
Operation

When hot condensate drops in pressure as it passes through a steam trap, a proportion flashes off into steam. This mixture of steam and condensate can be separated in the flash vessel into useful low pressure steam and condensate. The low pressure steam may be used for heating, tank heating etc. and can often be regarded as free energy. The condensate is returned to the boilerhouse in the normal way by gravity, under its own pressure or by a condensate return pumping system.

A flash steam recovery system can recover waste flash steam from condensate and often pays for itself in months.

Flash vessels are available in a range of standard sizes to suit most applications. We also design and make specials.

Gestra can survey your steam system, calculate the potential cost savings and propose a complete energy saving package.

Ask us for a free survey to assess the potential for condensate flash steam recovery.

- **Complete sets of equipment are available from Gestra. Other items which can help make up the system include a pressure reducing valve, non-return valve for the flash steam line and a condensate return pumping system.**

GESTRA Steam Solutions

FCD GSEDS0049-01 Issued 03/06

Replaces CD.8.3.5 Issued 07/97

Calculating the cost saving

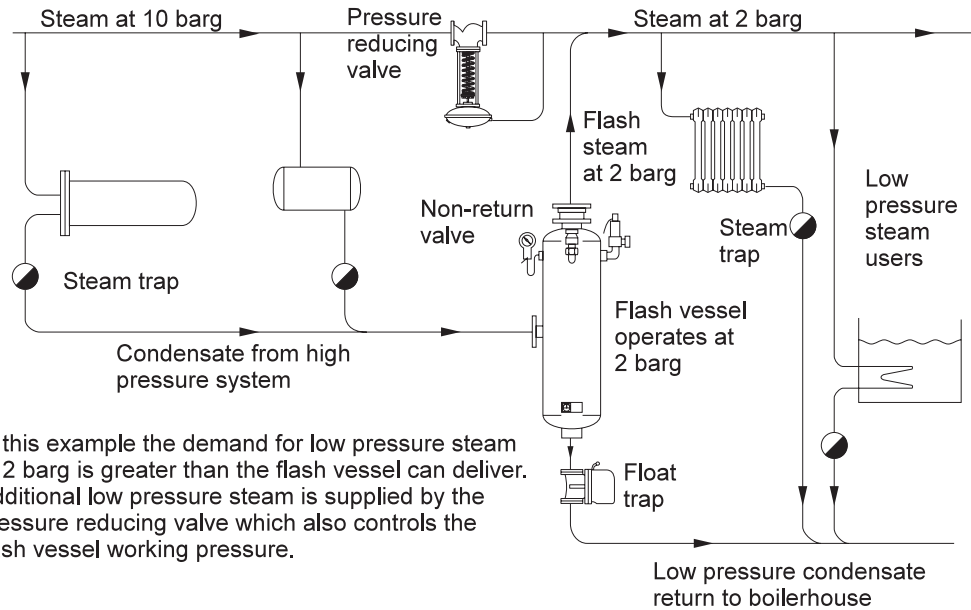
In the above system if 2000 kg/h of steam is used on average by the high pressure users, some 200 kg/h (or 10%) of low pressure flash steam is produced. In a 40 hour week with steam costing say £8 per 1000kg, the cost savings per year amount to £3,200.

The pressure drop from the high to the low pressure system in this example is from 10 barg to 2 barg. This produces a relatively high percentage of flash steam and the 2 barg back pressure imposed on the high pressure system is unlikely to affect the condensate drainage. Raising the flash vessel working pressure to 5 barg for example would halve the quantity of flash steam produced, and may adversely affect the condensate drainage.

Flash Vessel

Carbon steel pressure vessel with dished ends and internal stainless steel wear plate.
 Designed to BS5500 as required by pressure systems regulations for a maximum working pressure of 14 barg (203 psig).
 Please specify construction category required under BS5500.

Typical Installation



In this example the demand for low pressure steam at 2 barg is greater than the flash vessel can deliver. Additional low pressure steam is supplied by the pressure reducing valve which also controls the flash vessel working pressure.

Flash Vessel Dimensions

Flash Vessel type FV	100	250	500	750	1000	1500	2000
Inlet A	20mm	25mm	32mm	40mm	50mm	50mm	65mm
Outlet B	1½"	2"	80mm	100mm	100mm	150mm	150mm
Drain C	½"BSP	1¼"BSP	1½"BSP	1½"BSP	1½"BSP	65mm	65mm
Relief Valve E	½"BSP	¾"BSP	1"BSP	1½"BSP	1½"BSP	1½"BSP	2"BSP
Dimension H mm	800	975	1250	1450	1460	1480	1505
Dimension W mm	235	290	340	395	445	475	600

Larger flash vessels or vessels with special connection sizes are available to order.

