



HYDROGEN PLANT GAS GENERATOR

Why ATHENA



Provide one stop solution for customized hydrogen generating equipment and service

Rich experience in Hydrogen engineering and plant based equipment fabrication & supply.

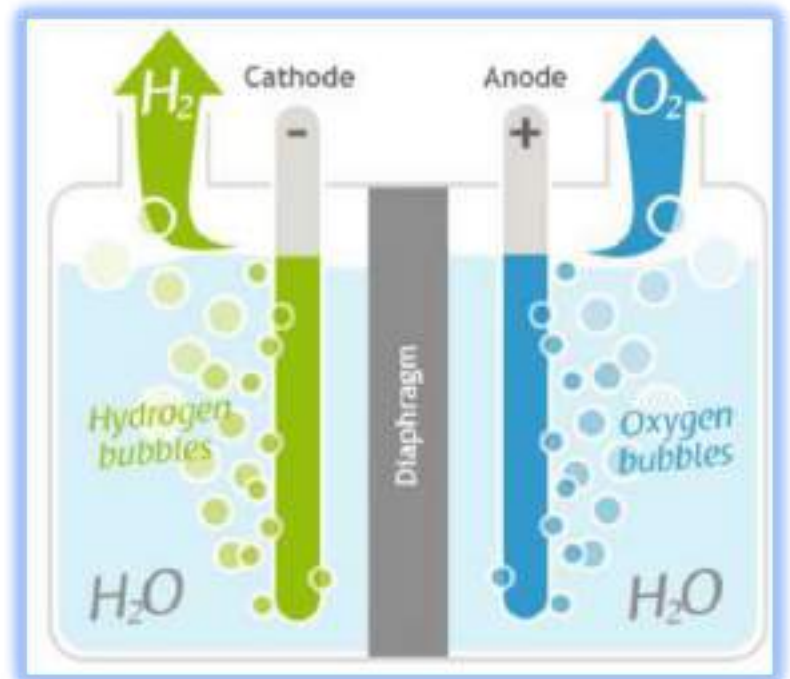
Experienced experts in H2 related field to learn and do customer demand analysis.

Professional team with expertise for overseas project management.

Experience with European and American Pioneer in Hydrogen Industry.

Product Introduction

- Water H_2O + Power = Hydrogen H_2 (+ Oxygen O_2)
- **Working pressure (according to technology) Up to 10-20 bar**
- Hydrogen production Up to 50Nm³/h
- Gas purity with purification system : 99.7%±0.2%
- (Water saturated)
- After purification Up to 99.999%



Athena H2 Generator

System Integration

- H2 produces by Electrolysis Technology to produce UHP Hydrogen Gas from H2O

High Reliability

- High quality components
- Optimized design to ensure the excellent quality

Cost Saving

- Low operation cost 7 x 24 Continuously running

Easy for Operation

- Optimised structure,
- Compact design
- Plug and play

Intelligent Control

- Intelligent evacuation of unqualified Hydrogen to realize unattended

Unique Material Selection

- Adsorption canister uses astronautics sophisticated aluminum profile,

HYDROGEN ENERGY APPLICATION INDUSTRY



Hydrogen Fuel Station by Renewable Energy



Chemical Hydrogenation



Hydrogen Fueling Station for Hydrogen Fuel Cell Car or Bus



Metallurgical Industry



Power Plant Industry



Hydrogen Fueling Station for Hydrogen Fuel Cell Drone



Electric Appliance Manufacture



Glass Processing Industry



Cutting Industry



Hydrogen Agricultural Irrigation

Model & Capacity

MODEL	(Nm ³ /h) H ₂ Capacity	(Nm ³ /h) O ₂ Capacity	H ₂ Purity	(A) Current	(V) DC Voltage	Cell Working Temp	Total Water Consumption	Total Power Consumption	Cooling Water Consumption
ATH-5S	5	2.5	99.999%	250	100	< 80°C	5 L/hr	27 Kw*h	4 m ³ /h
ATH-10S	10	5	99.999%	250	200	< 80°C	10 L/hr	52 Kw*h	6 m ³ /h
ATH-15S	15	8	99.999%	960	78	< 80°C	15 L/hr	78 Kw*h	10 m ³ /h
ATH-20S	20	10	99.999%	960	90	< 80°C	20 L/hr	105 Kw*h	12 m ³ /h
ATH-30S	30	15	99.999%	960	156	< 80°C	30 L/hr	155 Kw*h	12 m ³ /h
ATH-50S	50	25	99.999%	960	260	< 80°C	50 L/hr	260 Kw*h	18 m ³ /h
ATH-75S	75	38	99.999%	960	392	< 80°C	75 L/hr	382 Kw*h	18 m ³ /h
ATH-100S	100	50	99.999%	3000	168	< 80°C	100 L/hr	512 Kw*h	18 m ³ /h
ATH-150S	150	75	99.999%	3000	252	< 80°C	150 L/hr	764 Kw*h	20 m ³ /h
ATH-200S	200	100	99.999%	3000	334	< 80°C	200 L/hr	1012 Kw*h	20 m ³ /h
ATH-250S	250	125	99.999%	3000	400	< 80°C	250 L/hr	1212 Kw*h	20 m ³ /h
ATH-300S	300	150	99.999%	3000	501	< 80°C	300 L/hr	1515 Kw*h	25 m ³ /h
ATH-400S	400	200	99.999%	7300	700	< 80°C	400 L/hr	2115 Kw*h	25 m ³ /h
ATH-500S	500	250	99.999%	7300	343	< 80°C	500 L/hr	2520 Kw*h	30 m ³ /h

Electrolyser CELL



World leading technology



High efficiency/Low Consumption



Reliable Performance



Solid Quality & Performance



Less footprint



ELECTROLYZER- CELL

Electrolytic Cell, we apply bipolar technology, special material polar frame, non-asbestos membrane cloth and low cost electrode for electrolysis cell. our major material for electrode is nickel. H₂ will be evolved on cathode side of cells and O₂ will be evolved on the anodes of cells at the same time.

H₂/O₂ Separator, H₂ and O₂ come separately into H₂ separator, where they are cooled by cooling water and separated from the mixture of gas-lye. after that H₂ is cooled by coil-piped cooler which is erected in the washer. final H₂ flows into hydrogen drying unit for further purification. O₂ process will be same as H₂ process.



H₂ Separation and Purification Unit

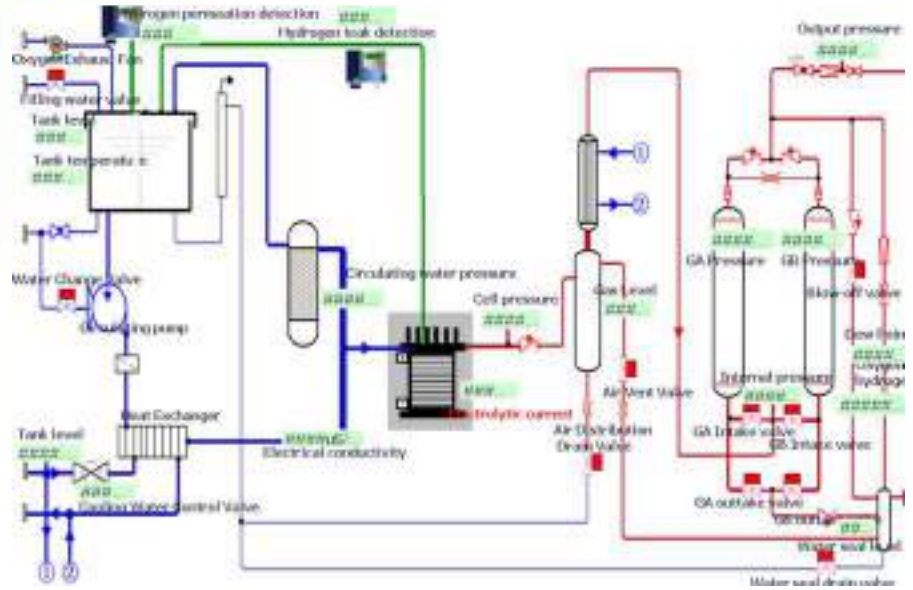
- Compact design w/SS frame
- SS316L pipeline
- Lye cooler SS 316L applied
- ASME, PED standard available
- Separation and purification Skid with SS material



ELECTROLYZER- CELL

- Dry unit

- Three tower design
- Zero consumption of regeneration



ATHENA TECHNOLOGY