

AV13

Air Vent for Steam Systems

Installation and Maintenance Instructions

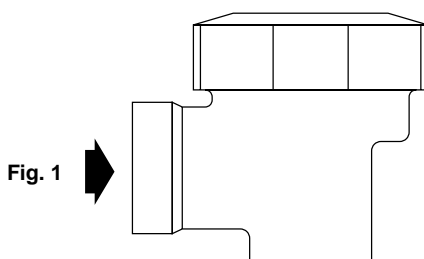


Fig. 1

1. General safety information

Safe operation of the unit can only be guaranteed if it is properly installed, commissioned and maintained by a qualified person (see Section 11 of the attached Supplementary Safety Information) 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.

Isolation

Consider whether closing isolating valves will put any other part of the system or personnel at risk. Dangers might include; isolation of vents and protective devices or alarms. Ensure isolation valves are turned off in a gradual way to avoid system shocks.

Pressure

Before attempting any maintenance consider what is or may have been in the pipeline. Ensure that any pressure is isolated and safely vented to atmospheric pressure before attempting to maintain the product, this is easily achieved by fitting Spirax Sarco depressurisation valves type DV (see separate literature for details). Do not assume that the system is depressurised even when a pressure gauge indicates zero.

Temperature

Allow time for temperature to normalise after isolation to avoid the danger of burns and consider whether protective clothing (including safety glasses) is required.

Viton:

If parts from Viton have been subjected to a temperature approaching 315°C (599°F) or higher, they may have decomposed and formed hydrofluoric acid. Avoid skin contact and inhalation of any fumes as the acid will cause deep skin burns and damage the respiratory system.

Disposal

This product is recyclable. No ecological hazard is anticipated with the disposal of this product providing due care is taken, EXCEPT;

Viton:

- Can be landfilled, when in compliance with National and Local regulations.
- Can be incinerated, but a scrubber must be used to remove Hydrogen Fluoride, which is evolved from the product and with the compliance to National and Local regulations.
- Is insoluble in aquatic media.

2. General product information

2.1 General description

The AV13 is a brass bodied maintainable balanced pressure thermostatic air vent for steam systems.

Note: For additional information see Technical Information Sheet TI-P010-02.

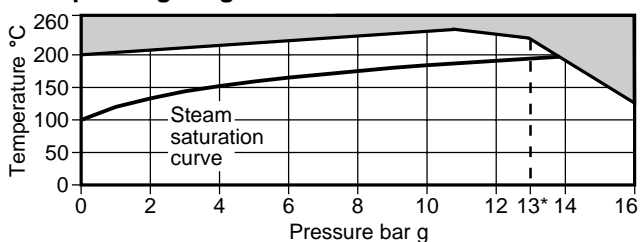
2.2 Sizes and pipe connections

3/8", 1/2" and 3/4" screwed BSP (BS 21 parallel) or NPT.

2.3 Limiting conditions

Maximum body design conditions	PN16
PMA - Maximum allowable pressure	16 bar g (232 psi g)
TMA - Maximum allowable temperature	260°C (500°F)
PMO - Maximum operating pressure	13 bar g (188.5 psi g)
TMO - Maximum operating temperature	225°C (437°F)
Designed for a maximum cold hydraulic test pressure of:	24 bar g (348 psi g)

2.4 Operating range



The product must not be used in this region.

*PMO Maximum operating pressure, recommended for saturated steam is 13 bar g (188.5 psi g).

2.5 Materials

Part	Material
Body	Brass
Cap	Brass
'O' ring	Synthetic rubber high fluorine fluorocarbon
Capsule	Stainless steel
Spring	Stainless steel
Spacer plate	Stainless steel
Seat	Stainless steel
Seat gasket	Stainless steel

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 protective covers from all connections.
- 3.4 The AV13 should be installed with the capsule in a horizontal plane with the cap at the top and be positioned at the highest point of the main, or plant, where the air collects. For maximum removal of air the discharge should be as free as possible and piped to a safe location.

4. Commissioning

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

5. Operation

The operating element is a capsule containing a small quantity of a special liquid with a boiling point below that of water. In the cold conditions that exist at start-up, the capsule is relaxed. The valve is off its seat and is wide open, allowing unrestricted removal of air. This is a feature of all balanced pressure traps and explains why they are well suited to air venting.

6. Maintenance

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

6.1 General information

Before undertaking any maintenance on the trap it must be isolated from both the supply line and return line and any pressure allowed to safely normalise to atmosphere. The trap should then be allowed to cool. When reassembling, ensure that all joint faces are clean.

6.2 How to fit the capsule:

- Allow the trap to cool.
- Remove the cap and lift out the capsule (4), spring (5) and spacer plate (6).
- Remove the valve seat and gasket (7 and 8).
- Screw in the new seat and gasket.
- Drop in the spacer plate.
- Replace the new capsule, spring and screw on cap using the new 'O' ring (3) assembled into the groove in the top of the cap, or in older models using the new gasket.
- Always fit the complete assembly when replacing the capsule.
- After maintenance ensure that the system is fully functioning.

Note 1: Early spacer plates were uni-directional (see Fig. 2) and must be fitted with the high points uppermost. This does not apply to later models.

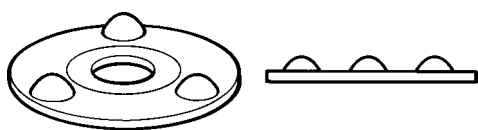


Fig. 2

Note 2: The spares pack contains two sizes of 'O' ring. Use of the correct 'O' ring is explained on the note also included in the spares pack.

7. Spare parts

The spare parts available are shown in heavy outline. Parts drawn in broken line are not supplied as spares.

Available spares

Capsule and seat assembly	3, 4, 5, 6, 7, 8
Cap gasket (earlier models) (packet of 3)	3
'O' ring (current models) (2 x packet of 3)	3

Notes: Earlier models were fitted with conventional gaskets. Current models are fitted with an 'O' ring to seal the cap. There are two types of 'O' ring. The 'O' ring used is dependent on the body type.

How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of air vent.

Example: 1 - Capsule and seat assembly for a ½" Spirax Sarco AV13 balanced pressure thermostatic air vent.

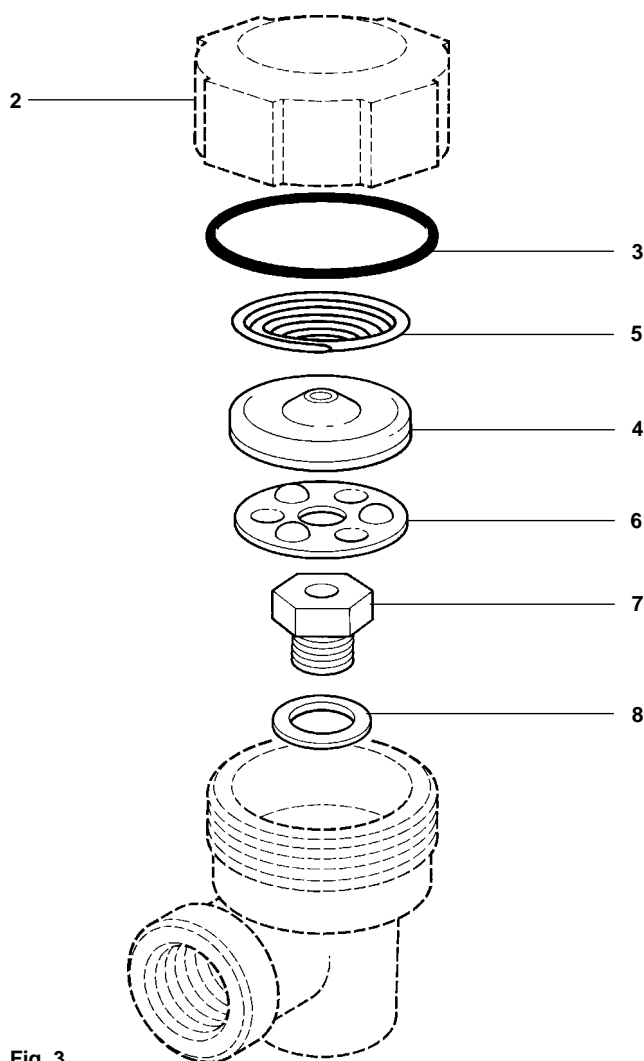




Fig. 3

Table 1 Recommended tightening torques

Item no.	Part	 or  mm	N m	(lbf ft)
2	Gasket	50 A/F	90 - 100	(65 - 72)
	'O' ring	50 A/F	50 - 60	(36 - 43)
7	Seat	17 A/F	35 - 40	(25 - 29)