

New



Biosirus

Turbojet Aerator

Aqua/Wastewater Jet Aerator Systems

High-velocity Subsurface Aeration
Significant Reduction in Energy Input
High Dissolved Oxygen Levels Achieved



• **Application:**

- Natural and Artificial Waterbodies:
 - Lakes, Ponds, Streams, Canals, Rivers
- Wastewater Treatment:
 - Treatment Plants, Holding tanks, sludge/digester tanks, Lagoons

• **Features:**

- 35% or more energy savings
- Simple construction and operations
- Horizontal air-flow and mixing
- Extended "hang time" of air bubbles

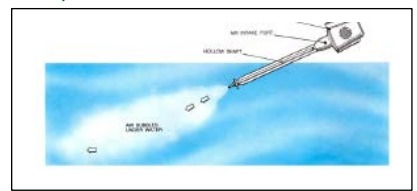


• **How Does It Work:**

- AC motor and air-intake above water level (on a float)
- Adjustable angular propeller tube below the water line
- Atmospheric air is drawn through the air-intake port and pushed through the hollow propeller shaft
- Propeller turbulence creates air-bubbles in water
- High velocity air disperses much further out into the water
- Horizontal water bubbles maximize bubble "hang-time" and oxygen mixing
- Maintains solids in suspension, accelerating its biodegradation

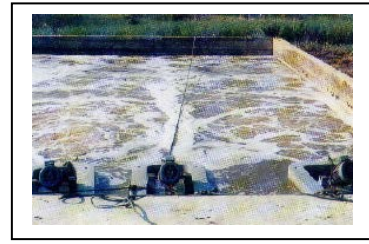
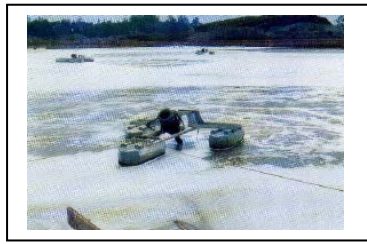
• **Technical Data:**

- **Models:** 0.4/0.75/1.5/2.25/3.7 KW models (0.5/1/2/3/5 HP)
- **Types:** (1) Wastewater and (2) Aqua/Natural water models (different materials)
- **AC Motor:** 120/220/240V; 50/60Hz.; 1ph/2ph/3ph
- High grade material
- Simplicity of design
- Safe and trouble-free operations
- Energy saving



• **Operation:**

The aerator is an AC motor driven propeller which creates high-velocity air flow below the water surface. The air flow is a low-angled horizontal jet rather than vertical (as in other systems). The high-tech airflow pattern allows for a longer air-bubble hang time in the water resulting in a higher dissolved oxygen level. This accelerates the bacteriological activities. The high velocity also allows for the solids to be in suspension longer (accelerating its breakdown).



Tech Talk: Dissolved Oxygen (Air) is a significant aspect in sustainable and living waterbodies

Biological Oxygen Demand (BOD), is the dissolved oxygen needed by aerobic organisms in water to breakdown organic materials present. High BOD is an indicator of heavy load of organic matter. it reduces the abundant supply of dissolved oxygen in the water to other aquatic life. This means water will be in anaerobic condition resulting in mortality of living aquatic organisms.

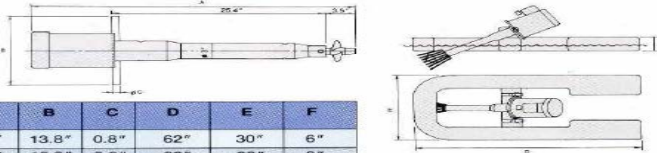
In absence of oxygen, anaerobic bacteria become active. When BOD value is medium, water will possess excessive nutrients causing algal bloom. Such condition is again dangerous because during day time water will be supersaturated with oxygen (due to photosynthesis in presence of sun light), but at late night DO may be zero or close to zero. This is primarily due to utilisation of oxygen for respiration by plants and animals (without any production of oxygen in absence of sunlight).

BOD levels in pristine waters is very low. Unfortunately, raw/untreated sewage is a big causal factor in rising BOD levels. Boosting dissolved oxygen (DO) is a significant activity to reactivate this balance. This gives the waterbody a fighting chance to rebalance itself naturally (if there are no other harmful chemical pollutants involved).

The turbojet aerator injects bubbles very efficiently at a very low energy input rate compared to other models and designs.

HP/KW	O2 Transfer Rate (kg/hr)	Air Volume (m ³ /min)	Mixing Volume (m ³)	Working Depth (m)	Weight (kg)
0.5/0.4	0.75	0.21	40-100	0.5-1.5	44
1/0.75	1.49	0.42	80-200	1.5-2.5	48
2/1.5	2.98	0.83	160-400	1.5-2.5	52
3/2.25	4.47	1.26	240-600	1.5-2.5	58
5/3.7	7.45	2.09	400-1000	1.5-3.5	65

NOMINAL DIMENSIONS



MODEL	HP	A	B	C	D	E	F
JM-005	1/2	39"	13.8"	0.8"	62"	30"	6"
JM-010	1	39"	13.8"	0.8"	62"	30"	6"
JM-020	2	41"	13.8"	0.8"	62"	30"	6"
JM-050	5	44"	13.8"	0.8"	62"	30"	6"

Float is one-piece molded polyethylene filled with diphenylmethane diisocyanate (MDI) and compounded polyol blend.

Typical Applications

Urban Lakes, Canals and Ponds:



Irrigation Canals and Rural Lakes:



Sewage and Waste Water Catchments:



And Savings Too:

The aerator systems offer significant energy savings (over 35% than other models) and significantly better dissolved oxygen as a result of the longer air bubble hang times. *This ensures savings in energy and a faster solution. A two-for-one benefit.*

Best Value Applications:

Parameters	Platinum Savings	Gold Savings	Silver Savings	Bronze Savings
Organic sewage	*****	****	***	**
Urban lakes, ponds, canals	*****	****	***	**
Rural irrigation canals	*****	****	***	**
Rural Lakes and Ponds	*****	****	***	**
Electricity Tariff (US \$/Kwh)	>0.15	0.12	0.10	0.08
Depth (m)	<3.5	3.5-7.0	7-10	>10
Typical Pay back (simple ROI)	1 Year	2 Years	3 Years	4 Years

**Call us for any details
or a trial project**

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