ABS FLOW BOOSTER
SB 1600 to SB 2500

50 Hz

Introduction
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 2-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.

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 motor housing.

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: Seals in viton, cable protection sleeve, PTC or PT 100 in the stator. CR version in stainless steel is available on request.

Weight: 150 kg (SB 1600), 153 kg (SB 1800), 156 kg (SB 2000), 160 kg (SB 2200), 168 kg (SB 2500).

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	Reinforced solid PUR
Coupling bracket	1.4408 (AISI A351)
Fasteners	1.4401 (AISI 316)

Mixer performance table

Hydraulic No.	Propeller dia. in mm	Mixer power P_P in kW	Motor kW
1621	1600	0.7	1.4
1622	1600	1.1	1.4
1623	1600	2.1	3.0
1624	1600	2.6	3.0
1821	1800	0.8	1.4
1822	1800	1.1	1.4
1823	1800	1.4	3.0
1824	1800	2.7	3.0
1825	1800	3.5	4.0
2021	2000	1.1	1.4
2022	2000	1.6	3.0
2023	2000	2.0	3.0
2024	2000	3.1	4.0
2025	2000	3.8	4.0
2221	2200	1.1	1.4
2222	2200	1.6	3.0
2223	2200	2.2	3.0
2224	2200	3.7	4.0
2521	2500	1.4	3.0
2522	2500	1.7	3.0
2523	2500	2.1	3.0
2524	2500	2.7	3.0
2525	2500	4.1	4.5

Motor data

Motor	A 14/4	A 30/4	A 40/4	A 45/4
Rated power (kW)	1.4	3.0	4.0	4.5
Rated current at 400 V (A)	2.94	6.5	9.0	10.0
Motor efficiency (%)	78.3	80.9	77.7	76.6
Power factor	0.88	0.82	0.83	0.85
Speed (min^{-1})	36 - 48	36 - 63	56 - 63	56

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.

New coupling system

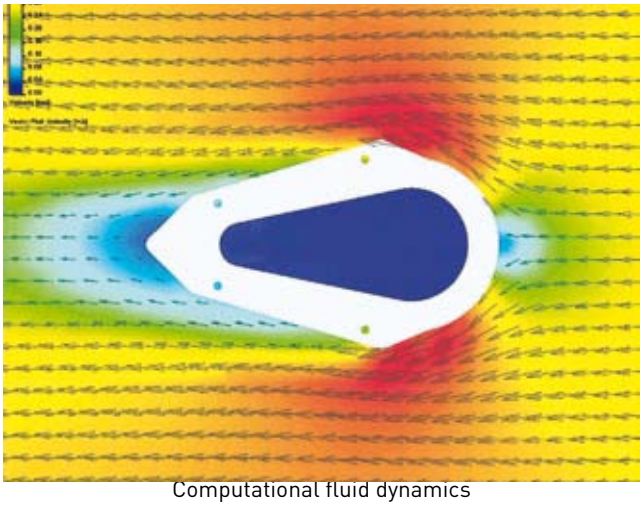
The patented ABS coupling system for submersible mixers is a major technical innovation in the development of easy disconnection systems. Liquid flow, regardless of being laminar or turbulent, causes vibrations which effects submersible mixers especially with large propellers. In addition to impulse 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.

Innovative concrete base

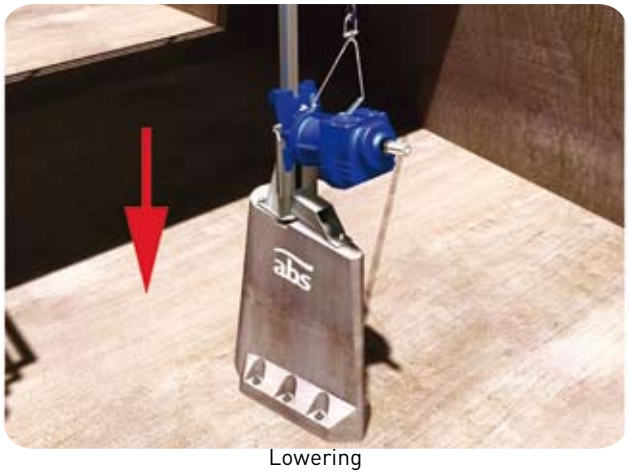
The ABS concrete base finally establishes the necessary vibration absorbing connection between machine and built structures. This invention has an abundance of advantages that make the flow booster a really comprehensive solution:

- 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

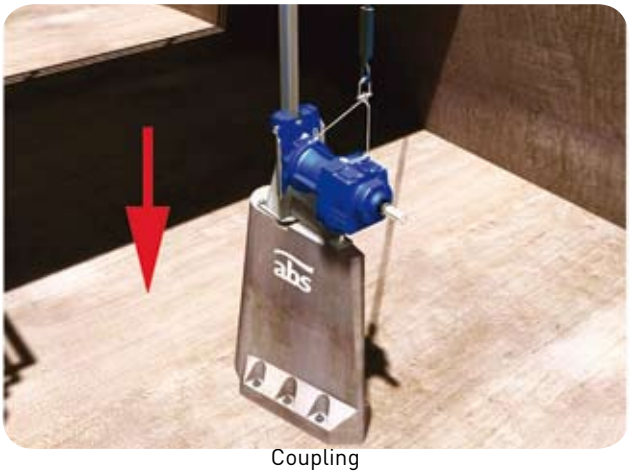


Computational fluid dynamics

Functioning



Lowering



Coupling

Locking (inside view)

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We know how water works

| ABS Group, Roskildevägen 1, Box 394, SE-201 23 Malmö, Sweden | Tel +46 40 35 04 00 | Fax +46 40 30 50 45 |
| www.absgroup.com |