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## ANALYTICAL GAS GENERATORS

INNOVATIVE GAS SOLUTIONS FOR YOUR LAB



**WIGGENS**  
THE MAGIC MOTION




# WIGGENS

THE MAGIC MOTION



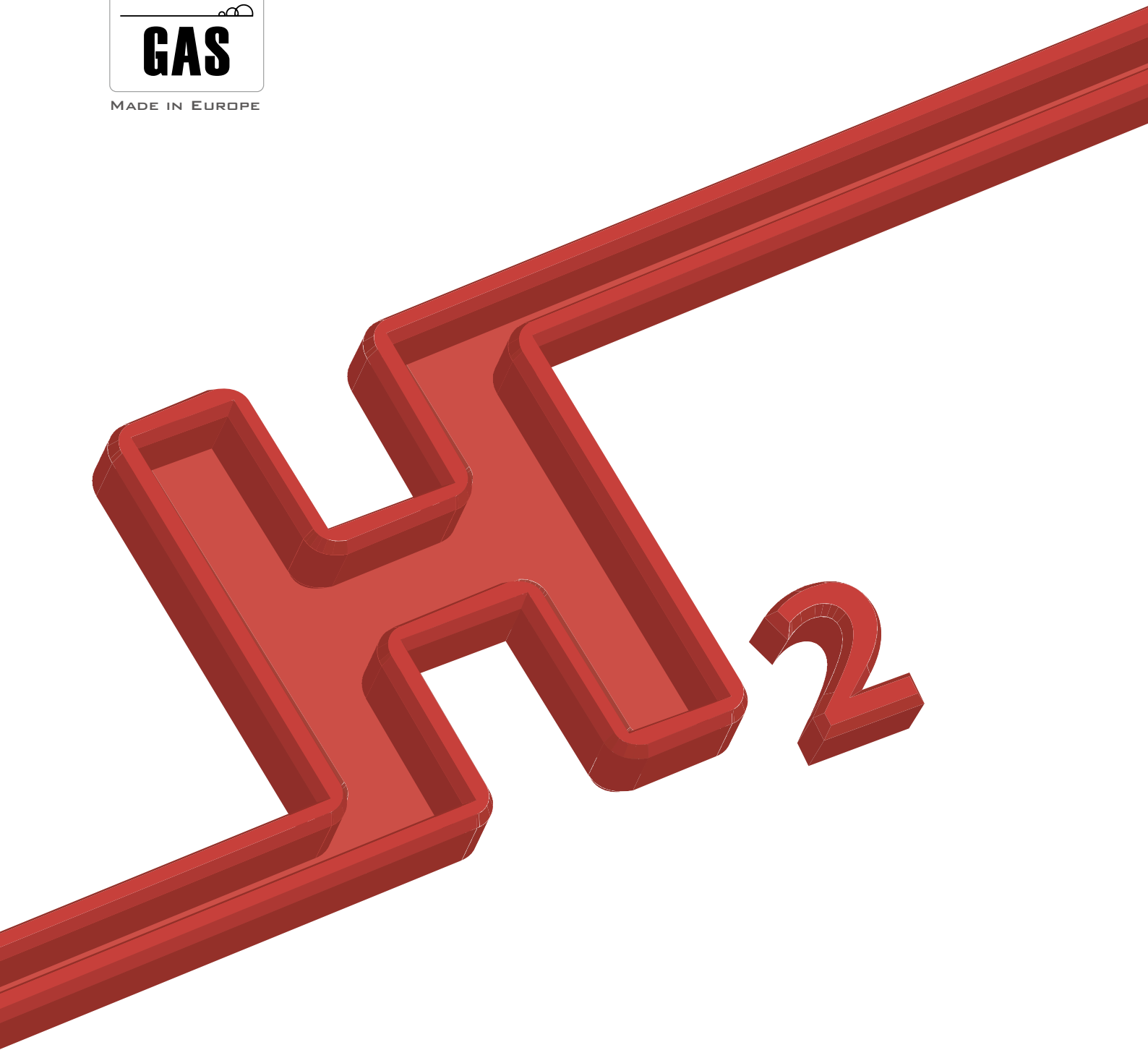
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MADE IN EUROPE



HYDROGEN GAS GENERATOR

## Glance of Hydrogen generator (H<sub>2</sub> or H<sub>2</sub>+Zero Air all-in-one)

Hydrogen	Series	Max Outlet pressure	The range of flow rate			
High purity 99.9995%	HK Plus	7 bar (102 psi)	100-250 mL/min	<ul style="list-style-type: none"> <li>Ideal for use for gas chromatography detectors such as:</li> <li>• GC - FID / GC - NPD / GC - TCD</li> <li>• Gas Reagent GC- ELCD / GC – HALL</li> </ul>		
	PG Plus				<ul style="list-style-type: none"> <li>• Flame ionization detector (FID)</li> <li>• Collisions on ICP-MS</li> </ul>	
High purity 99.9996%	FID FLAT-PG Plus (+Air)	11 bar (160 psi)	100-250 mL/min	<ul style="list-style-type: none"> <li>• FID-S Can placement under a GC</li> <li>• Ideal for all GC Detectors</li> </ul>		
	FID TOWER-PG Plus (+Air)				<ul style="list-style-type: none"> <li>• FID tower to conserve bench space</li> <li>• Ideal for all GC Detectors</li> </ul>	
	RACK-PG Plus (+Air)				<ul style="list-style-type: none"> <li>• Flame ionization detector (FID)</li> <li>• Fast GC</li> <li>• Collisions on ICP-MS</li> </ul>	
	NM Plus				<ul style="list-style-type: none"> <li>• Flame ionization detector (FID)</li> <li>• Carrier gas for GC and GC-MS</li> <li>• Fast GC</li> <li>• Collisions on ICP-MS</li> </ul>	
FID FLAT-NM Plus (+Air)	<ul style="list-style-type: none"> <li>• FID-S Can placement under a GC</li> <li>• Ideal for all GC Detectors</li> <li>• Ideal used as Carrier Gas</li> </ul>					
Ultrapure 99.99996%	FID TOWER-NM Plus (+Air)	11 bar (160 psi)	100-1350 mL/min	<ul style="list-style-type: none"> <li>• FID tower to conserve bench space</li> <li>• Ideal for all GC Detectors</li> <li>• Ideal used as Carrier Gas</li> </ul>		
	RACK-NM Plus (+Air)				<ul style="list-style-type: none"> <li>• Flame ionization detector (FID)</li> <li>• Carrier gas for GC and GC-MS</li> <li>• Fast GC</li> <li>• Collisions on ICP-MS</li> </ul>	



# HK Plus Series



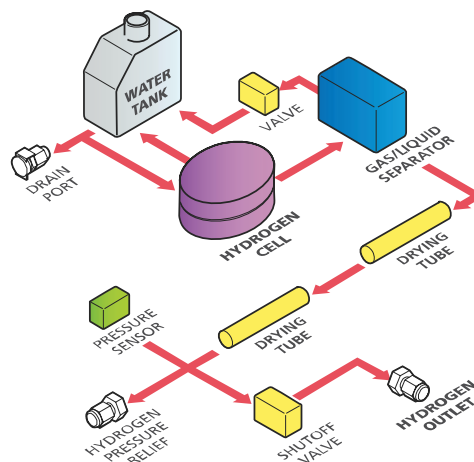
The Hydrogen Gas Generator HK Plus is equipped with the new and more recent polymer-membrane (PEM) technology.

The high purity hydrogen is used as GC-detector gas for the FID, the NPD and the TCD as well as reactor gas for GC-ELCD and the GC-HALL.

## OPERATING DIAGRAM

The hydrogen is produced by electrolysis of deionized or demineralized water. The patented polymer membrane cell is producing pure hydrogen which is passed through a dryer before use.

No chemicals are required.  
An alarm will indicate when an exchange is required.



## SPECIFICATIONS

**FLOW RATE**  
100~250ml/min.

**PURITY**  
99.9996%

**OUTLET PRESSURE**  
adjustable up to 7 bar

**CONTROLLER**  
microprocessor  
LCD interface with actual values for outlet pressure, water quality, autodiagnosics, leak-detector, water level

No noise

### NO MAINTENANCE

Ease of use: no caustic solution required, no maintenance thanks to static dryer

**CERTIFICATION**  
CE, CSA, FCC

## BENEFITS

### SAFETY

Since the total internal gas volume of the generator is less than 50 ml, there is no risk at all. The built-in leak detector will automatically turn off the gas production in case of a leak. A proven advantage over any high pressure and large volume storage device such as gastanks.

### LAB PRODUCTIVITY

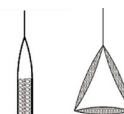
Thanks to the uninterrupted generation of high purity hydrogen the overall productivity of the laboratory is increased. No time is lost with gas tank switching or dryer exchanges-and no risk of contamination from unknown sources.

Modes	HKH <sub>2</sub> -100 plus	HKH <sub>2</sub> -160 plus	HKH <sub>2</sub> -250 plus
Flow rate (ml/min)	100	160	250
Weight (kg)	17	17	17
Cascading	None		
Purity	99.9995%		
Display	Parameters, Status, Alarms		
LED Indicators	On / off, Ready, Error		
Membrane	Polymer Electrolyte Membrane(PEM)		
Dryer	Exclusive static system dryer		
Max Outlet Pressure	adjustable up to 7 bar (102 psig)		
Internal Volume	<50 ml at max pressure		
Water quality	Deionized or demineralized (<10uS)		
Connections	1/8 swagelock		
Power	110-120 60 Hz / 220-240 50 Hz		
Dimensions(mm)	230W x 430H x 353L		
Certifications	CE, CSA, FCC		
Options	RS232C or RS485, Autorefill, External contracts, PC-control		

### Consumables:

Order No.	Description	Suitable for
DB-H200-031	Deioniser LE bag (pack of 2 pcs.) for routine use	HK Plus
DB-H200-030	Deioniser triangle LE bag, designed for new generators and higher water purifying capacity, in the first 4 to 6 months of operation.	HK Plus

\* For Tubing / adapter / Valve / Connectors, etc selection, please refer to Page 38



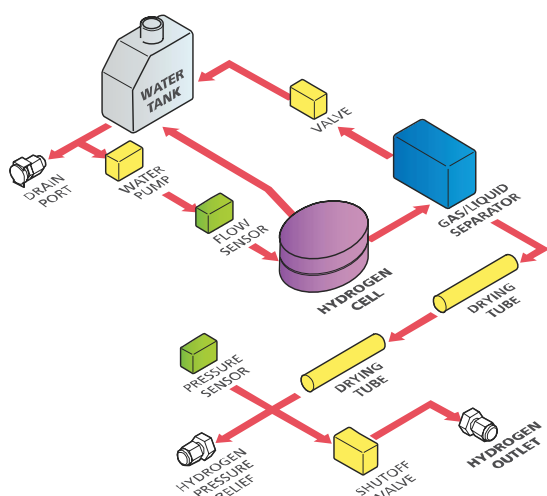
# PG Plus Series

## Ideal for all GC detector applications

Chemtron Hydrogen Generators offer a safe, economical and convenient alternative to gas cylinders. The PG Plus Series provides superior performance with proprietary electrolytic cell technology combined with high quality components and a unique hydrogen drying solution. Ideal for use with gas chromatography detectors such as FID, NPD, and FPD.

### PG PLUS SERIES FEATURES:

- real time outlet pressure, water quality, autodiagnosics with alarms / flowmeter Touch screen optional
- Leak detectors, water level and quality sensors Optimized powerful water pump for PEM cell
- Easy and quick use: no caustic solution used and simple dryer regeneration
- Earthquake / shock sensor
- Low energy consumption
- Software upgrade by standard USB
- Minimal maintenance
- Unique drying membrane - no desiccant cartridges required
- Unique 100% titanium electrolytic cell
- 2 year standard warranty



### The PG Plus series generators are ideal for:

- Flame ionization detector (FID)
- Collisions on ICP-MS
- Small fuel-cell cylinder refills

### OPERATING DIAGRAM

Hydrogen is produced using distilled or deionized water from hydrolysis, through a polymer membrane.

Electrolytic dissociation separates the water into its two main components: hydrogen ready for analytical use, and oxygen that is released into the air.

No acid or alkaline solutions are used in the hydrogen generation cycle.

The drying filter is easy to remove for regeneration; a signal is shown on the display when filter regeneration is required.

The exclusive cascading option allows up to 32 units to be connected in series, producing flow-rates of up to 20 litres also via Intranet!

Models	PGH <sub>2</sub> -100 plus	PGH <sub>2</sub> -160 plus	PGH <sub>2</sub> -250 plus	PGH <sub>2</sub> -300 plus	PGH <sub>2</sub> -500 plus	PGH <sub>2</sub> -600 plus
Flow rate (ml/min)	100	160	250	300	500	600
Weight (kg)	17	17	17	17	18	18
Purity	99.99996%					
Display	Operating parameters, system status, alarms and touch screen					
LED Indicators	Power on/off, system ready, errors					
Membrane	Polymer Electrolyte Membrane(PEM)					
Dryer	Exclusive cold dual dynamic regeneration system					
Max Outlet Pressure	11 bar (160 psig)					
Internal Volume	<50 ml at max pressure					
Water quality	Deionized or demineralized (<10uS)					
Cascading	The exclusive cascading option allows up to 32 units to be connected in series, producing flow-rates of up to 20 litres also via Intranet					
Connections	1/8 swagelock					
Power	110-120 60 Hz / 220-240 50 Hz					
Dimensions(mm)	230W x 450H x 370D					
Certifications	CE, CSA, FCC					
Options	RS232/RS485 and USB, autorefill, external contacts, PC control, Intranet					



# NM Plus Series

## Ideal for all GC & GC/MS carrier gas and detector gas applications

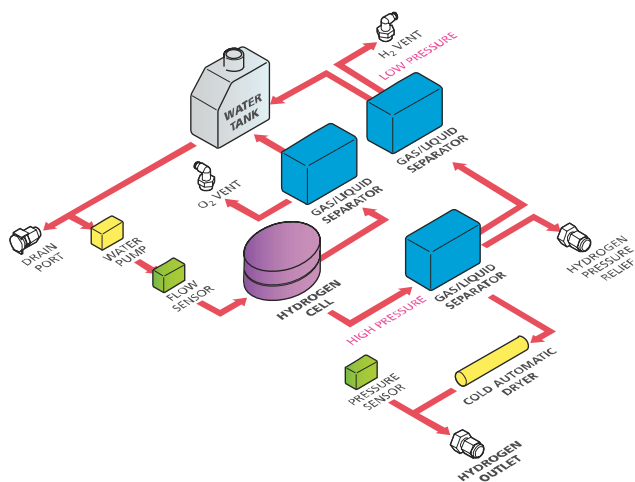
The NM Plus Series enhances the high performance of the PG Plus with the addition of a unique no maintenance purification system. This results in ultra high purity carrier grade gas. With its highly sophisticated software control and safety alarm capability it presents the GC user with the opportunity to reap the benefits of hydrogen carrier gas while overcoming the safety concerns.

### NM PLUS SERIES FEATURES:

- Full microprocessor control
- LCD touch screen interface or push buttons: real time outlet pressure, water quality, autodiagnosics
- with alarms / flowmeter
- Leak detectors, water level and quality sensors Optimized powerful water pump for PEM cell
- Easy and quick use: no caustic solution used and automatic cold dryer regeneration
- Earthquake / shock sensor
- Low energy consumption
- Software upgrade by standard USB
- No maintenance
- USB for remote monitoring and servicing
- Unique 100% titanium electrolytic cell
- 2 year standard warranty



The exclusive "No Maintenance" gas column cold dryer regeneration system eliminates all down time for maintenance that is typical of other systems on the market, assuring the best hydrogen purity at all times.



### The NM-H<sub>2</sub> series generators are ideal for:

- New design
- Flame ionization detector (FID)
- Carrier gas for GC and GC-MS
- Fast GC
- Collisions on ICP-MS
- Small fuel-cell cylinder refills

### OPERATING DIAGRAM

Hydrogen is produced using distilled or deionized water from hydrolysis, through a polymer membrane.

Electrolytic dissociation separates the water into its two main components: hydrogen ready for analytical use, and oxygen that is released into the air.

No acid no alkaline solutions are used in the hydrogen generation cycle.

The patented automatic drying system ensures the maximum grade of hydrogen purity.

The exclusive cascading option allows up to 32 units to be connected in series, producing flow-rates of up to 32 litres also via Intranet!

Models	NMH <sub>2</sub> -100 plus	NMH <sub>2</sub> -160 plus	NMH <sub>2</sub> -250 plus	NMH <sub>2</sub> -300 plus	NMH <sub>2</sub> -500 plus	NMH <sub>2</sub> -600 plus	NMH <sub>2</sub> -1000 plus	NMH <sub>2</sub> -1350 plus
Flow rate (ml/min)	100	160	250	300	500	600	1000	1350
Weight (kg)	20	20	20	20	21	21	22	24
Cascading	Yes (up to 32 units)							
Purity	99.9996%							
Display	Operating parameters, system status, alarms and touch screen							
LED Indicators	Power on/off, system ready, errors							
Membrane	Polymer Electrolyte Membrane(PEM)							
Dryer	Exclusive cold dual dynamic regeneration system							
Max Outlet Pressure	11 bar (160 psig)							
Internal Volume	<50 ml at max pressure							
Water quality	Deionized or demineralized (<10uS)							
Cascading	The exclusive cascading option allows up to 32 units to be connected in series, producing flow-rates of up to 32 litres also via Intranet							
Connections	1/8 swagelock							
Power	110-120 60 Hz / 220-240 50 Hz							
Dimensions(mm)	230W x 450H x 370D							
Certifications	CE, CSA, FCC							
Options	RS232/RS485 and USB, autorefill, external contacts, PC control, Intranet							

# BENEFITS OF PG & NM Plus

## IMPROVED CHROMATOGRAPH RESULTS

Hydrogen as a carrier gas is faster and more sensitive than the more expensive helium. Run time savings of 25% to 35% without a decline in resolution.

## SAFETY

The very limited internal volume (less than 50 ml) allows safe use of the gas generators where the use of cylinders is risky or prohibited. The application of tested safety technologies stops the unit in the event of leaks or malfunctions.

## SAVINGS

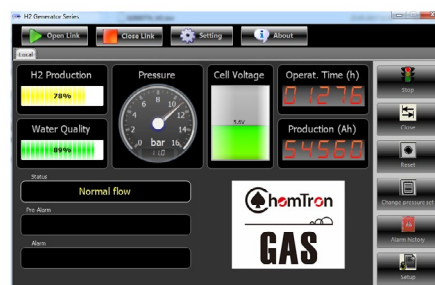
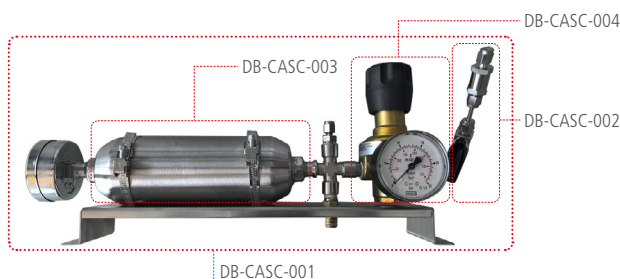
Hydrogen gas generators avoid the need for expensive installation of gas pipelines from the cylinder storerooms to the labs, as well as the need to repeatedly change the bottles.

## LONGER ANALYTICAL COLUMN LIFE

The use of hydrogen as a carrier gas allows lower temperature elution, thus extending the life of the chromatograph column.

## LAB PRODUCTIVITY

Continuous operation 24 hours a day allows maximum lab productivity, cutting dead time for gas bottle changeover and maintenance of the drying system.



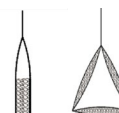
## Accessories of PG Plus and NM Plus

Order No.	Description	Suitable for
DB-10154	I/O Board for NM plus and PG plus	PG Plus and NM Plus
DB-10157	Cable for cascading, all versions (requires I/O Board)	PG Plus and NM Plus
DB-PH200-107	Remote Control RS232 (PC Software + Cable) (requires I/O Board)	PG Plus and NM Plus
DB-PH200-108	Remote Control USB (PC Software + Cable)	PG Plus and NM Plus
DB-PH200-109	Autorefill Plus (requires I/O Board)	PG Plus and NM Plus
DB-CASC-001	Cascading Hardware kit	PG Plus and NM Plus
DB-CASC-002	On off and non-return valve	PG Plus and NM Plus
DB-CASC-003	Buffer reservoir 0,75 liters	PG Plus and NM Plus
DB-CASC-004	PR with pressure gauge	PG Plus and NM Plus
DB-CASC-005	Cascading Hardware kit - high purity	NM Plus
DB-CASC-006	PR with pressure gauge - high purity	NM Plus
DB-H2SE-INT	H <sub>2</sub> sensor with interface Controls Chemtron generator	NM Plus
DB-H2SE-VAL	H <sub>2</sub> sensor with on/off line valve Independent from generator	NM Plus

## Consumables

Order No.	Description	Suitable for
DB-H200-031	Deioniser LE bag (pack of 2 pcs.) for routine use	PG Plus and NM Plus
DB-H200-030	Deioniser triangle LE bag, designed for new generators and higher water purifying capacity, in the first 4 to 6 months of operation.	PG Plus and NM Plus

\* For Tubing / adapter / Valve / Connectors, etc selection, please refer to Page 38





# FID Gas Station

Ideal for all GC Detectors Applications ( PG series )

Ideal for all GC Detectors and Carrier Gas Applications ( NM series )

This clever instrument combines the reliability of our hydrogen and zero air generators into one compact and convenient package. Available in both high purity PG Plus and Ultra high purity NM plus configurations, the FID station can be ordered in either of two different styles – flat for placement under a GC, or the FID tower to conserve bench space. Available in a variety of H<sub>2</sub> flow ranges up to 1 L/min and zero air flow rates up to 5 lpm.



FID TOWER



FID FLAT for placement under GC

## UNIQUE FEATURES

- Save lab bench space, place the FID Station Plus UNDER your GC. (Between GC and Bench)
- Built-in Water tank capacity: 7 lit
- No need of external water tank
- Single Plug connection 220V or 110V for both instrument
- No maintenance thanks to exclusive no-heated dryer
- Easy Change deionizer bag without need to switch off
- In case of service, the "core unit" is easily extractable.
- Easy service thanks to internal rails and sliders.

## OTHER FEATURES

- H<sub>2</sub> Generator + Zero Air Generator All" In-One Automatic Easy refill
- Cascading available up to 32 units
- PC Remote Software control via USB or RS232 Remote alarms / management
- Optional H<sub>2</sub> sensor

Generator is available in the usual flows of H<sub>2</sub> production up to 600cc/min with a purity of 6.0 or 7.0. It is also available for all models, the Zero Air generator that provides 5.0 lt of Zero Air with a contents of HC around 0.5ppm. It integrates a filtration system HC-H<sub>2</sub>O air into the Hydrogen Generator Rack (oil-free compressor not included).

The FID STATION PLUS is the best solution for the GCFID systems. The system is available in two versions:

- H<sub>2</sub> Generator
  - H<sub>2</sub> Generator + Zero Air Generator
- in the same core unit and with the same dimensions.

## CONTROL

Full microprocessor control  
 LCD touch screen interface or push buttons: real time outlet pressure, water quality, autodiagnosics  
 Leak detectors, water level and quality sensors  
 Optimized powerful water pump for PEM cell

## SAVINGS

- Hydrogen gas generators avoid the need for expensive installation of gas pipelines from the cylinder storerooms to the labs, as well as the need to repeatedly change the bottles.
- The dual configuration H<sub>2</sub> or H<sub>2</sub> + Air, available
- in all-in-one instrument, saves space and costs.

## IMPROVED CHROMATOGRAPH RESULTS

Hydrogen as a carrier gas is faster and more sensitive than the more expensive helium. Run time savings of 25% to 35% without a decline in resolution.

## EASY AND QUICK USE

- No caustic solution used and automatic cold dryer regeneration
- Low energy consumption
- Remote Software Control via RS232, USB, Intranet, (also for cascading system)
- Automatic Stand-By mode controlled Hydrogen sensor
- (optional) in case of leaks (LEL oven GC)

## EASY MAINTENANCE

The only maintenance is facilitated by the deionizer bag access system. The system allow to change the deionizer bag without tools or power off the instrument.

## SAFETY

- The very limited internal volume (less than 50 ml) allows safe use of the gas generators where the use of cylinders is risky or prohibited.
- The application of tested safety technologies stops the unit in the event of leaks or malfunctions.
- An optional hydrogen sensor is available for monitoring the oven-LEL of the GC. The Chemtron Plus series also includes additional security features like the shock sensor against shocks cause by earthquakes.

## LAB PRODUCTIVITY

Continuous operation 24 hours a day allows maximum lab productivity, cutting dead time for gas bottle changeover and maintenance of the drying



## HYDROGEN GAS GENERATOR

### FID TOWER-PG Plus series

for all GC Detectors Applications

Models (H <sub>2</sub> )	FID TOWER-PG 100 Plus	FID TOWER-PG 160 Plus	FID TOWER-PG 250 Plus	FID TOWER-PG 300 Plus	FID TOWER-PG 500 Plus	FID TOWER-PG 600 Plus
Flow rate (ml/min)	100	160	250	300	500	600
Weight (kg)	approximated 35					
Purity	99.9996%					
Display	Operating parameters, system status, alarms and touch screen					
LED Indicators	Power on/off, system ready, errors					
Membrane	Polymer Electrolyte Membrane(PEM)					
Max Outlet Pressure	11 bar (160 psig)					
Internal Volume	<50 ml at max pressure					
Water quality	Deionized or demineralized (<2 μs)					
Internal water tank system	7L autorefill included					
Cascading	The exclusive cascading option allows up to 32 units to be connected in series					
Connections	1/8 swagelock					
Power	110-120 60 Hz / 220-240 50 Hz					
Dimensions(mm)	140W × 490H × 580D					
Connection	USB mod A					
Certifications	CE, CSA, FCC					
Options	RS232/RS485 and USB, autorefill, external contacts, PC control, Intranet					



### FID TOWER-NM Plus series

for all GC Detectors and Carrier Gas Applications

Models(H <sub>2</sub> )	FID TOWER -NM 100 Plus	FID TOWER -NM 160 Plus	FID TOWER -NM 250 Plus	FID TOWER -NM 300 Plus	FID TOWER -NM 500 Plus	FID TOWER -NM 600 Plus	FID TOWER -NM 1000 Plus	FID TOWER -NM 1350 Plus
Flow rate (ml/min)	100	160	250	300	500	600	1000	1350
Weight (kg)	approximated 35							
Purity	99.99996%							
Display	Operating parameters, system status, alarms and touch screen							
LED Indicators	Power on/off, system ready, errors							
Membrane	Polymer Electrolyte Membrane(PEM)							
Dryer	Exclusive cold dual dynamic regeneration system							
Max Outlet Pressure	11 bar (160 psig)							
Internal Volume	<50 ml at max pressure							
Water quality	Deionized or demineralized (<2 μs)							
Internal water tank system	7L autorefill included							
Cascading	The exclusive cascading option allows up to 32 units to be connected in series							
Connections	1/8 swagelock							
Power	110-120 60 Hz / 220-240 50 Hz							
Dimensions(mm)	140W × 490H × 580D							
Connection	USB mod A							
Certifications	CE, CSA, FCC							
Options	RS232/RS485 and USB, external contacts, PC software, Manage & Control, Intranet							



### AIR GENERATOR PART

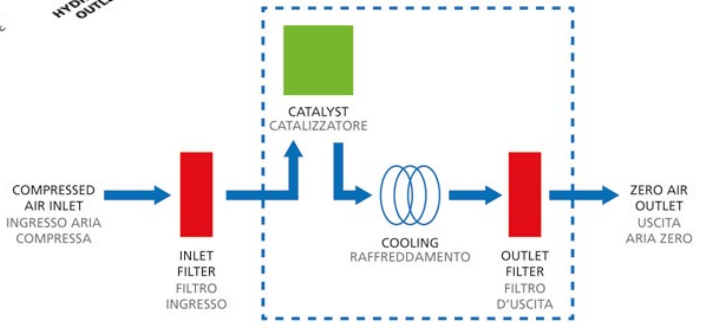
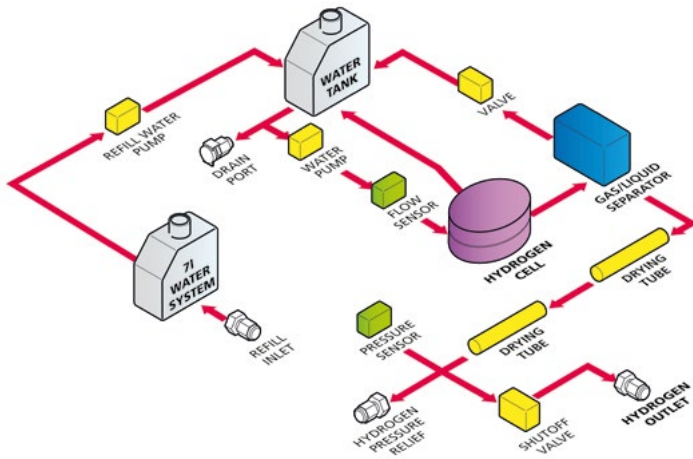
you can choose two different flowrate of zero air modules on the standard hydrogen generator to make all-in-one unit, and must be factory installed.

Flow (ml/min)	1800	5000
Weight (kg)	2	
HC & CO out	< 0.1	
Max CO in	50 ppm	
Max HC in	100 ppm	
Max temp. in	40 °C	
Pressure in	4.5-10 bar	
Pressure drop	< 1 bar	
Stability (min)	45	
In/out connections	1/4" OD, 1/8" OD	
Power	110-120 60Hz / 220-240 50Hz	
Working temp.	Amb.+15 °C	



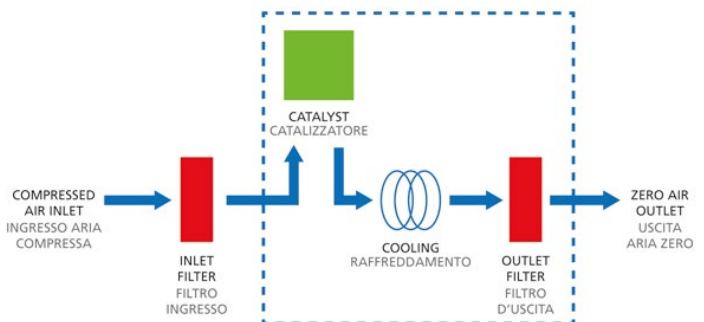
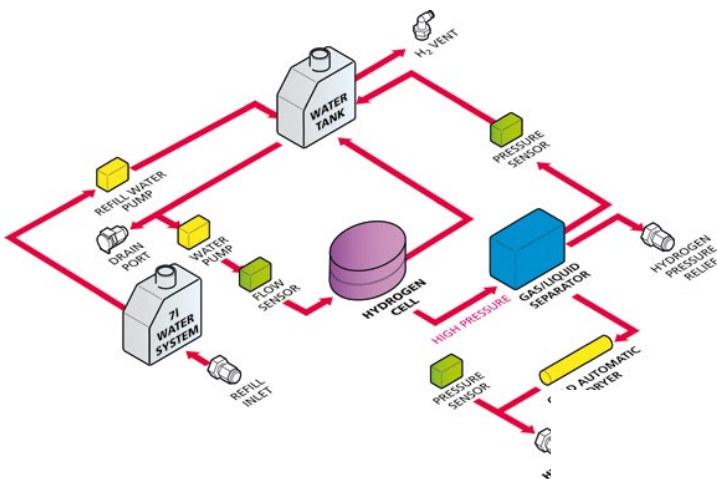
## Diagram for FID Tower -PG Plus

for all GC Detectors Applications



## Diagram for FID Tower -NM Plus

for all GC Detectors and Carrier Gas Applications





HYDROGEN GAS GENERATOR

## FID FLAT-PG Plus series

for all GC Detectors Applications

Models (H <sub>2</sub> )	FID FLAT-PG 100 Plus	FID FLAT-PG 250 Plus
Flow rate (ml/min)	100	250
Weight (kg)	approximated 40	
Purity	99.9996%	
Display	Operating parameters, system status, alarms and touch screen	
LED Indicators	Power on/off, system ready, errors	
Membrane	Polymer Electrolyte Membrane(PEM)	
Max Outlet Pressure	11 bar (160 psig)	
Internal Volume	<50 ml at max pressure	
Water quality	Deionized or demineralized (<2 μs)	
Internal water tank system	7L autorefill included	
Cascading	The exclusive cascading option allows up to 32 units to be connected in series	
Connections	1/8 swagelock	
Power	110-120 60 Hz / 220-240 50 Hz	
Dimensions(mm)	690W x 150H x 680D	
Tested weight support (kg)	80	
Connection	USB mod A	
Certifications	CE, CSA, FCC	
Options	RS232/RS485 and USB, autorefill, external contacts, PC control, Intranet	



## FID FLAT-NM Plus series

for all GC Detectors and Carrier Gas Applications

Models(H <sub>2</sub> )	FID FLAT-NM 100 Plus	FID FLAT-NM 300 Plus	FID FLAT-NM 600 Plus	FID FLAT-NM 1000 Plus
Flow rate (ml/min)	100	300	600	1000
Weight (kg)	approximated 35			
Purity	99.99996%			
Display	Operating parameters, system status, alarms and touch screen			
LED Indicators	Power on/off, system ready, errors			
Membrane	Polymer Electrolyte Membrane(PEM)			
Dryer	Exclusive cold dual dynamic regeneration system			
Max Outlet Pressure	11 bar (160 psig)			
Internal Volume	<50 ml at max pressure			
Water quality	Deionized or demineralized (<2 μs)			
Internal water tank system	7L autorefill included			
Cascading	The exclusive cascading option allows up to 32 units to be connected in series			
Connections	1/8 swagelock			
Power	110-120 60 Hz / 220-240 50 Hz			
Dimensions(mm)	690W x 150H x 680D			
Tested weight support (kg)	80			
Connection	USB mod A			
Certifications	CE, CSA, FCC			
Options	RS232/RS485 and USB, external contacts, PC software, Manage & Control, Intranet			



### AIR GENERATOR PART

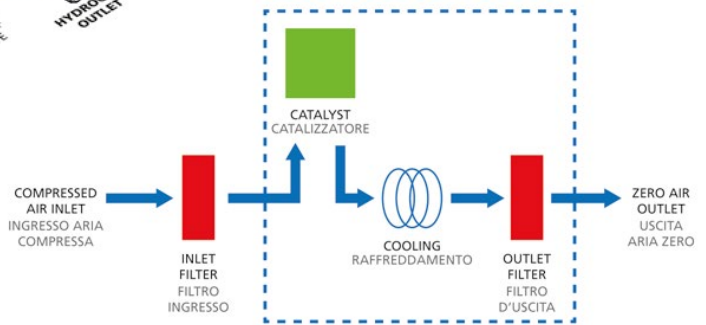
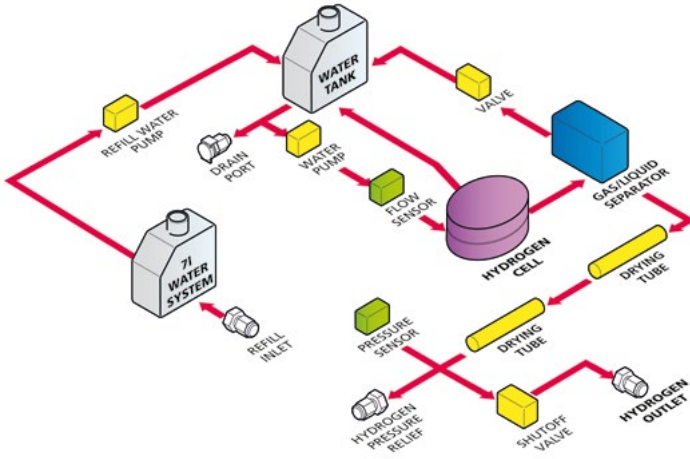
you can choose two different flowrate of zero air modules on the standard hydrogen generator to make all-in-one unit, and must be factory installed.

Flow (ml/min)	1800	5000
Weight (kg)	2	
HC & CO out	< 0.1	
Max CO in	50 ppm	
Max HC in	100 ppm	
Max temp. in	40 °C	
Pressure in	4.5-10 bar	
Pressure drop	< 1 bar	
Stability (min)	45	
In/out connections	1/4" OD, 1/8" OD	
Power	110-120 60Hz / 220-240 50Hz	
Working temp.	Amb.+15 °C	



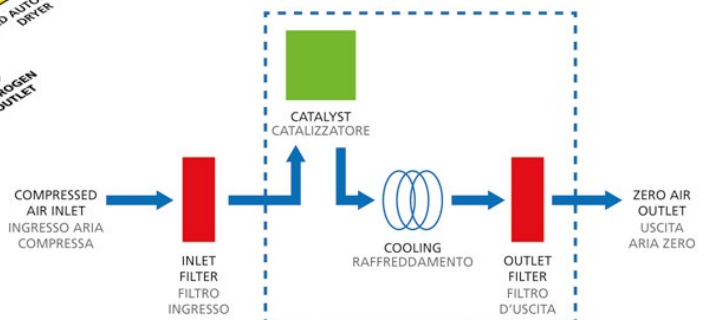
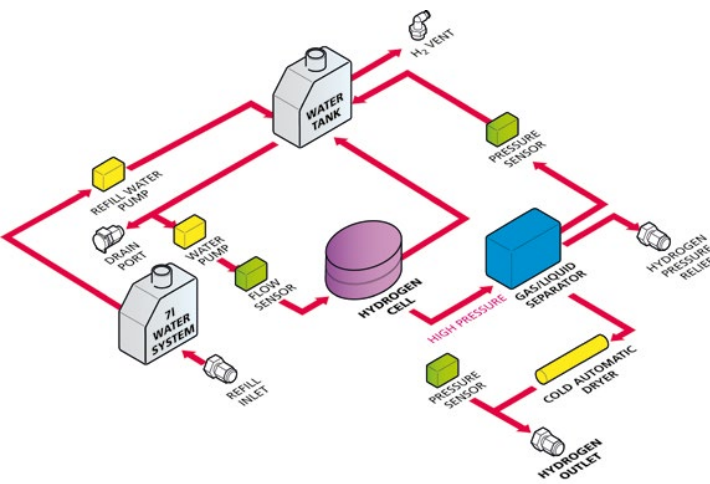
## Diagram for FID FLAT -PG Plus

for all GC Detectors Applications



## Diagram for FID FLAT -NM Plus

for all GC Detectors and Carrier Gas Applications





HYDROGEN GAS GENERATOR

# Hydrogen 19" Rack Plus

For Continuous Emission and Air Monitoring Applications



The new 19" Rack Plus series hydrogen generators use the latest polymer electrolyte membrane (PEM) technology to produce high purity hydrogen.

The exclusive "No Maintenance" gas column cold regeneration system eliminates all down time for maintenance that is typical of other systems on the market, assuring the best hydrogen purity at all times.

The 19" Rack Plus series generators are ideal for:

- New design
- Flame ionization detector (FID)
- Carrier gas for GC and GC-MS
- Fast GC
- Collisions on ICP-MS
- Small fuel-cell cylinder refills

The same features found in our laboratory gas generators are now available in industry standard 19" rack mount format – top quality, ultra safe, supremely reliable, and economical hydrogen generation in a convenient and compact package.

## HYDROGEN 19" RACK PLUS FEATURES:

- H<sub>2</sub> flow rates from 100 to 1350 ml/min
- H<sub>2</sub> purity options 99.9996% or 99.99996%
- H<sub>2</sub> pressure up to 11 bar (160 psig)
- Zero air flow rates 1.8 or 5.0 lpm options
- Zero air purity <0.1 ppm
- Minimal maintenance

## CONTROL

- Full microprocessor control
- LCD touch screen interface or push buttons: real time outlet pressure, water quality autodiagnosics with alarms / flowmeter
- Leak detectors, water level and quality sensors Optimized powerful water pump for PEM cell
- Easy and quick use: no caustic solution used and automatic cold dryer regeneration
- Earthquake / shock sensor
- Low energy consumption
- Software upgrade by standard USB



## BENEFITS

### IMPROVED CHROMATOGRAPH RESULTS

Hydrogen as a carrier gas is faster and more sensitive than the more expensive helium. Run time savings of 25% to 35% without a decline in resolution.

### SAFETY

The very limited internal volume (less than 50 ml) allows safe use of the gas generators where the use of cylinders is risky or prohibited.

The application of tested safety technologies stops the unit in the event of leaks or malfunctions.

### SAVINGS

Hydrogen gas generators avoid the need for expensive installation of gas pipelines from the cylinder storerooms to the labs, as well as the need to repeatedly change the bottles.

### LONGER ANALYTICAL COLUMN LIFE

The use of hydrogen as a carrier gas allows lower temperature elution, thus extending the life of the chromatograph column.

### LAB PRODUCTIVITY

Continuous operation 24 hours a day allows maximum lab productivity, cutting dead time for gas bottle changeover and maintenance of the drying system.



## 19" RACK-PG Plus series

Models(H <sub>2</sub> )	RACK-PG 100 Plus	RACK-PG 160 Plus	RACK-PG 250 Plus	RACK-PG 300 Plus	RACK-PG 500 Plus	RACK-PG 600 Plus
Flow rate (ml/min)	100	160	250	300	500	600
Purity	99.9996%					
Display	LCD touch screen interface or push bottoms					
Membrane	Polymer Electrolyte Membrane(PEM)					
Outlet Pressure	Adjustable by electronic controller up to 11 bar (160 psig)					
Water quality	Deionized or demineralized (<2 μs)					
Dimensions(mm)	19" standard RACK					
Connection	Software upgrade by standard USB					
Certifications	CE, CSA, FCC					

## 19" RACK-NM Plus series

Models(H <sub>2</sub> )	RACK-NM 100 Plus	RACK-NM 160 Plus	RACK-NM 250 Plus	RACK-NM 300 Plus	RACK-NM 500 Plus	RACK-NM 600 Plus	RACK-NM 1000 Plus	RACK-NM 1350 Plus
Flow rate (ml/min)	100	160	250	300	500	600	1000	1350
Purity	99.99996%							
Display	LCD touch screen interface or push bottoms							
Membrane	Polymer Electrolyte Membrane(PEM)							
Dryer	Exclusive cold dual dynamic regeneration system							
Outlet Pressure	Adjustable by electronic controller up to 11 bar (160 psig)							
Water quality	Deionized or demineralized (<2 μs)							
Dimensions(mm)	19" standard RACK							
Connection	Software upgrade by standard USB							
Certifications	CE, CSA, FCC							

### AIR GENERATOR PART

you can choose two different flowrate of zero air modules on the standard hydrogen generator to make all-in-one unit, and must be factory installed.

Flow (ml/min)	1800	5000
Weight (kg)	2	
HC & CO out	< 0.1	
Max CO in	50 ppm	
Max HC in	100 ppm	
Max temp. in	40 °C	
Pressure in	4.5-10 bar	
Pressure drop	< 1 bar	
Stability (min)	45	
In/out connections	1/4" OD, 1/8" OD	
Power	110-120 60Hz / 220-240 50Hz	
Working temp.	Amb.+15 °C	



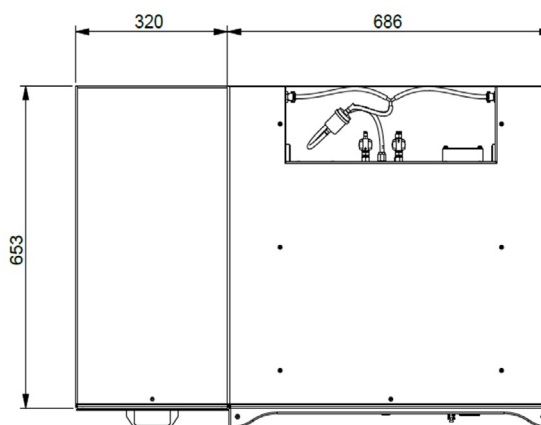
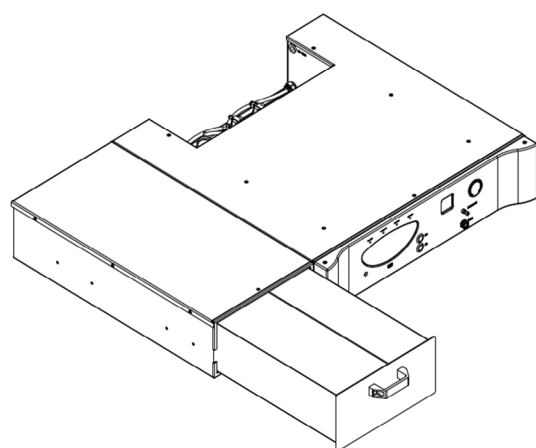


## HYDROGEN GAS GENERATOR

### Accessories for FID Gas Station and RACK Plus

Order No.	Description	Suitable for
DB-FH-1800	Air Option 1.8l/min for FID-S	FID-F
DB-FH-5000	Air Option 5.0l/min for FID-S	FID-F
DB-FH-MS	FID-Station MS Extension	FID-F
DB-RH200-020	Refill valve - replacing inlet pump (for H <sub>2</sub> O pressurized lines)	RACK
DB-FT-1800	Air Option 1.8l/min for FID-T	FID-T
DB-FT-5000	Air Option 5.0l/min for FID-T	FID-T
DB-RH-1800	Air Option 1.8l/min for Rack	RACK
DB-RH-5000	Air Option 5.0l/min for Rackz	RACK
DB-RT3U	Refill station 3U for Rack NM/PG PLUS	RACK
DB-RT2U	Refill station 2U for Rack NM/PG PLUS	RACK
DB-10155	I/O board for RACK/FID NM plus and PG plus	FID-F and RACK
DB-10156	I/O board for FID-Tower NM plus and PG plus	FID-T
DB-10157	Cable for cascading, all versions (requires I/O Board)	FID-F / FID-T / RACK
DB-PH200-107	Remote Control RS232 (PC Software + Cable) (requires I/O Board)	FID-F / FID-T / RACK
DB-PH200-108	Remote Control USB (PC Software + Cable)	FID-F / FID-T / RACK
DB-CASC-001	Cascading Hardware kit	FID-F / FID-T / RACK
DB-CASC-002	On off and non-return valve - high purity	FID-F / FID-T / RACK
DB-CASC-003	Buffer reservoir 0,75 liters - high purity	FID-F / FID-T / RACK
DB-CASC-004	PR with pressure gauge	FID-F / FID-T / RACK
DB-CASC-005	Cascading Hardware kit - high purity	FID-F / FID-T / RACK ( NM )
DB-CASC-006	PR with pressure gauge - high purity	FID-F / FID-T / RACK ( NM )
DB-RH200-022	H <sub>2</sub> pipe fitting kit 1/8" (for any additional rack unit)	RACK
DB-H2SE-INT	H <sub>2</sub> sensor with interface Controls Chemtron generator	FID-F / FID-T / RACK ( NM )
DB-H2SE-VAL	H <sub>2</sub> sensor with on/off line valve Independent from generator	FID-F / FID-T / RACK ( NM )

### FID Flat MS Extension ( p/n:DB-FH-MS)



### Consumables:

Order No.	Description	Suitable for
DB-H200-031	Deioniser LE bag (pack of 2 pcs.) for routine use	FID-F / FIT-T / RACK
DB-H200-030	Deioniser triangle LE bag. designed for new generators and higher water purifying capacity. in the first 4 to 6 months of operation.	FID-F / FIT-T / RACK
DB-RH200-013	Coalescent filter AF10 with cartridge	FID-F / FIT-T / RACK
DB-RH200-017	Replacement cartridge for coalescent filter AF10	FID-F / FIT-T / RACK

\* For Tubing / adapter / Valve / Connectors,etc selection, please refer to Page 38



# Special feature (option)

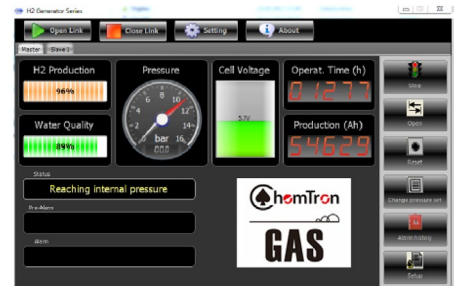
## Remote Control

### Part numbers

Order No.	Description
DB-PH200-107	Remote Control RS232 (PC Software + Cable) (requires I/O Board)
DB-PH200-108	Remote Control USB (PC Software + Cable)

### Software and hardware requirements

	Description
PC	Windows XP, Windows 7, 8, 10 1 free RS232 Com Port ( for DB-PH200-107 ) or 1 free USB Port ( for DB-PH200-108 )
Generator	All NM and PG generators with serial number ...1601...already have a USB connector on the backside I/O board option installed for DB-PH200-107



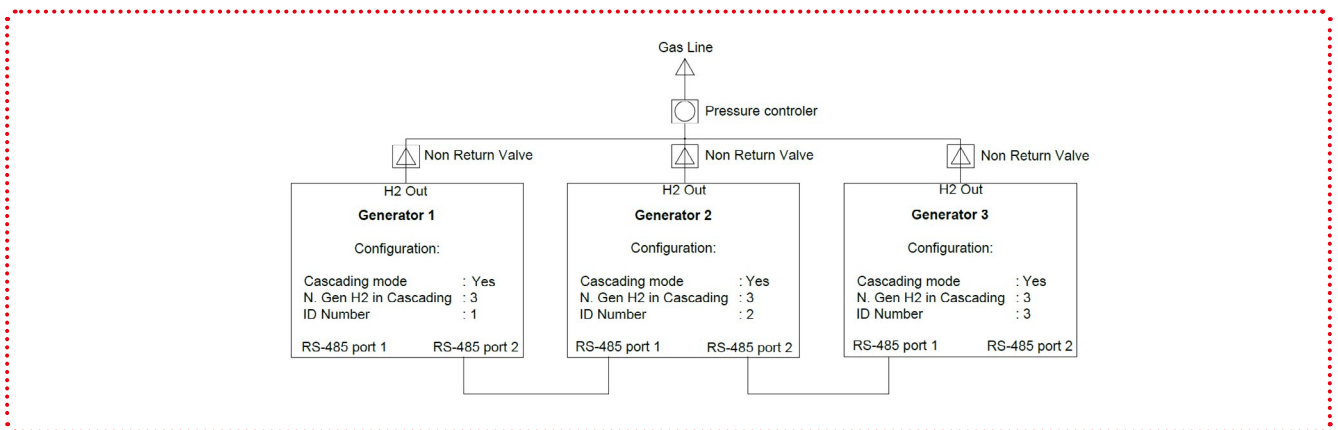
## Cascading

The RS-485 interface allows up to 10 generators to be operated in parallel mode. There are Two modes available.

The generators are connected with an external non return valve to a gas line. The pressure must be controlled with an external pressure regulator. The outlet pressure is fixed to 10.3 bars. This mode allows up to 10 generators in a cascading group.

The communication of the generators is done via the RS-485 Interface. For a correct communication each generator need a unique ID number. Each generator must know how many generators are connected in the cascading group. As soon as the generators are powered up, one generator becomes the master, and controls the others (slaves). If there is a problem with the master, one of the slave generators will become the master.

Every generator can be forced to be the master, by entering into the menu you will see the function "force to master", just select this function and acknowledge. When a generator is the master, you can see the letter "M" in the menu button, while the slaves show the letter "S".



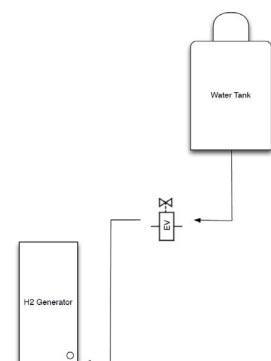
### IMPORTANT!

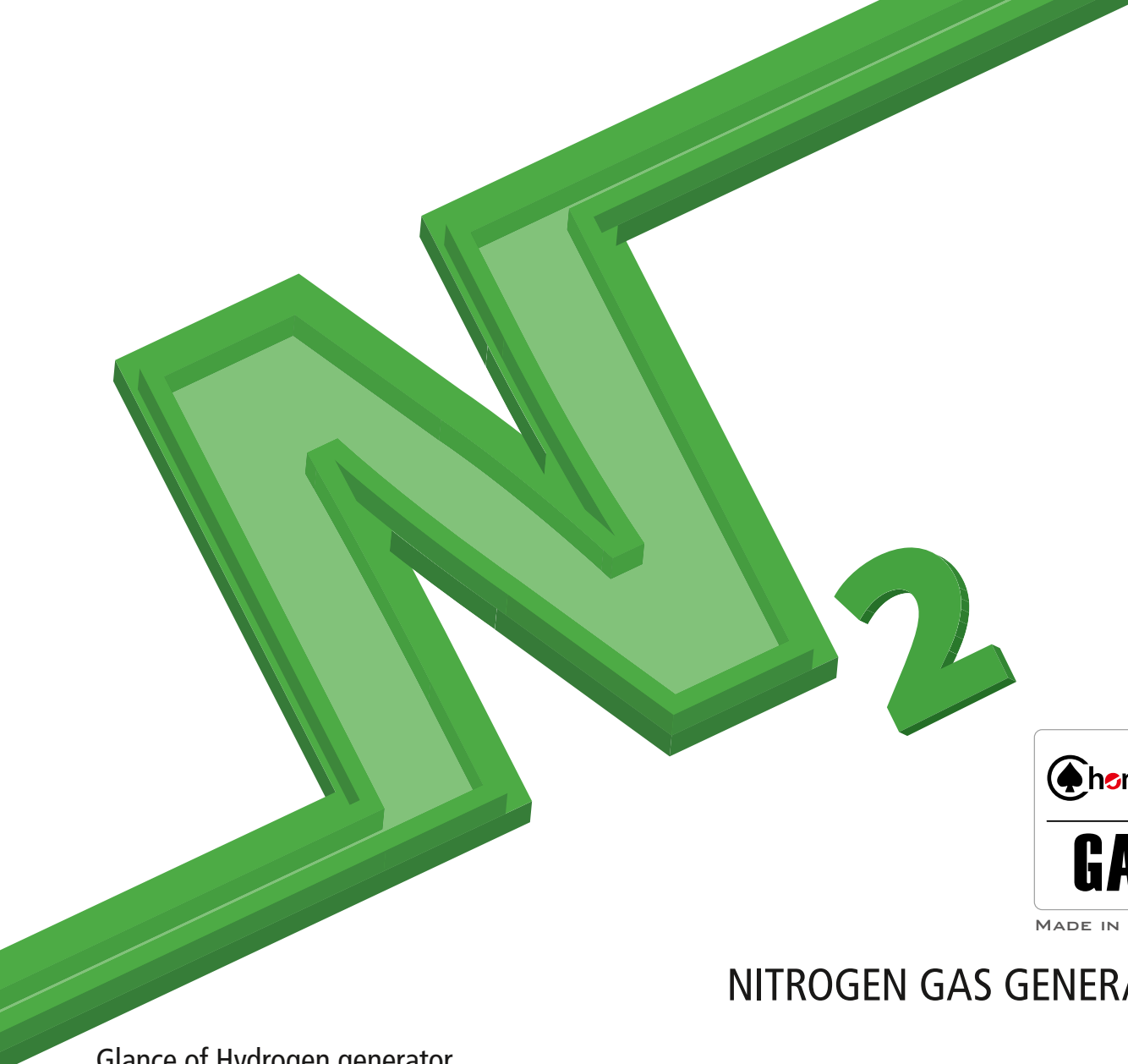
The cascading function will only work properly if the gas outlets on all the generators are connected to the same gas line.

## Auto refill

The auto refill option gives you the possibility to refill the water tank of the generator automatically from an external water source. You can either use a DI water line or a water reservoir. The kit includes a pump and a valve that assure a constant flow of water.

The system recognize itself when stops the refilling and when is time to restart it.





# NITROGEN GAS GENERATOR

## Glance of Hydrogen generator

	Series	The range of flow rate L/min	With or without air compressors	Purity
N <sub>2</sub>	N <sub>2</sub> -TOWER Plus (Oven)	0.2-4	without	99.9999%
	Mini WHISPER	5-12	without	98-99.9%
	WHISPER	40-120	without	98-99.9%
	WIND	3-80	with	90-99%
	WIND MS	5-80	with	97-99.9%
	MISTRAL EVOLUTION	10-40	with	98-99.9%
N <sub>2</sub> + Air	Mini WHISPER Hybrid	5-12	without	98-99.9%
	WHISPER Hybrid	35 ( Air )	without	Zero Air
		10-120	without	98.5%
	MISTRAL EVOLUTION HYBRID	35 or 70 ( Air )	without	Zero Air
		Up to 12	with	98-99.9%
	MISTRAL EVOLUTION GAS-STATION	Up to 10 ( Air )	with	Zero Air
	Up to 8 ( Air )	with	Zero Air	
	Up to 25	with	98-99.9%	
	Up to 40 ( Air )	With	Zero Air	



For air compressor selection of N<sub>2</sub>-TOWER Plus and WHISPER series, please refer to Page 38



NITROGEN GAS GENERATOR



## Nitrogen Generators For Gas Chromatography and Analytical Instrument Applications

Chemtron nitrogen generators are engineered to transform standard compressed air into a safe regulated supply of Ultra High Purity nitrogen. Utilizing a superior quality carbon molecular sieve (CMS) and innovative column switching, the nitrogen generators require minimal maintenance and operator attention.

### NITROGEN GENERATOR FEATURES:

- Flow rates from 500 to 4,000 ml/min
- Purity up to 99.999%
- Pressure up to 5 bar (75psig)
- Space saving design
- Optional hydrocarbon removal for GC applications
- Ideal for GC carrier gas including ECD, make up gas, TOC, DSC, and ELSD applications

The new series of Nitrogen generator modules N<sub>2</sub>-TOWER Plus produces high purity Nitrogen for all major applications in analytical laboratories. Nitrogen generators eliminate the typical problems associated with the handling of high pressure gastanks and they reduce the cost for high purity Nitrogen immediately.

The N<sub>2</sub>-TOWER Plus series of Nitrogen generators use air from a separate compressor and remove the Oxygen to less than 10ppm (hydrocarbons to <0.1ppm is optional). The guaranteed flow rates of pure Nitrogen are 500 ml / min, 750 ml / min, 1300 ml / min or 4000 ml / min depending on the generator module.

# N<sub>2</sub>-TOWER PLUS

## SPECIFICATIONS

LED-display for status  
 Maintenance control light  
 Alarms for: Catalyst duration, Catalyst temperature, pressure Simple removal of filters without the need to open instrument

## APPLICATIONS

- GC-Carrier Gas and Make-Up Gas
- ICP / HPLC-ELSD
- GC / FTIR
- Incubators
- TGA-DSC

## BENEFITS

The constant high purity of the Nitrogen provides stable conditions for analytical systems and guarantees highly reproducible results.

The investment for the Nitrogen generator is recuperated in about one year since there is no extra cost anymore for handling, transporting, storing and purchasing the high pressure gastanks.

The installation is very simple and quick as is the routine maintenance.

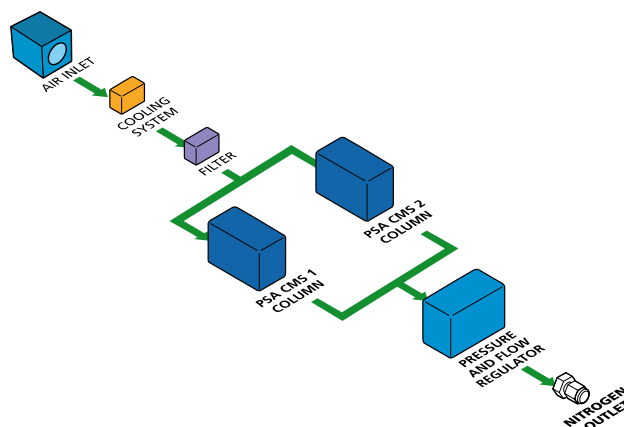
## OPERATING DIAGRAM

The compressed air from an outside source (not included) is pre-cleaned by passing through a charcoal filter before the Oxygen is removed by the double column pressure swing adsorption (PSA) system. One of the PSA columns is active whilst the second one is regenerated. The removed gases like Oxygen are released back to the atmosphere.

Other trace impurities such as hydrocarbons and CO are removed to levels <0.1ppm whilst the Nitrogen is passing through an optional catalyst. An additional filter is installed to remove particulates down to 0,5 microns.

The Nitrogen generators of the N<sub>2</sub>-TOWER Plus series are ideal for the method development and routine analysis by GC, GC-MS, ICP, HPLC-ELSD.

For the complete removal of all hydrocarbons, an optional catalytic oven is available. This will guarantee trouble-free operation of FID detectors in GC.



## N<sub>2</sub>-TOWER Plus series

Models(N <sub>2</sub> )	N <sub>2</sub> TOWER HP 200	N <sub>2</sub> TOWER HP 500	N <sub>2</sub> TOWER HP 750	N <sub>2</sub> TOWER HP 1300	N <sub>2</sub> TOWER HP 4000
Models(N <sub>2</sub> +Oven) Used as carrier gas	N <sub>2</sub> TOWER HP 500+Oven	N <sub>2</sub> TOWER HP 500+Oven	N <sub>2</sub> TOWER HP 750+Oven	N <sub>2</sub> TOWER HP 1300+Oven	N <sub>2</sub> TOWER HP 4000+Oven
Flow rate (ml/min)	200	500	750	1300	4000
Purity	99.9999%	99.9999%	99.998%	99.99%	99.9%
Purity (with OVEN )	99.9999%	99.9999%	99.999%	99.995%	99.99%
Delivery pressure	Up to 5bar ( 75 psig)				
Input pressure for mode Without compressor	7min-10 bar max ( 110-145 psig ) / Non condensing and oil free Air				
N <sub>2</sub> purity	0.1 ppm total Hydrocarbons ( if option is installed) <-50°C DP ( -58°F )				
Sound level	Noiseless ( external compressor )				
Particle filtration level	50 μ m				
Fittings	Inlet: 1/8" G thread with 6mm tube rapid fitting Outlet: 1/8" G thread with 4mm tube rapid fitting				
User interface	Pressure setting, system status, LED RGB display				
Dimensions ( mm )	140W × 630D × 490H				
Power consumptions	20W-270W with catalytic oven				
Power requirements	110-120V 60Hz / 220-240V 50Hz				
Recommendation of air compressor	GH6L	GH6L	GH6L	GH12L	GH20L



## Consumables

Order No.	Description	Suitable for
DB-10161	Replacement cartridge for coalescent filter AF20 (4pcs)	N <sub>2</sub> -TOWER Plus
DB-N-FIL004	Coalescent filter AF20 with cartridge	N <sub>2</sub> -TOWER Plus

\* For air compressor selection, please refer to Page 38

\* For Tubing / adapter / Valve / Connectors,etc selection, please refer to Page 38



# N<sub>2</sub>-WHISPER

The Whisper-0-80 Hybrid nitrogen generator has been developed to meet specific requirements in terms of flow, purity and pressure in LCMS applications that requires also filtered and dried air.

It can also be used for the evaporation of solvents in samples being analyzed. The simple high efficiency membrane technology allows the separation of nitrogen from the other components of the compressed air inlet.

The low pressure drop, just one bar, allows the unit to be connected to an existing dry and oil-free compressed air source in the lab.



## BENEFITS

### BETTER RESULTS FROM ANALYTICAL INSTRUMENTS

The constant purity of the nitrogen improves system stability and ensures reproducible results.

### BETTER LAB EFFICIENCY

The large nitrogen volumes used in analytical labs for LC-MS techniques mean gas bottles are insufficient to ensure good lab productivity.

### COST SAVINGS

The investment can normally be paid back in less than a year. No pipeline is required to carry the gas from the storeroom to the lab.

### IMPROVED SAFETY

Nitrogen produced at low pressure and at room temperature eliminates the risks relating to high pressure gas bottle use and the handling of liquid nitrogen.

### ...AND SIMPLE INSTALLATION

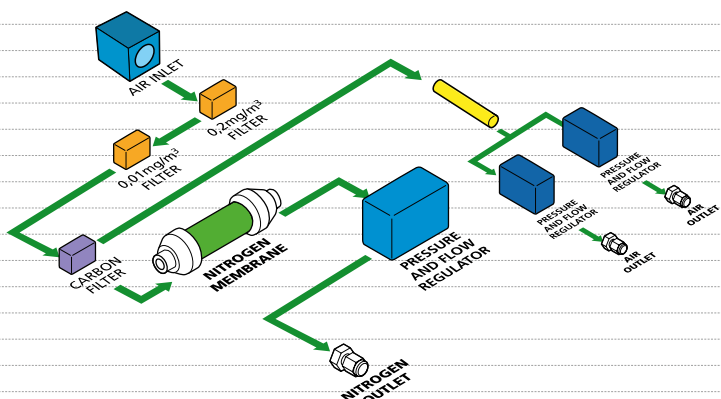
The Whisper-0-80 HYBRID nitrogen generator is very easy to install in the lab. No power connection is required. Wall-mounted installation saves bench space!

### MEMBRANE SEPARATION TECHNIQUE

Compressed air is forced through a hollow fiber membrane, with selective permeation of the different components nitrogen, oxygen, CO<sub>2</sub>, water vapor and traces of rare gases- depending on the rate of diffusion.

A quantity of incoming air, after a 3-steps filtering procedure, is dried through a fiber membrane column. The customer has also a source of dried filtered air in case of analysis that requires it.

Models	N <sub>2</sub> -Whisper 0-40	N <sub>2</sub> -Whisper 0-80	N <sub>2</sub> -Whisper 0-120
Max flow ( L/min of N <sub>2</sub> )	40	80	120
Inlet air flow ( L/min )	280	500	700
Weight ( kg )	15	18	20
Outlet Pressure	7 bar		
Inlet air pressure	8.5-10 bar		
Pressure drop	<0.8bar ( 10 psig)		
Purity ( based on outlet flow )	98~99.9%		
Residual particulate	<0.01 micron		
Dewpoint	-40°C		
Maximum operating temp	10°C -35°C		
Air compressor supplied	none		
Background noise	none		
Electrical requirements	none		
Connections	1/4 G		
Dimensions ( mm )	1150H × 48W × 260D		



# WHISPER Hybrid

The Whisper-0 nitrogen generator has been developed to meet specific requirements in terms of flow, purity and pressure in LCMS applications.

It can also be used for the evaporation of solvents in samples being analyzed. The simple high efficiency membrane technology allows the separation of nitrogen from the other components of the compressed air inlet.

The low pressure drop, just one bar, allows the unit to be connected to an existing dry and oilfree compressed air source in the lab.

## BENEFITS

### BETTER RESULTS FROM ANALYTICAL INSTRUMENTS

The constant purity of the nitrogen improves system stability and ensures reproducible results.

### BETTER LAB EFFICIENCY

The large nitrogen volumes used in analytical labs for LC-MS techniques mean gas bottles are insufficient to ensure good lab productivity.

### COST SAVINGS

The investment can normally be paid back in less than a year. No pipeline is required to carry the gas from the storeroom to the lab.

### IMPROVED SAFETY

Nitrogen produced at low pressure and at room temperature eliminates the risks relating to high pressure gas bottle use and the handling of liquid nitrogen.

### ...AND SIMPLE INSTALLATION

The Whisper-0 nitrogen generator is very easy to install in the lab. No power connection is required. Wall-mounted installation saves bench space!



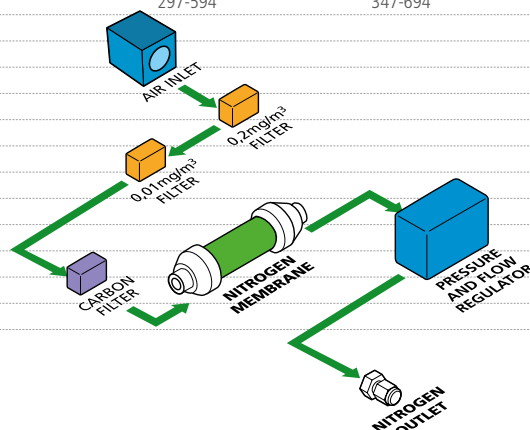
## MEMBRANE SEPARATION TECHNIQUE

Compressed air is forced through a hollow fiber membrane, with selective permeation of the different components nitrogen, oxygen, CO<sub>2</sub>, water vapor and traces of rare gases- depending on the rate of diffusion.

The rate of diffusion of nitrogen through the membrane is slower than the other components, which thus flow outside of the fibre membrane, leaving just nitrogen inside; this is then discharged subsequently, ready for use.



Models	N <sub>2</sub> -Whisper 0-10 Hybrid	N <sub>2</sub> -Whisper0-40 Hybrid	N <sub>2</sub> -Whisper 0-40 Hybrid P-E	N <sub>2</sub> -Whisper 0-80 Hybrid	N <sub>2</sub> -Whisper 0-120 Hybrid
Max flow of N <sub>2</sub> ( L/min )	12 @ 7 bar (100psi)	40 @ 7 bar (100psi)	15 @ 7 bar (100psi)	80 @ 7 bar (100psi)	120 @ 7 bar (100psi)
Air output A ( L/min )	26 @ 7 bar (100psi)	22 @ 7 bar (100psi)	70 @ 7 bar (100psi)	22 @ 7 bar (100psi)	22 @ 7 bar (100psi)
Air output B ( L/min )	10 @ 4 bar (60psi)	25 @ 4 bar (60psi)	N/A	25 @ 4 bar (60psi)	25 @ 4 bar (60psi)
Air Input ( L/min )	96-192	197-394	220-440	297-594	347-694
Outlet Pressure	7 bar N <sub>2</sub> , Adjustable 1.2bar outlets				
Inlet air pressure	8.5-10 bar				
Pressure drop	<0.8bar ( 10 psig)				
Purity ( based on outlet flow )	98-99.9%				
Residual particulate	<0.01 micron				
Dewpoint	-40°C				
Maximum operating temp	10°C -35°C				
Air compressor supplied	none				
Background noise	none				
Electrical requirements	none				
Connections	1/4 G				
Dimensions ( mm )	1150H x 48W x 260D				





# MINI-WHISPER Series

The Mini-Whisper Nitrogen Generator has been developed to meet specific requirements in terms of flow, purity and pressure on CAD applications

The simple high efficiency membrane technology allows the separation of nitrogen from the other components of the compressed air inlet.

The low pressure drop allows the unit to be connected to an existing dry and oil-free compressed air source in the lab.

## BENEFITS

### BETTER RESULTS FROM ANALYTICAL INSTRUMENTS

The constant purity of the nitrogen improves system stability and ensures reproducible results.

### BETTER LAB EFFICIENCY

Gas bottles are insufficient to ensure good lab productivity.

### COST SAVINGS

The investment can normally be paid back in less than a year. No pipeline is required to carry the gas from the storeroom to the lab.

### IMPROVED SAFETY

Nitrogen produced at low pressure and at room temperature eliminates the risks relating to high pressure gas bottle use and the handling of liquid nitrogen.

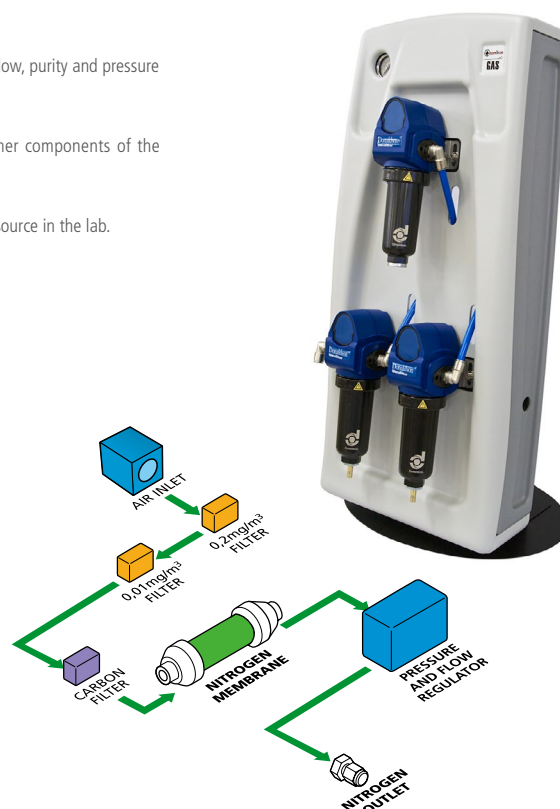
### ...AND SIMPLE INSTALLATION

The Mini-Whisper Nitrogen Generator is very easy to install in the lab. No power connection is required. Bench-top or wall-mounted installation to save bench space!

## MEMBRANE SEPARATION TECHNIQUE

Compressed air is forced through a hollow fiber membrane, with selective permeation of the different components - nitrogen, oxygen, carbon dioxide, water vapor and traces of rare gases - depending on the rate of diffusion.

The rate of diffusion of nitrogen through the membrane is slower than the other components, which thus flow outside of the fiber membrane. Just nitrogen remains inside which is then subsequently discharged, ready for use.



Models	N <sub>2</sub> -MINI-WHISPER	MINI-WHISPER Hybrid
Out max flow of N <sub>2</sub>	5-12L/min	5-12L/min
Out max flow of Air	none	35 L/min
Inlet air flow	>80L/min	>80L/min
Outlet Pressure	Up to 7 bar	Air (A):7bar, Air (B)4bar, N <sub>2</sub> : 8bar
Inlet air pressure	5-8bar	
Pressure drop	<0.8bar ( 10 psig)	
Purity ( based on outlet flow )	98-99.9%	
Residual particulate	<0.01 micron	
Dewpoint	-40°C	
Maximum operating temp	10°C -35°C	
Air compressor supplied	none	
Background noise	none	
Electrical requirements	none	
Connections	1/4 G	
Weight ( kg )	8	
Dimensions ( mm )	735H × 348W × 350D	

## Options

Order No.	Description	Suitable for
DB-WN2-005	10 Lt. tank	All WHISPER Series
DB-WN2-006	10 mt. Tube	All WHISPER Series
DB-WN2-017	Special 100% teflon tubing (any model)	All WHISPER Series
DB-GH60000-EU	Oil free Air Compressor, 60L/min at 8bar, Max 10 bar, Includes: adsorbent dryer, a muffling box, inlet filter, tank outlet is 1/4 inch inner threaded, 450 × 500 × 740mm	All WHISPER Series

## Consumables

Order No.	Description	Suitable for
DB-WN2-001	Annual Filter Kit (3 filter elements)	All WHISPER Series

\* For air compressor selection, please refer to Page 38

\* For Tubing / adapter / Valve / Connectors,etc selection, please refer to Page 38



# WIND series

## Large flow rate nitrogen generators

WIND series nitrogen generator produces high purity and large flow rate nitrogen for all major applications in analytical laboratories. Nitrogen generators eliminate the typical problems associated with the handling of high pressure gastanks and they reduce the cost for high purity Nitrogen immediately.

### WIND series features

- New molecular sieve separation and membrane passivation technology
- Built-in air compressor
- Long working life and the separation effect is not attenuated
- Easy to use, and produce gas immediately after turn on the equipment
- Low noise and good heat dissipation, laboratory environment friendly

### Application

- Nitrogen blowing apparatus
- Nitrogen cleaning
- Hot desegregation
- Evaporative light-scattering detector (ELSD)
- Solid phase extractio

Hollow fiber membrane technology

All-in-one system

Air compressor has been integrated

Compact and save laboratory space



### Specifications

Models	WIND-3	WIND-30	WIND-80
Power (W)	800	1600	3900
Power (V / Hz)	220V/50Hz	220V/50Hz	380V/50Hz
Purity	97%	90-98.5%	96-99.5%
Flow rate (L/min) @6.9bar	3	5 ~ 30	20 ~ 80
Delivery pressure	5.5bar (80psi)	5.5bar (80psi)	6.9bar (100psi)
Plasticizers (PAEs)	without	without	without
Dew point (°C)	<-45	<-45	<-45
Particle filtration level (µm)	<0.01	<0.01	<0.01
Environmental humidity (°C)	0-80% No condensation	0-80% No condensation	0-80% No condensation
Environmental temperature (°C)	10-35	10-35	10-35
Motor speed (rpm)	1450	1450	1450
Dimension (mm)	300 × 500 × 500	420 × 640 × 730	850 × 720 × 1065
Outlet (mm)	6mm quick connector or G1/4 Male	6mm quick connector or G1/4 Male	6mm quick connector or G1/4 Male
Sound level (dB)	60	65	65



# WIND MS Nitrogen Generator

## Especially for LC-MS

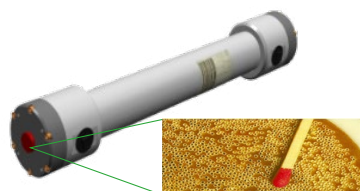
WIND MS series using hollow fiber membrane technology and built-in compressed air supply system. Long-term operation design and test have been done for supporting liquid chromatography-mass spectrometry (LC-MS). Compact structure, convenient movement and low noise.

### Application

LC-MS / ELSD /, CAD / Purge gas and Solid phase extraction, etc.

### Leading technology

- With pre-triple filter, the diameter of the exhaust particles is less than 0.01 $\mu$ m.
- Built-in cooler, constant temperature hollow fiber membrane technology to ensure the best separation effect
- Purity up to 99.9%, full compliance with this gas requirement of mass spectrometry.
- No plasticizer and phthalates to ensure healthy use



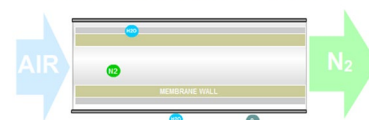
### Safety and reliability

- No high pressure, low and high temperature risk
- Overtemperature Protection Function of Compressor
- Compressor shockproof base
- Automatic pressure relief function to ensure the start of compressor under atmospheric pressure and prolong compressor life
- Low noise, heat dissipation control and lab friendly

### Automation and Convenience

- Automatic Timing Function, Recording Equipment Working Time
- Automatic Drainage Function
- Quick-open side door for easy maintenance
- Description of incidental use and maintenance of side panel

### NITROGEN SEPARATION PRINCIPLE



Ambient air contains nitrogen (78.1%), oxygen (20.9%), argon (1%), carbon dioxide, water vapor and some traces of inert gasses. Pressurized air is fed through the hollow fibre membrane.

Diffusion Rate SLOW  $N_2$  O<sub>2</sub> FAST

NEXT

## Hollow fiber membrane technology

## All-in-one system

## Air compressor has been integrated

## Compact and save laboratory space



### Specifications

Models	WIND MS5	WIND MS15	WIND MS40	WIND MS80
Power ( W )	750	750	2300	3900
Power ( V / Hz )	220V/50Hz	220V/50Hz	220V/50Hz	380V/50Hz
Purity	99.7-99.9%	96-99.9%	96-99.9%	96-99.9%
Flow rate ( L/min ) @6.9bar	1 ~ 5	5 ~ 15	10 ~ 40	20 ~ 80
Delivery pressure	6.9bar ( 100psi )	6.9bar ( 100psi )	6.9bar ( 100psi )	6.9bar ( 100psi )
Plasticizers (PAEs)	without	without	without	without
Dew point ( °C )	<-45	<-45	<-45	<-45
Particle filtration level ( $\mu$ m )	<0.01	<0.01	<0.01	<0.01
Environmental humidity ( °C )	0-80% No condensation	0-80% No condensation	0-80% No condensation	0-80% No condensation
Environmental temperature ( °C )	10-35	10-35	10-35	10-35
Motor speed (rpm)	1450	1450	1450	1450
Dimension ( mm )	300 × 500 × 500	400 × 560 × 800	400 × 660 × 1200	850 × 720 × 1065
Outlet ( mm )	6mm quick connector or G1/4 Male	6mm quick connector or G1/4 Male	6mm quick connector or G1/4 Male	6mm quick connector or G1/4 Male
Sound level (dB)	57	57	60	60

# MISTRAL EVOLUTION FAMILY

The Mistral-Evolution Nitrogen Gas Generator is specifically designed and built to meet the requirements for flow-rates, purity and pressure of today's LCMS systems. Besides this application they are also used for sample preparation work such as solvent evaporation and others.

The simple but well proven pressure swing adsorption (PSA) technology is used to separate Nitrogen from the other gases present in compressed air.



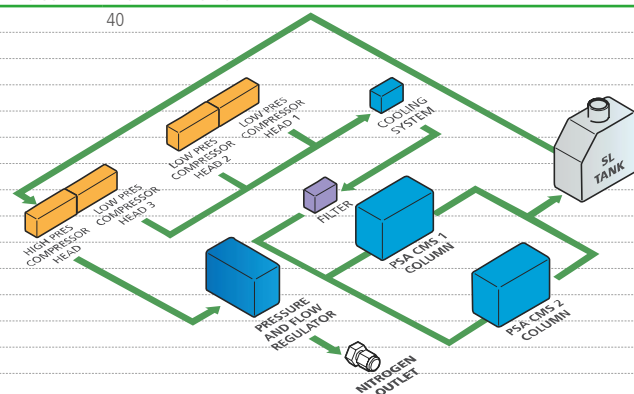
## ADVANTAGES

- The Mistral-Evolution is optimized to generate nitrogen of constant purity and hence improve the performance of the analytical instrument - which will result in an overall productivity improvement of the laboratory.
- The large quantities of pure nitrogen used for LCMS require a continuous supply which cannot be provided by gas tanks. There will be no extra cost anymore for gas supply, transportation, storage and handling. The pure nitrogen is produced locally at low pressure and at ambient temperature which is a very much appreciated advantage over high pressure gas tanks or liquid nitrogen.
- The Mistral-Evolution is easy to install - a 220V-50Hz optional 110V-60Hz power socket is all what is required. The low noise of the instrument allows the installation near the LCMS or next door up to 30 meters apart.

## MISTRAL EVOLUTION

The Mistral LCMS Evolution (PSA technology) include an integral oil-free air compressor and deliver a continuous stream of pure nitrogen gas of 98.5% with a flow rate of 40 Nl/min. It uses the pressure swing adsorption (PSA) system that removes oxygen, carbon dioxide and water from compressed air. The resulting stream pure nitrogen is ideal for laboratory applications like LCMS techniques and other inert gas applications.

Models	MISTRAL EVO 10L	MISTRAL EVO 25L	MISTRAL EVO 35L	MISTRAL EVO 40L
Flow rate ( L/min )	10	25	35	40
Pressure	Nitrogen Outlet: max 8 bar ( 116 psi )			
Purity	98-99.9%			
Voltage	110V/60Hz-230V/50Hz			
Weight	90 kg net			
Consumption	1800 W			
Pressure accuracy	0.1 bar ( ± 0.5% )			
Display	Graphic Display, 128 × 64px			
Protection	IP2x			
Temperature	From 15°C to 40°C			
Noise	<60 dB (A)			
Alarm relay	250VAC, 16A max			
Outlet	Nitrogen Outlet, rapid fitting for 6mm OD tube			
Dimension ( mm )	482W × 835L × 641H			
Certification	CE, CSA, FCC			

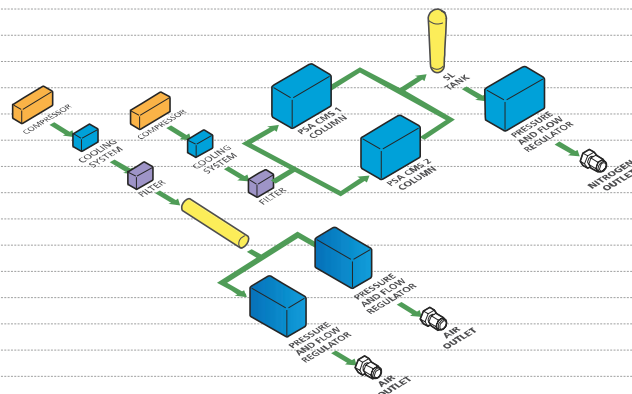




## MISTRAL EVOLUTION HYBRID for the LCMS AB SCIEX

The Mistral EVO Hybrid Nitrogen Generator was specifically designed to meet the flow, purity and pressure requirements of the LCMS of AB SCIEX with appropriate pressures and flows of nitrogen. The simple and proven pressure swing adsorption (PSA) technology is employed to remove nitrogen from compressed air. Selective molsieves (CMS) adsorb remaining oxygen and traces of humidity.

Models	MISTRAL EVOLUTION HYBRID
N <sub>2</sub> Flow	Up to 12L/min at 80 psi
Source Air Gas	Up to 24L/min at 100 psi
Exhaust Air Gas	Up to 8L/min at 60 psi
Purity	98~99.9%
Voltage	110V/60Hz-230V/50Hz
Weight	90 kg net
Consumption	1800 W
Pressure accuracy	0.1 bar ( ± 0.5% )
Display	Graphic Display, 128 × 64px
Protection	IP2x
Temperature	From 15°C to 40°C
Air dewpoint at operating pressure	-40°C
Noise	<60 dB
Alarm relay	250VAC, 16A max
Outlet	rapid fitting for 6mm OD tube
Dimension ( mm )	482W × 835L × 641H
Certification	CE, CSA, FCC

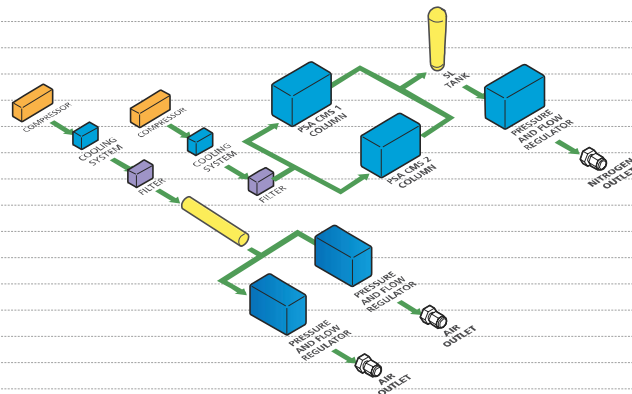


## MISTRAL EVOLUTION GAS-STATION x Agilent AES 4100MP

The new generator Mistral EVO Gas-Station is the global dedicated solution for the new Microwave Agilent 4100MP system. The well known and proven pressure swing adsorption (PSA) technology is used to generate nitrogen with a purity >99.5% and a flow of up to 25 NI /min simultaneously with up to 40 NI / min of dry air for POP and EGM.

This combination allows the system to stabilize quickly and be ready faster. Thanks to a particular insulation the Mistral EVO Gas-Station can be installed in the laboratory near the instrument or underneath the laboratory bench.

Models	MISTRAL EVOLUTION GAS-STATION
N <sub>2</sub> Flow	Up to 25L/min at 8bar max
Air Gas Flow	Up to 40L/min at 8bar max
Purity	98~99.9%
Voltage	110V/60Hz-230V/50Hz
Weight	110 kg net
Consumption	2500 W
Pressure accuracy	0.1 bar ( ± 0.5% )
Display	Graphic Display, 128 × 64px
Protection	IP2x
Temperature	From 15°C to 40°C
Air dewpoint at operating pressure	-40°C
Noise	<60 dB
Alarm relay	250VAC, 16A max
Outlet	rapid fitting for 6mm OD tube
Dimension ( mm )	482W × 1235L × 641H
Certification	CE, CSA, FCC



### Options

Order No.	Description	Suitable for
DB-WN2-005	10 Lt. tank	All MISTRAL Series
DB-WN2-006	10 mt. Tube	All MISTRAL Series

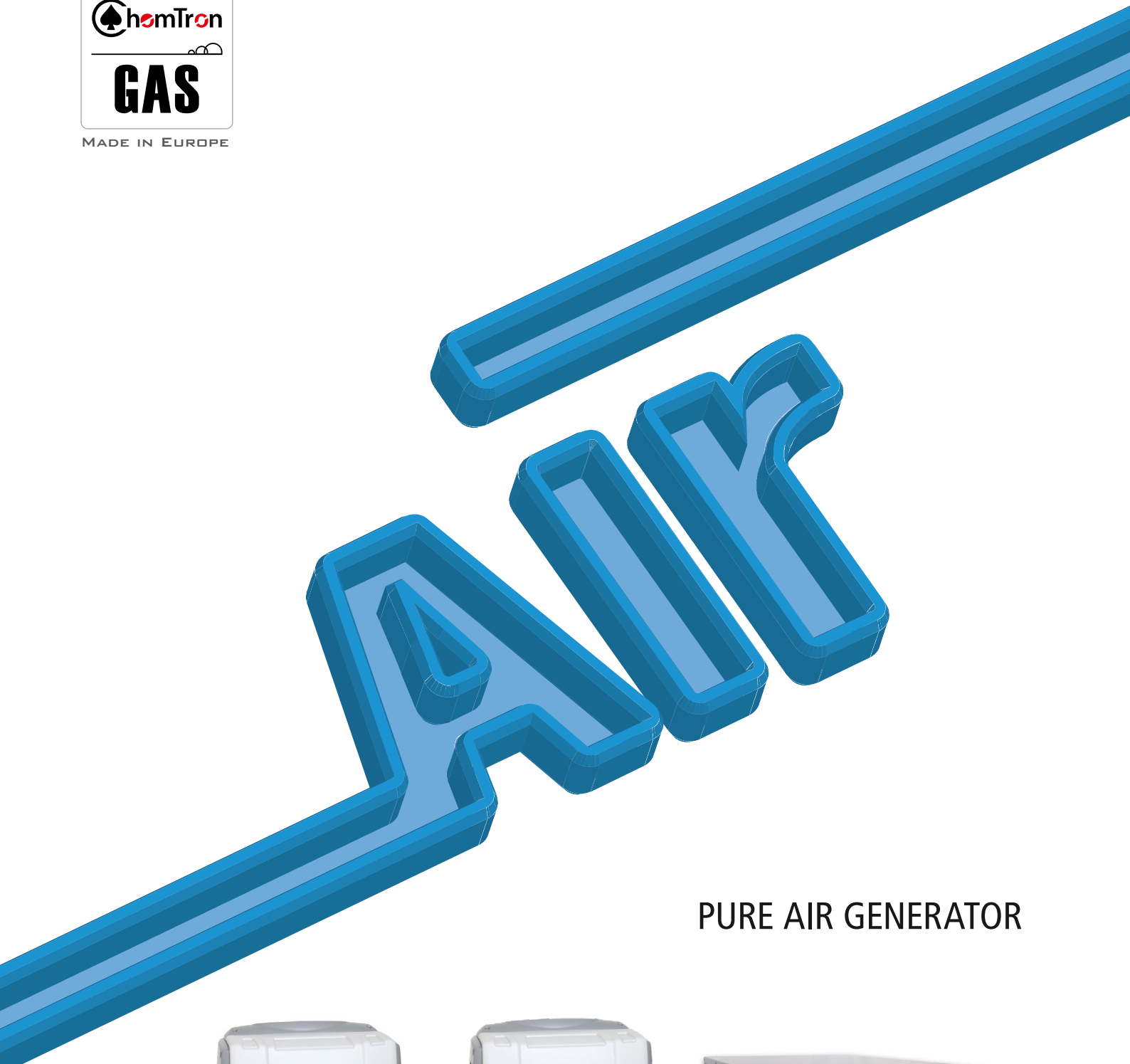
### Consumables

Order No.	Description	Suitable for
DB-FIL004	Kit 4000h for MISTRAL-EVO(1xSilencer+ 1xResin Inlet filter+1xCartridge Filter)	-EVO
DB-FIL005	Kit for MISTRAL-EVO HYBRID & GAS STATION(1xSilencer+1xResin filter+2xCartridges)	-HYBRID & -GAS STATION
DB-FIL006	Kit for MISTRAL-EVO HYBRID & GAS STATION(1xSilencer+1xResin filter+3xCartridges), from S/N: EVO-131015070	-HYBRID & -GAS STATION
DB-FIL007	Kit for MISTRAL-EVO LOW NOISE(4xSilencer+1xCartridges), from S/N: EVO-140715107	-EVO
DB-FIL008	Kit for MISTRAL-EVO HYBRID LOW NOISE (3xWhite Sil.+ 1xBlue Sil.+3xCart.),from S/N: EVO-141015118	-HYBRID
DB-FIL009	Kit for MISTRAL GAS STATION LOW NOISE(4xWhite Sil.+1xBlue Sil.+3xCart.), from S/N: EVO-150615144	-GAS STATION
DB-EVO-002	OF-302 Air Compressor (hybrid and gas station)	-HYBRID & -GAS STATION
DB-EVO-010	OF-312 Air Compressor (air)	All MISTRAL Series
DB-EVO-011	OF-332 Air Compressor (nitrogen)	All MISTRAL Series

\* For Tubing / adapter / Valve / Connectors,etc selection, please refer to Page 38



MADE IN EUROPE



## PURE AIR GENERATOR



### Glance of Zero Air and Ultra-Zero Air Generator

	Series	The range of flow rate L/min	Purity
Air	GC Zero Air	1.5-30	Zero Air
	GT Zero Air	1.5-30	Ultra-Zero Air
	19" Rack GC Zero Air	1.8-15	Zero Air
	Air Compressor		For N <sub>2</sub> gas generators ( N <sub>2</sub> -Tower Plus and Whisper series )



PURE AIR GENERATOR

**GAS**



## GC Zero Air Generator

The GC Zero Air Generators produces dry and hydrocarbon-free air, using air from oil-free compressors, thus avoiding the need to use traditional bottles that are often complex to change.

The ergonomic, compact and silent design makes the GC series generators the ideal solution for the following analytical applications:

GC-FID, GC-NPD, GC-FPD, GC-PFPD, THA, TOC.

GC Zero Air Generators are designed to supply ultrapure hydrocarbon free zero air for GC-FID applications. Catalytic oxidation technology eliminates hydrocarbons to <0.1ppm resulting in a flat and stable baseline, increased sensitivity and repeatable analysis.

For more demanding applications such as TOC, Continuous Emissions Monitoring and process control applications the GT Zero Air Generator removes CO, CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub> and water vapor.

### SPECIFICATIONS

#### MODELS AVAILABLE

GC-1500 1.5 L / min  
GC-3000 3 L / min  
GC-6000 6 L / min  
GC-15000 15 L / min  
GC-30000 30 L / min

#### EXTERNAL COMPRESSOR (option)

Following an agreement with a leading manufacturer operating a sales and service network in many cities throughout Italy and the world, Chemtron can supply the right "oil free" compressor for different flow requirements.

# GC Zero Air Generator

## BENEFITS

### BETTER DETECTOR PERFORMANCE

The reduction of hydrocarbons, including methane, and carbon monoxide to < 0.1 ppm decreases the background noise level and gives the baseline much better stability, considerably increasing detector sensitivity and ensuring precise analytical results.

### EASY INSTALLATION

Just connect a suitable oil free compressor (optional) to almost immediately have air at the right grade.

To save bench space, the unit can be easily installed on the lab wall.

### LAB SAFETY

No more bottles in the lab and expensive pipelines for air distribution.

### SAVE MONEY

The unit only requires connection to a suitable oil free compressor and the mains: the investment can be paid back in less than a year.

### IMPROVED LAB EFFICIENCY

Continuous operation 24 hours a day cuts dead times for gas bottle changeover and avoids the need for tedious instrument recalibrations.

## OPERATING DIAGRAM

Zero Air generators use three steps to transform ambient air into analytical grade air.

### STEP 1: PRE-FILTRATION

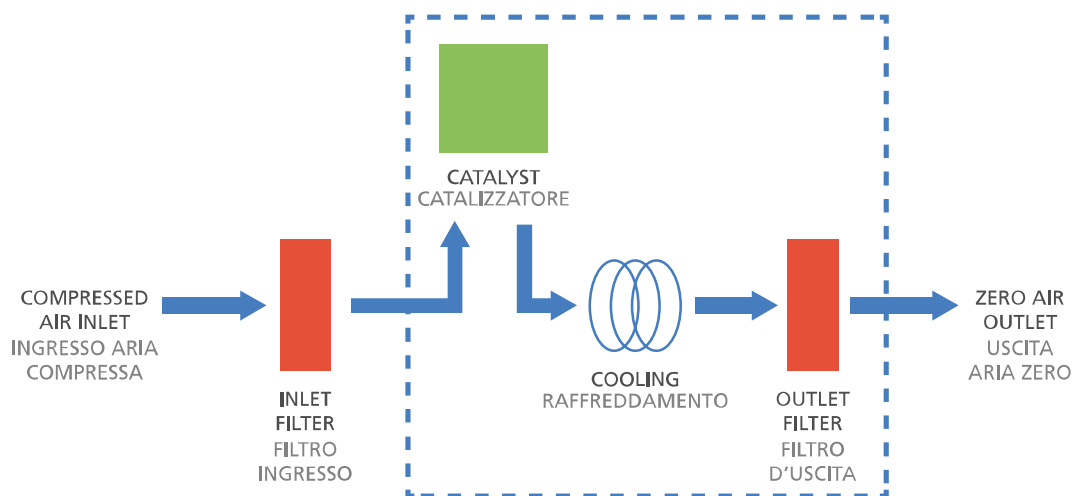
The external oil-free compressor delivers air through a high-efficiency filter that traps any particles that may damage the system. The filter has an automatic purge system, and traps oil, water and any other particles larger than 5 microns in size.

### STEP 2: HC AND CO TRAPPING

The air leaving the filter enters a high-temperature platinum catalyser, which through oxidation eliminates hydrocarbon molecules down to <0.1 ppm.

### STEP 3: FINAL FILTRATION

A high-efficiency filter is used to prevent any kind of particles from entering the instrument.



Models	GC1500	GC3000	GC6000	GC15000	GC30000
Flow ( L/min )	1.5	3	6	15	30
Weight ( kg )	5	9	12	22	22
HC & CO out	< 0.1				
Max CO in	50 ppm				
Max HC in	100 ppm				
Max temp. in	40 °C				
Pressure in	4.5-10 bar				
Pressure drop	<1 bar				
Stability ( min )	45				
In / out connections	1/4-1/8 ( NPT )				
Power	110-120V 60Hz / 220-240V 50Hz				
Dimensions ( mm )	410H x 550W x 230D				
Working temp	Amb.+15°C				
Certification	CE, CSA, FCC				
Recommendation of air compressor	GH6L	GH6L	GH12L	GH20L	GH40L

\* For Tubing / adapter / Valve / Connectors, etc selection, please refer to Page 38



PURE AIR GENERATOR



## GT Ultra-Zero Air generator

The GT Ultra-Zero Air generators produce dry and hydrocarbon / NOx-free air, using air from oil free compressors, thus avoiding the need to use traditional bottles that are often complex to change.

The ergonomic, compact and silent design makes the Ultra-Zero Air series generators the ideal solution for the following analytical applications:

GC-FID GC-NPD GC-FPD GC-PFPD THA TOC.

GT Ultra-Zero Air Generators are designed to supply ultrapure hydrocarbon free zero air for GC-FID applications. Catalytic oxidation technology eliminates hydrocarbons to <0.1ppm resulting in a flat and stable baseline, increased sensitivity and repeatable analysis.

For more demanding applications such as TOC, Continuous Emissions Monitoring and process control applications the GT Zero Air Generator removes CO, CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub> and water vapor.

### SPECIFICATIONS

#### MODELS AVAILABLE

- GT-1500 1.5 L / min
- GT-3000 3 L / min
- GT-6000 6 L / min
- GT-15000 15 L / min
- GT-30000 30 L / min

#### EXTERNAL COMPRESSOR (option)

Following an agreement with a leading manufacturer operating a sales and service network in many cities throughout Italy and the world, Chemtron can supply the right "oil free" compressor for different flow requirements.

# GT Ultra-Zero Air generator

## BENEFITS

### BETTER DETECTOR PERFORMANCE

The reduction of hydrocarbons, including methane, and carbon monoxide to < 0.1 ppm, as well as NOx to < 1 ppm, decreases the background noise level and gives the baseline much better stability, considerably increasing detector sensitivity and ensuring precise analytical results.

### EASY INSTALLATION

Just connect a suitable oil free compressor (optional) to almost immediately have air at the right grade.

To save bench space, the unit can be easily installed on the lab wall.

### LAB SAFETY

No more bottles in the lab and expensive pipelines for air distribution.

### SAVE MONEY

The unit only requires connection to a suitable oil free compressor and the mains: the investment can be paid back in less than a year.

### IMPROVED LAB EFFICIENCY

Continuous operation 24 hours a day cuts dead times for gas bottle changeover and avoids the need for tedious instrument recalibrations.

## OPERATING DIAGRAM

Ultra-Zero Air generators use five steps to transform ambient air into analytical grade air.

### STEP 1: PRE-FILTRATION

The external oil-free compressor delivers air through a high-efficiency filter that traps any particles that may damage the system. The filter has an automatic purge system, and traps oil, water and any other particles larger than 5 microns in size.

### STEP 2: DRYING AND TRAPPING

Residual moisture and CO<sub>2</sub> / CO molecules are removed by a dual active carbon trap.

### STEP 3: NO<sub>x</sub>, SO<sub>x</sub>, O<sub>3</sub>

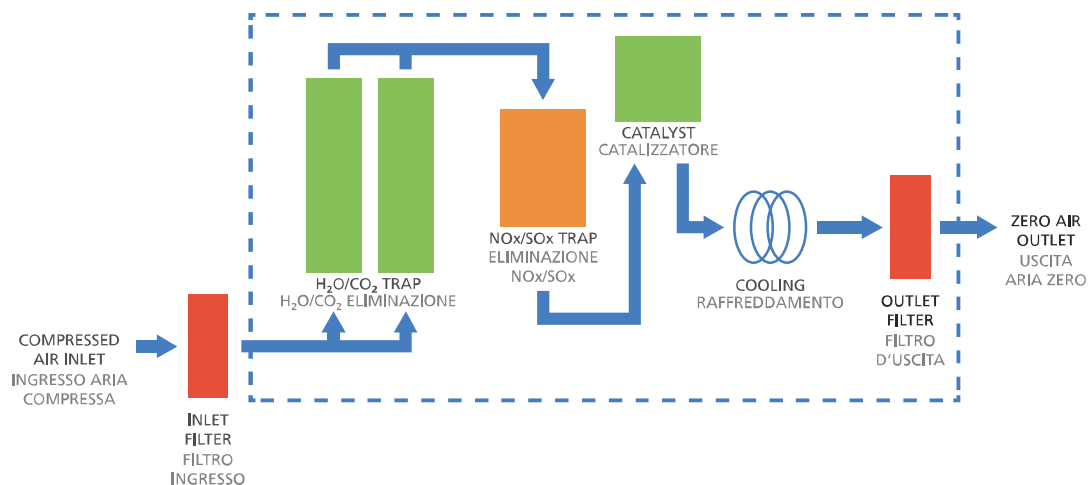
A special scrubber removes specific molecules.

### STEP 4: HC AND CO TRAPPING

The air leaving the filter enters a high-temperature platinum catalyzer, which through oxidation eliminates hydrocarbon molecules down to < 0.1 ppm.

### STEP 5: FINAL FILTRATION

A high-efficiency filter is used to prevent any kind of particles from entering the instrument.



Models	GT1500	GT3000	GT6000	GT15000	GT30000
Flow ( L/min )	1.5	3	6	15	30
Weight ( kg )	9	9	25	25	25
Dimensions ( mm )	410H × 550W × 250D	410H × 550W × 250D	410H × 550W × 250D	470H × 630W × 310D	470H × 630W × 310D
HC & CO out	< 0.1 ppm				
CO <sub>2</sub> out	< 5 ppm				
NO <sub>x</sub> , SO <sub>x</sub> out	< 0.1 ppm				
Max CO in	50 ppm				
Max HC in	100 ppm				
Max temp. in	40°C				
Pressure in	4.5-10 bar				
Pressure drop	< 1 bar				
Stability ( min )	45				
In / out connections	1/4-1/8 ( NPT )				
Power	110-120V 60Hz / 220-240V 50Hz				
Working temp	Amb.+15°C				
Certification	CE, CSA, FCC				
Recommendation of air compressor	GH6L	GH6L	GH20L	GH40L	/

\* For Tubing / adapter / Valve / Connectors, etc selection, please refer to Page 38





PURE AIR GENERATOR

# 19" RACK GC ZERO AIR GENERATOR

## BENEFITS

### BETTER DETECTOR PERFORMANCE

The reduction of hydrocarbons, including methane, and carbon monoxide to < 0.1 ppm decreases the background noise level and gives the baseline much better stability, considerably increasing detector sensitivity and ensuring precise analytical results.

### EASY INSTALLATION

Just connect a suitable oil free compressor (optional) to almost immediately have air at the right grade.  
To save bench space, the unit can be easily installed on the lab wall.

### LAB SAFETY

No more bottles in the lab and expensive pipelines for air distribution.

### SAVE MONEY

The unit only requires connection to a suitable oil free compressor and the mains: the investment can be paid back in less than a year.

### IMPROVED LAB EFFICIENCY

Continuous operation 24 hours a day cuts dead times for gas bottle changeover and avoids the need for tedious instrument recalibrations.



Models	RACK ZERO AIR GC 1800	RACK ZERO AIR GC 5000	RACK ZERO AIR GC 10000	RACK ZERO AIR GC 15000
Flow ( L/min )	1.8	5.0	10.0	15.0
HC & CO out	< 0.1			
Max CO in	50 ppm			
Max HC in	100 ppm			
Max temp. in	40 °C			
Pressure in	4.5-10 bar			
Pressure drop	<1 bar			
Stability ( min )	45			
In / out connections	1/4-1/8 ( NPT )			
Power	110-120V 60Hz / 220-240V 50Hz			
Dimensions ( mm )	19" standard rack			
Working temp	Amb.+15°C			
Certification	CE, CSA, FCC			
Recommendation of air compressor	GH6L	GH12L	GH20L	GH40L

## Consumables

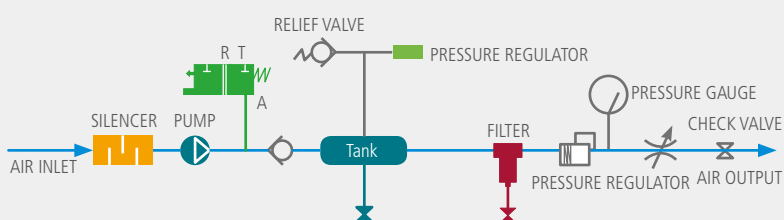
Order No.	Description	Suitable for
DB-N-CART001	Replacement cartridge for Inlet filter	GC and GT
DB-N-FIL001	Filter housing complete with Filter cartridge (external)	GC and GT
DB-N-FIL002	Filter for Zero Air Generator (internal)	GC and GT
DB-RH200-013	Coalescent filter AF10 with cartridge	RACK GC
DB-RH200-017	Replacement cartridge for coalescent filter AF10	RACK GC

\* For Tubing / adapter / Valve / Connectors,etc selection, please refer to Page 38

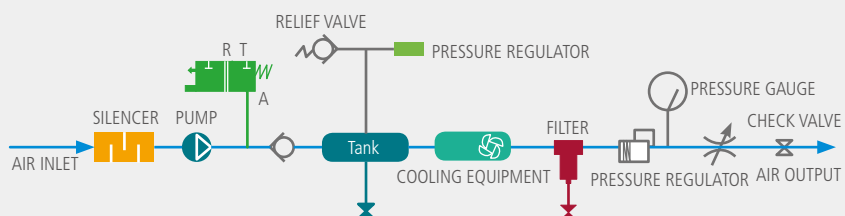
# Compressed Air System

- Compressed air system is designed for laboratory applications
- P440 is a small size which is suitable for the supply of compressed air for work conditions with small flow rate and low pressure in the laboratory.
- P640 is medium size which is suitable for continuous supply of compressed air, equipped with condenser and filter to increase the output air purity.

## Work flow of P440



## Work flow of P640



## Specifications

Model	P440	P640
Order No.	167440-22	167640-22
Max. Airflow (L/min)	30	60
Max. Pressure (bar)	5	8
Pressure adjustment range (bar)	0~5	0~8
Power(W)	750	550
Connection (mm)	8mm quick connector or G1/4 Male	
Air tank (L)	30	30
Weight(kg)	56	68
Noise (dB)	69	69
Dimension L × W × H (mm)	680 × 340 × 720	640 × 470 × 720
Filter type	WND30005	WND30005
Running type	Switch: auto stop, start at 3bar and stop at 5bar.	Switch: auto stop, start at 3bar and stop at 6bar.
safety valve:	Release the air pressure automatically when the pressure over 8bar in the air tank	

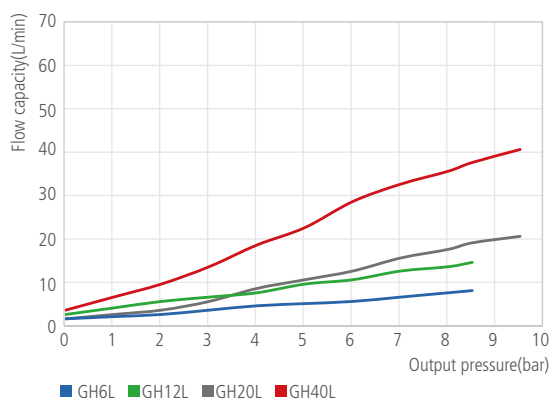
# Purified Air System

Purified Air System is specifically developed for the applications where air quality is essential for your applications and production processes.

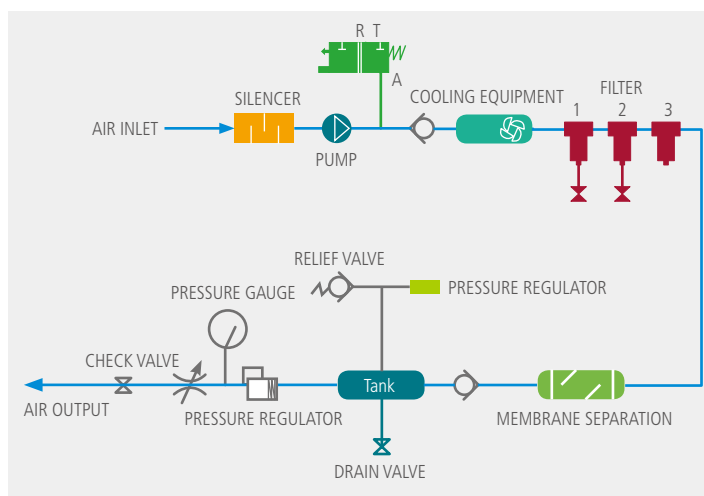
We are committed to provide purified air to Nitrogen generator, Zero air generator, and deliver top air quality for critical applications including food and beverage processing, chemical processing, electronics manufacturing and Life science research.



Pumps characteristics curve between pressure and flow rate



Work flow of GH6L/12L/20L/40L



## Specifications

Model	GH6L	GH12L	GH20L	GH40L
Order No.	16706000-22	16712000-22	16720000-22	16740000-22
Max. Airflow (L/min)	6	12	20	40
Max. Pressure (bar)	8.5	8.5	9.5	9.5
Pressure adjustment range (bar)	0~8.5	0~8.5	0~9.5	0~9.5
Power(W)	400	400	600	600
Connection (mm)	6mm quick connector or G1/4 Male		6mm quick connector or G1/4 Male	
Air tank (L)	5	8	20	40
Weight(kg)	35	40	59	72
Noise (dB)	57	57	63	63
Dimension L × W × H (mm)	550 × 220 × 450	550 × 300 × 560	640 × 420 × 550	640 × 470 × 720
Filter type	Model I Triple filter	Model I Triple filter	Model II Triple filter	Model II Triple filter
Running type	Switch: auto stop, start at 7.5bar and stop at 8.5bar.		Switch: auto stop, start at 7.5bar and stop at 9.5bar.	
safety valve	Release the air pressure automatically when the pressure over 10bar in the air tank			

# Purified Air System



## Features

### Highest air quality

- GH series has equipped with a condenser, a triple filtration device, and an efficient dryer, to ensure the filtration accuracy of the air and the filtration of water vapor. The particles with a diameter of 0.01 um can be filtered, and the dew point of output gas can reach to -15°C .
- Use of high-quality stainless steel internal tank to avoid corrosion and solid particles in the tank for a long period of time, to ensure the purity of the output gas
- Purified air system is suitable for supplying nitrogen generators and zero air generators.

### Environmentally friendly

We deliver purified air and create less waste compared to oil lubricated compressors. You'll need less oil and filter elements to dispose of after maintenance

### Safety

- The inside of the motor is equipped with a temperature protection switch. When the internal temperature is too high, it will stop automatically, and it will auto start after cool down.
- The internal tank is equipped with a relief valve. If the equipment reaches the maximum pressure, the relief valve will open automatically to prevent overload and overpressure
- GH series is equipped with digital pressure switches, start and stop can be set according to the customer's needs. If the pressure switch reaches the set pressure, the motor will stop running. If it exceeds the pressure setting, the pressure switch will display the alarm.
- Maintenance and safety signs are printed on the casing of the Purified air system, to ensure the accurate operation of the unit and avoid damage caused by improper operation.

### Quality Assured

- The maximum working pressure can reach 8.5 or 9.5 bar, and it can be adjusted continuously. It is suitable for use in the case of continuous work, and guarantees the output of large flow under the maximum pressure.
- Adjustable output pressure, set the pressure to make the motor turn off. This function can extend the service life and maintenance cycle of the unit.
- With high precision display gauge to ensure that the pressure gauge reading is stable and shows accurate actual pressure values.
- Direct drive transmission, without belt, further reducing vibration and noise

### Smart AIR Solutions

- Compact design, GH6L and computer case are similar in size
- The air inlet is equipped with filter, to filter dust particles and reduce the noise
- The inside of the unit is equipped with shockproof pads and soundproof cotton to reduce the vibration and noise, and reduce the damage caused by mechanical vibration to unit

### Lower operating cost

Our innovation has resulted in some of the most energy efficient products in the market, keeping energy costs low.



PURE AIR GENERATOR

# Accessories

## Pressure gauge

Order No.	Name	Description
WND3010	Pressure gauge	0~16bar, G1/8 connection, Ø40mm



## Buffer vessel

Order No.	Name	Description
CQG010	Buffer vessel	10L, Ø220 × 300mm, Stainless steel, Horizontal, 8mm quick connector or G1/4 Male
CQG020	Buffer vessel	20L, Ø250 × 440mm, Stainless steel, Horizontal, 8mm quick connector or G1/4 Male
CQG030	Buffer vessel	30L, Ø300 × 460mm, Stainless steel, Horizontal, 8mm quick connector or G1/4 Male
CQG050	Buffer vessel	50L, Ø350 × 700mm, Stainless steel, Vertical, 8mm quick connector or G1/4 Male
CQG100	Buffer vessel	100L, Ø400 × 1100mm, Stainless steel, Vertical, 8mm quick connector or G1/4 Male
CQG200	Buffer vessel	200L, Ø500 × 1230mm, Stainless steel, Vertical, 8mm quick connector or G1/4 Male
CQG300	Buffer vessel	300L, Ø550 × 1530mm, Stainless steel, Vertical, 8mm quick connector or G1/4 Male

Different material and size of buffer vessel can be customized. The pressure up to 10 bar. Included safety valves, pressure gauges, drainage valves, exhaust ball valves.



## PU pressure tubing

Order No.	Name	Description
WND30036	PU pressure tubing	6mm, quick connection, up to 10bar
WND30035	PU pressure tubing	8mm, quick connection, up to 10bar
WND30034	PU pressure tubing	10mm, quick connection, up to 10bar
WND30063	PU pressure tubing	12mm, quick connection, up to 10bar
WND30064	PU pressure tubing	14mm, quick connection, up to 10bar

Different size of pressure tubing can be customized



## Quick connector

Order No.	Name	Description
P440031	Quick connector	6~8mm, quick connection
P440032	Quick connector	8~10mm, quick connection
P440033	Quick connector	10~12mm, quick connection
P440034	Quick connector	12~14mm, quick connection
WND3011	Quick connector	6mm, PE three-way quick connection
WND30S0010	Quick connector	8mm, PE three-way quick connection
WND30017	Quick connector	10mm, PE three-way quick connection
WND3035	Quick connector	6mm, PY three-way quick connection
WND30018	Quick connector	8mm, PY three-way quick connection
WND30S0012	Quick connector	10mm, PY three-way quick connection



## Pressure reducing valve

Order No.	Name	Description
WND30009	Pressure reducing valve	0.05~0.7Mpa, G1/4 inlet, G1/8 × 1 outlet, G1/4 × 2 outlet
GH40L002	Pressure reducing valve	0.05~0.85Mpa, G1/4 inlet, G1/4 × 3 outlet



## Air Filter and Separator

Order No.	Name	Description
WND3001	Air filter	Model I, G1/4 connection, 5 μ m, air flow rate <200L/min, Automatic drain, up to 10 bar
WND3002	Oil mist separator	Model I, G1/4 connection, 0.3 μ m, air flow rate <200L/min, Automatic drain, up to 10 bar
WND3003	Microfog separator	Model I, G1/4 connection, 0.01 μ m, air flow rate <200L/min, up to 10 bar
WND30123	Triple filter	Included WND3001, WND3002 and WND3003
WND30005	Air filter	Model II, G1/4 connection, 5 μ m, air flow rate <450L/min, Automatic drain, up to 10 bar
WND30006	Oil mist separator	Model II, G1/4 connection, 0.3 μ m, air flow rate <450L/min, Automatic drain, up to 10 bar
WND30007	Microfog separator	Model II, G1/4 connection, 0.01 μ m, air flow rate <450L/min, up to 10 bar
WND30567	Triple filter	Included WND30005, WND30006 and WND30007





PURE AIR GENERATOR

### Filter cartridge



Order No.	Name	Description
WND3001-01	Filter cartridge	5 μ m
WND3002-01	Filter cartridge	0.3 μ m
WND3003-01	Filter cartridge	0.01 μ m
WND30005-01	Filter cartridge	5 μ m
WND30006-01	Filter cartridge	0.3 μ m
WND30007-01	Filter cartridge	0.01 μ m

Recommended to replace it once a year and shorten it according to the air quality of inlet.



### Installation kits, when GH series provides gas to two system

Order No.	Purified air system	External system 1	External system 2
WND12201	GH	GC Zero Air Generator	N2 TOWER plus series
		Hydrogen and air generator	
WND12202	GH	GC Zero Air Generator	GC Zero Air Generator
		Hydrogen and air generator	Hydrogen and air generator
		GT Ultra-Zero Air Generator	GT Ultra-Zero Air Generator
WND12203	GH	N2 TOWER plus series	N2 TOWER plus series



DB-2-tube  
DB-4-tube



DB-200-6  
DB-400-6



DB-400-6-2



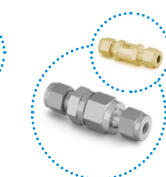
DB-200-9  
DB-400-9



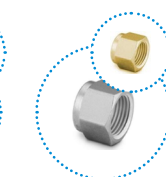
DB-200-3  
DB-400-3



DB-41GS2  
DB-43GS4



DB-2C-1  
DB-4C-1



DB-200-NFSET  
DB-400-NFSET

### SS-Tubing / adapter / Valve / Connectors, etc

Order No.	Description
DB-2-tube	1/8" SS tubing, 1meter, uncut.
DB-4-tube	1/4" SS tubing, 1meter, uncut.
DB-200-6	2 Adapters 1/8" to 1/8"
DB-400-6	2 Adapters 1/4" to 1/4"
DB-400-6-2	2 Adapters 1/4" to 1/8"
DB-200-9	1/8" 2 Elbow fittings 90°
DB-400-9	1/8" 2 Elbow fittings 90°
DB-200-3	1/8" T-connector
DB-400-3	1/4" T-connector
DB-41GS2	1/8" Shut-off valve
DB-43GS4	1/4" Shut-off valve
DB-2C-1	1/8" Non-return valve, Open pressure 1 pisp ( 0.07bar )
DB-4C-1	1/4" Non-return valve, Open pressure 1 pisp ( 0.07bar )
DB-200-NFSET	1/8" screw cap, includes seals (5 pieces)
DB-400-NFSET	1/4" screw cap, includes seals (5 pieces)
DB-tools-set	Tubing tools set

### COPPER-Tubing / adapter / Valve / Connectors, etc

Order No.	Description
DC-2-tube	1/8" copper tubing, 1meter, uncut.
DC-4-tube	1/4" copper tubing, 1meter, uncut.
DC-200-6	2 Adapters 1/8" to 1/8"
DC-400-6	2 Adapters 1/4" to 1/4"
DC-400-6-2	2 Adapters 1/4" to 1/8"
DC-200-9	1/8" 2 Elbow fittings 90°
DC-400-9	1/8" 2 Elbow fittings 90°
DC-200-3	1/8" T-connector
DC-400-3	1/4" T-connector
DC-41GS2	1/8" Shut-off valve
DC-43GS4	1/4" Shut-off valve
DC-2C-1	1/8" Non-return valve, Open pressure 1 pisp ( 0.07bar )
DC-4C-1	1/4" Non-return valve, Open pressure 1 pisp ( 0.07bar )
DC-200-NFSET	1/8" screw cap, includes seals (5 pieces)
DC-400-NFSET	1/4" screw cap, includes seals (5 pieces)
DC-tools-set	Tubing tools set

### Options

Order No.	Description	Suitable for
DB-GH60000-EU	Oil free Air Compressor, 60L/min at 8bar, Max 10 bar, Includes: adsorbent dryer, a muffling box, inlet filter, tank outlet is 1/4 inch inner threaded, 450 × 500 × 740mm	For N <sub>2</sub> gas generators

## PCB FAMILY

The PCB 1500 / PCB 1500 Plus is a Peltier-controlled external water recirculator ideal for all thermostated cell holders. As a stand-alone external accessory, it requires no electronic or physical modifications to the cell holders.

The principal feature of this device is that the water is heated and cooled using Peltier elements, allowing a very wide temperature range, from below ambient temperature (0°C) up to 100 °C as well as providing excellent temperature accuracy ( $\pm 0.1$  °C). In addition, heating and cooling ramps can be programmed locally or remotely (remote software not included).

### FEATURES

- User-friendly interface and digital display
- Local or remote control
- Dual voltage settings (110V / 220V)
- CE and CSA compliant

MODELS	PCB 1500	PCB 1500 PLUS
Temperature range	+20°C to +60°C	+0°C to +110°C
Temperature accuracy	$\pm 0.1$	$\pm 0.1$
Reproducibility	$\pm 0.5$	$\pm 0.5$
Managing Peltier Cell Directly	NO	YES (Single or Multiple)
RS-232C interface	YES	YES
USB	YES	YES
Display	Graphic Display	Graphic Display
Certification	CE / CSA	CE / CSA



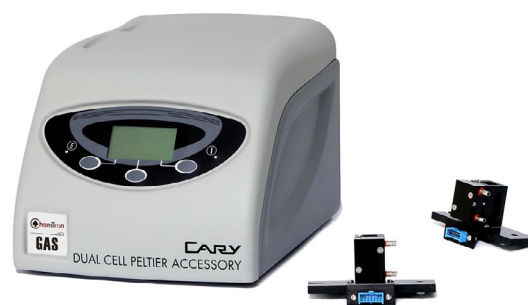
## PELTIER TEMPERATURE CONTROL ACCESSORIES

We work along side the customer in all phases of development of custom temperature controllers, from definition of required specifications to testing of final prototypes. The result is a high-quality and reliable temperature control accessory to operate as part of the instrument manufacturer's system. Indeed, as well as being customized in terms of colors, logos and size to fit with the instrument line, all Chemtron temperature controllers feature a built-in RS232 serial interface, allowing the units to be controlled within the manufacturer's software package.

Our accurate Peltier temperature controllers feature a wide temperature control range (0°C to +110°C) and can be made to suit a variety of cell holder configurations single or multi position (8).

### FEATURES

- User-friendly interface and digital display
- Local or remote control
- Built-in stirring control
- Dual voltage settings (110V | 220V)
- CE mark
- CSA-UL



### PELTIER TEMPERATURE CONTROL ACCESSORIES FOR UV / FLUORESCENCE

Temperature range	+0°C to +110°C
Temperature accuracy	$\pm 0.1$
Reproducibility	$\pm 0.5$
Stirring speed	250-2000 rpm
Program ramp	included
RS-232C USB interface	included
Certification	CE / CSA

## Chemtron – TECHNOLOGY YOU CAN TRUST

Chemtron is a leading innovator and manufacturer of high purity gas systems for analytical laboratories.

Generators are specifically designed to meet the stringent gas requirements for all the leading GC and LC/MS instrument manufactures.



### SAFE

Eliminate health and safety issues and requirements for managing, moving and storing high pressure gas cylinders. No concerns with the storage of flammable hydrogen gas or the sudden accidental release of high pressure gas from a cylinder.



### CONVENIENT

No instrument or application downtime as a result of running out of cylinder gas. Gas generators provide a 24/7 reliable on-demand supply.

## WHY A GAS GENERATOR?

Gas generators offer a safe, convenient and cost effective alternative to gas cylinders and dewars. A Chemtron generator provides you with a dependable, easy to use and on-demand supply of ultra high purity gas.



### COST EFFECTIVE

Minimal generator maintenance costs. Eliminate ongoing costs associated with cylinders, such as the volatility of gas prices, delivery and rental costs, and unplanned downtime.



### IMPROVE PERFORMANCE

Consistent, reliable on-demand supply of gas, at stable high purity and pressure, improves sensitivity and reproducibility.



# About WIGGENS

What Does Wiggins Stands for?

**W**ide Product Range  
**I**nternational Orientation  
**G**reat Quality  
**G**reat Service  
**E**nergetic Team  
**N**ew Technology  
**S**olutions

**WIGGENS**  
THE MAGIC MOTION

Wiggins was established in 2005 with the goal delivering the best laboratory equipment and service for reliable results, since then Wiggins has been producing top-quality general laboratory equipment, our brand Wiggins stands for high quality, durability and remarkable performance.

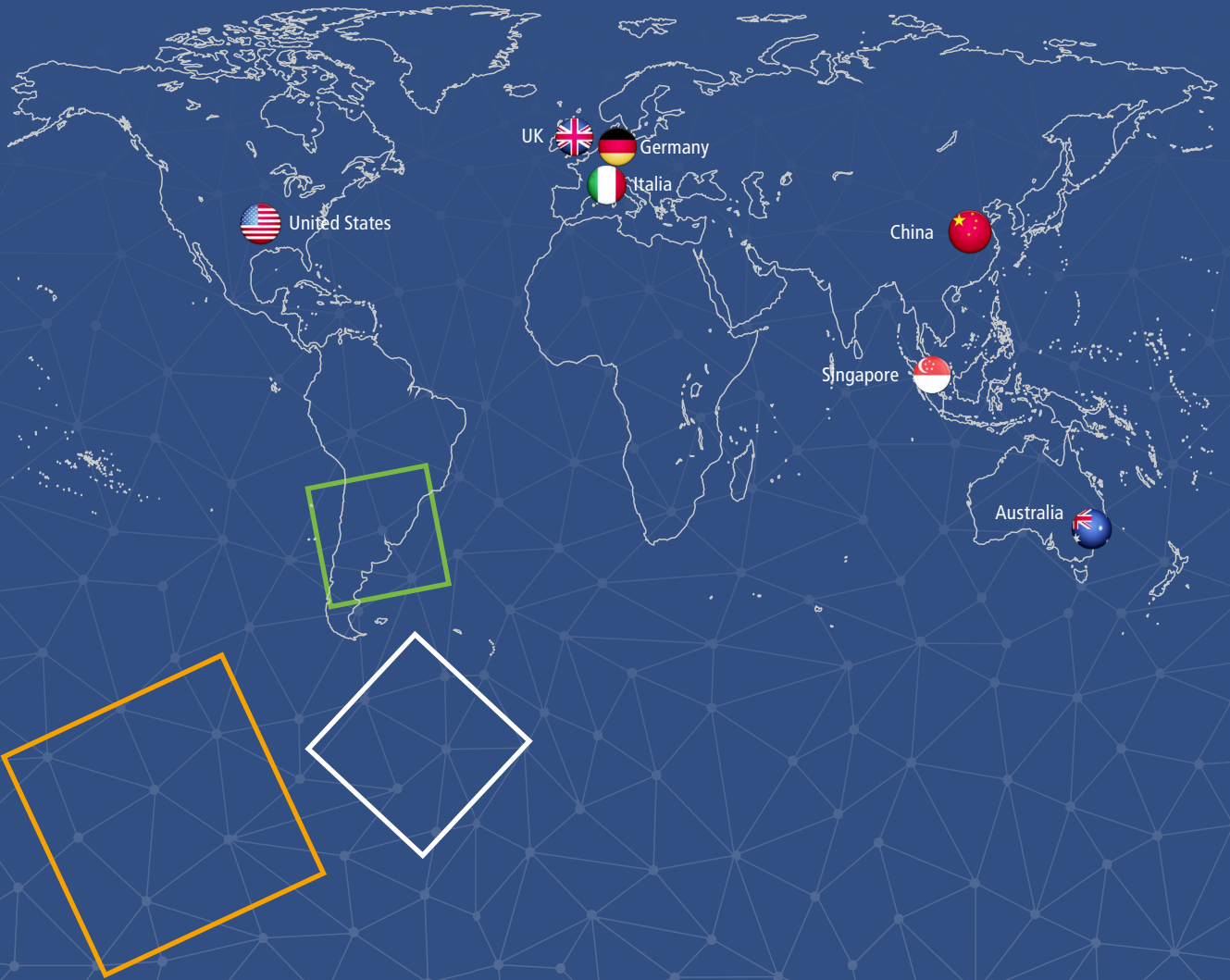
Wiggins is your general laboratory companion and provides products that can be used in different kinds of laboratory environments. The Wiggins product range includes:

- \* Rotary Evaporators
- \* Pumps
- \* Heating & Mixing units
- \* Incubator & Ovens
- \* Reactors

ChemVak, the product brand of Wiggins, is specializing in vacuum technology offering an extensive range of vacuum pumps for all applications, including chemical-resistant diaphragm pumps oil-free pumps and rotary vane vacuum pumps, are complemented by vacuum filtration equipment for a wide range of different applications. In addition, solvent recovery systems and bio-suction systems are part of the product range.

ChemTron is our product brand focus on chemical reaction solutions, as well as efficient chemical separation tools--rotary evaporator.





**WIGGENS**  
THE MAGIC MOTION