

06.3

AERATORS

SURFACE AERATOR WITH FLOATS



AERATORS

SURFACE AERATOR WITH FLOATS

WHAT ABOUT

The DET05F SURFACE AERATOR WITH FLOATS is suitable for waste water treatment and its purpose is to provide and spread oxygen through the body of liquid, in addition to stirring the sludge and preventing sedimentation at the bottom of the tank.

In the surface aerator with floats the water is aspirated vertically by the runner from the bottom of the tank and ejected through the vanes at a height similar to that of the water level. Oxygen is added in the choppy area on the water surface. The circulation capacity of this type of aerator means this oxygen is dispersed homogeneously throughout all the water in the tank.

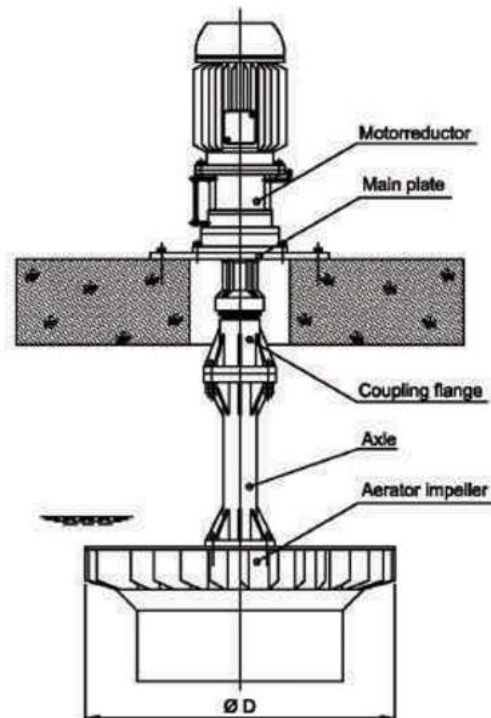
The surface aerator with floats can be mounted on a concrete walkway or steel profiles as long as these are sufficiently rigid to absorb harmful vibrations produced while it is operating and which might damage it.

Nominal oxygen provision is expressed in Kg O₂ / kWh consumed. As a general rule, 1.8 to 2 Kg of O₂ can be used per kWh for an oxygen demand (DBO₅) of:

- Small Plants: 2 Kg O₂ / Kg DBO₅
- Large Plants: 1.4 - 1.6 Kg O₂ / Kg DBO₅

FACTORS DIRECTLY LINKED TO THE DET05F SURFACE AERATOR WITH FLOATS EFFECTIVELY PROVIDING OXYGEN

- Immersion.
- Rotation speed.
- Operational time.
- Waste water quality.
- Tank size and the width/height ratio.
- Hydraulic radius.
- Drop in performance due to partial obstruction of the runner.
- Salinity and temperature.



SELECTION TABLE AND OXIGEN CONTRIBUTION

| Ref. | POWER | ØD | Kg. O ₂ /hour | | | Max volume of agitation m ³ |
|-----------|-------|-------|--------------------------|-------|--------|--|
| | | | *1,6 | **1,8 | ***2,0 | |
| DET05-30 | 3 | 0,825 | 3,6 | 4,05 | 4,5 | 90 |
| DET05-40 | 4 | | 4,8 | 5,4 | 6 | 120 |
| DET05-55 | 5,5 | | 6,6 | 7,42 | 8,25 | 165 |
| DET05-75 | 7,5 | 0,915 | 9 | 10,1 | 11,25 | 225 |
| DET05-100 | 10 | | 12 | 13,5 | 15 | 300 |
| DET05-150 | 15 | 1,000 | 18 | 20,2 | 22,5 | 450 |
| DET05-200 | 20 | 1,225 | 24 | 27 | 30 | 600 |
| DET05-250 | 25 | 1,375 | 30 | 33,75 | 37,5 | 750 |
| DET05-300 | 30 | 1,575 | 36 | 40,5 | 45 | 900 |
| DET05-400 | 40 | 1,825 | 48 | 54 | 60 | 1.200 |
| DET05-500 | 50 | 1,975 | 60 | 67,5 | 75 | 1.500 |
| DET05-600 | 60 | 2,300 | 72 | 81 | 90 | 1.800 |
| DET05-750 | 75 | | 90 | 101,2 | 112,5 | 2.250 |

* For a 1,6 Kg. O₂/Kwh contribution
 ** For a 1,8 Kg. O₂/Kwh contribution
 *** For a 2,0 Kg. O₂/Kwh contribution

Dimensions in meters

AERATORS

SURFACE AERATOR WITH FLOATS

RUNNER

Made from plate whose thickness varies according to the size; it consists of an upper shield flange-connected with the shaft, vanes and a lower diffuser. The vanes can go clockwise or anti-clockwise. This allows the turbine to work leftwards or rightwards depending on the client's needs.

DRIVE UNIT

This consists of a geared motor unit, positioned and flange-connected to the base plate. The power and reduction vary according to the model built.

SHAFT

This comprises a circular cross-section pipe whose thickness varies per the model. It is strengthened using brackets and has a flange at either end.

FLOATS

Variable in size, these consist of a ferrule plate and Klopper-type bottoms on both sides. The upper section of the Klopper bottom has a hole with a flange through which sand can be passed to use as ballast for the unit to regulate its buoyancy.

BASE PLATE FOR ANCHORAGE

Plate on which the drive unit is supported; comprised of tensing rods at the ends which allow the height of the unit to be adjusted slightly.

