

AERATOR  
+ MIXING



# AER-AS

AERATOR-MIXER



FLOATING SURFACE  
AERATOR









## MAIN CHARACTERISTICS

Axial flow aerator with patented instantaneous radial discharge. World renowned for high aeration efficiency in field conditions due to maximum transfer of kinetic energy to water surface.

Installations range from small tanks to large lagoons due to high mixing and oxygen dispersion characteristic in the form of an apple shaped flow.



## ADVANTAGES

EXCELLENT EFFICIENCY IN WASTEWATER

MAINTAINS THE SAME  $O_2$  IN EFFICIENCY OVER TIME

EXCEPTIONAL MIXING AND OXYGEN DISPERSION

ADAPTABLE TO SUIT VARIED WATER LEVELS

WATER LEVEL DOES NOT AFFECT EFFICIENCY

SUITABLE FOR VARIOUS LAGOONS, TANKS, OR DITCHES;  
ANY SHAPE OR ANY SIZE

SUITABLE FOR FIXED AND VARIABLE SPEED FREQUENCY  
OPERATION

UNPARALLELED WATER-COOLING CAPABILITIES - ADJUSTABLE  
RATE

MINIMAL NOISE IN OPERATION

LOW-AEROSOL PRODUCTION AND LOW-ODOUR EMISSION

EASE OF INSTALLATION - EVEN WHILST THE PLANT REMAINS  
ONLINE

MINIMAL MAINTENANCE

SIMPLICITY OF DESIGN AND OPERATION

NO GEARBOX, NO SUBMERGED BEARINGS, NO MECHANICAL  
SEALS, NO BLOWERS, NO PIPEWORK, OR VALVES

LONG SERVICE LIFE - NO CONSUMABLE PARTS, NO MAJOR WEAR  
SURFACES

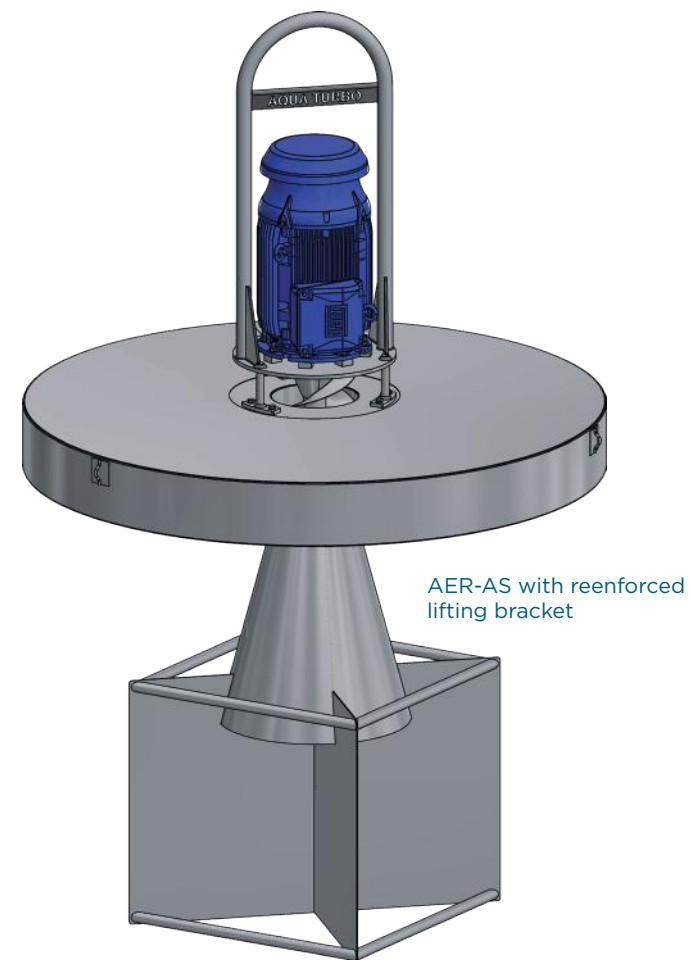
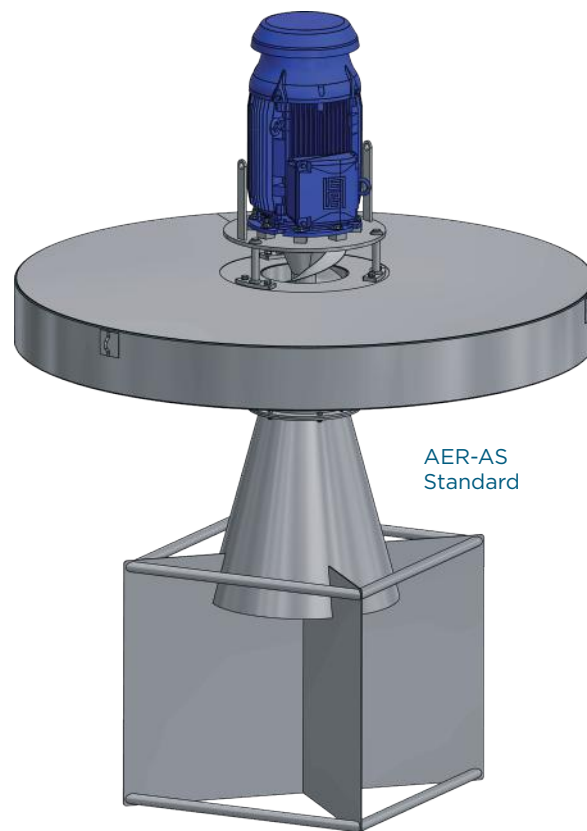
100% STAINLESS STEEL CONSTRUCTION

## COMPONENTS

- High efficiency motor, mooring eyes
- Guiding tubes system
- Anti-vortex Vanes
- Cone-cross
- Soft-edge liner base
- ScrewPELLER®
- Large stabilisation cross
- 100% Stainless steel construction
- Anti-erosion plate

## OPTIONS

- Alternate WEG paint plans and colours upon request
- WEG W3Seal\* with brass labyrinth seal for ultimate ingress protection
- Tropicalised Windings -Internal paint system



## CONSTRUCTION

- Reduce or extended draft suction cone cross-cone to suit water level
- 3 mooring eyes
- Alternate materials of construction
  - AISI 316L stainless steel; duplex stainless steel upon request
- Special cone-cross options to suit application -e.g., flow through design for oxidation ditch with varying flows characteristics

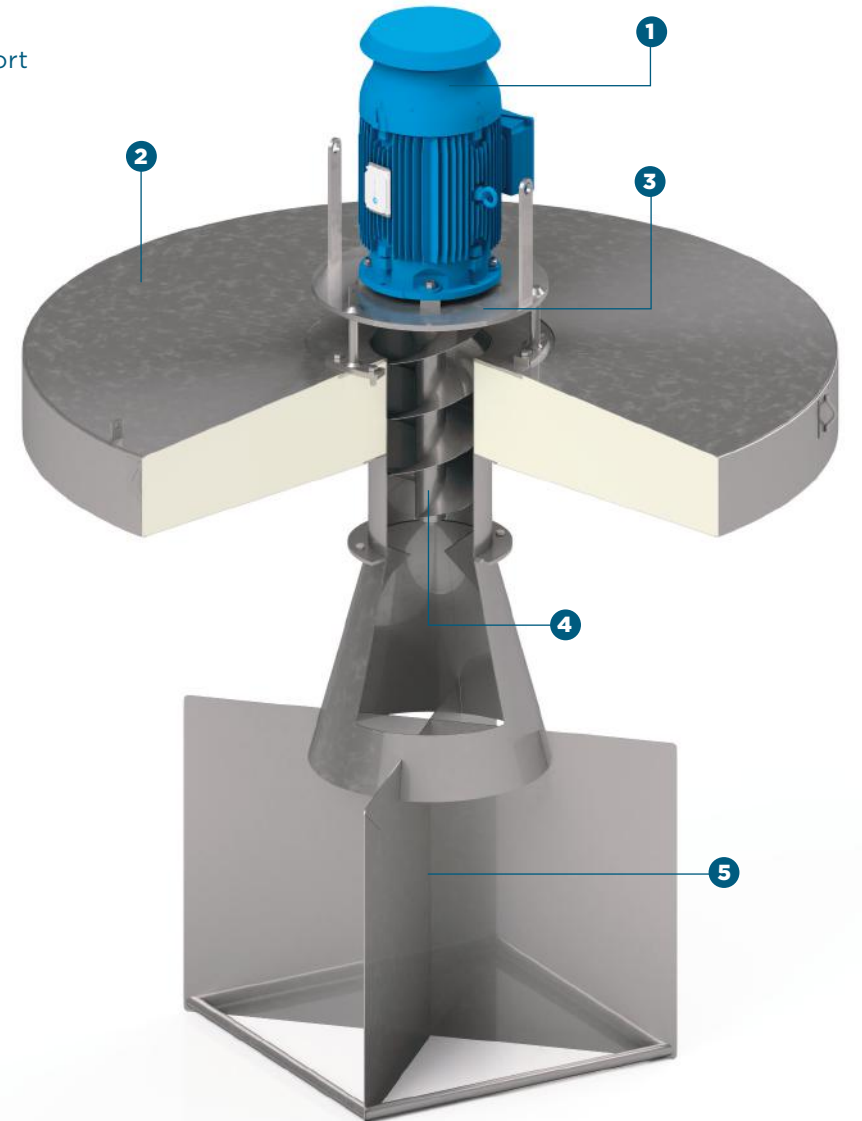
## VARIOUS DRAFTS OPTIONS FOR SUCTION CONES

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.

## STANDARD CONFIGURATION

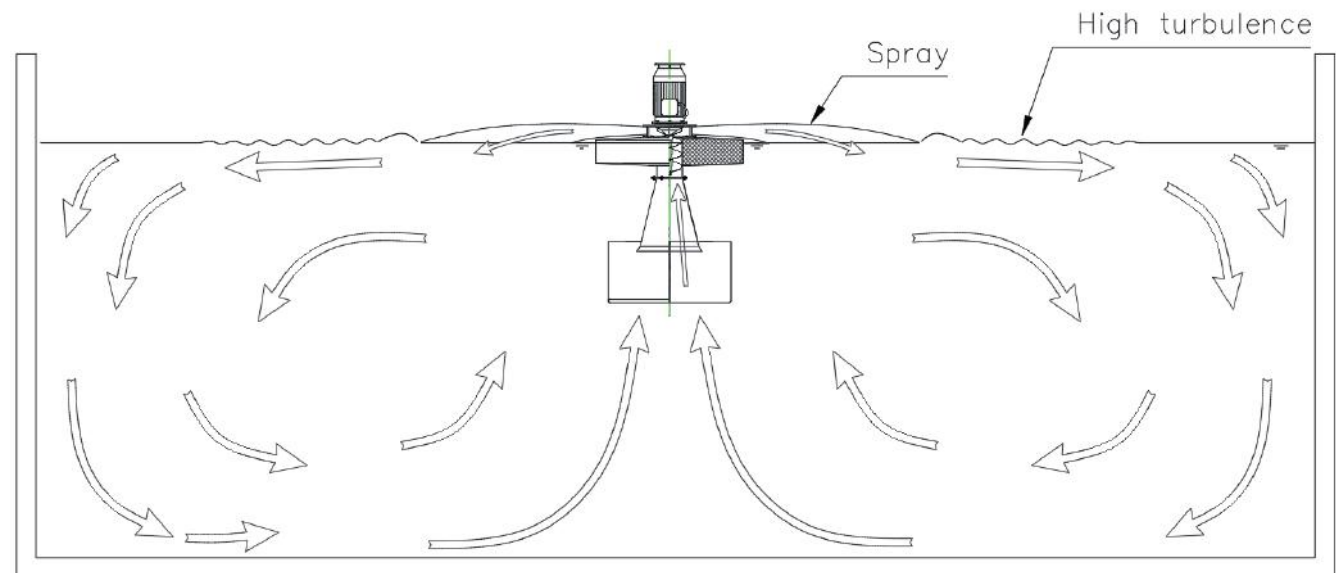
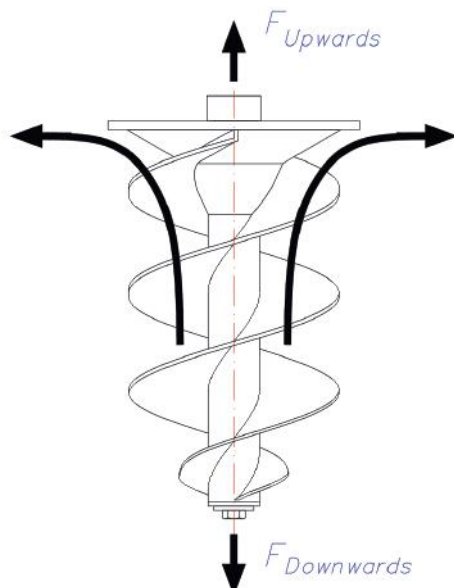
- 1 Motor
- 2 Float
- 3 Flange Support
- 4 Screweller®
- 5 Cross



## WORKING PRINCIPLE AER-AS

The Aquaturbo® functions as an open pump. The mixed liquor of wastewater and activated sludge is aspirated via the suction cone. The unique Aquaturbo® Screwpeller® pumps the liquid axially up through the cylindrical volute, bends the liquid flow from axial to radial, and ensures that maximum kinetic energy is transferred to the water surface.

Whilst transferring the maximum kinetic energy to the water, the Screwpeller® achieves a high performance in pumping and oxygen transfer. Due to the design of the Screwpeller®, the forces on the bearings are very low, so standard bearings can be used.





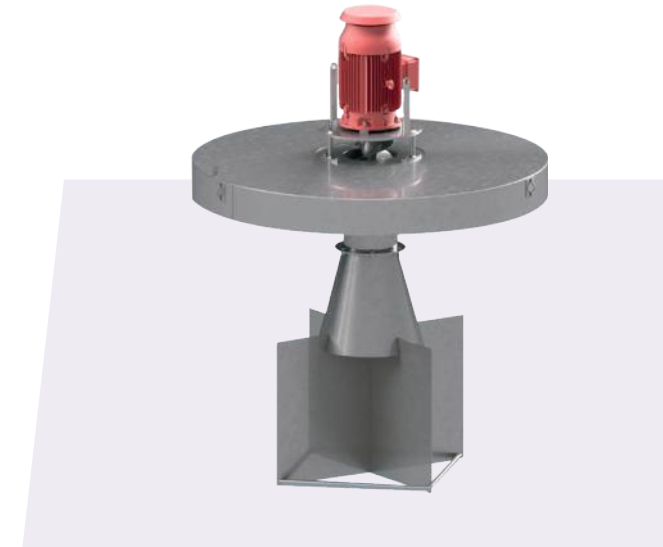




## MOTOR DETAILS

Multiple combinations are possible.

- 1 Motor with remote greasing & easy access greasing system
- 2 Motor with stainless steel raincover
- 3 Motor with smart monitoring



1



2



3

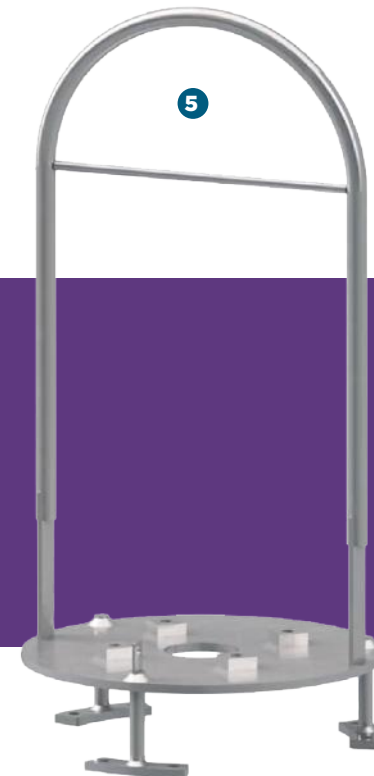
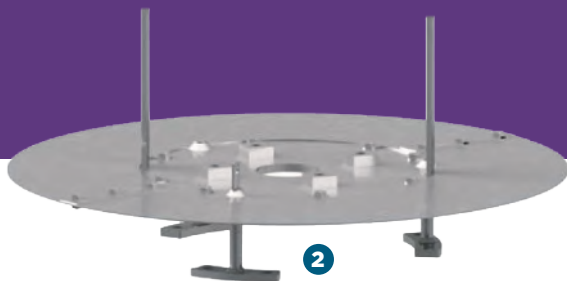
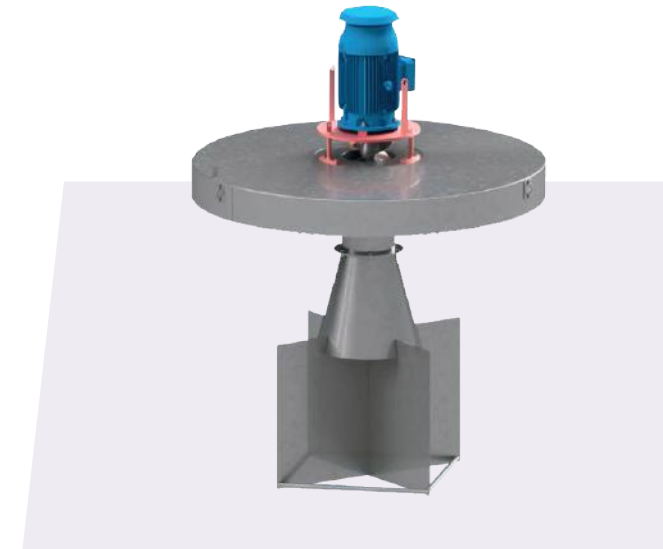




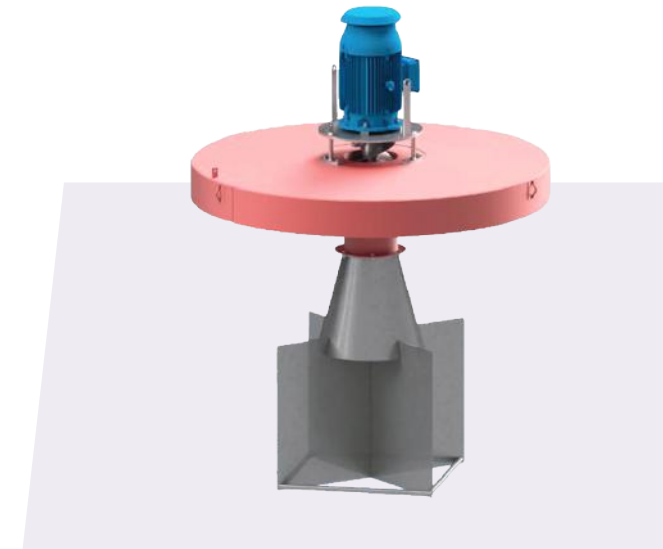
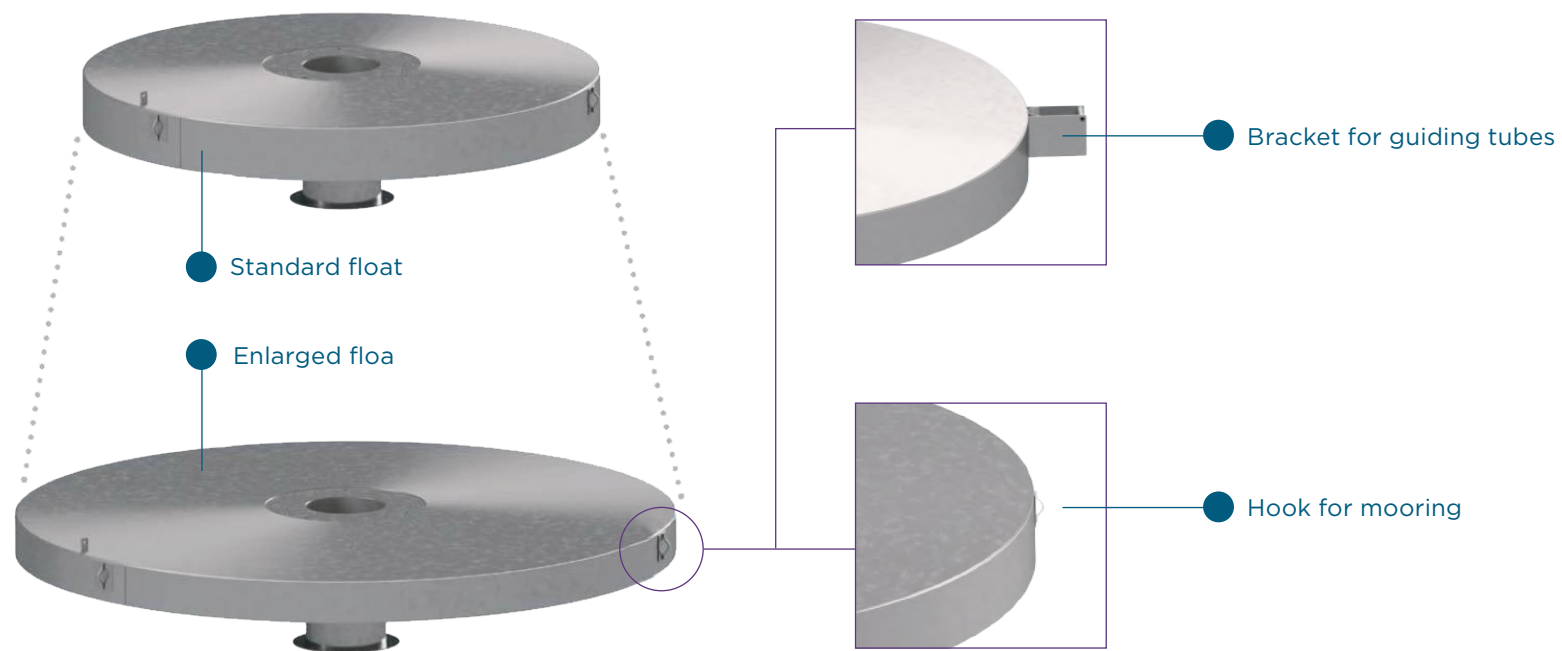
## FLANGE SUPPORT DETAILS

Multiple combinations are possible.

- ❶ Flange support with anti ragging brackets
- ❷ Flange support with deflector plate
- ❸ 3-leg flange support
- ❹ 4-leg flange support
- ❺ Flange support with lifting bracket



## FLOAT DETAILS

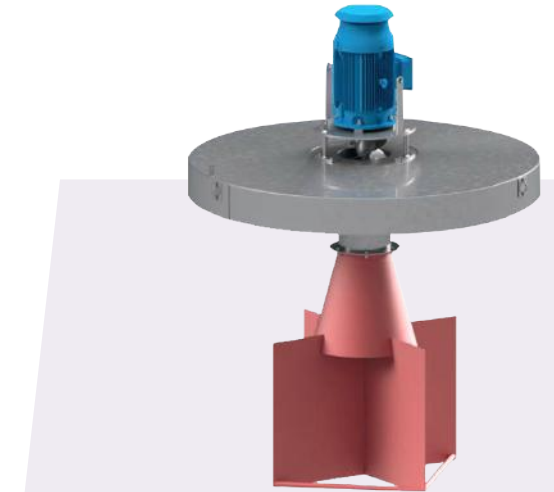
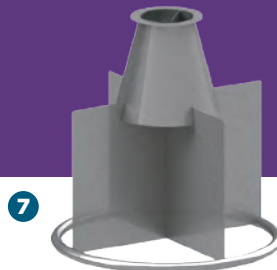
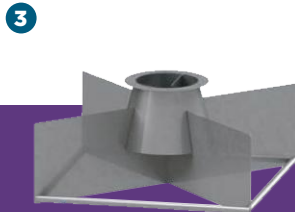




## CROSS DETAILS

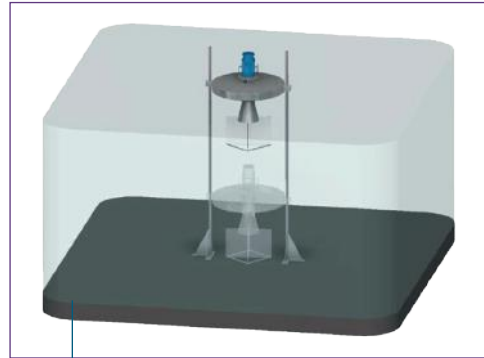
Multiple combinations are possible.

- 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

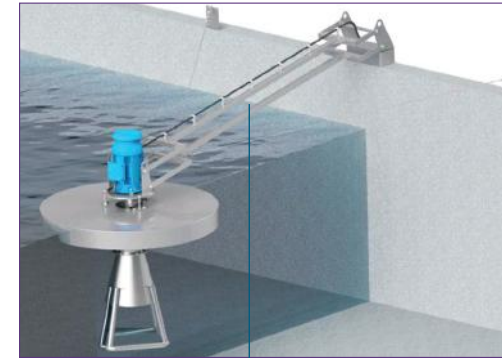


## MOORING DETAILS

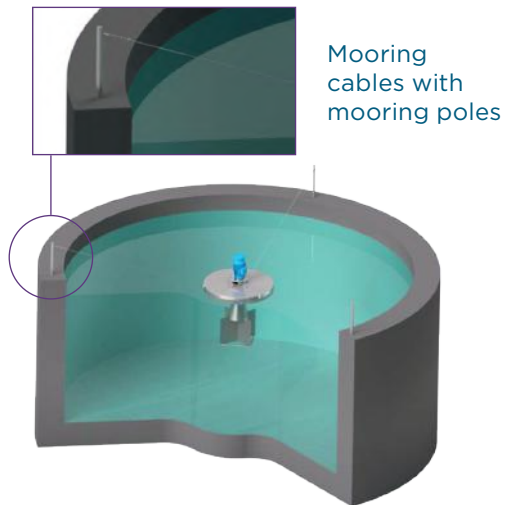
Multiple combinations are possible.



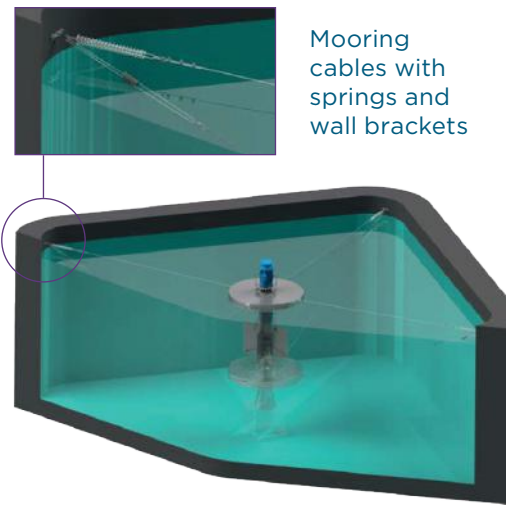
With guiding tubes



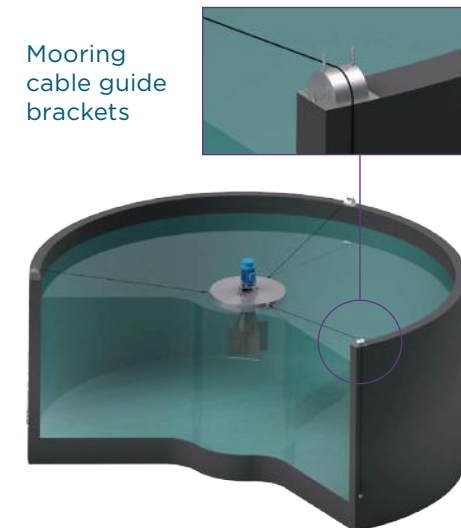
With double hinged arm



Mooring cables with mooring poles



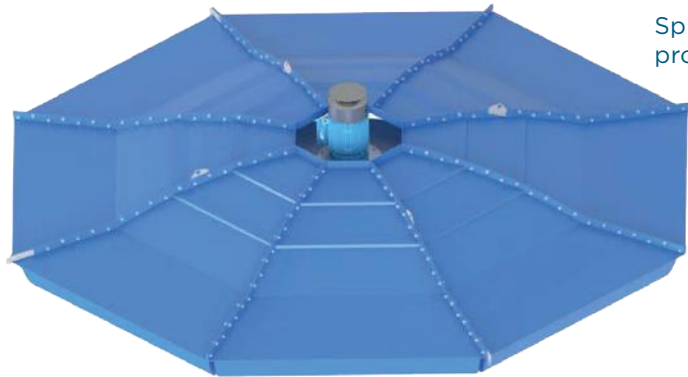
Mooring cables with springs and wall brackets



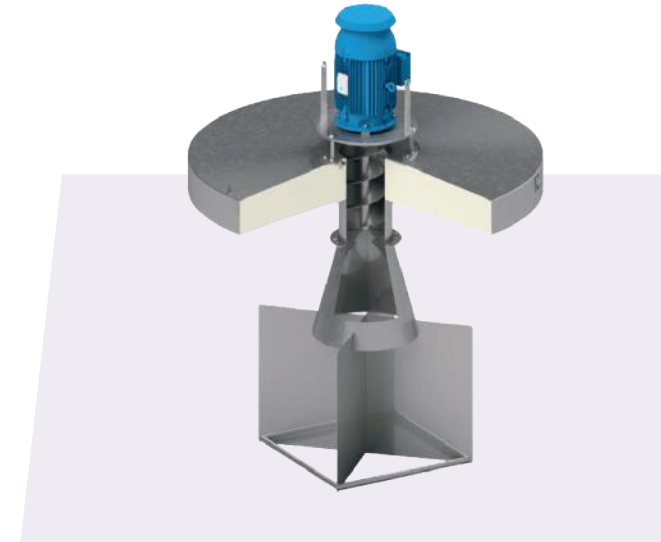
Mooring cable guide brackets



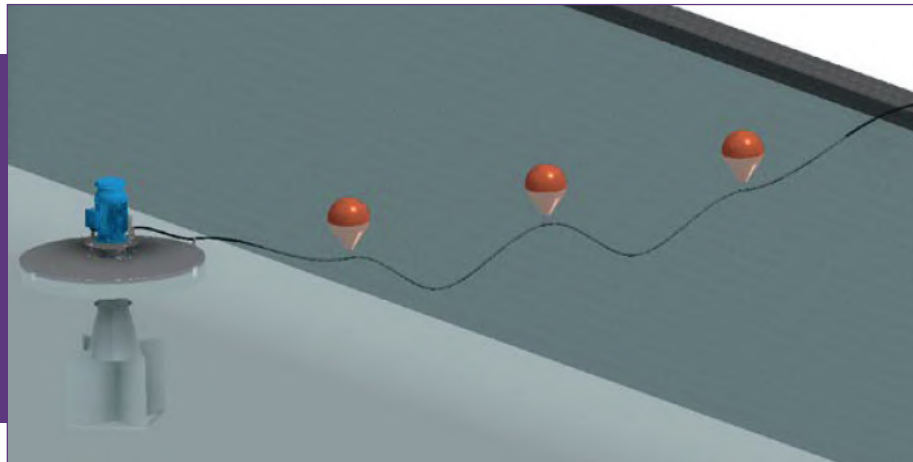
## OTHER ACCESSOIRES



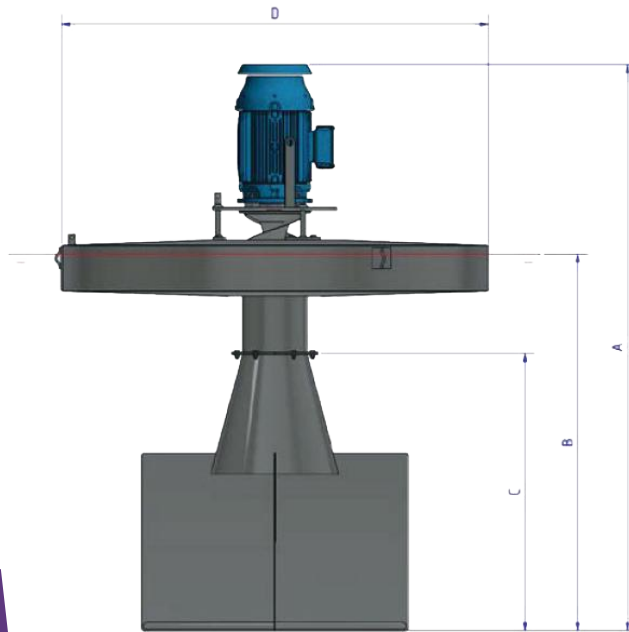
Splash and noise  
protection cover



Electrical cable floats



# TECHNICAL DATA



| Model                            | kW   | rpm  | WATER LEVELS                    |                                      |                                     |                                |
|----------------------------------|------|------|---------------------------------|--------------------------------------|-------------------------------------|--------------------------------|
|                                  |      |      | Min waterlevel<br>at min draft* | Min waterlevel<br>at standard draft* | Max waterlevel<br>at standard draft | Max waterlevel<br>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-A S0300-24                   | 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 0750-24-24                | 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-AS0750-16                    | 7.5  | 975  | 1.00                            | 1.45                                 | 2.90                                | 3.90                           |
| AER-AS1100-16                    | 11   | 975  | 1.09                            | 1.68                                 | 3.10                                | 4.10                           |
| AER-AS1500-16                    | 15   | 975  | 1.10                            | 1.75                                 | 3.30                                | 4.80                           |
| AER-AS1850-16                    | 18.5 | 975  | 1.15                            | 2.11                                 | 3.40                                | 4.90                           |
| AER-AS2200-16                    | 22   | 980  | 1.20                            | 2.13                                 | 3.55                                | 5.05                           |
| AER-AS3000-16                    | 30   | 985  | 1.20                            | 2.17                                 | 3.80                                | 5.30                           |
| AER-AS3700-16                    | 37   | 985  | 1.26                            | 2.28                                 | 3.90                                | 5.40                           |
| AER-AS4500-16                    | 45   | 990  | 1.35                            | 2.35                                 | 4.05                                | 5.55                           |
| AER-AS5500-16                    | 55   | 990  | 1.49                            | 2.47                                 | 4.20                                | 5.95                           |
| AER-AS7500-16                    | 75   | 990  | 1.60                            | 2.86                                 | 4.50                                | 6.25                           |
| AER-AS9000-16                    | 90   | 990  | 1.60                            | 3.05                                 | 4.65                                | 6.40                           |
| AER-AS1100-16                    | 110  | 990  | 1.90                            | 2.95                                 | 4.80                                | 6.55                           |
| AER-AS13200-16                   | 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**<br>Hight turbulence<br>diameter | B<br>complete mix<br>diameter | C<br>oxygen dispersion<br>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 |

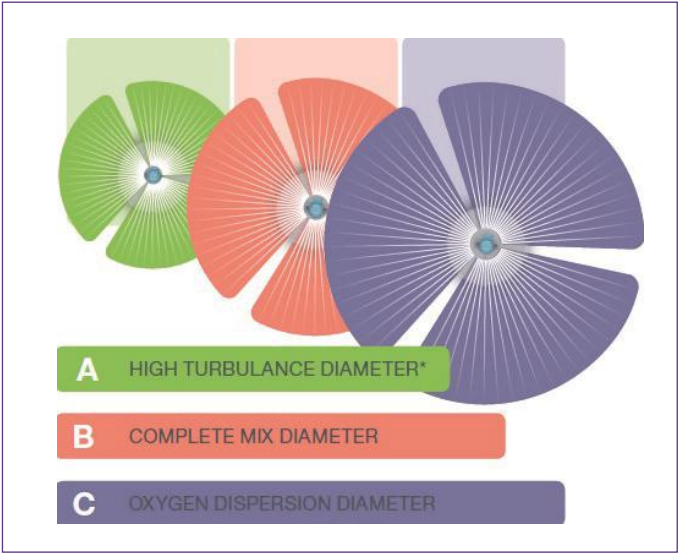
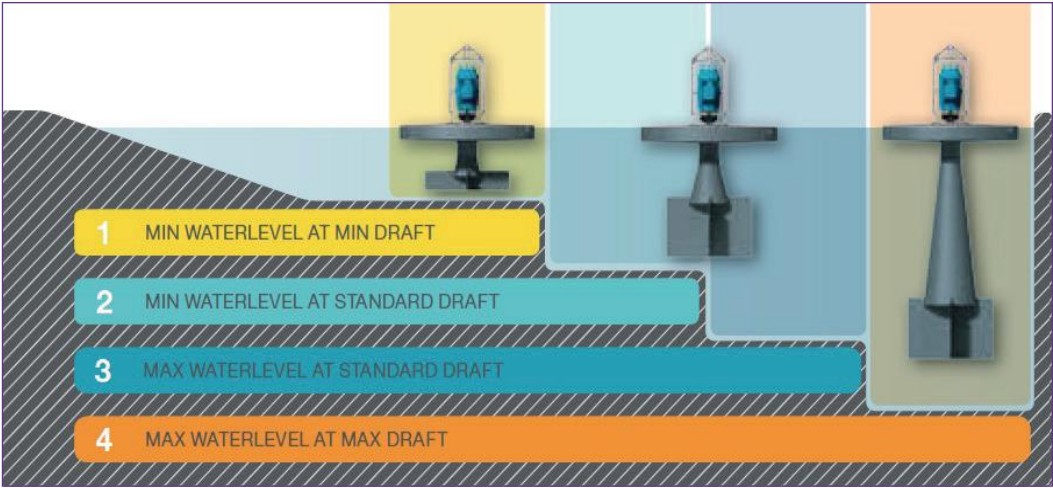
|      |    |     |
|------|----|-----|
| 10.5 | 18 | 51  |
| 11.5 | 20 | 63  |
| 12   | 23 | 72  |
| 12.5 | 25 | 78  |
| 13   | 27 | 84  |
| 14   | 31 | 95  |
| 14.5 | 33 | 100 |
| 15   | 35 | 107 |
| 15.5 | 40 | 116 |
| 16.5 | 44 | 128 |
| 17   | 46 | 137 |
| 17.5 | 50 | 143 |
| 18   | 52 | 145 |

|      |    |     |
|------|----|-----|
| 15   | 34 | 103 |
| 15.5 | 36 | 110 |
| 16   | 41 | 119 |
| 17   | 48 | 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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