

SURFACE  
AERATION



# AER-AS

AERATOR-MIXER



HIGH-SPEED FLOATING  
AERATOR



AVAILABLE  
FOR RENT



## MAIN CHARACTERISTICS

The Aquaturbo AER-AS is a high-speed floating mechanical aerator. It consists of a high efficiency ambient operated motor customized to Aquaturbo wet environment operating standards. The unit is constructed from stainless steel and consists of a one-piece float, a suction cone, and a two flight Archimedes style ScrewPELLER®.

The ScrewPELLER® generates a flat and large-diameter spray pattern maximizing the air-water contact zone.

The AER-AS is easily adaptable to nearly any basin configuration. With a lengthened intake cone section, the AER-AS can penetrate water depths up to 8 m. This allows the unit to draw activated sludge of low oxygen concentration from the bottom of the basin to be transformed into an oxygen-rich surface discharge.

Easy to install, robust and reliable, the Aquaturbo AER-AS ensures efficient aeration and mixing for years of maintenance free service.



## ADVANTAGES

EXTENDED RANGE FROM 1.1 TO 160KW

HIGH PERFORMANCE SCREWPELLER® TECHNOLOGY

- INTENSIVE MIXING AND EXCEPTIONAL OXYGEN DISPERSION
- FLAT SPRAY - LOW AEROSOL AND HIGH INFLUENCE DIAMETER

100% STAINLESS STEEL CONSTRUCTION

- UV RESISTANCE
- HIGH CORROSION RESISTANCE

WITHOUT CIVIL ENGINEERING, SIMPLE, FAST AND NON-STOP INSTALLATION OF THE PROCESS

COOLING EFFECT OF THE EFFLUENT

VERSATILE DESIGN

- ADAPTED TO FLUCTUATING WATER LEVELS WITH CABLES & SPRINGS, MOORING ARMS, OR VERTICAL GUIDE POSTS WITH DELTA FRAME
- SUITABLE FOR BASIN DEPTHS FROM 63CM TO 8M

ROBUST AND RELIABLE DESIGN WITH LOW MAINTENANCE

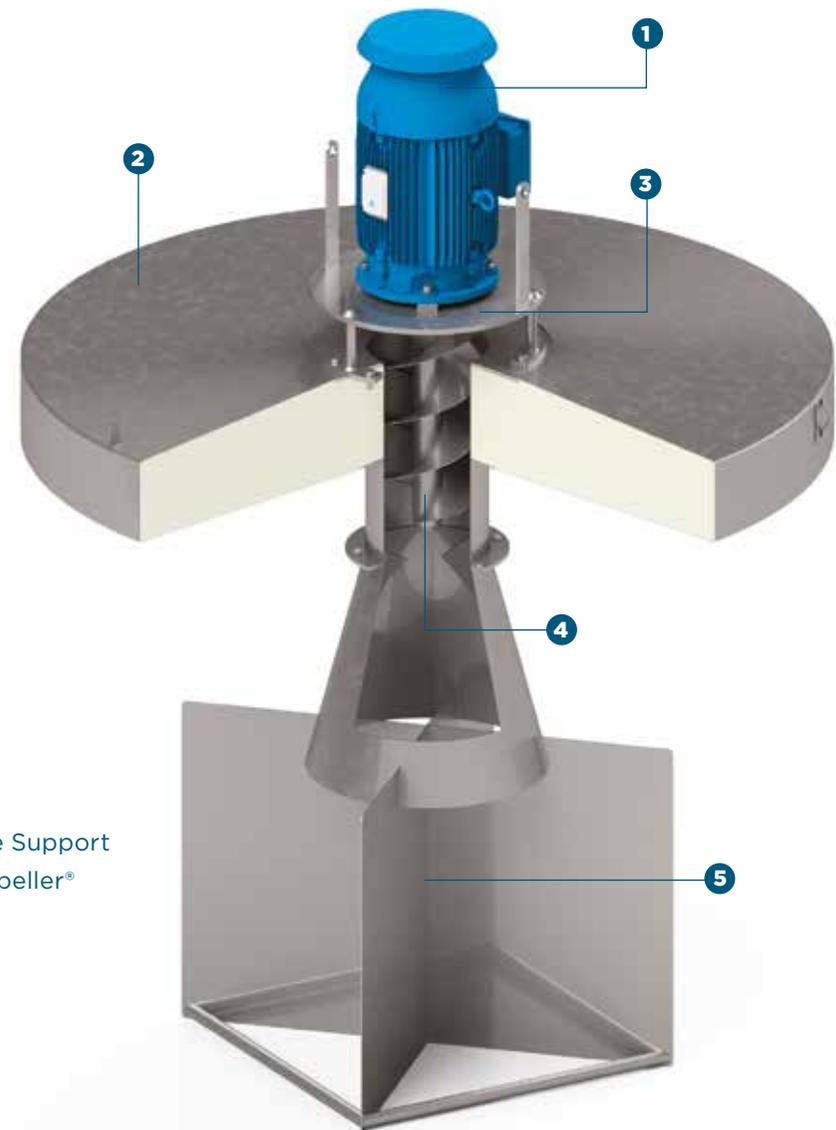
- PREMIUM MOTOR WITH IP56 RATING
- DIRECT DRIVE (FEW MOVING PARTS = LOW MAINTENANCE)
- SCREWPELLER® TECHNOLOGY MINIMIZES VIBRATION AND STRESSES ON THE MOTOR BEARINGS
- FEW WEARING PARTS

LONG LIFE STANDING

AVAILABLE FOR RENT

## STANDARD CONFIGURATION

- IP56 epoxy coated steel surface motor to standard Aquaturbo
- Available from 1.1kW to 160kW at 50Hz (750, 1000, 1500 rpm) or 60Hz (900, 1200, 1800 rpm)
- All stainless-steel construction
- One piece float
- Motor support
- Screwpeller® - Archimedes 2 flight impeller design
- Intake and stabilization cone
- Lifting rings
- Mooring rings



- 1 Motor
- 2 Float
- 3 Flange Support
- 4 Screwpeller®
- 5 Cross

# VARIOUS DRAFTS OPTIONS FOR SUCTION CONES

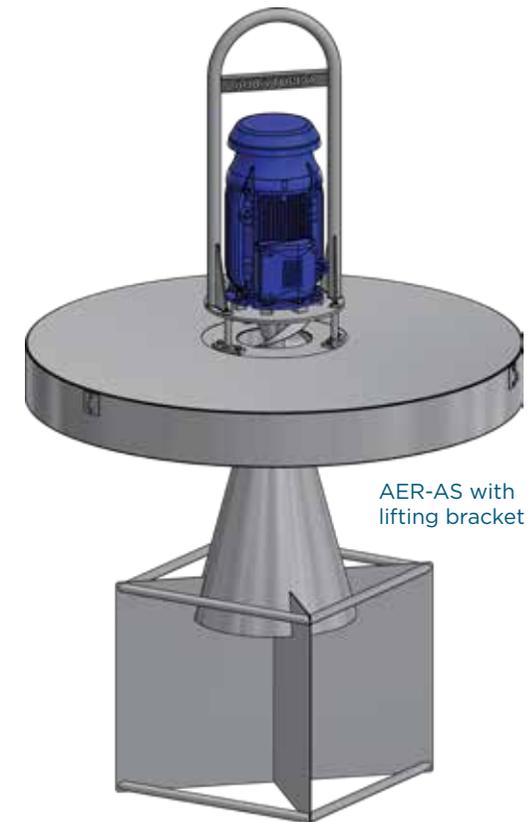
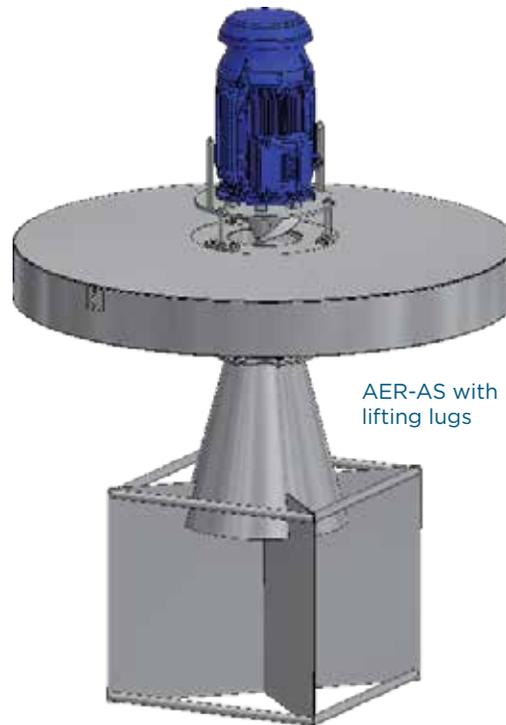
MIN drafts – STD draft – MAX draft

Each Aquaturbo AER-AS surface aerator has a standard depth suction cone with an associated min and max water level range. The draft can be reduced or extended within the operational limits of each model. Optimum mixing and oxygen transfer is achieved when the correct draft is selected to suit the water level. The suction and cross cone position of the aerator create a center of gravity below the water surface, maximizing equipment stability.

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## OPTIONS

- Stainless steel construction 304L/316L
- Lifting hooks or lifting shackle
- Low discharge deflector plate
- ScrewPELLER®
- Cables, springs, vertical guide tubes with delta frame, or articulated mooring arm.
- Shortened or extended cross cone
- Open cone for channel applications
- Anti-erosion protection plate
- Curved round tube for basin liner protection
- Tropicalized motor windings
- Inverter duty motor for use with VSD/VFD drives
- Motor paint scheme and custom colors
- Automatic motor lubrication system
- Intelligent connected sensor



# WORKING PRINCIPLE AND THE SCREWPELLER® TECHNOLOGY

The Aquaturbo® AER-AS functions are like an open pump. The ScrewPELLER draws the mixed liquor of wastewater and activated sludge into the suction cone.

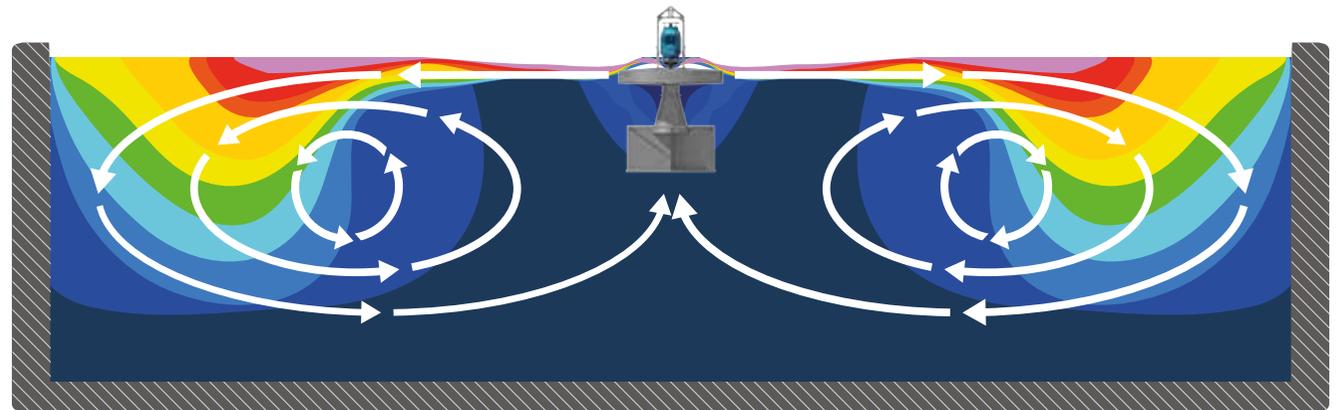
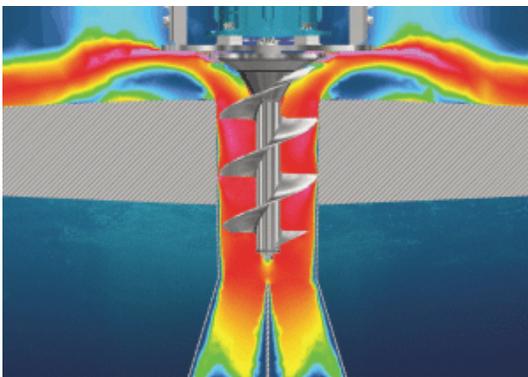
The ScrewPELLER® is a centrifugal impeller constructed with a two-start Archimedean helix on a central shaft with an integral top plate.

The ScrewPELLER is a solid one-piece structure that does require minimal maintenance. Directly driven by the motor, the unique Aquaturbo® ScrewPELLER® pumps the liquid axially up through the cylindrical volute, and the liquid flow is curved with this action changing the flow from axial to radial. This action ensures that maximum kinetic energy is displaced on the water surface. This

unique effect creates significant turbulence on the water surface over a large diameter for maximum oxygen transfer from the above surface air into the activated sludge in real life conditions.

The ScrewPELLER® ensures intensive mixing and excellent dispersion of oxygen throughout the tank.

The design of the ScrewPELLER® minimizes vibrations and forces on the motor bearings, ensuring an exceptional lifetime of the Aquaturbo® AER-AS high-speed aerator.

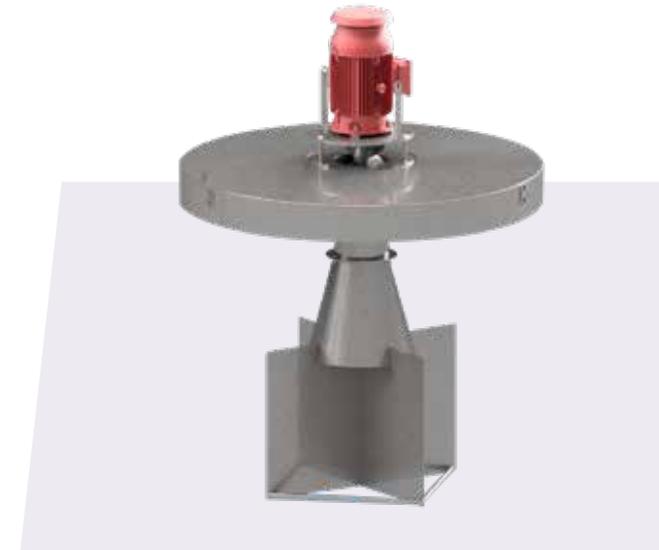




## MOTOR SUPPORT DETAILS

Multiple combinations are possible.

- 1 Motor with remote or easy access lubrication system
- 2 Motor with stainless steel protective cover (rain, sun)
- 3 Motor with intelligent sensor(s) wirelessly connected to monitoring application



1



2



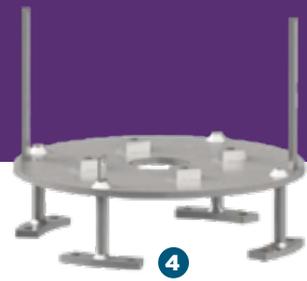
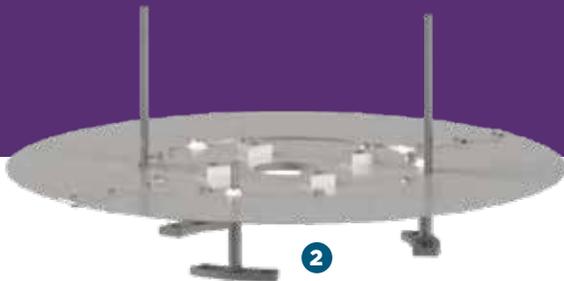
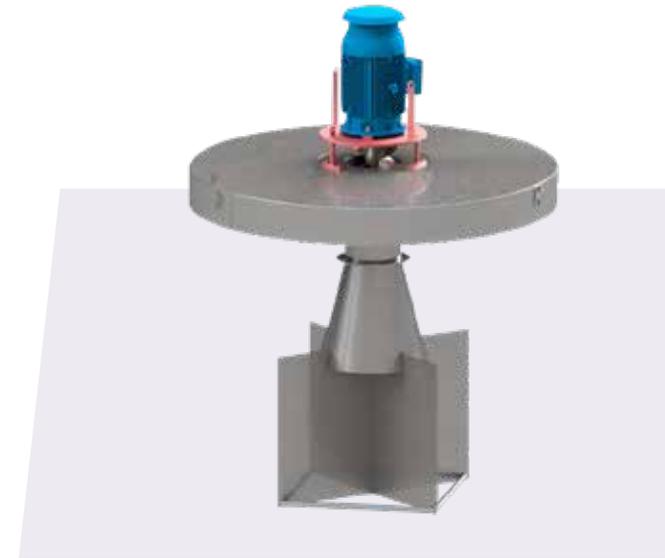
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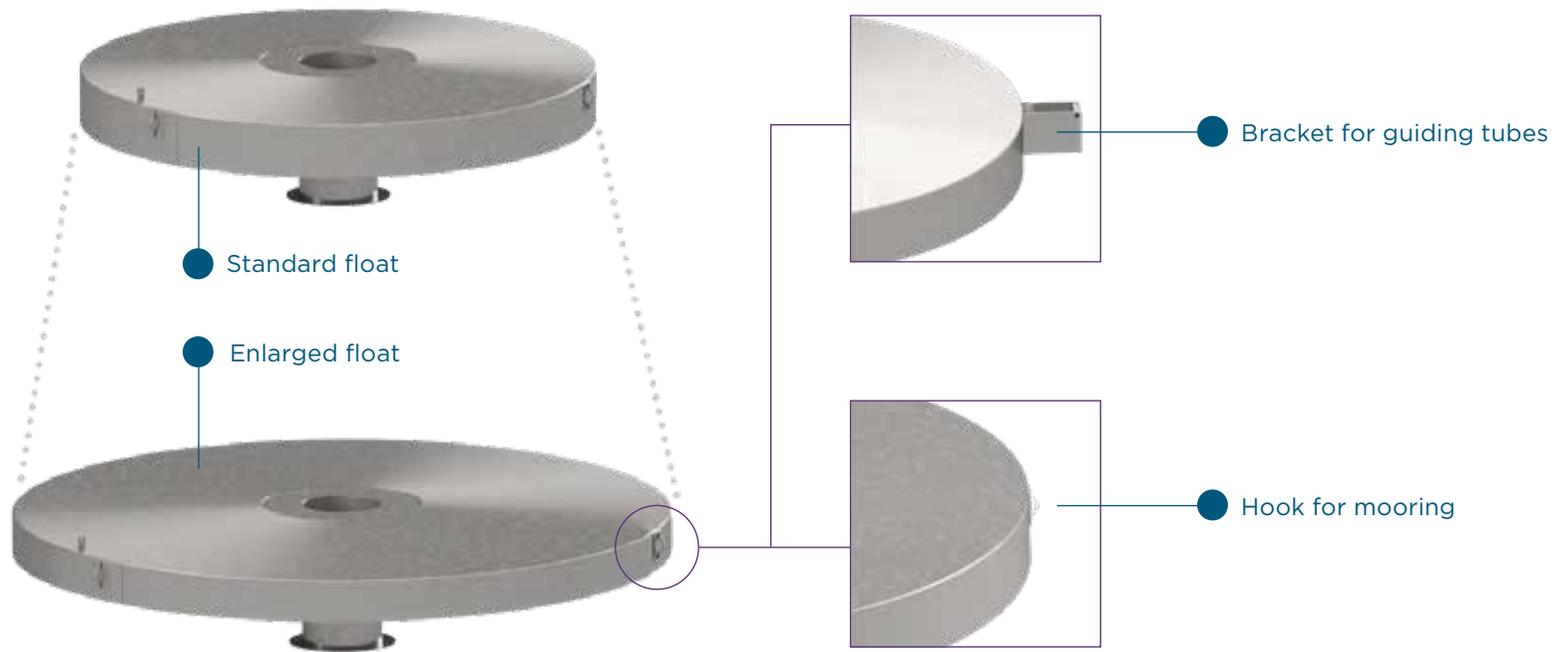
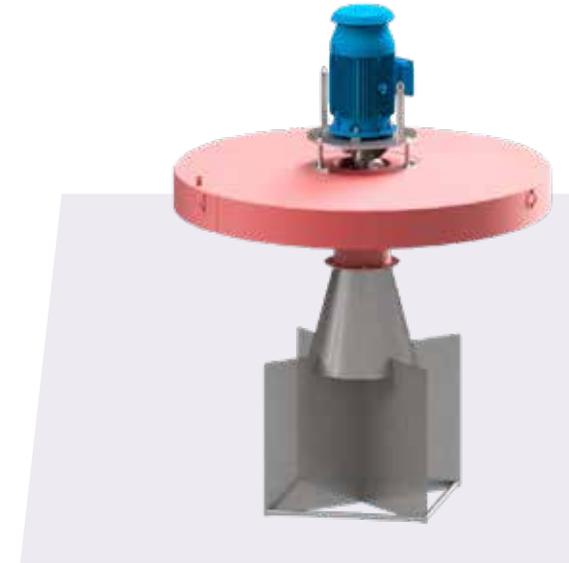
## FLANGE SUPPORT DETAILS

Multiple combinations are possible.

- 1 Flange support with anti ragging brackets
- 2 Flange support with deflector plate
- 3 3-leg flange support
- 4 4-leg flange support- 5 Flange support with lifting bracket



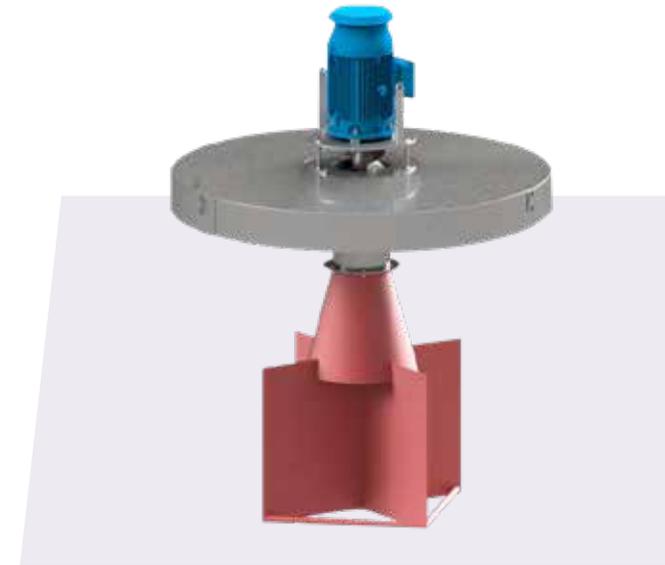
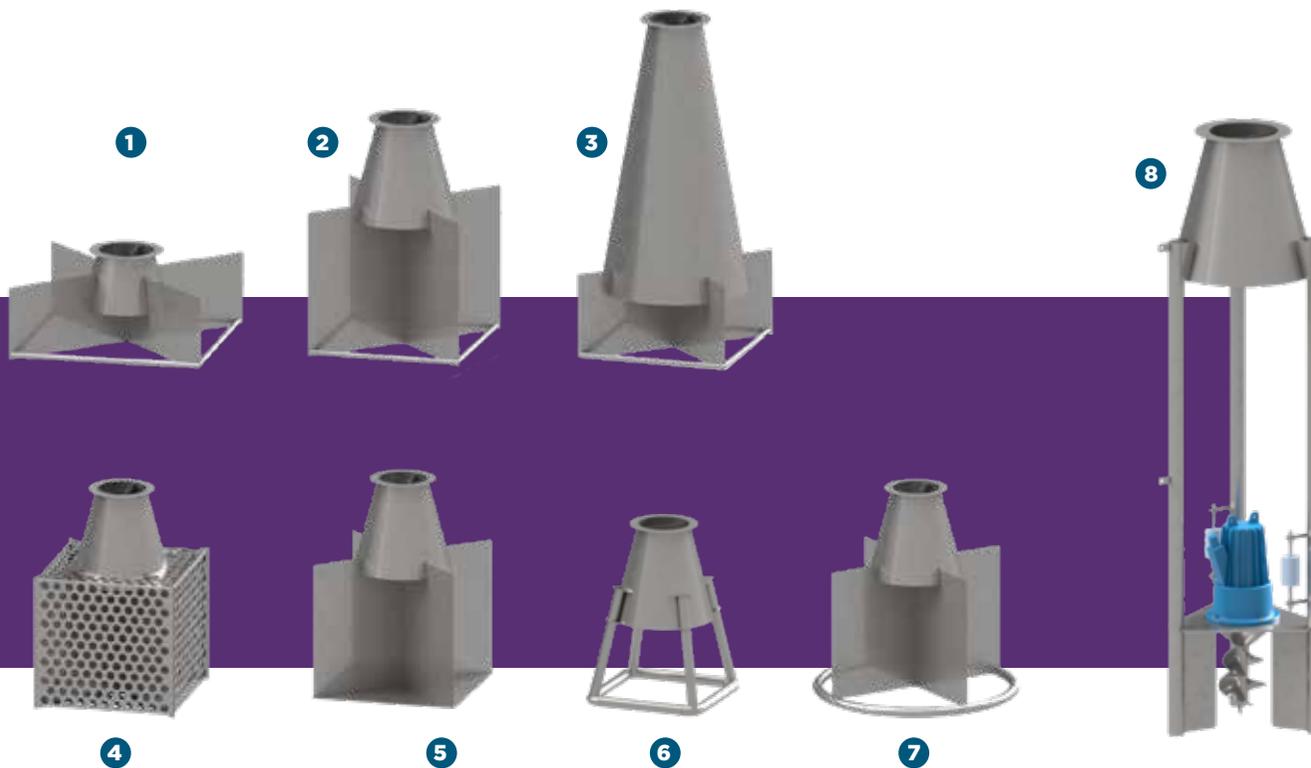
# FLOAT DETAILS



## CROSS DETAILS

Multiple combinations are possible.

- 1 Shortened cone cross
- 2 Standard cone cross
- 3 Extended cone cross
- 4 Cage cone cross
- 5 Cone cross with anti-erosion plate
- 6 Open cone cross
- 7 Cone cross with liner protection
- 8 Cone cross with mixer unit



### Aquaturbo AER-AS & MIX-SL Combined Unit

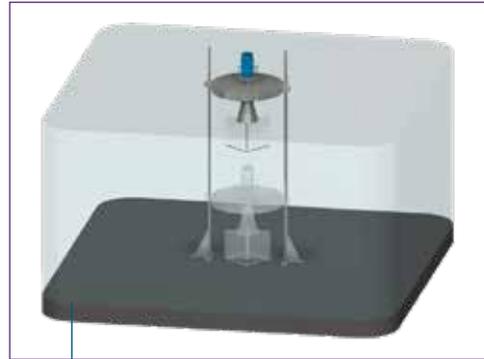
Combining the AER-AS high-speed floating mechanical aerator and MIX-SL submersible mixer allows the unit to operate simultaneously for maximum influence or independently for Nitrification or Denitrification.

This equipment is used for deep ponds or lagoons or for SBR applications for denitrification phases requiring intensive mixing without oxygen supply.

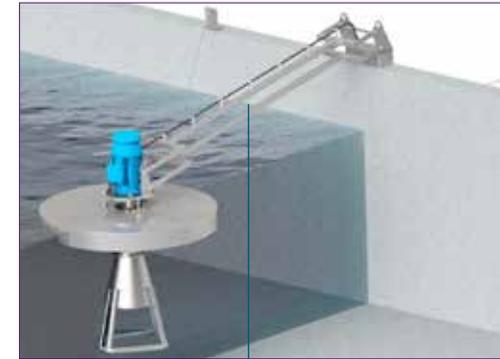


# MOORING DETAILS

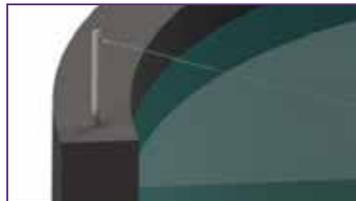
Multiple combinations are possible.



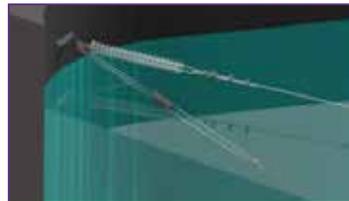
● With guiding tubes



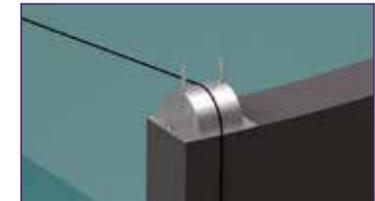
● With double hinged arm



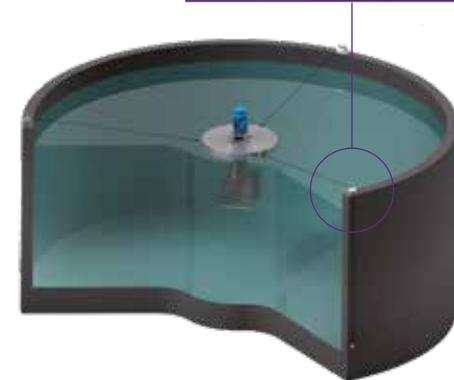
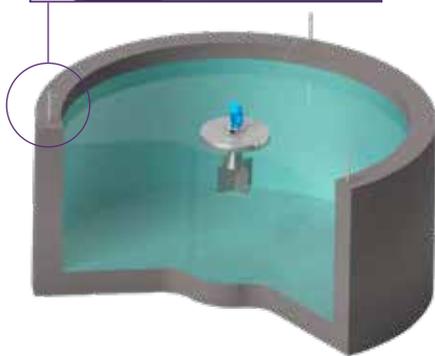
Mooring cables with mooring poles



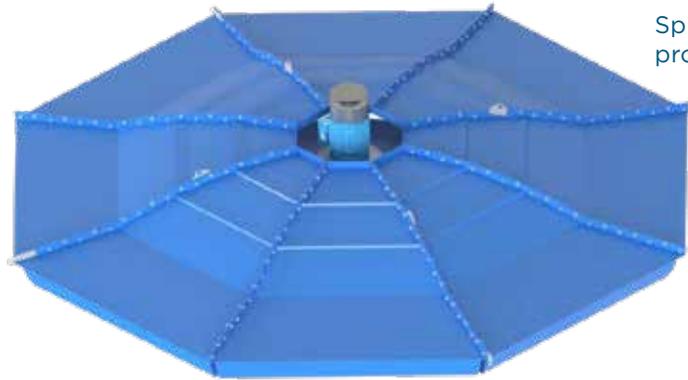
Mooring cables with springs and wall brackets



Mooring cable guide brackets



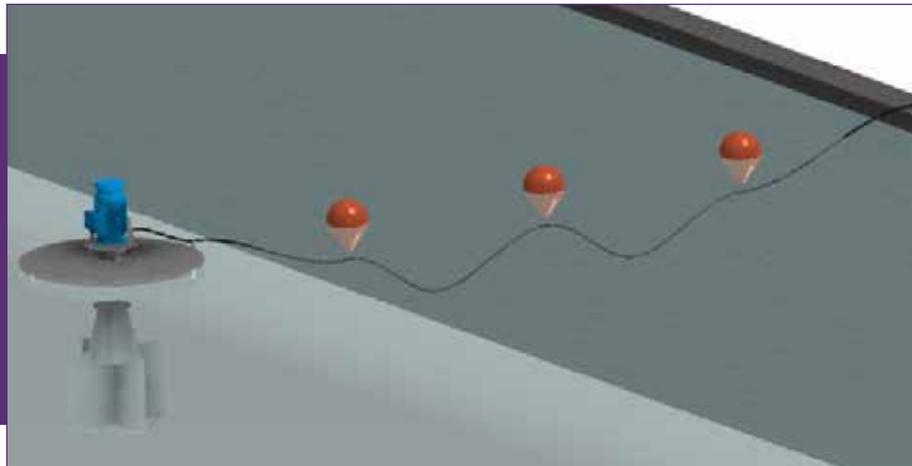
## OTHER ACCESSOIRES



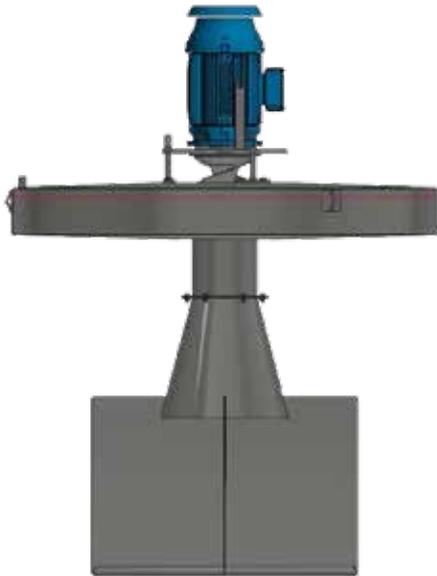
Splash and noise protection cover



Electrical cable floats



# TECHNICAL DATA



## WATER LEVELS

Model	kW	rpm	Min waterlevel at min draft*	Min waterlevel at standard draft*	Max waterlevel at standard draft	Max waterlevel at max draft
			m	m	m	m
<b>SERIES 24 4Pol ± 1500 rpm</b>						
AER-AS 0075-24	0.75	1455	0.63	0.98	1.80	2.80
AER-AS 0110-24	1.1	1460	0.69	1.00	1.90	2.90
AER-AS 0150-24	4.5	1455	0.71	1.05	2.05	3.05
AER-AS 0220-24	2.2	1440	0.74	0.98	2.20	3.20
AER-AS 0300-24	3	1440	0.74	1.06	2.40	3.40
AER-AS 0400-24	4	1450	0.80	1.11	2.50	3.50
AER-AS 0550-24	5.5	1465	0.85	1.26	2.60	3.60
AER-AS 0750-24	7.5	1465	0.90	1.33	2.80	3.80
AER-AS 1100-24	11	1470	1.00	1.46	3.00	4.00
AER-AS 1500-24	15	1470	1.08	1.53	3.20	4.70
AER-AS 1850-24	18.5	1470	1.10	1.73	3.30	4.80
AER-AS 2200-24	22	1475	1.10	1.83	3.40	4.90
AER-AS 3000-24	30	1480	1.20	2.14	3.60	5.10
AER-AS 3700-24	37	1480	1.24	2.08	3.80	5.30
AER-AS 4500-24	45	1480	1.26	2.16	3.90	5.40
AER-AS 5500-24	55	1480	1.38	2.30	4.00	5.50
<b>SERIES 16 6Pol ± 1000 rpm</b>						
AER-AS 0750-16	7.5	975	1.00	1.45	2.90	3.90
AER-AS 1100-16	11	975	1.09	1.68	3.10	4.10
AER-AS 1500-16	15	975	1.10	1.75	3.30	4.80
AER-AS 1850-16	18.5	975	1.15	2.11	3.40	4.90
AER-AS 2200-16	22	980	1.20	2.13	3.55	5.05
AER-AS 3000-16	30	985	1.20	2.17	3.80	5.30
AER-AS 3700-16	37	985	1.26	2.28	3.90	5.40
AER-AS 4500-16	45	990	1.35	2.35	4.05	5.55
AER-AS 5500-16	55	990	1.49	2.47	4.20	5.95
AER-AS 7500-16	75	990	1.60	2.86	4.50	6.25
AER-AS 9000-16	90	990	1.60	3.05	4.65	6.40
AER-AS 11000-16	110	990	1.90	2.95	4.80	6.55
AER-AS 13200-16	132	990	1.90	2.93	5.00	6.75
<b>SERIES 12 8Pol ± 750 rpm</b>						
AER-AS 3700-12	37	740	1.49	2.39	4.20	5.70
AER-AS 4500-12	45	740	1.53	2.47	4.35	5.85
AER-AS 5500-12	55	740	1.79	2.89	4.55	6.30
AER-AS 7500-12	75	740	1.85	2.99	4.80	6.55
AER-AS 9000-12	90	740	2.10	3.41	5.00	6.75
AER-AS 11000-12	110	750	2.14	3.46	5.20	6.95
AER-AS 13200-12	132	750	2.25	3.64	5.40	7.15
AER-AS 16000-12	160	750	2.32	3.76	5.60	7.35
AER-AS 20000-12	200	750	2.39	3.89	5.90	7.65

Please note :

Final aerator selection and exact draft is dependent upon many factors including basin construction (concrete, earthen, membrane liner or other), water level fluctuation; nature and degree of settled deposits, process objectives (complete mix, partial mix, laminar mix or other) and whether the influent is screened. An Anti-erosion Plate is often specified for operation in shallow earthen or membrane lined basins and when settled deposits are present.

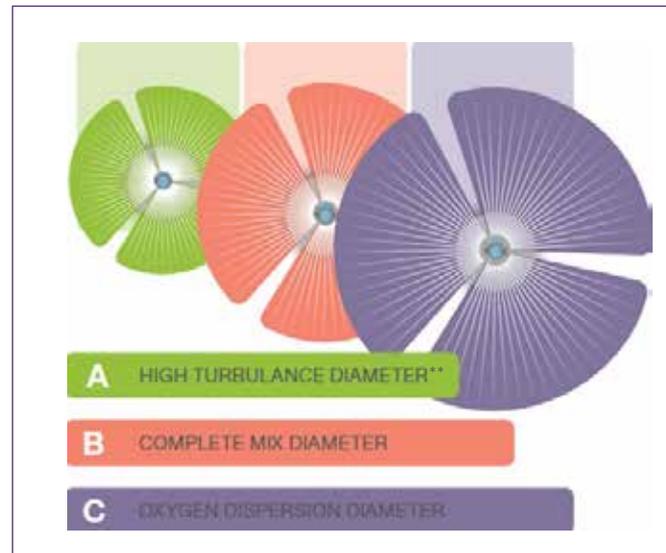
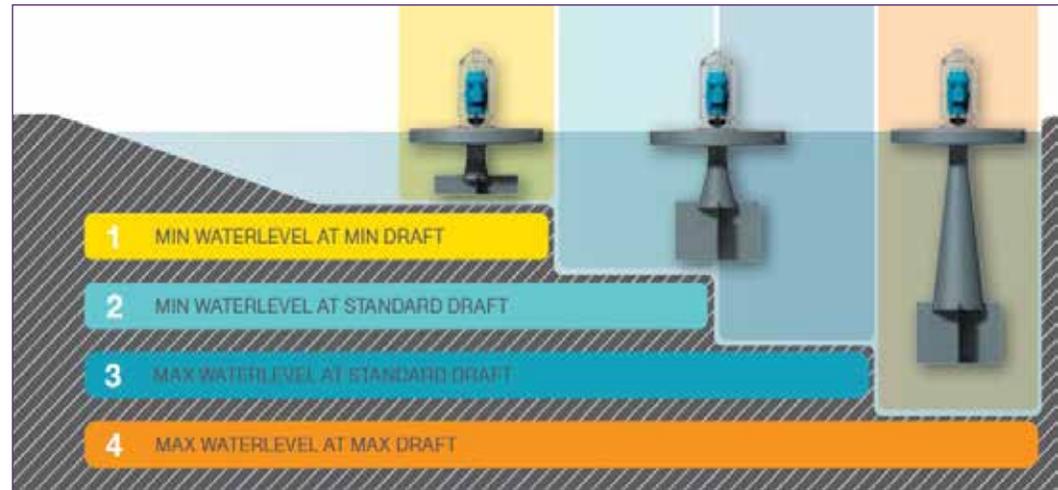
\* Min water levels 1 and 2 are draft plus 0.1m

ZONE OF INFLUENCE		
A** Hight turbulence diameter	B Complete mix diameter	C Oxygen dispersion diameter
m	m	m

2.5	7	20
3.5	8	24
4.5	9	28
5.5	12	45
6.5	13	45
8	14	47
9.5	15	49
10	16	52
10.5	19	61
11	22	70
11.5	24	75
12	25	80
13	25.5	86
14	26	90
15	26.5	95
16	27	100

10.5	18	51
11.5	20	63
12	23	72
12.5	25	78
13	27	84
14	31	95
14.5	33	100
15	35	107
15.5	40	116
16.5	44	128
17	46	137
17.5	50	143
18	52	145

15	34	103
15.5	36	110
16	41	119
17	46	128
17.5	49	135
18	53	144
18	57	150
18.5	60	154
19	62	157



Please note:

Zones A, B and C are averages values depending on basin dimensions, water levels, solid concentration, operational hours per day and reactor configuration.

\*\* Zone A is min basin diameter and min aerator centres.

## A STEP AHEAD IN WATER TECHNOLOGY

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