

SULZER

Reshaping

the power of low speed
submersible mixers



The world's biggest mixer for wastewater treatment requires 25% less energy!

The low speed submersible mixer ABS flow booster XSB is the biggest of its type on the market for wastewater treatment and cuts energy consumption by a remarkable 25%! It achieves this through a premium-efficiency motor, a highly efficient gearbox and a unique innovative hydraulic design that boosts mixer efficiency as proven by exhaustive testing.

The ABS flow booster XSB is ideal for wastewater circulation and flow generation in the oxidation ditches and nutrient removal. With a maximum thrust of more than 6400 N from the 3-blade model, one mixer is now sufficient in most cases where two were required before.

The ABS flow booster XSB is yet another world first and represents the third phase of the ABS EffeX Revolution following the introduction of the superior ABS EffeX submersible sewage pump XFP range and the ABS submersible mixer XRW.

Totally new propeller design

ABS has taken an uncompromising approach to designing the new propeller of the ABS flow booster XSB to achieve optimized performance and efficiency. The 3-blade propellers are configured to produce high thrusts resulting in a high flow capacity in an axial direction with less pulsation. A high-strength composite material structure enables extremely thin yet highly efficient blades.

The blade profile and special curved wedge shape allow the propeller to be effectively self-cleaning. Single blade fastening to the hub allows straightforward assembly.

Big energy savings

As energy costs for mixers make up about 80% of operating costs, using premium-efficiency motors cuts energy consumption dramatically. Compared with other low speed mixer models on the market, the ABS flow booster XSB reduces energy consumption by approximately 25% thanks to a motor efficiency of more than 90%.

Further reduced costs

Moreover, installation costs are reduced due to an innovative design which makes one mixer sufficient where two were required previously. More than 6400 N of propeller thrust from the three-blade model with mixer blades that separate easily from the propeller hub to facilitate transport, assembly and disassembly. The subsequent total cost reduction provides optimal life cycle economy.

Greater reliability

The enhanced design of the ABS flow booster XSB reduces wear and tear and vibration. Its premium-efficiency motor is dependable and the special patented mounting pedestal stabilizes mixer operation.

The robust 3-stage helical gearbox provides high efficiency and very long operating life because of its new strong oil-lubricated bearing configuration with a calculated lifetime of more than 100 000 h. The fatigue-strength helical gears allow numerous reduction ratios and were specially developed for this mixer. Thus it was possible to design small, compact, lightweight drives, even where high performances are required.





Photo by T. Laurent

Scientifically proven

The ABS flow booster XSB is a result of extensive R&D activities and working with universities. This involved wide-ranging laboratory performance data analyses that contributed significantly to the ABS continuous improvement program. Laboratory testing was complemented with thorough field trials until the desired high performance was attained.

Lower carbon footprint

Greater energy saving from the premium-efficiency motor and other design features reduces the carbon footprint when using the low speed mixer ABS flow booster XSB. The carbon footprint is further cut by a maximal equipment life cycle and minimal mixer maintenance.

Join the **ABSEffeX** Revolution

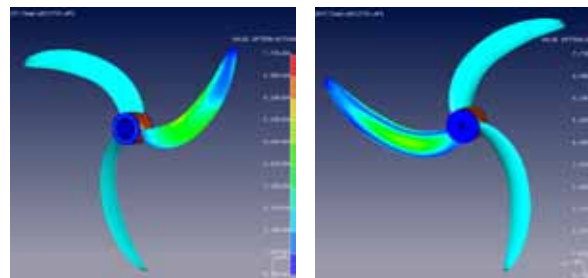
Make the right choice if you want to be first ...
... or more importantly, the first choice if you want to be right!

Smart features of our high-performance mixer

A number of smart features are built into the low speed mixer ABS flow booster XSB to ensure we offer the wastewater treatment industry the most high-performing and energy-saving product of its type.

Premium-efficiency motor

The low speed mixer ABS flow booster XSB has a built-in 3-phase squirrel cage IE3 premium-efficiency motor in accordance with IEC60034-30 to optimize motor efficiency. We are the first company in the world to offer submersible motors with such a high standard. The main benefits of using this type of motor are reduced energy consumption and carbon footprint because it is the most highly efficient motor on the market.



New blade design

Modern computational fluid dynamic procedures for a broad area of inlet velocities were used to ensure propeller and profile optimization. Moreover, a combination of highly elastic design and 3-blade geometry enables the propeller to attain extreme smoothness and vibration damping, which reduces the strain on the drive unit.

Demountable blades

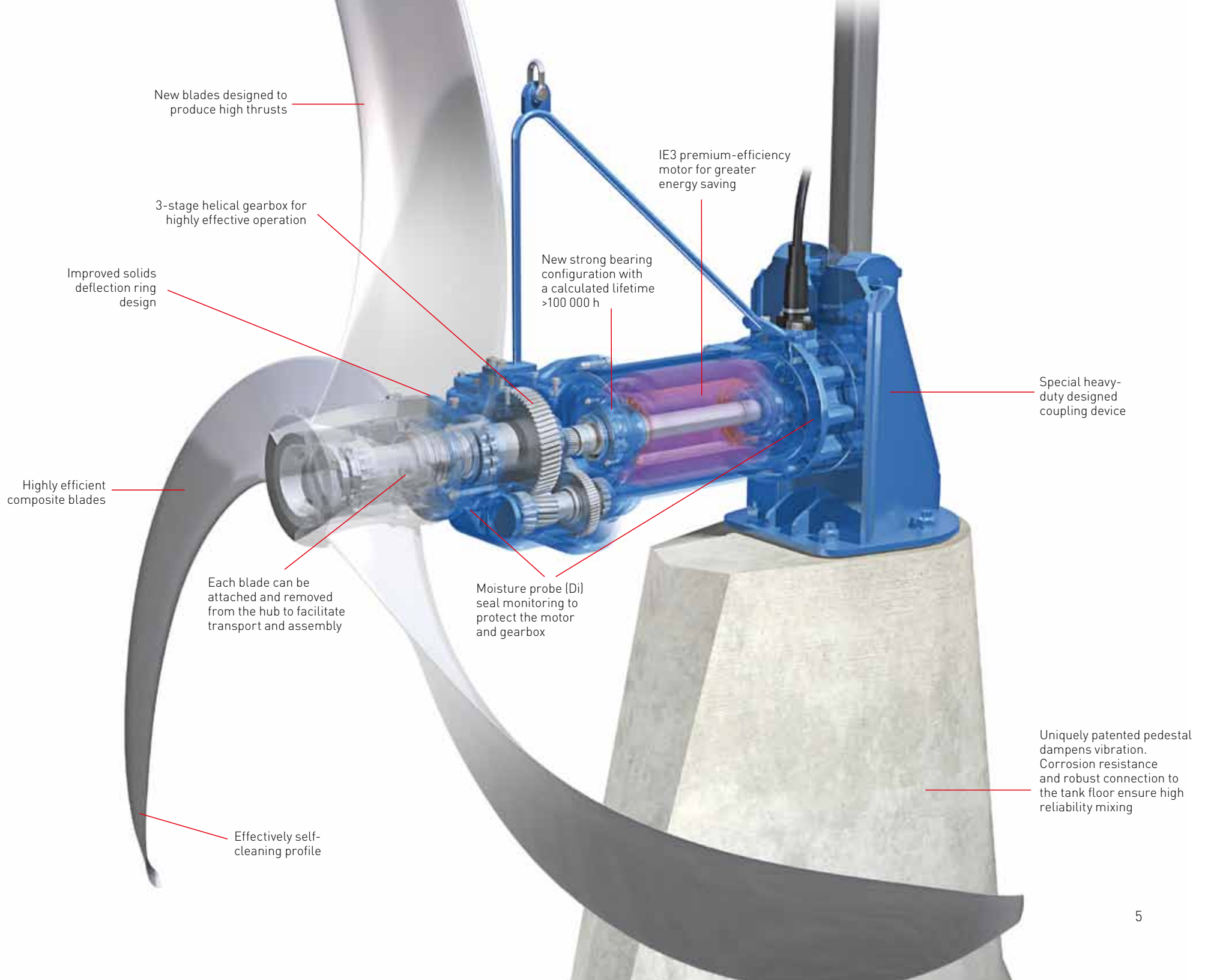
Each blade of the ABS flow booster XSB mixer can be removed easily to facilitate transport and installation. Simply remove the head cap bolts as shown in the figure to remove a blade to disassemble the propeller.

Patented mounting pedestal

The patented concrete pedestal is unique for this mixer and is designed to efficiently absorb vibration. Moreover:

- The streamlined shape of the base eliminates turbulence, improving the efficiency of the propeller.
- The mass and material characteristics of the concrete base suppress all damaging vibration.
- Corrosion resistance and a robust connection to the tank floor ensure high reliability and a long operating life.





New blades designed to produce high thrusts

3-stage helical gearbox for highly effective operation

Improved solids deflection ring design

Highly efficient composite blades

Each blade can be attached and removed from the hub to facilitate transport and assembly

Effectively self-cleaning profile

IE3 premium-efficiency motor for greater energy saving

New strong bearing configuration with a calculated lifetime >100 000 h

Special heavy-duty designed coupling device

Moisture probe (Di) seal monitoring to protect the motor and gearbox

Uniquely patented pedestal dampens vibration. Corrosion resistance and robust connection to the tank floor ensure high reliability mixing

Highly effective mixing in a wastewater treatment plant

The ABS flow booster XSB with integral motor is designed for the gentle circulation and mixing of fluids in wastewater treatment plants, particularly in the nitrification, denitrification and chemical phosphate removal stages.

Equalization

The objective of mixing during the equalization process is to blend and homogenize wastewaters coming from different sources, and to prevent sedimentation, stratification and odor formation before releasing it for further treatment. The ABS flow booster XSB is an excellent solution for keeping wastewater in deep tanks well mixed.

Nutrient Removal

In the anaerobic and anoxic tanks, the biomass has to be kept in suspension in order to avoid the risk of sludge settling and maximize the active volume. The aim is to provide good contact between the inlet wastewater, recirculated sludge and biomass. The ABS flow booster XSB provides sufficient mixing energy to keep the biomass in suspension.

Oxidation ditches

In all tanks where a simultaneous denitrification-nitrification process takes place, the large mixer generates optimal and efficient mixing to achieve good biomass mixing and circulation, and prevent settlement. This low speed mixer is much more efficient than a brush aerator for moving mixed liquids.

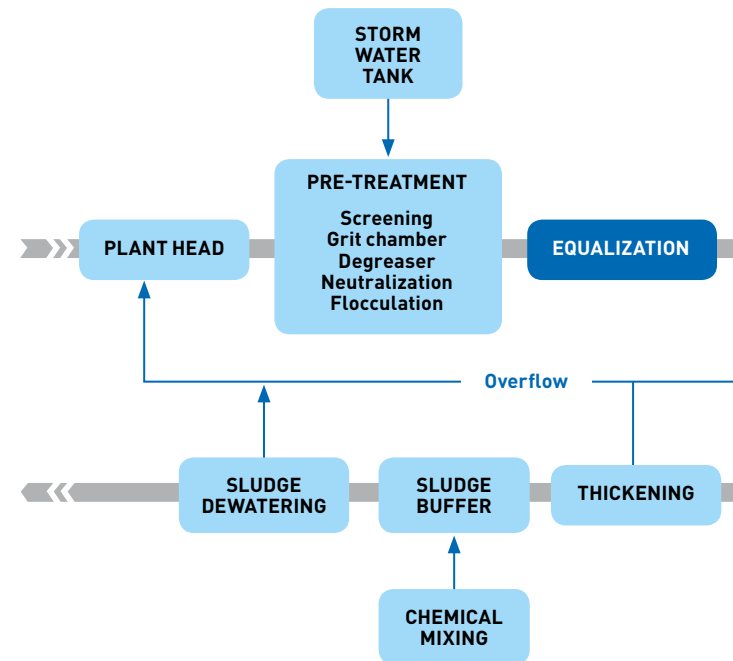
Chemical phosphate removal

The horizontal flow generated by the ABS flow booster XSB efficiently creates an even distribution of the chemical flocculants introduced into the wastewater to produce flocs suitable for catching the phosphates.

Strong local service

ABS is a strong global brand and is represented worldwide with a strong local presence.

We offer a complete Service Program with everything from on-site repair to full service maintenance contracts, including alarm management and 24-hour breakdown services. In addition, a sophisticated stocking system has been developed with international hub locations and on-hand stocks of key products in order to ensure rapid and reliable availability of the product on-site when needed.

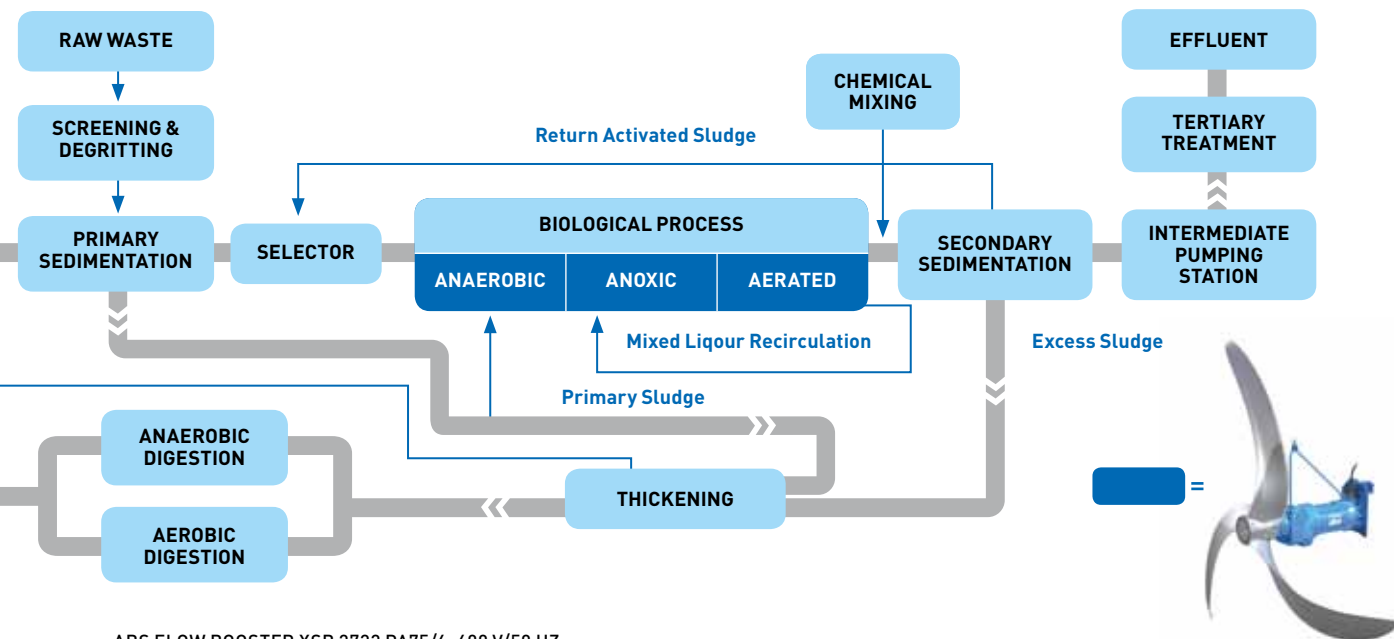


The wastewater specialist

The ABS brand is synonymous with innovation and well-proven solutions for wastewater collection and treatment. Good customer relations have enabled us to build up extensive application expertise.

We understand and solve the challenges of municipal, industrial, commercial and domestic end-users worldwide every day. And we help professionals design, select, install and service wastewater systems of any type.

We take care of you throughout the life cycle of your investment – before, during and after.



ABS FLOW BOOSTER XSB 2733 PA75/4, 400 V/50 HZ

Propeller diameter:	2750 mm
No. of blades:	3
Propeller speed:	60 m ⁻¹
Rated motor power P ₂ :	7.50 kW
Motor efficiency:	90.4%



At the forefront of wastewater handling

ABS is a world-leading brand with a long tradition in the wastewater industry. We offer more than 100 years of application experience and manufacturing of customer-oriented solutions using the latest technology.

The result is the development and supply of integrated ABS solutions and individual products for use in the wastewater segments: Domestic and Commercial Wastewater, Wastewater Collection Networks and Wastewater Treatment.



www.ABSEffeX.com

Join the **ABS**Effe**X**Revolution