

# MICROBUBBLE AIR & DIRT SEPARATORS (Demountable)

## THE AD-R

### 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 demountable combined unit (our model ref AD-R) 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 or D-R) 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.

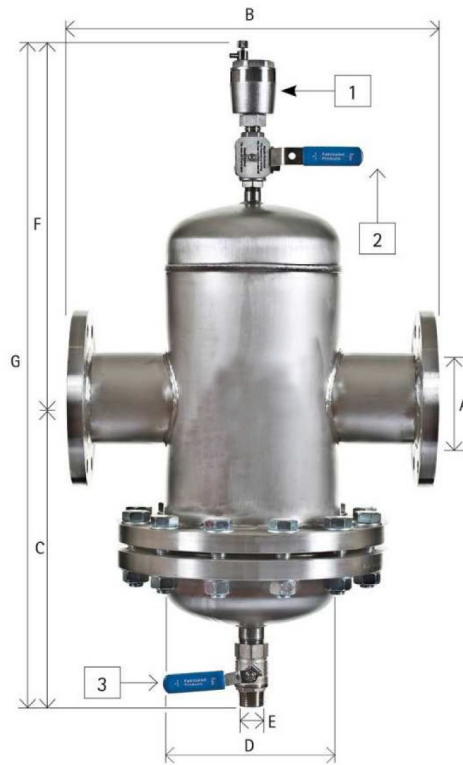
The unit is maintenance free.

## Drain valve

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



## Combined unit Air (de-aerator)-& Dirt Separator Removable Model AD-R

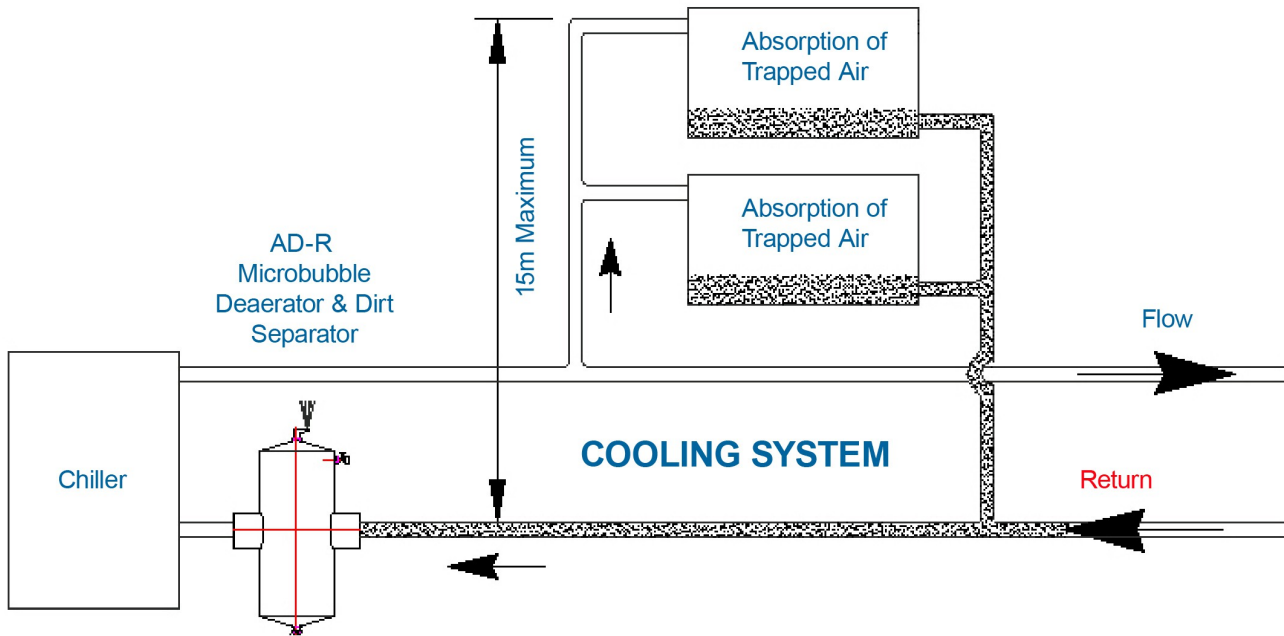


Model No.	Dimensions (mm)							Tested to
	A	B	C	D	E	F	G	
AD-R50	50	430	338	170	25	380	718	21 Bar
AD-R65	65	430	338	170	25	380	718	21 Bar
AD-R80	80	490	408	220	25	440	848	21 Bar
AD-R100	100	490	408	220	25	440	848	21 Bar
AD-R125	125	630	518	325	25	550	1068	21 Bar
AD-R150	150	630	518	325	25	550	1068	21 Bar
AD-R200	200	810	695	410	50	625	1320	21 Bar
AD-R250	250	880	845	510	50	775	1620	21 Bar
AD-R300	300	1100	945	610	50	875	1820	21 Bar
AD-R350	350	1500	1020	770	50	950	1970	21 Bar
AD-R400	400	1500	1195	770	50	1125	2320	21 Bar
AD-R450	450	1750	1195	920	50	1125	2320	21 Bar

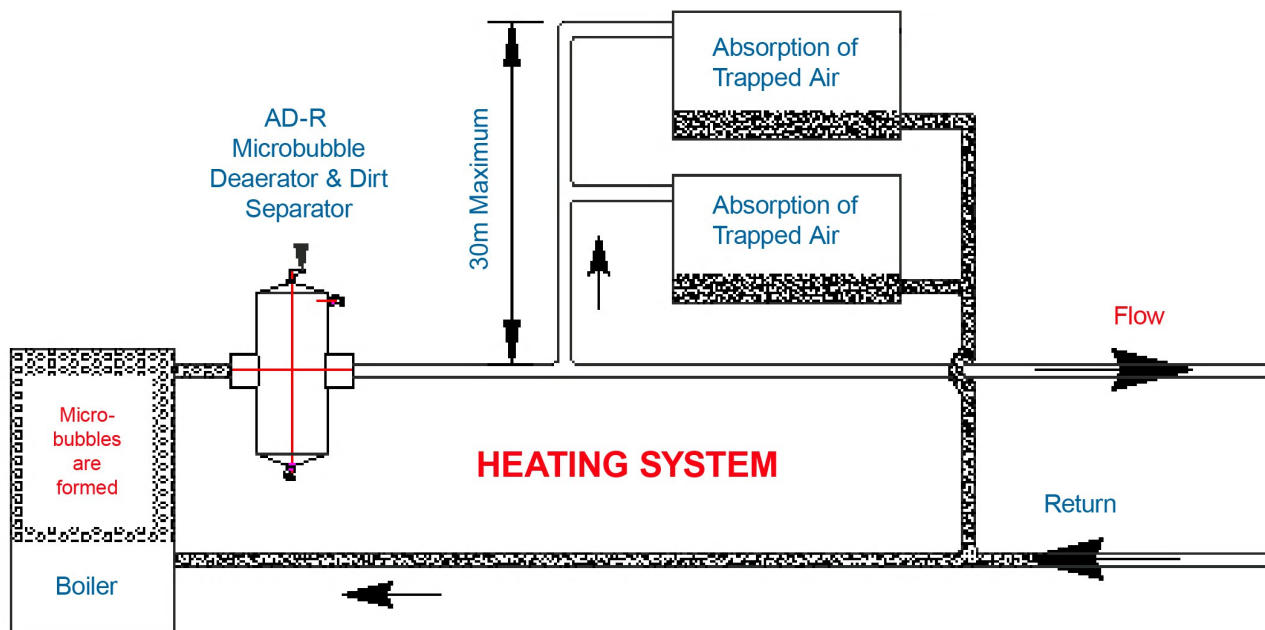
1. High Capacity Auto Air Vent
2. Fast Bleed Valve
3. Drain Valve

## Positioning the AD-R 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-R should always be installed before equipment that needs protection from dirt, sludge, etc., (ie. Chillers, control 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 plant room where new chiller unit and control equipment have been installed but the existing system has been left intact.



# Schematic installation Schemes – Unit Range

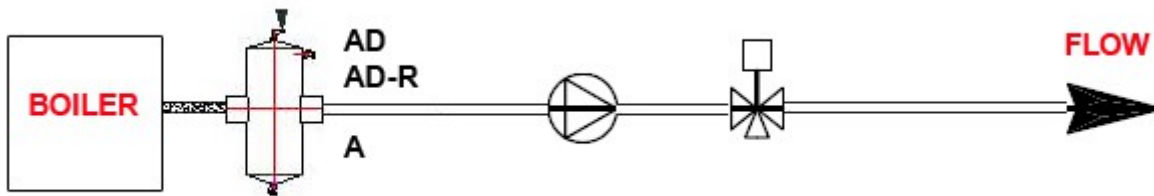
This document describes where to install the unit products in heating & cooling systems

## Specific rules

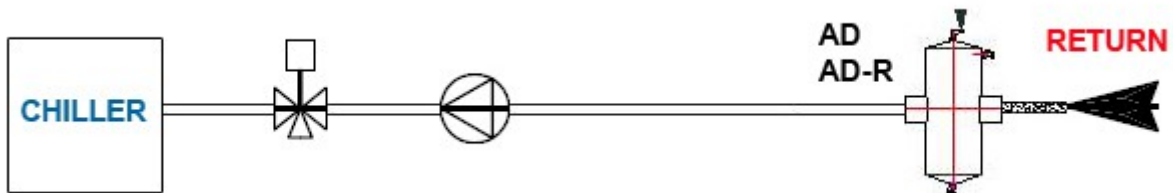
1. All models are in line units the water flows through them.
2. The positioning of the unit range to the pumps and control equipment is important !!
3. Consideration of all our range of units must be taken into account when specifying a unit applying to a specific contract.

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

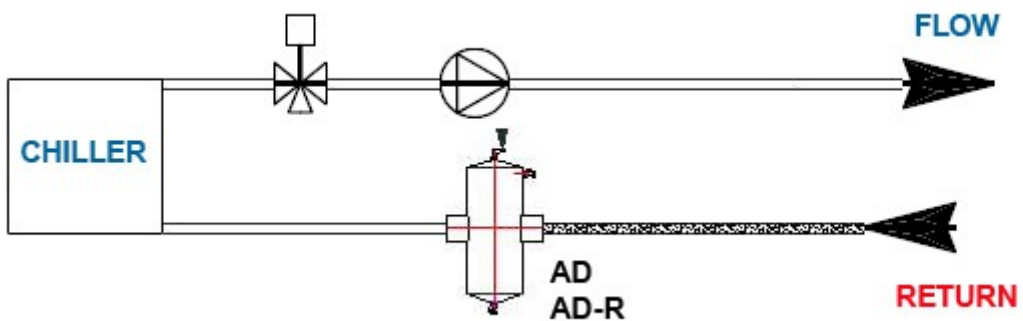
## Air & Dirt or Air Only



## Air & Dirt Only



## Air & Dirt Only



Dirt Only

