EVEREST TURBO
LET'S GO VALUE ENGINEERING

EVEREST TURBO
Innovative Engineering Solutions

EVEREST FLONERGIA AIRLIFT PUMPS

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1. *Water Inlet*
2. *Radial Air Injection for Enhancing Oxygenation*
3. *Axial Air Injection for Enhancing Water Lifting*
4. *Air & Water Outlet*

EVEREST FLONERGIA AIR LIFT PUMP

Everest FloNergia's FloMov family of pumps are designed specifically for Aquaculture, Aquaponics, Hydroponics, Wastewater Treatment and many other applications involving pumping of suspended solids laden fluids. They offer a well-engineered, patent pending, dual-injector airlift pump solution that uses significantly less energy than conventional centrifugal pump/aerator systems.

With a wide range of readily available sizes, our pumps serve the needs of large and small producers/plants. Everest FloNergia offers custom designed solutions for a wide variety of applications and sizes.

Everest FloNergia FloMov pumps are perfect solution for providing **water circulation** and **aeration** in a single device for your application.

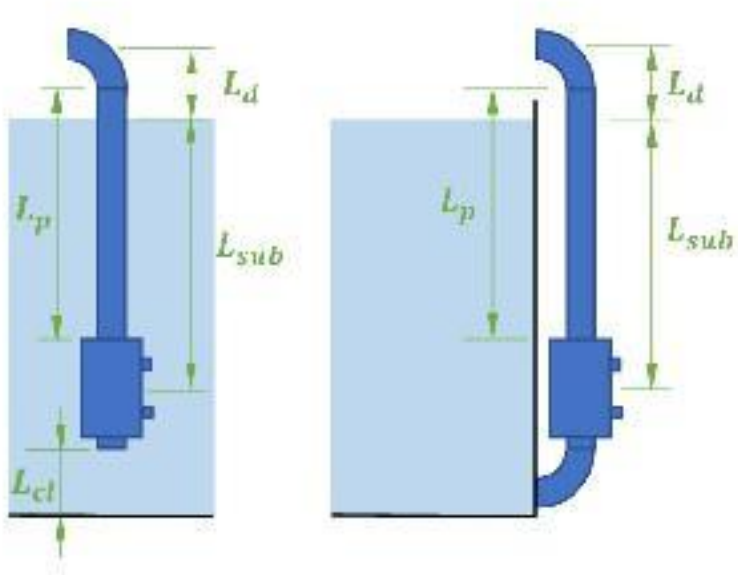
Benefits include:

• 50–70% less energy usage compared to systems using centrifugal pumps
• Improved water aeration with the ability to operate using other injection gases if needed
• High ability to handle solid water mixtures
• Minimal maintenance requirements - no moving parts
• Reduced noise levels

Everest FloNergia FloMov pumps are best integrated with Regenerative Blowers to maximize energy savings. Regenerative blowers provide the required air flow rates at the required pressure range with higher efficiency than alternatives such as compressed air.

TECHNICAL SPECIFICATIONS

Everest FloNergia FloMov pump output varies with the **Submergence Ratio**. The submergence ratio is defined as the ratio between the static water head available above the pump to the total length of delivery pipe. The higher the submergence ratio, the higher the flow rate generated for a given air flow rate



$$SR = \frac{L_{sub}}{L_{sub} + L_d}$$

Everest FloNergia FloMov pumps require a minimum clearance between the pump inlet side and the bottom of the body of water it is submerged in, if installed with no attachments to the pump inlet side, of at least one pump diameter.

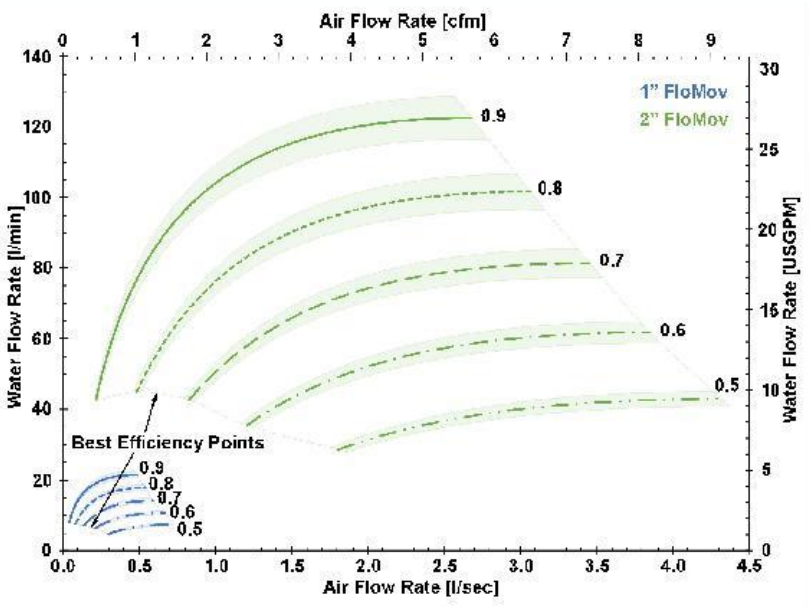
$$L_{cl_{min}} = 1D$$

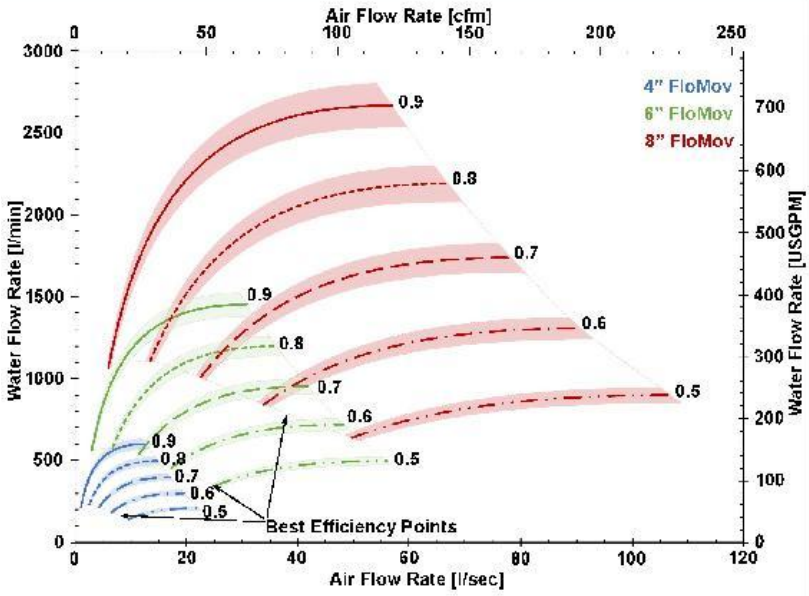
Everest FloNergia FloMov pumps require a minimum straight pipe section on the delivery side before any outlet elbow attachment of two pump diameters.

$$L_{P\,min} = 2D$$

TECHNICAL SPECIFICATIONS

Performance data for FloMov pumps at different submergence ratios can be determined from the following table or figures:





FloMov pump performance curves for submergence ratios from 0. 5 to 0. 9. Shaded areas on the curves represent the expected variability in pump performance due to several factors including variations in installation, different inlet/outlet fittings, varying air inlet flow distribution and varying aeration needs.

It is important to note that we do not recommended operating the pumps at submergence ratios below 0.5. We also do not recommend adding any fittings to the pump outlet side in addition to a straight pipe and an elbow.

TECHNICAL SPECIFICATIONS

Pump/ Pipe Size	Sub-mergence Ratio	Best Efficiency[1]					Maximum Water Flow[2]					Required Air Pressure	Connection Type[3]	
		Water Flow Rate*		Required Air Flow Rate		Estimated Power Consumption+	Water Flow Rate*		Required Air Flow Rate		Estimated Power Consumption+			
Inch (mm)		LPM	GPM	LPS	CFM	W	LPM	GPM	LPS	CFM	W		Water	Air
1 (25)	0.9	8	2.2	0.05	0.1	0.8	22	6	0.5	1	8	10% above static pressure at air injection depth	PVC SCH 40 Pipe Extension	1/4" NPT thread-ed holes
	0.8	7.5	2	0.1	0.2	1.6	18	4.75	0.55	1.2	8.7			
	0.7	7	1.8	0.15	0.3	2.4	15	4	0.6	1.3	9.5			
	0.6	6	1.6	0.2	0.4	3.2	11	3	0.65	1.4	10.3			
	0.5	5	1.3	0.3	0.6	4.7	7.5	2	0.7	1.5	11			
2 (50)	0.9	43	11.5	0.2	0.4	3.2	123	32.5	2.7	5.7	42.5			
	0.8	45	12	0.5	1	8	102	27	3	6.5	47			
	0.7	43	11.5	0.8	1.7	12.5	82	22	3.5	7.5	55			
	0.6	36	9.5	1.2	2.5	19	62	16.5	4	8.5	63			
	0.5	29	8	1.8	3.8	28.5	43	11.5	4.5	9.5	71			
4 (101)	0.9	216	57	1	2	16	600	159	13	28	204			1" NPT thread-ed holes
	0.8	235	62	3	6	47	500	132	15	32	236			
	0.7	215	57	4	8	63	400	106	17	36	267			
	0.6	185	49	7	15	110	300	79	20	42	314			
	0.5	145	38	10	21	157	210	56	22	47	346			
6 (152)	0.9	565	149	3	6	47	1450	383	30	64	472			
	0.8	576	152	7	15	110	1200	317	36	76	566			
	0.7	537	142	12	25	189	955	252	42	89	660			
	0.6	456	120	17	36	267	720	190	48	102	755			
	0.5	347	92	25	53	393	500	132	56	118	880			
8 (203)	0.9	1070	283	6	13	95	2685	710	56	118	880			
	0.8	1050	277	13	28	204	2190	579	66	140	1037			
	0.7	1008	266	23	49	361	1738	459	78	165	1226			
	0.6	843	223	34	72	534	1307	345	91	193	1430			
	0.5	640	169	50	106	786	900	238	107	227	1682			

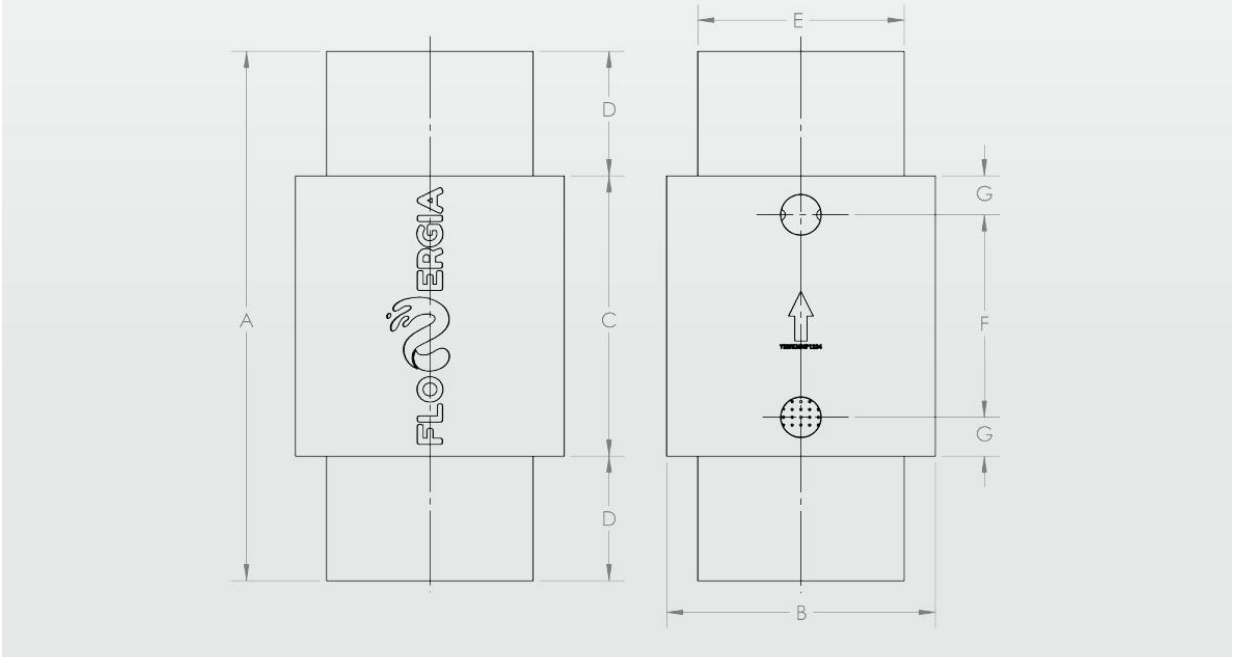
1. *Best efficiency points represent the operating points for the given size and submergence ratio where the pump generates the reported water flow rate at the best operating efficiency.*
2. *Maximum water flow points represent the highest generated water flow rates for the given size and submergence ratio. Increasing air flow beyond these values will result in improved aeration but will not result in improved water flow rate.*
3. *Alternate connection types are available upon request.*

- *It is expected that pump output will vary from the values indicated in the table due to several factors including variations in installation, different inlet/outlet fittings, varying air inlet flow distribution and varying aeration needs.*
- *Power consumption is estimated based on an air injection pressure of 11 kPa (1 . 6 psi) which is equivalent to a submergence depth of 1 m (3 ft), and a combined blower/motor efficiency of 70%. Actual power consumption will vary based on actual installation conditions.*

TECHNICAL SPECIFICATIONS

Pump Overall Dimensions:

Pump Size	A	B	C	D	E	F	G
Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch
1	5.5	2.65	4.1	0.7	1.715	2.8	0.65
2	6.25	3.67	4.85	0.7	2.775	3.55	0.65
4	15	6.625	7	4	4.5	4.5	1.25
6	17	8.625	9	4	6.625	6.5	1.25
8	19	10.75	11	4	8.625	8.5	1.25



This new airlift pump design has demonstrated outstanding performance when tested in both laboratory as well as in-field trials. The airlift pump has demonstrated a reduction in energy consumption of 50 – 70 % as well as an improvement in performance over competing systems.

EVEREST FLONERGIA AIRLIFT PUMPS

CONTACT US

EVEREST BLOWERS PVT. LTD.

CORPORATE OFFICE
B-44, Mayapuri Industrial Area, Phase-1, New Delhi-110064, India
T: +91- 11 45457777

FACTORY
Plot 82-83, Sec-16, HSIIDC Indl. Area, Bahadurgarh-124507,Haryana, India
T: +91-1276-241821, 241822

SALES
+91-8053047777, 8053067777
Email: cmo@everestblowers.com
Web: www.everestturbo.com

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