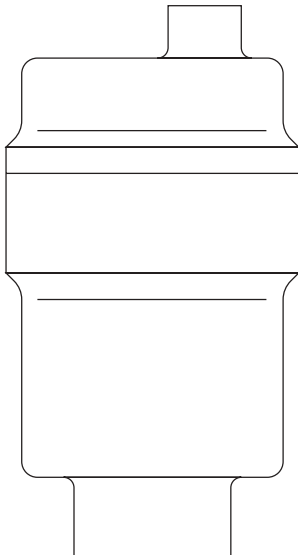


AE36 and AE36A

Automatic Air Eliminators/Air Vents for Liquid Systems
Installation and Maintenance Instructions



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

— 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 'O' ring:

If the Viton 'O' ring has been subjected to a temperature approaching 315°C (599°F) or higher, it 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

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

Viton:

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

— 2. General product information —

2.1 General description

The AE36 range of automatic air eliminators/air vents are designed for use on hot and cold water installations. The body and cap are of austenitic stainless steel type 316L.

They are available as follows:

| | |
|--------------|------------------------------------|
| AE36 | Standard air vent |
| AE36A | Standard air vent with check valve |

Note: For further information see the following Technical Information Sheet, TI-P017-02.

2.2 Sizes and pipe connections

| | | |
|---------------|-----------|------------|
| Inlet | ½" female | BSP or NPT |
| Outlet | ¼" male | BSP or NPT |

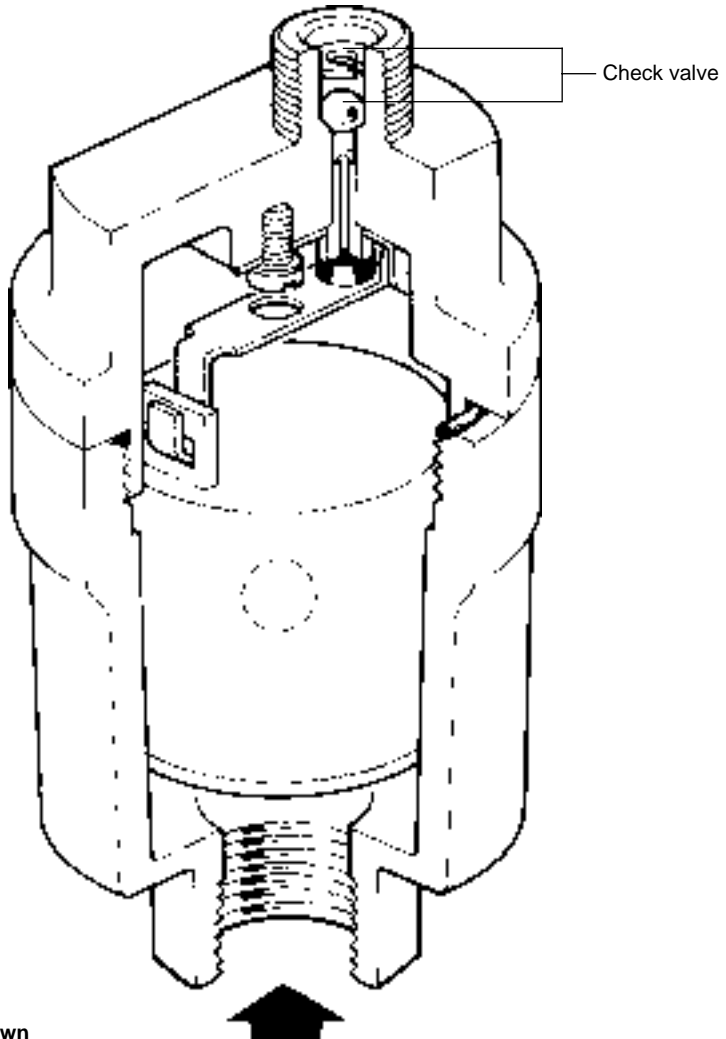
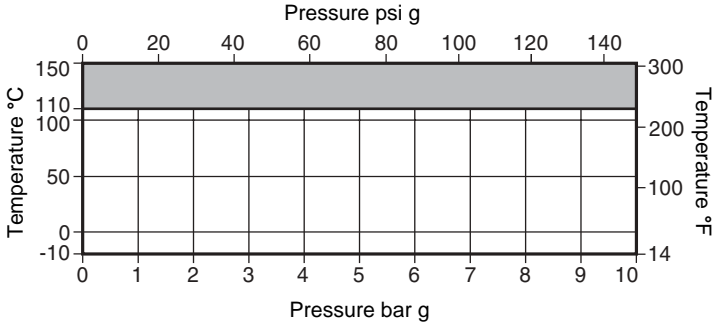



Fig. 1 AE36A shown

2.3 Pressure/temperature limits



 The product **should not** be used in this region as damage to the internals may occur.

| Body design conditions | | PN10 | |
|------------------------|---|------------------|---------------------|
| PMA | Maximum allowable pressure | 10 bar g @ 150°C | (145 psi g @ 302°F) |
| TMA | Maximum allowable temperature | 150°C | (302°F) |
| | Minimum allowable temperature | -10°C | (14°F) |
| PMO | Maximum operating pressure | 10 bar g @ 110°C | (145 psi g @ 230°F) |
| TMO | Maximum operating temperature | 110°C @ 10 bar g | (230°F @ 145 psi g) |
| | Minimum operating temperature | -10°C | (14°F) |
| ΔPMX | Maximum differential pressure | 8 bar | (116 psi) |
| | Designed for a maximum cold hydraulic test pressure of: | 15 bar g | (217.5 psi g) |
| | Minimum specific gravity of liquid | 0.926 | |

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 automatic air eliminator/air vent should be installed vertically with the inlet at the bottom. We recommend that a drip pipe be fitted discharging to a safe place. To enable this to be done the outlet is provided with a 1/4" BSP or NPT male thread. See Fig. 2 for a typical application.

The automatic air eliminator/air vent should be installed vertically with the inlet at the bottom. We recommend piping the discharge from the air eliminator/air vent to a suitable safe point.

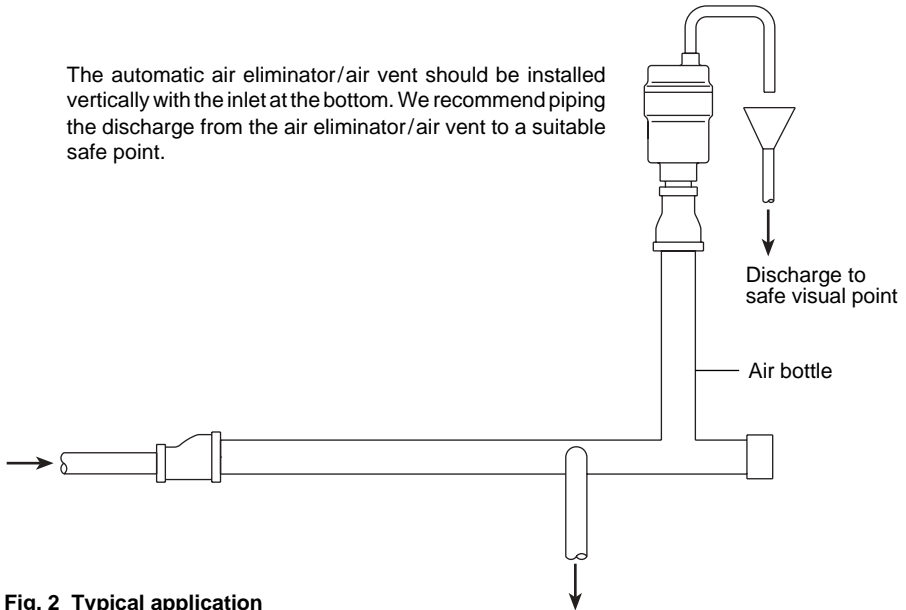


Fig. 2 Typical application

4. Commissioning

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

5. Operation

At start-up the air eliminator/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. The check valve (AE36A) is essential where there is a possibility of the system operating under negative head conditions. It will prevent air being drawn into the system.

6. Maintenance

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

6.1 General information

All work must be carried out by a suitably competent person. Before starting work ensure that suitable tools are available. Use only Spirax Sarco replacement parts. Before attempting to work on the air vent ensure that it is isolated from the rest of the pressurised system. Allow time for the temperature of the air vent to normalise.

The unit has a long service life and the only maintenance that would normally be required is the occasional cleaning of the valve and seat.

6.2 How to clean/replace the valve and seat:

- Unscrew the cap (1) from the body.
- The float (4) can then be detached from the lever and the mechanism removed by undoing the screw (8) in the centre of the cap.
- The valve cone (5) is easily changed once the float has been removed.
- Refitting of the mechanism is straight forward, the float can then be hooked back onto the lever and the whole assembly screwed back into the body (see Table 1 for recommended tightening torques).
- The set of internals are supplied with a check valve ball and circlip.
- The check valve is only required for the AE36A.
- The check valve should be fitted into the outlet port and held loosely by the circlip, which is fitted 1.6 mm below the level of the outlet as shown in Fig. 3.

After maintenance ensure that the system is fully functioning.

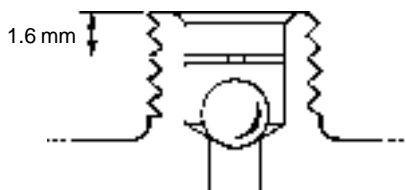


Fig. 3

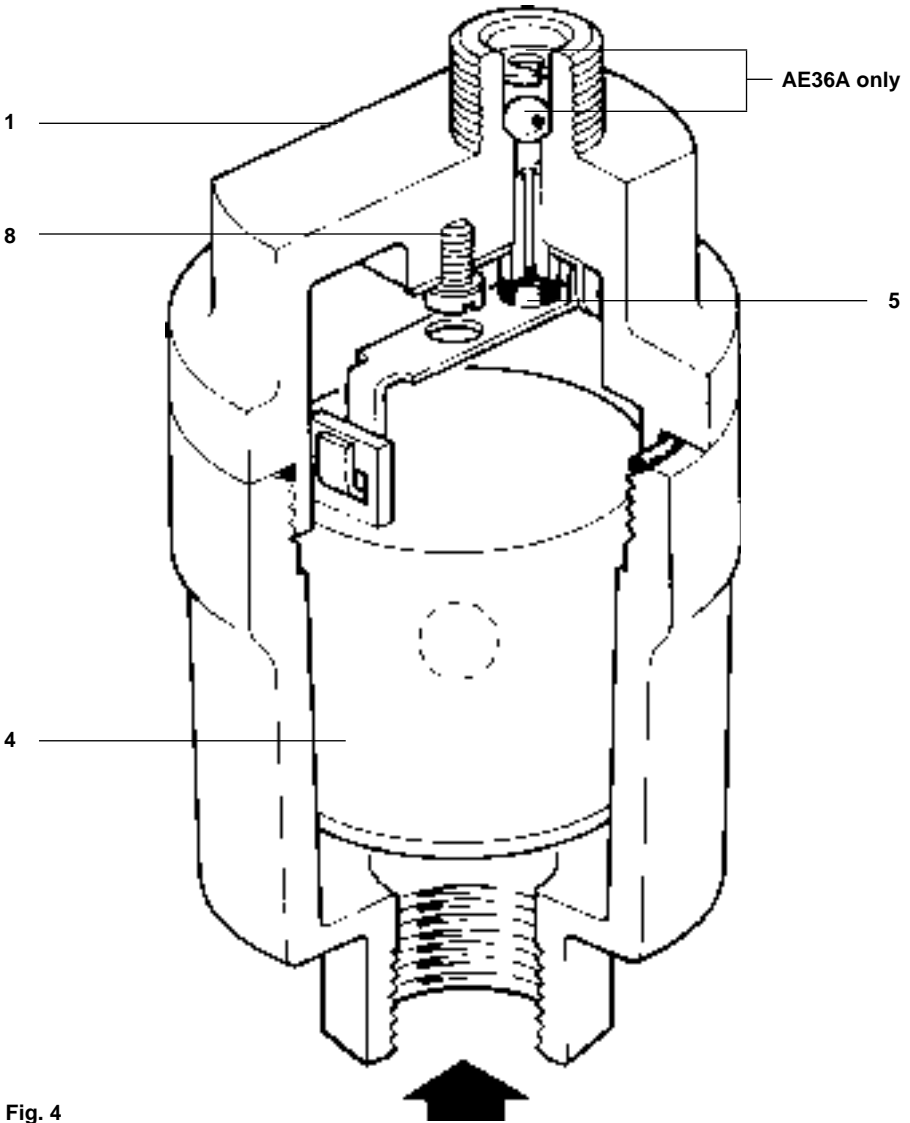




Fig. 4

Table 1 Recommended tightening torques

| Item |  or mm |  | N m | (lbf ft) |
|------|--|---|-----------|-------------|
| 1 | 30 | | 10 - 12 | (7.0 - 8.6) |
| 8 | Cheesehead | M4 x 6 | 2.5 - 2.8 | (1.8 - 2.0) |

7. Spare parts

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

Available spares

Maintenance kit comprising:

Cap 'O' ring, float, valve cone, check valve ball, check valve circlip

2, 4, 5, 9, 10

Important note

If you have earlier versions of the AE36 designated AE36CV which operate over the range 3 to 8 bar then the spares set for the AE36A cannot be used. The earlier spares set should be used.

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 automatic air vent.

Example: 1 - Maintenance kit for a Spirax Sarco 1/2" AE36A automatic air eliminator/air vent with check valve.

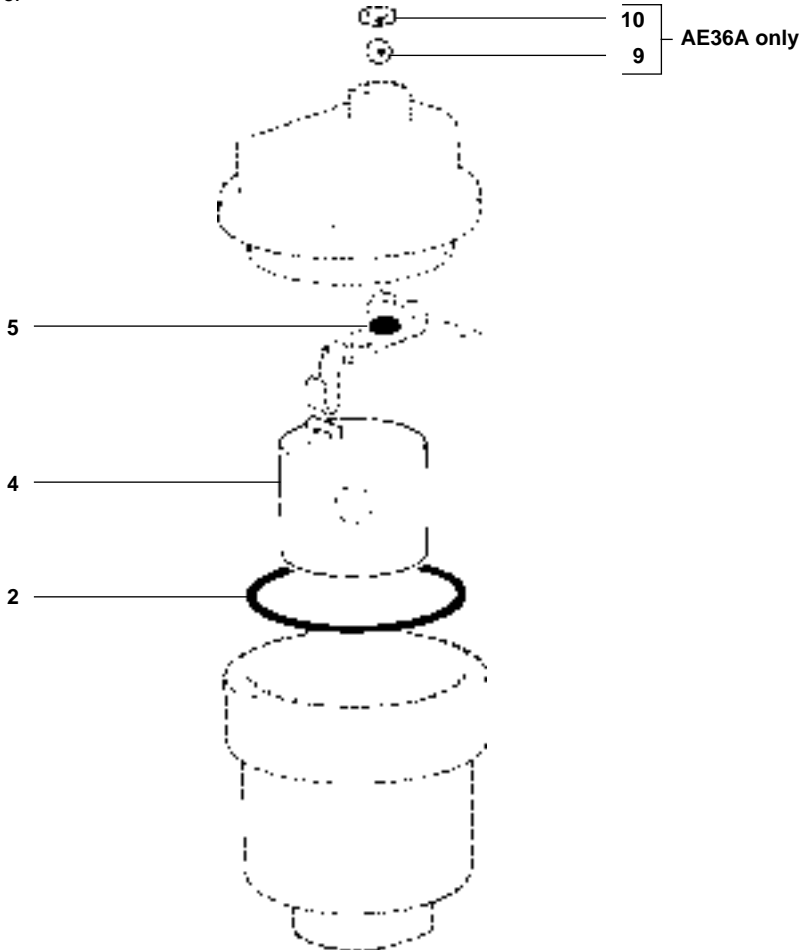


Fig. 5