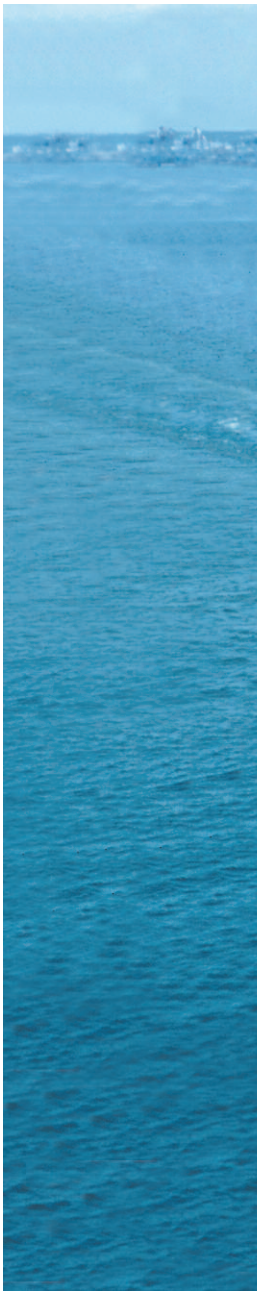

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TURBULO-MPB Bilge Water Separator
Simplex-Turbulo-Systems

Blohm + Voss Industries

Blohm+Voss

TURBULO-MPB Bilge Water Separator

For more than 80 years we have been building Turbulo bilge water separators, which makes Blohm + Voss Industries one of the market leaders in separator technology. Turbulo separators have proven themselves in onboard operation for all types of vessels.

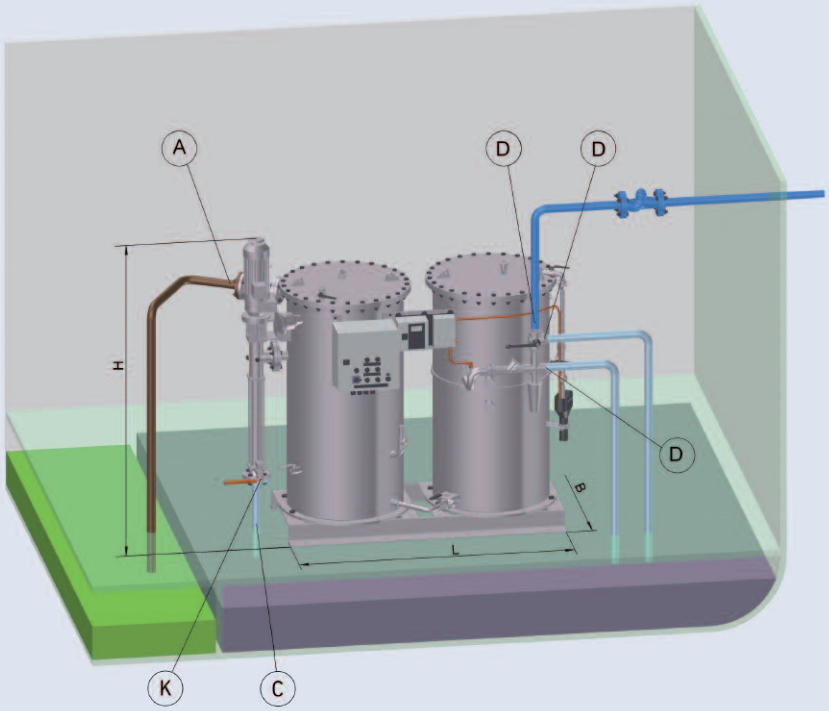
On the basis of our experience, we developed the bilge water separator series type Turbulo-MPB (Mechanical Phase Breaker). The Turbulo-MPB is designed for the treatment of bilge water on ships in accordance with the new IMO Resolution MEPC 107(49). The system not only reduces the oil/hydrocarbon contents to meet the most stringent international requirements like USCG, Great Lakes and St.Lorenz Seaways, but also holds back solid matter as well as the very small hydrocarbon particles.

Description
The bilge water separator Turbulo-MPB is a classification-approved steel welded construction which is completely mounted on a foundation frame. It will be supplied wired and ready for operation with electric heating, temperature regulation, switch box, oil content alarm unit, valves, cocks, pressure gauges, safety valves and 3-way valves.

The Turbulo-MPB System (Two-stage System)
1st Stage
The Turbulo-MPB bilge water separator operates as a pressure system. The system functions according to the principle of gravitation supported by oleophilic coalescer inserts called HEC (High Efficiency Coalescer) in the first stage. These coalescer inserts are corrosion resistant and offer a very large surface area at a high free volume. The oily water mixture is passed through the separator by means of a special sized pump mounted on the first stage. The separated oil is drained out of the collecting space automatically by means of a level control. If the separator has to process heavy oil, a heating coil is installed in the oil collecting space to support the operation.

2nd Stage
The second „breaking" stage utilizes mechanically working „HycaSep" elements (Hydro Carbon Separation) to separate mechanical emulsions in accordance with the IMO-Resolution MEPC 107(49). The „HycaSep" elements work according to the principle of coalescence.

Properties of the „HycaSep" Element
The „HycaSep" element was developed among others for the separation of oil/water mixtures with regard to the test fluid "C" specified by MEPC. The element can take up and give off larger quantities of oil because of a primary and secondary coalescence function. Oil/water mixtures with a reduced interfacial tension are also separated. Higher oil concentrations are processed without substantial pressure losses during the MEPC 107(49) tests.
Coalescers like „HycaSep" collect hydrocarbons by adhesion and release the collected oil gravitationally. For holding back fine hydrocarbon particles, the coalescer has a suitable fibre structure being able to collect and release hydrocarbons even if they are contaminated by detergents. A loss of operating pressure due to solid particles necessitates replacing of the coalescer elements. For operation, maintenance and replacement work, no special training or skill is necessary.



TMPB		0.25	0.5	1	2.5	5	10
Capacity	m^3/h	0.25	0.5	1	2.5	5	10
Weight empty, incl. pump	kg	235	235	360	650	1000	1650
Weight full, incl. pump	kg	345	345	545	1250	2070	3930
Inlet	C	DN 40	DN 40	DN 40	DN 40	DN 50	DN 65
Outlet	D	G 1/2	G 1/2	G 3/4	G 1	G 1 1/2	DN 50
Oil outlet	A	G 3/4	G 3/4	G 3/4	G 1 1/2	DN 50	DN 65
Dry running protection valve	K	G 1/2	G 1/2	G 1/2	G 1/2	G 1/2	G 1/2
Dimensions	L	870	870	900	1400	1700	2400
	B	400	400	425	640	780	1156
Total height	H	1463	1463	1728	1677	1861	1868

15 ppm Alarm Unit
For monitoring the purity of the discharge water several measuring unit types are available.

The Advantages:
- Residual oil content in the outlet water well below 15 ppm (Test results near 1 ppm)
- Compact dimensions
- Small floor space required
- Simple installation
- Simple maintenance
- Fully automatic operation
- Separate installation of pump and 2nd stage possible

We are able to answer specific analytical questions, especially concerning the determination of hydrocarbons in regard to ISO 9377-2.

Our own lab supports the following analyses:
- Determination of particles in size and distribution
- Determination of the oil content according to ISO 9377-2
- Determination of streaming potential in an emulsion
- Determination of the relevant oil parameters
- Determination of the interfacial tension