

Employing water as fuel. Surpassing in Economy, Precision, and Safety!

Precision hydrogen gas generator

SUNWELDER

MODEL: SW-122A

MODEL: SW-125A

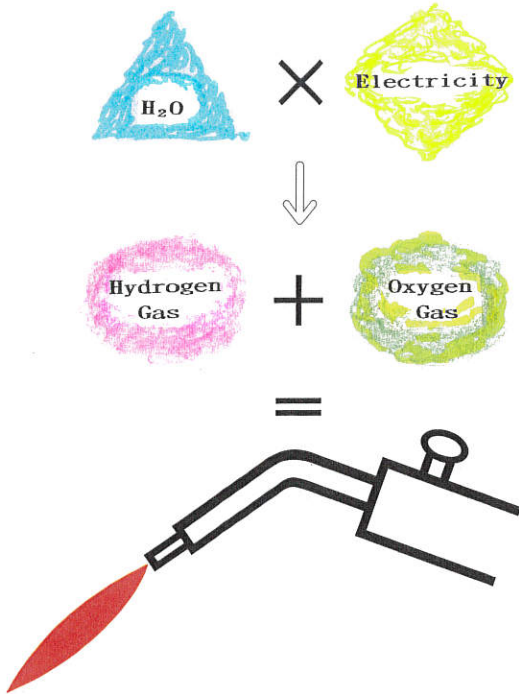


SUN WELL CO.,LTD

What sets **SUNWELDER** apart from the competition?

FIRST

The hydrogen & oxygen gas generator "SUNWELDER" was innovated by the theory of electrolysis of water, which follows British physicist Faraday's "The basic Electro-physical law". Sunwelder electrolyzes water to generate two parts of hydrogen gas to one part of oxygen gas and mixed them in the Gas Generator Tank. Our exclusive **Pressure Control System** constantly maintains the gas generating pressure against the set pressure, thereby allowing Sunwelder to be applied in the field of automated as well as robotized production lines such as precision brazing, soldering, burning treatment for semiconductor, and removing burrs of resin products, where stable and precise heat source is required.



NEXT

Safe, stable, and soot-free clean gas attains high-temperature flame, 2,000°C with alcohol and 2,800°C without alcohol. When in use of methyl alcohol, a torch flame gets **high reducing character** which produces anti-oxidation effects suitable for soldering and brazing. Furthermore, the torch flame is a very **narrow and straightforward flame** and can be throttled down to a micro-tiny flame size (Minimum torch tip inner diameter 0.135φ), thus providing optimum condition for soldering and brazing without heat-affecting the surroundings. The high level of performance, which is just as good as that of a laser beam welding machine, can be attainable from Sunwelder.

FINALLY

《 Safety & Economy conscious 》

Safety - Sunwelder utilizes the generated gas as a torch flame under its generated pressure (0 ~ 50 Kpa) as it is, without compression. So, there is no danger of explosion, No need to look for high pressured gas handling experts.

Economy - Low running cost because it is the water and electricity that creates the mixture of gas. Low initial cost because plural numbers of hand torches can be applicable depending on the torch tip sizes. Long life time of more than 10 years. Low overhaul charge and after-sales service. Rental service during overhaul of the machines will be available so as not to affect automated production lines.

《 Features & Function 》

With Sensor Pressure Control, Sunwelder is able to supply the mixture gas stably. Generator tank, Cooling & Evaporator tank are equipped with level gauge, drain valves, and Error Signals (Pressure OK signal/ Solution shortage signal). Compact design because Cooling & Evaporator tanks have been built into the machine body. Wide variety of optional items for automated machines and equipments; torch tips, hand torches, flame power switching system, Sun saver (automatic ignitor/extinguisher), Sunlighter, soldering wire feeder, Sunliner (Precision feeder of brazing material) are available.

SW-122A



Precision hydrogen gas generator "Sunwelder" is highly reputed in the area of precision soldering & brazing, burning treatment of semiconductor, removing burrs of resin products, flame polishing, point quenching & annealing, glassware fabrication, where clean, precise, and stable heat source is specifically required. In addition, our exclusive and epochal idea of

SENSOR PRESSURE CONTROL SYSTEM is designed to control set pressure, thereby allowing Sunwelder to be assembled or combined with automated as well as robotized production lines of rapidly and highly diversifying precision industries.

SW-125A



《 MAJOR APPLICATIONS 》

- Electric mechanics & Electronics industry
- Precision machinery industry
- Automobile industry
- Optical & Spectacles industry
- Physical & Chemical industry
- Glass & Resin industry
- Precious metal & Dental instruments industry
- Various kinds of soldering & brazing

- ◇ Burning of semiconductors & electronic parts
- ◇ Ball bonding of semiconductors
- ◇ Soldering of terminal of coil & PC board
- ◇ Soldering of terminal connector for harness
- ◇ Soldering & Brazing of ceramic PC board
- ◇ Removal of enameled wire coating
- ◇ Soldering & Shrinkage of motor lead wire
- ◇ Soldering & Brazeing of thermocouple
- ◇ Removal of burrs of resin products
- ◇ Flame polishing of acrylic resin
- ◇ Glass & ceramic ware processing
- ◇ Pipe-Soldering for refrigerator & air conditioner
- ◇ Soldering & Melting of precious metals and the materials for dental treatment
- ◇ Sealing soldering of endoscope and electron tube
- ◇ Soldering & Brazing of Bourdon-tube of pressure gauge
- ◇ Soldering of fishing gear
- ◇ Soldering of thermal fuse
- ◇ Heat source for laboratory & school use
- ◇ Annealing & quenching of miscellaneous items

SW-122A with W·Evaporator & Automatic feedtank

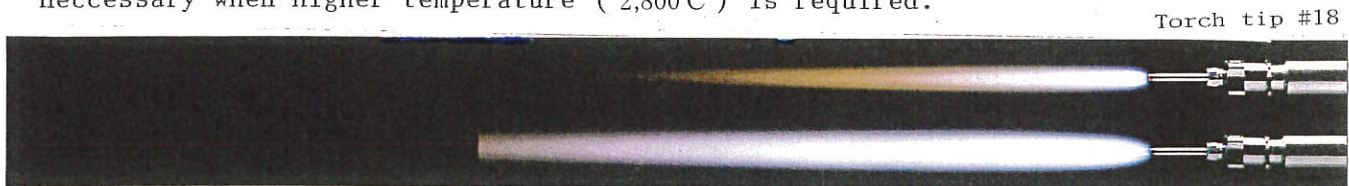


◆ TORCH FLAME ◆

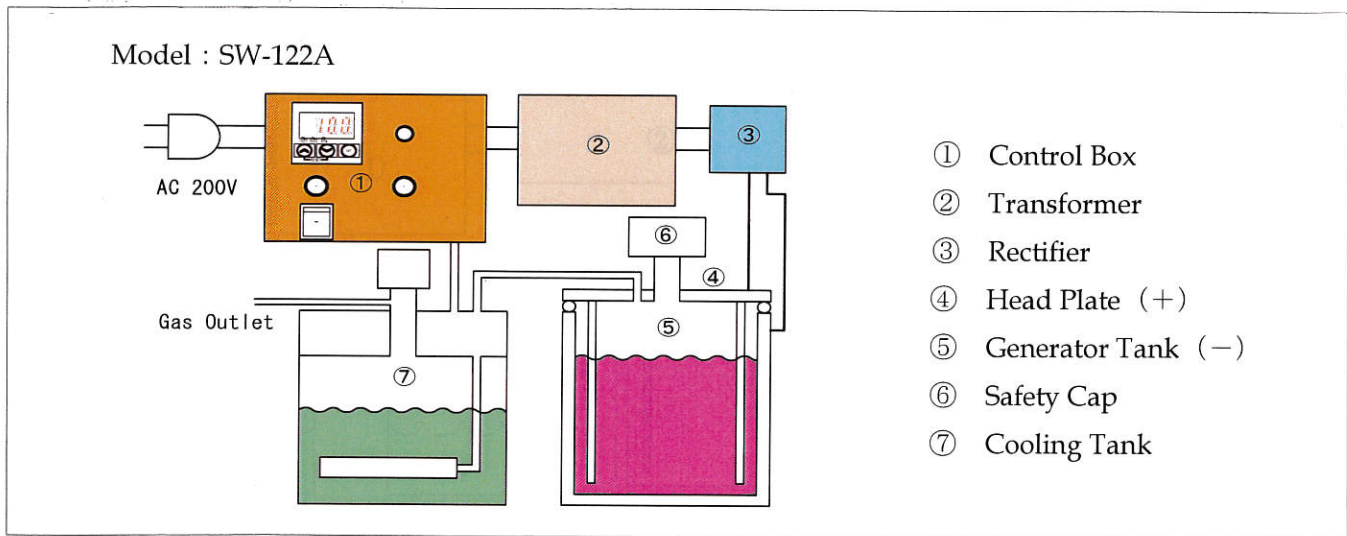


◆ THE ROLE OF METHYL ALCOHOL ◆

By giving high reducing character to the torch flame, methyl alcohol creates the flame with larger volume and lower temperature of 2,000°C, which produces excellent effects on soldering or brazing, and also it helps to prevent the weldment from oxidation. Methyl alcohol is not necessary when higher temperature (2,800°C) is required.

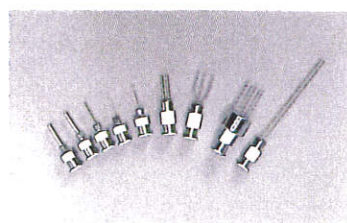
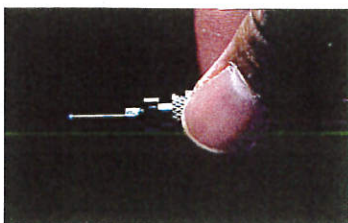


◆ PRINCIPLES ◆



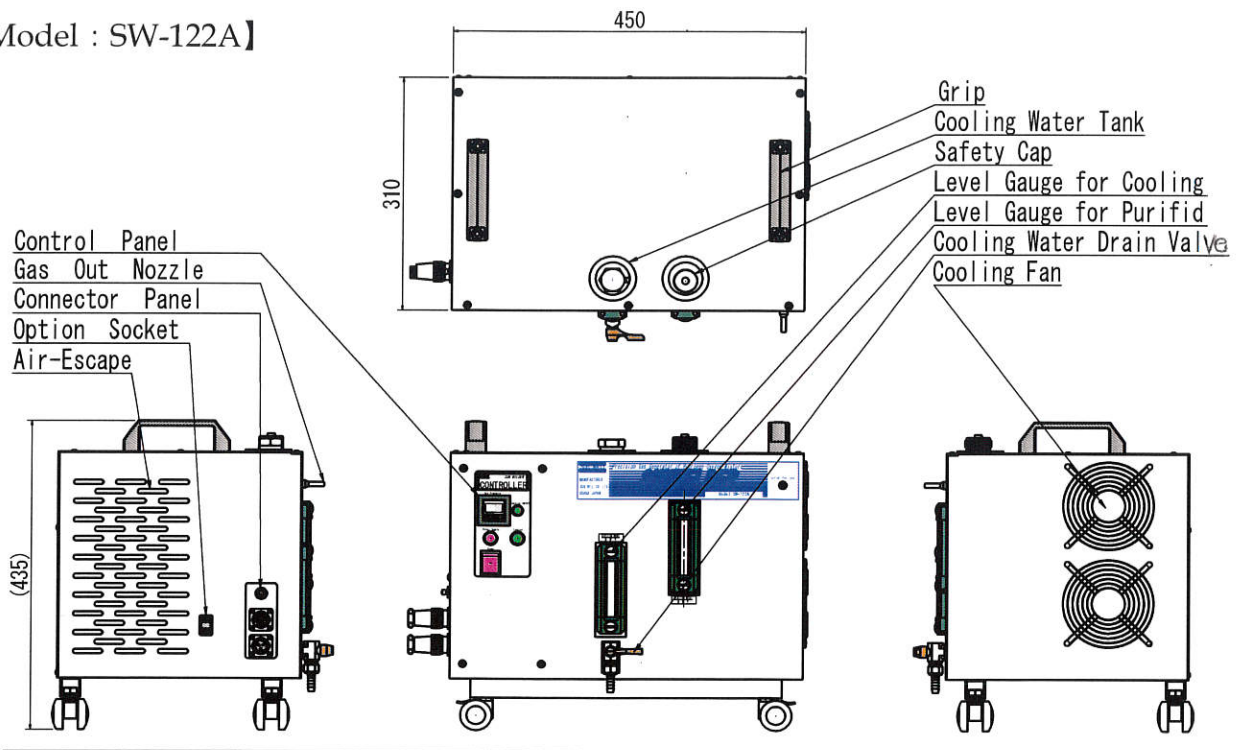
◆ AVAILABLE TORCH TIP SIZES ◆

TIP #	12	13	14	15	16	17	18	19	20	21	22
Inside ϕ	2.270	1.940	1.640	1.430	1.250	1.110	0.915	0.715	0.610	0.520	0.418
TIP #	23	24	25	26	27	28	29	30			
Inside ϕ	0.340	0.311	0.261	0.250	0.205	0.175	0.150	0.135			

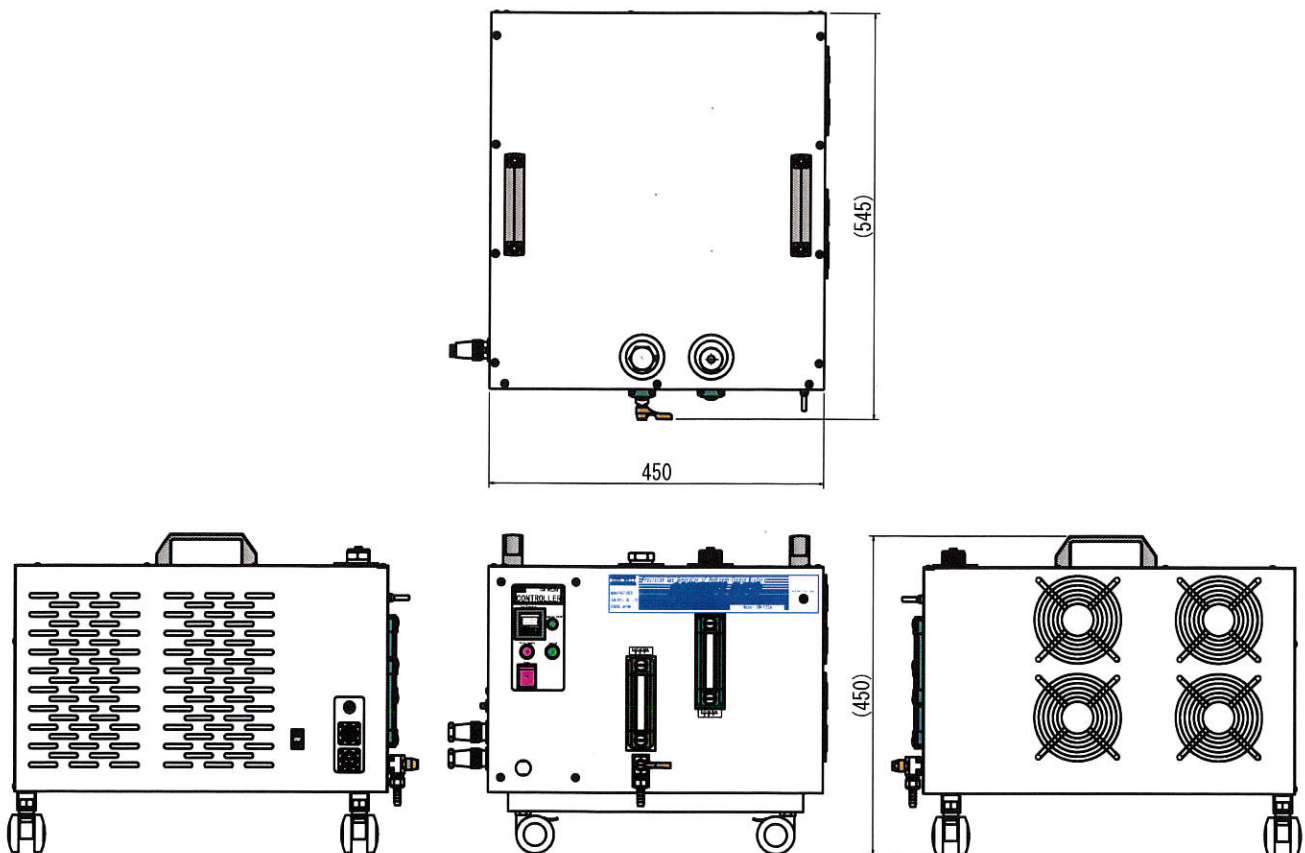


OUTLINE DRAWING

【Model : SW-122A】



【Model : SW-125A】



Equipment Specifications (with Double evaporator tank type)		
Model	SW-122A	SW-125A
Maximum gas generation capacity	170 L/hr (1atm 25°C)	340 L/hr (1atm 25°C)
Applicable torch tip	#17-#30	#14-#30
Maximum flame temperature (When non-alcohol is used)	Approx. 2,800°C	
Maximum flame temperature (When alcohol is used)	Approx. 2,000°C	
Volume of electrolyte in generator tank	3 L	6 L
Volume of cooling water in cooling water tank	Approx. 700 cc	
Volume of evaporator solution in double evaporator tank unit	Approx. 1,800 cc	
Volume of cooling water in double evaporator tank unit	Approx. 1,200 cc	
Consumption of distilled water (for maximum gas generation)	70 cc/hr (Experiment value)	140 cc/hr (Experiment value)
Consumption of evaporator solution (for maximum gas generation)	20 cc/hr (Experiment value)	40 cc/hr (Experiment value)
Pressure sensor, Pressure setting device	OMRON E8F2, Manual setting	
Pressure setting range	0.0-50 kPa (Max)	
External error signal	Incorporating pressure OK signal and generator tank solution shortage signal	
Generator tank specification	With level gauge and drain valve, Inside of equipment	
Generator tank solution (A)	Electrolyte	
Generator tank refilling solution	Purified water (Distilled water)	
Cooling water tank specification (B)	With level gauge and drain valve	
Cooling water for cooling water tank (B)	Purified water (Distilled water)	
Evaporator tank solution (C)	Evaporator solution (alcohol)	
Evaporator tank cooling water (D)	Tap water	
Evaporator solution refilling interval	Approx. 8 hours	Approx. 4 hours
Electrolyte refiling interval	1,000 hours	
Cooling water overall replacement interval	200 hours	
Evaporator solution overall replacement interval	100 hours	
Applicable torch	Various types of hand torches, torch for the equipment, etc.	
Flame extinguishing method	Air extinguishing, Electromagnetic valve, Sunsaver, etc.	
Ambient temperature	5-30°C	
Input voltage	100 VAC (±5%) 50/60 Hz	200 VAC (±5%) 50/60 Hz
Input current	12 A (Breaker 15 A)	
Gas generation pressure control method	Control with pressure sensor	
Dimensions of equipment (including casters)	W = 450, D = 310, H=367mm	W = 450, D = 500, H = 380 mm
Weight of equipment (excluding solution)	56 kg	82 kg

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