to Match Return or Blowdown Line Size** | | **"H"** | **Height** | **34" - 56" - 72" - 96" - 108"** | | **"DIA"** | **Outside Diameter** | **6.625" - 8.625" - 10.75" - 14" - 16" - 18" - 20" - 24" - 30" - 36"** | | **"D"** | **Drain** | **1" - 1 1/4" - 1 1/2" - 2" - 2 1/2" - 3" - 4" - 5"** | | **"V"** | **Vent** | **2" - 2 1/2" - 3" - 4" - 5" - 6" - 8" - 10" - 12" - 14" - 16" - 18"** | | **"PL"** | **Plate  Thickness** | **Std. Wt. - 5/16" - 3/8"** | |
| **Flash Separators are sized for the condensate flow entering the tank and the amount of flash steam that is produced when venting to a lower pressure. To select a flash separator use Chart "A" to determine the flash steam amount and Chart "B" that gives the size of tank and nozzle connections sizes required.  CHART "A" - PERCENTAGE FLASH STEAM**   To use Chart A follow the "PRESSURE FROM" (horizontal at the top) down vertically to the "FLASH TO" pressure. All pressures are in psig.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | ***PRESSURE FROM PSIG*** | | | | | | | | | | | | | | | | ***F L A S H  T O  P S I G*** |  | **600** | **500** | **450** | **400** | **350** | **300** | **250** | **200** | **150** | **100** | **75** | **50** | **25** | | **500** | 2.8 |  |  |  |  |  |  |  |  |  |  |  |  | | **400** | 5.8 | 3.1 | 1.3 |  |  |  |  |  |  |  |  |  |  | | **350** | 7.5 | 4.8 | 3.0 | 1.8 |  |  |  |  |  |  |  |  |  | | **300** | 9.2 | 6.6 | 4.8 | 3.6 | 1.9 |  |  |  |  |  |  |  |  | | **250** | 11.1 | 8.5 | 6.8 | 5.6 | 3.9 | 2.1 |  |  |  |  |  |  |  | | **225** | 12.2 | 9.7 | 8.0 | 6.8 | 5.1 | 3.3 | 1.2 |  |  |  |  |  |  | | **200** | 13.3 | 10.8 | 9.1 | 7.9 | 6.2 | 4.4 | 2.4 |  |  |  |  |  |  | | **175** | 14.4 | 11.9 | 10.3 | 9.1 | 7.4 | 5.7 | 3.7 | 1.3 |  |  |  |  |  | | **150** | 15.7 | 13.2 | 11.6 | 10.4 | 8.8 | 7.0 | 5.0 | 2.7 |  |  |  |  |  | | **125** | 17.1 | 14.6 | 13.0 | 11.9 | 10.3 | 8.5 | 6.6 | 4.3 | 1.6 |  |  |  |  | | **100** | 18.6 | 16.2 | 14.6 | 13.5 | 11.9 | 10.2 | 8.3 | 6.0 | 3.4 |  |  |  |  | | **75** | 20.3 | 18.0 | 16.4 | 15.3 | 13.7 | 12.1 | 10.2 | 7.9 | 5.4 | 2.0 |  |  |  | | **50** | 22.6 | 20.3 | 18.8 | 17.7 | 16.1 | 14.5 | 12.6 | 10.4 | 7.9 | 4.6 | 2.6 |  |  | | **25** | 25.4 | 23.1 | 21.6 | 20.6 | 19.1 | 17.5 | 15.6 | 13.5 | 11.0 | 7.8 | 5.9 | 3.3 |  | | **15** | 26.9 | 24.7 | 23.2 | 22.1 | 20.6 | 19.0 | 17.2 | 15.1 | 12.7 | 9.5 | 7.6 | 5.1 | 1.8 | | **10** | 27.8 | 25.6 | 24.2 | 23.1 | 21.6 | 20.1 | 18.3 | 16.2 | 13.8 | 10.6 | 8.7 | 6.2 | 2.9 | | **5** | 28.9 | 26.7 | 25.2 | 24.2 | 22.7 | 21.1 | 19.4 | 17.3 | 14.9 | 11.8 | 9.9 | 7.4 | 4.2 | | **0** | 30.2 | 28.0 | 26.6 | 25.6 | 24.1 | 22.6 | 20.8 | 18.8 | 16.4 | 13.3 | 11.4 | 9.0 | 5.8 | |
| |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | ***LBS/HR Condensate*** | ***LBS/HR FLASH STEAM*** | | | | | | | | | | | | | | **100** | **500** | **700** | **1000** | **2000** | **3000** | **4000** | **8000** | **12000** | **18000** | **21000** | **25000** | **35000** | | |  |  | | --- | --- | | **100,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 108 30 5 2 | 108 30 5 2 | 108 30 5 2 1/2 | 108 30 5 3 | 108 30 5 4 | 108 30 5 5 | 108 30 5 6 | 108 30 5 8 | 108 30 5 10 | 108 30 5 12 | 108 30 5 14 | 108 36 5 16 | 108 36 4 18 | | |  |  | | --- | --- | | **90,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 96 30 5 2 | 96 30 5 2 | 96 30 5 2 1/2 | 96 30 5 3 | 96 30 5 4 | 96 30 5 5 | 96 30 5 6 | 96 30 5 8 | 96 30 5 10 | 96 30 5 12 | 96 30 4 14 | 96 36 4 16 | 96 36 4 18 | | |  |  | | --- | --- | | **80,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 96 24 5 2 | 96 24 5 2 | 96 24 5 2 1/2 | 96 24 5 3 | 96 24 5 4 | 96 24 5 5 | 96 24 5 6 | 96 24 5 8 | 96 24 4 10 | 96 24 4 12 | 96 30 4 14 | 96 36 4 16 | 96 36 4 18 | | |  |  | | --- | --- | | **70,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 72 24 4 2 | 72 24 4 2 | 72 24 4 2 1/2 | 72 24 4 3 | 72 24 4 4 | 72 24 4 5 | 72 24 4 6 | 72 24 4 8 | 72 24 4 10 | 72 24 4 12 | 72 30 4 14 | 72 36 4 16 | 72 36 4 18 | | |  |  | | --- | --- | | **60,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 56 24 4 2 | 56 24 4 2 | 56 24 4 2 1/2 | 56 24 4 3 | 56 24 4 4 | 56 24 4 5 | 56 24 4 6 | 56 24 4 8 | 56 24 4 10 | 56 24 4 12 | 56 30 4 14 | 56 36 4 16 |  | | |  |  | | --- | --- | | **50,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 72 20 4 2 | 72 20 4 2 | 72 20 4 2 1/2 | 72 20 4 3 | 72 20 4 4 | 72 20 4 5 | 72 20 4 6 | 72 20 4 8 | 72 20 4 10 | 72 24 4 12 | 72 30 3 14 | 72 36 3 16 |  | | |  |  | | --- | --- | | **40,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 56 20 4 2 | 56 20 4 2 | 56 20 4 2 1/2 | 56 20 4 3 | 56 20 4 4 | 56 20 4 5 | 56 20 4 6 | 56 20 4 8 | 56 20 3 10 | 56 24 3 12 | 56 30 3 14 |  |  | | |  |  | | --- | --- | | **30,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 56 18 3 2 | 56 18 3 2 | 56 18 3 2 1/2 | 56 18 3 3 | 56 18 3 4 | 56 18 3 5 | 56 18 3 6 | 56 18 3 8 | 56 20 3 10 | 56 24 2 1/2 12 |  |  |  | | |  |  | | --- | --- | | **20,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 56 14 2 1/2 2 | 56 14 2 1/2 2 | 56 14 2 1/2 2 1/2 | 56 16 2 1/2 3 | 56 16 2 1/2 4 | 56 16 2 1/2 5 | 56 16 2 1/2 6 | 56 16 2 1/2 8 | 56 20 2 10 |  |  |  |  | | |  |  | | --- | --- | | **10,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 34 14 2 2 | 34 14 2 2 | 34 14 2 2 1/2 | 34 14 2 3 | 34 14 2 4 | 34 14 2 5 | 34 14 2 6 | 56 16 1.5 8 |  |  |  |  |  | | |  |  | | --- | --- | | **5,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 34 10 1 1/2 2 | 34 10 1 1/2 2 | 34 10 1 1/2 2 1/2 | 34 10 1 1/2 3 | 34 14 1 1/2 4 | 34 14 1 1/2 5 | 34 14 1 1/2 6 |  |  |  |  |  |  | | |  |  | | --- | --- | | **3,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 34 10 1 1/4 2 | 34 10 1 1/4 2 | 34 10 1 1/4 2 1/2 | 34 10 1 1/4 3 | 34 14 1 1/4 4 |  |  |  |  |  |  |  |  | | |  |  | | --- | --- | | **2,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 34 8 1 1/4 2 | 34 8 1 1/4 2 | 34 8 1 2 1/2 | 34 10 1 3 |  |  |  |  |  |  |  |  |  | | |  |  | | --- | --- | | **1,000** | HEIGHT | | DIA. | | DRAIN | | VENT | | 34 6 1 2 | 34 8 1 2 | 34 8 1 2 1/2 |  |  |  |  |  |  |  |  |  |  |   **CHART "B" - SIZING FOR FLASH SEPARATOR**  To use Chart B select the Flash Separator by finding the flash amount across the top and going down to the total condensate flow rate entering the separator shown on the left side of the chart. |
| The drain and vent sizes listed in Chart "B" are based on atmospheric operating conditions. When the flashing to pressure is above atmospheric pressure, smaller drain and vent sizes can be used. The drain size in no case should be smaller then the trap connection size. To determine the minimum vent size use the following formula:  . http://www.pennseparator.com/sqrt.gif  Where: Dia. Equals the minimum diameter of vent (inches) F The amount of flash steam in lbs./hour  SV Is the specific volume of steam (cu. Ft/lbs.) |

**FLASH SEPARATOR**

**SUGGESTED SPECIFICATIONS**

Furnish and install as shown on plans a Vertical Cyclone Flash Separator Model No. FS\_\_\_\_\_\_ " Dia.- \_\_\_\_\_\_" Height, as selected for a condensate flow rate of \_\_\_\_\_\_#/hr. at \_\_\_\_\_\_ psig flashing to a pressure of \_\_\_\_\_\_ psi. The nozzels also selected for the flow rate shall include a \_\_\_\_\_\_" tangential inlet with stainless steel wear plate to match the condensate line size, a \_\_\_\_\_\_" water leg overflow type condensate drain, and a \_\_\_\_\_\_" centrally located steam vent to prduce 97% quality flash steam. The tank shall include coupling connections for a level gauge, inspection openings and tank cleanout. Materials and locations per our spec print C-4B.

Optional accessories that can be provided include an External Float Level Controller with a Pneumatic or Mechanical Control Valve or Armstrong Trap Model No. \_\_\_\_\_\_ properly sized for the condensate drain flow rate, inlet Check Valves (list sizes) as required for multiple inlets at various pressures, tank Clean-Out Ball Valve, Safety Valve to protect the tank from over-pressurizing or to maintain a maximum venting pressure, Pressure Gauge with Iron Siphon, Industrial Type Thermometer.

Optional Supports include Angle Legs with Floor pads. Three legs are provided on 24" diameter separators and smaller and four legs are provided on larger separators. Special mounting bracket designs are also available