



## INSTALLATION AND MAINTENANCE INSTRUCTIONS RV FLASH VESSELS

### GENERAL

- These instructions must be carefully read before any work involving products supplied by VALSTEAM ADCA ENGINEERING S.A. is undertaken.
- The installation procedure is a critical stage in the life of equipment, so care should be taken to avoid any damage.
- The flash vessel is the main component in any flash recovery system. It allows flash steam from high pressure condensate to be separated out, providing a low pressure steam supply, which has the same heat content as live steam at the same pressure.

### Note:

- Current regional safety regulations should be taken into account and followed, while doing the installation and maintenance work.
- Handling, installation and maintenance work must be carried out by trained personnel. A supervisor must follow and check all activities.
- For the problems that cannot be solved with the help of these instructions, please contact the supplier or the manufacturer.
- The manufacturer reserves the right to change the design and material of this product without notice.
- If necessary to perform hydrostatic test on the equipment/installation be aware of the limits according to the table below

LIMITING CONDITIONS **											
RV						RV/SS					
Rating	Press. bar	Temp. °C	Rating	Press. bar	Temp. °C	Rating	Press. bar	Temp. °C	Rating	Press. bar	Temp. °C
PN16	16	50	ANSI Cl.150 lbs	16	50	PN16	16	50	ANSI Cl.150 lbs	16	50
	14	100		14	100		16	100		16	100
	13 *	195		13 *	195		13 *	195		13 *	195
	12	250		-	-		12	250		-	-

\*PMO-Max.operating pressure for saturated steam. Minimum operating temp.: -10°C. Design code: AD-Merkblatt

\*\* Rating according to EN1092:2007.

LIMITING CONDITIONS		
RATING	Pressure bar	Related Temp. °C
EN PN16	16	120
	14	198
	13	250
ANSI150#	16	120
	14	198

GROUP 2 GASES CATEGORY		
RATING	SIZES	CATEGORY
EN PN16	RV06	2
	RV08	2
	RV12	3
	RV16	3
	RV18	3

PRESSURE TEST [bar] 20°C	
PN 16	22 bar

### CE Marking:

This product fully complies with the requirements of PED European Pressure Equipment Directive 97/23/CE and has been design for use with water, steam, air and other gases within group 2.

**ATTENTION**

- If malfunction of any other equipment or system operation failure may result in a dangerous overpressure, overtemperature or even vacuum condition, a safety device must be included in the system to prevent such situations. A safety valve socket connection is provided on the vessel. If the selection of the safety valve recommends the use of a valve connection bigger than that included on the vessel, then, we recommend it's installation as mentioned on fig.1.
- Do not touch the equipment without appropriate protection during working operation because it may conduct heat if the used fluid is at high temperature.
- Before starting maintenance be sure that the equipment is not pressurized or hot.
- If any of the socket connections is not being used, it must be closed with an appropriate carbon steel plug.
- The equipments must be used within the working temperature and pressure limits laid down for them, otherwise they may fail (refer to nameplate and/or IS- Information Sheet).
- Manual handling of products may present a risk of injury. You are advised to assess the risks taking into account the task, the individual, the load and the working environment.
- Do not remove the nameplate attached to the equipment. Serial number and other useful information is stamped on it.
- Do not apply the equipment for oxygen service, if it hasn't been specifically manufactured for that purpose.
- If the optional top vent connection is not being used, it must be closed with an appropriate carbon steel or stainless steel plug.
- During the assembly work, apply protective measures against dirt.
- When connecting flanges, the bolts should be mounted from the counter flange side with the hexagon nuts from the flash vessel side and it must exist a perfect match between the connection flanges.
- Tighten flange connection bolts uniformly in a diagonal sequence.
- Correct installation of the equipment is full responsibility of the contractor
- Flash vessels are designed to be applied in places protected from exposure to weather.
- We recommend special constructions or protective measures for applications on the outside or in adverse environments like corrosion-promoting conditions (sea water, chemical vapors, etc).

**TRANSPORT AND STORAGE****ATTENTION**

- Handling and lifting of materials should be made with adequate equipments.
- Do not damage the paint job. It protects against corrosion during transportation and storage.
- The flash vessel and equipments should be protected from impacts and forces during transportation and storage.
- The manufacturer doesn't assume the responsibility of damaged equipments due to inappropriate handling during the transportation and storage.

## INSTALLATION



### ATTENTION

- Account for over pressure conditions, according with the local laws or standards.
- Flash vessels must not be used with other purpose than the one they were built for (e.g. climbing aids or as connecting points for lifting gear).
- For the problems that cannot be solved with the help of these instructions, please contact the supplier or the manufacturer.

### Installation area requirements:

- The installation area should have easy access and provide enough space for maintenance and removing operations.
- The pipework before and after the flash vessel, must be sized in order to avoid that the max flow speed recommended, for the fluid in question, is exceeded.
- In order to allow installation and maintenance work without emptying the system, stop valves should be installed upstream and downstream of the flash vessel.
- If the system cannot be stopped for maintenance it is recommended that isolating valves are installed upstream and downstream of the flash vessel together with a by-pass manual regulating valve. The process can be then controlled manually during the flash vessel maintenance/changing. The by-pass must be kept close during the normal operation.
- The installation area should have the necessary firing system to prevent damage of the equipment due to over temperature/pressure cause by fire.

### Procedure:

- Prior to installation check that the product is suitable for the intended application: materials and pressure/temperature ratings.
- Before to installation remove plastic covers placed on flanges or connection ends. The equipment has an arrow or Inlet/Outlet designations. Be sure that it will be installed on the appropriate flow direction.
- External stresses that may be induced by the system doing to pipe expansion, etc, can affect this product. The necessary precautions are recommended during the system design and equipment assembly.
- The flash vessel must be installed on vertical position always with the flash steam outlet on the top. A float and thermostatic steam trap is recommended to automatically discharge the condensate. For detailed system design please consult factory and assembling instructions AS 9.703.
- External stresses that may be induced by the system due to pipe expansion, etc, can affect this product. The necessary precautions are recommended during the systems design and equipment assembly.
- The flash vessel pipework should be properly supported and free from strain and it should not be subjected to undue surges of pressure. The start-up condition should be considered.

## START UP



### ATTENTION

- Current regional safety regulations should be take into account and followed.
- Protective insulation and warning notice may be required.
- Until the start up of an existing or a new plant, the following must be checked:
  - All works are completed.
  - The flash vessel is correctly installed.
  - All the necessary safety devices (if applicable) have been installed.

### Procedure:

1. All stop valves should be closed.
2. Open slowly the stop valves, in order to avoid water hammer damaging, until the input pressure reaches its limit.
3. The flash vessel is ready.
4. The drain valve should be operated in order to guarantee that initial dirt accumulated during the assembling process is removed.

### Periodical checking:

- 24 hours after the start up, it is recommended to check the pipe connections for leaks and retighten the connections if necessary.

### MAINTENANCE

- The flash steam doesn't need any specific type of maintenance. Regular inspection may be recommended by local authorities according to specific or general pipe and/or vessels assembly procedures.
- When reassembling make sure that all gasket faces are clean and always use a new gasket. Tighten flange connection bolts uniformly in a diagonal sequence.
- Estimated lifetime under satisfactory working conditions: 5 years; after this period we recommend the wall thickness examination using appropriated inspection equipment. Poor quality water or corrosive fluids will reduce this period.

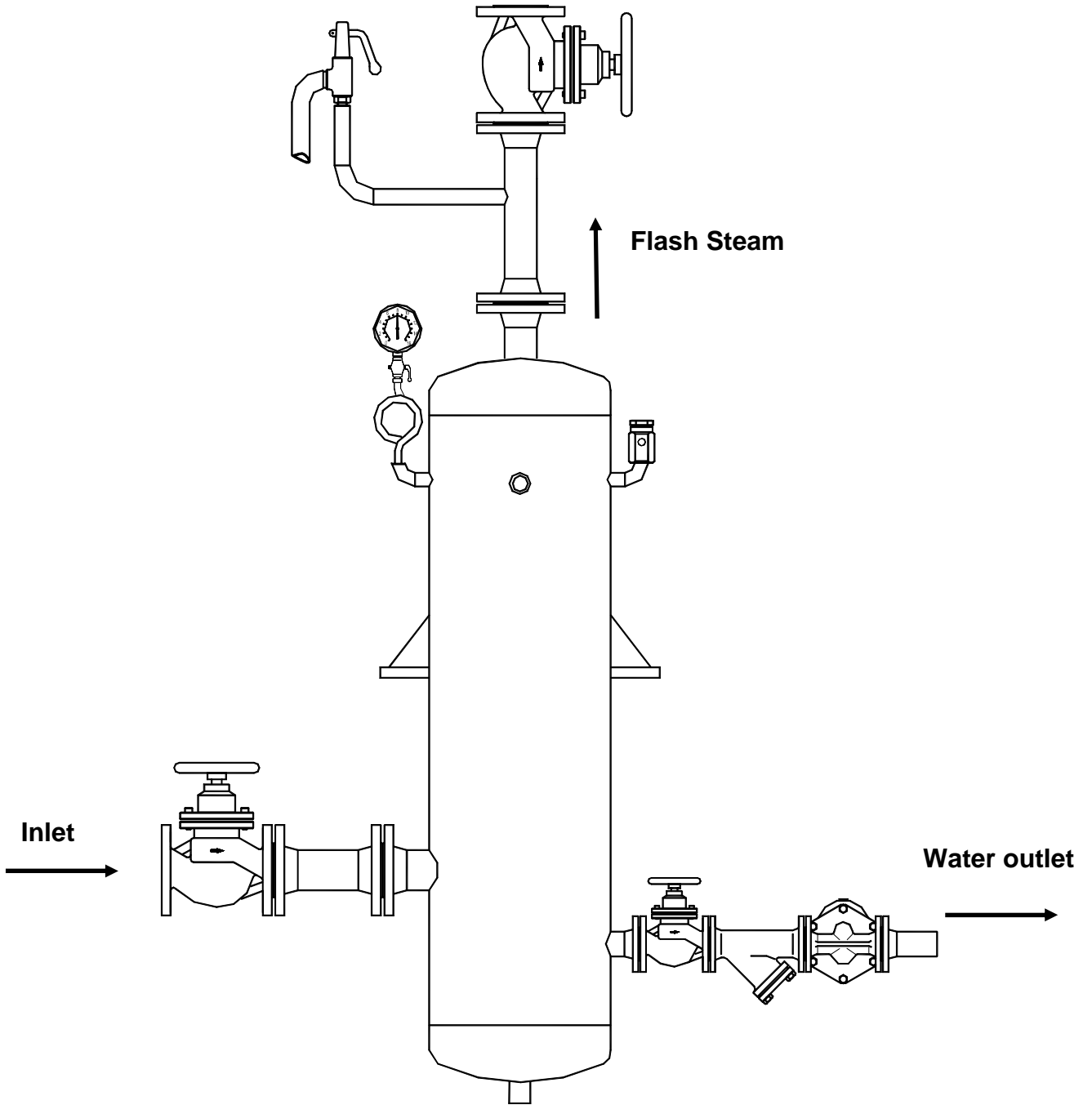


Fig.1

## PRODUCTS RETURNING



ATTENTION

- Information regarding any hazards and precautions to be considered because of contaminating fluids and residues or mechanical damage that may represent a health, safety or environmental risk, must be provided in writing by the distributors and costumers when returning products to Valsteam ADCA engineering.
- Health and safety data sheets regarding substances identified as hazardous or potentially hazardous must be provided with the information mention above.



ATTENTION

- **LOSS OF WARRANTY:** Total or partial disregard of above instructions involves loss of any right to warranty.