

SPIROCROSS®



SPIROCROSS® | HYDRAULIC DEAERATORS
AND DIRT SEPARATORS
FOR HEATING, COOLING
AND PROCESS SYSTEMS

SPIR  **TECH**
FOR BETTER PERFORMANCE

COMMERCIAL | INDUSTRY



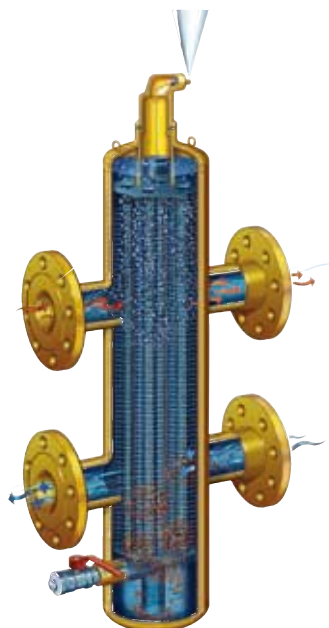
Air and dirt separation in perfect balance

A good hydraulic balance is highly important for HVAC and process systems with several groups and pumps. The effective removal of air and dirt also contributes towards the achievement of optimum system performance. Hydraulic balancing and air and dirt separation are combined in the compact SpiroCross.

A logical consequence is that only four connections are required instead of eight. That means saving on purchasing costs but also on installation and maintenance costs.

SpiroCross can be used for both new build projects and for renovating heating, cooling and process systems.

SpiroCross was developed by Spirotech using Computational Fluid Dynamics and was also tested extensively on our own TÜV-certified test and measurement set-up and in various systems in practice.



Benefits of SpiroCross

- Three functions in a single component.
- Just four connections instead of eight.
- Optimum hydraulic balance in the system.
- Spirotube guarantees optimum fluid mixing.
- Removes circulating air and micro bubbles.
- Even tiny particles, from 5 μm (= 0.005 mm), are separated and removed.
- Dirt can be discharged while the system is in operation.
- Minimal constant pressure drop.
- Compact design and limited built-in height.
- No unnecessary shutdown.
- Three-year guarantee.

Total solutions

Spirotech offers an extensive range of total solutions for HVAC and process systems: accessories, additives and advice to ensure optimum efficiency and guarantee the quality of the system fluid. These products and services reduce faults, wear and maintenance as well as improve system performance and lower energy consumption. And what is more, these total solutions provide major benefits and save time during the design, installation, start-up and commissioning of systems.

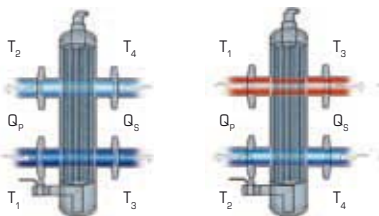
“Three functions in a single compact appliance.”

SpiroCross: versatile yet compact

Cooling

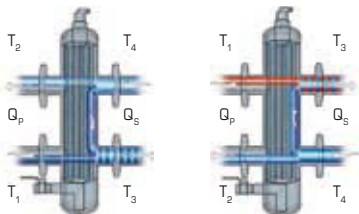
Heating

Situation 1: $Q_p = Q_s$ $T_1 = T_3$ $T_2 = T_4$



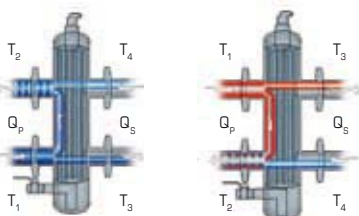
In this rare situation, supply and demand are exactly equal. This is the ideal situation in which the hydraulic separator is actually superfluous.

Situation 2: $Q_p < Q_s$ $T_1 > T_3$ $T_2 = T_4$



In this situation, demand is greater than supply. This will cause the ΔT between T3 and T4 to drop. Some of the return water will join the supply, as a result of which it will take longer for the rooms to reach their set temperature. Where possible, the power of the boiler or cooler will then be increased.

Situation 3: $Q_p > Q_s$ $T_1 = T_3$ $T_2 > T_4$



In the third situation, supply is greater than demand. This will cause the ΔT between T1 and T2 to drop. Some of the supply water will now join the return water, as a result of which the efficiency of the boiler or cooler will decrease. Where possible, the power will be modulated downwards.

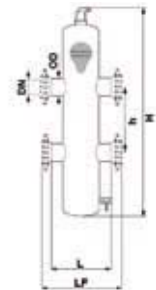
At the heart of the SpiroCross is a spiral structure through which the fluid flows. This is the “Spirotube” which ensures that micro bubbles rise automatically and dirt particles sink automatically. Although the Spirotube can trap the smallest micro bubbles and dirt particles, it has a very open structure which means that the SpiroCross does not clog up. The flow and the low pressure drop are not affected by the accumulated dirt.

Dirt trapped can be discharged while the system is in operation. This saves a great deal of time and therefore represents a major advantage over filters.

How exactly does a hydraulic separator work?

A hydraulic separator absorbs the differences in volumetric flow between a primary circuit (supply = Q_p) and a secondary circuit (demand = Q_s). Three operating situations can occur if a hydraulic separator is installed in a system and these are shown on the left.

Connection DN (mm)	50	65	80	100	125	150	200	250	300
Connection OD (mm)	60.3	76.1	88.9	114.3	139.7	168.3	219.1	273	323.9
H (mm)	815	905	999	1261	1546	1781	2321	2870	3388
h (mm)	240	305	360	460	560	670	870	1100	1295
L (mm)	260	260	370	370	525	525	650	750	850
LF (mm)	350	350	470	475	635	635	775	890	1005
Primary Flow at 1.5 m/s (m ³ /h)	12.5	20	27	47	72	108	180	288	405
Primary Flow at 1.5 m/s (l/s)	3.5	5.5	7.5	13	20	30	50	80	113
Capacity ($\Delta T = 20^\circ\text{C}$) (kW)	294	462	630	1092	1680	2520	4200	6720	9450
Capacity ($\Delta T = 6^\circ\text{C}$) (kW)	88	139	189	328	504	756	1260	2016	2835
Article number	XC050	XC065	XC080	XC100	XC050	XC125	XC150	XC250	XC300



The SpiroCross are suitable for water and water/glycol mixtures (max. 50%). They can be used in combination with locally approved chemical additives and inhibitors that are compatible with the materials applied within the system. Not suitable for drinking water installations.

The standard SpiroCross is suitable for a temperature range of 0 to 110 °C and for an operating pressure of 0 to 10 bar. The SpiroCross housing is made of unalloyed steel. The flange connection is PN 16. Other sizes, connection materials, materials, pressures and temperatures are available on request.

Digital support

Product data sheets, standard specification texts, line drawings, CAD symbols, project descriptions, etc. are available via our website.

Custom-made solutions and OEM applications

Spirotech offers not only standard products. If necessary, we work with customers to produce custom-made solutions. These are based on users' specific requirements. If desired, these can also be supplied as OEM products.

Separate literature is available which contains detailed product information. You can also find this information on our website.



Spirotech: accessories, additives and advice

Spirotech designs and produces innovative total solutions for conditioning fluids in HVAC and process systems. Our products and services reduce faults and wear, less maintenance is required, performance is improved and energy consumption is reduced.

Spirotech is deservedly regarded as the only real specialist in the world. Leading manufacturers of system components recommend Spirotech products on account of their high standard of quality and the company's vision on product development and process improvement.

Thanks to a very extensive international network of suppliers, users all over the world enjoy the benefits of our products and services every day.

Spirotech is a Spiro Enterprises company.



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