



# Flygt Adaptive Mixers

DESIGNED TO DO MORE





# You can't predict everything, but you can be ready for it.



The only constant in wastewater treatment is change. Whether because of daily variation or long term population growth, the process demands of wastewater treatment shift constantly. With a traditional single speed mixer, you have to operate at 100% capacity, regardless of how much thrust you actually need. But without the ability to control your mixing, you're wasting energy, time, and an opportunity to adapt to what happens next.

Because treatment processes are variable, your mixer should be too. With an integrated drive and remote operation, Flygt Adaptive Mixers put you in complete control, while the next-generation design ensures a lifetime of reliable, streamlined operation.



## IMPROVE PROCESS RESILIENCY

**Sediment on your tank floor? Seasonal fluctuations? Process upgrades?** Flygt Adaptive Mixers let you adjust output to achieve the required mixing process result – no matter what.



## SPEND LESS ON ENERGY

Flygt Adaptive Mixers can be controlled to deliver only the thrust required – and nothing more – which results in remarkable energy cost savings.



## REDUCE MIXER INVENTORY

When you factor in a smaller inventory of parts and spare mixers, plus the ability for mixers to be redeployed across different applications, your mixer investment goes a lot further.



## INCREASE MIXER UPTIME

With comprehensive monitoring, auto-correction functions, and a sealed, protected environment for the drive, Flygt Adaptive Mixers introduce a new level in mixing reliability.



## + Super premium efficiency IE4 equivalent motor

Synchronous permanent magnet motors are super premium according to IEC/TS 60034-30-2 Ed.1. When compared to lower classification such as IE3 – often based on conventional asynchronous technology – motors with IE4 efficiency use less energy.

## + Cost-efficient drive system

With their perfect match between motor and integrated power electronics, Flygt Adaptive Mixers require less time during the design phase for selection, purchasing, and programming. Installation costs are further reduced thanks to the elimination of several external components: motor protection devices, power and current measurement devices, soft starter, climate control and variable frequency drives.

### ADAPTIVE MIXERS

# Technical Innovations

Dirigo™ is the intelligent, flexible and submersible Flygt drive unit, which consists of a synchronous permanent magnet motor and an integrated motor control system. It enables advanced functionality, a more reliable system and extended lifetime.



	Flygt 4220		Flygt 4320		
Rated power, 50/60 Hz	1.1–3.0 kW (1.5–4.0 hp)		2.0–8.0 kW (2.7–10.7 hp)		
Propeller diameter	370 mm (15 in.)	580 mm (23 in.)	1,400 mm (55 in.)	2,000 mm (79 in.)	2,500 mm (98 in.)
Maximum thrust*, N	830	940	3,240	4,540	5,900
Maximum efficiency*, N/kW	470	590	680	1,090	1,580

\*According to ISO 21630:2007

## + Quick set-up of the control interface

A set-up wizard guides even untrained users through installation and commissioning with a set of predefined questions. Afterwards, the mixer is ready to operate and communicate.

## + Energy-saving, non-clogging propeller

Designed using the principles of advanced fluid mechanics, our large-diameter propellers with backswept self-cleaning design offer uninterrupted non-clogging performance without compromising efficiency.



# Spend Less On Energy

Designed to deliver the exact output you need.

## + Match output to demand

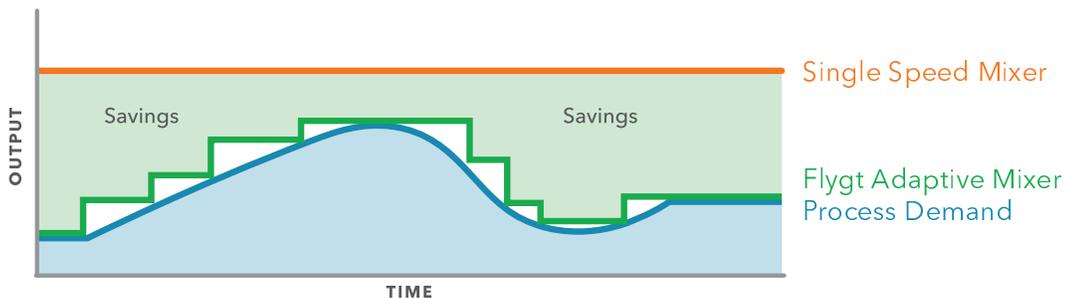
Unlike single speed mixers, which operate at a fixed duty point and use the same amount of energy regardless of process demands, Flygt Adaptive Mixers only use the energy you need based on an exact set of process demands.

## + Avoid overdimensioning

Thanks to their variable speed, Flygt Adaptive Mixers can be easily adjusted during commissioning, overcoming uncertainties from the design phase that often lead to over-dimensioning. Plants operating below their long-term design capacity benefit from this flexibility as well.

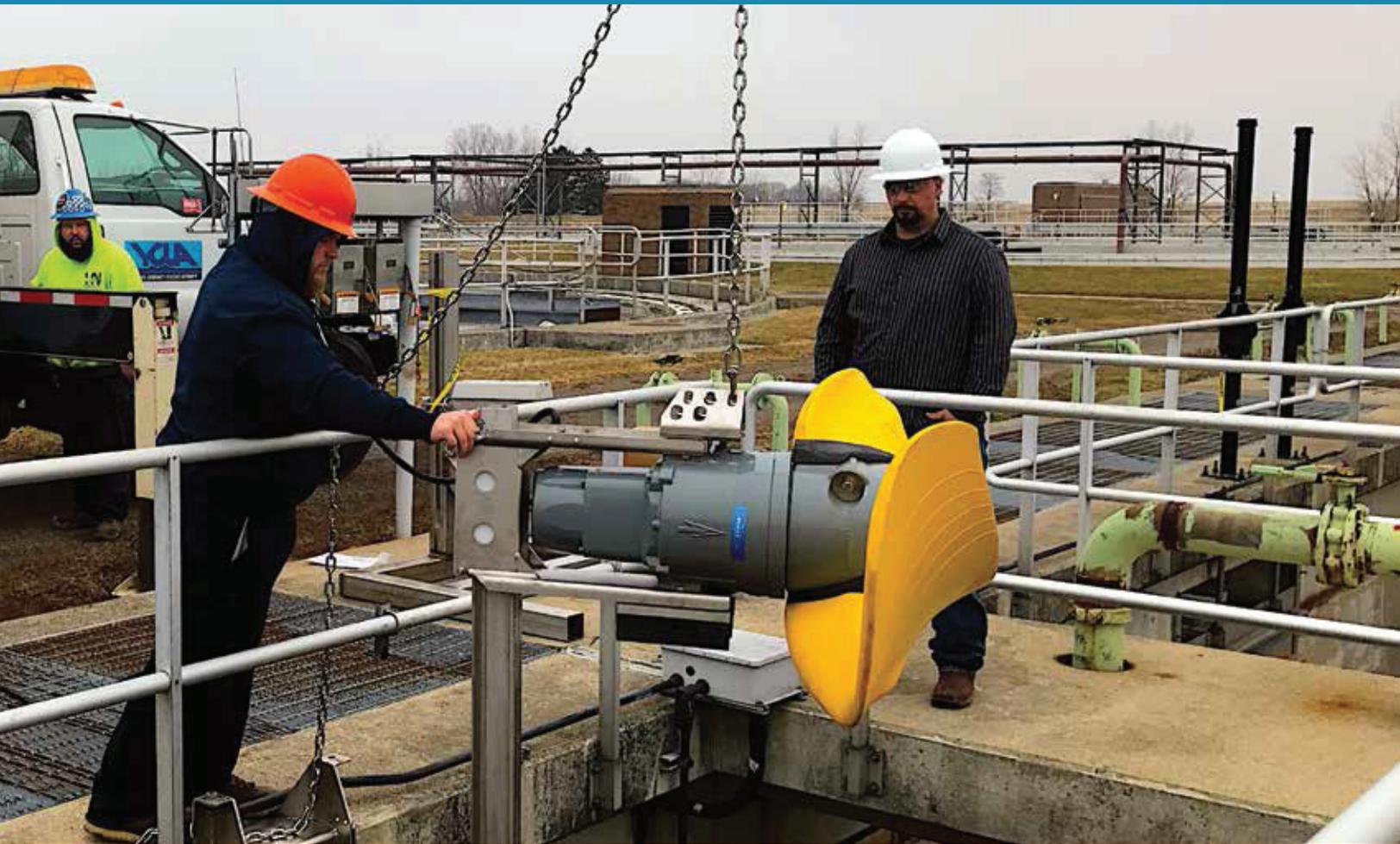
## + Market-leading ISO 21630 efficiency

With efficiencies of up to 1,500 newtons of thrust per kilowatt of input electrical power, Flygt Adaptive Mixers can improve efficiency by up to 50%, resulting in significant cost savings compared to a conventional single speed mixer.



# Proven Savings In The Field

YPSILANTI, MICHIGAN, USA



## Flygt 4320

APPLICATION:

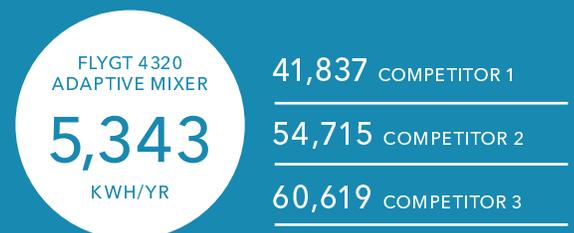
Aeration tanks of an anoxic nutrient removal process

COSTS SAVINGS:

**A 92% decrease in energy consumption over 10 years of implementation**

## Energy Comparison

Variable speed vs single speed mixers



# Improve Process Resiliency

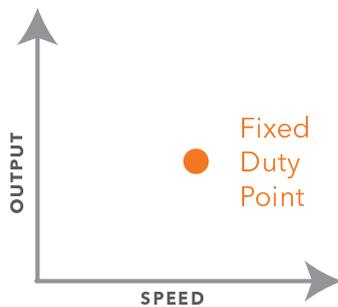
Flygt Adaptive Mixers let you handle both the expected and the unknown.

## + Instant adjustment at your fingertips

For events like seasonal fluctuations, tank cleanings, or plant upgrades, the user-friendly operator panel puts you in complete control of your mixer's output so you can react quickly and efficiently.

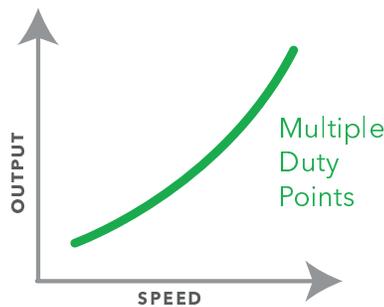
## + Minute-by-minute process flexibility

With easy integration into a plant-wide SCADA system, the mixer output can be constantly regulated to achieve the desired mixing results. And in multi-mixer tanks, you can keep the process up and running by turning up the output of remaining mixers when one mixer is removed for service.



Single Speed Mixer

A single-speed mixer has a fixed output that does not allow for a change, even if the process demand were to increase or decrease.



Flygt Adaptive Mixer

A Flygt Adaptive Mixer has an output range for the utmost in flexibility in response to process changes.

Know exactly what is going on without having to touch the mixer, or even leave the control room. From a single control panel, you can monitor power consumption, energy usage, run times, temperature, phase loss alarms, and overload.



# Reduce Mixer Inventory



[ Fewer spares. More options. ]

## + Smaller inventory of mixers and parts

Because Flygt Adaptive Mixers cover a range of duty points, plants can deploy them across different tanks and applications, which requires a smaller capital investment in spare parts and backup mixers.

## + Lower investment upon reuse

With their easy adjustment, Flygt Adaptive Mixers can be reused in other tanks and applications. During a process redesign or upgrade, Flygt Adaptive Mixers can even be exchanged among different plants – avoiding the need to rebuild or replace an existing mixer.



# Increase Mixer Uptime

Proven non-stop performance makes your job easier.

## + Integrated monitoring

With a Flygt Adaptive Mixer, you know exactly what is going on without having to touch the mixer – or even leave your control room. Integrated monitoring functions include power consumption, energy meter, running time, drive temperature, phase loss alarm, and overload.

## + Low maintenance costs

From the reduced wear of the mixers themselves – thanks to their variable output – to their advanced motors, ActiveSeal™ technology, and durable hydraulics, Flygt Adaptive Mixers were designed to handle the harsh demands of wastewater treatment with long maintenance intervals.

## + Enhanced drive system reliability

Placing the control electronics inside a dust-free, non-oxidizing environment reduces the risk for drive failure. In addition, these integrated components are submerged in a cooling media, which eliminates the need for a fan – the most fail-prone component of a traditional VFD (variable frequency drive). This integrated design also eliminates potential errors from sizing, setup, and wiring.

## + Adjusts for overload conditions

When overload conditions are imminent, a Flygt Adaptive Mixer automatically senses the danger, adjusts output accordingly, and triggers an alarm.

### ◀ Easy replacement of existing mixers

Flygt Adaptive Mixers can often be installed without changing the existing installation system because they fit most common guide bar dimensions.

# Xylem |'zilem|

- 1) The tissue in plants that brings water upward from the roots
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

**For more information about Flygt Adaptive Mixers, go to [www.xylem.com/adaptivemixers](http://www.xylem.com/adaptivemixers)**

**xylem**

Let's Solve Water

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