

HYDROX GAS Generator



Company Introduction



Low-carbon green growth energy developing company

Due to the depletion of fossil fuel and global warming, the world is seeking to develop and use pollution-free, clean energy to prevent further environmental disasters.

The interest in pollution-free and clean energy is growing: a multitude of companies are aware of the significance of developing environmentally friendly energy in order to return their earned profit to the society.

In 1995, EO2 Engineering started the development of mass hydrogen gas generators (Hydrox) with 38 research scientists, completed its' development in 2003 and has since sold the Hydrox Gas Generator to major companies from home and abroad. In August 2016, EO2 Engineering was reinvented as SM Innovation, a blue-chip company whose leading-edge technology is recognized as the best in the field of mass hydrogen gas generators.

Hydrogen gas is a fuel obtained by electrolyzing water and it is eco-friendly alternative energy which does not produce carbon dioxide when burned. It is therefore garnering the attention as new renewable energy in 21C to prevent the global warming also with superb economic feasibility.



Company Introduction

History

Year	Detail	Year	Detail
2005.03	Incorporated	2008.04	Signs an MOU with POSCO-POSAC
2005.04	Exports E-20M , E-3M to Shenyang in China	2008.12	Exports the industrial boiler (for auxiliary fuel) to Japan
2005.06	Demonstrates cutting machine in Gwangyang POSCO	2009.01	Supplies the gas generator for cutter to POSCO Pohang Iron and Steel Company
2005.07	Supplies to Yeongdo Shipyard of Hanjin Heavy Industries & Construction Co., Ltd	2009.04	Signs a business agreement on new renewable energy with College of Engineering of Jeonju University
2006.03	Registered as venture company (Small and Medium Business Administration)	2009.06	Designated for the task with an option to purchase by SMBA (joint development in lineal heating with Daewoo Shipbuilding and Marine Engineering Co., Ltd.)
2006.12	POSCO Gwangyang Edge System (E-80M)	2010.02	Exports 80M to power plant in Mexico (for auxiliary fuel of bunker C oil)
2007.01	Exports E-6M to Hydroxy Americas. Inc in the U.S. and 3 units of E-6M to CMA Corp in Australia	2010.09	Completes the construction of 160M POSCO special steel (for cutting scrap)
2007.06	Supplies 6 units of E-6M to Dooill Enterprise Research Institute	2011.04	Exports E-6M to Ham in Okinawa, Japan (for auxiliary fuel)
2007.07	Signs a contract of supplying E-20M with Fujimura Trade Inc. in Japan	2015.02	Korea Western Power CO.,Ltd. E-20M
2008.01	Exports the gas generator for cutting slab to CORUS Corporation in Netherlands	2016.08	SM Innovation Co.,Ltd. Incorporated

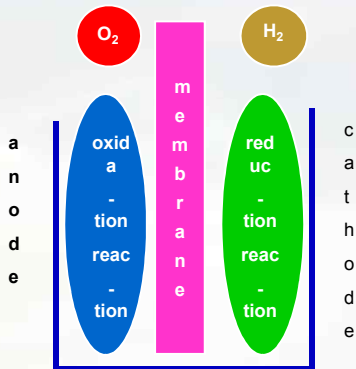
Industrial Property Right



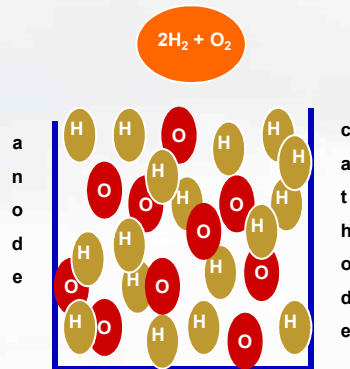
Year	Detail	Year	Detail
2011.05	Establishes the enterprise affiliated research institute (Korea Industrial Technology Association)	2007.01	Gas cutting device
2011.08	Registered as venture company (Small and Medium Business Corporation)	2006.08	Gas cutting tip
2010.10	Lineal heating device for hydrogen and oxygen mixture gas	2006.04	Mixture gas combustion system
2010.10	Nozzle tip for preventing the back fire and blowback of hydrogen and oxygen mixture gas in lineal heating device	2005.06	Cooling system for hydrogen and oxygen mixture gas generator
		2005.06	Power pack for hydrogen and oxygen mixture gas generator

Principle

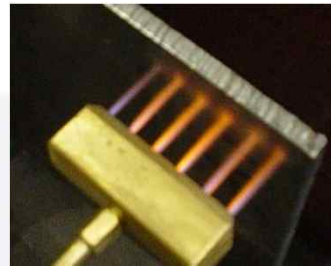
Existing method



HYDROX GAS



Electrolyzing water (H₂O) produces hydrogen (H₂) in cathode and oxygen (O₂) in anode. The Hydrox Gas Generator creates naturally compounded hydrogen and oxygen gas by 2:1.



Features of Hydrox Gas

Economics

- The Hydrox Gas of high temperature will increase the temperature of object over 2,300 °C. It is high efficiency energy that can rise the temperature more than 3,000 °C according to the application atmosphere.
- The efficiency of electrolyzing the Hydrox Gas is 85-90%, and possibly up to 95% at maximum.

Environment

- The Hydrox Gas is hydrogen and oxygen mixture gas for alternative energy harmless to environment: when it is burnt, hydrogen will react with oxygen to reproduce water without making carbon dioxide whereby the global warming can be prevented.

Safety

- It is safe energy as the gas is produced under low pressure without storage tank.
- In cases where hydrogen gas is emitted into air, it will disperse by hydrogen-bonding with carbon or oxygen, its autoignition temperature is 585 °C which is higher than methane and propane, and thus it is safe.



Principle

Noxious Gas

(Unit: mg/10000kcal)

Fuel	Sulfur Oxide	Nitrogen Oxide	Carbon Monoxide	Dust
Hydrox Gas	0	0	0	0
LNG	15	1,519	304	27
Paraffin	1,995	2,530	690	345
Light Diesel	3,706	2,398	654	327
Heavy Diesel	30,704	6,666	606	2,404
Briquette	22,866	2,866	71,484	1,332

Comparison of cutting environment

Picture of cutting	Feature
	<p>[Conventional LPG]</p> <ul style="list-style-type: none"> • Beginning of cutting: enormous volume of noxious yellow fume occurs • Cutting loss: 10 mm (thickness: 200mm) • Cut side: very rough • CO2 occurs
	<p>[Hydrox Gas]</p> <ul style="list-style-type: none"> • Beginning of cutting: no noxious yellow fume occurs • Cutting loss: 4 mm (thickness: 200mm) • Cut side: satisfactory • converts into water (H2O)

Features of Hydrox Gas

Item	Hydrox Gas	L.P.G	L.N.G
Specific gravity (air: 1)	0.41	1.55-2.01	0.6
Weight compared to air	Very light	Heavy	Light
Speed of atmospheric dispersion	Very fast	Stagnant	Fast
Possibility of explosion while stagnant	Safe	Very high	Relatively safe
Moisture within gas	Wet	Dry	Dry
Type of use	No storage container	Stored in container	Stored in container
Type of storage	-	High pressure liquefaction	High pressure compression
Storage container / pipe pressure	-	7~10 kg/cm2	8.5 kg/cm2

Product



E-6M



E-10M



E-20M



E-40M



E-80M



E-160M

Specifications of Hydrox Gas Generator

Model	E-6M	E-10M	E-20M	E-40M	E-80M	E-160M
Maximum gas production	6 N ^m /h	10 N ^m /h	20 N ^m /h	40 N ^m /h	80 N ^m /h	160 N ^m /h
Continuous gas production	5.2 N ^m /h	8 N ^m /h	16 N ^m /h	32 N ^m /h	64 N ^m /h	128 N ^m /h
Power consumption	22Kw	30Kw	60Kw	120Kw	240Kw	480Kw
Water Consumption	3.6ℓ/h	6.5ℓ/h	11ℓ/h	26ℓ/h	52ℓ/h	104ℓ/h
Size	1260x950x1480	1300x1400x1800	1600x2770x2100	1800x2770x1850	TBA	TBA
Type	All-in-one	All-in-one	All-in-one	All-in-one/ Detachable	Detachable	Detachable
Cooling Type	Air	Water	Water	Water	Water	Water

Advantages of Hydrox Gas Generator

Detail	Advantage and Feature	Remark
Electrolytic cell method	Cylindrical electrolytic cell method	A lot of gas generation / High efficiency / Optimized technology
Back fire protection	Self-developed back fire protection technology	Perfect isolation of back fire / Little malfunction and quickly responsive to malfunction
System structure	Integration of power, gas production and cooling parts	Convenient in installation and mobility management / small space needed for installation
Degree of heat production	IGBT device	Relatively less heat production
Control and operation method	Mechanical/ electronic touch method	Simple operation by touch method and easy to catch abnormal status
Remote control	Internet or telephone network	Uncomplicated follow-up management and controllable in any place in the world
Use of additional fuel	Electrolyzing with use of only purified water	Cost of fuel is reduced by using only purified water and noxious gas does not occur.

Economic Feasibility of Hydrox Gas

Prime cost analysis by Posco (2003)

Division	Gwangyang Iron Company		Pohang Iron and Steel Company	
	LPG Cutting	Hydrox Gas Cutting	LPG Cutting	Hydrox Gas Cutting
Cutting width	230 mm	230 mm	250 mm	250 mm
Cutting length	1580 mm	1580 mm	1600 mm	1600 mm
Cutting speed	260~300 mm/min	260~350 mm/min	200~250 mm/min	200~250 mm/min
Range of thermal change	800 mm	80 mm	900 mm	120 mm
Cutting loss	10 mm	4 mm	-	-
Illumination photometry on cut side	125s~155s	90s~115s	Visually identified	Visually identified
Drag measurement of cut side	3.2 mm	2.25 mm	-	-
Measurement of plane(30t)	0.0625 mm	0.0375 mm	-	-
Pollutant	CO2 : 75ppm	(H2O)	CO2 : 75ppm	(H2O)
Degree of fume production	Enormous amount of fume occurred	Slight amount of fume occurred	Enormous amount of fume occurred	Slight amount of fume occurred
Quantity of gas consumption	20 m ³ /h	14~18 m³/h	20 m ³ /h	28 m³/h
Unit cost of fuel (m ³)	KRW 1,073+preheating oxygen	KRW 127	KRW 1,073+preheating oxygen	KRW 127
Cost of fuel used	KRW 21,460/h	KRW 2,286/h	KRW 21,460/h	KRW 3,556/h

Quantity of heat: test result of Kanagawa Institute of Technology in Japan
 1KW: KRW 60 LPG from Seoul City Gas Co., Ltd for industrial use

(In Sep 2016)

Division	Hydrox Gas	LPG	Boiler Paraffin	Petroleum (0.1%)
Caloric value	2,000 kcal/N m³	11,079 kcal/kg	9,079 kcal/ℓ	9,200 kcal/ℓ
Combustion efficiency	95%	85%	80%	80%
Available heat	1,900 kcal/N m³	9,417 kcal/kg	7,263 kcal/ℓ	7,360 kcal/ℓ
Price (KRW)	280/N m³	1,625/kg	1,208 /ℓ	1,415 /ℓ
Unit cost/1,000 kcal	KRW 147	KRW 173	KRW 166	KRW 192

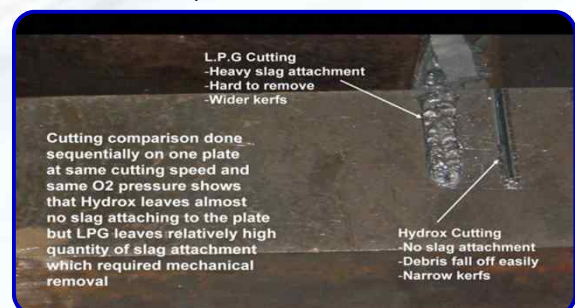
Structure of Hydrox Gas Flame

Structure of cutting flame



Less heat deflection of basic material due to straight flame

Shape of Cut Substructure



Less damage to basic material and no slag left in its substructure from cutting

Cutting Facility Using Hydrox Gas

Hydrox Gas generates hydrogen and oxygen simultaneously, thereby making the cutting possible without preheating oxygen used for LPG or LNG. With fuel reduction, cutting speed improvement and lesser loss of basic materials, it is environmentally friendly, efficient and economic energy.



Corus in Netherlands
230mm E-6M



Cutting of Wako in Japan
100~350mm E-3M/E-20M



Cutting of CMA in Australia
200~350mm E-6M/E-20M



Liaoning Ende in China
200~350mm E-6M/E-20M



Special Steel Cutting
in POSCO
500~1,000mm E-160M



Special Steel Cutting by 2
torches in POSCO
600mm E-160M



Thin Plate Cutting
in Pohang POSCO
30mm E-6M



Hanjin Heavy Industries &
Construction Co., Ltd
30~250mm E-6M

Comparison of Cut Side

Standards: Class A: 50 , Class B: 70
(Korea Institute of Energy Research)



LPG cut side
(surface roughness: 93)



Hydrox Gas cut side
(surface roughness: 61)



Acetylene gas cut side
(surface roughness: 78)

Cutting Quality by Hydrox Gas



Cutting quality of Gwangyang Iron
Company (thickness: 230 mm)



Cutting quality of Pohang Iron and Steel
Company (thickness: 250mm)



Cutting quality of Corus Corporation in
Netherlands
(thickness: 230 mm / speed: 220mm/min)

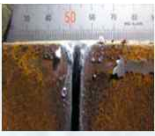





Cutting Facility Using Hydrox Gas

Comparison of Economics of Using Hydrox Gas

2016.08

GAS	Average Use (m ³ /h)	Use per day (m ³ /8h)	Use per month (28 days) (m ³ /mon)	Use per annum (m ³ /year)	Unit cost of fuel (m ³ /KRW)	Annual fuel cost (KRW/year)	Reduction in fuel by Hydrox Generator	Remark
LPG	4.2	33.6	940	11,289	3,250	36,690,225	* Each year: KRW 41,566,873 reduced * Fuel reduction rate: 82%	* LPG 1kg → KRW 1,625 specific gravity 2 * LPG 1m ³ → KRW 3,250 * Oxygen 1m ³ → KRW 430
Preheating Oxygen	12.3	98.4	2,755	33,062	430	14,216,832		
Total fuel cost						50,907,057		
Acetylene	6.72	53.7	1,505.3	18,063.6	9,900	178,829,640	* Each year: KRW 187,404,976 reduced * Fuel reduction rate: 95%	* Acetylene 1kg → KRW 11,000 specific gravity 0.9 * 1m ³ → KRW 9,900 * Oxygen 1m ³ → KRW 430
Preheating Oxygen	15.5	124	3472	41,664	430	17,915,520		
Total fuel cost						196,745,160		
Hydrox Gas	12.4	99.2	2,779.8	33,357.8	280	9,340,184	* Hydrox gas needs no preheating oxygen for cutting. * Improved cutting speed with high temperature hydrogen (1.5 times faster than LPG) * Lesser deflection and loss of basic material due to straight flame	* Maximum consumption of electricity 1m ³ /h → 2.8kwh/m ³ * Cost for industrial electricity → KRW 100 per 1kw/h

Loss of Basic Material by Using Hydrox Gas

Cutting Speed	200 (mm/min)		300 (mm/min)		400 (mm/min)	
	Loss of basic material	Cut side	Loss of basic material	Cut side	Loss of basic material	Cut side
Hydrox cutting (thickness: 80t)						

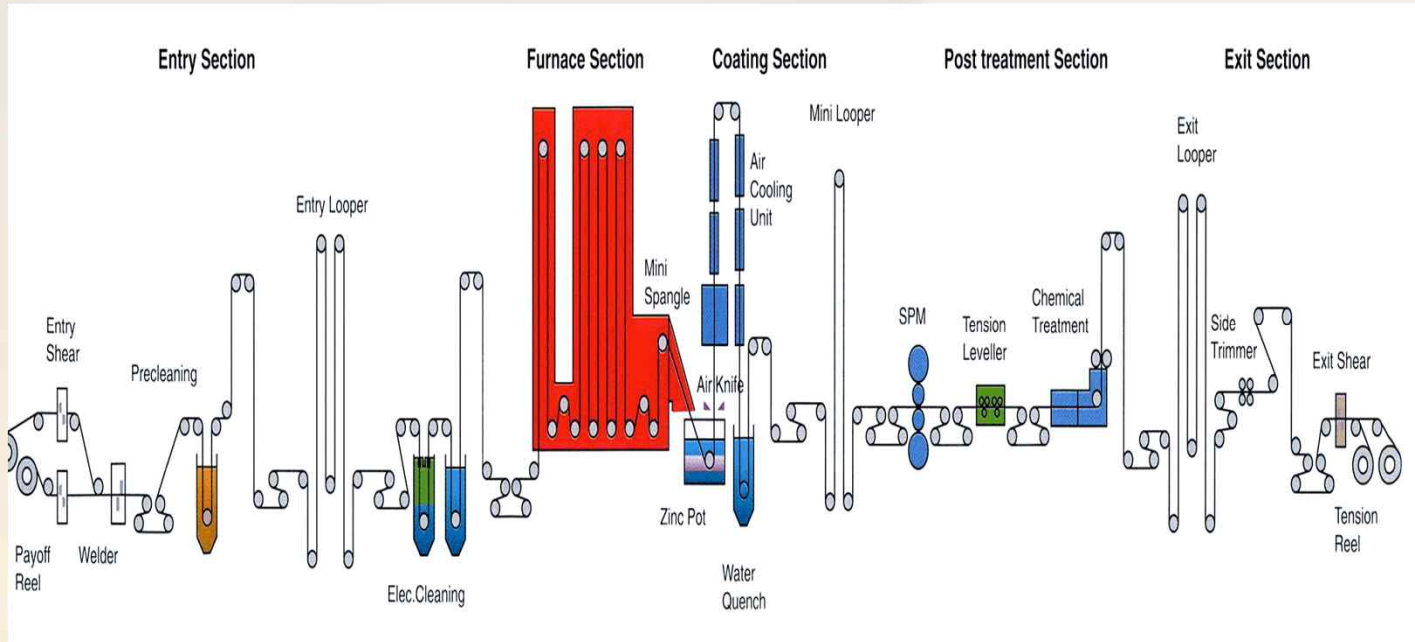
Characteristics of Hydrox Gas Combustion



1. Preheating oxygen: LPG gas cutting essentially requires preheating oxygen and the preheating time, whereas Hydrox gas does not necessitate preheating oxygen as it contains 33.3% of oxygen, shortening the preheating time.
2. Cutting speed: the LPG flame is diffusion-typed and unable to maintain the temperature above 1,800 to 2,000°C with combustion speed at 46cm/s. However, Hydrox gas maintains above 2,800°C with concentration heating and the cutting speed is 30% faster than LPG with its faster combustion speed by 9.5m/s.
3. Cutting tip: LPG cutting tip is composed of LPG, preheating oxygen and high pressure oxygen, while Hydrox gas contains only Hydrox gas and high pressure oxygen. It is also available for the use of conventional LPG tip.
4. Safety: LPG needs to be stored under high pressure, decompressed under low pressure in discharge area, and uses back fire protector for only LPG, whereas Hydrox Generator, while producing gas, controls automatically below the 3kgf/cm², decompresses the gas in discharge area, and uses its exclusive back fire protector, all of which ensure the safety use.

Heat Treatment Facility Using Hydrox Gas

Edge Burner System (POSCO Gwangyang Iron Company: E-80M)



Background of Development and Effects

1. Background of development: while plating the heat-treated steel sheet with nickel, both edges of steel sheet were cooled too fast resulting in poor result of plating. In the late process of heat treatment, the edges were treated heat with COG and LPG, which showed only some 5°C increase in the temperature. Therefore, development research started.
2. Core development: increasing the temperature of edges by more than 15°C instantly without damaging the surface of steel sheet by using high temperature and straight flame of Hydrox gas
3. Test result and effects: use of Hydrox gas improved the quality of plating by increasing the temperature of edges up to 20°C
4. Conclusion: Hydrox gas is appropriate for facilities that need local heating with room temperature straight flame. It contributed to the improvement in productivity and quality with excellent heat treatment effect.

Heat Treatment Facility Using Hydrox Gas

Lineal Heating System (Daewoo Shipbuilding and Marine Engineering: E-40M)



In the conventional work process using LPG gas, severe noise and the high cost of work have to be resolved.

Using only Hydrox Gas can diminish the greenhouse gas emission, resolve the severe noise on the work site, and cost less expenses, thereby improving the work environment and reducing the energy consumed.



- Inexpensive fuel cost → Maximizing economics
- Less heated area by lineal heating → Decrease of work time
- No fume/ greenhouse gas (Co2) → Clean work environment
- Noise reduction → Improved work environment

Steel Grade Heat Treatment System (Hydrox Americas.Inc: E-20M)

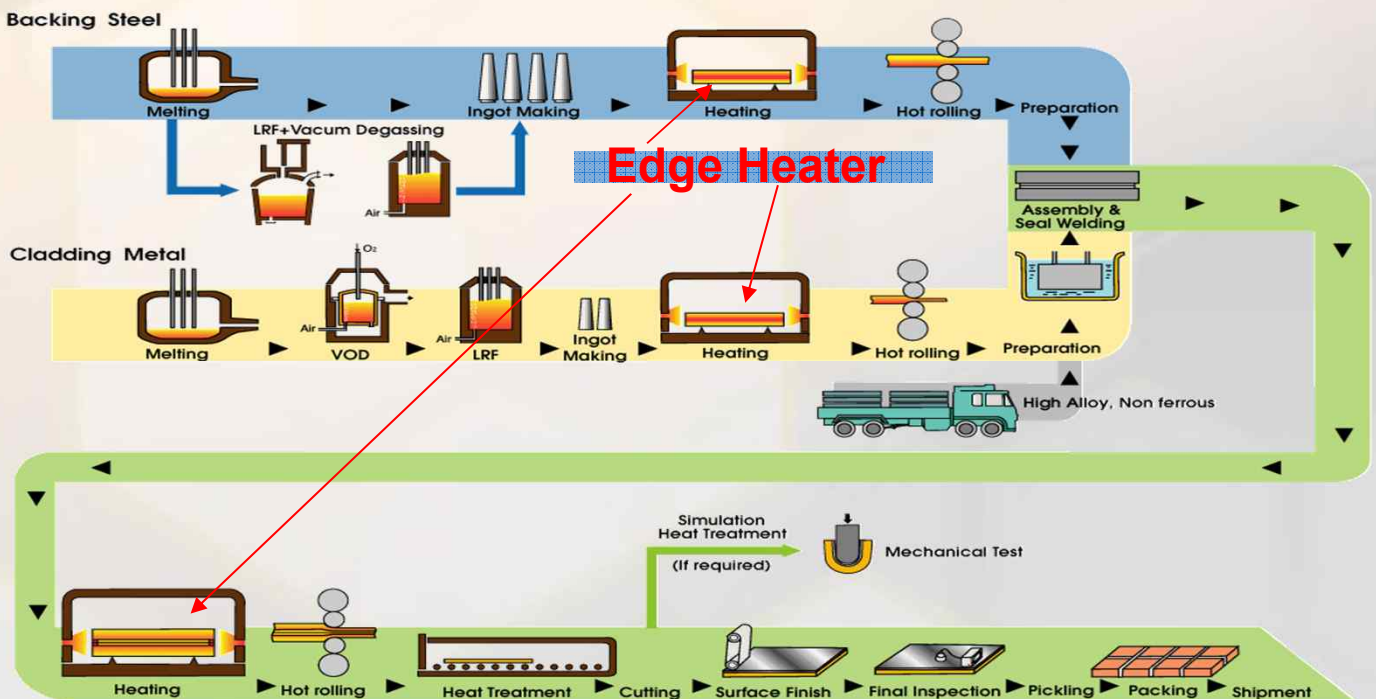


< Heat Treatment >

By heat treating the surface of special steel used for rotation part of military tank, the materials were hardened, their abrasion decreased, and extended the durability. The hardness is stronger by 15% than when LPG is used for heat treatment and 10% than when acetylene is used.

< Surface Scarfing >

If the rough and rusted surface of steel sheet is treated by Hydrox gas, the work speed will improve and reduce the contamination substances such as Co2 fume, whereby the work environment will be improved.



Compound Combustion Facility Using Hydrox Gas

The companies using oil and LPG are confronted with higher fuel cost, and the rise of oil price and greenhouse gas emission are the hot issues in their industry; yet there is not an alternative provided for these problems. Without changing the conventional combustion method, but for reducing fuel and greenhouse gas emission, we offer our environmentally friendly Hydrox Gas Auxiliary Combustion System.



CFE Plant in Mexico
Auxiliary Combustion
E-80M

Hotel Boiler in Japan
Auxiliary Combustion
E-6M

Okinawa ham in Japan
Auxiliary Fuel
E-6M

Celex International
in Hong Kong
Auxiliary Fuel E-10M

Compound Gas Combustion Test



Oil + Hydrox Gas Burner



LPG + Hydrox Gas Burner

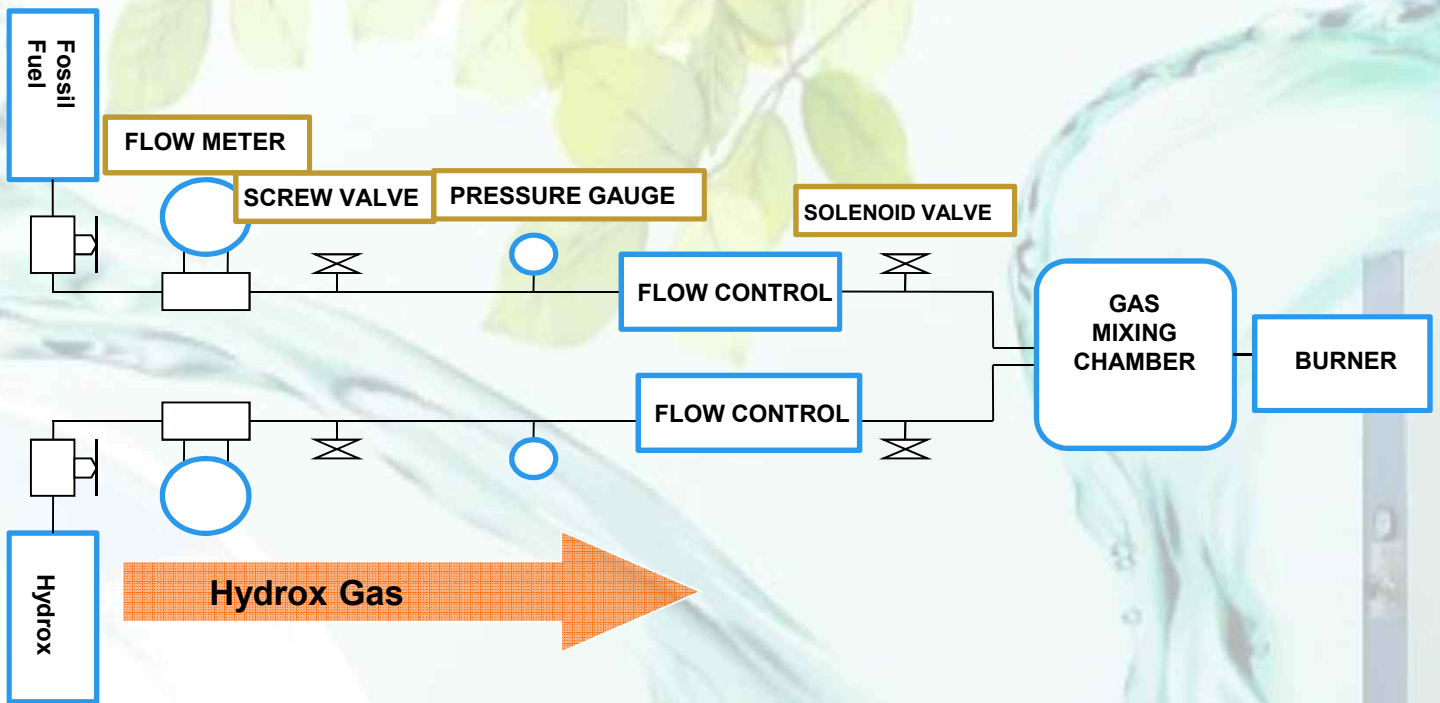
When the combustion efficiency of L.P.G and paraffin oil is between 80% to 85%, use of Hydrox Gas as main fuel or auxiliary fuel at the wanted temperature setting, the combustion efficiency will rise almost up to 100%, **thereby seeing the effect of 5 to 20% of fuel reduction.**

Compound-typed Perfect Combustion System

- Reducing the amount of using oil and LPG, while maintaining the heat efficiency and reducing the fuel cost
- Obtaining green energy effect by reducing the amount of fossil fuel use and greenhouse gas emissions
- Wider range of selection for usage available with the changes in Hydrox Gas rate
- Application of existing facilities without great change in the process: either using the existing burner or changing only the burner

Compound Combustion Facility Using Hydrox Gas

Compound Combustion System



Compound Combustion Thermal Image



Image of paraffin oil combustion



Compound combustion of paraffin oil and Hydrox (3 m³/hr)



Compound combustion of paraffin oil and Hydrox (6 m³/hr)

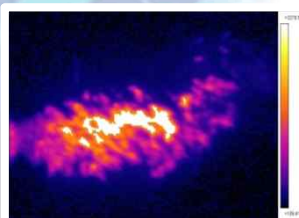


Image of paraffin oil combustion



Compound combustion of paraffin oil and Hydrox (3 m³/hr)



Compound combustion of paraffin oil and Hydrox (6 m³/hr)

Compound Combustion Facility Using Hydrox Gas

Compound-Typed High-Efficiency Combustion System

In the Mexico power plant, the combustion of bunker C oil boiler showed 85% of combustion efficiency when using high-temperature steam around some 65%. However, the combustion of low quality oil will emit greenhouse gas mainly such as sulfur oxides and carbon dioxides, and inefficient due to the imperfectly combusted oil. Therefore, Hydrox Auxiliary Combustion System should be applied to this boiler, which can reduce the fuel and greenhouse gas emissions without altering the conventional combustion mechanism.



- Reducing the amount of using bunker C oil, maintaining the heat efficiency, and thereby reducing the fuel cost
- Reducing the amount of using fossil fuel to achieve green energy effect with decreased Co2
- Elevating the combustion efficiency by resolving the imperfect combustion through changes in the rate of Hydrox Gas
- Using the existing burner and additional application without great changes in the process available

Hydrox Application Nozzle



Melting System Using Hydrox Gas

Composition and Features of Product

- Composed of liquid-metal melting furnace, Hydrox Gas compound burner and new fuel device (Hydrox Generator)
- Using a compound burner of Hydrox specialized burner and general fuel burner makes its imitation difficult by other companies
- Hydrox Gas Generator is a mass generator applicable to the industry with system stability and efficiency (95%) from leading-edge technology



Melting furnace

Inside of melting furnace

Gas generator

Compound burner

- New measure to elevate the caloric value of gas
- Perfect combustion measure of the imperfect gas of combustion in the second incineration
- Sludge melting method
- Fuel-reducing measure



Sludge Melting System Using Hydrox Gas

Melting of Magnesia and Refractory Processing



LPG + O2 : 8 hr



Hydrox Gas : 30 min

- MgO (Magnesia) is currently melted in the arc type of furnace melting 1 ton consumes approximately 2700kw, which is also very costly in regularly replacing the arc burner. Yet it is still used in special fields as there is no other high temperature fuel that can substitute MgO. Use of Hydrox Gas can resolve this by simplifying the maintenance of economics and environment as it has been verified through tests.
- MgO oval briquettes which are obtained by 8-hour heating with use of LPG and oxygen, and MgO which is heated by Hydrox Gas for 30 minutes are shown in the above pictures.

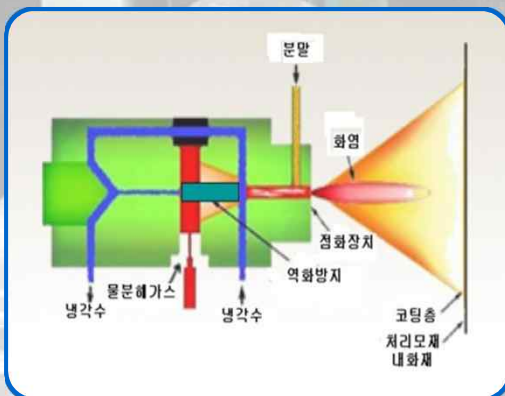
Applicable Technologies Using Hydrox Gas

Low-Level Nuclear Waste Incineration Melting



For the current low-level nuclear waste treatment, the Plasma Torch Melting (PTM) technology is prominent. Nevertheless, the cost for PTM facilities and maintenance is too expensive. Therefore, the furnace using Hydrox Gas which can generate the temperature as high as PTM with the melting available over 2,400°C has been developed. It is inexpensive compared to PTM; economic melting roll facilities can be installed.

Fireproof Coating System



To extend the life span of fireproofing materials used in converter or blast furnace, their inside is coated by the powders of materials with high melting temperature such as magnesia (MgO), alumina.

This process costs enormous time and energy. However, it can be simplified by coating with use of high temperature water decomposition flame gas.

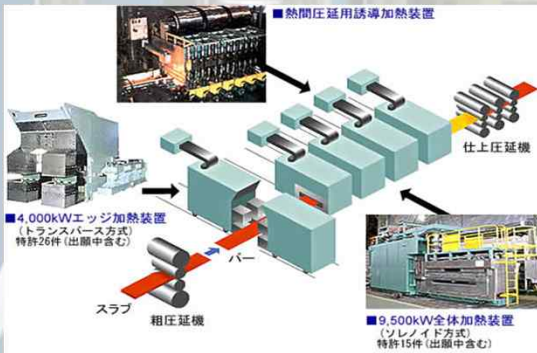
Steel Sheet Scarfing



Prior to the rolling, scarfing takes place to peel off and eliminate the defects of steel surface by using gas and oxygen. For this work, the iron and steel mill consumes 1500 m³/hr to 2000 m³/hr of LPG gas, producing enormous amount of carbon dioxides. If replaced by water decomposition gas, it will improve the economics and speed of work, producing less contamination substances such as CO₂ and fume. This way, the work environment will be improved resulting in the higher efficiency of work process.

Applicable Technologies Using Hydrox Gas

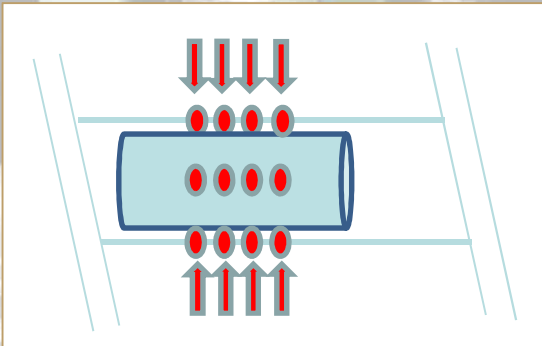
Roll Process Edge Heat Treatment System



Currently, there are mainly two types of methods for roll process: gas-type heater (LNG+O₂) developed jointly by Weirton Steel and the Department of Energy in the U.S., while other countries failed to increase the temperature of edges with gas-type heat treatment and are mostly using mass electricity instead.

High-temperature Hydrox Gas can improve this by simplified facility installation and at inexpensive cost with its local heat treatment method.

Rod Steel Surface Heat Treatment System



There are many discussions on the methods to diminish the crack phenomena caused by the temperature difference in the surface of free cutting steel in the rod steel mill process. Among the methods, Hydrox Gas is deemed most effective in reduce the temperature difference as its Auxiliary Edge Heating System will improve the quality by using high temperature heat resources. It is anticipated this system will take the predominant position in the world market, bringing the best energy reduction and productivity improvement effects.

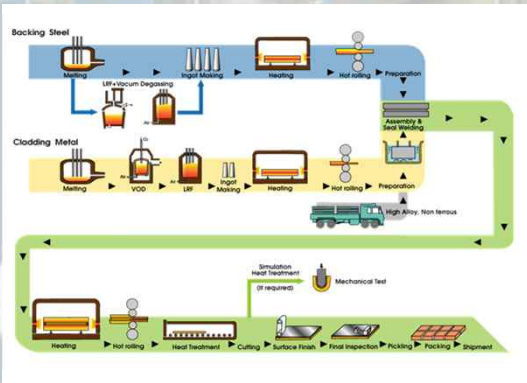
Ladle and Tundish Burner System for Compound Gas



By combining the conventional fossil fuels such as LPG, LNG, COG and Oil, together with Hydrox as auxiliary gas, there will be no need for the changing of the existing burner; this implies that the installation of facilities is uncomplicated, while the amount of using fossil fuel is decreased, reducing the contamination substances; accelerating the combustion and increasing the combustion efficiency. It is indeed economic and environmentally friendly.

Applicable Technologies Using Hydrox Gas

Steel Manufacture Heat Treatment



Use of Hydrox Gas solely or combined with other fuels in the heat treatment of steel manufacturing process will accelerate the combustion, increase the productivity, and prevent the occurrence of noxious gas. It is highly expected to contribute to the reduction in contamination substances and energy saving.

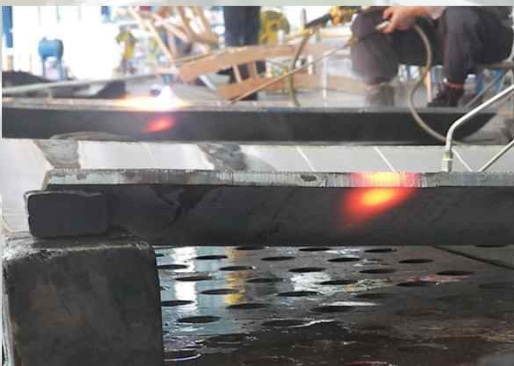
Non-Co2

Boiler Auxiliary Combustion System



Applying Hydrox Gas as additional auxiliary fuel to the bunker of paraffin oil and bunker fuel oil C will shift the imperfect combustion into the almost perfect one, which will expectedly increase the efficiency by taking advantage of high temperature, while simultaneously diminishing the amount of using oils. Therefore, the Co2 emissions will decrease as well as the cost.

Lineal Heating System in Shipyard



Using high-pressure oxygen to heighten the temperature of lineal heating flame causes severe noise, and the area of thermal effect is wide.

To reduce the noise and to narrow down the area of thermal effect, Hydrox Gas will be a viable measure to replace the conventional method as it will considerably help improve the work environment.

Applicable Technologies Using Hydrox Gas

Industrial Waste Treatment and VOC Diminution Device



Use of Hydrox Gas for incinerating the wastes produced by companies has time saving and fuel cost reduction effects by perfectly incinerating the wastes with its high temperature. What's more, the emissions of noxious gases will substantially decrease by incinerating twice with high-temperature Hydrox Gas.

Foods and Leachate Treatment System



Adding Hydrox Gas to the conventional fuels in the boiler drying the foods will elevate the productivity and reduce the fuel cost. The dried foods are used as feeds for animals, and the leachate occurred by this can also be treated by Hydrox Gas to decrease the environmental pollution, which is already utilized in the industry successfully.

Polishing System



The polishing process is applied to the surface of high-priced cosmetics containers and glass for foods to get rid of foreign substances and polish the surface by heat treatment. The temperature is low with use of LPG, resulting in the deterioration of quality owing to the considerable loss of heat, which can be resolved by using Hydrox Gas at inexpensive cost.