

Aspirating Aerator

Lambda aspirating jet aerator is an efficient aerator to be installed in aerating tanks, basins, aerated lagoons and rivers/canals for municipal and industrial wastewater treatment. The hi-grade material air jet is directly mounted at an adjustable angle with the motor portion and air intake above the surface, and the propeller portion below the surface. The motor rotates and turns the hollow shaft along with the propeller and drives the water at a high speed near the propeller blades. Air above the water level is drawn via the air intake port and going into the hollow shaft. Turbulent flow created by the propeller breaks up the air into small bubbles along the water streamline, mixes in the basin and disperses oxygen. Maximum oxygen transfer can be achieved by increasing bubble hang time via horizontal water movement.

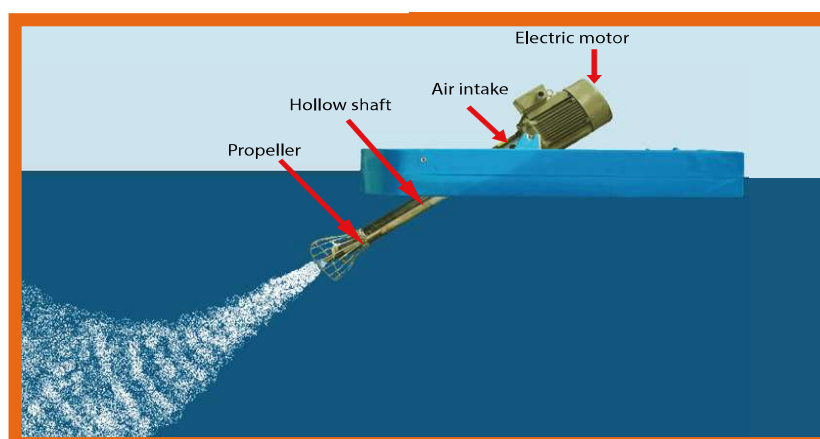
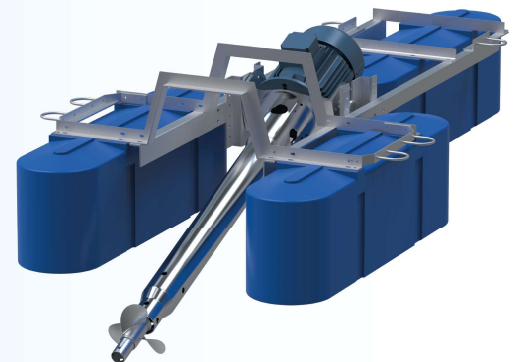


Features

- The aerator parts are made from stainless steel 304/316 or engineering plastic depending upon water quality.
- Aerator synchronous speeds are 1,500 rpm and 3,000 rpm.
- Ceramic or stainless steel sleeve is installed at the shaft end bearing, when uses in common water.
- There is no end bearing model for the high-strength cantilever hollow shaft, which means no bearing problem when used in abrasive water.
- Installation is available both in fix and float types.

Benefits

- Creates effective horizontal water movement to limit algae growth and distribute oxygen over a wide area.
- Operates quietly without spraying or splashing for year-round performance.
- Reduce odors by injecting oxygen and providing water movement.
- Directs circulation into most areas as the aerator angle adjust to control the amount of circulation and depth of bubble stream. Easy to move and install by one person (we recommend a registered electrician to do all the wiring).



Application

Sewage

Aeration, re-suspension and circulation of oxidation ditches, aerobic treatment of sewage effluent, mixing, consolidation and treatment of sludge, improved digestion resulting in the ditch returning to original handling capacity.

Fish Farms

The total flexibility in depth and position gives the high volume of entrained air which is the perfect choice for fish rearing tanks, growing cages and fishing lakes.

Environmental Use

Oil spillage recovery, ranging from slight oil contaminated cooling water to heavy pollution after oil spillage and to the removal of water bound larvae e.g. mosquitoes



Process Waste

The floatation aerator is ideal for use on large bodies of water, such as lagoons and reservoirs, where stratification is to be avoided. The unit will also deal with polluted water in situ, rejuvenating depleted oxygen levels. This method of aerating has been proved, in large ditches (e.g. paper manufacturing), to improve the consistency of effluent prior to discharge



Application Guide

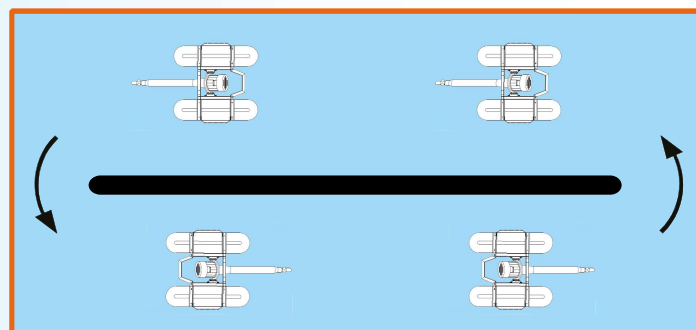
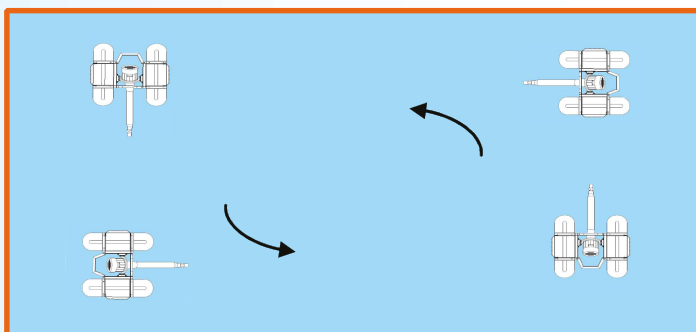
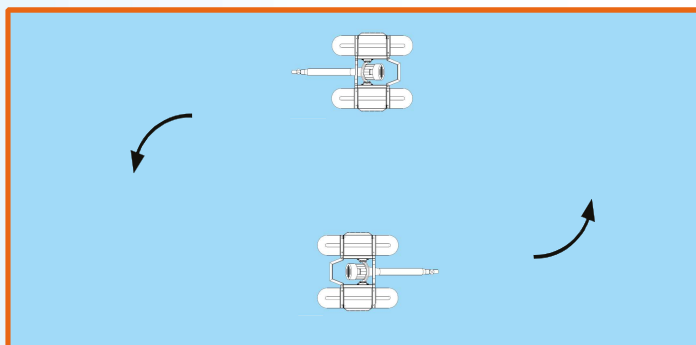
This guide is written to assist the user of Lambda aspirating jet aerators in the effective and efficient sizing and application of this product. When making a recommendation for Lambda aerators you must carefully consider mixing and oxygen requirements, as well as the configuration of the process system.

How is it applied?

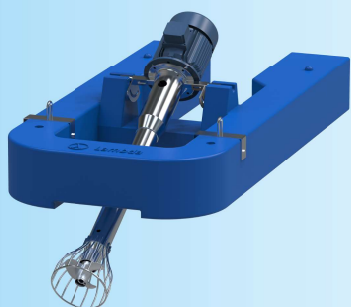
Lambda aerators can be mounted on floats, basin walls or bridge. They are fully adjustable with several mooring option available to fit specific basin geo-Metries. Multiple aerators can be used depending upon the basin size. These aerators can be used in different shaped tanks, lagoons and oxidation ditches. Typical positioning is presented in the left.

Design and process advantages:

Oxygen transfer rates are maximized by the extremely efficient mixing capabilities of the Lambda aerator and by the horizontal bubble hang time generated. This makes the Lambda aerator the ideal choice for large lagoons or for any application that requires complete mixing because mixing zones can be linked to maximize energy efficiency. The versatility of the mounting options reduced capital costs.

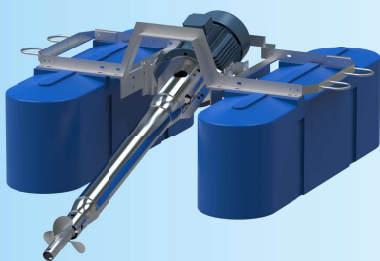


Type : S, for Common Water
380V, 3 Phase, 50 Hz, IP55, 3,000 rpm.



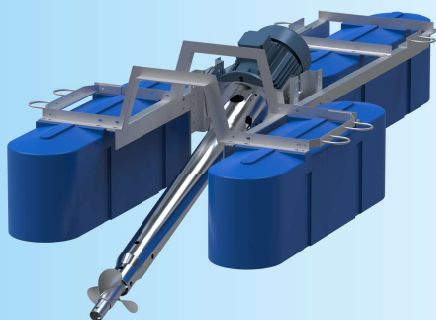
2 -5.5 Hp

Model	Hp	Quantity				Approx. Total Weight (kg)
		Aerator	Motor Cover	Frame	Float	
STT020A-PA080	2	✓	✓	-	✓	42
STT030A-PA080	3	✓	✓	-	✓	44
STT055A-PA100	5.5	✓	✓	-	✓	60



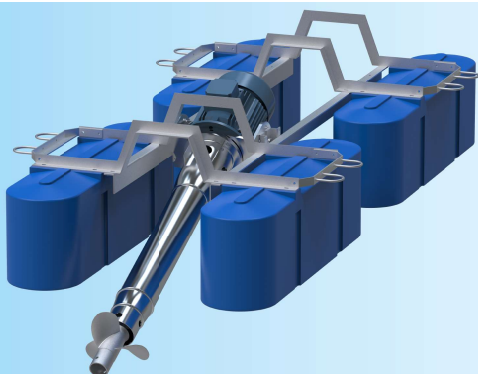
7.5 -10 Hp

Model	Hp	Quantity				Approx. Total Weight (kg)
		Aerator	Motor Cover	Frame	Float	
STH075A-PI200	7.5	✓	✓	✓	✓	172
STH100A-PI200	10	✓	✓	✓	✓	207



15 -25 Hp

Model	Hp	Quantity				Approx. Total Weight (kg)
		Aerator	Motor Cover	Frame	Float	
STH150A-PI200	15	✓	✓	✓	✓	285
STH200A-PI200	20	✓	✓	✓	✓	306
STH250A-PI200	25	✓	✓	✓	✓	325



30 Hp

Model	Hp	Quantity				Approx. Total Weight (kg)
		Aerator	Motor Cover	Frame	Float	
STH300A-PI200	30	✓	✓	✓	✓	402

Model

X X X XXXX -XXXX

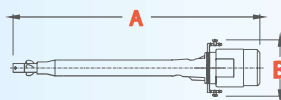
Float Model

Power (Hp)

Power Supply; 3phase, 1 phase

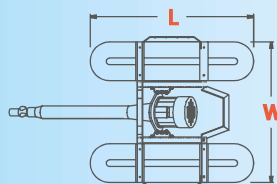
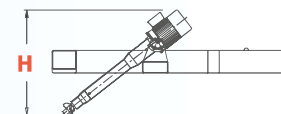
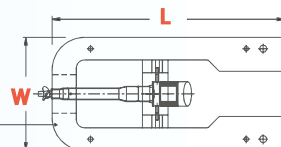
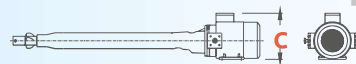
Material Code

Type

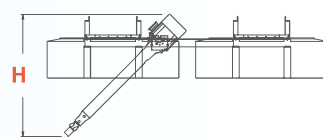
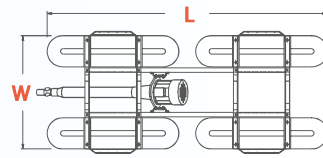
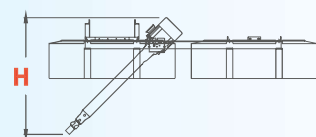
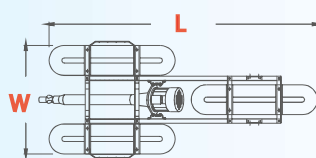


PAFO80B

PAF100B



PIF200A



General Specification

Model	SxT020A-PA080	SxT030A-PA080	SxT055A-PA100	SxH075A-PI200	SxH100A-PI200	SxH150A-PI200	SxH200A-PI200	SxH250A-PI200	SxH300A-PI200
Motor									
Power [KW / Hp]	1.5 / 2	2.2 / 3	4 / 5.5	5.5 / 7.5	7.5 / 10	11 / 15	15 / 20	18.5 / 25	22 / 30
Voltage [V], Phase, Frequency	380 V, 3 Ph, 50 Hz.								
Rated current [A]	3.5	4.8	8.2	11.2	14.7	21	28.3	36	42
Insulation class	H								
Protection class	IP55								
Impeller	Marine Type								
Impeller speed approx. [rpm.]	2,880	2,880	2,905	2,910	2,910	2,930	2,930	2,940	2,940
Number of float	PA080 x 1		PA100 x 1	PI200 x 2		PI200 x 3			PI200 x 4
Weight Approx. [kg.]	42	44	60	172	207	285	306	325	402
Mooring cable diameter [mm.]	6				9				12

Application for aeration and mixing tank

*Oxygen transfer rate [kg. O ₂ / hr]	3.0	4.5	8.2	11.2	14.9	22.4	29.8	37.3	44.7
Min depth [m]	1.5	1.5	1.5	1.5	2	2.5	3	3	3
Max depth [m]	2.5	2.5	3.5	3.5	4	5	5	6	6
Working distance [m]	12	15	20	23	25	33	35	38	40
Mixing volume [cu.m]	100	150	300	400	550	800	1,000	1,300	1,600

Dimension

Aerator length [mm.] A	1,122	1,147	1,300	1,805	1,805	2,099	2,099	2,121	3,054
Aerator width [mm.] B	350	350	370	410	410	410	410	410	629
Aerator height [mm.] C	229	229	282	324	324	392	392	392	412
Total length [mm.] L	1,565	1,565	1,565	1,480	1,480	3,290	3,290	3,290	3,290
Total width [mm.] W	750	750	750	1,380	1,380	1,380	1,380	1,380	1,380
Total height [mm.] H	676	676	980	1,341	1,341	1,593	1,593	1,593	1,915

Material

Material Code	A	T	U
For aerator model	2-3 Hp	All model	All model
Housing	Stainless Steel 304	Stainless Steel 304	Stainless Steel 316
Drive shaft			
Propeller			
Mounting bracket	Stainless Steel 304		
Frame ass'y	Hot-dip Galvanized Steel		
Bolts & nut	Stainless Steel 304		
Float	Polyethylene, Polyurethane foam filled		

Float

Float Number	Float Type
PA080	PAF080B
PA100	PAF100B
PI200	PIF200A

*Oxygen transfer rate at standard condition.

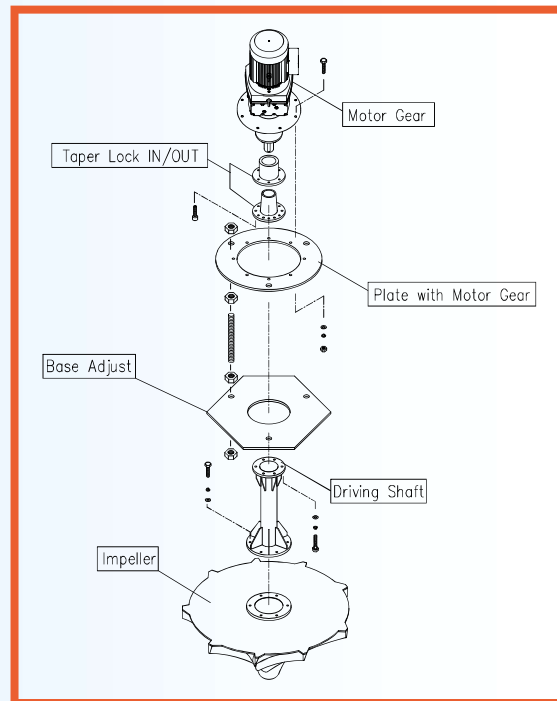
Mixing volume are calculated to velocity gradient 50 sec and power per unit volume 10 watt/ cu.m.

Drive Unit:

The aerator is driven by a motor of suitable rating. The speed is reduced from the motor speed to the aerator speed by a suitable reduction gear box having worm/helical gears. The speed of the aerator and the diameter of the impeller are so selected that aerator will have the optimum oxygen transfer capacity. The motor is of reputed make suitable for outdoor duties. The reducer bearings and gears are oil lubricated and weather protected. Our range of manufacturing covers 3.0 HP, 5 HP, 10 HP, 12.5 HP, 15 HP, 20 HP, 25 HP, 30 HP, 40 HP, 50 HP, 60 HP, 75 HP and 100 HP fixed type surface aerators.

Adjusting studs:

The depth of submergence can be adjusted by the adjusting studs. It is necessary to maintain the water level to avoid overloading of aerator drive.



How Aerator Works

Aerators consist of a motor mounted to a gear reducer and an extended shaft. A specially designed rotor is attached to the bottom of the extended shaft. The aerator is positioned so the rotor is partially submerged in the wastewater. When activated, turns at a slow speed (typically 40 to 100 rpm). Specially designed fins on the rotor then pump large amounts of water into the air in a fine spray. These very small droplets create a 360-degree circular pattern. High transfer of oxygen is created by the large surface-to-volume ratio of the water droplet and its long exposure to air after spraying. Pumping up oxygen-deficient water at the bottom of the basin and exposing it to air above the water surface provides faster mass transfer from ambient air to the water droplet. The deep pumping action of aerator generates effective localized mixing to optimize many wastewater treatment processes. Aerator is ideal for treatment processes in industries that require fast and efficient oxygen transfer, including the pulp and paper, food processing, and other industries.

Basic Installation and Erection Procedures

Shipped in modules and is easy to assemble in the field. It typically requires a crane and crew of two to four people, depending on size of the machine.

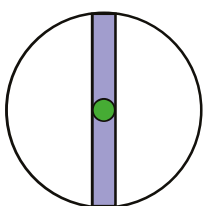
1. Assemble the rotor.
2. Position the drive mechanism on the rotor. Bolt the rotor to the drive mechanism.
3. NSA1: bolt the arms to the center mechanism.
NSA 2, 3 and 4: bolt the arms to the top lugs of the center mechanism.
4. Install the lower link bars between the center mechanism and the arms.
5. Bolt the float assemblies to the arms.
6. Fill the gearbox with oil.
7. Use the crane to place the NSA in the water. Hook up mooring and electric cable to the machine.
8. Adjust floats for desired rotor immersion.

Mounting Flexibility

Aerator offers flexibility to be configured as a floating or fixed mounted unit. Each float mounted aerator installs on a "three-pod" pontoon system. The stainless steel pontoons are filled with closed cell polymer foam, making a rugged long-life float system. With a flotation safety factor of 2, a 250 pound (114 kg) operator can safely step on the fully assembled float and aerator system to check equipment or perform routine maintenance.

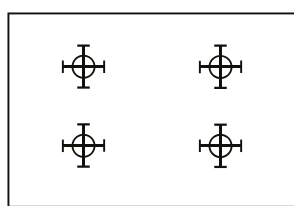
Application Guide

Aerators can be fixed mounted on a platform or float mounted within a basin. Single aerators are used to aerate and mix small tanks while multiple aerators are used in large basins. Tank baffle walls are sometimes used to limit rotational mixing. These aerators can be used in round tanks, rectangular tanks, lagoons or oxidation ditches. Typical positioning is as follows:



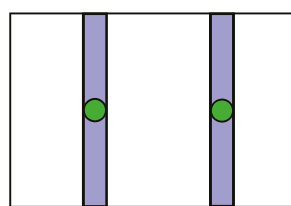
Round Tank

Fixed Mount center



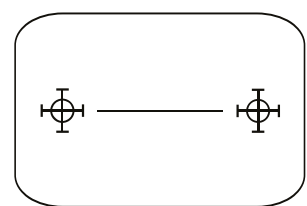
Rectangular Tank

Float Mount



Rectangular Tank

Fixed Mount



Oxydation Ditch

Float Mount

Low Speed Surface Aerator 380 V, 3 Phase, 50 Hz, IP55



SEW

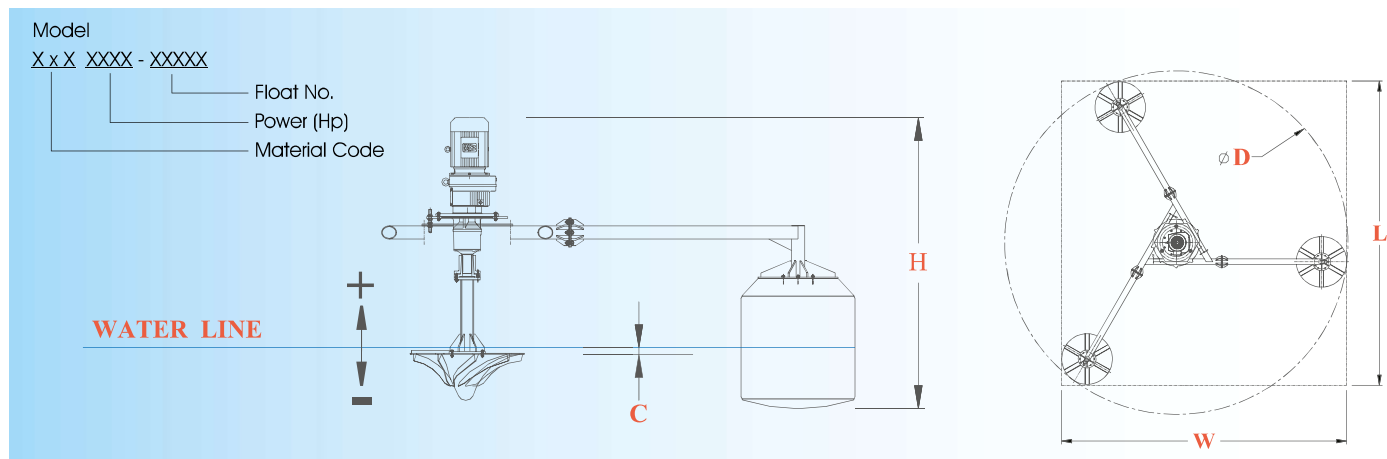
Mild steel with hot dip galvanized

Model	Hp	Quantity			Approx. Total Weight (kg)
		Aerator	Frame	Float	
VST055A-PC250	5.5	✓	✓	✓	588.0
VSH075A-PC700	7.5	✓	✓	✓	1,081.0
VSH100A-PC700	10	✓	✓	✓	1,107.0
VSH150A-PC700	15	✓	✓	✓	1,130.0
VSH200A-PC700	20	✓	✓	✓	1,271.0
VSH250A-PC2K0	25	✓	✓	✓	3,145.0
VSH300A-PC2K0	30	✓	✓	✓	3,513.0
VSH400A-PC2K0	40	✓	✓	✓	3,585.0
VSH500A-PC2K0	50	✓	✓	✓	3,850.0

SS 304

Model	Hp	Quantity			Approx. Total Weight (kg)
		Aerator	Frame	Float	
VTT055A-PC250	5.5	✓	✓	✓	588.0
VTH075A-PC700	7.5	✓	✓	✓	1,081.0
VTH100A-PC700	10	✓	✓	✓	1,107.0
VTH150A-PC700	15	✓	✓	✓	1,130.0
VTH200A-PC700	20	✓	✓	✓	1,271.0
VTH250A-PC2K0	25	✓	✓	✓	3,145.0
VTH300A-PC2K0	30	✓	✓	✓	3,513.0
VTH400A-PC2K0	40	✓	✓	✓	3,585.0
VTH500A-PC2K0	50	✓	✓	✓	3,850.0

Low Speed Surface Aerator



General Specification :

Model	VxT055A-PC250	VxH075A-PC700	VxH100A-PC700	VxH150A-PC700	VxH200A-PC700	VxH250A-PC2K0	VxH300A-PC2K0	VxH400A-PC2K0	VxH500A-PC2K0
Geared motor									
Power [KW/Hp]	4/5.5	5.5/7.5	7.5/10	11/15	15/20	18.5/25	22/30	30/40	37/50
Voltage [V], Phase, Frequency	380V, 3Ph, 50Hz								
Insulation class	F								
Protection class	IP55								
Output speed approx. [rpm.]	74	78	88	98	107		43	43	53
Rated current [A]	8.7	11	5.5	22.5	29.5	37	42.5	55	67
Service factor	2.8	3.7	3	2.2	3.2	3	3.6	2.7	27
Flange size	350	450	450	450	550	550	660	660	660
Impeller type	Turbine								
Impeller dia. approx. [mm.]	1000		1,180			2,000		2,200	
Number of float	PC250 x 3		PC700 x 3			PC2K0 x 3			

Application for aeration and mixing tank

Oxygen transfer rate [kg O ₂ /hr]	8.2	11.2	14.9	22.4	29.8	37.3	44.7	59.6	74.5
Min depth [m]	1.5	1.5	1.5	1.5	1.5	2	2	2	2
Max depth [m]	4	4	4	4.5	4.5	5	5	5	5
Min tank dimension [W x L][m]									
Max tank dimension [W x L][m]									

Dimension :

Diameter [mm.]	D	5,500			6,000				7,500			
Height [mm.]	H	1,725	1,765	1,850	2,390	2,410	2,470	2,550	3,760	3,840	3,900	3,980
Coverage [mm.]	C	50							+50 to +100			
Width [mm.]	W	4,050			5,650				6,535			
Length [mm.]	L	4,250				5,975			6,870			
Weight approx. [kg.]		525	550	588	1,081	1,107	1,130	1,271	3,145	3,513	3,585	3,850
Mooring cables diameter [mm.]		6			9				12			

Material :

Material code	S	T	U
Geared motor	“SEW” MADE IN WEST GERMANY, IP55, Service Factor higher than two		
Coupling	Stainless Steel 304		Stainless Steel 316
Drive shaft			
Impeller	Hot-dip Galvanized Steel	Stainless Steel 304	
Frame ass’y			
Bolt & nut	Stainless Steel 304		
Float	Polyethylene, PU Foam Filled		

Float

Float Number	Float Type
PC250	PCF250A
PC700	PCF700A
PC2K0	PCF2K0A

*Oxygen transfer rate at standard condition.

Mixing volume are calculated due to power per unit volume 10 watt/cu.m.

Low Speed Surface Aerator 380 V, 3 Phase, 50 Hz, IP55



Transmax



Mild steel with hot - dip galvanized

Model	Hp	Quantity			Approx. Total Weight (kg)
		Aerator	Frame	Float	
VTG055-3PC250	5.5	✓	✓	✓	588.0
VTG075-3PC250	7.5	✓	✓	✓	1,081.0
VTG010-3PC250	10	✓	✓	✓	1,107.0
VTG015-3PC700	15	✓	✓	✓	1,130.0
VTG020-3PC700	20	✓	✓	✓	1,271.0
VTG025-3PC1K	25	✓	✓	✓	3,145.0
VTG030-3PC1K	30	✓	✓	✓	3,513.0
VTG040-3PC1K	40	✓	✓	✓	3,585.0
VTG050-3PC1K	50	✓	✓	✓	3,850.0

SS 304

Model	Hp	Quantity			Approx. Total Weight (kg)
		Aerator	Frame	Float	
VTS055-3PC250	5.5	✓	✓	✓	588.0
VTS075-3PC250	7.5	✓	✓	✓	1,081.0
VTS010-3PC250	10	✓	✓	✓	1,107.0
VTS015-3PC700	15	✓	✓	✓	1,130.0
VTS020-3PC700	20	✓	✓	✓	1,271.0
VTS025-3PC1K	25	✓	✓	✓	3,145.0
VTS030-3PC1K	30	✓	✓	✓	3,513.0
VTS040-3PC1K	40	✓	✓	✓	3,585.0
VTS050-3PC1K	50	✓	✓	✓	3,850.0

Gear Motor

[illegible][illegible]

Dimension (approx.)

Oxygen transfer rate (kg.O2/h)	3.0	4.5	6.0	8.2	11.2	15.2	22.4	30.5	36.2	44.5				
	Depth (min. M)													
	1.5			1.8			2.0			2.5				
Depth (max. M)	3.5													
	4.0													
	60.5													
Mixing Aeration Tank(dia. M)	4.8	7.0	9.0	10.5	15.5	17.5	22.0	25.0	33.0	35.0	37.0	38.0	39.0	40.0
Aeration Pond/Lagoon(dia. M)	15.0	21.0	28.0	32.0	42.0	46.0	50.0	55.0	64.0	68.0	74.0	80.0	82.0	84.0

Diameter : D (mm)	4200				5500				6500				7500			
	2100	2200	2300	2350	2750	2800	2900	3000	3200	3400	3400	4200	4300	4400		
	400				600				800				1000			
	750				950				950				1200			
Height : H (mm)	1000	1100	1200	1300	1200	1250	1450	1550	1700	1800	1800	1900	2000	2100		
	3"Pipe sch80				4"Pipe sch80				6"Pipe sch80				8"Pipe sch80			
	500	600	650	700	1150	1200	1300	1450	2350	2500	2550	3850	4000	4100		
	6				9				12				14			
Mooring Cables dia. (mm)																
Electrical Cable (sq.mm)/NYY&Gr																
2.5	4.0	6.0	6.0	6.0	10	10	16	25	25	35	35	35	50	70		

Frame	Hot dip Galvanize steel
Gear Motor	"Transmax" Vertical Helical Gear, TEFC, IP 55, Class F
Coupling	Stainless steel
Driving shaft	Seamless pipe Sch80
Nuts and Bolts	Stainless steel
Float	Polyethylene with PU foam filled