

Driving Innovation in Wastewater Treatment





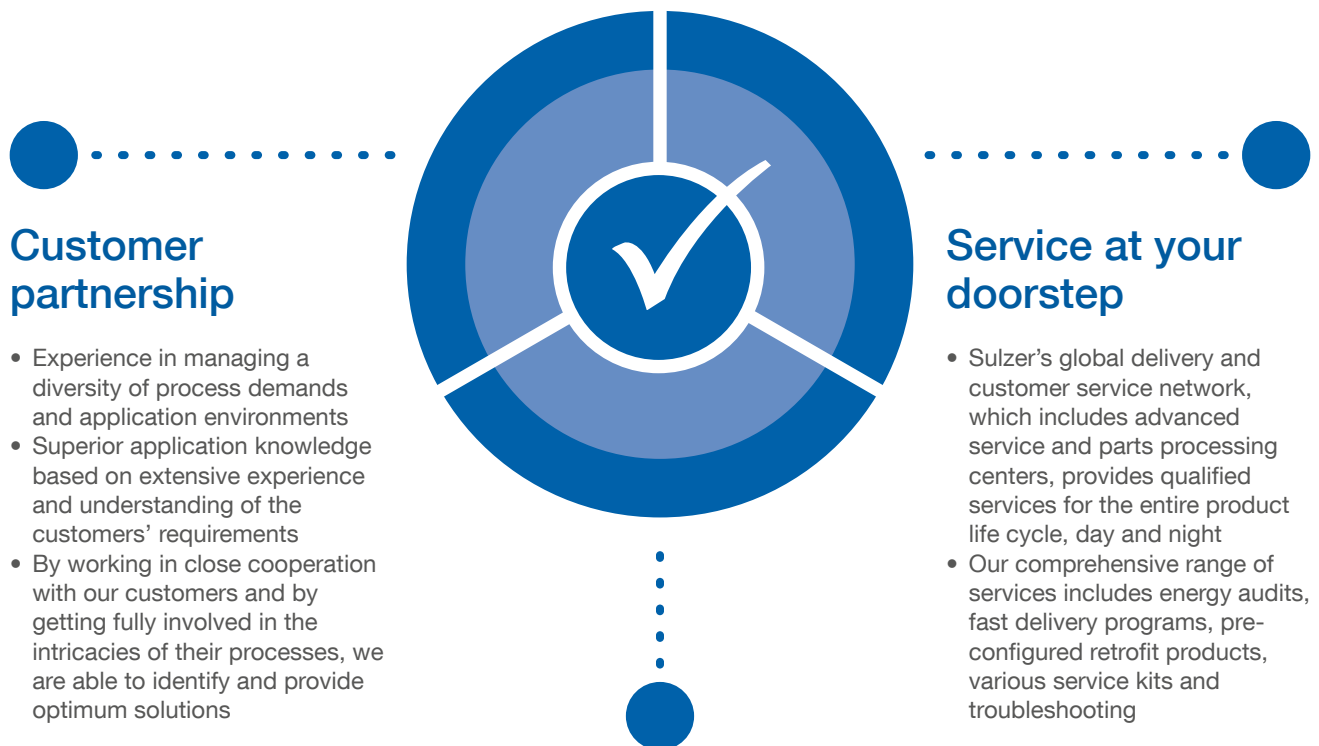
SULZER

Submersible mixers are one of the many areas where Sulzer innovation can benefit wastewater treatment. Using the right premium-efficiency motor technology for the specific task, energy efficiency can be improved by up to 35%.

The Sulzer Advantage

Innovative and proven pumping, mixing and aeration solutions

Sulzer is a worldwide player in the design and manufacture of equipment for wastewater treatment. Our offering extends beyond pumps, allowing customers to benefit from innovative system solutions.



Products that fit

- A comprehensive product portfolio and customized solutions for your process improvements
- Sulzer's well-proven reliability increases production uptime and reduces breakdowns
- Advanced materials, sealing solutions and overall operating efficiency ensure a reliable process and maintenance-free operation
- Energy-efficient products with low life cycle costs and a lighter environmental footprint

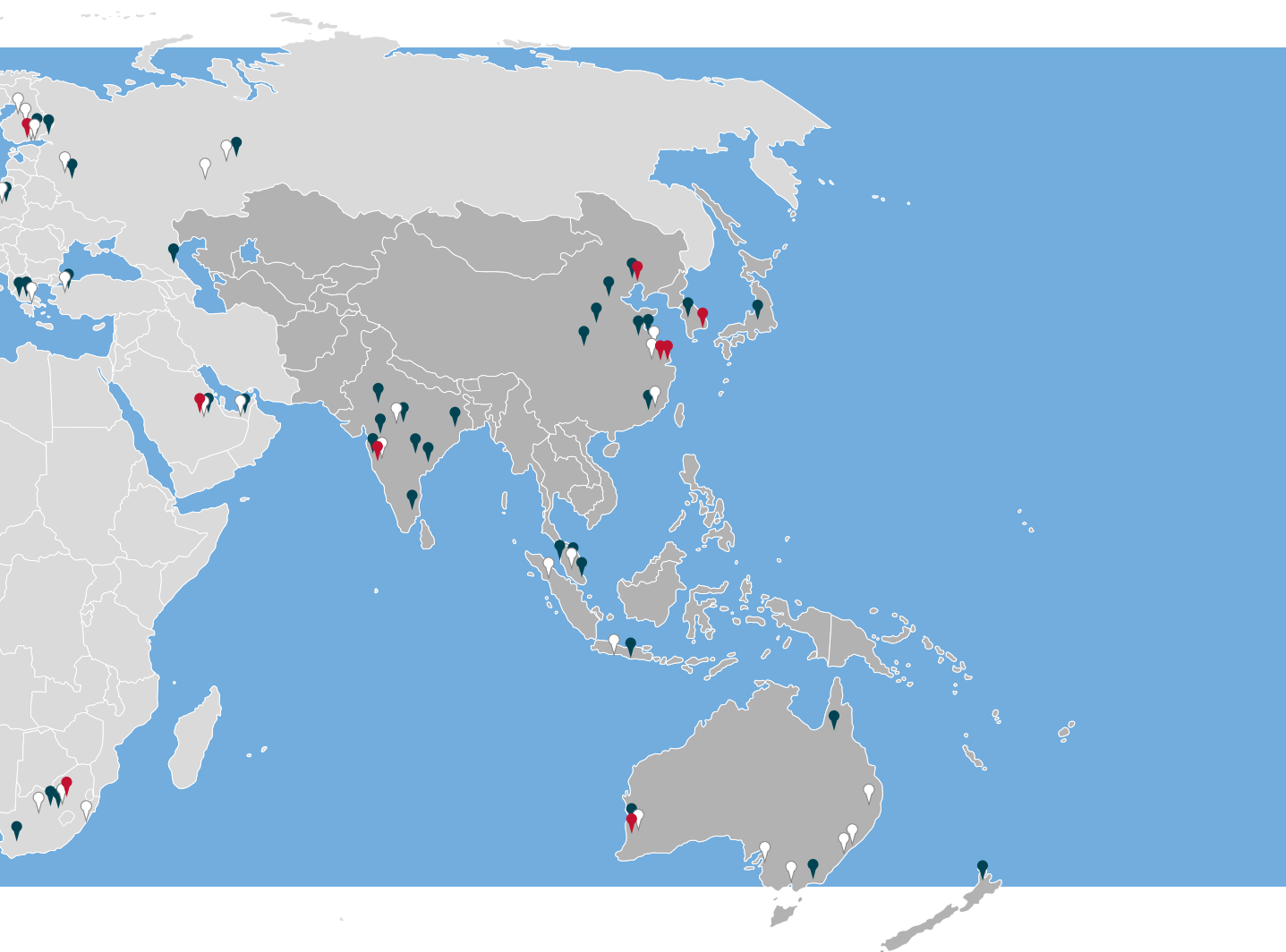
Our Global Organization Supports Customer Needs



Wherever you are Sulzer is close by, bringing you the best in pumping, mixing and aeration technology, expertise and services. With our large global presence, we have strategically placed sales, customer care and delivery facilities that keep us close to you. Sulzer is your best partner for achieving all your performance, reliability, safety and sustainability goals.

Sulzer is well known for our state-of-the-art products, performance, reliability and energy-efficient solutions. Our customers benefit from intensive research and development in fluid dynamics, process-oriented products and special materials.

All Sulzer manufacturing plants have advanced testing facilities, capable of demonstrating pump performance and testing ancillary equipment to ensure smooth commissioning and start-up procedures.



Quality and sustainability

We are committed to providing our customers with the best products at the highest quality standards in the industry. All of our locations around the world implement certified management systems in accordance with ISO 9001 (Quality), ISO 14001 (Environment) and OHSAS 18001 (Health and Safety) as an effective way to sustain the continuous improvement of our processes and products. Some of our locations also have specific certifications, such as ATEX IECEX03.

Your Wastewater Operation

Your business is part of changing the world for the better. Innovation and technology can help you solve water challenges.



Global

A changing world and changing legal requirements place pressure on your business.



Legislation



CO₂ limits



Overflow concerns



Climate change



Urban development

Business

You face financial challenges and the service demands of your customers.



Reducing energy costs



Lowering operating costs



Improving service levels



Municipal vs. private structures



Replacements and upgrades

Social

Your business is a part of meeting larger goals in a broad human perspective.



Water consumption



Personal hygiene



Environmental protection



Sustainability

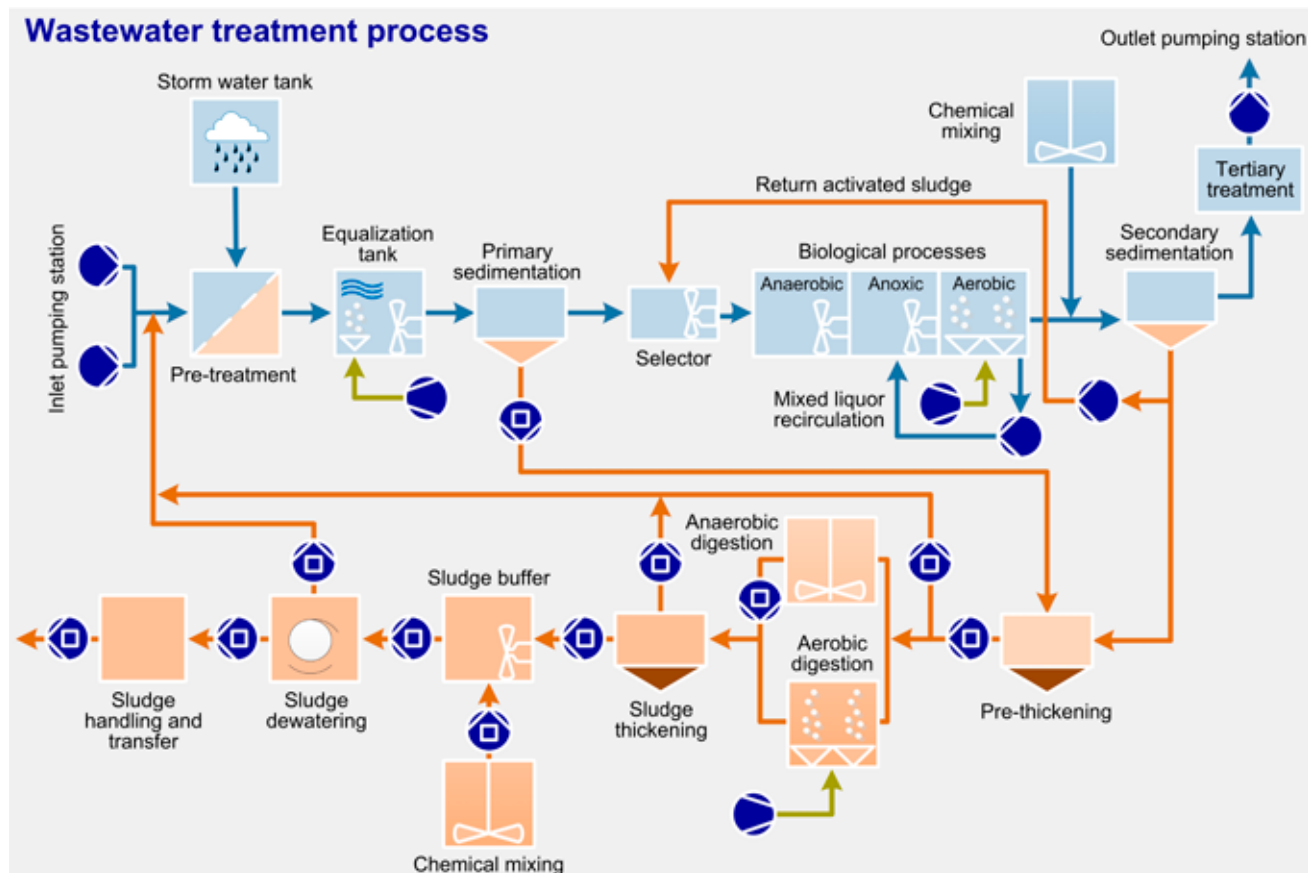
Driving innovation in wastewater treatment

When planning a new wastewater treatment plant or upgrading an existing one, operating costs are as important as investment costs. Sulzer's innovative pumps, mixers, compressors, aeration systems and other solutions combine reliable treatment performance with superior energy efficiency.

The Sulzer advantage is evident from the moment sewage enters your wastewater treatment plant. We ensure the efficiency and reliability of both mechanical and biological processes, while at the same time reducing energy consumption.

We do this through leading motor technologies, advanced hydraulic designs and innovative equipment construction. Premium-efficiency IE3 motors and IE3-equivalent permanent-magnet motors are used as standard. Energy use is further reduced by features like our self-cleaning mixer propellers or the superior magnetic bearings of our turbocompressors.

Supporting our equipment is an extensive body of knowledge and a wide range of tools. Using these, we can analyze your existing plant and determine the right solutions for a complete upgrade. In working with Sulzer, you have a single partner for plant-wide improvement.



Our Comprehensive Product Portfolio

| | | Application | | | | | | | | | | | | | | | | |
|---------------------------------------|---|-------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|-----------------------|--------------------|
| Product technology | Product name | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | High-efficiency (IE3) | Class H insulation |
| Agitators | Scaba top-mounted vertical agitator | | | ✓ | ✓ | | ✓ | ✓ | | | | ✓ | ✓ | ✓ | | | ● | |
| | Scaba side-mounted horizontal agitator | | | | | | ✓ | ✓ | | | | | ✓ | ✓ | | | ● | |
| Submersible mixers premium efficiency | Submersible mixer XRW 210 to 900 | | ✓ | ✓ | | | | ✓ | | | | | ✓ | | | | ✓ | ● |
| | Flow booster type ABS XSB 900 to 2750 | | ✓ | ✓ | ✓ | | | ✓ | | | | | | | | | ✓ | ● |
| Submersible mixers standard | Flow booster type ABS SB 900 to 2500 | | ✓ | ✓ | ✓ | | | ✓ | | | | | | | | | | ● |
| | Submersible mixer type ABS SB 1200 KA | | ✓ | ✓ | ✓ | | | ✓ | | | | | | | | | | ● |
| | Submersible mixer RW 200 to 650 | | ✓ | ✓ | | | | ✓ | | | | | ✓ | | | | | ● |
| Aeration systems | Aerator type ABS Venturi Jet | | ✓ | | ✓ | | | | | | ✓ | | | | | | | |
| | Submersible aerator type ABS XTA, XTAK | | ✓ | | ✓ | | | | | | ✓ | | | | | | | |
| | Submersible aerator mixer type ABS OKI | | ✓ | | ✓ | | | | | | ✓ | | | | | | | |
| | Disc diffuser system type ABS | | | | ✓ | | | ✓ | | | ✓ | | | | | | | |
| | Turbocompressor type ABS HST 2500, 6000, 9500 | | | | ✓ | | | ✓ | | | ✓ | | | | | | | |
| | Turbocompressor type ABS HST 20 | | | | ✓ | | | ✓ | | | ✓ | | | | | | | |
| | Turbocompressor type ABS HST 40 | | | | ✓ | | | ✓ | | | ✓ | | | | | | | |
| Submersible heavy duty pumps | Submersible sewage pump type ABS AFP | ✓ | | | | | | | ✓ | ✓ | | | | | | | | ● |
| | Submersible sewage pump type ABS XFP (30-650 kW) | ✓ | | | | | | | ✓ | ✓ | | | | | | | ✓ | ✓ |
| | Submersible propeller pump type ABS VUPX | | | | | | | | ✓ | ✓ | | | | | | | ✓ | ✓ |
| | Submersible mixed flow column pump type ABS AFLX | ● | | | | | | | ✓ | ✓ | | | | | | | ✓ | ✓ |
| | Submersible recirculation pump type ABS XRCP 250 to 800 | | | | | ✓ | | ✓ | | | | | | | | | ✓ | |
| | Submersible recirculation pump type ABS RCP 250 to 800 | | | | | ✓ | | ✓ | | | | | | | | | | |
| Single stage pumps | Dry-installed sewage pump type ABS AFC | ✓ | | | | | | | ✓ | ✓ | | | | | | | ● | |
| | Dry installed sewage pump type ABS FR | ✓ | | | | | | | ✓ | ✓ | | | | | | | ● | |
| Progressing cavity pumps | PC transfer pump | | | | | | | | | | | ✓ | ✓ | ✓ | | ✓ | ● | |
| | PC transfer perform pump | | | | | | | | | | | ✓ | ✓ | ✓ | | ✓ | ● | |
| | PC cake pump | | | | | | | | | | | | | | ✓ | ✓ | ● | |
| | PC dosing pump | | | | | | | | | | | | ✓ | ✓ | | | ● | |
| Macerator grinders | Pipeline macerator grinder | | | | | | | | | | | ✓ | | | | | ● | |
| | Channel macerator grinder | ✓ | | | | | | | | | | | | | | | ● | |
| Monitoring and control | Leakage relay type ABS CA 461 | | | | | | | | | | | | | | | | | |
| | Temperature and leakage relay type ABS CA 462 | | | | | | | | | | | | | | | | | |
| | Pump controller type ABS PC 441 | | | | | | | | | | | | | | | | | |

1. Inlet pumping station

2. Equalization

3. Selector

4. Biological process

5. Mixed liquor recirculation

6. Chemical mixing – sewage

7. Tertiary treatment

8. Outlet pumping stations

9. Return of activated sludge

10. Aerobic digestion

11. Anaerobic digestion

12. Sludge buffer tank

13. Chemical mixing – sludge

14. Sludge thickening and dewatering

15. Sludge handling and transfer

| Motor-related | | | | | | | | Product facts on page |
|---------------|-----------------------------------|---------------------------------|---------------------------|-----------------|------------|-----------------------|---------|-----------------------|
| Nema class A | Long bearing life (>50,000 hours) | Sealed cable connection chamber | Full condition monitoring | Explosion proof | Axial flow | Positive displacement | Grinder | |
| | ✓ | | | ● | ✓ | | | 10 |
| | ✓ | | | | ✓ | | | 10 |
| ✓ | ✓ | ✓ | ✓ | ● | ✓ | | | 11 |
| ✓ | ✓ | ✓ | ✓ | ● | ✓ | | | 10 |
| ✓ | ✓ | ✓ | | ● | ✓ | | | 10 |
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| ✓ / ● | ✓ | ✓ | ✓ / ● | ✓ / ● | | | | 14 |
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| ✓ / ● | ✓ | ✓ | ✓ / ● | ✓ / ● | ✓ | | | 14 |
| | ✓ | ✓ | ✓ | ● | ✓ | | | 15 |
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✓ = Standard ● = Optional

Product Overview

Agitators

SCABA TOP-MOUNTED VERTICAL AGITATOR

FEATURES AND BENEFITS

Scaba top-mounted vertical agitators are used for mixing and agitating process liquids in demanding industrial applications. They ensure homogenous mixing results, high process reliability, high efficiency, low operating costs and low environmental stress.

KEY CHARACTERISTICS

| | |
|--------------------|---------------|
| Temperatures | up to 350 °C |
| Propeller diameter | 100 mm to 6 m |
| Shaft length | up to 30 m |



SCABA SIDE-MOUNTED HORIZONTAL AGITATOR

FEATURES AND BENEFITS

Scaba side-mounted horizontal agitators are ideal for mixing and agitating process liquids in demanding industrial applications. They ensure homogenous mixing results, process reliability, high efficiency, low operating costs and low environmental stress.

KEY CHARACTERISTICS

| | |
|--------------------|--------------------|
| Temperature | up to 180 °C |
| Propeller diameter | 500 mm to 1,500 mm |
| Power | 0.12 kW to 250 kW |



Submersible mixers

FLOW BOOSTER TYPE XSB 900 TO XSB 2750

FEATURES AND BENEFITS

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

KEY CHARACTERISTICS

| | |
|---------------------|--------------------|
| Maximum mixing flow | 6.2 m³/s |
| Propeller diameter | 900 mm to 2,750 mm |



FLOW BOOSTER TYPE ABS SB 900 TO SB 2500

FEATURES AND BENEFITS

The standard range of Flow booster type ABS SB are slow running submersible units with integral motors for gentle circulation and mixing of fluids in treatment plants and industrial applications. The flow booster is complete with monocast propeller blades and excellent self-cleaning properties, giving optimum operation with low energy input. The unit can be raised and lowered for inspection even in filled tanks.

KEY CHARACTERISTICS

Maximum mixing flow 4.3 m³/s
Propeller diameter 900 mm to 2,500 mm



SUBMERSIBLE MIXER TYPE ABS SB 1200 KA

FEATURES AND BENEFITS

The Submersible mixer type ABS SB 1200 KA combines all the specific requirements of those treatment processes where the biofilm is bound on the surface of plastic carriers. The low tip speed in combination with a specially designed propeller, prevent any negative effects on the carrier material during the mixing. The energy cost is reduced thanks to a unique drive unit.

KEY CHARACTERISTICS

Maximum mixing flow 0.82 m³/s
Propeller diameter 900 mm to 1,080 mm



SUBMERSIBLE MIXER TYPE ABS XRW 210 TO XRW 900

FEATURES AND BENEFITS

The Submersible mixer type ABS XRW premium efficiency series provide a total efficiency improvement of up to 35% compared to our RW mixer range and other conventional mixer designs. The mixers are mainly used for agitating, blending, mixing, dissolving, and suspension of solids in municipal treatment plants, industry, and agriculture. The high speed mixers, XRW 210 and XRW 300, are equipped with squirrel-cage induction motor of IE3 standard. In the medium-speed range, XRW 400 and XRW 650, the mixers are equipped with an IE3-equivalent permanent-magnet motors and the medium-low speeds mixer range, XRW 900, is equipped with squirrel-cage induction motor of IE3 standard and a gear box as speed reducer. Use of premium-efficiency motor technologies, together with optimized and proven propeller designs, gives the XRW mixers the lowest energy consumption for each mixing speed. A wide range of brackets and adapters facilitate easy upgrades of existing installations. Also available with explosion-proof motors.

KEY CHARACTERISTICS

Maximum mixing flow 1.79 m³/s
Propeller diameter 210 mm to 900 mm



SUBMERSIBLE MIXER TYPE ABS RW 200 TO RW 650

FEATURES AND BENEFITS

These standard mixers have an integral motor and are suitable for agitating, blending, mixing, dissolving and suspension of solids in municipal treatment plants, industry and agriculture. Sulzer offers multiple and gear driven mixers with either standard or explosion-proof motor enclosures. A wide range of brackets and adapters facilitate easy upgrades of existing installations.

KEY CHARACTERISTICS

Maximum mixing flow 1.75 m³/s
Propeller diameter 200 mm to 650 mm



Aeration products

AERATOR TYPE ABS VENTURI JET

FEATURES AND BENEFITS

Based on the ejector principle, the Venturi jet aerator is an ideal solution for water depths from 1.5 m to 5 m. It provides cost-effective mixing and aeration in municipal and industrial wastewater applications, storm water retention tanks, and balancing tanks.

KEY CHARACTERISTICS

Oxygen transfer 1-16 kg O₂/h at 3 meter water depth
Motor range 1.3 - 18.5 kW



SUBMERSIBLE AERATOR TYPE ABS XTA, XTAK

FEATURES AND BENEFITS

These products are suitable for wastewater treatment in municipal and industrial plants. Application areas include mixing, equalization and activated sludge tanks. Suitable also for SBR-reactors and sludge storage tanks at a water depth between 2 and 9 m. The aerator is free-standing on the bottom of the basin and hence can be installed without emptying the basin.

The self aspirating aerator has a very low noise level due to its efficient silencer. Compared to conventional surface aerators the submerged XTA aerator creates no aerosol thus preventing formation of coliform bacteria.

KEY CHARACTERISTICS

Oxygen transfer up to 80 kg O₂/h
Motor range 3 - 75 kW



SUBMERSIBLE AERATOR MIXER TYPE ABS OKI

FEATURES AND BENEFITS

The submersible aerator mixer type ABS OKI is a heavy-duty unit with the capacity to operate both as an aerator and/or a mixer. This makes it suitable for discontinuous aeration processes such as simultaneous denitrification, nitrification and SBR processes, even at depths of 12 m and in liquids with high dry matter content.

The high pumping and mixing capacity of the OKI aerator makes it the right choice for many processes. Maintenance or changing the plant configuration is easy thanks to the OKI's liftability.

KEY CHARACTERISTICS

Oxygen transfer up to 405 kg O₂/h
Motor range 3 - 37 kW



DISC DIFFUSER SYSTEM TYPE ABS SUCOFLOW DS

FEATURES AND BENEFITS

The robust Sucoflow disk diffuser has an EPDM membrane perforated using a specially developed process. The large effective surface area and the thread mounting means it is a good choice for stainless steel piping and liftable systems. The membrane is reliably mounted on the frame with a stainless steel wire. A built-in non-return valve provides additional safety for planned or unplanned outages.

KEY CHARACTERISTICS

Membrane surface area 0.183 m²
Operating range 1 - 15 m³/h (+20°C; 1 013 mbar)



DISC DIFFUSER SYSTEM TYPE ABS

FEATURES AND BENEFITS

Disc diffuser system type ABS offers a number of alternative membrane and porous aeration diffuser models that are easy to install and maintain. Special features that improve the operation reliability and efficiency include the non-return valve, available on all models and the sliding ring, available on the types ABS PIK 300 and PRK 300. High oxygen transfer efficiency combined with low pressure drops makes the ABS diffusers extremely effective.

KEY CHARACTERISTICS

| | |
|-------------------|--|
| Diffuser diameter | PIK300, PRK300: 336 mm, KKI215, HKL215, MKL215: 215 mm |
| Operating range | PIK300, PRK300: 1.5-8 m ³ /h (+20°C; 1,013 mbar) KKI215: 0.5-4 m ³ /h (+20°C; 1,013 mbar) HKL215: 1.0-5 m ³ /h (+20°C; 1,013 mbar) MKL215: 1.5-6 m ³ /h (+20°C; 1,013 mbar) |



TURBOCOMPRESSOR TYPE ABS HST 2500, 6000, 9500

FEATURES AND BENEFITS

The modern and silent HST turbocompressor features an advanced design with proven magnetic bearing technology and a high-speed motor driven through a built-in frequency converter. Turbocompressors type ABS are widely used to supply air to aerobic treatment processes in wastewater treatment plants. They can also be used in other positions where large amounts of compressed air is needed.

KEY CHARACTERISTICS

| | |
|----------------|-----------------------------------|
| Air flow range | 1,000 - 10,000 Nm ³ /h |
| Pressure range | 40 - 125 kPa |



TURBOCOMPRESSOR TYPE ABS HST 20

FEATURES AND BENEFITS

HST 20, the new generation of world class high efficiency turbocompressors gives exceptional energy savings from wire to air, savings in maintenance costs, stable efficiency with magnetic bearings, compact and cost effective installation and an optimized process by an intuitive compressor control.

KEY CHARACTERISTICS

| | |
|----------------|----------------------------------|
| Air flow range | 2,000 - 7,000 Nm ³ /h |
| Pressure range | 30 - 90 kPa |



TURBOCOMPRESSOR TYPE ABS HST 40

FEATURES AND BENEFITS

The modern and silent HST turbocompressor features an advanced design with proven magnetic bearing technology and a high-speed motor driven through a built-in frequency converter. Turbocompressors type ABS are widely used to supply air to aerobic treatment processes in wastewater treatment plants. They can also be used in other positions where large amounts of compressed air is needed.

KEY CHARACTERISTICS

| | |
|----------------|-----------------------------------|
| Air flow range | 4,100 - 16,000 Nm ³ /h |
| Pressure range | 40 - 85 kPa |



Submersible heavy duty pumps

SUBMERSIBLE SEWAGE PUMP TYPE ABS AFP

FEATURES AND BENEFITS

For reliable and economical pumping of heavily polluted sewage in commercial, industrial and municipal applications. The AFP pumps offer high sustainability and excellent rag handling, and power up to 550 kW.

KEY CHARACTERISTICS

| | |
|-----------------|--------------|
| Discharge sizes | DN 400 - 800 |
| Motor range | 110 - 550 kW |
| Bearing life | 100,000 h |



SUBMERSIBLE SEWAGE PUMP TYPE ABS XFP (30-650 kW)

FEATURES AND BENEFITS

Submersible sewage pump type ABS XFP models PE4 to PE7 are designed for wet or dry installation in terminal pumping stations. The XFP pumps use premium-efficiency IE3 motors to offer significant energy savings, along with excellent rag handling, long-term reliability and a future-proof design.

KEY CHARACTERISTICS

| | |
|-----------------|--------------|
| Discharge sizes | DN 100 - 800 |
| Motor range | 30 - 650 kW |
| Bearing life | 100,000 h |



SUBMERSIBLE PROPELLER PUMP TYPE ABS VUPX

FEATURES AND BENEFITS

The VUPX series of submersible propeller pumps are ideal for applications where large volumes of storm or process water have to be pumped to heads up to a maximum of 10 m. Available with premium-efficiency IE3 motors. These compact pumps feature highly efficient three- or four-blade propellers and a space-saving design for direct installation in compact rising mains.

KEY CHARACTERISTICS

| | |
|---------------|----------------------------|
| Pipe diameter | 600 to 1,200 mm and larger |
| Motor range | 7.5 - 650 kW |
| Bearing life | 100,000 h |



SUBMERSIBLE MIXED FLOW COLUMN PUMP TYPE ABS AFLX

FEATURES AND BENEFITS

Save space and reduce installation costs with the AFLX range of submersible axial-flow pumps, designed for direct installation in compact rising mains. Available with premium-efficiency IE3 motors. Featuring highly efficient three- to five-blade mixed flow impellers. The AFLX-pumps ensure high reliability and efficiency.

KEY CHARACTERISTICS

| | |
|---------------|----------------------------|
| Pipe diameter | 600 to 1,200 mm and larger |
| Motor range | 7.5 - 650 kW |
| Bearing life | 100,000 h |



Submersible recirculation pumps

SUBMERSIBLE RECIRCULATION PUMP TYPE ABS XRCP 250 TO XRCP 800

FEATURES AND BENEFITS

Our premium range of submersible recirculation pumps type ABS XRCP is specifically designed for pumping and recirculation of activated sludge in the denitrification/nitrification process of a wastewater treatment plants. With this compact and easy-to-handle pump, you choose the market's best ongoing energy performance. You also get the best life cycle cost, from initial purchase to ongoing operation.

KEY CHARACTERISTICS

50 Hz/60 Hz
Max. flow 5,800 m³/h
Max. head 2.5 m
Discharge sizes DN 250, DN 400, DN 500, DN 800



SUBMERSIBLE RECIRCULATION PUMP TYPE ABS RCP 250 TO RCP 800

FEATURES AND BENEFITS

Our standard range of submersible recirculation pumps type ABS RCP is specifically designed for pumping and recirculation of activated sludge in the denitrification/nitrification process of a wastewater treatment plants. This compact and easy-to-handle pump is efficient and reliable.

KEY CHARACTERISTICS

50 Hz/60 Hz
Max. flow 4,500 m³/h
Max. head 1.8 m
Discharge sizes DN 250, DN 400, DN 500, DN 800



Single stage pumps

DRY-INSTALLED SEWAGE PUMP TYPE ABS AFC

FEATURES AND BENEFITS

The AFC dry-installed sewage pump is designed for pumping wastewater and sewage from buildings and sites in private, commercial, industrial, and municipal areas. With an air-cooled IEC motor from 3 to 22 kW, the pump can be installed either horizontally or vertically.

KEY CHARACTERISTICS

Discharge sizes DN 50, 80, 100, 150, 200
Motor range 3 - 22 kW
Bearing life 100,000 h



DRY INSTALLED SEWAGE PUMP TYPE ABS FR

FEATURES AND BENEFITS

The FR dry-installed clogless pump enables economical pumping of heavily-polluted sewage and wastewater in municipal and industrial applications. It is ideal for pumping clear water, polluted water, and heavily-polluted sewage in commercial, industrial, and municipal applications.

KEY CHARACTERISTICS

Discharge sizes DN 150 - 800
Motor range up to 700 kW
Bearing life 100,000 h



Progressing cavity pumps

PC TRANSFER PUMP

FEATURES AND BENEFITS

Sulzer's competitively priced transfer pump, with close-coupled drive and gearbox. Options for vertical or horizontal installation, baseplate and flanged or square inlet. This product has a small footprint, useful where space to install is tight and is available in low to high flow configurations.

KEY CHARACTERISTICS

| | |
|--------------|-----------------------------|
| Capacities | up to 440 m ³ /h |
| Pressures | up to 24 bar |
| Temperatures | -10 up to 100°C |



PC TRANSFER PERFORM PUMP

FEATURES AND BENEFITS

The PC transfer perform pump is designed for easy dismantle and reassembly, maintain in place without the need to disconnect, remove suction or discharge pipework and minimize time and cost. An extension of the PC transfer, available in cast iron or stainless steel, with a choice of rotor, stator materials and inlet configurations.

KEY CHARACTERISTICS

| | |
|--------------|-----------------------------|
| Capacities | up to 225 m ³ /h |
| Pressures | up to 12 bar |
| Temperatures | -10 up to 100°C |



PC CAKE PUMP

FEATURES AND BENEFITS

Available as standard or maintain in place, the cake pump is designed with a wide throat inlet for transfer and handling of thickened and blended sludge. Capable to transfer viscous sludge cakes, slurries, thick non-flowing pastes and specifically dewatered sludge cake > 30% dry solids concentration.

KEY CHARACTERISTICS

| | |
|--------------|----------------------------|
| Capacities | up to 49 m ³ /h |
| Pressures | up to 24 bar |
| Temperatures | -10 up to 100°C |



PC DOSING PUMP

FEATURES AND BENEFITS

In sludge dewatering and thickening, barrier layer injection and conditioning agents are added to the delivery pipework for lubrication, to reduce friction losses and system operating pressure. Our products are used in low flow dosing applications where flow capacity needs to be maintained.

KEY CHARACTERISTICS

| | |
|--------------|----------------|
| Capacities | 5 to 1,250 l/h |
| Pressures | up to 72 bar |
| Temperatures | up to 120°C |



Macerator grinders

MACERATOR - CHANNEL SERIES GRINDER

FEATURES AND BENEFITS

Installed in wastewater treatment plant open channels, for in-flow disintegration. Slow speed and high torque, each shaft is fitted with cutters and spacers for solids grinding, designed to pull apart fibrous material, to crop, crush and shear items such as rags, rope and plastics into small pieces.

KEY CHARACTERISTICS

Capacities up to 1,150 m³/h



MACERATOR - PIPELINE SERIES GRINDER

FEATURES AND BENEFITS

A macerator grinder with a pull-back cutter stack, which allows removal for maintenance without disturbing the pipeline. For raw sewage systems, to protect downstream pumps and equipment, and designed for fine grinding of sludge, within the sludge treatment plant where grinding improves digestion.

KEY CHARACTERISTICS

Capacities up to 330 m³/h

Pressures up to 0.4 bar



Monitoring and Control

Sulzer offers a wide range of monitoring and control equipment for advanced monitoring and control of treatment equipment. For information about the full range, visit www.sulzer.com.

LEAKAGE RELAY TYPE ABS CA 461

FEATURES AND BENEFITS

The CA 461 is designed to spy and detect leakage in pumps and mixers. The amplifier is housed in a norm enclosure fitted for DIN-rail mounting. The unit is available in two executions, 24 VDC or 110-230 VAC supply.



TEMPERATURE & LEAKAGE RELAY CA 462

FEATURES AND BENEFITS

The CA 462 is designed to spy and detect temperature and leakage in pumps and mixers. The amplifier is housed in a norm enclosure fitted for DIN-rail mounting. The unit is available in two executions, 24 VDC or 110-230 VAC supply.



PUMP CONTROLLER TYPE ABS PC 441

FEATURES AND BENEFITS

The PC 441 is a monitor and controller for one to four pumps. The PC 441 has many advanced features to minimize operating costs and increase the availability of the equipment in a wastewater treatment plant.



Services for Equipment Lifetime and Economy

Sulzer is the expert not only when it comes to supplying your equipment, but also when it comes to supporting it throughout its life cycle. Our tailored service and maintenance offering extends from simple workshop repairs to complete operation and maintenance framework agreements for your wastewater treatment plant.

Equipment installation services

Installing wastewater treatment equipment is a complex and even dangerous task, where poor quality work can increase running costs, lower reliability and shorten equipment life. Sulzer's well-trained and well-equipped engineers ensure a safe and problem-free installation, and they can support your own personnel with operating guidance and recommendations for the most cost-effective maintenance. Our services cover:

- Equipment installation (mechanical)
- Equipment installation (electrical)
- On-site commissioning and testing

Routine maintenance contracts

Regular maintenance of pumps and other wastewater equipment reduces the risk of breakdowns and emergency call-outs. Sulzer's planned maintenance services thus ensure lower, more predictable costs. Whether regularly visiting your site to check equipment condition or performing planned overhauls to restore equipment operation, our engineers work with maximum efficiency and minimum disruption on site. We offer:

- On-site maintenance and repair
- Site and equipment surveys
- Energy management services

Spare parts and spares kits

A key element of effective maintenance is having essential spare parts on hand whenever your personnel need them. Sulzer has extensive central stocks and efficient logistics that guarantee quick delivery of commonly used parts, as well as software tools and technical expertise to assist in equipment identification and parts selection. For the greatest simplicity, we offer a range of kits with everything needed to service your equipment. We provide:

- Spare parts
- Spares kits
- Service kits
- Upgrade kits
- Strategic spares recommendations

Workshop services

Sulzer has an extensive network of workshops that places us close to you for rapid response. Staffed by highly trained engineers and closely partnered with our manufacturing centers, our workshops are equipped to repair and refurbish all types of wastewater equipment. They restore high-value equipment to "as-new" condition, using only the manufacturer's original spare parts for the highest reliability and lowest energy consumption. Our workshops perform:

- Repairs of Sulzer equipment
- Repairs of non-Sulzer equipment
- Repairs of explosion-proof equipment
- Installation and removal
- Commissioning and testing after repair

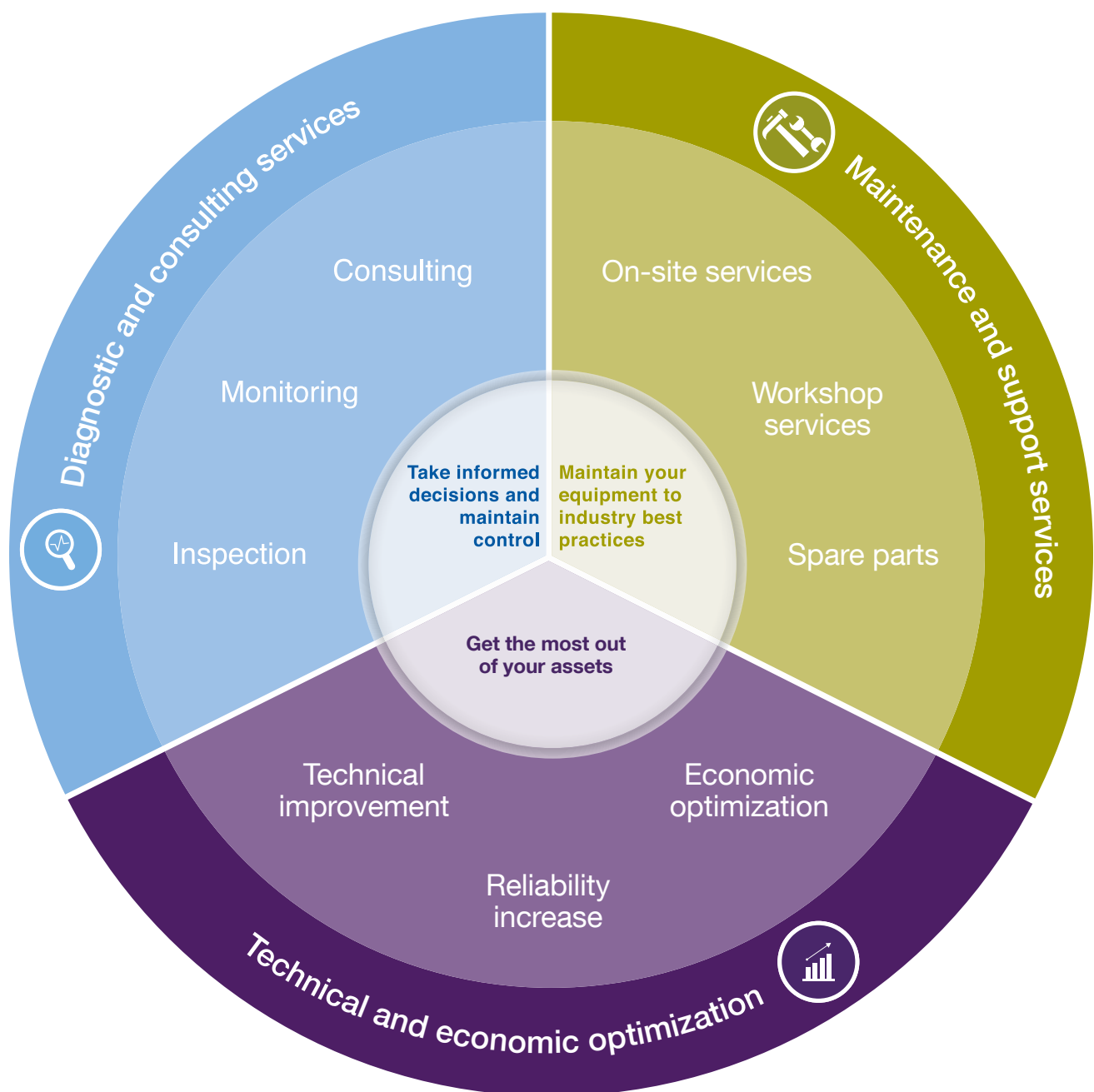
Replacement and upgrade services

As equipment ages, it costs more to run. Spare parts become expensive and lead times longer, while performance falls behind that of the latest products. Sulzer's technical support staff can help you identify and prioritize replacement or upgrade opportunities, so that you choose the most appropriate equipment at the most appropriate time. Besides recommending and supplying the equipment, we can take full responsibility for its installation and commissioning if desired. We can provide:

- Replacement equipment
- Adapter brackets and guide-rail replacement
- Selection assistance and technical support
- Full contract management

Your Ideal Service Partner

Our commitment and expertise always delivers reliability, responsiveness, rapid turnaround and innovative solutions.



www.sulzer.com

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