Technical Specifications

Specification		Nitrogen	Hydrogen	Zero Air
Purity	:	99.995% to 99.9999%	99.995% to 99.9999%	ZA grade
Oxygen	:	< 3 ppm ~ 1ppm	< 3ppm ~ 1ppm	NA
Water dew point	:	- 40DegC	- 40DegC	- 40DegC
Outflow speed	:		Model Dependent	
Outflow pressure	:	67 PSIG	60 PSIG	80 PSIG
Pressure stability	:	< 0.001MPa	< 0.001MPa	< 0.001MPa
Flow Control & Display Accuracy	:	+/- 5% of FSD using digital MFC system		NA
Alarms	:	Low water level, Gas Leakage, Excess pressure & Low Pressure		
Rated voltage	:	220V±10%; 50HZ		
Rated power	:	200W to 400 W dependent on model		
Temperature	:	18-25 ° C		
Noise	:	< 42 dB ~ 60 dB model dependent		
Size	:	47 x 26 x 38 cm		
Weight	:	22~40 Kgs		
Compressor	:	In built in the system or external model dependent		

MODELS (Membrane Based Systems)

Nitrogen Generator

CIC-PWWE- YFRN300	:	300 ML/MIN
CIC-PWWE- YFRN500	:	500 ML/MIN
CIC-PWWE-YFRN1000	:	1000 ML/MIN
CIC-PWWE-YFRN2000	:	2000 ML/MIN

Nitrogen – Air Combination Generator

		NITROGEN	AIR
CIC-PWWE- YFRNA300	:	300 ML/MIN	2000 ML/MIN
CIC-PWWE- YFRNA500	:	500 ML/MIN	4000 ML/MIN

Nitrogen – Hydrogen – Air Combination Generator

		NITROGEN	HYDROGEN	AIR
CIC-PWWE- YFRNHA300	:	300 ML/MIN	300 ML/MIN	2000 ML/MIN
CIC-PWEW- YFRNHA500	:	500 ML/MIN	500 ML/MIN	4000 ML/MIN

PSA based Nitrogen Generators

The Pressure Swing Adsorption (PSA) based Nitrogen Generators are manufactured using special grade Carbon Molecular Sieve imported from Germany & the UK for achieving purity levels between 99.9% to 99.9995% depending upon the model and flow selected.

CIC-PSA-500	500 ML/MIN @ 6 BAR
CIC-PSA-1000	1,000 ML/MIN @ 6 BAR
CIC-PSA-2000	2,000 ML/MIN @ 6 BAR
CIC-PSA-5000	5,000 ML/MIN @ 6 BAR
CIC-PSA-8000	8,000 ML/MIN @ 6 BAR
CIC-PSA-1K	10,000 ML/MIN @ 6 BAR

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High Quality Gas Generators for General use & Special Application

Membrane Nitrogen

Pure Water Hydrogen

Zero Air

NHA Combination

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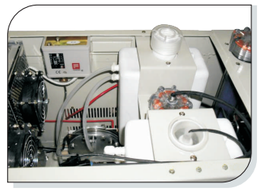
Hydrogen Generators

There are two types of hydrogen generators being manufactured by us:

1. Non Alkali Pure Water based hydrogen generators operating on ion membrane separation technology (PEM) using hard core SPE electrodes which do not require alkali (KOH) during the life time of its operation.
2. Alkali based Pure water based hydrogen generators operating on transition metal catalysis & membrane separation technology which requires the use of an alkali (KOH) once during the installation and then thrice a year only.

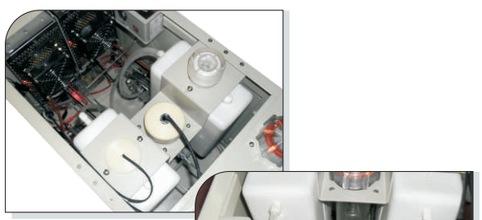
Non Alkali Pure Water Generators

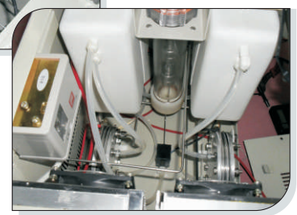
Models : CIC–PWE -SPExxxxHC & SPExxxxHP



The SPExxxxHC & SPExxxxHP Hydrogen Generators use a highly sensitive fuzzy logic control algorithm for achieving closed loop electrolysis along with auto tracing system for pressure control to provide excellent pressure stability. The closed loop electrolysis ensures that the gas flow requirement of the system is measured and electrolysis current set such that excess gas is not produced and hence pressure over run is always prevented.

This instrument adopts pure water electrolysis technology to produce hydrogen from water without using any alkali for gas generation. The transition metal element catalysis technology uses hard core SPE electrodes which are very active catalysts closely assembled i.e. nearly zero distanced for the production of hydrogen gas. The assembly consists of composite catalyst and ion membrane separation technology (PEM) to completely separate H2 & O2 thus providing high purity hydrogen with oxygen less than 20 ppm for HC series and 1 PPM for HP series.





MODELS

CIC- PWE -SPE500HC	: 500 ML/MIN
CIC-PWE-SPE1000HC	: 1000 ML/MIN
CIC- PWE -SPE2000HC	: 2000 ML/MIN
CIC- PWE -SPE5000HC	: 5000 ML/MIN
CIC-PWE-SPE0500 HP	: 500 ML/MIN
CIC-PWE-SPE1000 HP	: 1000 ML/MIN

Technical Specifications

Hydrogen purity	: 99.997% to 99.9999% - Model Dependent
Oxygen content	: <20 PPM & < 1 PPM
Water dew point	: - 40°C
Outflow speed	: Dependent on models
Outflow pressure	: 0.4 MPa settable from the system
Pressure Protection	: Over limit protection set at 0.42 MPa
Pressure stability	: < 0.001MPa
Rated voltage	: 220V±10%; 50HZ
Rated power	: 260W to 800 W
Temperature	: 18-25°C
Flow Control & Display Accuracy	: +/- 5% of FSD using digital MFC system
Alarms	: Low water level, Gas Leakage, Excess pressure & Low Pressure

Note : Please write to us if you do not see anything you require and we will try to provide you with a system suitable for your requirement. Being manufacturers based in India we have the capacity & capability to manufacture specialized systems as per requirement.

Alkali Based Pure Water Systems (Hydrogen)

Models: CIC–PWWE-YFRHxxxx

The YFRHXXXX Hydrogen Generators use highly sensitive fuzzy logic control algorithm for achieving closed loop electrolysis along with auto tracing system for pressure control to provide excellent pressure stability. The closed loop electrolysis ensures that the gas flow requirement of the system is measured and electrolysis current set such that excess gas is not produced and hence pressure over run is always prevented.

This instrument adopts water electrolysis technology to produce hydrogen from water using KOH (potassium hydroxide) aqueous solution as electrolyte. The transition metal element catalysis technology uses noble metal assembly as electrodes along with membrane separation technology to completely separate H2 and O2 thus providing high purity hydrogen with oxygen less than 3 ppm.

Technical Specifications

Hydrogen purity	: Min. 99.9995%
Oxygen content	: <3 PPM
Water dew point	: - 40°C
Outflow speed	: Dependeng on the model
Outflow pressure	: 0.4 MPa or 0.6 MPa available
Pressure stability	: < 0.001MPa
Rated voltage	: 220V±10%; 50HZ
Rated power	: 200W to 800 W as per model
Temperature	: 18-25°C
Flow Control & Display Accuracy	: +/- 5% of FSD using digital MFC system
Alarms	: Low water level, Gas Leakage, Excess pressure & Low Pressure

MODELS

CIC- PWWE -YFRH300	: 300 ML/MIN
CIC- PWWE -YFRH300 HP	: 300 ML/MIN
CIC- PWWE -YFRH1000	: 1000 ML/MIN
CIC- PWWE -YFRH2000	: 2000 ML/MIN
CIC- PWWE -YFRH5000	: 5000 ML/MIN

Select Model Keeping 70% Capacity as usable flow. For continuous operation consult factory.

Combination Generators

Combination Generator is an innovative product developed by us which is now being widely used in India as well as exported to other Asian countries. We have various types of combination generators available which can provide up to 3 independent gases from one system itself. Various models of combination generators are available from us

1. CIC-PWWE-YFRNAxxx is electrolysis based Nitrogen - Air Combination Generator utilizing transition metal catalysis & membrane separation technology for delivering ultra pure Nitrogen and zero air.
2. CIC-PWWE-YFRNHAxxx is electrolysis based Nitrogen – Hydrogen - Air Combination Generator utilizing transition metal catalysis & membrane separation technology for delivering ultra pure nitrogen and hydrogen.
3. CIC-PSA-NA-HP-xxxx is Pressure Swing Adsorption based Nitrogen Air combination generator which utilizes the less expensive option of CMS beds to generate Nitrogen and zero air for analytical applications.

These instruments adopt electro catalysis technology to produce Nitrogen, Hydrogen & Air. The transition metal element catalysis technology uses noble metal assembly as electrodes coupled upstream with membrane separation technology to give high purity Nitrogen & Hydrogen using separate cells. The electrolytic cell for this generator is designed to work contrary to the fuel cell process i.e. when compressed pure air enters the electrolytic cell, the oxygen in the air is absorbed at cathode & procures electron to form OH- molecule and moves to anode. The electron is again lost at anode thus oxygen is formed which gets separated by the membrane thereby giving pure nitrogen constantly. Similarly transition metal element catalysis technology uses noble metal assembly as electrodes with upstream membrane separation technology to completely electrolyze H2 & O2 thus providing hi purity Hydrogen with oxygen less than 1 ppm.