
COMBINED MICROBUBBLE, DIRT & SLUDGE SEPARATOR FOR HEATING AND COOLING SYSTEMS



EXTWIN

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OVERVIEW

Extwin, combined microbubble and dirt separator for heating and cooling systems for sealed system circuits. Suitable for use with water and water/glycol mixture to a maximum of 40% concentration.

The Extwin offers the combined functions of the specialist individual air separator and a dirt/sludge component in a single, compact fitting. A far more cost-effective solution than using both the individual components.

The air separator is for removing circulating free air and gas bubbles with high efficiency from the system flow. Permanent evacuation by way of integrated automatic air vent with high venting capacity. Facilitating hydraulic balancing after filling operations.

The dirt separator is for the removal of dirt particles up to a size of 0.5mm out of the liquid flow by way of a specifically designated insert. The Extwin is fitted with a ¾" service/drain valve located at the bottom of the unit for easy removal of the collected dirt/sludge, no additional shut-off valves or bypass lines required.

The collection area can be easily emptied at regular intervals using a drain ball valve while the system remains in operation. The flanged collection chamber can be removed for inspection.

Features

- Robust steel construction
- Minimal maintenance
- Flange connections DN 50 to DN 300 (PN16)
- Max. operating pressure: 10 bar
- Operating temperature 110°C
- Minimum pressure drop

Air removal

Because micro-bubbles are carried along by the flow, special measures are required in order to remove them from the system efficiently. The casings of micro-bubble separators have a larger cross-section than the connection dimensions, which reduces the flow speed in the separator. At the same time, the volume flow is guided by a special wire mesh. The turbulence causes gas bubbles to move in an undetermined direction. Depending on the volume flow, density, and volume of the particles, parts of these gas bubbles are supported in their natural breakaway motion and removed from the system via the deaeration top section.

Dirt removal

The sludge/dirt separation in the Extwin works on a similar principle to micro-bubble separation: The flow is guided through an area with a greater cross-section than the connection dimensions in order to reduce the flow speed. The turbulence caused by the tube mesh causes heavy materials to move in an undetermined direction. Depending on the volume flow, density, and volume, parts of these sludge particles are supported in their natural breakaway motion and guided to the bottom section of the casing.

Applications

A combined micro-bubble, dirt, and sludge separator is useful for heat generators that can produce calcification. It is designed for installation downstream of a heat generator in systems with no or a low static height (up to 10m). Especially in cooling circuits it is useful to combine deaeration with dirt separation in the return line to the chiller and/or heat exchanger.

AUTOMATIC AIR VENT OPERATION

In order to ensure ongoing safe and automatic operation the automatic air vent follows a sound engineering design formula: Gases collect in a generously sized chamber. This causes the water level in the chamber to drop and a float to fall, which opens the deaeration valve once it reaches a certain depth. The combination of a multiple-tested valve and a generously sized air chamber ensures flawless operation, even in extreme pressure fluctuations and heavily contaminated media.

**Non-leak, non-shut-off
deaeration valve**

**Air chamber with
special design: driving
impurities do not reach
the deaeration valve;
high air chamber
volume to counteract
pressure fluctuations.**

**Sound design for an
extra-long service life**



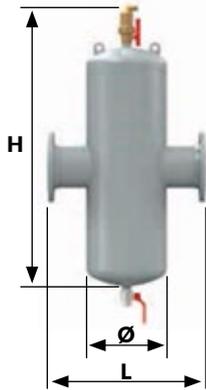
DIRT & SLUDGE SEPARATION

The sludge/dirt separation in the main chamber works on a similar principle to micro-bubble separation: The flow is guided through an area with a greater cross-section than the connection dimensions in order to reduce the flow speed. The turbulence caused by the tube mesh causes heavy materials to move in an undetermined direction.

Depending on the volume flow, density, and volume, parts of these sludge particles are supported in their natural breakaway motion and guided to the bottom section of the casing. The tube mesh is purposely designed with ample tolerance away from the flow connection to allow larger dirt particles to fall directly to the bottom of the chamber. This design adds the effectiveness of the mesh whereby it will not get clogged so quickly and reduces the overall frictional resistance through the chamber.



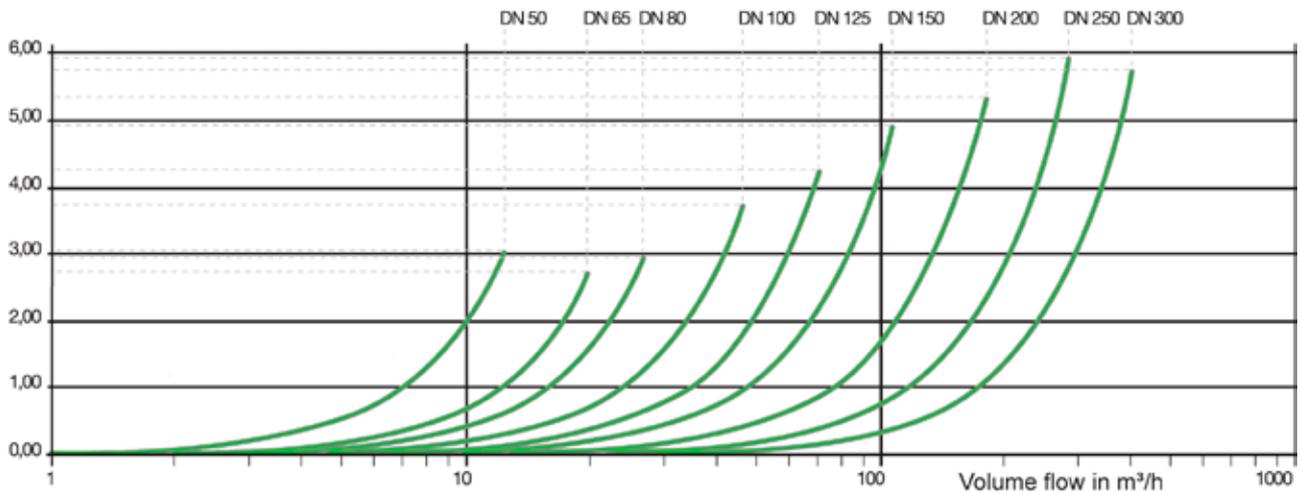
EXTWIN DIMENSIONS



STEEL WITH FLANGE CONNECTION - 110°C - 10 BAR

TYPE	WEIGHT kg	CONNECTION	V _{max} m ³ /h	L mm	Ø mm	H mm
TW 50	17	DN50/PN16	12.5	350	132	754
TW 65	18	DN65/PN16	20	350	132	754
TW 80	31	DN80/PN16	27	470	206	973
TW 100	33	DN100/PN16	47	475	206	973
TW 125	70	DN125/PN16	72	635	354	120
TW 150	73	DN150/PN16	108	635	354	1210
TW 200	135	DN200/PN16	180	775	409	1492
TW 250	250	DN250/PN16	288	890	480	1896
TW 300	325	DN300/PN16	405	1005	634	2206

EXTWIN PRESSURE LOSS IN kPa



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