

Made  
in  
JAPAN

## 让水加上培育未来的功能。

在水里融入更多氧气等气体，并在高浓度下持续更长时间。

能够做到以上功能的是溶解氧·气体溶解装置 Sansolver。

鱼类等水性生物的养殖和水耕栽培、

生物处理水的净化、

微藻类生物燃料的生产等，

在很多的产业领域都能发挥很大的效果。

通过我公司的精细气体专利技术提高了气体溶解效率

并实现了在小水量和低压力的溶解。

另外，构造简单，设备维护性非常好。

除了海水、淡水以外，还可以对应多种液体，

可以溶解氧气、二氧化碳、氮、氢等各种气体，

将来可以被应用于更广泛的领域和用途。

 SANSO

BEST GAS DISSOLUTION SYSTEM

最好的气体溶解设备

# sansolver<sup>®</sup>

# sansolver<sup>®</sup>

## Introduction of water with Special functions towards to future.

Industrial Market demands a gas,  
such as Oxygen, dissolved into  
water and Sansolver maintains high concentration for a long time.

Our new products will bring positive effect into various industries,  
such as, aquaculture, fish & aquatic life, Hydroponics,  
watertreatment by biomass, oil production of microalgae.

With high gas dissolution efficiency by our fine bubble patent technology,  
the dissolution by the low-pressure power and a small quantity of water,  
realizes small size, light weight and mobility.

In addition, simple structure of  
product leads to easy maintenance.

Sansolver can apply to  
sea water, fresh water, and many kinds of liquids,  
and dissolve a gas; O<sub>2</sub>, CO<sub>2</sub>, H<sub>2</sub>, N<sub>2</sub> into various liquid.

Thus, Sansolver have enormous potential applications  
into wide range of fields and industries.



SANSO ELECTRIC CO.,LTD.

URL : [http:// www.sanso-elec.co.jp](http://www.sanso-elec.co.jp)

1-1 AOYAMA-KITA, 1-CHOME, HIMEJI-CITY, 671-2221, JAPAN

TEL : +81-79-266-1200 FAX : +81-79-266-1206

E-mail : [sanso@sanso-elec.co.jp](mailto:sanso@sanso-elec.co.jp)

代理商



烟台日特测量仪器有限公司  
YANTAI INT MEASURE INSTRUMENT CO.,LTD.  
日本测器株式会社·中国子公司(百年的企业传承)

网址: <http://www.intcn.cn>

烟台总部联系方式 电话: 0535-666-7106 传真: 0535-666-7126 E-mail: [yantai@ytrite.com](mailto:yantai@ytrite.com)  
上海本部联系方式 电话: 021-5230-8251 传真: 021-5230-8252 E-mail: [shanghai@ytrite.com](mailto:shanghai@ytrite.com)  
无锡分部联系方式 电话: 0510-8522-6008 传真: 0510-8522-6009 E-mail: [wuxi@ytrite.com](mailto:wuxi@ytrite.com)  
天津分部联系方式 电话: 022-8383-1788 传真: 022-8383-1799 E-mail: [tianjin@ytrite.com](mailto:tianjin@ytrite.com)  
广州分部联系方式 电话: 020-8520-5133 传真: 020-8520-5155 E-mail: [guangzhou1@ytrite.com](mailto:guangzhou1@ytrite.com)  
大连分部联系方式 电话: 0411-8753-9950 传真: 0411-8753-9950 E-mail: [dalian@ytrite.com](mailto:dalian@ytrite.com)  
青岛分部联系方式 电话: 0532-8699-0510 传真: 0532-8699-0512 E-mail: [qingdao@ytrite.com](mailto:qingdao@ytrite.com)

 SANSO

代理商: 烟台日特测量仪器有限公司

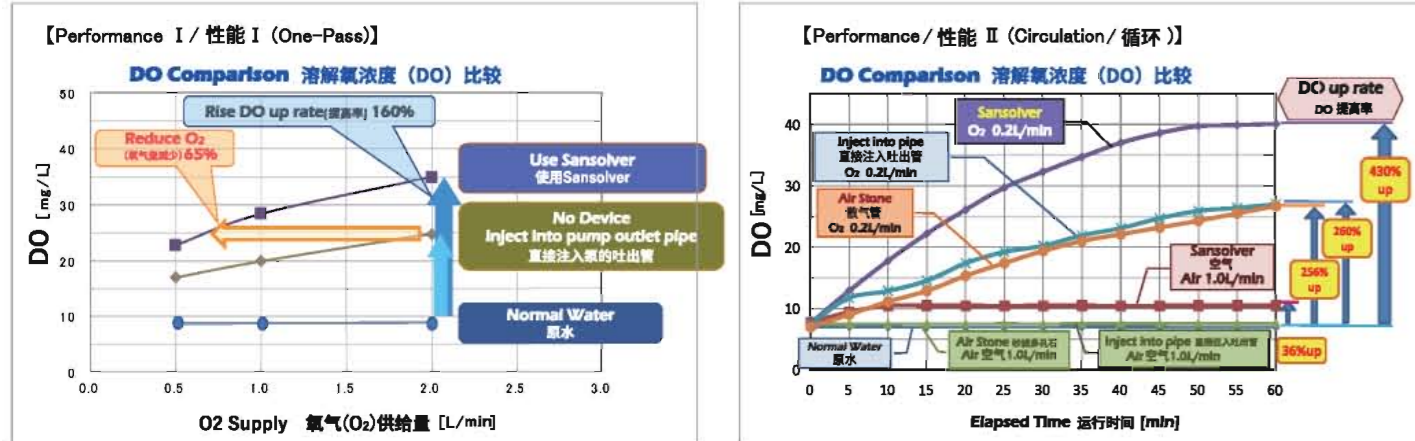
# Sansolver<sup>®</sup>

## System

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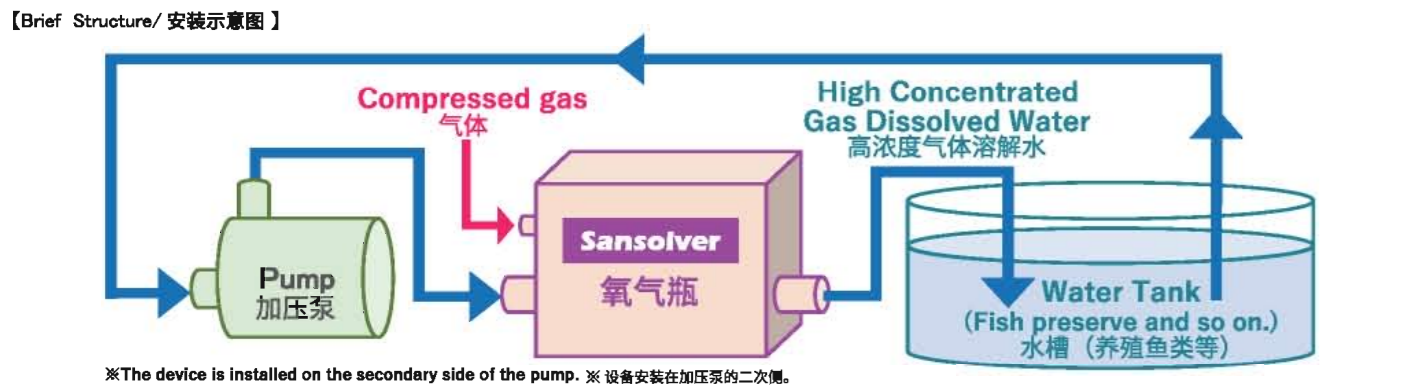
### 1 Technical Information

氧气溶解性能



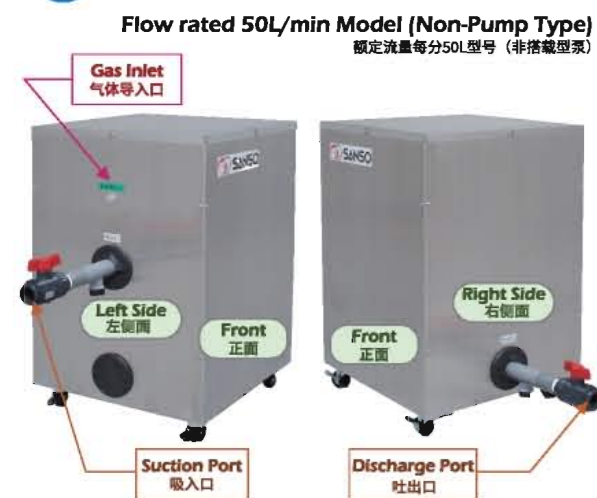
### 2 Basic Systems

气体溶解装置



### 3 Appearance

外观



### 4 Basic Specification

基本规格

Specification 主要规格	
Application 用途	To keep oxygen density highly in a fish preserve 陆上养殖领域等
Pipe Size of Water Line 口径	Rc 1 (Female Screw) Rc1 (螺纹)
Pipe Size of Gas Inlet 气体导入口径	φ6mm (Tube Fitting) φ6mm (管接头)
Ambient temperature 环境温度	0 ~ 40°C
Water Temperature 使用液体温度	0 ~ 60°C (No Freezing conditions) 0~60°C (无结冰)
Size of Device 尺寸	3040mm(L)×480mm(W)×760mm(H) 长1040mm×宽480mm×高760mm
Weight 重量	30kg 约30kg
<b>Ability of Dissolving Oxygen 生成能力</b>	
Condition of gas supply: O <sub>2</sub> (Pressure, 0.15 Mpa-Flow rate, 1.0L/min) ※99% purify 供气条件: 氧气 (压力0.15MPa-流量1.0L/min) ※氧气纯度99%	
Pump Performance 加压性能	30m - 50L/min
Recommended Pump (SANSO Products) 推荐泵 (本公司型号)	40PSPZ-403B/4033B
Dissolved Oxygen Concentration 溶解氧浓度 (清水20°C时)	≥ 25mg/L (Discharge flow rate 50L/min) 25mg/L以上 (吐出流量50L/min时)

# Sansolver creates positive effect by such facilities, industries.

## Sansolver 通过这样的设施和产业创造了巨大的效益。

### Activation of the bio filter ●生物过滤器的活性化

The bio filter which breaks down the organic substance in water by a microbe. Sansolver will increase dissolved O<sub>2</sub> concentration in water, and improve a microbe processing capacity. For purification by the biological decomposition, it may reduce consumption of chemicals, then, achieve lower cost and environmental conservation.

通过微生物分解污水的生物过滤器。利用 Sansolver 提高溶解氧的浓度, 激活微生物, 从而提高处理能力。因为采用生物分解净化, 可以减少药品的使用, 实现低成本化和环境保护。

### Sewerage treatment facilities ●污水处理设施

Sansolver will contribute to optimize processing facilities because of population growth by developing housing land.

为应对人口增长, Sansolver 将通过开发住房用地来优化处理设施。

### Improvement growing environment of aquaculture ●鱼类生长环境的提高

Sansolver produce high O<sub>2</sub> dissolved water into aquaculture, the results will improve the market problems, such as enhancement of fry growth, protection from fry death by lack of oxygen, and farming of fry densification.

利用 Sansolver 使鱼类生存用水的溶解氧达到高浓度, 从而促进幼鱼和鱼苗的生长, 防止因缺氧而死亡, 实现高密度的饲养。

### Aquaculture -Fish farming- ●养殖场

Sansolver provide water containing high dissolved O<sub>2</sub>, there are three good points, taking shorter the breeding period to commercial fish size and avoid the death of fish caused by lack of O<sub>2</sub>, and improve farming density while keeping stable system to increase production efficiency.

优点有 3 个。缩短成鱼的时间, 大幅提高存活率。而且在同一空间里可以更高密度地进行养殖, 提高生产效率。

### Live Stock (Seafoods) wholesaler and logistic company ●活鱼批发商和物流公司

Sansolver's water will be able to keep living fish with large numbers and for a long time. So fish wholesaler can sell, alive sea foods to retailers and restaurants on a timely manner.

Sansolver 的水可以保持水箱中的鱼长时间存活, 从而在保证新鲜度的同时, 及时地给零售者和饭店供货。

### Aquarium ●水族馆

Sansolver keep the dissolved O<sub>2</sub> density of the water tank high, and always purify it by a safe bio filter to a creature, and protect displayed fish carefully.

保证水槽中较高的溶解氧浓度, 利用对生物比较安全的生物过滤器反复净化, 更好地保护展示用的鱼类。

Sansolver can solve some problems of water in the current living and industry. for instance, it makes production lead time of fish or vegetable more shorter, cleans waster water, encourages faster growth of oil productive microalga. It will reflect on current demands for solution of global problems as food shortage, polluted water, and limitation of oil. Effect of Sansolver will solve big problems of facilities near by you, furthermore, contribute future industrial innovations, such as, fish farming outside the earth's atmosphere.

Sansolver 将帮助解决当前生活和工业用水的问题。提高鱼和蔬菜的生产效率, 稳定污水的净化, 促进制造石油的藻类的生长。满足粮食、环境、能源等各个领域日益严峻的时代需求。并且, 投身到从身边设施的确切变革到未来的产业革新。例如, Sansolver 有潜力使大气层外的鱼类养殖成为可能。

### Mass production of the bio-fuel ●生物燃料的大量生产

Sansolver has growth stimulation in an alga creating oil becoming the raw materials such as the jet fuel. The oil which Sansolver produced is expected as next-generation new energy without releasing CO<sub>2</sub> of the bottom of the earth like fossil fuel.

作为喷气燃料等原料的石油, 可以利用 Sansolver 来促进其原生藻类的生长。产生的石油不会像化石燃料那样将地下的 CO<sub>2</sub> 释放到地面, 期待其成为下一代的新能源。

### High gas dissolved efficiency 高气体溶解效率

**Apply a fine bubble device patented technology**  
To reduce amouts of oxygen in Land-based aquaculture, Sansolver will casuse dissolving oxygen efficiently.  
※To improve max 50% of dissolution efficiency: O<sub>2</sub>, one way pass.  
Dissolution efficiency=(dissolved oxygen mass at device outlet, mass at inlet) /Input oxygen mass

运用精细气体装置专利技术  
通过有效地溶解氧气, 减少陆上养殖的氧气使用量。  
※氧气一次通过的溶解效率最大为 50%。  
溶解效率 = (设备出口溶解氧重量 - 入口溶解氧重量) / 注入氧气重量

### Dissolution a gas by small amount of water and under the low pressure 小水量, 低压力溶解

In the case of a small model, it performs at 8L-/min water and Device inlet pressure 0.01MPa.  
小型设备情况下, 水量每分钟 8L, 设备入口压力为 0.01MPa。

### Simple dissolution system 简单的溶解系统

Avoid to be jammed and clean easily because of simple internal structure.  
由于没有复杂的控制结构, 内部构造简单, 减少了堵塞等的担心, 清扫也比较简单。

### High corrosion resistance 高耐腐蚀性

The gas dissolution water-contacting part is made of resin and rubber, and Sansolver can be used for various kinds of liquids besides seawater by combining with a SANSO's pump.  
气体溶解输水部由树脂和橡胶构成, 通过与本公司的泵组合, 可以应对海水以外的各种液体。

### Various types of gas can be dissolved (oxygen, carbon dioxide, nitrogen, hydrogen, etc.) 可以溶解多种气体 (氧气、二氧化碳、氮、氢等)

※Consult separately for gases and liquids corrodng contacted parts, such as ozone.  
※对于臭氧等会腐蚀接触部件材质的气体和液体, 请另行咨询我公司。

### 5 Application

实际应用情况

Monitoring and checking improvement effect of a dissolved O<sub>2</sub> density to seawater in a land-based aquaculture. 陆地养殖场正在验证提高海水溶解氧浓度的效果。

**Sansolver**

Oxygen is efficiently Dissolved and generated less bubbles. 氧气高效溶解, 泡沫少。

**Old System (aeration)**  
以往案例 (旧技术的空气调节)

Many of the oxygen bubbles rise to surface, without dissolving. 很多气泡没有溶解就浮上来了

### 6 Cases of using Sansolver

安装使用示例

**Globefish Culture 河豚养殖**

**Flounder Culture 比目鱼养殖**

**Eel Culture 鳗鱼养殖**

**Bio-filtration system 生物过滤系统**

**Expected Effects 预期效果 (给客户带来的效益)**

- Improve Survival rate 提高存活率
- Improve Culturing density 提高养殖密度
- Shorten Rearing period 缩短培育时间
- Improve Bio-filter ability 提高过滤处理效率