Automatic air vents

for hot and cold water systems

spirax sarco

Why remove air from a water system?

Every building services engineer knows that air trapped in either a hot or chilled water system can cause trouble, such as excessive noise, corrosion and increased maintenance costs. Air can cause air locks which inhibit the filling of the system or the priming of pumps. It can seriously affect the accuracy of flow measurement meters and regulating valves. Under extreme conditions it may even temporarily decommission plant.

Air and other incondensable gases considerably reduce heat transfer efficiency. A film of air 1 mm thick presents the same barrier to heat transfer as a wall of copper 13 m thick!

Entrapped air in any water system is a threat to thermal efficiency. It is particularly damaging in a chilled water system which does not have the natural deaerating ability of hot water.

Which method of air venting?

Manual air vents may be used to good effect during the initial charging of the system, but are often not used after commissioning.

Air in a plant may take time to reach a vent point and these tend to be in inaccessible places. This makes manual venting a tiresome and frequently neglected task.

By far the most effective method of removing air and other gases from a water system is to fit Spirax Sarco automatic air vents.

Efficient air removal

The Spirax Sarco AE30 range of automatic air vents is used throughout the world and has been specifically designed to efficiently remove air and other incondensable gases from chilled water systems, and low and medium temperature hot water systems.

It is manufactured from a special copper alloy which is dezincification resistant (DZR).

The range is maintainable ensuring optimum performance at all times.

Product range

Model	Connection		Check valve	Lockshield valve
	BSP	NPT		
AE30	●	●		
AE30A	●	●	●	
AE30B	●			●
AE30C	●		●	●

User benefits

- Materials of construction comply with the requirements of the Water Research Centre (WRc) and M & E3.
- Reliable, leak free operation.
- Check valve and lockshield valve options available.
- Compact body design.
- One valve covers all operating conditions making selection and replacement simple.
- Simple lever and float operation.
- Spirax Sarco's guarantee of worldwide technical support, knowledge and service.

How it works

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 chamber, the float falls and opens the valve. After the air is discharged, the valve closes, due to a rising water level.

The check valve is essential where there is a possibility of the system operating in vacuum by preventing air being drawn into the system.

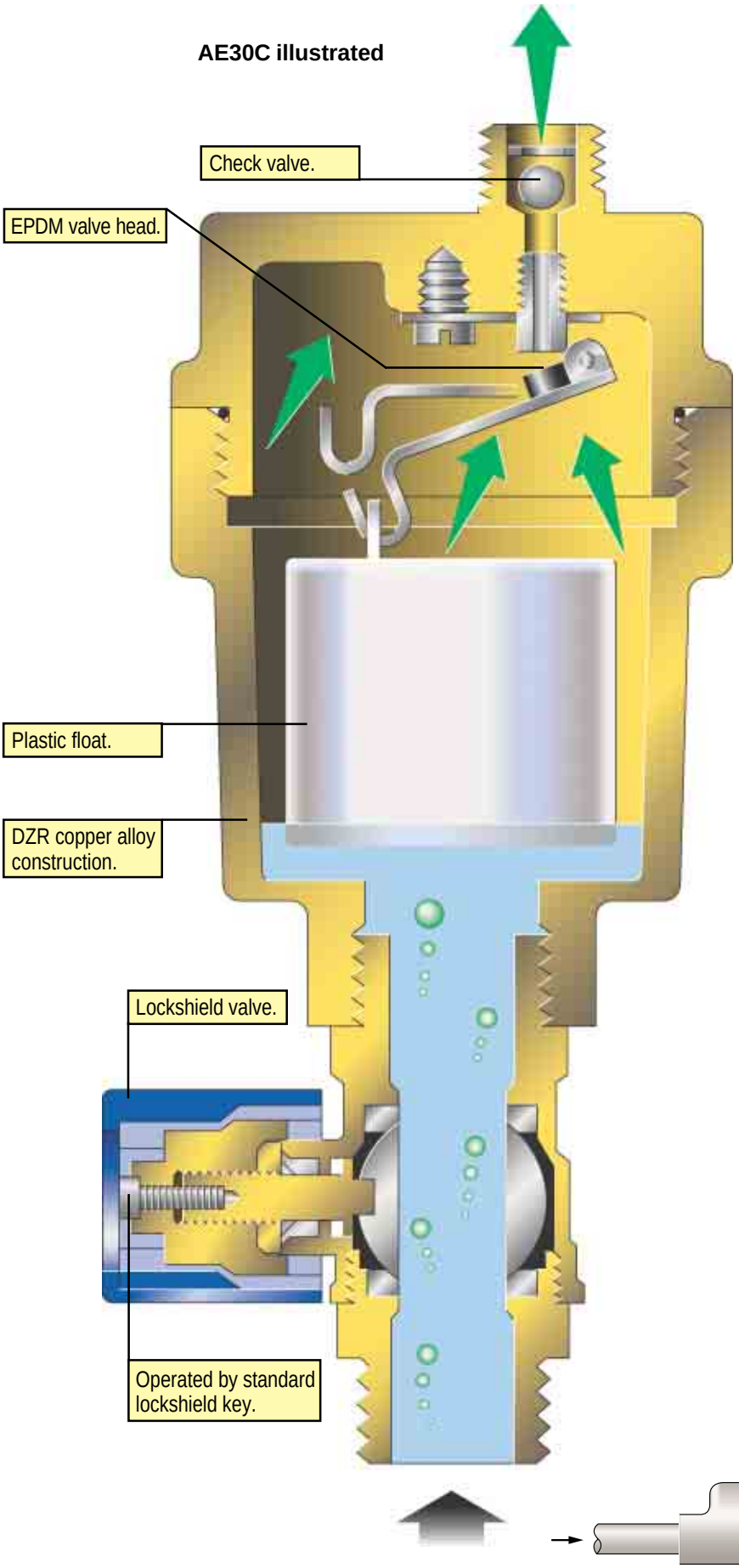
The lockshield ball valve has a unique feature that offers 3 modes of operation:

- **Normal operation.**
- **Locked in open position.**
- **Locked in closed position.**

In normal operation the ball valve can be adjusted using a lockshield key.

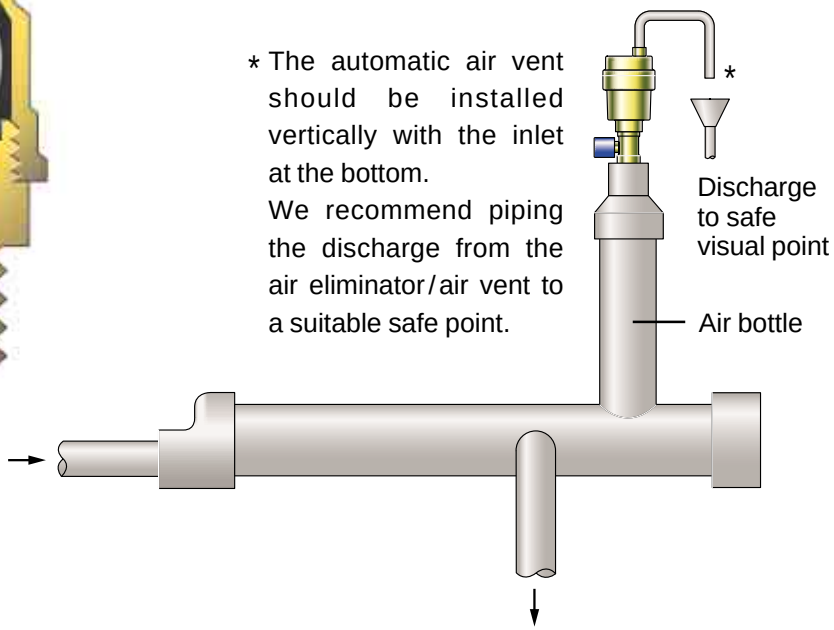
In the open or closed position the valve can be locked. If the plastic cover and screw are removed the valve stem can be rotated to lock the ball valve in the open or closed position.

AE30C illustrated



Typical application

* The automatic 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.



Sizes and pipe connections

AE30, AE30A	Inlet:	½" female BSP or NPT
	Outlet:	¼" male BSP or NPT
AE30B, AE30C	Inlet:	½" male BSP
	Outlet:	¼" male BSP

Materials

AE30 (all versions)

Cap	DZR brass alloy	BS 2872 CZ 132
Cap 'O' ring	Green Viton 75	WRc 9305512
Body	DZR brass alloy	BS 2872 CZ 132
Float	Acetal co hostaform / stainless steel	
Valve cone	EPDM	WRc 9205519
Valve seat	Stainless steel	BS 970 431 S29
Bracket and lever assembly	Stainless steel	BS 1449 304 S11
Screw	Stainless steel	BS 4138 18/8

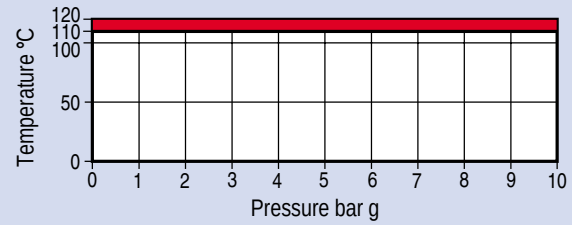
AE30A and AE30C

Check valve ball	Stainless steel	AISI 440 B
Circlip	Stainless steel	BS 970 302 S25

AE30B and AE30C

Lockshield valve body	DZR brass alloy	BS 2872 CZ 132
Lockshield valve	Hard Cr. DZR alloy	BS 2874 CZ 2132
Ball	Hard Cr. DZR alloy	BS 2874 CZ 2132
Seal	Virgin PTFE	
Stem seal	Virgin PTFE	
Cover	Polypropylene	
Screw	Steel	BS 4138 18/8
Lockshield key	SG iron	BS 2789

Pressure / temperature limits (all versions)

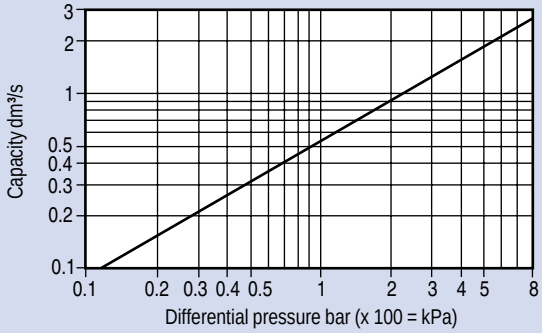


The product **should not** be used in this region as damage to the internals may occur.

Body design conditions		PN10
PMA	Maximum allowable pressure @ 120°C	10 bar g
TMA	Maximum allowable temperature @ 10 bar g	120°C
Minimum allowable temperature		-10°C
PMO	Maximum operating pressure @ 110°C	10 bar g
TMO	Maximum operating temperature @ 10 bar g	110°C
Minimum operating temperature		0°C
ΔPMX	Maximum differential pressure	8 bar g
Designed for a maximum cold hydraulic test pressure of 15 bar g		
Minimum specific gravity of liquid		0.926

AE30 AE30A AE30B AE30C

Capacities (all versions)



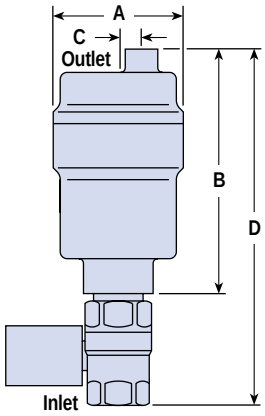
If the temperature of the air differs from 16°C, the discharge capacity from the graph can be corrected by multiplying it by the following equation:

$$\frac{289}{273 + T \text{ (T is the actual temperature in °C)}}$$

It may be assumed that the temperature of the air is equal to the temperature of the water.

Dimensions (approximate) in mm and kg

Model	AE30 AE30A	AE30B AE30C
A	56	56
B	105	105
C	10	10
D	-	155
Weight	0.7	0.9



How to specify

Spirax Sarco AE30 automatic air vent with dezincification resistant copper alloy body and EPDM valve head.

Spirax Sarco AE30A automatic air vent with dezincification resistant copper alloy body, EPDM valve head and check valve.

Spirax Sarco AE30B automatic air vent with dezincification resistant copper alloy body, EPDM valve head and lockshield valve.

Spirax Sarco AE30C automatic air vent with dezincification resistant copper alloy body, EPDM valve head, check valve and lockshield valve.

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