

# **YJ-Nozzle**

## **Micro-Bubble Nozzle**



**YJ nozzles are developed and manufactured by Bi-Clean Inc.**

# YJ Nozzle product specifications

Model (weight)	Connector diameter (in.)	Inner diameter (mm)	Pump power usage (kw)	Liquid flow rate (L/min)	Max. Air flow rate (L/min)
YJ-8.0 (1.8kg)	3/4	8	0.4 (1/2 HP)	50 (13 GPM)	15(0.53cfm)
YJ-11 (2kg)	1	11	0.4 (1/2 HP)	80 (22 GPM)	30 (1.06 cfm)
YJ-15 (4kg)	1-1/2	15	0.75 (1 HP)	165 (44 GPM)	60 (2.12 cfm)
YJ-21(7kg)	2	21	2.2 (3 HP)	370 (98 GPM)	100 (3.53 cfm)
YJ-32SQ (12.5kg)	2-1/2	32	3.7 (5 HP)	720 (190 GPM)	240 (8.47 cfm)
YJ-40 (20kg)	3	40	5.5 (7 HP)	1060 (280 GPM)	390 (13.77 cfm)
YJ-52SP (35kg)	Flange	52	7.5(10HP)	2000 (690 GPM)	660 (23.30 cfm)
YJ-75 (70kg)	Flange	75	18 (24HP)	4500 (1190 GPM)	1150 (40.60 cfm)

- The flow rate shown are at 0.1Mpa pressure. Higher capacity pump will increase the rate.
- ISO(BSP) threads. NPT threads available upon request.
- YJ-8.0 and YJ-75 are custom product. Other custom sizes can be available

# YJ-Nozzle

## The most effective Micro-Bubble Aeration device

- YJ nozzles are made of precisely machined stainless steel for long lasting and uniform performance.



- The SOTE of YJ-nozzles are the best of all Micro-Bubble devices available in the market at 51.5%. And great oxygen transfer power efficiency of 0.37kg-O<sub>2</sub>/kwh(see page 4 data)
- YJ-nozzles show excellent performance in dissolving various gasses with high gas utilization.
- YJ nozzles are virtually clogging-free thanks to large aperture size.



# SOTE DATA

by Tsurumi manufacturing Co. Ltd.

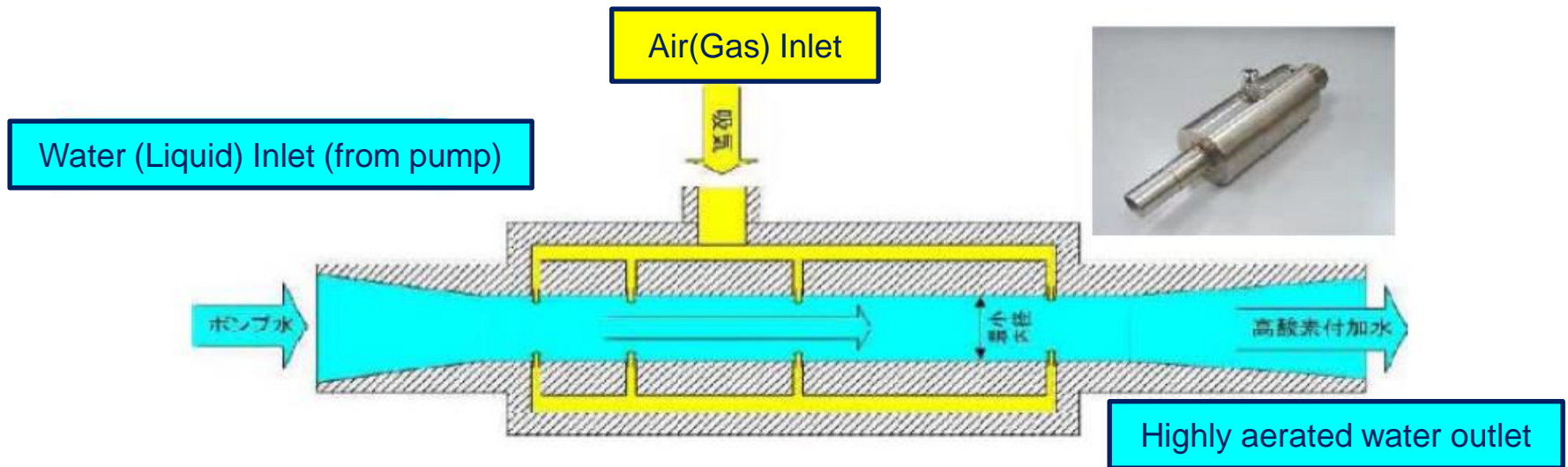
	DO meter 1	DO meter 2	DO meter 3	DO meter 4	Average
Dissolved oxygen volume (kg-O <sub>2</sub> /h)	0.83	0.90	0.76	0.76	0.81
Oxygen transfer efficiency (%)	52.6	57.0	48.2	48.2	51.5
Oxygen transfer power efficiency (kg-O <sub>2</sub> /kwh)	0.38	0.41	0.35	0.35	0.37
Air aspiration volume (m <sup>3</sup> /h)	5.4	5.4	5.4	5.4	5.4

Tank size : 10m x 10m x 5.17m water depth

Water temp : 6.5 degree C

System : YJ-21 with Tsurumi pump 50SF22.2 200v, 60hz, 2.2kw

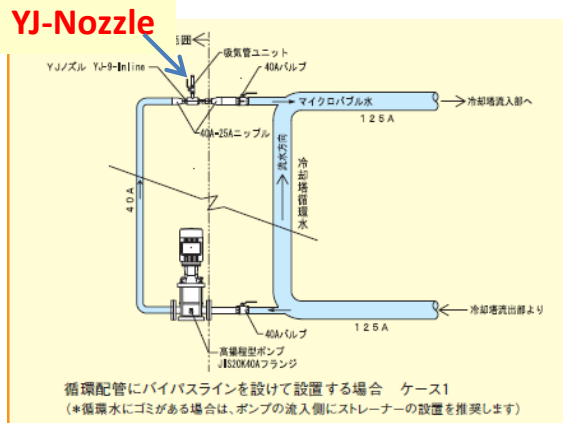
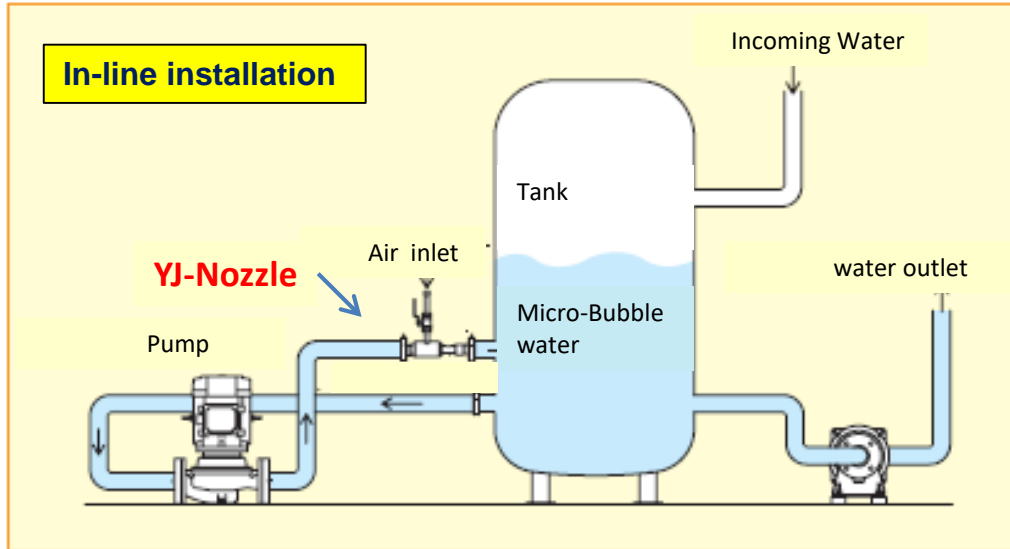
# How YJ-Nozzles work?



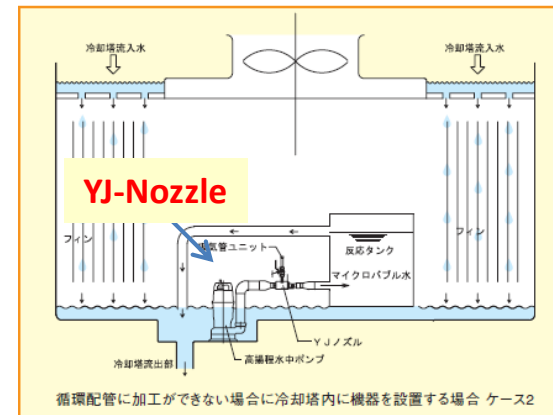
The water go through the nozzle with certain minimum velocity meet air from multiple outlets located inside of nozzle and they are efficiently mixed. The most of air dissolution happens in this process.

The vacuum created at air inlet is more than  $-0.09\text{Mpa}$ . It self aspirate air even at the water depth of 10m.

# YJ-Nozzle installation examples



**In-line bypassed installation**



**Submersible installation**

# Installation Pictures

