ABS flow booster SB 900

50 Hz

The compact ABS flow boosters have been designed for a wide range of applications. The units are suitable to achieve flow pattern in large tanks and open waters for mixing and stirring applications.

Construction
The ABS flow booster SB is designed as a compact, water pressure-tight unit including propeller and integrally lockable coupling system. The flow boosters are available in the material version:
Cast iron (EC)

Motor
Squirrel cage, 3-phase, 4-pole 50 Hz,
insulation class F (155 °C), max. submergence 20 m.

Propeller
Technically optimized, axially operating 3-blade propellers with very good self-cleaning effect for vibration-free operation. The propellers are designed to achieve high thrusts and therefore a high flow capacity in axial direction.

Solids deflection ring
The patented solids deflection ring protects the mechanical seal from damage by ingress of solids or fibrous matter.

Bearings
All bearings are lubricated-for-life and maintenance-free, with a calculated life time of more than 100,000 h.

Gearbox
Robust fatigue strength gearbox of high efficiency and very long operating life, oil lubricated.

Shaft sealing
Motor side dual radial seal, medium side silicon carbide mechanical seal independent of direction of rotation. O-Rings / lip seals: NBR.

Seal monitoring
DI-system with a sensor in the junction box.

Temperature monitoring
TCS-Thermo-Control-System with bimetallic contacts as thermal sensors in every phase of the stator give a timely warning or switch off the motor automatically before the permissible temperature limit e.g. due to overloading, high temperatured medium, or other problem sources, has been exceeded.

Cable
10 m sewage resistant CSM material. Type: H07RN.

Options
Explosion-proof version, seals in viton, cable protection sleeve, PTC or PT 100 in the stator.

Weight: 147 kg.

Motor data

Motor	A 14/4	A 30/4
Rated power (kW)	1.4	3.0
Rated current at 400 V (A)	2.94	6.5
Motor efficiency (%)	78.3	80.9
Power factor	0.88	0.82
Speed (min^{-1})	79	102 - 113

Flow booster performance table

Hydraulic No.	Propeller dia. in mm	Mixer power PP in kW	Motor kW
931	900	0.6	1.4
932	900	1.2	3.0
933	900	1.5	3.0

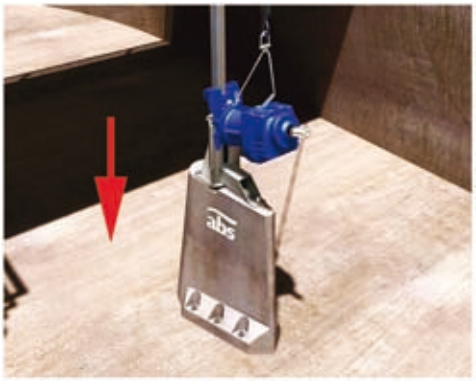
Material

Part	Cast iron version
Motor housing	EN1563; EN-GJS-400-18 (GGG-40)
Motor shaft	1.0060 (St 60-2)
Propeller shaft	1.7225 fully encapsulated (42CrMo4)
Propeller	DIN 17 440; 1.4571
Coupling bracket	DIN 17 445; 1.4408 (CF-8M)
Fasteners	1.4401 (AISI 316)

Optimizing special design

ABS has relied on the well-established special design for the propellers, giving a self-cleaning effect. An advanced special design was combined with propeller blades shaped for optimal flow properties. These properties make the propeller insensitive to turbulance or uneven flow.

The propeller design guarantees an optimum effectiveness not only at specifically chosen performance levels, but throughout the power and diameter range. Due to the new manufacturing method of large propellers, which allows the propeller production in one piece, an optimum stress pattern in the propeller and the best possible precision is achieved. This allows vibration-free operation.



Lowering

New coupling system

The patented ABS coupling system for submersible mixers is a major technical innovation in the development of easy disconnection systems. Liquid flow, regardless of being laminar or turbulent, causes vibrations which effects submersible mixers especially with large propellers. In addition to impulse forces and any intrinsic vibrations of the units themselves, these forces must be absorbed by the coupling device so that quick disconnection systems can function in a secure and reliable manner.

A vibration-free attachment is a major requirement for reliable running and long operating life of the mixers and installation system. Amply designed three dimensional support of the coupling element ensure its reliable seating. With the new ABS flow booster SB an innovative product assuring trouble-free operation is offered.

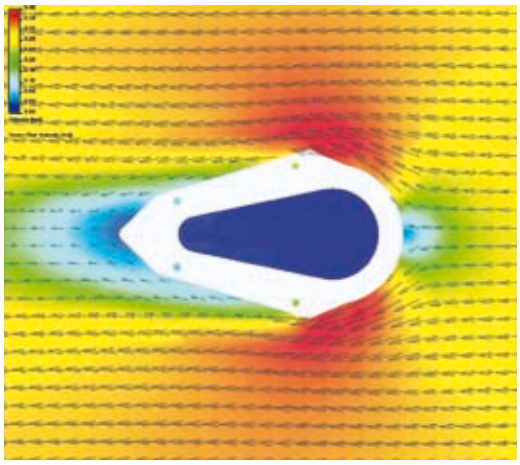
Coupling

Innovative concrete base

The ABS concrete base finally establishes the necessary vibration absorbing connection between machine and built structures. This invention has an abundance of advantages that make the flow booster a really comprehensive solution:

- The flow favouring drop shape avoids turbulence and therefore improves the efficiency of the propeller.
- The mass and the material characteristics supress all damaging vibrations.
- Corrosion resistance and a fluent connection with the tank floor ensure the highest level of security and long operation life.

Locking (inside view)



Computational fluid dynamics

We know how water works

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