



**3C.500-E**  
 Issue 4.1 - 2016

## RV type Flash Vessels

### Description

The energetic efficiency of a steam plant or of one of its sections can be easily increased and optimised simply recovering the flash steam produced during the discharge of the condensate.

It is for this reason that every modern steam plant must be equipped with one or more recovery sections for the flash steam.

Steam traps discharge the condensate from a pressurized system to another having a lower pressure; during the changeover, due to an unavoidable physical law, part of the high temperature condensate is reverted to steam that have exactly the same characteristics of the steam produced by boilers. From here the convenience and the logical consequence of arranging the recovery and the use of the flash steam by means of flash systems, including flash vessels and related accessories.

The system will amortize the whole cost of the equipment in a very short time, producing afterwards an economical recovery by a free of cost energy saving.

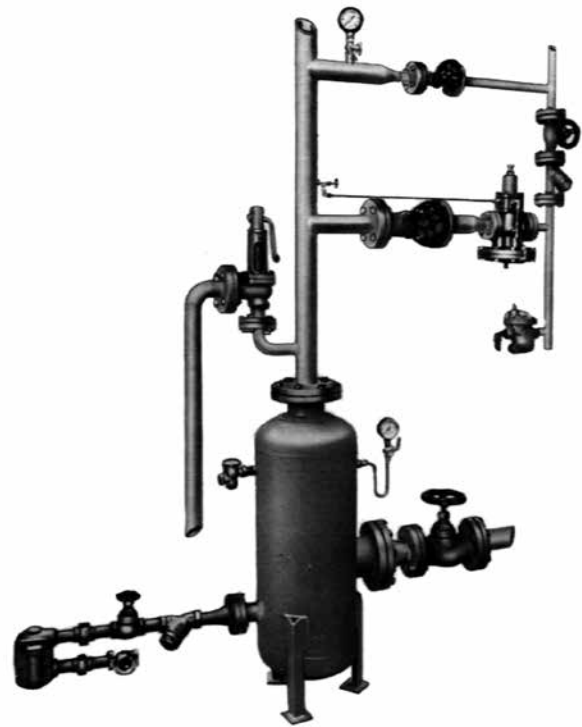
### Standards

The RV flash vessels, standard construction or specifically engineered on project, are designed and constructed according to the requirements of the European Pressure Equipment Directive 2014/68/EU.

### Certification

The RV flash vessels are available with material certification to EN 10204 3.1.

**Note:** All certification / inspection requirements must be stated at the time of order placement.



**Fig. 1** - Plant section for the flash steam recovery by means of RV flash vessel and related accessories: steam traps, strainers, sight glasses, pressure control, safety valve, air vent, pressure gauge, stop valves.

### Technical features

Models	RV 6 - RV 8 - RV 12 - RV 15 - RV S on design	
Fluids	Steam - Condensate	
Materials	Quality carbon steel sheet - Fabricated execution - External heat resistant paint	
Execution	25 bar g @ 250°C	
Cold hydraulic test	37,5 bar g	
Plant connections	Flanged EN 1092 PN 40	
Accessories connections	Screwed gas ISO 7/1 Rp	
CE Mark Category Gas and Liquid Group 2	Type RV 6	Category 2
	Type RV 8	Category 2
	Type RV 12	Category 3
	Type RV 15	Category 3
	Type RV S	To be defined

### How to size

Use the chart below to select the appropriate size flash vessel. It is necessary to know the pressure on the condensate at the steam traps discharge from the high pressure section of the plant or the boiler pressure in the case of blowdown heat recovery, the flash steam pressure (desired or already existing) and the condensate or blowdown flowrate.

See the two sizing examples indicated on the graph below.

#### Example 1 (solid lines):

A boiler plant operating at 12 bar g has a TDS control blowdown flowrate of 2500 kg/h (3 boilers at 833 kg/h each). The flash steam from the blowdown is to be added to the low pressure steam system operating at 1 bar g.

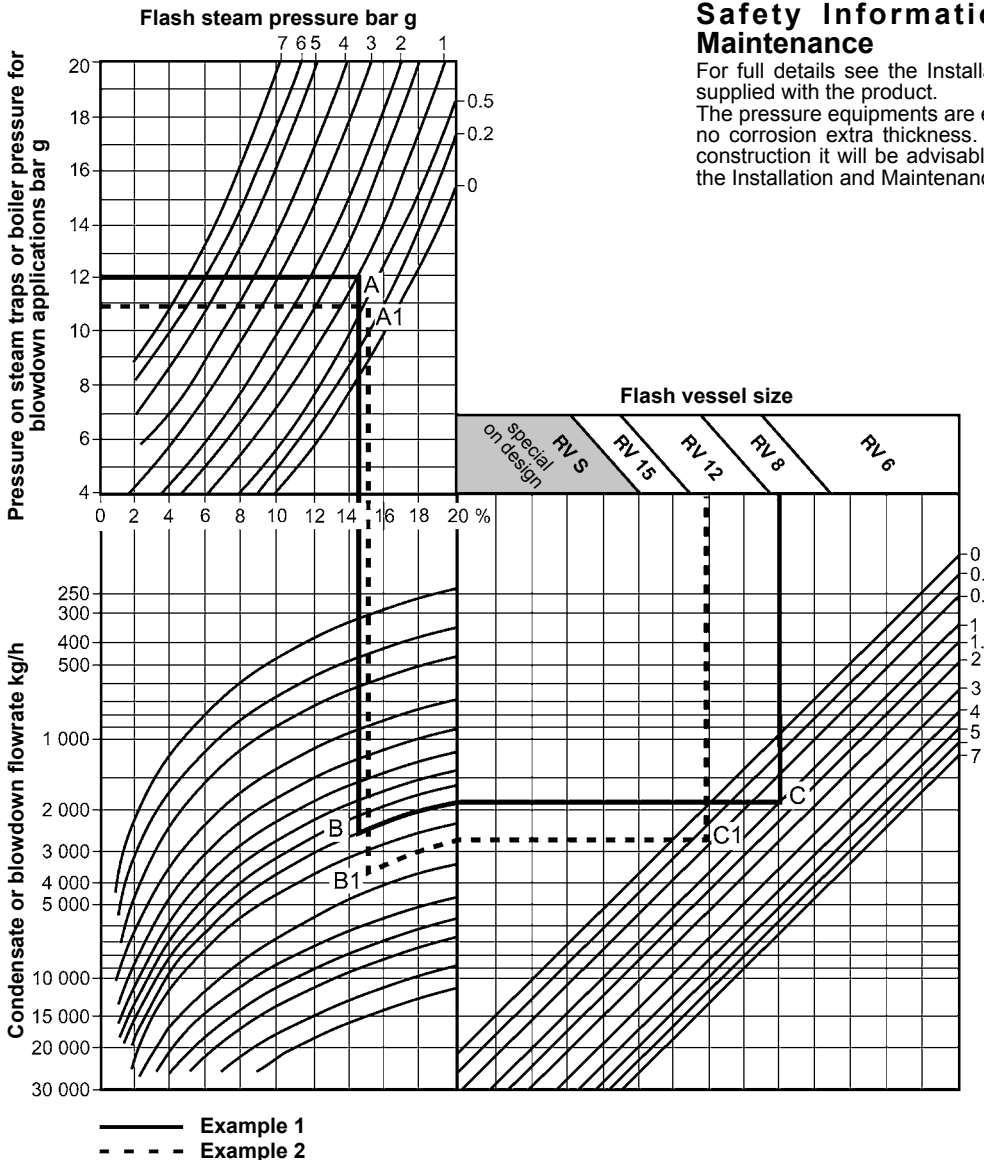
1. From boiler pressure move horizontally to flash steam pressure - **A**
2. Drop vertically to blowdown flowrate in kg/h - **B**

3. Follow curve to right-hand scale and across to same flash pressure - **C**
4. Move upwards to flash vessel size. Select flash vessels - in this case an **RV 8** is required.

#### Example 2 (dotted lines):

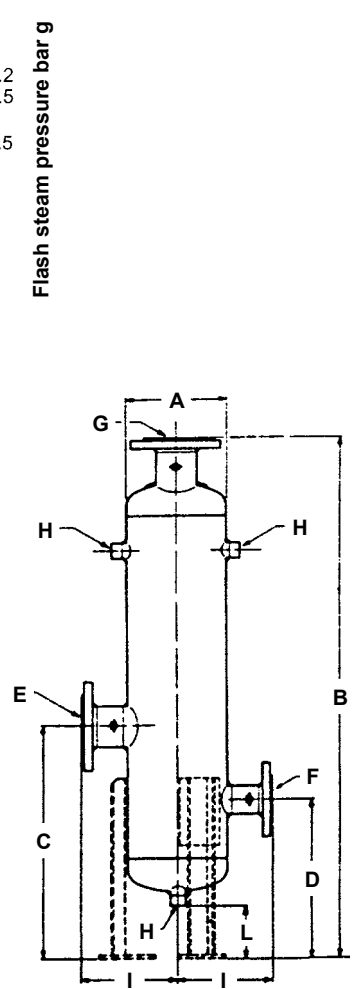
A plant operating on steam at 11 bar g condenses 4000 kg/h of steam. Flash is to be recovered at 0,5 bar g:

1. From pressure on steam traps move horizontally to flash steam pressure - **A1**
2. Drop vertically to condensate flowrate in kg/h - **B1**
3. Follow curve to right hand scale and across to same flash pressure - **C1**
4. Move upwards to flash vessels size. Select flash vessel - in this case an **RV 12** is required.



### Safety Information, Installation and Maintenance

For full details see the Installation and Maintenance Instructions supplied with the product. The pressure equipments are engineered taking into consideration no corrosion extra thickness. To evaluate the full integrity of the construction it will be advisable to follow the recommendations in the Installation and Maintenance Instructions manual.



### Dimensions in mm and weights in kg (approximate)

Type	A	B	C	D	E (DN)	F (DN)	G (DN)	H	I	L	Weight
RV 6	168	1137	510	343	65	40	50	1/2"	184	120	40
RV 8	219	1151	515	350	80	50	80	1/2"	210	120	65
RV 12	323	1219	562	397	100	50	80	1/2"	262	120	90
RV 15	408	1354	630	425	150	50	125	1/2"	307	120	112
RV S	To be defined according to specific projects										