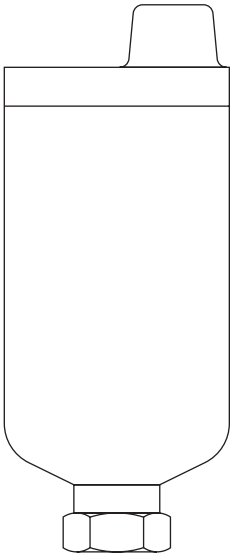
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AE50S
Automatic Air and Gas Vent for Liquid Systems
Installation and Maintenance Instructions



1. Safety information
2. General product information
3. Installation
4. Commissioning
5. Operation
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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 11 on this document) 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.

The products listed below comply with the requirements of the European Pressure Equipment Directive 2014/68/EU and carry the CE mark when so required.

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

The products fall within the following Pressure Equipment Directive categories:

Product	Group 2 Gases	Group 2 Liquids
AE50S	SEP	SEP

i) **AE50S has been specifically designed for use on steam, air or water / condensate which are in Group 2 of the above mentioned Pressure Equipment Directive.**

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 before installation.**

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.

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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 danger of burns. If parts made from Viton have been subjected to a temperature approaching 315 °C (599 °F) or higher, it may have decomposed and formed hydroflouric acid. Avoid skin contact and inhalation of any fumes as the acid will cause deep skin burns and damage the respiratory system.
If parts made from PTFE have been subjected to a temperature approaching 260 °C (500 °F) or higher, they will give off toxic fumes, which if inhaled are likely to cause temporary discomfort. It is essential for a no smoking rule to be enforced in all areas where PTFE is stored, handled, or processed as persons inhaling the fumes from burning tobacco contaminated with PTFE particles can develop 'polymer fume fever'.

1.9 Tools and consumables

Before starting work ensure that you have suitable tools and/or consumablesavailable. 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.

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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.

1.13 Residual hazards

In normal use the external surface of the product may be very hot. If used at the maximum permitted operating conditions the surface temperature of some products may reach temperatures of 100 °C (212 °F).
Many products are not self-draining. Take due care when dismantling or removing the product from an installation (refer to 'Maintenance instructions').

1.14 Freezing

Provision must be made to protect products which are not self-draining against frost damage in environments where they may be exposed to temperatures below freezing point.

1.15 Safety information - Product specific

See the relevant Sections of the attached Installation and Maintenance Instructions for specific details relating to these products.

1.16 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.

Please visit the Spirax Sarco product compliance web pages
https://www.spiraxsarco.com/product-compliance
for up to date information on any substances of concern that may be contained within this product. Where no additional information is provided on the Spirax Sarco product compliance web page, this product may be safely recycled and/or disposed providing due care is taken. Always check your local recycling and disposal regulations.

1.17 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.

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2. General product information

2.1 General description

The AE50S automatic air and gas vent is designed for use on liquid systems. It has welded construction and the body is manufactured in 304L austenitic stainless steel.

Certification

The product is available with material certification EN 10204 3.1.B for bowl, cover and inlet connection as standard.

Note: For further information see the following Technical Information Sheet, TI-P017-10, which gives full details of: Materials, sizes and pipe connections, dimensions, weights, operating ranges and capacities.

2.2 Sizes and pipe connections

Inlet:	¾" female BSP T Rp (ISO 7-1) or NPT
Outlet:	½" female BSP T Rp (ISO 7-1) or NPT

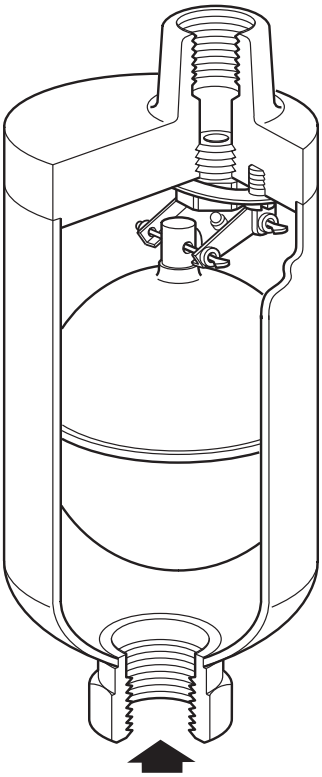
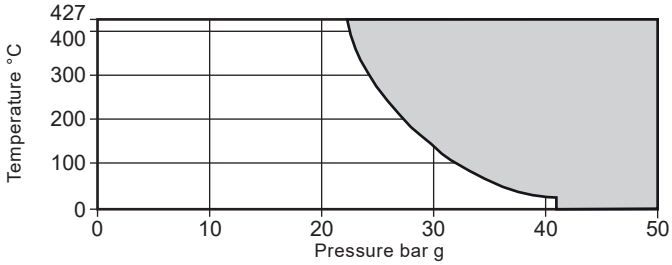


Fig. 1 AE50S

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2.3 Pressure / temperature limits



The product **must not** be used in this region.

Body design conditions		ANSI 300
PMA	Maximum allowable pressure	41.4 bar g
TMA	Maximum allowable temperature	427 °C
PMO	Maximum operating pressure	41.4 bar g
TMO	Maximum operating temperature	427 °C
ΔPMX	Maximum differential pressure	30 bar
Designed for a maximum cold hydraulic test pressure of:		63 bar g
Minimum specific gravity of liquid		**0.65**

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3. Installation

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

Refering 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 protective covers from all connections.

3.4 The AE50S should be installed vertically with the inlet at the bottom. Because of the way automatic air and gas vents operate they all dribble water and liquid when discharging air and gas. This is perfectly normal.
We recommend piping the discharge to a safe visible point or drain via an air break.

3.5 **For installation on superheated water applications:** We at Spirax Sarco recommend 1 to 2 m of ¾" vertical pipeline should be fitted prior to the inlet of the vent. On superheated water systems the outlet pipework must be sized to accommodate any flash steam created during discharge. Direct the outlet pipework to a safe point of discharge where there is no risk of injury to persons or damage to property.

Because of the way automatic air vents operate they all dribble water when discharging air. This is perfectly normal, because of this we recommend piping the discharge to a drain via an air break.

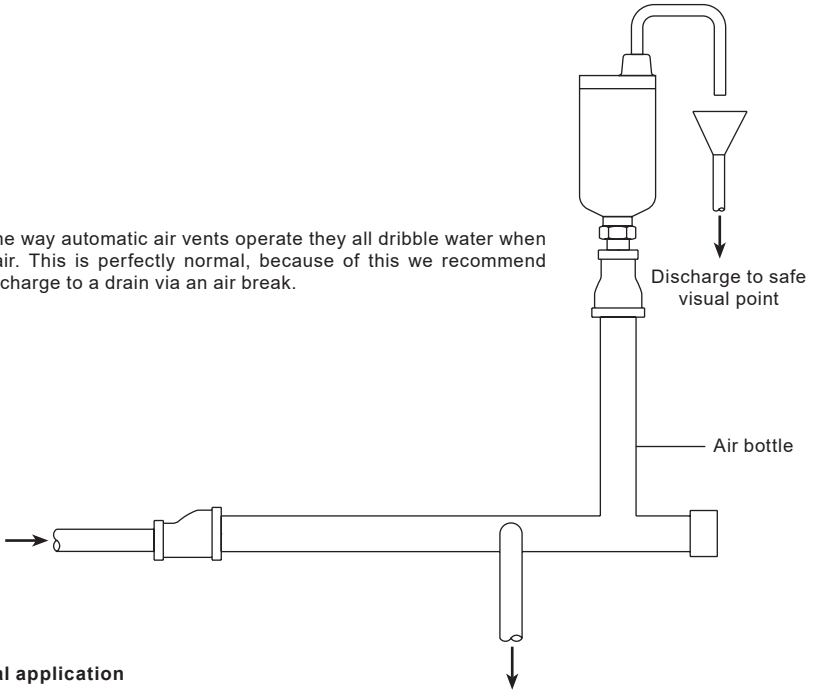


Fig. 2 Typical application

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4. Commissioning

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

5. Operation

At start-up the air vent is open allowing air to pass through the main valve. As soon as water reaches the vent the float is raised and the lever mechanism closes the valve.
When more air reaches the vent it displaces water and the float falls thus opening the valve. After the air is discharged the valve is closed, as the water level rises to replace the air.

6. Maintenance

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

The AE50S is a sealed automatic air and gas vent. It is adjustable and requires no maintenance.

7. Spare parts

The AE50S is a sealed automatic air and gas vent, no spare parts are available.

How to order a new product

Example: 1 off ¾" Spirax Sarco AE50S automatic air and gas vent manufactured in austentic stainless steel screwed BSP.

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