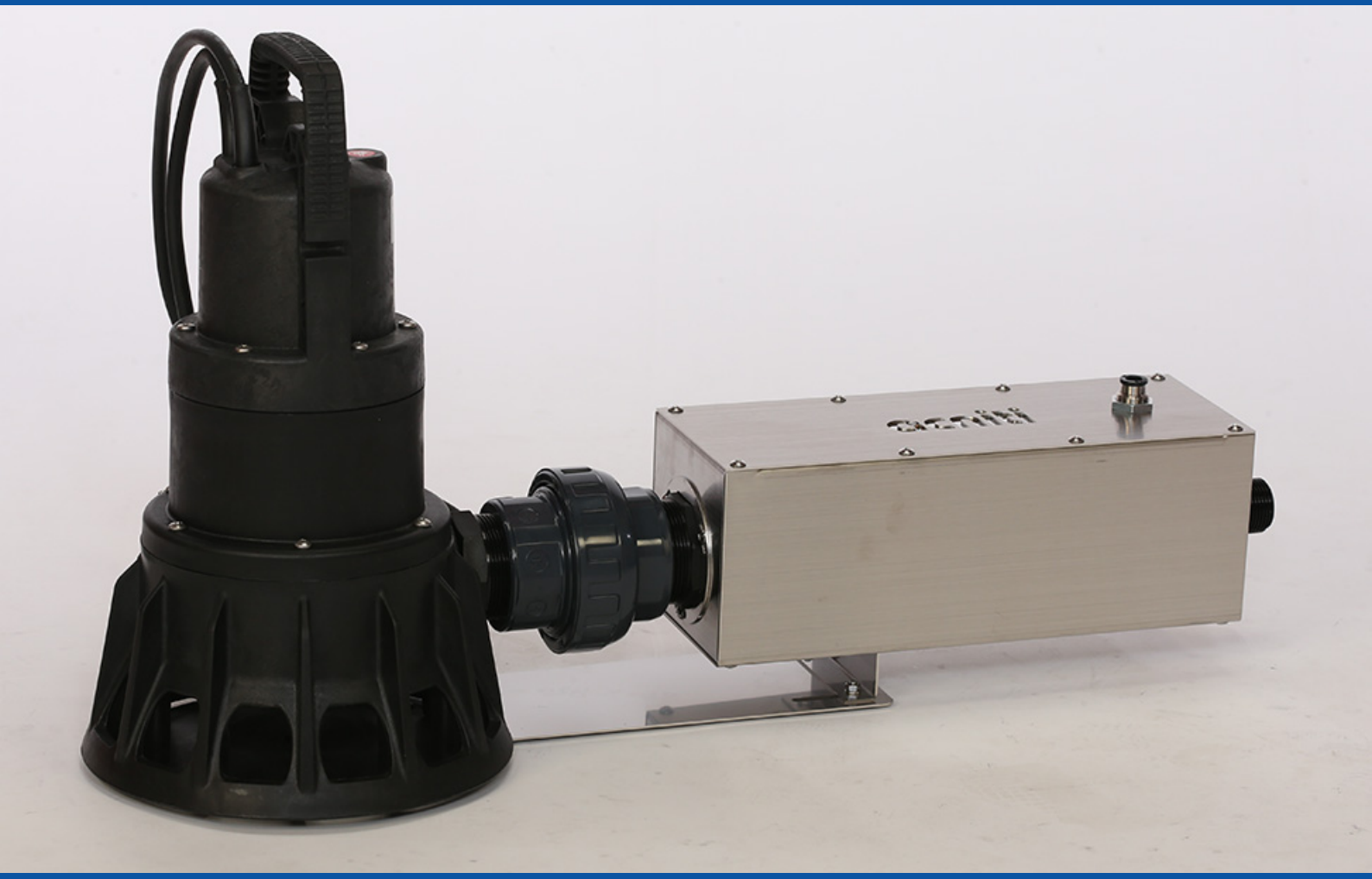

acniti LLC
1-2-9 Nyoidani
Minoh Osaka
562-0011
Japan

Turbiti submersible

Large volume submersible ultrafine bubble generator in combination with a dissolved oxygen generator, for aerating effectively lakes, horticulture, fishponds and shrimp cultivation. Aeration is for many biological processes very important the Acniti submersible unit guarantees high DO values for ideal biological activities creating an optimal environment for high production output.

Turbiti submersible

Turbiti submersible nanobubble mixer

- Clean Tech – Chemical free cleaning solutions
- Pond remediation
- aeration of irrigation tanks for production of tomato, cucumber, pepper, carnation chrysanthemum and roses
- agriculture and horticulture
- aquaculture
- For aeration of lakes with algae contamination
- Shrimp cultivation
- easy to install
- compact design, small footprint
- efficient gas dissolution

About submersible nanobubble mixer

The submersible ultrafine bubble mixing unit is a, complete submersible unit with the low-pressure mixing valve technique that effectively and efficiently saturates liquids with gases over 5 times the levels of conventional technologies. The UFB mixer produces fine bubbles that maximize water contact with the introduced gas producing a liquid highly saturated with suspended gas bubbles. With the UFB mixer, not only less gas is required to achieve optimum saturation levels, but once desired levels are achieved, the liquid maintains its saturation for extended periods of time. There is no need for pressurized tanks or high-pressure cylinders to keep the gases in solution.

The submersible unit consists of an UFB mixer combined with a pump, in a special Stainless-steel SUS 316L enclosing. The submersible unit can be equipped with a variety of pumps and two different sizes of UFB mixers, this makes the unit suitable for many applications:

- Clean Tech – Chemical free cleaning solutions
- Pond remediation
- Agriculture and Horticulture
- Aquaculture

The submersible unit features

- Compact design, small footprint
- Easy to connect and position in existing installations.
- Efficient gas dissolution
- Works in combination with a range of submersible pumps
- Flexible systems design possible

Market application segments

The submersible ultrafine bubble mixer can be used for various applications, such as lake and pond remediation, treatment of agriculture and horticulture irrigation water, and aqua culture applications. Making the unit suitable for an application is done by varying the required pump in the unit.

Nanobubble mixer type	737 light	737
Agriculture & horticulture	Tsurumi LB-480	Tsurumi LB-800
Water treatment, lake and pond remediation	Tsurumi HS2.4	Tsurumi 50PN2.75
Aquaculture and seawater applications	Tsurumi 50TM2.25	Tsurumi 50TM2.75

Stainless steel 316L

The submersible unit is made from stainless steel 316L, in stainless steel there are 3 common qualities (property differences). The most common used is stainless steel SUS304 then 316 and 316L. Like 304, which is common in the food industry, both type 316 and 316L exhibit better corrosion resistance and are stronger at elevated temperatures. 316 stainless steel has more carbon in it than 316L. Both are very similar, durable, corrosion-resistant, and a good choice for high-stress situations. 316L is a better stainless steel for high-temperature, high-corrosion uses, which is why it's so popular for use in construction and marine projects and Acniti has chosen to use this quality to fabricate the submersible units from.

- Food preparation equipment, particularly in chloride environments.
- Pharmaceuticals
- Marine applications
- Architectural applications
- Medical implants, including pins, screws and orthopedic implants like total hip and knee replacements
- Fasteners

Seals

The unit comes standard with NBR seals also called **Nitrile rubber.** When the unit is used in seawater or an environment which is acidic or has oil contamination, we offer the possibility to upgrade the seals into fluoro rubber elastomers also called FPM, FKM, Viton. This seal is called according to DIN and ISO as **FPM**, as American Standard **FKM**. Viton® is the registered trademark of DuPont Performance Elastomers.

Oxygen concentrator

The use of an oxygen concentrator is recommended, air contains around 21% oxygen, by using an oxygen concentrator the oxygen level can be concentrated up to 90% – 95% making the pumping operation 4 to 5 times more efficient. The electricity usage is around 600 watts per hour. Supplying around 6 liters of oxygen per minute. This is more economic in electricity usage than using air.

Biology: agriculture, water-treatment

Often, we get the question can I also use the ultrafine bubble generator with air. While this is perfectly possible, from a chemical physical or technical point of view, by connecting a compressor to the installation. We recommended against the use of air from a biological point of view, in most cases we recommend the use of a single gas such as oxygen.

While with air, you will get around the same bubble concentration and bubble sizes as with oxygen. We have experienced that in a lot of cases dosing air, you also produce nitrogen and carbon dioxide bubbles. Especially CO2 is easy to dissolve, will lower your pH and can be used during daytime as a food source for algae production. Also, nitrogen bubbles don’t provide most of the time any benefit, it saturates the water with the wrong bubbles to create a healthy environment. For all these reasons, most of the time we recommend using pure O2.

Shipping, packing and installation

The submersible ultrafine bubble mixer, will be shipped by DHL or FedEx as a flat pack without a pump. This saves on transport cost. The preferred Tsurumi pump has to be bought locally, this has the advantage of local warranty and gives the security that the pump is safe to use on the local electricity network. Tsurumi has a worldwide strong network and their pumps are easy to buy online or via their dealers. Once you have received the submersible unit package, it's easy to mount with a star screwdriver and a 13 mm wrench. The package contains a bracket to sturdy mount the pump in the stainless-steel box.

submersible nanobubble mixer turbiti 737-o2sus316 specs

	Beschreibung	Metrisch	Kaiserlich
1	Model name	Submersible turbiti 737-O2SUS316	Submersible turbiti 737-O2SUS316
2	Model number	turbiti_737_submersible-316L_no-pump	turbiti_737_submersible-316 L_no-pump
	Flüssigkeit	**Metrisch**	**Kaiserlich**
3	Minimum flow / minute 50 Hz	125 Liter	33 Gallone
4	Maximum flow / minute 50 Hz	160 Liter	42 Gallone
5	Minimum flow / minute 60 Hz	140 Liter	37 Gallone
6	Maximum flow / minute 60 Hz	175 Liter	46 Gallone
7	Minimum flow / hour 50 Hz	7.5 M3	264.9 CF
8	Maximum flow / hour 50 Hz	9.6 M3	339.0 CF
9	Minimum flow / hour 60 Hz	8.4 M3	296.6 CF
10	Maximum flow / hour 60 Hz	11 M3	371 CF
11	water temperature minimum	0 ℃	32 ℉
12	water temperature maximum	40 ℃	104 ℉
13	Strainer availability and size	Strainer on submersible pump when larger than 6 mm	Strainer on submersible pump when larger than 6 mm
	Umgebung	**Metrisch**	**Kaiserlich**

	Umgebung	Metrisch	Kaiserlich
14	Ambient temperature minimum	-20 °C	-4 °F
15	Ambient temperature maximum	50 °C	122 °F
16	Relative humidity minimum	0 %	0 %
17	Relative humidity maximum	100 %	100 %
	Gas	**Metrisch**	**Kaiserlich**
18	Minimum flow / minute	5.0 Liter	1.3 Gallone
19	Maximum flow / minute	8.0 Liter	2.1 Gallone
20	Minimum flow / hour	300 Liter	79 Gallone
21	Maximum flow / hour	480 Liter	127 Gallone
22	Druck Minimum	40 kPa	6 PSI
23	Druck maximal	65 kPa	9 PSI
24	Gas quality	No corrosive gases: Use O2, N2, CO2 or ambient air.	No corrosive gases: Use O2, N2, CO2 or ambient air.
	Elektrisch	**Metrisch**	**Kaiserlich**
25	Unit phase Ø voltage	1 Ø 115 or 220 VAC	1 Ø 115 or 220 VAC
26	Unit power consumption	480 watts based on recommended pump	480 watts based on recommended pump
27	Wetted parts	SUS316L, PVC, Nylon,	SUS316L, PVC, Nylon,
28	Pump suction method	Submersible pump	Submersible pump
29	Control	No control	No control
	Pumpe		
30	@option	Water treatment Tsurumi 50PN2.75	
31	@option	Aquaculture, Seawater Tsurumi Pump 50TM2.75	
32	@option	DAB Leader FEKA BVP	
	Verbindungen	**Metrisch**	**Kaiserlich**

	Verbindungen	Metrisch	Kaiserlich
33	Water inlet	submersible pump inlet	submersible pump inlet
34	Water outlet	25 mm about 1"	25 mm about 1"
35	Gas inlet	10 mm gas hose or 3/8"	10 mm gas hose or 3/8"
	Abmessungen & Gewicht	**Metrisch**	**Kaiserlich**
36	Abm. (B) x (T) x (H)	310 x 285 x 890 mm	12.2 x 11.2 x 35.0 Zoll
37	weight	17.3 Kg	38.1 lbs.
38	Shipping dim. (w)x(d)x(h)	35 x 34 x 95 cm	14 x 13 x 37 Zoll
39	Shipping weight	25 Kg	55 lbs.
	Bemerkungen		
40	Other remarks	✓ Weight: weight bare unit: 17.3 kg ✓ Weight: weight unit + LB480 pump and UFB manifold: 30.5 kg	

submersible nanobubble mixer turbiti 737 with techno polymer pump 220v

	Beschreibung	Metrisch	Kaiserlich
1	Model name	Submersible turbiti 737 with techno polymer pump 220V	Submersible turbiti 737 with techno polymer pump 220V
2	Model number	turbiti_737_submersible-316L_techno-polymer-pump_220V	turbiti_737_submersible-316L_techno-polymer-pump_220V
	Verbindungen	**Metrisch**	**Kaiserlich**
3	Water inlet	submersible pump inlet	submersible pump inlet
4	Water outlet	25 mm about 1"	25 mm about 1"
5	Gas inlet	10 mm gas hose or 3/8"	10 mm gas hose or 3/8"
	Bemerkungen		
6	Other remarks	✔ Approximately @ 1 meter depth 60 kPa / 0.6 bar or 9 psi oxygen or air pressure required. Put pump deeper to dissolve more gasses. ✔ Weight: weight bare unit: 12.4 kg ✔ dimensions in cm: (l x w x h) : 74 x 25 x 41cm	