MICROBUBBLE AIR & DIRT SEPARATORS

THE AD

The Air Free & Clean Solution An air & dirt free water system through one unit

Deaeration

The word Deaeration describes the removal of dissolved gases from liquids such as air from water. When water is heated or the pressure reduced gas microbubbles are released into the system. Microbubbles can be the cause of major problems such as pump failure, corrosion and energy loss.

The Solution

The unit combines the removal of air and dirt through a single unit. Installed at the hottest point in the system the unit will eliminate these microbubbles from heating and chilled water systems.

Dirt Removal

The unit is also used to remove dirt particles from heating and chilled water systems. Installed it will eliminate all dirt particles down to 10 microns.

Features

- Greatly reduced commissioning times after initial fill.
- Longer system life (through air and dirt elimination)
- Low-pressure drop
- Bi-directional flow
- Max. temp. 110 c
- Max. Working pressure 10 bar
- Tested to 21 bar
- Stainless steel shell
- Air collects in the air chamber before being automatically vented
- Floating dirt can be removed by opening the valve situated on the side of the unit.
- The same valve is used for releasing air when filling the system
- Large collector ensures that flushing is only required now and then
- Can be flushed while fully operational (no need to shut down)
- An internal stainless steel concentrator to aid removal of air and dirt.

Location

This combined unit (our model ref AD) must be installed at the hottest part of the system (before the pumps). In a heating system this is the main flow from the boilers.
The static head must not exceed 30 metres.

In a chilled water system the unit must be located in the return close to the chiller.
Maximum static head must not exceed 15 metres.

N.B. if the static head is greater than these figures the efficiency of the unit is reduced.

Dirt separation only

This unit (our model ref D) should be installed in the return pipework before the flow of water enters any plant (boilers, pumps, etc.). There is no head restriction on this unit.

Air separation only

This unit (our model ref A) must be installed at the hottest part of the system (before the pumps). In a heating system this is the main flow from the boilers.
The static head must not exceed 30 metres.

In a chilled water system the unit must be located in the return close to the chiller.
Maximum static head must not exceed 15 metres.

The maximum flow rates through the unit is 3m/sec. If these values are exceeded the efficiency is reduced.

Commissioning

The unit requires no special commissioning. All units are fitted with a fast bleed valve, which should be used when initially filling the system. The same valve is used for draining off floating scum and also prevents the possibility of dirt clogging the air vent. Maintenance will be required to remove trapped dirt and sludge. Opening the ball valve at the bottom of the unit does this. The valve may be opened while the system is under pressure.

Scalding is a danger at high pressures and temperatures. Ensure that the water is safely piped to drain before opening the valve.

The system pressure will flush the dirt out. Leave the valve open until the collected dirt has been flushed out, repeat this operation every few days. Once the water is clear it may be possible to drain every 6 months or so depending on the size and age of the system.

Most of the dissolved air will be removed in a few days. However this may vary from system to system .In large systems it may take several weeks.

Dirt separators can only remove dirt that is circulating.

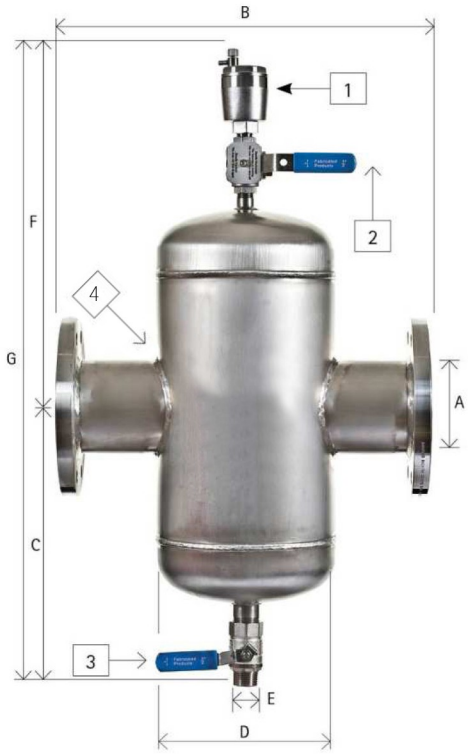
Flanges

All flanges are drilled to BS 4504 PN16 as standard.
Plain ends and other flange rating are available on request.
The unit is maintenance free.

Drain valve

All models are supplied with a ball valve for draining the collected dirt and sludge.

Combined Unit Air (de-aerator) & Dirt Separator – Model AD

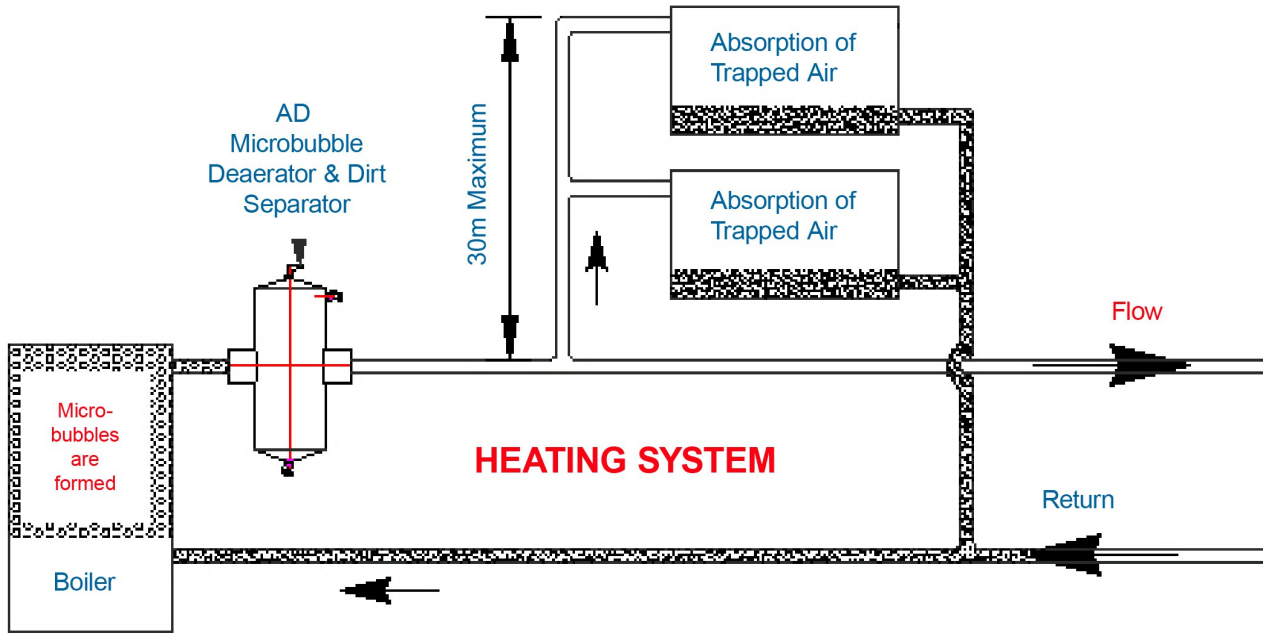


Model No.	Dimensions (mm)							Tested to
	A	B	C	D	E	F	G	
AD-32	32	430	300	170	25	380	680	21 Bar
AD-40	40	430	300	170	25	380	680	21 Bar
AD-50	50	430	300	170	25	380	680	21 Bar
AD-65	65	430	300	170	25	380	680	21 Bar
AD-80	80	490	360	220	25	440	800	21 Bar
AD-100	100	490	360	220	25	440	800	21 Bar
AD-125	125	630	470	325	25	550	1020	21 Bar
AD-150	150	630	470	325	25	550	1020	21 Bar
AD-200	200	810	625	410	50	625	1250	21 Bar
AD-250	250	880	775	510	50	775	1550	21 Bar
AD-300	300	1100	875	610	50	875	1750	21 Bar
AD-350	350	1500	950	770	50	950	1900	21 Bar
AD-400	400	1500	1125	770	50	1125	2250	21 Bar
AD-450	450	1750	1125	920	50	1125	2250	21 Bar
AD-500	500	2000	1175	1220	50	1175	2350	21 Bar
AD-600	600	2000	1325	1220	50	1325	2650	21 Bar

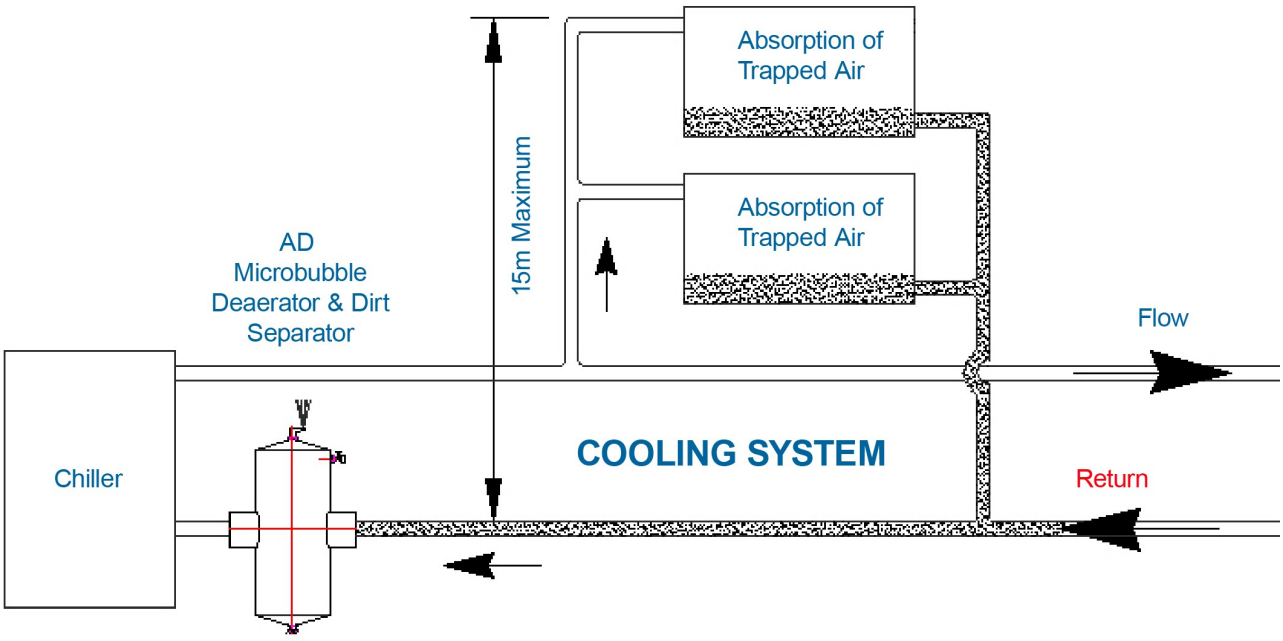
1. High capacity auto air vent
2. Fast bleed valve
3. Drain valve
4. Removable high gauss magnetic rod

Positioning the AD Combined microbubble air & dirt separator in the system is important for optimum performance

In heating systems this should be in the flow, preferably at the highest temperature (next to the heat source) and low pressure if possible.



In cooling systems this should be in the return. The AD should always be installed before equipment that needs protection from dirt, sludge, etc., (ie. Chillers, controll valves, pumps, etc.) In existing systems where there are problems with dirt, sludge, etc. a demountable unit should be installed, our AD-R will solve this problem. This applies to in and around the plantroom where new chiller unit and control equipment have been installed but the existing system has been left intact.



Schematic Instalation Schemes

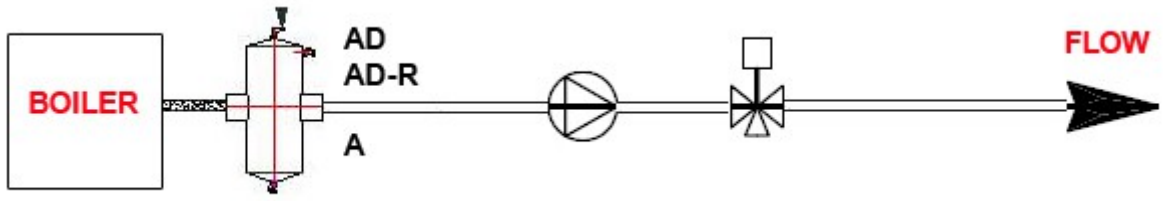
This document describes where to install the units in heating & cooling systems

Specific rules

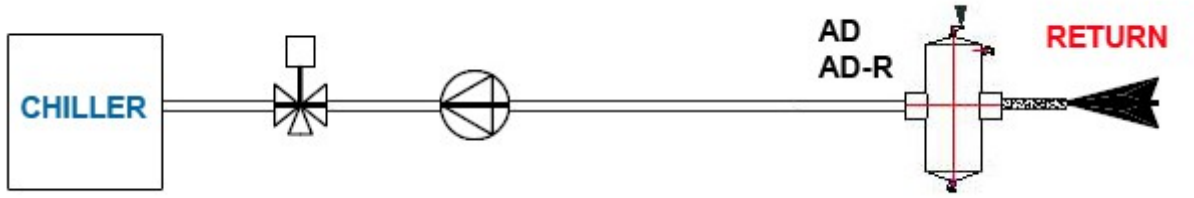
1. All models are in line units the water flows through them.
2. The positioning of the clean vent range to the pumps and control equipment is important !!
3. Consideration of all our range of units must be taken into account when specifying a unit applying to a specific contract.

A. Is it a total new build.
B. Is it a boiler house / plantroom refurbishment.
C. Is there a particular problem with air or dirt (existing systems).
D. Positioning of boiler house / plantroom regarding head of water.

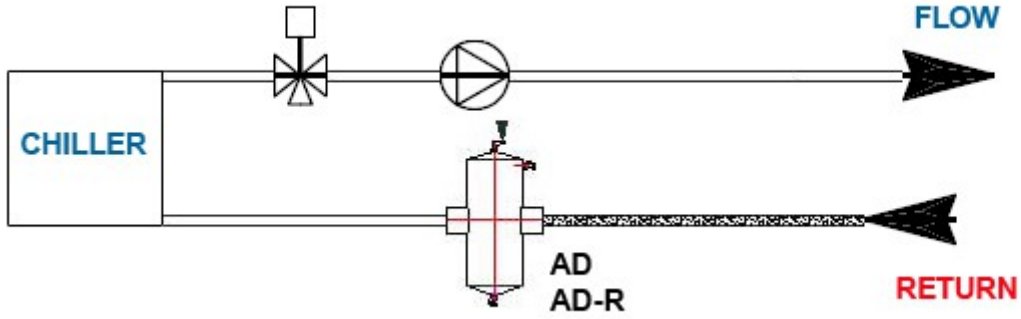
Air & Dirt or Air Only



Air & Dirt Only



Air & Dirt Only



Dirt Only