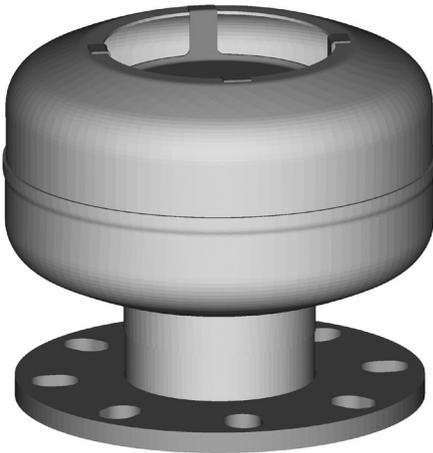


VHT
Vent Heads

Installation and Maintenance Instructions



1. Safety information
2. General product information
3. Installation
4. Commissioning
5. Operation
6. Maintenance
7. Spare parts

1. Safety information

Safe operation of these products can only be guaranteed if they are properly installed, commissioned, used and maintained by qualified personnel (see Section 1.11) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

1.1 Intended use

Referring to the Installation and Maintenance Instructions, name-plate and Technical Information Sheet, check that the product is suitable for the intended use/application. These products comply with the requirements of the European Pressure Equipment Directive 97/23/EC and fall within category 'SEP'.

It should be noted that products rated as 'SEP' are required by the Directive not to carry the  mark.

- i) The product has been specifically designed for use on steam, air or water/condensate which are in Group 2 of the above mentioned Pressure Equipment Directive. The products' use on other fluids may be possible but, if this is contemplated, Spirax Sarco should be contacted to confirm the suitability of the product for the application being considered.
- ii) Check material suitability, pressure and temperature and their maximum and minimum values. If the maximum operating limits of the product are lower than those of the system in which it is being fitted, or if malfunction of the product could result in a dangerous overpressure or overtemperature occurrence, ensure a safety device is included in the system to prevent such over-limit situations.
- iii) Determine the correct installation situation and direction of fluid flow.
- iv) Spirax Sarco products are not intended to withstand external stresses that may be induced by any system to which they are fitted. It is the responsibility of the installer to consider these stresses and take adequate precautions to minimise them.
- v) Remove protection covers from all connections and protective film from all name-plates, where appropriate, before installation on steam or other high temperature applications.

1.2 Access

Ensure safe access and if necessary a safe working platform (suitably guarded) before attempting to work on the product. Arrange suitable lifting gear if required.

1.3 Lighting

Ensure adequate lighting, particularly where detailed or intricate work is required.

1.4 Hazardous liquids or gases in the pipeline

Consider what is in the pipeline or what may have been in the pipeline at some previous time. Consider: flammable materials, substances hazardous to health, extremes of temperature.

1.5 Hazardous environment around the product

Consider: explosion risk areas, lack of oxygen (e.g. tanks, pits), dangerous gases, extremes of temperature, hot surfaces, fire hazard (e.g. during welding), excessive noise, moving machinery.

1.6 The system

Consider the effect on the complete system of the work proposed. Will any proposed action (e.g. closing isolation valves, electrical isolation) put any other part of the system or any personnel at risk?

Dangers might include isolation of vents or protective devices or the rendering ineffective of controls or alarms. Ensure isolation valves are turned on and off in a gradual way to avoid system shocks.

1.7 Pressure systems

Ensure that any pressure is isolated and safely vented to atmospheric pressure. Consider double isolation (double block and bleed) and the locking or labelling of closed valves. Do not assume that the system has depressurised even when the pressure gauge indicates zero.

1.8 Temperature

Allow time for temperature to normalise after isolation to avoid the danger of burns.

1.9 Tools and consumables

Before starting work ensure that you have suitable tools and/or consumables available. Use only genuine Spirax Sarco replacement parts.

1.10 Protective clothing

Consider whether you and/or others in the vicinity require any protective clothing to protect against the hazards of, for example, chemicals, high/low temperature, radiation, noise, falling objects, and dangers to eyes and face.

1.11 Permits to work

All work must be carried out or be supervised by a suitably competent person. Installation and operating personnel should be trained in the correct use of the product according to the Installation and Maintenance Instructions. Where a formal 'permit to work' system is in force it must be complied with. Where there is no such system, it is recommended that a responsible person should know what work is going on and, where necessary, arrange to have an assistant whose primary responsibility is safety.

Post 'warning notices' if necessary.

1.12 Handling

Manual handling of large and/or heavy products may present a risk of injury. Lifting, pushing, pulling, carrying or supporting a load by bodily force can cause injury particularly to the back. You are advised to assess the risks taking into account the task, the individual, the load and the working environment and use the appropriate handling method depending on the circumstances of the work being done.

Please note that if lifting straps are required we would recommend that they be fitted around the baffle plate legs to prevent damage to the unit.

1.13 Residual hazards

In normal use the external surface of the product may be very hot.

1.14 Freezing

Due to the self-draining design this product does not require any protection from freezing.

1.15 Disposal

Unless otherwise stated in the Installation and Maintenance Instructions, this product is recyclable and no ecological hazard is anticipated with its disposal providing due care is taken.

1.16 Returning products

Customers and stockists are reminded that under EC Health, Safety and Environment Law, when returning products to Spirax Sarco they must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk. This information must be provided in writing including Health and Safety data sheets relating to any substances identified as hazardous or potentially hazardous.

2. General product information

2.1 Description

Spirax Sarco VHT vent heads are designed for fitting to vertical open ended steam vent pipes. The vent head will discharge dry steam safely to atmosphere, avoiding the possibility of discomfort or even injury to personnel and material damage to buildings.

The vent head incorporates an internal baffle to separate entrained water from the steam.

Principle features:

- Efficient separation.
- Stainless steel body for long maintenance free life.
- A simple and effective vent head for general applications.
- Flanged in General accordance to EN 1092 PN16 or (ANSI) ASME 150

Applications

Vent heads are ideal for use on blowdown vessels, condensate vessels, boiler feedtanks, hot water storage tanks etc.

Warning: Vent heads must not be used for safety valve outlets.

Vent heads are selected to be the same nominal size as the vent pipe.

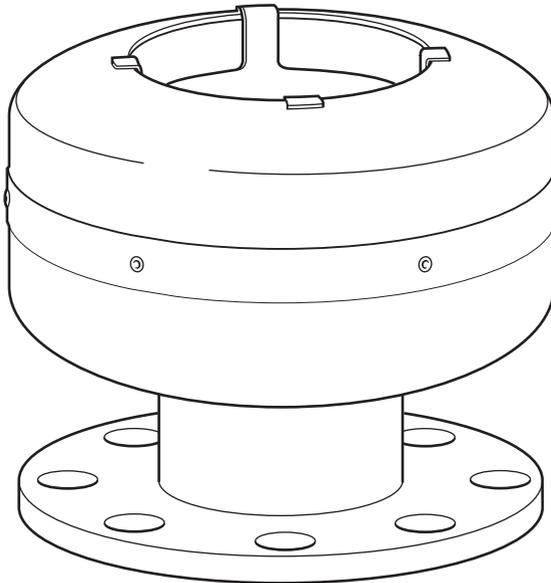


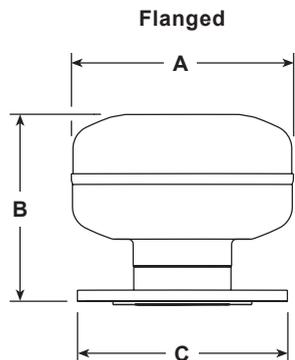
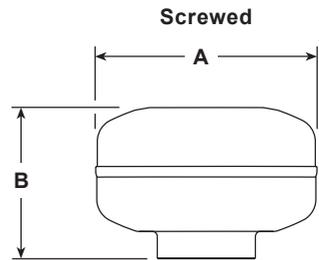
Fig. 1 DN100 VHT4 Shown

2.2 Sizes and pipe connections

Description	Size		Inlet connection
VHT2	DN50	2"	Screwed BSP
			Screwed NPT
VHT3	DN80	3"	Screwed BSP
			Screwed NPT
			Flanged EN 1092 PN16 or (ANSI) ASME 150
VHT4	DN100	4"	Flanged EN 1092 PN16 or (ANSI) ASME 150
VHT6	DN150	6"	Flanged EN 1092 PN16 or (ANSI) ASME 150
VHT8	DN200	8"	Flanged EN 1092 PN16 or (ANSI) ASME 150
VHT10	DN250	10"	Flanged EN 1092 PN16 or (ANSI) ASME 150
VHT12	DN300	12"	Flanged EN 1092 PN16 or (ANSI) ASME 150

2.3 Dimensions / weights (approximate) in mm and kg

Description	A	B	C	Weight
VHT2	203	137	-	2.08
	203	137	-	2.08
VHT3	203	145	-	2.70
	203	145	-	2.70
	203	173	192	3.65
VHT4	304	237.0	224	6.31
VHT6	403	302.5	280	10.76
VHT8	403	314	334	12.28
VHT10	503	372.5	406	19.17
VHT12	503	343.5	483	22.29



3. Installation

Note: Before actioning any installation observe the 'Safety information' in Section 1.

Referring to the Installation and Maintenance Instructions, name-plate and Technical Information Sheet, check that the product is suitable for the intended installation:

- 3.1** Check materials, pressure and temperature and their maximum values. If the maximum operating limit of the product is lower than that of the system in which it is being fitted, ensure that a safety device is included in the system to prevent overpressurisation.
- 3.2** Determine the correct installation situation and the direction of fluid flow.
- 3.3** Remove protection covers from all connections and protective film from all name-plates, where appropriate, before installation on steam or other high temperature applications.
- 3.4** Installation of the screwed and flanged vent heads is relatively straightforward. The flanged vent heads have a lightweight flange drilled to suit the flange standard specified - See Table 1 for the recommended tightening torques. Due to the design of this product no drain is required.

Table 1 Recommended tightening torques

Vent head	VHT3	VHT4	VHT6	VHT8	VHT10	VHT12
Bolt torque	60 N m	60 N m	60 N m	70 N m	70 N m	70 N m

Please note that if lifting straps are required we would recommend that they be fitted around the baffle plate legs to prevent damage to the unit.

Note: The Flange bolt holes are "slotted" to suit the PCD of PN16 & A150, on occasions not all bolts holes can be utilised.

4. Commissioning

After installation or maintenance ensure that the system is fully functioning. Carry out tests on any alarms or protective devices.

5. Operation

VHT vent heads are suitable for vertical open-ended steam vent pipes. The vent head is designed to safely discharge dry steam to atmosphere at low velocity, protecting personnel from injury, buildings from damage and minimising the nuisance of water spray on the surroundings.

Steam flow entering the vent head is directed over an internal disc and forced into a toroidal vortex, causing entrained water droplets to be flung outwards and 'wetting out' onto the internal surface of the vent head. As these droplets coalesce they are driven towards the internal drain by the 'downward' rotation of the toroidal vortex.

6. Maintenance

We recommend that an annual inspection is carried out to ensure that no debris is restricting the outlet.

Please note that the VHT contains no maintainable parts.