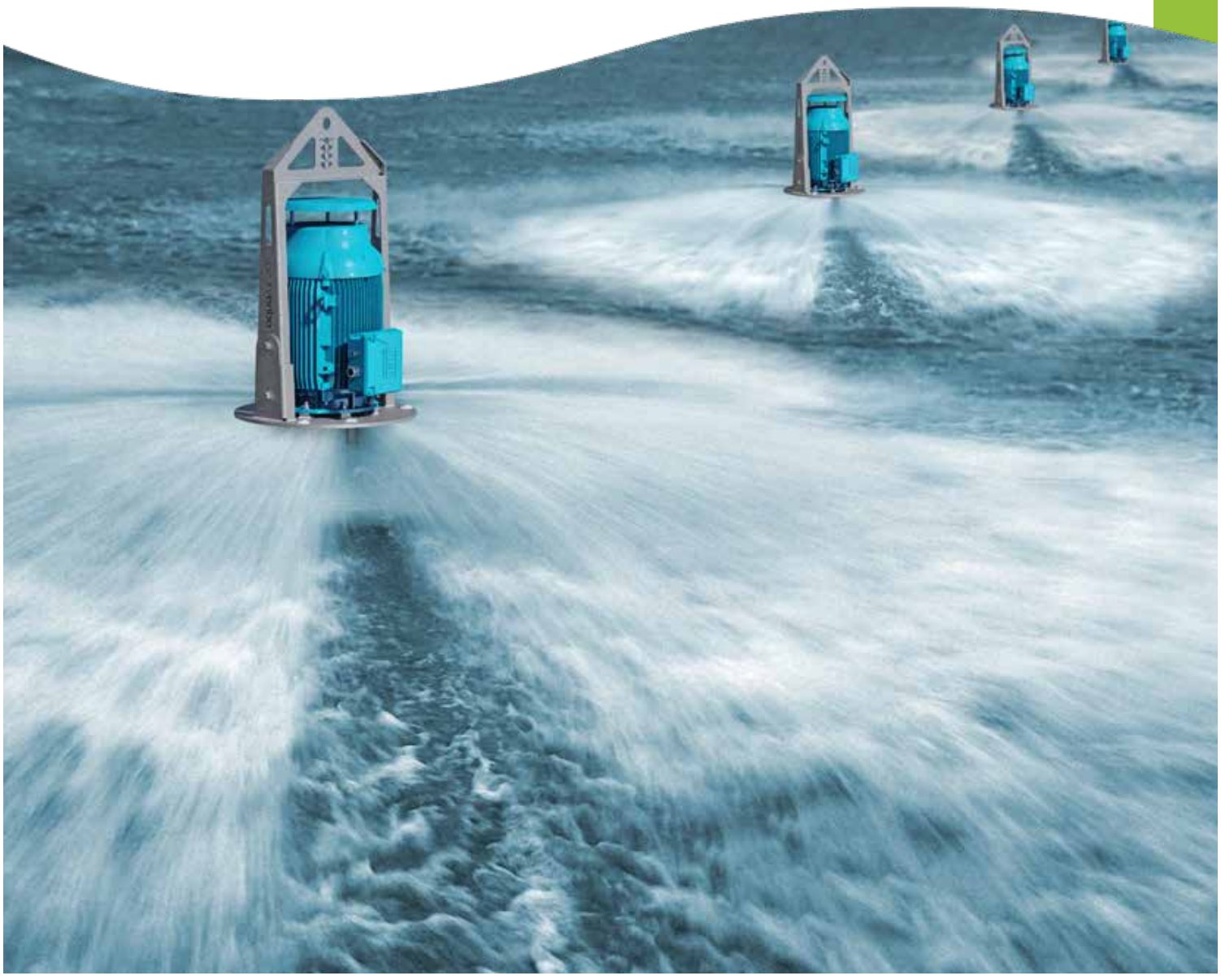

# aquaturbo® AER-AS

Floating Surface Aerator

# AER-AS

## Floating surface aerator

AQUA TURBO™ SYSTEMS
Waste Water Treatment Equipment

www.aquaturbo.com


**HEADQUARTERS**
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**AQUATURBO SYSTEMS INC**

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Springdale AR 72764, USA
Tel.: +1 479 927 1300
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# Nothing aerates like aquaturbo®

## aquaturbo® AER-AS Surface Aerator stands the test of time

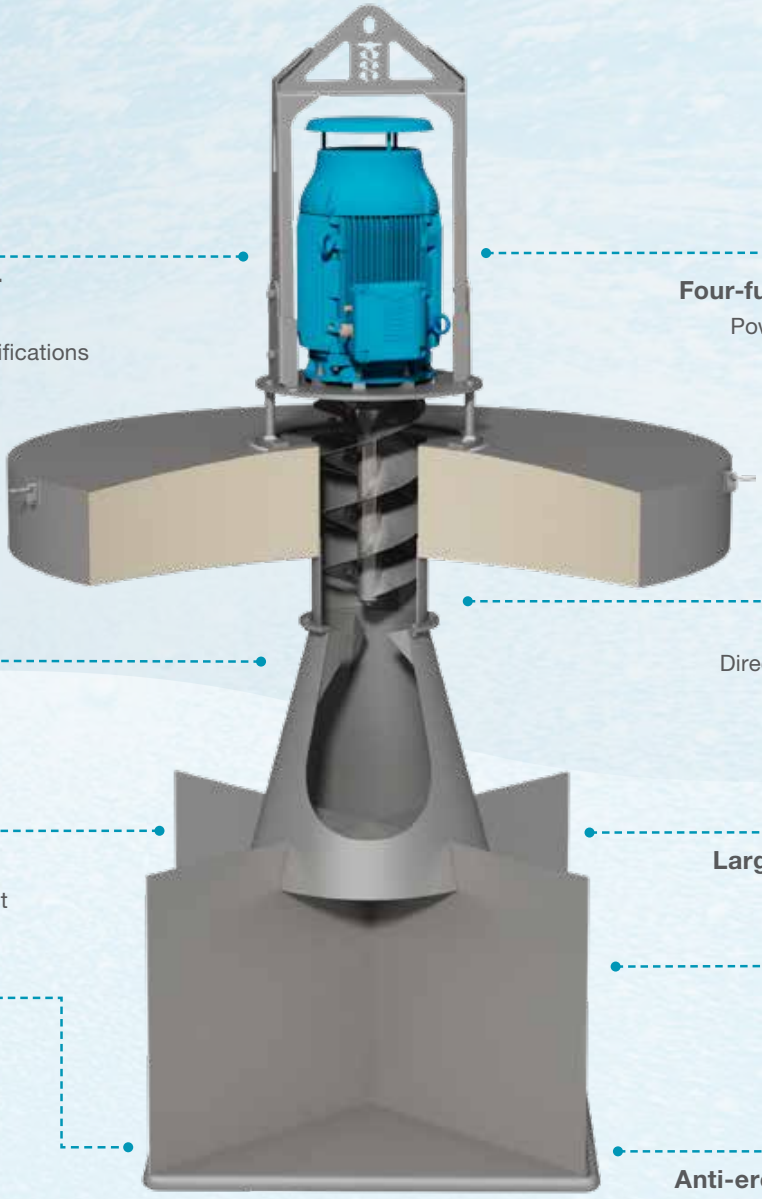
Many aerators have come and gone over the past 40-years but aquaturbo® **AER-AS** Surface Aerator remains the tried-and-true market leader. Performance in the field is unsurpassed by any other surface aerator, in fact any other aerator, in the world.

**Tick the boxes and compare aquaturbo® AER-AS with any other aeration technology. When all factors are considered aquaturbo® AER-AS comes out on top every time.**

- **Outstanding efficiency in wastewater**
- **Zero drop-off in efficiency over time**
- **Exceptional mixing and oxygen dispersion**
- **Adaptable to suit any water level**
- **Water level does not affect efficiency**
- **Suitable for any lagoon, tank or ditch; any shape, any size**
- **Suitable for fixed and variable frequency operation**
- **Unparalleled water-cooling capabilities – adjustable rate**
- **Low-noise operation**
- **Low-aerosol production and low-odour migration**
- **Ease of installation** – Even whilst the plant remains online
- **Ease of maintenance**
- **Simplicity of design and operation**
  no gearbox, no submerged bearings, no mechanical seals, no oil, no variable speed drives, no blowers, no pipework or valves
- **Long service life** - no consumable parts, no opposing wear surfaces
- **100% stainless steel construction**

## **Surface** aerator... but in name alone.

# Features



**High-efficiency Motor**
WEG W22.
Built to aeris.global specifications

**Four-function Lifting Saddle**
Power section swivel feature

**Replaceable Mooring Eyes**
Cast stainless steel

screwpeller®
Direct-mount with no support bearing required. Integral rotating diffusion head

**Anti-vortex Vanes**

**Cone-cross**
Infinite draft options to suit any water level

**Large Stabilisation Cross**

**100% Stainless Steel Construction**

**Soft-edge Liner Base (Optional)**
Designed to protect membrane liners

**Anti-erosion Plate (Optional)**

# Four-function Lifting Saddle

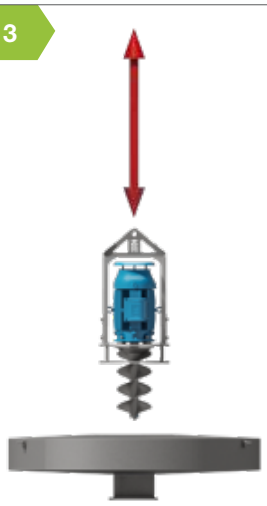
1

**Lift entire aerator**
For installation and removal

2

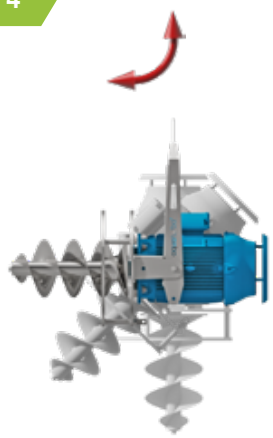
**Lift without cone-cross**
For assembly and disassembly

3



**Lift power-section only**
For assembly and disassembly

4



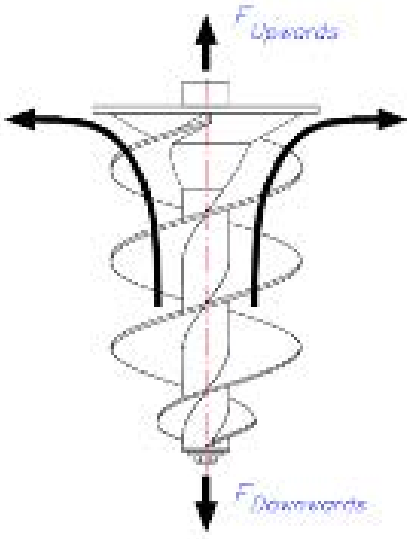
**Swivel power-section**
Perfect COG allows rotation by hand

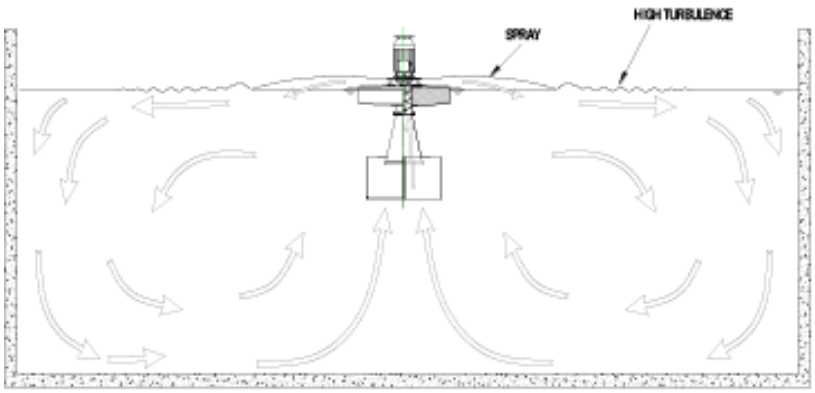
# AER-AS

## Working principle AER-AS

The AQUA TURBO® functions as an open pump. The mixed liquor of wastewater and activated sludge is aspirated via the suction cone. The unique AQUA TURBO® 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.

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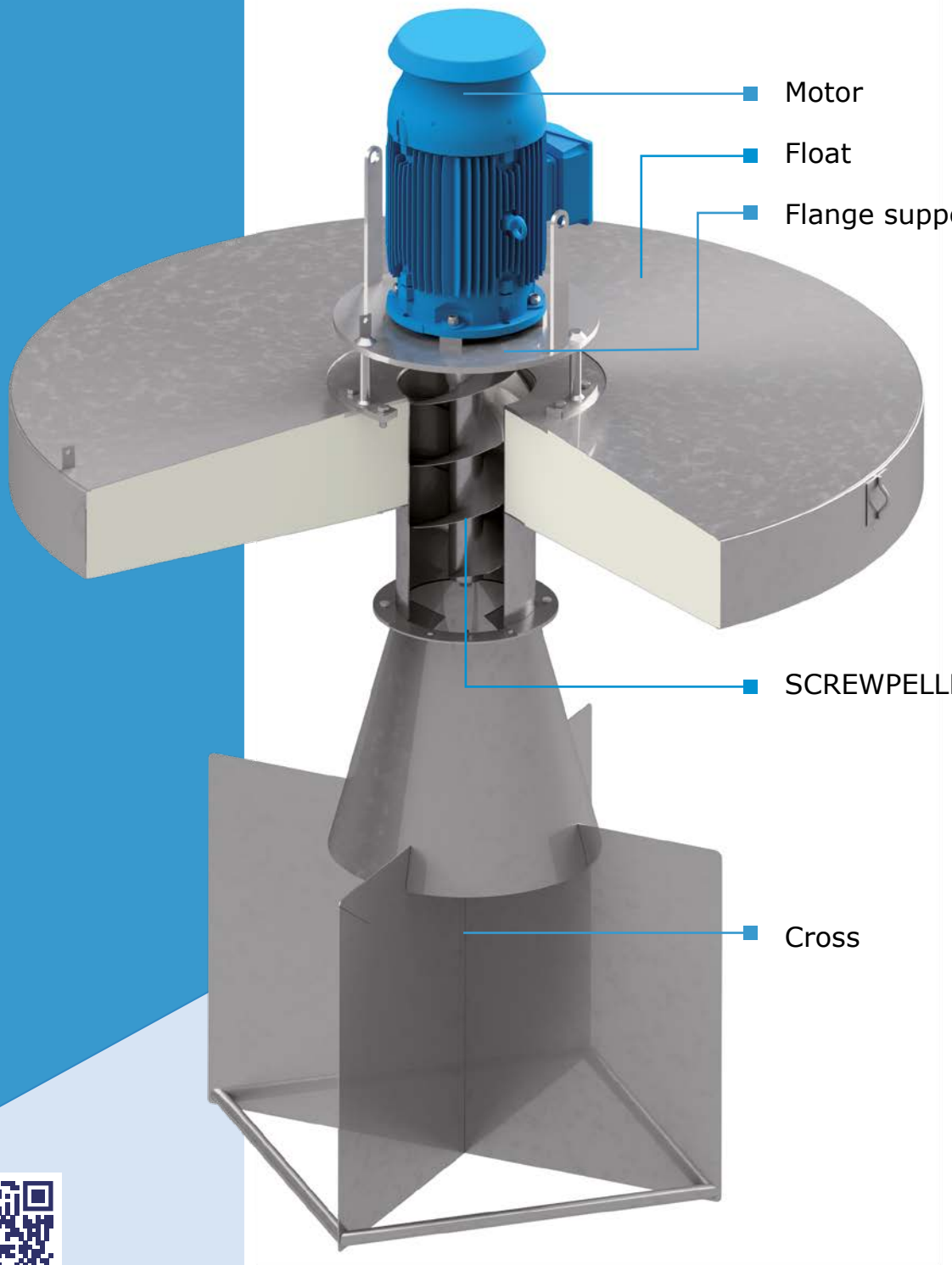
# AER-AS

## Standard configuration

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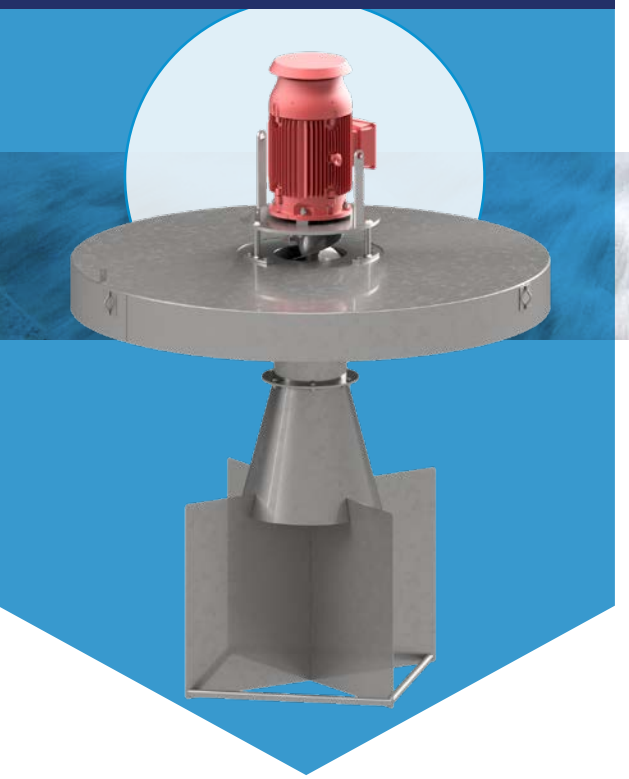
accessories options **AER-AS**

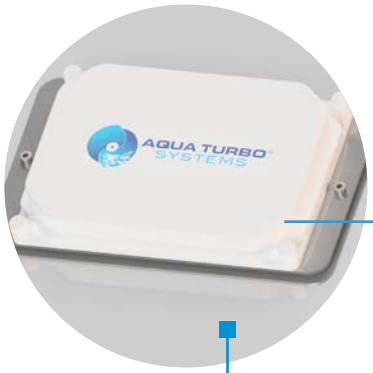


# Motor details

## Multiple combinations are possible,

Motor with remote greasing &
easy access greasing system

Motor with
stainless steel raincover




Motor with smart monitoring

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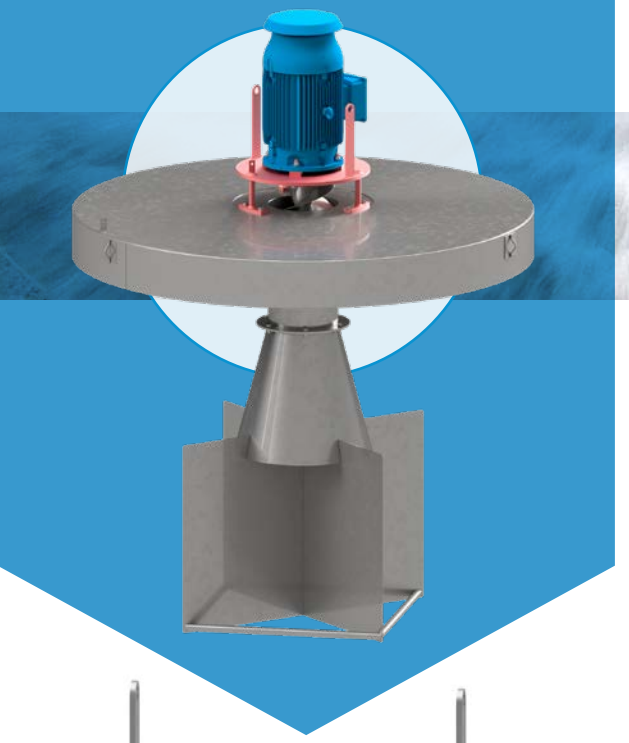
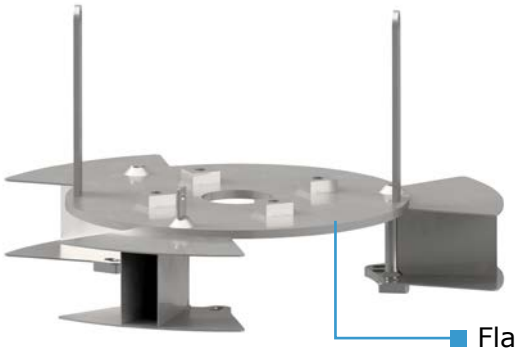
accessories options **AER-AS**

# Flange support details

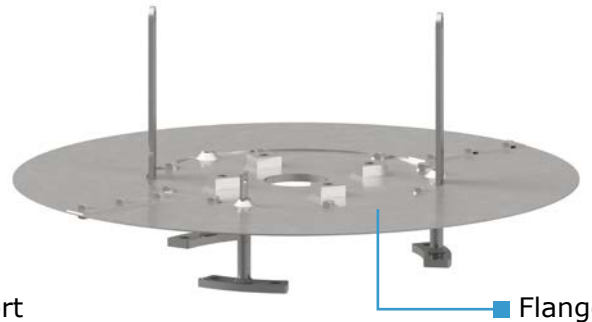
## Multiple combinations are possible,





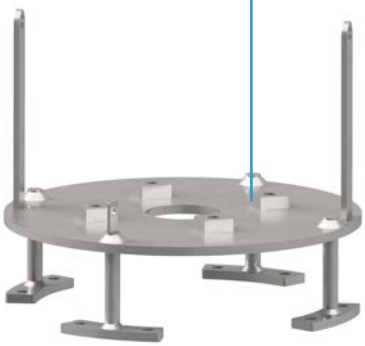
Flange support with anti ragging brackets

3-leg flange support



Flange support with deflector plate

4-leg flange support



Flange support with lifting bracket

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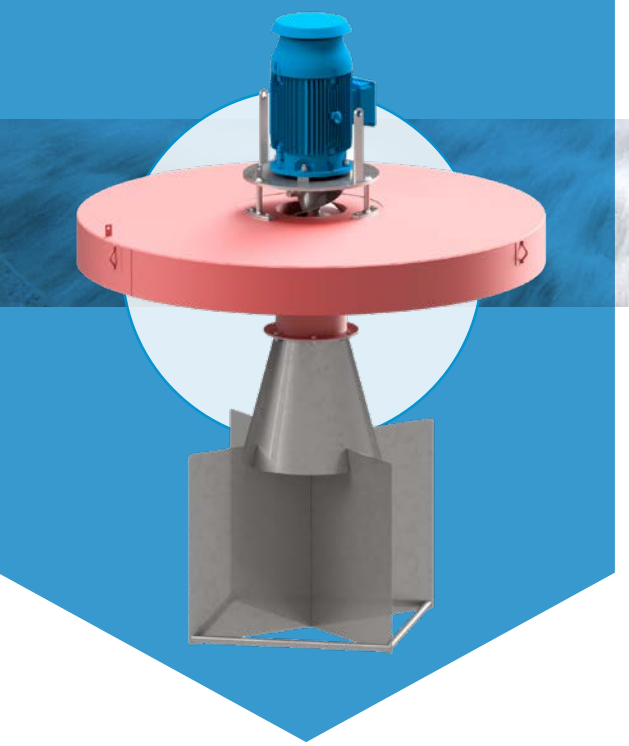
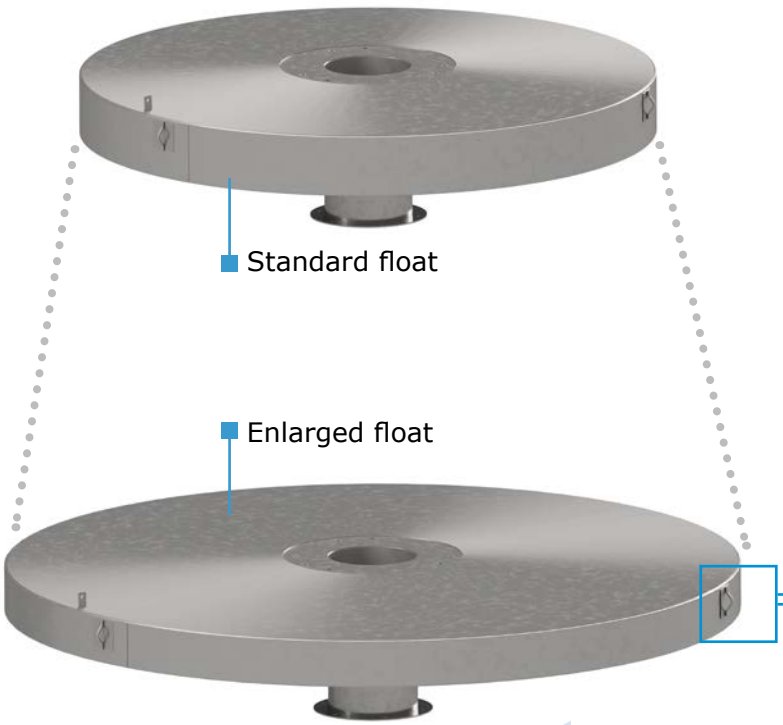
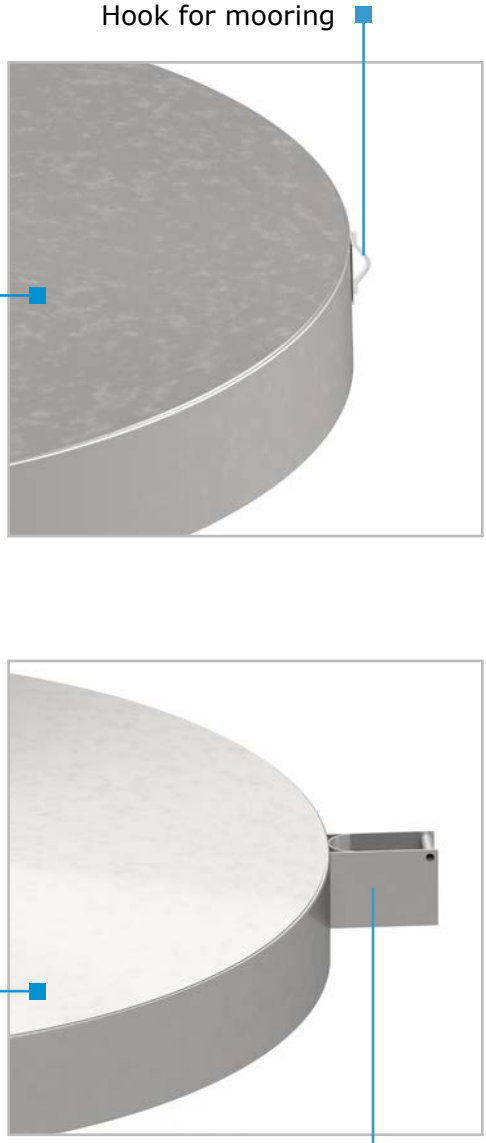
# Float details



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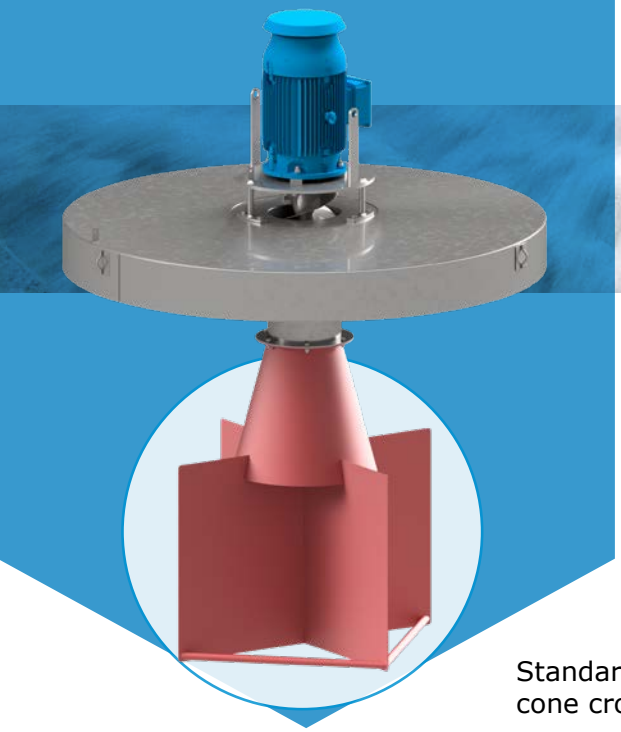
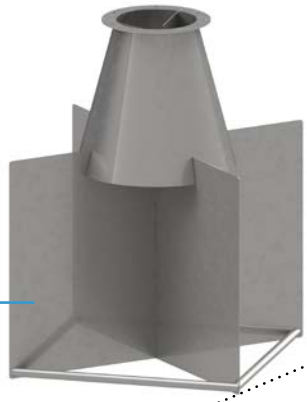
# Cross details

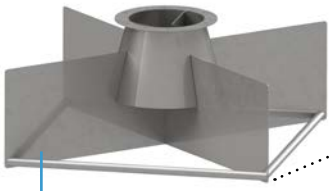
## Multiple combinations are possible,



Extended cone cross



Standard cone cross

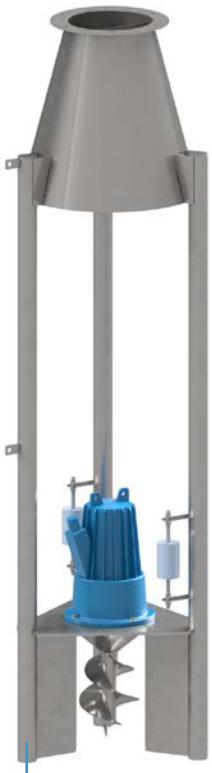


Shortened cone cross

Open cone cross

Cone cross with anti-erosion plate

Cage cone cross



Cone cross with mixer unit

Cone cross with liner protection

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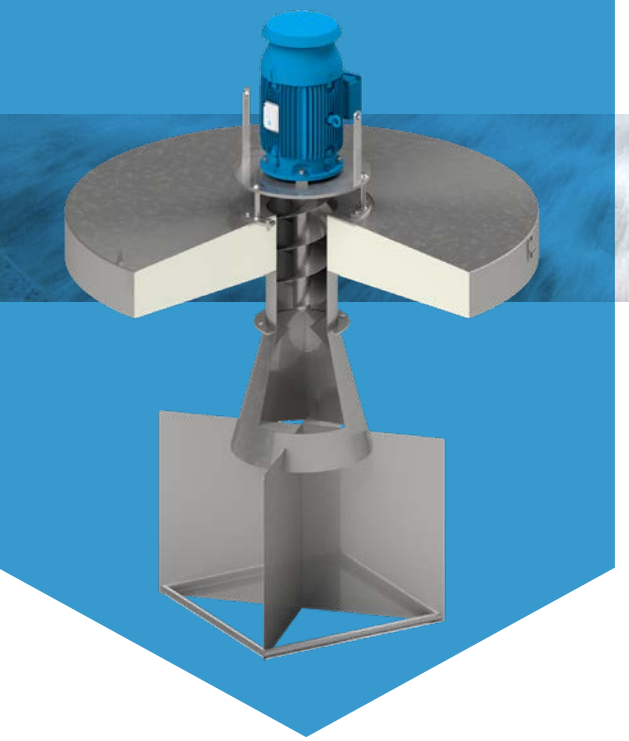
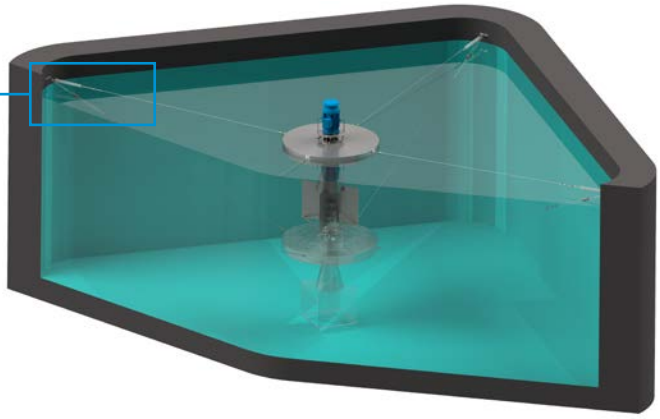
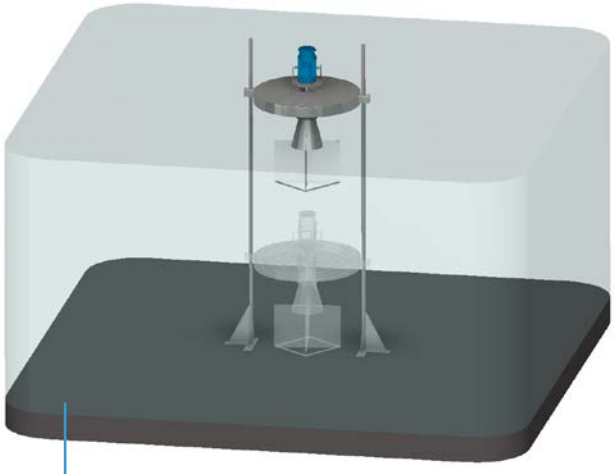
# Mooring details

## Multiple combinations are possible,

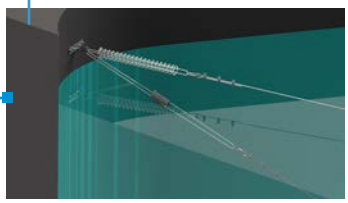




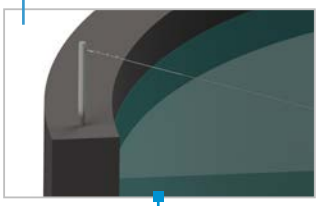


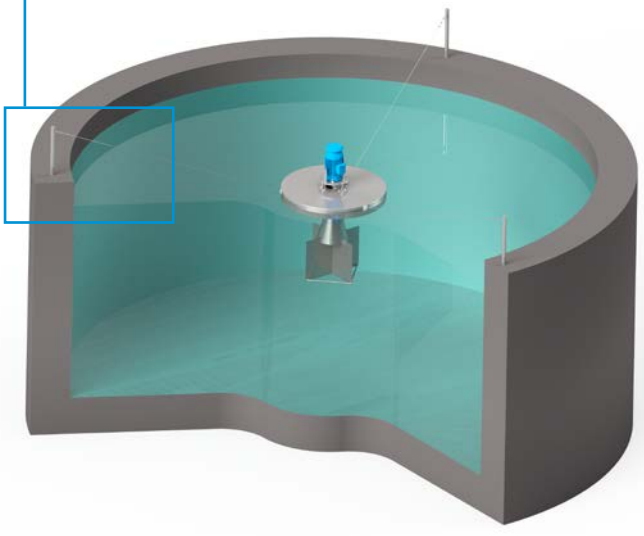
With guiding tubes

Mooring cables with springs and wall brackets



Mooring cables with mooring poles





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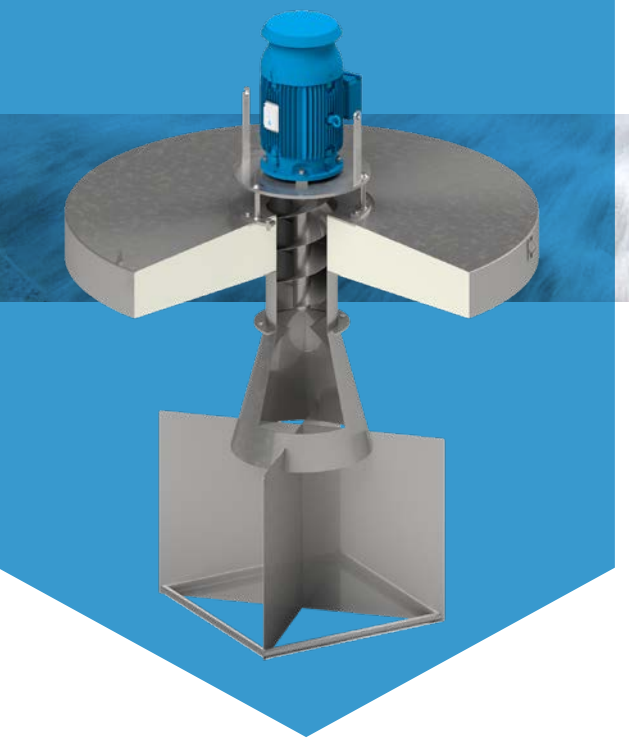
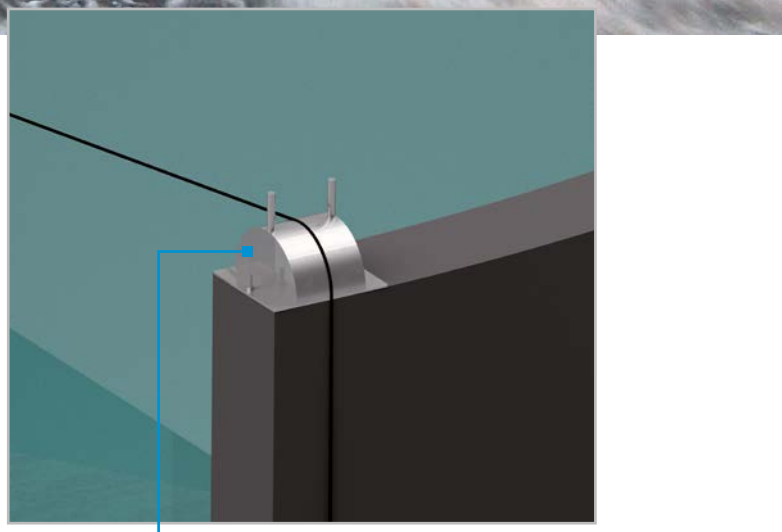
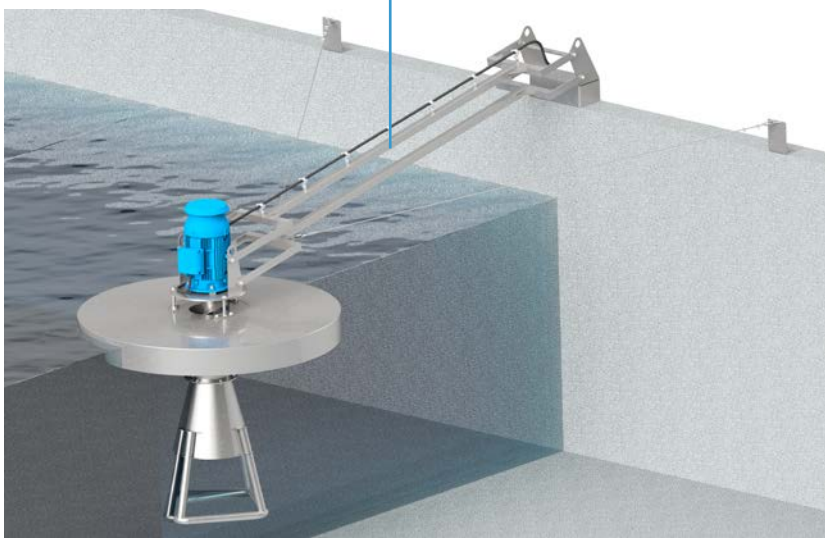
# Mooring details





Mooring cable guide brackets

With double hinged arm



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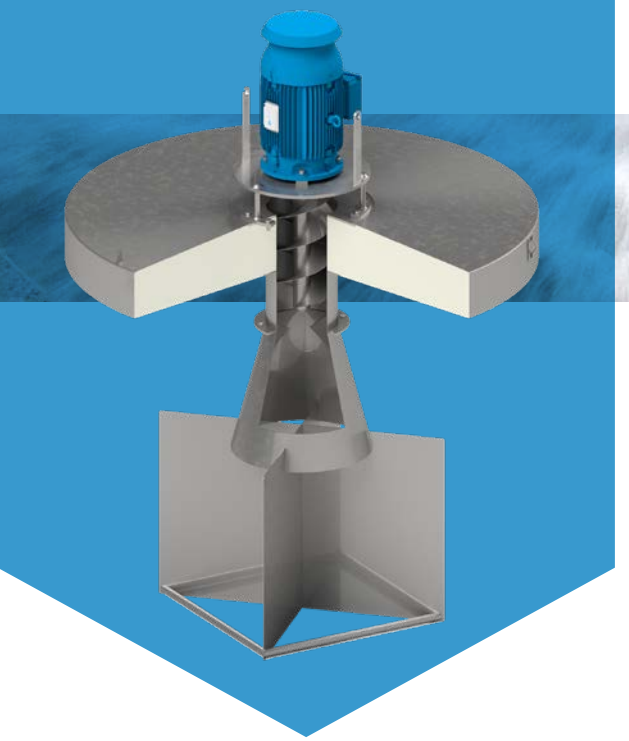
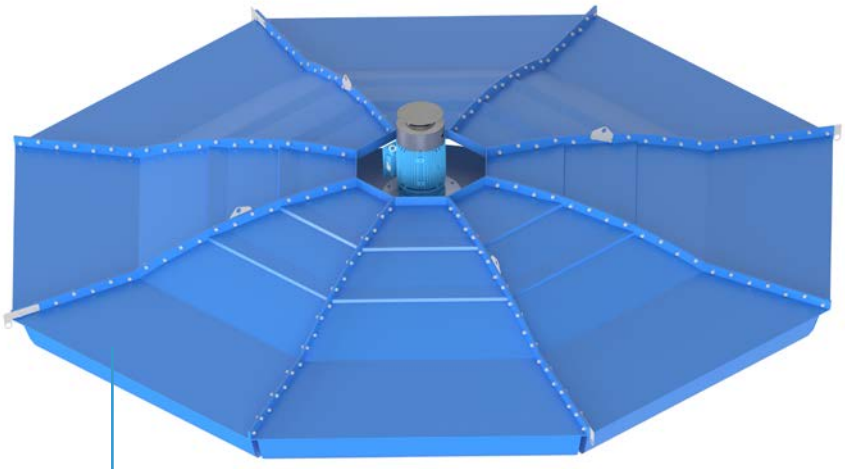
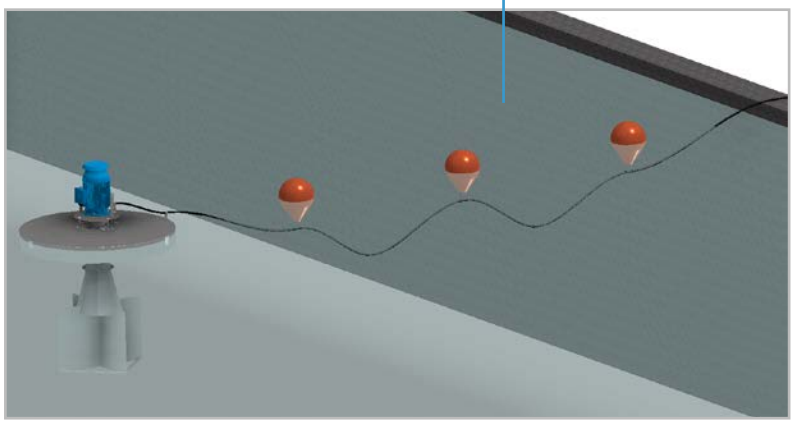
# Other





Splash and noise protection cover

Electrical cable floats



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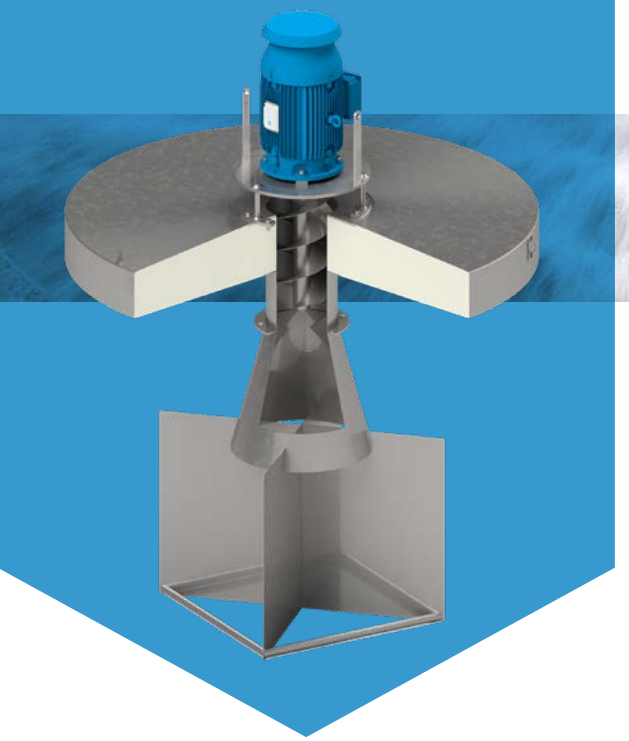
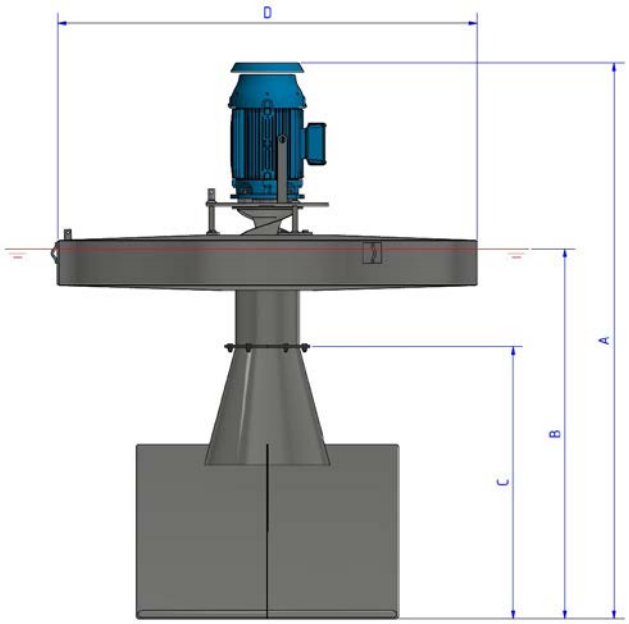
accessories options **AER-AS**

# Technical data: metric






| Type | Motor Power | Rotation Speed | Standard Height [A] | Standard Draught [B] | Height Conecross [C] | Float Diameter [D] | Weight |
|---|---|---|---|---|---|---|---|
| | [kW] | [rpm] | [mm] | [mm] | [mm] | [mm] | [Kg] |
| Series 24 | | | | | | | |
| AER-AS 0075-24 | 0,75 | 1.420 | 1.307 | 880 | 655 | 1.000 | 103 |
| AER-AS 0110-24 | 1,10 | 1.455 | 1.318 | 900 | 655 | 1.000 | 116 |
| AER-AS 0150-24 | 1,50 | 1.450 | 1.397 | 950 | 685 | 1.000 | 121 |
| AER-AS 0220-24 | 2,20 | 1.435 | 1.379 | 880 | 605 | 1.000 | 140 |
| AER-AS 0300-24 | 3,00 | 1.440 | 1.503 | 955 | 660 | 1.000 | 161 |
| AER-AS 0400-24 | 4,00 | 1.450 | 1.541 | 1.010 | 695 | 1.250 | 181 |
| AER-AS 0550-24 | 5,50 | 1.450 | 1.750 | 1.156 | 830 | 1.250 | 246 |
| AER-AS 0750-24 | 7,50 | 1.460 | 1.973 | 1.226 | 890 | 1.500 | 265 |
| AER-AS 1100-24 | 11,00 | 1.470 | 2.111 | 1.356 | 990 | 2.000 | 424 |
| AER-AS 1500-24 | 15,00 | 1.465 | 2.291 | 1.431 | 1.035 | 2.000 | 439 |
| AER-AS 1850-24 | 18,50 | 1.470 | 2.477 | 1.634 | 1.208 | 2.000 | 513 |
| AER-AS 2200-24 | 22,00 | 1.470 | 2.625 | 1.734 | 1.298 | 2.000 | 549 |
| AER-AS 3000-24 | 30,00 | 1.480 | 3.009 | 2.031 | 1.585 | 2.000 | 673 |
| AER-AS 3700-24 | 37,00 | 1.480 | 3.068 | 1.981 | 1.515 | 2.000 | 918 |
| AER-AS 4500-24 | 45,00 | 1.475 | 3.167 | 2.056 | 1.580 | 2.300 | 942 |
| AER-AS 5500-24 | 55,00 | 1.480 | 3.409 | 2.200 | 1.720 | 2.300 | 1.232 |
| Series 16 | | | | | | | |
| AER-AS 1100-16 | 11,00 | 975 | 2.411 | 1.581 | 1.115 | 2.000 | 503 |
| AER-AS 1500-16 | 15,00 | 975 | 2.560 | 1.645 | 1.165 | 2.000 | 573 |
| AER-AS 1850-16 | 18,50 | 980 | 3.006 | 2.005 | 1.465 | 2.000 | 679 |
| AER-AS 2200-16 | 22,00 | 980 | 3.029 | 2.026 | 1.480 | 2.000 | 727 |
| AER-AS 3000-16 | 30,00 | 985 | 3.215 | 2.070 | 1.530 | 2.390 | 1.030 |
| AER-AS 3700-16 | 37,00 | 985 | 3.415 | 2.180 | 1.610 | 2.390 | 1.165 |
| AER-AS 4500-16 | 45,00 | 985 | 3.610 | 2.250 | 1.660 | 2.800 | 1.640 |
| AER-AS 5500-16 | 55,00 | 985 | 3.732 | 2.365 | 1.755 | 2.800 | 1.641 |
| AER-AS 7500-16 | 75,00 | 990 | 4.341 | 2.755 | 2.115 | 3.000 | 2.406 |
| AER-AS 9000-16 | 90,00 | 990 | 4.544 | 2.950 | 2.280 | 3.000 | 2.404 |
| AER-AS 11000-16 | 110,00 | 990 | 4.442 | 2.840 | 2.140 | 3.000 | 2.631 |
| AER-AS 13200-16 | 132,00 | 990 | 4.436 | 2.830 | 2.130 | 3.000 | 2.662 |
| Series 12 | | | | | | | |
| AER-AS 5500-12 | 55,00 | 740 | 4.381 | 2.785 | 2.065 | 3.000 | 2.325 |
| AER-AS 7500-12 | 75,00 | 740 | 4.516 | 2.890 | 2.120 | 3.000 | 2.572 |
| AER-AS 9000-12 | 90,00 | 740 | 4.940 | 3.305 | 2.495 | 3.000 | 2.813 |
| AER-AS 11000-12 | 110,00 | 740 | 5.119 | 3.360 | 2.535 | 3.000 | 3.061 |
| AER-AS 13200-12 | 132,00 | 740 | 5.334 | 3.540 | 2.685 | 3.000 | 4.393 |
| AER-AS 16000-12 | 160,00 | 745 | 5.522 | 3.660 | 2.765 | 3.500 | 4.418 |

All values are indicative, AQUA TURBO SYSTEMS GROUP reserves the right to change these values at any time.

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Waste Water Treatment Equipment

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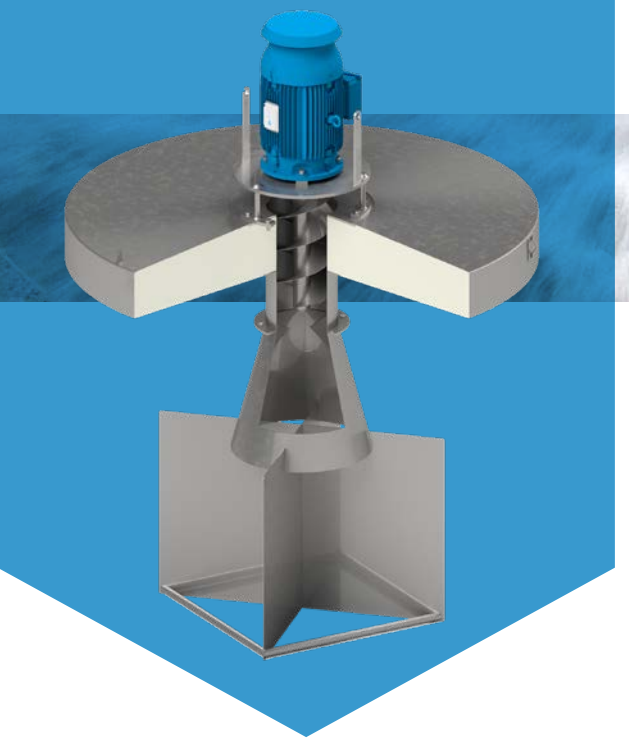
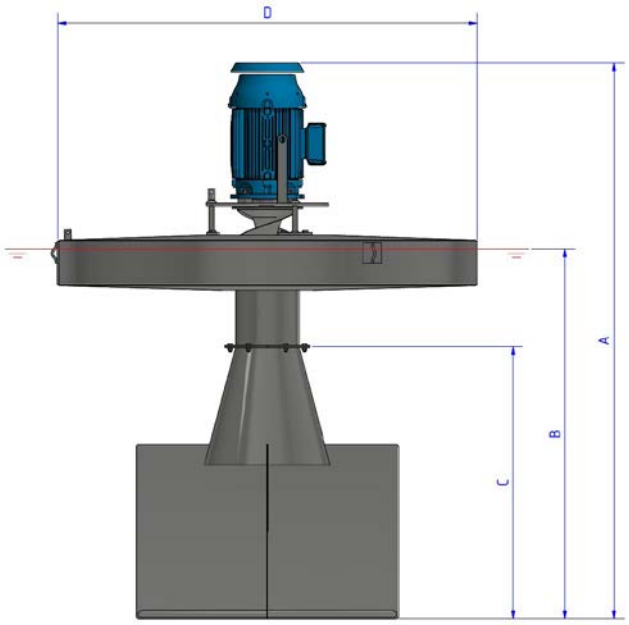
accessories options **AER-AS**



# Technical data: imperial




| Type | Motor Power | Rotation Speed | Standard Height [A] | Standard Draught [B] | Height Conecross [C] | Float Diameter [D] | Weight |
|---|---|---|---|---|---|---|---|
| | [HP] | [rpm] | [IN] | [IN] | [IN] | [IN] | [lbs] |
| Series 30 | | | | | | | |
| AER-AS 0075-30 | 1 | 1760 | 50 | 32 | 23 | 39 | 240 |
| AER-AS 0110-30 | 1,5 | 1760 | 51 | 34 | 25 | 39 | 271 |
| AER-AS 0150-30 | 2 | 1755 | 55 | 38 | 28 | 39 | 302 |
| AER-AS 0220-30 | 3 | 1760 | 56 | 35 | 24 | 39 | 370 |
| AER-AS 0400-30 | 5 | 1750 | 60 | 39 | 28 | 49 | 425 |
| AER-AS 0550-30 | 7,5 | 1770 | 71 | 46 | 35 | 49 | 507 |
| AER-AS 0750-30 | 10 | 1770 | 75 | 50 | 37 | 59 | 653 |
| AER-AS 1100-30 | 15 | 1765 | 80 | 50 | 37 | 59 | 796 |
| AER-AS 1500-30 | 20 | 1770 | 85 | 55 | 41 | 59 | 840 |
| AER-AS 1850-30 | 25 | 1770 | 100 | 66 | 50 | 79 | 1155 |
| AER-AS 2200-30 | 30 | 1760 | 105 | 70 | 54 | 79 | 1166 |
| AER-AS 3000-30 | 40 | 1775 | 114 | 77 | 61 | 79 | 1391 |
| AER-AS 3700-30 | 50 | 1775 | 113 | 76 | 60 | 79 | 1464 |
| AER-AS 4500-30 | 60 | 1780 | 118 | 78 | 61 | 91 | 2015 |
| AER-AS 5500-30 | 75 | 1780 | 122 | 81 | 65 | 91 | 2374 |
| Series 20 | | | | | | | |
| AER-AS 1100-20 | 15 | 1175 | 95 | 60 | 44 | 79 | 1199 |
| AER-AS 1500-20 | 20 | 1180 | 99 | 64 | 46 | 79 | 1226 |
| AER-AS 1850-20 | 25 | 1180 | 105 | 68 | 48 | 79 | 1440 |
| AER-AS 2200-20 | 30 | 1180 | 116 | 78 | 58 | 79 | 1594 |
| AER-AS 3000-20 | 40 | 1185 | 117 | 76 | 57 | 94 | 2138 |
| AER-AS 3700-20 | 50 | 1185 | 124 | 82 | 62 | 94 | 2253 |
| AER-AS 4500-20 | 60 | 1185 | 132 | 85 | 64 | 94 | 3047 |
| AER-AS 5500-20 | 75 | 1185 | 137 | 90 | 68 | 94 | 3239 |
| AER-AS 7500-20 | 100 | 1190 | 164 | 108 | 85 | 94 | 4405 |
| AER-AS 9000-20 | 125 | 1188 | 166 | 110 | 87 | 118 | 4495 |
| AER-AS 11000-20 | 150 | 1190 | 162 | 106 | 81 | 118 | 4830 |
| Series 15 | | | | | | | |
| AER-AS 5500-15 | 75 | 890 | 163 | 107 | 81 | 118 | 4394 |
| AER-AS 7500-15 | 100 | 885 | 166 | 109 | 81 | 118 | 4702 |
| AER-AS 9000-15 | 125 | 885 | 182 | 125 | 96 | 118 | 4938 |
| AER-AS 11000-15 | 150 | 890 | 188 | 131 | 100 | 118 | 5454 |
| AER-AS 16000-15 | 200 | 885 | 197 | 137 | 106 | 138 | 8534 |

All values are indicative, AQUA TURBO SYSTEMS GROUP reserves the right to change these values at any time.

AQUA TURBO™ SYSTEMS
Waste Water Treatment Equipment

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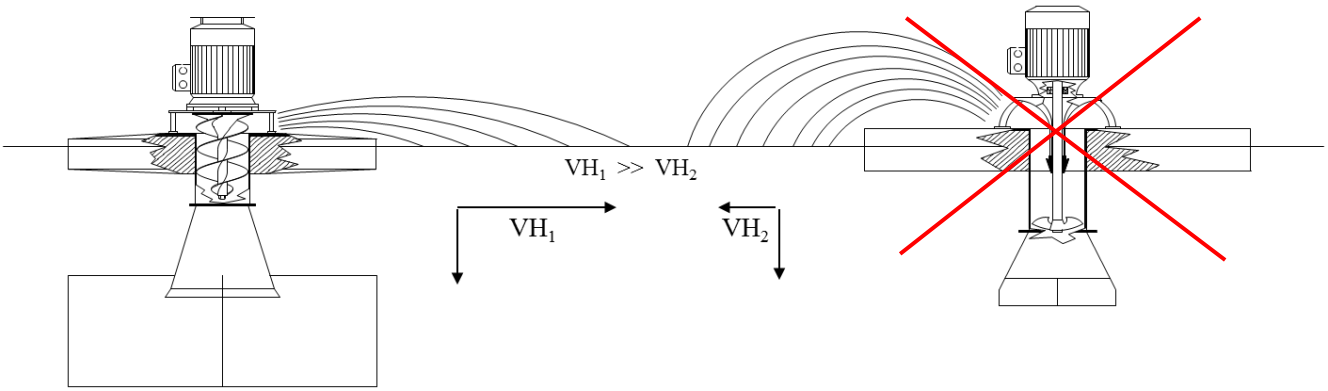
## Aqua Turbo® Model AER-AS

## Legacy Impeller Design




**Flat discharge with HIGH horizontal velocity**

**Raised discharge with LOW horizontal velocity**

**Minimal spray, aerosol, odor, and vapor draft.**

**Excessive spray, aerosol, odor, and vapor draft.**

**Large oxygen dispersion – 18.kW = 90mØ. Pump action translates to horizontal mixing energy in basin.**

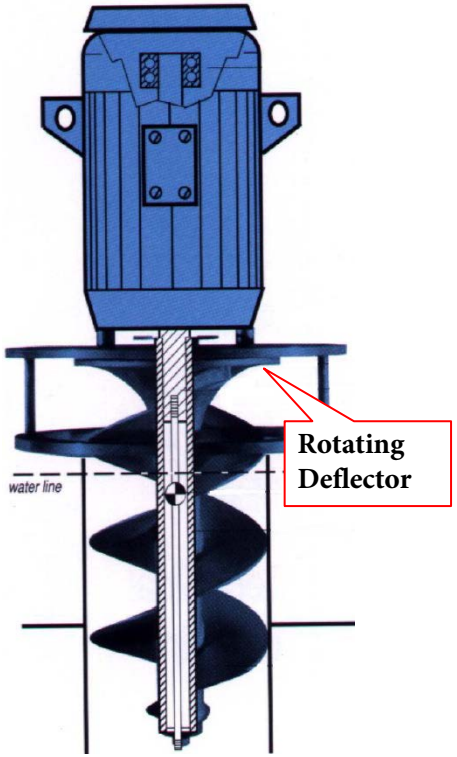
**Small oxygen dispersion – 18.5kW = 20mØ. Pump action is lost from basin by throwing water vertically.**

**Discharge is directed away from the motor.**

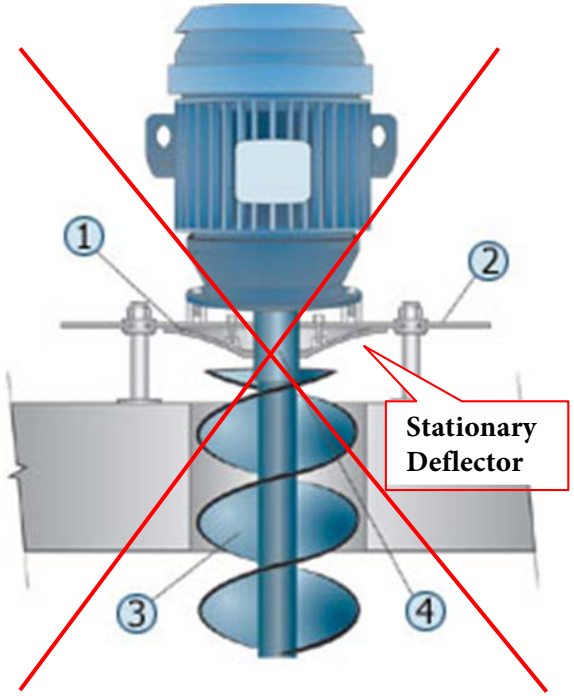
**Motor is exposed to aerator spray and biomass build-up.**

AQUA TURBO™ SYSTEMS
Waste Water Treatment Equipment

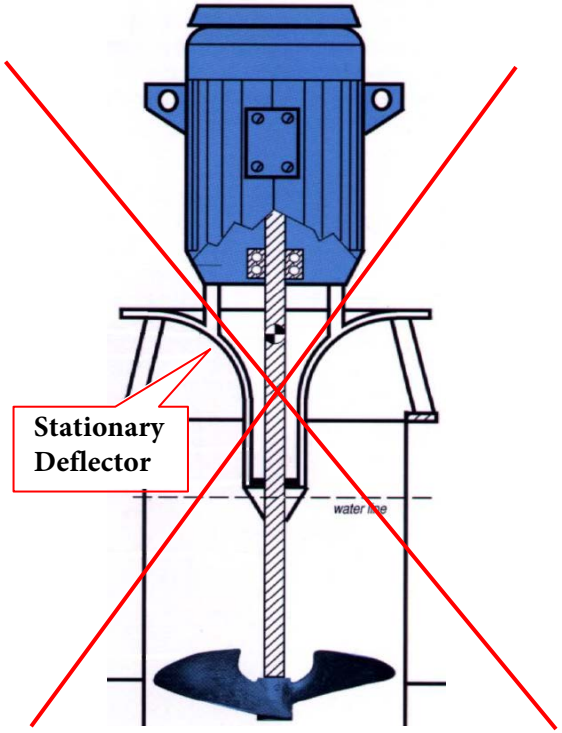
## AquaTurbo® AER-AS




## Screw Type Impeller Design




## Legacy Impeller Design




**Aqua Turbo® AER-AS has a rotating deflector, which is integral to the Screwpeller® design. The patented design provides the following advantages:**

1. Minimize hydraulic loss associated with instantaneous direction change from axial suction flow to radial discharge flow.
2. Provides a flat trajectory and high horizontal discharge velocity for maximum oxygen dispersion.
3. Minimizes axial and radial loads on motor bearings due to integral rotating round plate at the top. The plate equalizes axial loading because the pumped flow impacts the plate during the change in direction.
4. Prevents water from entering the motor by functioning as a "slinger plate"
5. The top plate is designed heavier than is required to redirect the flow to position the center of rotating mass as close as possible to the motor bearing.
6. The combined benefits of the Screwpeller® design allow electric motors used to be installed with standard "off-the-shelf" bearings.
7. The efficient Screwpeller design reduces HP requirements by 30%, which translates into a corresponding reduction in electricity consumption.