

BBN PURE DRINKING WATER PRODUCTION LINE

BBN design and construct a complete plant of Drinking Water containing hydrogen and nano-bubble.

BBN is very specialized and experienced in system design, engineering, supply of water treatment and waste to Energy system integrated with the fully commercialized equipment in the world market.

We cooperate with world leading environment, Water and energy companies for the integration, co-production and assembly to meet demand of different application and treatment .

Here we introduce a complete Turnkey Portable Water Treatment Plant containing Nanobubble with hydrogen. Our treatment does not use chemicals and treat by physical and natural method :

6000 BPH(500ML) pure drinking water production line

1. TECHNOLOGICAL PROCESS :

4T water treatment system :

River, Stream, Lake or Ground Water Pump → Quartz Sand Filter → BBN Clean Water Plasma Reactor AP6 → Micron Filter → BBN Nano Bubble Generator + PEM Hydrogen Generator(Optional) → Carbon Activated Filter → Pure water tank

6000BPH 500mL filling and packing system :

Auto bottle blowing system → air conveyor → washing filling capping machine → lamp checker → conveyor → ink-jet printer → labeling machine → shrinkable film packing machine → final product

No.	Machine name	Model	quantity	Price (USD)	Remark
PART A: WATER TREATMENT SYSTEM					
1	Booster pump	CHL4-60	1		✧ Booster pump : ✧ Water flow : 6m³/h ✧ Head of delivery: 31m ✧ Motor power:1.1kw ✧ capacity: 6T/H
2	Quarts Sand filter	JDL-6	1		✧ material: SUS304 ✧ thickness: 2.5mm ✧ dimensions: Φ600*2200mm ✧ capacity: 4T/H
3	CWP Plasma Reactor	AP6	1		✧ No Need of Chemicals ✧ No need Chlorinei-Oxide ✧ Dimensions: Φ600*2200mm
4	Micron filter	JML-6	1		✧ capacity: 6T/H ✧ material: SUS304 ✧ thickness: 2mm ✧ dimensions: Φ220*1000mm
5	Nano Bubble Generator	NanoMax-06 (BBN-003)	1		✧ Capacity : ^T/H ✧ Effected Waterbody 1200CBM/day ✧ Dimensions: 850*550*850mm ✧ volume: 5m³
6	Pure water tank	CG-5000B	1		✧ material: SUS304 ✧ thickness: 3mm ✧ dimensions: Φ1800*2600mm
4T/H water treatment price				Ask us	PART A Total Price

Booster Pump Model: CHL4-60

Material: Pump body stainless steel SUS304

Working Conditions: liquid with thick, clean, non-flammable, non-explosive, and doesn't contain solid particle.

Temperature of liquid: Normal temperature: -15°C to +70°C

High temperature: +70°C to +120

Elevation: The highest:1000m

Flow: 6m³/H

Flow length:31m

Power: 1.1KW

The protecting rank: IP55

Insulation rank: F

Voltage: 380V 50HZ

Speed: 2900r/min

Pump inputting mouth diameter: Inner diameter ø50mm

The motor is completely sealed, air cooling second grade standard air blower.



Quartz Sand Filter JDL-6



- Material: SUS304 stainless steel (Food grade)
Height: 2200mm, Diameter: 600mm
- Components: Water distributor, water gather, pressure gauge, filter material, valves and so on
- Filter medium: Sand
- Specification: $\phi 2.5\text{mm}$ $\phi 1\text{mm}$ $\phi 0.5\text{mm}$ $\phi 0.2\text{mm}$
- The bigger shall be put downside and the smaller shall be put upside.
- Usage: It is mainly used to remove Plankton, Moss, Suspension, Colloid and so on.
- Filtering volume: $6\text{m}^3/\text{h}$
- The filter is equipped with back wash system and user shall connect the pump with each filter and open relative valves

CWP Plasma Reactor AP6

Produce a unique, state of the art "Fusion" water processing technology, which is helping to shape a new generation of green, low power consumption water treatments

How it works

Clear Water Plasma has developed a patent pending technology in which a Programmable Logic Controlled (PLC) high voltage energy pulse is delivered directly

into contaminated water at a controlled frequency. This energy pulse initiates primary and secondary electron avalanches which produce multiple oxidants (like OH, H, O, O₃ and H₂O₂) and simultaneously creates high intensity UV radiation measuring between 60nm and 300nm. During the discharge of the pulse, an acoustic and hydrosonic shock wave travels through the reactor at 3 to 4 times Mach speed.

Features and Benefits

- 1) A high voltage pulsed discharge is induced directly in the effluent stream generating multiple oxidants and radicals such as OH, O, H, O₃, H₂O₂, etc.
- 2) Aggressive oxidant species are nonselective and oxidize all contaminants in the effluent.
- 3) A high intensity UV light released during the process is used for bacteria disinfection.
- 4) The high energy pulse generates a hydrosonic wave which creates acoustic cavitation. Bacteria colony clusters are then broken down
- 5) Direct energy input into the water results in a high efficiency energy transfer, thus reducing the overall operating cost per gallon.
- 6) Scale-causing minerals are precipitated and removed
- 7) Without biocides, the process results in effective biofouling control.



SPECIFICATION of PLASMA REACTOR

Ap6 Machine

- 0.6M Wide X 0.82 M Deep X 1.520M (H)
- Total Weight Approx. 220 Kgs
- Consist of front and rear doors

Two-process reactors

- Two-process reactors, piped together with 1" Sch 80 PVC Pipe
- Each reactor holds 1 electrodes assemblies

Pump

- PentaAir Shallow Well Jet pump
- Model STA-Rite CJ 90F Series

Piping System

- PVC schedule 80 pipes.
- Valves and couplings
- Electro-Magnetic Flow meter
- Air Injection System
- Back Pressure Control Valve

Main Control Panel

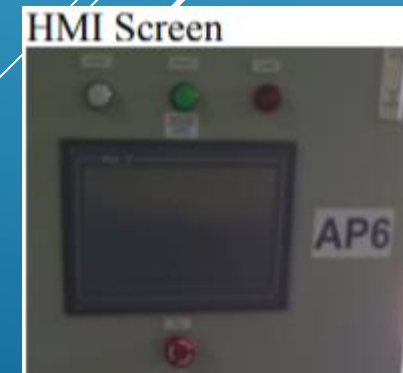
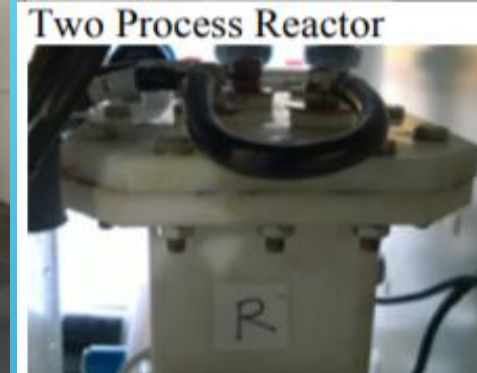
- Two power module each rated for 24VDC, 60-amp current
- 2 Polarity switching module
- PLC and HMI screen for controls
- Ac cooling coils for cooling Electronic Cabinet.

HMI Screen

- Window Based HMI Screen.

Power Input to Panel

- AC 440V-380V, 3phase,50-60 Hz Power Input



Solutions

CWP uses electricity to generate multi-oxidants in the water

✓ No Chemicals

✓ No Ozone

✓ No Chlorine di-oxide

✓ No Ultrasound

✓ No UV light

Features of CWP's Technology

✓ Safety

✓ Low Cost

✓ Effectiveness

✓ Modular and Flexible

✓ Small Footprint

✓ Low Maintenance

✓ Broad Utility

Technology Features	CWP' Hyper Oxidation Process
Oxidants Generation	The process generates multi-oxidants, e.g. H ₂ O ₂ , O ₃ , bleach, etc., using a cocktail of mixed metal coatings and electrolytes from the water. There is no need for the injection of salt water.
Bacteria Disinfection	Yes
Scale Prevention	Yes. Divalent Cations are precipitated on the cathode surface. The treated effluent does not scale.
Flow Rate	There is no limitation on flow rate since all influent is treated through the reactor.
Oxidation of Heavy Metals	Yes. Heavy metals, including iron, are oxidized.
Automation with Low manpower needs	Yes
Foot Print	Small
Operating Cost	Low
Treatment and recycling of Flow back and produced water	The process can treat 100% flow back and produced water without any limitations on the TDS for bacteria disinfection, precipitation of scale-causing minerals, and oxidation of heavy metals.
Elimination of H ₂ S	Yes
Chemicals and Biocides	No
Mobile/Onsite Application	Yes

Electro-Oxidation Reactor

Self-Cleaning Hyper Oxidation System Designed and tested for bacteria disinfection, precipitation of scale causing minerals and oxidation of organic and inorganic contaminants.

AP6 Electro-Oxidation Unit designed for low flow rate applications:

- Based on same paddle electrode technology as AP48.
- Reactor outfitted with two paddle electrodes, power supplies, and reactor controls; modular; all housed in a single enclosure.
- Inlet water connections 2" NPT or Flanged connections; flow rates up to 100GPM; ideally sized for smaller installations, cooling towers, hospital waste water, etc.
- AC Power input 220V single phase, 60Hz, 20 Amps; DC output 24VDC, 500 Amp
- Ideal for disinfection and water treating via oxidation of microorganism, biofilm; organic and inorganic contaminants; and micro-precipitation of scale causing minerals
- High-efficiency of the electrolysis process
- Compact, lightweight, versatile
- Low capital and operating cost
- Fully automatic controls with data logging
- Self cleaning electrodes and self cleaning reactor
- Safe to operate
- Green, environmentally friendly technology
- Removes biofilm and fouling
- Deodorization and bacteria disinfection
- Anti-fouling treatment serves to maintain clean surface for process equipment
- Effective on all types of water
- No moving parts
- Operator safe and environmentally friendly

Technology:

Comparison is done with nearest competition in the industry for treating flow back and produced water.

	AP6
Oxidants Generations in the Effluent	Generates multi-oxidants e.g. H₂O₂, O₃, bleach etc. using cocktail of mixed metal coating and electrolyte from the water. <u>No need for injection of salt water.</u>
Bacteria Disinfection	Yes
Scale Prevention	Yes. Divalent Cations are precipitated on the cathode surface. The treated effluent does not scale.
Flow Rate	2" Pipe Line with flow rate up 150 gallons per min.
Oxidation of Heavy Metals including Iron	Oxidation of heavy metals including iron.
Automation with Low manpower needs	Yes
Foot Print	Small
Operating Cost	Low
Treatment and recycling of Flow back and produced water	Can treat 100% raw water without any limitations on the TDS for bacteria, precipitation of scale causing minerals and oxidation of heavy metals.
Elimination of H ₂ S	Yes
Eliminate use of Chemicals and Biocides	Yes
Mobile/Onsite Application	Yes

Applications:

- ✓ Cooling Tower Water Treatment
- ✓ H₂S / Odor Contaminated water treatment
- ✓ Hospital Waste Water Treatment
- ✓ Scale and Biofilm prevention
- ✓ BOD-COD reduction
- ✓ Marine growth prevention system for ships
- ✓ Chlorine generator for sanitation for passenger ships

Micron Filter Model: JML-6



Height: 1000mm x Diameter: 220mm

Material: SUS304 stainless steel (Food grade)

Medium: Polypropylene film 40feet 5pieces

Filter precision: 5 μ m

Usage: It is mainly used to remove the tiny impurity.

RO Systems



1. American HYDRANAUTCS company's film
2. Glass fiber film shell
3. Reverse osmosis high pressure pump one set-
4. All kinds of capacity indicator, pressure indicator, electricity magnetic valve, balance device and pipe valve system
5. Online type pressure auto self-protection device
6. Online type electricity indicator (with stable compensation)
System safe protecting and alarm system

RO systems is not needed for this process but
It can be installed after water testing, or If Cheap
alternative system is planned, RO will be used

Nanobubble Generator NanoMax-06

We find out and developed natural solution combining with nanobubble and plasma effect to treat waste water without chemicals in the existing facility on the basis of the commercialized systems and advanced technology. And Plasma reactor treat waste water containing heavy metal, dying color, waste oil and chemical waste from industrial complex. Also It can treat underground water, river, stream and lake water for drinking water without chemicals

BBN Nanobubble generator infuse 99.9999% pure hydrogen or oxygen into water for the production of nanobubble hydrogen water.. 99,9999% Pure hydrogen and oxygen are produced from pure water by SPE-PEM Electrolyzer.

Nanobubble Japan : <https://youtu.be/mvBiHcWT1B8>

Nano bubble Water

http://www.bbnworld.net/nano/micro_nano.pdf

Nano bubble Water : <https://blog.naver.com/0101hng>

Product Introduction

Nano Bubble Generator is a new generation of high efficiency and energy saving water treatment technology application. It has huge development potential, as the functional properties of bubble, bubble with anion, speed slow, ozone bubble explosion equivalent can have antiseptic effect, gradually become smaller bubbles... etc.) familiar, and mature technology and development, will continue to expand its use range, market growth will follow. Our nano bubble generator can replace the current domestic high-pressure decompression dissolved foaming of fine bubbles, and part of the aeration equipment.



**Dissolved Oxygen: $\geq 8.9\text{mg/L}$
(Normal Air Source)**

Features

Hydrogen or Oxygen is infused into the water as nanobubble.

- *High density of micro nano bubble, non-clogging, easy to maintain.
- *Bubble size : **80 nm ~ 20 μm** , good gas-liquid dissolving effect.
- *Stable performance, high efficiency, low noise.
- *Wide range of application, such as : wastewater treatment, gas treatment aquaculture, aquaponics hydroponics, agricultural irrigation, bath etc.

Definition of Nano Bubble

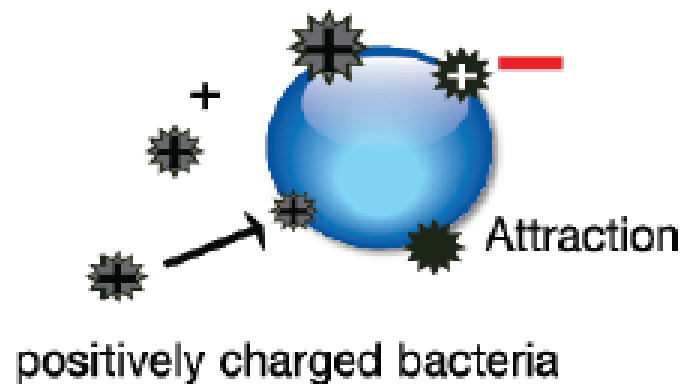
Effects of OH free radical

OH hydroxyl is the strongest natural oxidizer being created when O₂ line is operating. It has a nano-second of very short half-life, high reactivity to organic compounds harmful to the human body, and washing and sterilization power utterly harmless.

OH free radical creation and sterilization effects

Self contraction & absorption

Negatively charged bacteria



2,000 times
of O₃

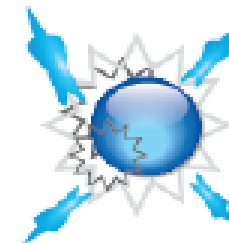
180 times of
UVC

physical shock
self Destruction

Two times more
Chlorine (Cl)
than tap water

OH hydroxyl generation

Sterilization Effect



hydroxyl radical
Hot spot

OH⁻

1.57 times of
H₂O₂ (hydrogen peroxide)

Features of Nano Bubbles

1. <Sinking>

- Nano bubbles in the size of 50-100 Nano are going to sink inside water at a low speed
- Reason: The surface tension becomes lowered, concurrently they come to be heavier than the neighbors by oxygen molecules loaded into water molecules.

2. <3-6 months Survival>

- Nano bubble surface is to be electrified in negative through the attachment of electrons, thus they are repelling each other.
- Do not grow into large bubbles without being combined with each other by shock

3. <Floating in slow pace>

- Rising in slow pace by 0.1cm/sec. → Very effective to removal of impurities in water
- Nano bubbles, negative electric charged, attract the impurities by their electrostatic forces and rise slowly.

4. <Shock wave generated>

- (when the compressed bubbles extinct near the surface of water)
- The burst out of the bubbles triggers 400KHz of ultrasound, high sound pressure level up to 140db, about 5,000 degrees momentary fevers, etc.
- Negative electrostatic forces loaded on bubbles attract virus and bacteria, which will be extinguished, through the energies when the burst of the bubbles

5. <Hydroxyl ion occurrence>

- Free radicals (hydroxyl group: $\text{OH}^\cdot$) are generated, having a strong oxidizing power, when the bubbles are burst out: $\text{H}_2\text{O} \rightarrow \text{H}^\cdot + \text{OH}^\cdot$
- Hydroxyl group generates Hydroxyl Ion (H_3O_2) in conjunction with water molecules: $\text{OH}^\cdot + \text{H}_2\text{O} \rightarrow (\text{H}_3\text{O}_2)^\cdot$
- Surfactant → Sterilization, Peeling, Whitening → Cleansing effect, Sterilization effect, etc.

6. <Surface area enlargement>

- $3\mu\text{m}$ bubbles gets 10,000 times expansion in contact areas, in comparison of 1mm bubbles.
- Increasing the amount of dissolved oxygen, and promoting the activities of aerobic microorganisms

7. <DO increase (Dissolved Oxygen)>

- Facilitating Oxidation-reduction
- Disinfection of microorganisms by oxidation of their proteins → Thriving of aerobic bacteria, while killing anaerobic bacteria

8. <Surface tension lowered>

- On the water surface, air is eased to infiltrate into water, dissolving oxygen while reverted nitrogen to be emitted into air → T-N to be decreased

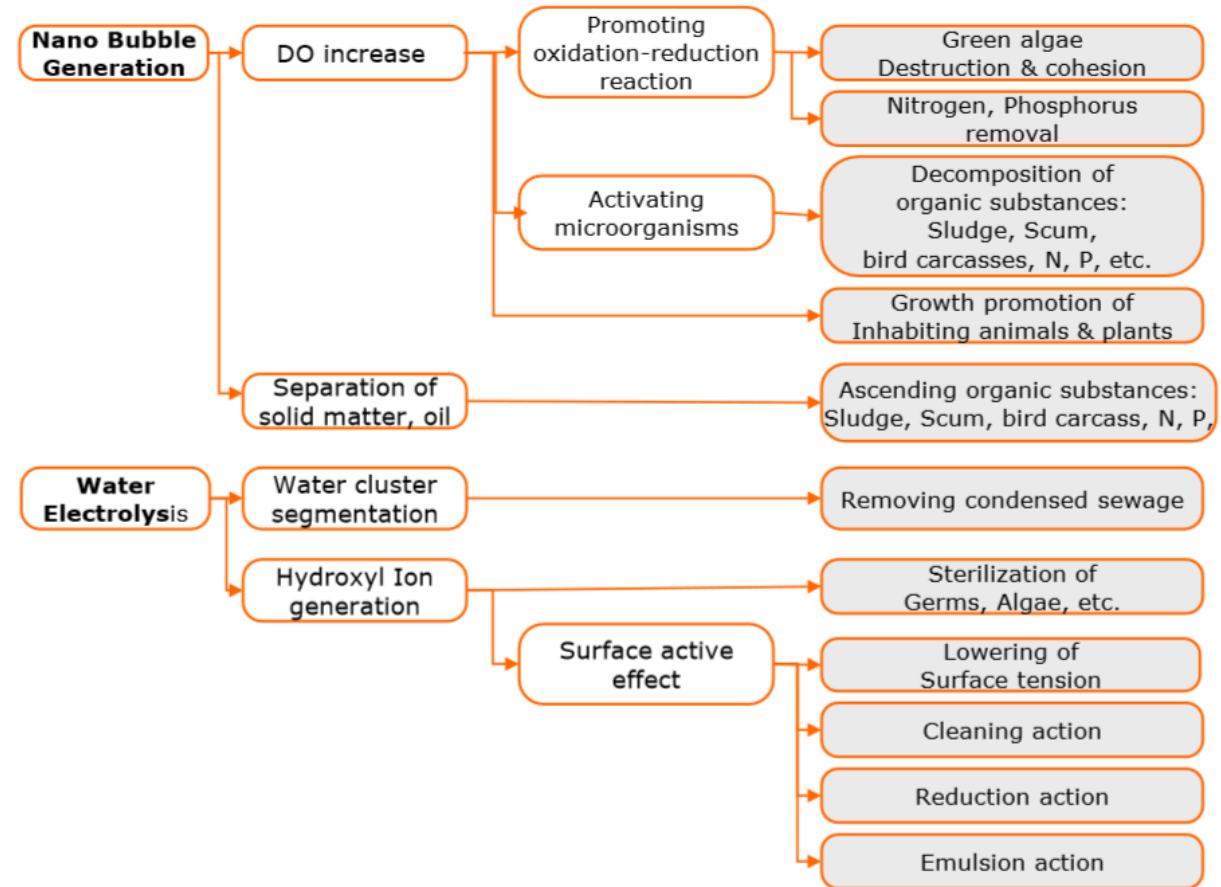
9. <ORP reduction - oxidation-reduction potential>

- Destroying air sacs of floating algae, through electric potential differences between water molecules.

10. <Water activation>

- Ionization of water molecules → Easing absorption → Physiological activation
- Decrease of water intermolecular bonding force → Molecule clusters are scaled down
- Increase of water molecule vibration → decompositions of chemical substances, ammonia, heavy metals, odors, etc.

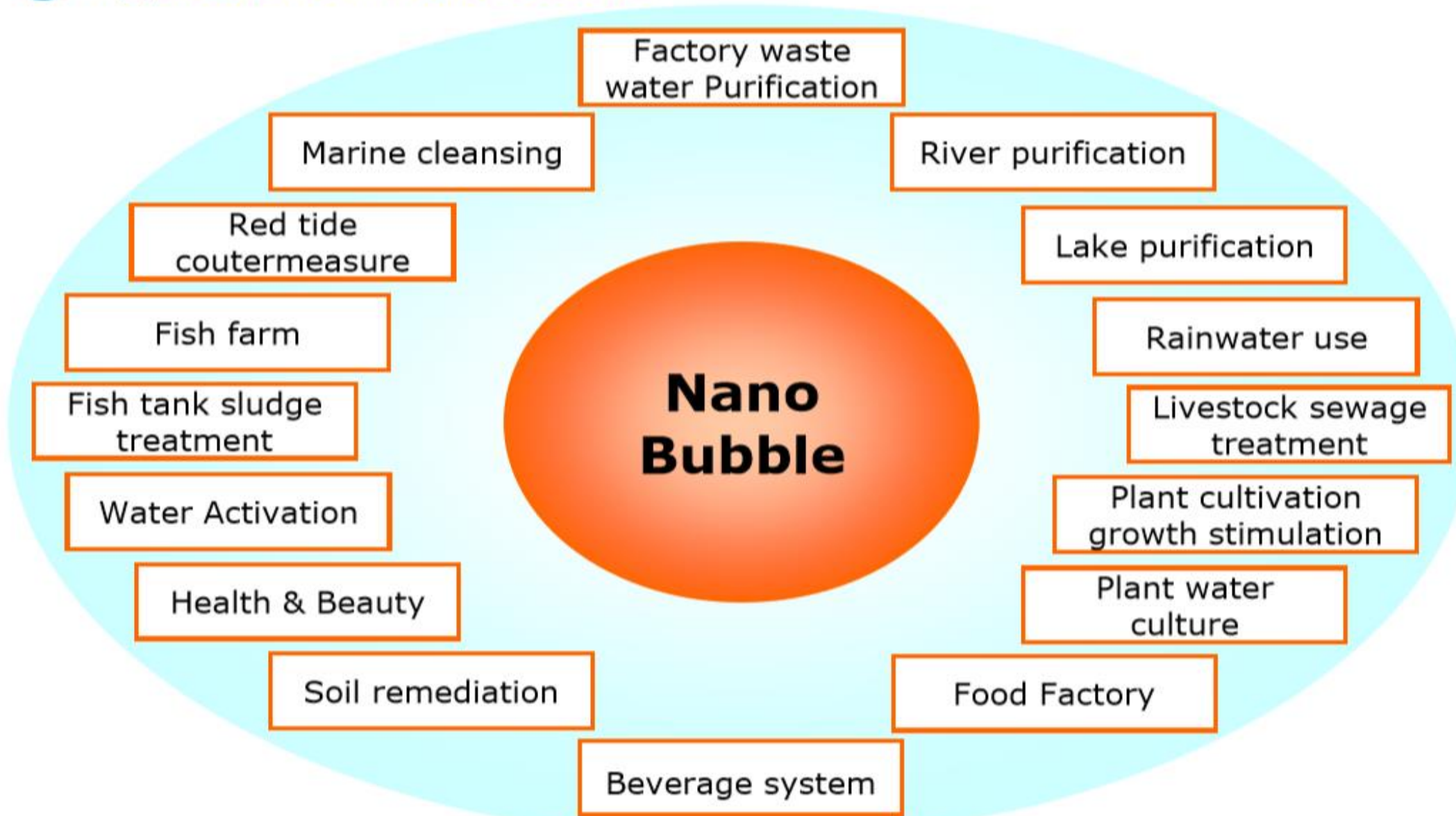
Effects



Features

1. **Environmental protection** → Enabling the processes without either deteriorating water quality or destroying environments of the water body
2. **None of additional chemicals** → Unnecessary to add chemicals for the processes of neutralizations, coagulations, etc.
3. **Cost Effective** → Consuming installation & operation costs and spaces far less than those of conventional systems using precipitation, filtration, etc.
4. **Emulsion effect** → Available to minimize the input of chemicals, through the way of spraying by the emulsion of chemicals with micro bubbles.
5. **Adaptability** → available to use the system either in closed lake or in large open water bodies such as rivers

➡ Applications of Nano bubbles



NANO BUBBLE APPLICATION

Lake, River, Dam, Bay	Water quality improvement, Sludge removal, Odor removal, Algae decomposition & prevention, Eutrophication prevention, Sterilization T-N • T-P • SS • BOD • COD • PH • DO • ORP Improvement
Agriculture	Plant growth improvement, eutrophic materials decomposition, microbial activation, Improving resistances to diseases & coldness, Sugar contents increase, Soil improvement, Sterilization, Soil moisture improvement
Livestock	Livestock growth promotion, Disease -resistance improvement, Meat quality & milk quantity improvements, Promoting sewage treatment, Odor removal
Beverage	Easier mixing of materials, Hydrogen & Oxygen dissolving, Alkaline-ionized water
Source water, Pool	Residual chlorine removal, Trihalomethane(THM) removal, Sterilization (E.coli)
Food & Industrial drainage	Raw material cleansing, Sterilization intermediate processing, Reducing organic chemicals, Decomposition and decoloration of dyes and bleaching solution, Solutions for volatile organic compounds (VOC), Preventing soil contamination
Aquaculture	Removing food scraps, Skin diseases improvement, Activating plankton production, solution for red tide
Waste treatment plant	Removing odor, Improving COD•BOD, Removing hazardous substances
Beauty & Cleansing	Non-detergent washing, Skin improvement, Disinfection cleansing, Atopy improvement, Anion effect

Oxygen & Hydrogen Generator by PEM Titanium Electrolyzer

BBN electrolysis cell is light, highly effective, energy-saving and of environmental protection, producing hydrogen and oxygen through the electrolysis of pure water (without adding alkali). That's PEM technology. The electrodes, as the core of cell, are highly active catalytic electrode with nearly zero distance between the electrodes, which is formed by integrating composite catalyst with ion membrane with high electrolytic efficiency.

Working Principle

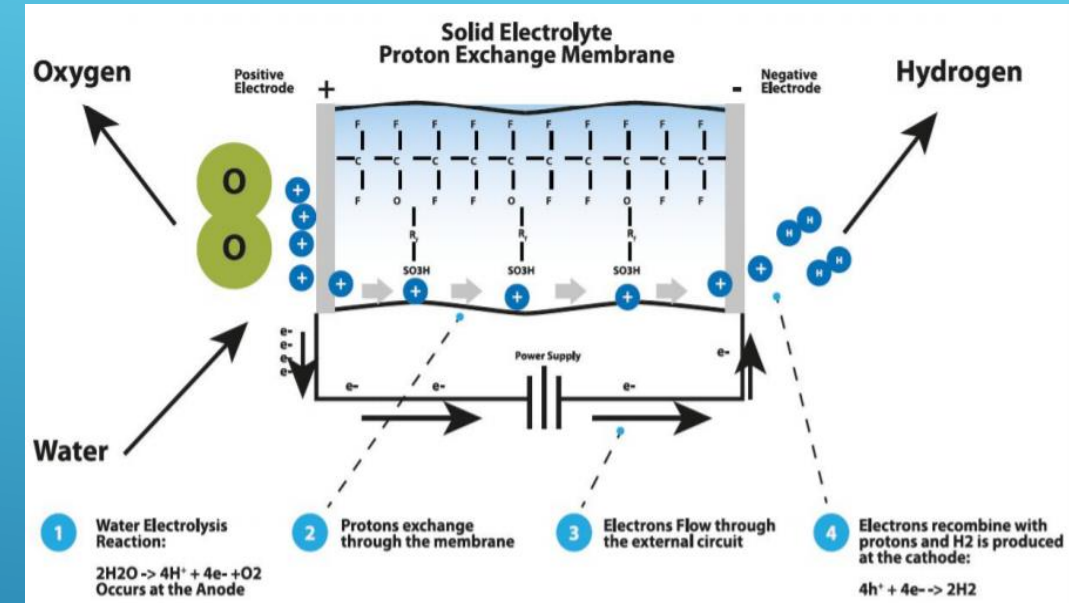
1. The proton exchange membrane (PEM), which only allows water and positive ions to cross between compartments. The membrane also serves as the electrolyte in the cell, eliminating the need for hazardous liquid electrolytes such as concentrated potassium hydroxide. PEM water electrolysis simply splits pure deionized water (H₂O) into its constituent parts, hydrogen (H₂) and oxygen (O₂), on either side of this membrane. When a DC voltage is applied to the Electrolyzer, water fed to the anode, or oxygen electrode, are oxidized to oxygen and protons, while electrons are released. The protons (H⁺ ions) pass through the PEM to the cathode, or hydrogen electrode, where they meet electrons from the other side of the circuit, and are reduced to hydrogen gas.

The two reactions that occur in the cell are as follows:



4. Thus, the only possible components of the streams are hydrogen, oxygen and water moisture, as shown in the following Figure

PEM active rich hydrogen water generator makes combined hydrogen breathing with Oxygen



Technical Parameters

1. hydrogen flow:

1000/1200/5000/17000/34000ml/min

2. oxygen flow:

150/250/500/600/2500/8500/17000ml/min

THE HEALTH BENEFITS OF HYDROGEN RICH WATER

ANTIOXIDANT : Hydrogen exhibits beneficial effects on tissues in organ transplantation and in the treatment of cancers and skin diseases, among other uses. For example, during cancer radiotherapy ionizing radiation causes damage to normal tissues, especially lung, heart and other organs.

DIABETES : Supplementation of hydrogen-rich water improves lipid and glucose metabolism in patients with type 2 diabetes or impaired glucose tolerance.

CANCER CELLS : Hydrogen exhibits beneficial effects on tissues in organ transplantation and in the treatment of cancers and skin diseases, among other uses

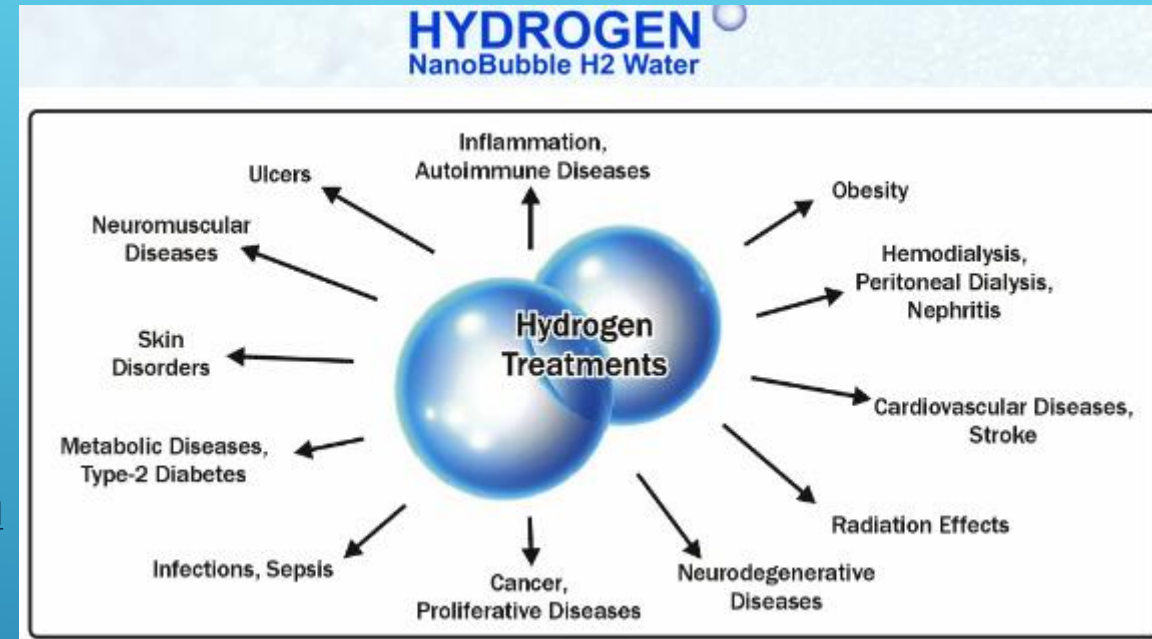
ANTI-AGING : This same publication examined the ability of H₂-enriched water to stimulate production of type-1 collagen in skin fibroblasts and keratinocytes after UVA-exposure. They found that type-1 collagen synthesis was increased over 2-fold after 3-5 days in the H₂-enriched Water samples compared to controls

BRAIN INJURY : An important cause of injury worldwide is body trauma, leading to disability or death. Hydrogen has been experimentally used as an adjuvant to treat injuries in various organs of the body, particularly in the brain, lungs, kidney, retina, and glands, such as liver and pancreas.

ATHLETIC PERFORMANCE : it has been said that hydrogen can function as antioxidant, so we investigated the effect of hydrogen-rich water (HW) on oxidative stress and muscle fatigue in response to acute exercise.

HEART FAILURE : Prevent Metabolic Syndrome. A disorder characterized by a constellation of symptoms (including obesity, insulin resistance, high cholesterol and hypertension), metabolic syndrome is associated with an increased risk for cardiovascular disease and type 2 diabetes.

INFLAMMATION : The cells that are repeatedly exposed to inflammatory mediators will have the genes that code for inflammatory response proteins switched on, and thus be in a constant state of inflammation. This leads to diseases and health conditions that are strongly linked to inflammation, including asthma and cardiovascular diseases. Some of the molecules in the body that can instigate a change in gene expression are: Nf-kB, TNF α , and reactive nitrogen species such as nitric oxide and peroxynitrite. Hydrogen attacks inflammation



PART B: 500ML Bottle Blowing Machine Quotation

1	PET blowing machine	OGB-6S	1	- Output: 6000BPH - Bottle volume:0.1L-1.5L 6cavity with single servo motor
2	High pressure air compressor	3-34CSH-1830	1	- Capacity: 4.8/30 - Brand name: Shangair
3	Low pressure air compressor	CW-2.2/12	1	- Capacity: 4.8/30 - Brand name: Shangair
4	High pressure air storage tank	1.0/30	1	Capacity: 1.2/30
5	High pressure air cooling dryer+air filter	5.0/30	1	- Capacity: 5.0/30 - With 2pcs of air filter
6	Water chiller	5HP	1	
7	Bottle mould	250ml	1	
6000BPH Bottle Blowing Machine			Ask Us	Part B total price

OGB-6S Blowing Machine Specification



ITEM	Unit	OGB-6S
	Theoretical output	Pcs/h
PRODUCT	Max. Volume	L
	Max. height	mm
	Max. diameter	mm
MOULD	Number of cavities	/
	.mould plate dimension(LxH)	mm
	mould thickness	mm
	Mould opening stroke	mm
ELECTRICAL	Power	
	Total power	KW
	Heating power	KW
AIR SYSTEM	Operation pressure	Mpa
	Action air consuming	M3/min
	Blowing pressure	Mpa
	Blowing air consuming	M3/min
MACHINE	Main body dimension(LxWxH)	M
	Main body weight	KG
	Preform autoloader	M
	Preform automatic weight	KG

2. 3-34CSH-1830

high pressure air compressor

型 号 (Model No)	: 3-34CSH-1830
排 气 量 (Air discharge)	: 4.8m ³ /min
工 作 压 力 (Pressure)	: 3.0Mpa
功 率 (Motor power)	: 3×18.5KW
储 气 罐 (Tank)	: 无 (No)
转 速 (Running speed)	: 730 r.p.m
重 量 (Weight)	: 2300KG
包 装 尺 寸 (Package)	: 4200×1200×2000 (mm)



3. CW-2.0/10

low pressure air compressor

型 号 (Model No)	: CW-2.0/10
排 气 量 (Air discharge)	: 2.0m ³ /min
工 作 压 力 (Pressure)	: 1.0Mpa
功 率 (Motor power)	: 15KW
储 气 罐 (Tank)	: 360L
转 速 (Running speed)	: 820 r.p.m
重 量 (Weight)	: 650KG
包 装 尺 寸 (Package)	: 2000×1000×1900 (mm)



3.cooling dryer

Cooling dryer	UNIT	5.0/30H
capacity	m ³ /min	5.0
Working pressure	Mpa	3.0
Inlet temperature	°C	80
power	HP	1.5
weight	KG	280
Overall dimension	L×W×Hmm	1100×650×1180



4.air filter

Air filter	unit	5.0/30
capacity	m ³ /min	5.0
Working pressure	Mpa	3.0
Inlet temperature	°C	80
power	HP	无
weight	KG	35
Overall dimension	L×W×Hmm	1050×550×550



5.High pressure air storage tank

Air storage tank	Unit	1.0M ³ /3.0 Mpa
Capacity	M ³	1.0
Working pressure	Mpa	3.0
Overall dimension	L×W×H mm	1000×900×2300
Inner diameter	Mm	800
Weight	Kg	450



6. Air cooled water chiller

Specification↵		XC-05ACI↵
Parameter↵		
Model↵		
Cooling capacity↵	Kcal/h↵	12040↵
Compressor↵	All-closed vorticity↵	
Compressor power↵	Kw↵	4.4↵
Refrigerant↵	R22↵	
Chilled water pump power↵	Kw↵	0.75↵
Max flow rate of chilled water↵	L/min↵	115↵
Flow water inlet and outlet pipe↵	‘↵	1’↵
Cooling fan power↵	Kw↵	0.5↵
Inner dimension↵	mm↵	1100×700×1400↵
Water tank capacity↵	L↵	88↵
weight↵	Kg↵	240↵



NO.	Name	Photo	Qty	Unit price USD	Total price USD
1	OGB-6S automatic blowing machine		1set		1
2	Preform conveyor		1set		
Auxiliary Machine					
3	3-34CSH-1830 high pressure air compressor		1set		
4	CW-2.0/10 Low pressure air compressor		1set		
5	1.0/30 High pressure air storage tank		1set		
6	50/30 air cooling dryer		1set		
7	Air filter		2pcs		
8	XC-05ACI Air cooled water chiller		1set		
9	Bottle mould	250ml, 6cavity	1set		
Total Price					1

PART C: 500ML FILLING AND PACKING SYSTEM					
1	Air conveyor		10m		
2	Washing filling and capping machine	CGF18-18-6	1		✧ capacity: 6000BPH ✧ Washing head: 18 filling head: 18 capping head: 6 ✧ material: SUS304 ✧ inverter: Mitsubishi ✧ PLC: Mitsubishi ✧ Touch screen: weinview ✧ Spray pump: lingxiao pu mp ✧ Photoelectric switch:auto nics
3	conveyor	SS-1	10m		✧ Chain material: PA66 ✧ Chain plate material:SUS304
4	Lamp checker	DJ-1	1 pc.	Free	

5	ink printer	PM-1	1 pc.		✧ Capacity: 6000BPH ✧ ink printer
6	Auto label sleeve machine	OG-100	1 pc.		✧ Capacity: 6000BPH ✧ Electrics: schneider ✧ inverter: Panasonic ✧ Touch screen: WEINVIEW ✧ Dimensions: 2100*1100*2000mm ✧ Label sleeve system include: label sleeve machine, shrink tunnel, steam generator
7	Auto film pack shrink machine	DFR-150A	1 pc.		✧ Capacity: 5-10 packages/min ✧ Power: 16KW ✧ Air cylinder: AirTAC
Total Filling and packing system price				Ask Us	✧ PART C Total price
TOTAL PRICE Part A+ Part B + Part C				Ask	✧ Part A +B+C Grand total

Total Plant for Nanobubble(Hydrogen)water Part A + Part B + Part C + CIF + Royalty= US\$500,000.00

PART C: PARAMETERS FOR FILLING AND PACKING SYSTEM

1. 18-18-6 washing filling and capping 3-in-1 machine

Model: CGF18-18-6

Number of heads: 18 washing heads, 18 filling heads and 6 capping heads

Capacity: 6000B/H (500ml PET standard bottle)

Material: The material which contact directly with the liquid is the SUS304 (Food grade) made in china. The transmission mechanism and the gear are equipped with firing A4 carbon steel. The 3-in-1 is mainly used to fill water.

6. Disposition :

6.1、PLC: MITSUBISHI

6.2、Touch screen: WEINVIEW

7. Volume of PET bottle : 0.3L-1.5L

8. Diameter of bottle: 50-91mm

9. Height of bottle: 170-330mm

10. Cap diameter: plastic screw type cap

11. Filling temperature: Normal

12. Filling pressure: Normal

13. Filling precision: $\pm 2-3\%$

14. Pressure of washing: 0.2Mpa

15. Washing consuming water: 600kg/h

16. Air consumption: 0.4m³ /min

17. Power of main motor: 3.13KW

18. Dimension: 2450 × 1950 × 2200mm



Cap Loader



Air Conveyor

1. Model: SS-I
2. Material: Stainless steel SUS304
3. Length: 2m
4. Manner of bottle inputting: Bottle handling with air delivering.
5. Power of motor: 0.75KW



CGF 18-18-6 is designed and manufactured based on the latest technology from Germany and Italy, for the demand of technical requirement of beverage production, as pure water and mineral water.

The filling mono-bloc works as follows:

Bottles are fed from conveyor chain into the filling machine mono-bloc via star wheel. Bottle clamp installed on the rotary wheel of the rinse will grip bottle mouth and make a 180° turn along a guide track to face the bottle mouth downward. In designated section of the rinse, rinsing water will jet out from special nozzles to flush bottle inside wall.

After rinsing and dripping, bottles gripped by bottle clamp will make another 180° turn along a guide track to resume bottle mouth facing up position. Clean bottles are discharged out of the rinse by a star wheel to feed the filler.

After entering the filler, bottles are retained by neck supporting carrier plates, which are actuated by bottle carrier mechanism to raise them to engage with filling valves. Filling valves are opened by bottle presence signals.

After finishing filling, valves are closed by valve closing mechanism to further stop venting to complete the filling process. Bottle carrier mechanism is lowered by a cam to disengage filled bottles with filling valves.

Then bottles are transferred into the capper by a neck handling star wheel. Anti-rotation blades on capping heads will seize the bottleneck to prevent it from rotation and hold it in a upright position.

The twist-on capping head will make revolving and rotating movement along with the machine to finish the complete capping process of

cap picking, placing, twisting, and disengaging under the control of a cam.

A discharge star wheel discharges finished bottles onto discharge conveyor belt to be conveyed out of the filling mono-bloc.

Main features

I . Bottle in feed

- 1) Bottle in feed by combination of in feed screw and in feed star wheel
- 2) Equipped with bottle jam protection device.

II. Rinser



- 1) The rotary wheel is a fully SUS304 stainless steel welded structure.
- 2) The machine applies unique overturning bottle clamp, which is an innovation of our company. This bottle clamp grips bottle at neck position, avoiding bottle mouth thread contamination caused by rubber gripper block of a traditional bottle clamp. Made of SS304 stainless steel, this bottle clamp is hygienic and durable.
- 3) The high efficiency atomizing spray nozzle installed on bottle clamp incorporating technology from Spaying Systems Co. Ltd., is capable of cleaning any part of bottle inner wall, and also saves rinsing water.
- 4) The rinse is driven by driving system positioned inside machine frame via gear transmission.

III. Transfer star wheel

- 1) Made of stainless steel of superior quality.
- 2) Equipped with bottle jam protection device.

IV. Filler



- 1) The filler is designed and manufactured with application of Italy technology, providing hardware guarantee for securing product quality and reducing loss.
- 2) Rotary wheel are fully made of stainless steel SS304.
- 3) Filling valves are designed and manufactured with German technology, made of SS304, featuring high filling accuracy and high filling speed.
- 4) Bottles are raised and lowered by cam controlled lifting cylinder. Valve opening mechanism is actuated by air cylinder.
- 5) Hydraulic pump is float-ball controlled.
- 6) The filler is driven by driving system positioned inside machine frame via gear transmission.

V. Capper



- 1) The capper is most precise part in 3 in 1 filling machine, because the quality of machine is important to running credibility and product quality. The sealing machine in our company has strongpoint as follows:
- 2) The cover track has the device to prevent the reversal cover from passing and pick out the reversal cover. Meanwhile the photoelectric switch can stop the machine automatically when there is no cover on the track, by which it can avoid bottle without cover effectively.
- 3) It also has the bottle check-up switch. Together with cylinder on the joint of the cover track and cover lift, they can control the cover flow and stop it in case no bottle to reduce the quantity of cover.
- 4) Highly effective acentric way for cap sorting to reduce the abrasion.
- 5) It has the check-up device to control the cover lift.

2. Ink Jet Printer



This printer has a built-in pump without an external air source. The printer's lower solvent consumption offers further savings from our great value ranges.

The printer's sealed stainless steel casing is compatible with various harsh industrial environments. And its LCD display together with its menu command can make operation much easier.

This printer can print up to three lines of fonts and be integrated into high-speed production lines. Its functions and performance have reached that of international standards of the same category. Automatic ink viscosity measuring and control, fault alarm indicator and automatic hydraulic system flushing can combine to ensure the continuous stable operation of this system.

This printer is capable of creating a wide range of graphics, languages, numbers and characters. Users can select different high-quality and high-speed printing modes according to their own needs. The RS232 portal provides this printer with the access to a computer or network by means of Kenuohua software.

Features and Benefits:

- User-friendly large LCD display (240x64 dot)
- English, Chinese characters and numbers printing
- 26 messages (79 characters per message) database input/output
- Brand/logos/symbols creation
- Automatic ink viscosity measuring and control
- Fault auto-check indicator
- Automatic hydraulic system flushing
- Flexible date choices and real time clock
- Automatic synchronous serial number
- Solid and durable stainless steel casing

Technical Specifications:

- Dimensions: 600mm x 468mm x 300mm
- Weight: 38kg
- Length of print head tube: 3m
- Power supply: $\sim 220V \pm 15\%$, Rated current: 2A
- Ambient temperature: 5-40°C,
- Relative humidity: 10-90% non-condensing

Inkjet Printing Features:

- Character matrix: 7x5, 7x7, 10x7, 12x12, 16x10, 16x16, 24x8
- Lines of printing: Up to 3 (7x5, 7x7)
- Printing speed: Up to 1076 characters/second (7x5 single line)
- Variable characters/languages/logos/fonts printing
- Timing and counting printing
- Reversal and inverse etc., four directional inkjet printing
- Automatic show of products counting, batch numbers, shift numbers
- Message delayed printing
- Bold: Up to 9 times
- Printing height: (7x5) single line. 2.5-5mm
(16x16) single line. 5-10mm

3. Auto Label Sleeve Machine



OG-2000 Shrink tunnel



OG-1200 Steam generator

Automatic label sleeve machine

Machine size : 2100L*1200W*2000H (mm)

Machine body material and weight : SUS304 , 700Kgs approximate (Main machine)

Applicable bottle diameter rang: $\Phi 28$ mm- $\Phi 125$ mm

Applicable bottle height : 30 mm -250 mm

Label length : 28 mm ~120mm , Label edge transparent should more than 5mm

Label thickness : 0.03 mm ~0.13 mm (PVC, PET, OPS, applicable)

Paper pipe inner diameter: 5"~10" , can be adjusted freely.

Capacity : 100b/m(Round bottle, after filling , bottle outside should be dried , Label length within 100mm)

Power specification: $\phi 3,380/220$ VAC

Power consumption: 4.2KW

Conveyor : Standard 2M (This machine not include conveyor connector, motor.)

Producing efficiency : 100b/m , Label feeding round plate Micro computer control ; Auto sensor ; Change label quickly , Cut precisely.

PM-100 Model the capacity is smaller than the other model but it takes the same PLC, Fixing Module, Stepping motor, Touch screen as the higher speed machines.

5. Applicable bottle: All kinds such as round bottle, square bottle, flat bottle, curve bottle and so on

OG-2000 Shrink tunnel specification.

The new type shrink tunnel is based on different kind bottle and different shape bottle like round bottle, square bottle and flat bottle. This machine is easily operated and easily adjusted. The steam spurting is using seamless tube.

OG-1200 Steam generator

Input power specification : 3 380V

Power consumption : 18KW

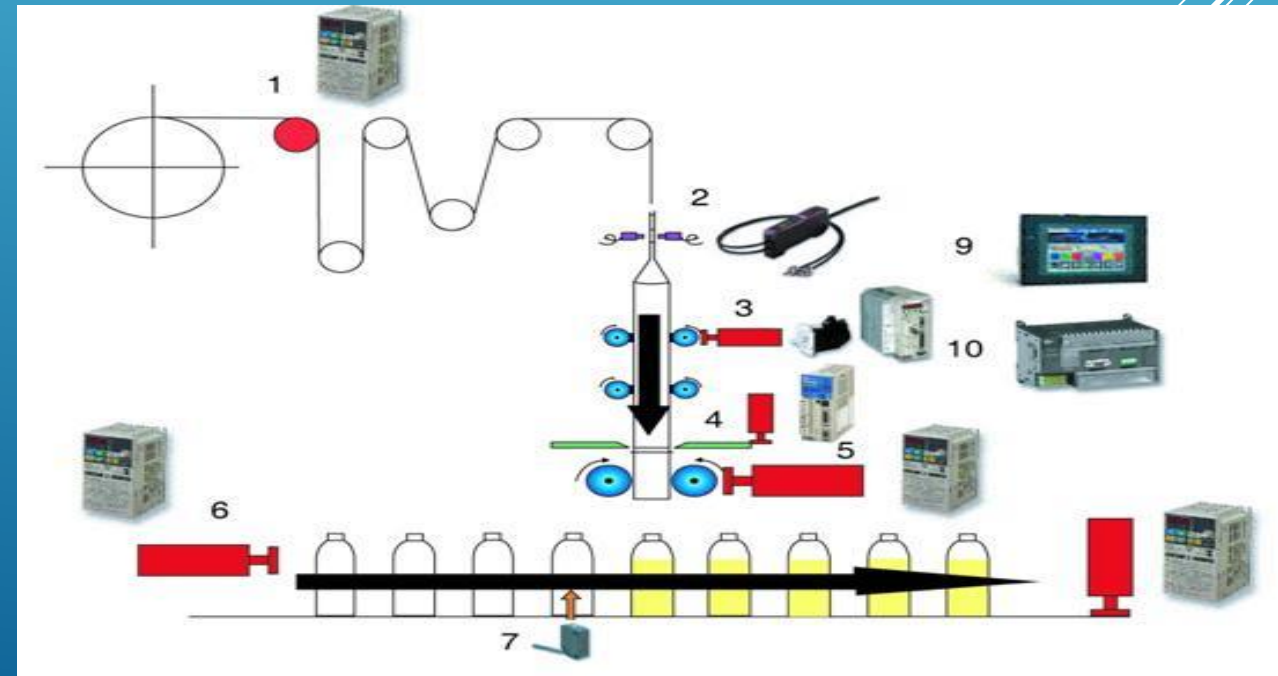
Steam pressure : 0.25-0.4Mpa

Steam capacity : 24Kg/h;

Size : 600L $\times$ 550W $\times$ 1200H

Weight : 196Kg

Technical process:



4. AUTOMATIC PE FILM PACKING MACHINE



1. Bottle entering→ Auto unscrambling bottle→ Pushing bottle→ Heat sealing-Cool cutting →Pressing PE→ Shrink→ Cooling.

This machine applies air-stirring mechanism in pushing bottle and hot sealing-cool cutting. (it uses flat silk pulse seal, the saw tooth knife cuts, the unique heat seal-cool cut mechanism, has guaranteed the packing agglutination, reliable, and artistic.

Automatic unscrambling bottle's appliance makes bottle changing more quickly and conveniently.

Delivering film mechanism and the tensity voluntarily adjusts.
PLC programmable procedure control system.

Double air blowers, guarantees the temperature balance in the shrink stove with PAD temperature controller, that apparently saves energy.

It applies wing shape stainless steel heating system, which is durable for long time use.

The heatproof Bolivian filament special fluorine dragon transportation net belt is used in shrink part to ensure the steady of transportation and high strengthen wear proof.

This machine applies invert speed control net belt conveying mechanism.

The height of the conveyer shall be made towards client's demand, and usually adjusting scope is $800 \pm 30\text{mm}$

The direction of bottle entering can be adjusted according to client's demand.

2. Parameter

2.1 Max package dimension: $L420 \times W278 \times H390\text{mm}$

2.2 Min package dimension: $L210 \times W140 \times H100\text{mm}$

2.3 Material of shrink film: PE、PVC

2.4 Thickness of shrink film: $0.03\text{—}0.15\text{mm}$

2.5 Thermal shrink temperature: it can be adjusted freely under 260°C .

2.6 Max capacity per hour: 720 bags

2.7 Total heating power: 18kw

2.8 Actual power: 15kw/h

2.9 Suitable voltage: 380/220V

2.10 Working air pressure 0.6-0.8Mpa, air consumption capacity: $0.3\text{m}^3/\text{min}$.

2.11 Gross weight: 1100KG

3. Basic disposition

Touch screen, and PLC control system.

AIRTAC air-stirring device.

Stainless steel wing shape heating pipe, 12 pieces with 1.5kw per one.

Sino-America Bolivian filament special fluorine dragon transportation net belt

AUTONICS light electricity switch.

Outside pack: Plastic film and wooden case.

Terms and Conditions for JV Partner

A. The total plant Price CIF including royalty & license : US\$1,000,000.-
We don't sell this plant and supply to the business partner under joint venture .
JV Partner (Buyer) should prepare land and factory with 50% investment for the plant.

B. JV contract is signed and JV company is established at the place of JV Partner when US\$500,000(50%) or more is paid by T/T.

C. The total plant is shipped and delivered within 3-5 month while JV Partner prepare land and factory.

Within 7 days after contract and payment, bottle design drawing should be prepared.
Within 10 days after contract and payment, caps should be supplied

D. 3 Years Guarantee after the plant is commissioned and the site service engineer and operator will be trained.

E. JV company will pay the fees of installation engineer, round tickets, meals, accommodation, medical fee including daily expenses

F. Basic Infrastructure (Provided by JV Company)

1. Space for pure/mineral water filling production line in workshop: About 500 square meters with height 4 meters. Adjustable according to the factory.

2. Electricity network: 380V/60Hz (Adjustable according to JV partner's local voltage standard)

3. Wire/cables: wires/cables from customer's general control cabinet to the main control cabinet for pure/mineral water filling production line; all electrical cable from the main control cabinet to each machine.

4. Water supply: ~6 tons per hour for water treatment making pure/mineral water.

5. Heat supply: shrinkable labeling machine have it own steam generator.

6. Means for lifting the machines when unloading and positioning

7. JV Company prepares: water, bottle perform, cap, label, raw water pool or tank and drainage.

G. Energy consumption:
Electricity requirement : 200KW Installed

H. Manpower requirement : 7-10 persons

I. Training

The content of training is structure and maintenance of equipment, control and operation Training is in the workshop of JV company. After training the technician of buyer could master the operation and maintenance, could adjust the process and treat different failures.

J. After sales

The trained JV company engineer will do after sales service and all the wearing parts will be supplied free for 3 years.

We adopt wooden case as package. It is suitable for long-distance transport. By sea

Confirmed by BBN World Company. January 2020

BBN Pure Hydrogen Nanobubble Water Production line is composed of water treatment by plasma reactor, nanobubble generator + PEM Hydrogen Electrolyzer, PET bottle Blowing Machine, Filling, Capping, Labeling, Printing and Shrinkable package Line .

The 6000 BPH (500 ml) hydrogen nanobubble drinking water plant can be supplied and installed within 3-5 months
We want JV to build up drinking water bottling plant but if client want to purchase, we will supply complete turnkey plant

6000BPH 4T/h Portable water treatment system :

River, Stream, Lake or Ground Water Pump → Multi-medium filter → BBN Clean Water Plasma Reactor → Micron Filter → BBN Nano Bubble Generator+ PEM Hydrogen Generator(Optional) → Carbon activated filter → nanobubble hydrogen water

6000BPH 500ml filling and packing system :

Auto bottle blowing system → air conveyor → washing filling capping machine → lamp checker → conveyor → ink-jet printer → labeling machine → shrinkable film packing machine → final product

1, The market price of Nanobubble hydrogen water is 2\$/500ml in Korea

2. Amazon : https://www.amazon.com/dp/B071YSK6LR/ref=dp_cerb_1 US\$4,00/500ml

3. Fish, Food, medical .. Very good effect on cancer: <https://youtu.be/mvBiHcWT1B8>

If we sell U\$0.1/bottle to distributor, $6000 \text{ BPH} \times 24 \text{ Hour} \times 300 \text{ days /year} \times \$0.1 = \text{U\$}4,320,000 \text{ /Year}$

If we sell U\$0.3/bottle to distributor, $6000 \text{ BPH} \times 24 \text{ Hour} \times 300 \text{ days /year} \times \$0.3 = \text{U\$}12,960,000 \text{ /Year}$

If client buy at \$1.00 /500ml, $6000 \text{ BPH} \times 24 \text{ Hour} \times 300 \text{ days/year} = \text{U\$}43,200,000 \text{ /year}$, Huge profit .

We can build 2-3 drinking water bottling plant from the profit every year. For community, Flat complex, hospital, big building, swimming pool, the drinking water plant without bottling line can be installed and connected with water tank and swimming pool.

We can convert any water, river, lake, stream, spring, underground water to drinking water containing nanobubble
Or Hydrogen infusion nanobubble water.

Thank You



BioClean & BlueEnergy Network

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Waste to Energy, Recycling, Water Treatment, Renewable Energy
Global Market Expansion, Strategic Sourcing, Cross-border Financing,