



AIRMAX[®]

Low Speed
Surface Aerator



Air for Life

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AIRMAX

Technology at the Service of the Environment Water Aeration: a Vital Process

Cleaning water after its use, before returning it to our water courses, has now become indispensable. An essential stage in the process of biological purification of waste water is its effective **aeration**.

Aeration of waste water ensures two essential functions simultaneously:

- the **addition of oxygen** which is essential for the development of activated sludge;
- the effective **mixing** of the activated sludge, to maintain the solid particles in suspension and ensure adequate homogenisation of the environment to be treated.

The AIRMAX Surface Aerator Less Energy Consumed and More Advantages

The development of the AIRMAX low-speed vertical shaft surface aerator has highlighted the fact that, in order to use less energy, the diameter of the impeller has to be wide, resulting in a lower rotation speed. The form and number of blades also play a primordial role. Energy efficiency is stable for a wide range of speeds.

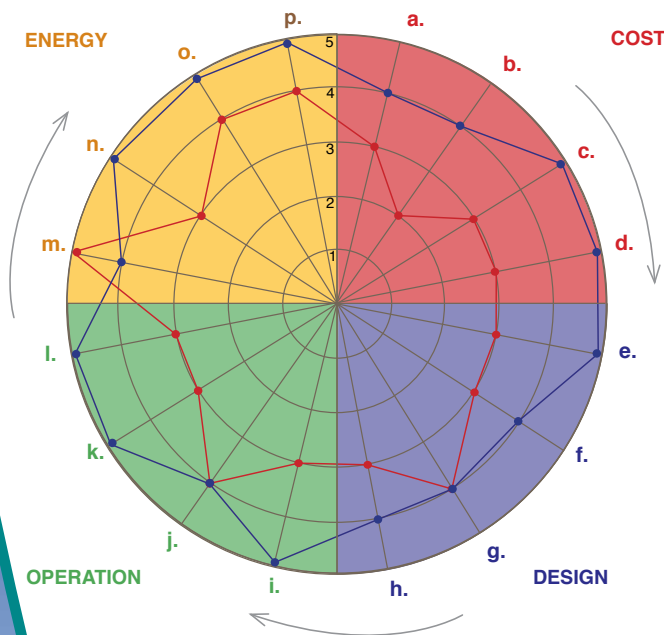
Although the **energy efficiency** measured in clean water pleads in favour of fine bubble aeration systems, in **field conditions**, the AIRMAX surface aerator achieves greater energy efficiency.

Comparison of the AIRMAX Surface Aerator with the Fine Bubbles Aeration System

- = AIRMAX aerators
- = Fine bubbles

1 = poor / 5 = excellent

SOTE is expressed in kgO₂/kWh



- a. Equipment savings
- b. Civil engineering works savings
- c. Assembly savings
- d. Operating savings
- e. Mixing
- f. Dimensioning reliability
- g. Noise limitation
- h. Ease of dimensioning
- i. Mechanical reliability
- j. Ease of regulation
- k. Ease of maintenance
- l. Experience Feedback
- m. SOTE (Standard Oxygen Transfer Efficiency)
- n. Keeping Long Term OTE
- o. Alpha factor α
- p. OTE (Oxygen Transfer Efficiency in field conditions)

In field conditions, the superior energy efficiency of low-speed surface aerators AIRMAX is proven in comparison to any other aeration system.

Customised Solutions

► Zero Emission

Towards Zero Noise Emission and Zero Aerosol

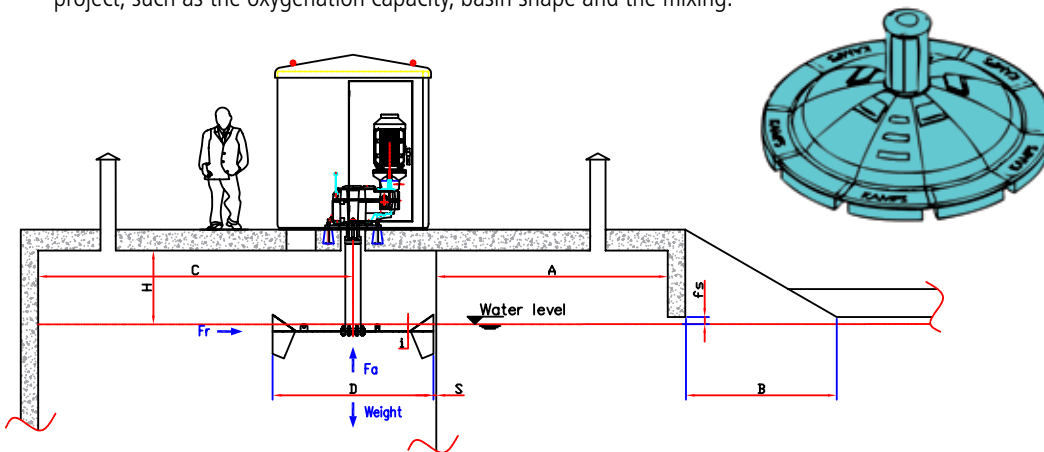
Reducing disturbance generated around water treatment plants is one of our constant concerns.

In order to limit noise pollution and aerosols, AIRMAX aerators can be entirely covered over (concrete or composite cover), in accordance with the requirements of the submitted project.

► Customisation

KAMPS can optimise the aeration **basin shape** using its in-depth knowledge of the hydraulic flows created by the aerator, thereby optimising all aspects of the process.

The **dimensioning of the aerator AIRMAX** is studied in accordance with the various elements of the project, such as the oxygenation capacity, basin shape and the mixing.



AIRMAX Aerator Dimensioning Table

SOTR (kgO ₂ /h)	MOTOR POWER (kW)	AIRMAX DIAMETER (m)	SPEED (rpm)
11 - 15	5.5	1.15	70.1
15 - 19	7.5	1.3	65
19 - 26	11	1.5	58.2
26 - 35	15	1.7	53
35 - 40	18.5	1.7	56.7
40 - 50	22	1.8	51.3
50 - 65	30	1.9	51.6
65 - 80	37	2.1	46.2
80 - 97	45	2.3	42.7
97 - 117	55	2.5	42.7
117 - 160	75	2.75	37.7
160 - 190	90	2.75	41.6
190 - 230	110	3	37.2
230 - 270	132	3.25	33.4
270 - 330	160	3.25	37.4
330 - 400	200	3.5	32

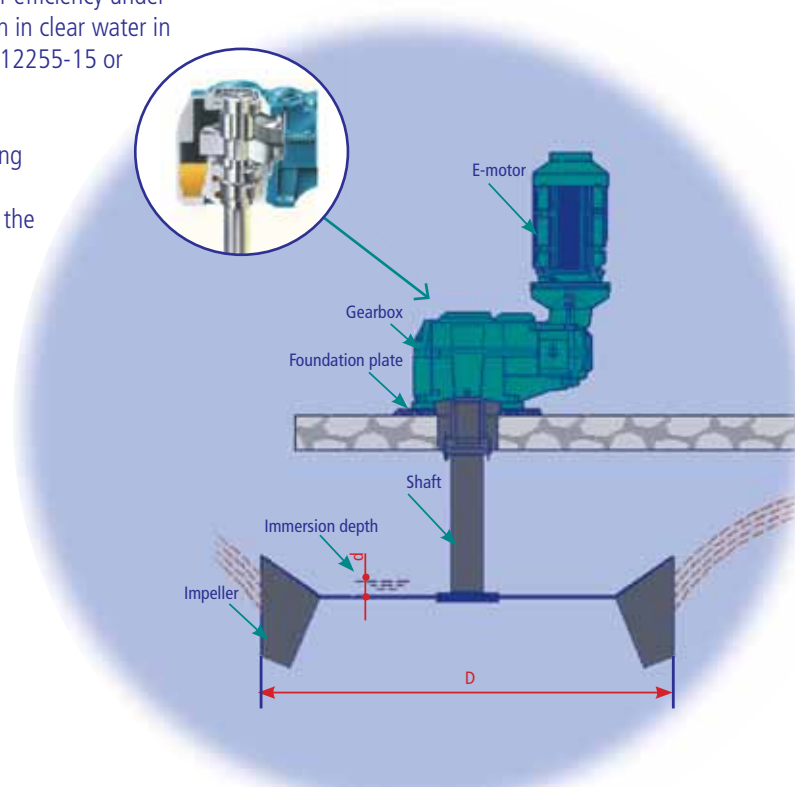
Information subject to modification



Technical Advantages and Specifications

► Technical Advantages

- very high SOTE, oxygen transfer efficiency under standard conditions (reaeration in clear water in accordance with the norm EN 12255-15 or Stora): 1.8 to 3 kgO₂/kWh
- constant efficiency over time
- physical impossibility of clogging or fouling
- high alpha factor, especially in the event of high activated sludge concentration
- oxygen transfer rate (SOTR) of 10 to 450 kg O₂/h per unit
- total accessibility with no need to drain the basins
- high mixing capacity (up to 6 m deep)
- easy propulsion capacity (oxidation ditch)
- power adjustment
- no bearing in contact with the water
- minimal maintenance
- lifetime > 20 years



► Technical Specifications

- Diameter: 1 - 4 m
- Tip speed: < 5.5 m / sec
- Lifetime of the bearings: > 100,000 h
- Service factor: 1.5 - 2
- Material: carbon steel
- Protection: SA 2^{1/2} Epoxy 300 µm
- Bolts: hot-dipped galvanised steel
- Gears: low temperature drywell
- Options: sun shield, composite cover, floaters, draft tubes
- Motor: IE1, IE2, IE3

The KAMPS Water Treatment Product Range

Membrane bioreactors • Continuous sand filters • Deaerators • Sludge dewatering systems (belt thickeners, belt press, plate filter press) • Lagoon installations • Integrated M-BIOMAX and S-BIOMAX water treatment plants.



Best Science • Best Support • Best Success

KAMPS is an industrial company specialising in water treatment. Its flexible structure enables it to guarantee its customers a fast, flexible and dynamic response to their requirements.

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