

Compressed Air Treatment Products Gas Generators & Purifiers

Global Standard Air & Gas



WE ARE PROUD OF LEADING THE INDUSTRIAL STANDARD OF COMPRESSED AIR AND GAS SOLUTIONS SINCE 1993 YEAR !

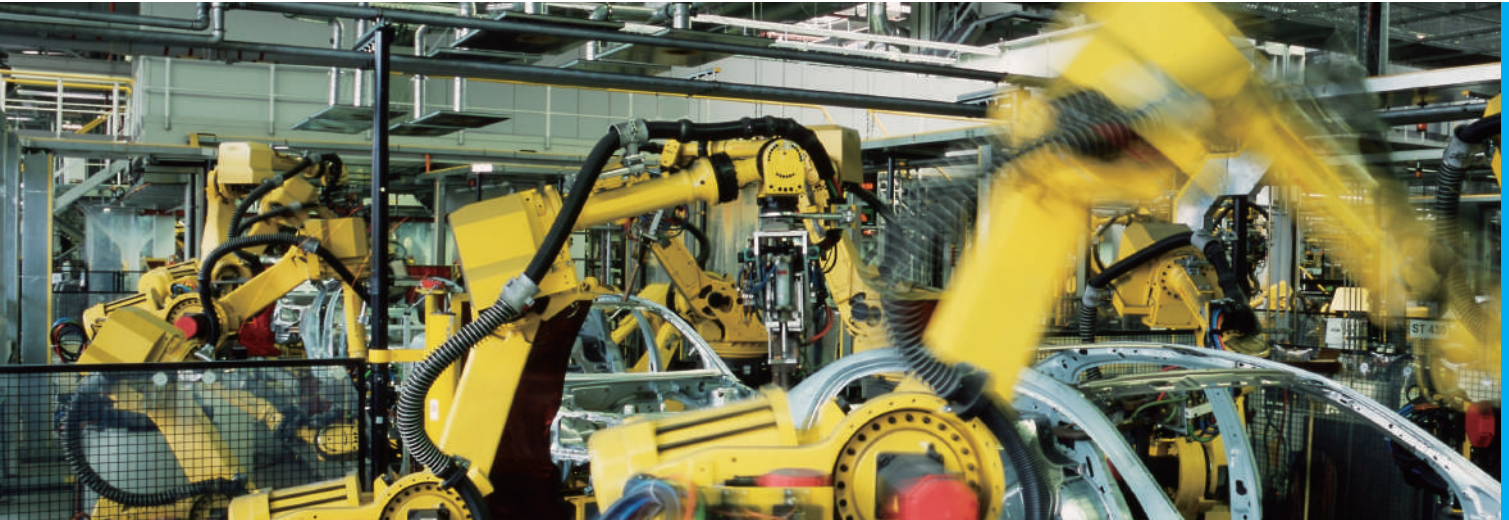
GSA – Global Standard Air/Gas is development and manufacturing organization producing various compressed air/gas dryers, air/gas chiller, gas generators, gas purifiers, air/gas filters, condensate drains etc.

The company was founded in Korea in 1993 and restarted as GSA in 2003. Over these years, the company has earned a reputation that has a unique combination of quality, value, trust and reliability.

GSA is a very innovative, customer oriented and technology driven company. We always strive to provide world top quality products for compressed air treatment and gas generation supporting you and your business with our solutions.

In this catalogue you will find our total techniques and products of energy saving compressed air and gas solutions to help customers focus on their production at ease.

A global leader of Refrigerated air dryer (Non-cycling : 1st generation)



Global Standard Air & Gas

Compressed air dryers reduce the quantity of water vapor, liquid water, hydrocarbon, and hydrocarbon vapor in compressed air. Moisture in compressed air is harmful. Water damages a compressed air system several ways.

A refrigerated air dryer removes moisture from the compressed air through use of a heat exchanger. An air-to-refrigerant heat exchanger is used to cool the air so that the vapor condenses into water. This water is then collected and drained out of the system leaving only dry air. A refrigerated dryer typically has a dew point around 40°F

GSA's Non-Cycling Refrigerated Air Dryer is extremely reliable. The dryers adopting aluminum heat exchanger can be sized for any application, and will always provide consistent dew points. The units also have very low maintenance costs.

With world-top quality components, a sensing air dew point design and effective control systems, magnet/float combination drain trap, GSA air dryers offer proven reliability helping you avoid the operational costs and downtime caused by corrosion and damage from compressed air condensate.



GSA's non-cycling Refrigerated Air Dryer

A global leader of Cycling air dryer (2 ~ 3rd generation)



Non-cycling refrigerated dryers operate the refrigeration compressor continuously once the unit is powered on, regardless of demand. Cycling or thermal mass dryers are considered as an energy saving type because they store cold energy and use it on an as needed basis.

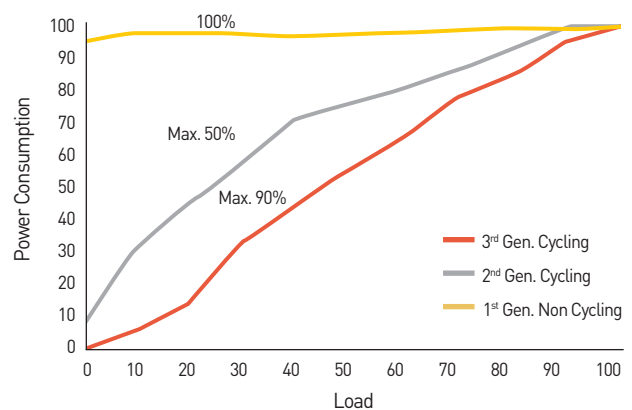
The cycling dryer works by using the refrigeration system to cool Phase Change Material (PCM). Heat is exchanged between the thermal mass and the warm air entering the system, cooling the air and warming the thermal mass.

Once the temperature of the thermal mass rises above a certain point, the system turns on. The system turns off when the desired low temperature is achieved. Non-cycling refrigerated dryers are designed to run continuously. So, it makes no difference if a facility is open or closed a non-cycling dryer will operate regardless.

On the other hand, cycling dryers turn on and off based on demand, making them much more energy-efficient. For example, a 5000 scfm non-cycling refrigerated dryer running continuously for 10,000 hours at an average energy cost of \$1.00 per hour,

would cost \$10,000 annually in energy expenses alone. In the same scenario, a GSA cycling dryer, running at 20% load, would cost \$2,000 annually a \$8,000 savings compared to the cost of operating a non-cycling dryer.

GSA's 3rd generation ref.
air dryer



Comparison of power consumption

A global leader of Desiccant air dryer



Desiccant air dryer is used in many kinds of industries where air quality is paramount for the production process and end products. These applications include food and beverage processing, the pharmaceutical industry (manufacturing and packaging), wastewater treatment, chemical and petrochemical processing, semiconductor and electronics manufacturing, medical sector, automotive paint spraying, textile manufacturing and many more. Contamination by even the smallest quantities of water can result in production downtime and product spoilage.

GSA's innovative airstream distributor and optimally sized vessels and pipes makes sure the compressed air is distributed properly with minimal pressure drop. Complete range of desiccant air dryers for a broad variety of industries and applications with dew points from -20 to -70°C prevents water from entering your products or process.

GSA's Zero purge loss is a type of externally heated compressed air dryer. The blower purge takes atmosphere air in through a blower. The air is heated to between 350°F and 500°F (120.4°C to 260°C) and channeled to the wet tower. The hot air drives the moisture off the desiccant. Tower cooling is also done by atmosphere air. So the compressed air from air compressor is not purged out.

GSA's heat of compression desiccant air dryer uses the heat generated by the non-lubricated compressor during normal operation to dry the desiccant. This design reduces utility costs. With heat from compression compressed air dryers has the lowest utility costs of all heated compressed air dryers.



GSA's Zero purge loss desiccant air dryer

Recommended Dew Points

Application	Pressure Dew Point(°F)	Pressure Dew Point(°C)
Air Motors(high efficiency)	-40 to 38	-40 to 3.3
Air Motors(low efficiency)	-20	-28.8
Breathing Air(subsequently humidified)	-40 to 38	-40 to 3.3
Chemical Processing	-40	-40
Control Air(industrial services)	-40	-40
Cryogenic Systems	-100	-73.3
Drying Processes	-40 to 4	-40 to -15.5
General Services(indoors)	-40 to 50	-40 to 10
General Services(outdoors)	-100 to 38	-73.3 to 3.3
Instrumentation(industrial services)	-40	-40
Instrumentation(laboratory services)	-60	-51.1
Microelectronic Service	-100 to -40	-73.3 to -40
Paint Spray Service	-40 to 38	-40 to 3.3
Pharmaceutical Services	-100 to -40	-73.3 to -40

A global leader of Gas generator



The demand of Nitrogen, Oxygen, Hydrogen and various industrial gases is increasing as industries are developed. GSA designs and manufactures various industrial gas generators.

GSA's patent airstream distributor in the bottom of gas generation tower helps airstream flow equally in all directions, which results in no drop of purity even after a long-time operation. In addition, the high quality activated alumina filled in the bottom of GSA's gas generation towers reduces the quantity of water vapor. So you don't need to use a desiccant air dryer ahead of PSA tower, which helps you to save energy significantly.



Various analysis of GSA's gas generators

GSA's touch screen control monitor helps you to check the various working conditions visually at sight or in a remote control room in real time, through which you can change the setting value easily.

GSA's gas generators with Pressure Swing Absorption (PSA) technology deliver a high capacity flow of gas at the purity you need. Suitable for a wide range of applications, which guarantees an excellent return on your investment. Never risk a production breakdown again due to gas supply shortage.



A site of installation

A global leader of Gas purifier



GSA's gas purifiers efficiently remove numerous impurities with high reliability, low cost and high performance.

Our processes are various such as heated getter, dual catalytic, dual adsorption or their combination. They are designed specifically to provide ultra-high purity gas for semiconductor applications. Two adsorption vessels alternate between purify and regeneration modes, providing continuous purification.

GSA's gas purifiers ensures consistent and repeatable process performance, isolates critical process areas from house gas distribution systems, and protects against gas purity upsets and cross contamination.

Our optimized design provides sub-ppb performance which is better than gas from cylinder or liquid sources.

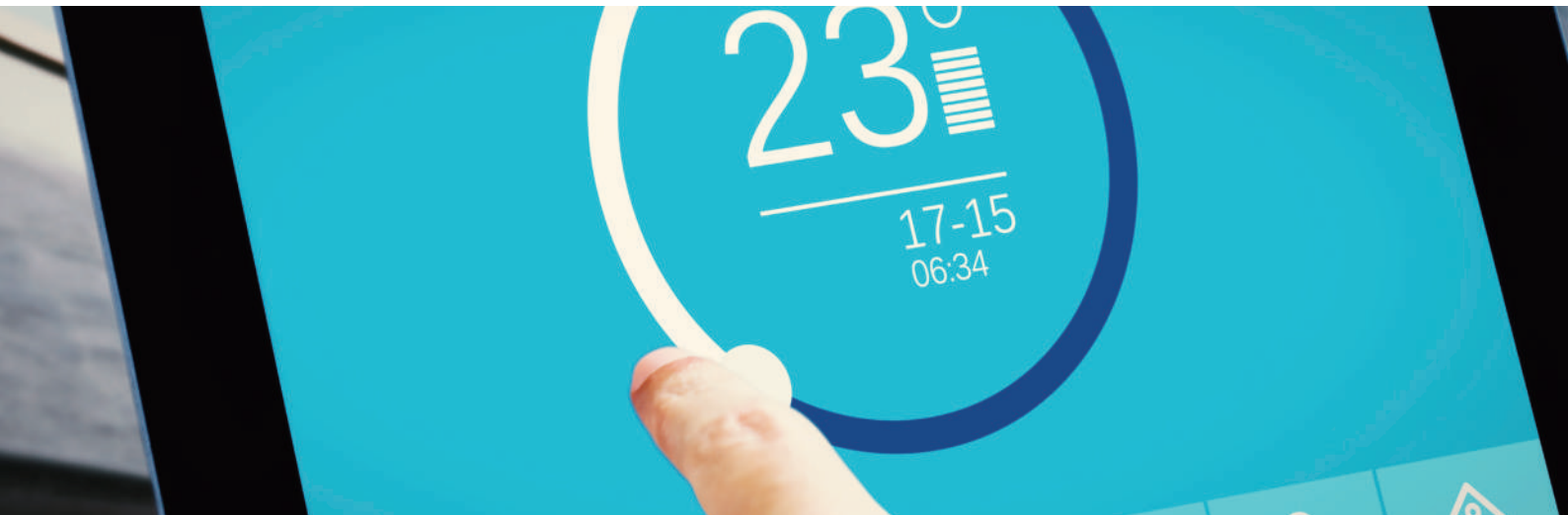
GSA's advanced gas purification technology provides semiconductor manufacturers with an innovative, efficient and cost effective solution to purify purge gases used in a dry and immersion-based lithography tools.

GSA is a global leader of gas purifiers with the world's highest level of gas purification technology and a broad range of technologies acquired through several decades of experience. Our gas purifiers deliver the ultimate gas purity and incorporate environmental and safety features that provide security and reliability.



GSA's DEOXO equipment

A global leader of Air/Gas chiller



Chiller removes heat from a load and transfers it to the environment using a refrigeration system. It is widely used in many industries such as mold, injection molding, electronics industry, and so on.

GSA chiller can cool the temperature of the compressed air/gas down to the level customers want (max. - 70°C). The electronic precision controller of the unit can maintain a constant outlet temperature of compressed air/gas when you set the target temperature you need. You can monitor a various operating condition and control the system remotely.

GSA's gas chiller systems are designed for cooling gases (nitrogen, argon and other gases) and clean-dry-air for a variety of process cooling applications. Our highly reliable process chills air used in automotive, defense, semiconductor and other various industries.

GSA's air-cooled and water-cooled chiller offers superior control and industry leading efficiency through advanced heat exchangers, smart controls, brazed evaporators and microchannel condensers delivering lower equipment and installation costs and driving down the total cost of ownership.



Various application of Chiller

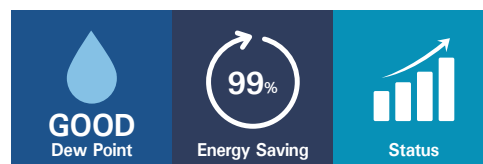
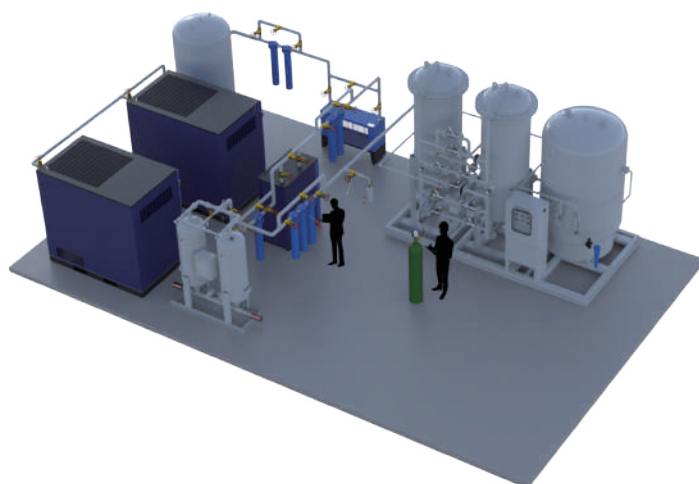
5G. IoT compressed air system



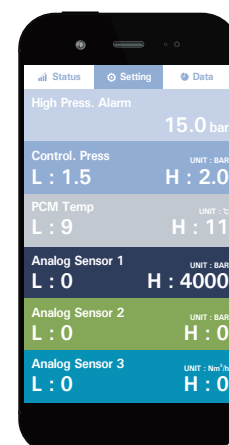
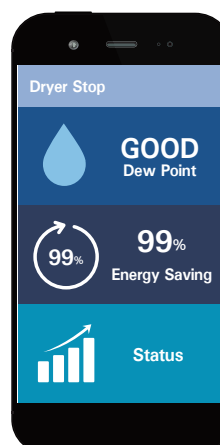
If required, we can also get you monitor remotely your compressed air system centrally via the Internet, 24 hours a day, 365 days a year, allowing you to depend on the productivity and availability of your system at all times.

Optional functions

- Wi-Fi, Bluetooth wireless communication
- Ethernet, RS-485 wire communication
- Monitoring through mobile devices
- User-friendly easy interface
- Easy to check running status through data logging
- Optimal performance with easy and simple setting
- Energy saving with cycling and VSD technique
- Easy maintenance management with testing function
- Intuitive interface



Dew Point	3°C	Ref. Conden. Press	16 bar
Ambient Temp.	25°C	Air Inlet Press.	7 bar
Pcm Temp.	2°C	Air Flow	120 Nm³/h
Ref. Suction Temp.	5°C		



Monitoring unit by mobile phone

Refrigerated Air Dryer



HYD-N3 series

3rd generation cycling type

Flow rate : 0.5~85 Nm³/min

Energy storage heat exchanger

High Purity Alkanes PCM
Max. 90% energy saving
environmentally friendly dryer
Zero air loss magnetic float drain v/v
Wifi/BT Communication
4.3" TFT touch screen / RealTime Monitoring

HYD-20~600N3

(Upon request, customized product)



HYD-N2 series

2nd generation cycling type

Flow rate : 0.5~180 Nm³/min

Energy storage heat exchanger

Energy saving technology
environmentally friendly dryer
ECO mode lamp / Max. 50% energy saving
Zero air loss magnetic float drain v/v
Temp. Controller

HYD-5~1200N2

(Upon request, customized product)



HYD-N series

Non cycling type

Flow rate : 0.5~14.2 Nm³/min

Highly efficient Al. heat exchanger

Dew point indication
Air-cooled type
Zero air loss magnet float drain v/v
High Performance

HYD-5~100N



HYD-N series

Non cycling type

Flow rate : 21~210 Nm³/min

Highly efficient Al. heat exchanger

Dew point indication
Zero air loss level sensor drain v/v
Air-cooled type / 4.3" TFT touch screen
Safety devices / High Performance

HYD-150~1500N

(Upon request, customized product)



HYD-WN series

Non cycling type

Flow rate : 22.5~330 Nm³/min

Highly efficient Al. heat exchanger

Dew point indication
Water-cooled type
Zero air loss level sensor drain v/v
4.3" TFT touch screen
Safety devices / Powerful performance

HYD-150~2500WN



HYD-HTN series

Non cycling type

For High inlet temperature

Flow rate : 0.7~14.2 Nm³/min

Highly efficient Al. heat exchanger

Dew point indication
Zero air loss magnet float drain v/v
Automatic control of after-cooler
Built-in aftercooler & 1~2 air filters

HYD-5~100HTN



HYD-HTNS series

Non cycling type

For High inlet temperature

Flow rate : 0.7~2.7 Nm³/min

Highly efficient Al. heat exchanger

Dew point indication
Zero air loss magnet float drain v/v
Automatic control of after-cooler
Built-in aftercooler & 3 air filters

HYD-5~20HTNS

(Upon request, customized product)



HYD-HT series

Non cycling type

For High inlet temperature

Flow rate : 21~210 Nm³/min

Highly efficient Al. heat exchanger

High Performance
Zero air loss level sensor drain v/v
High inlet & ambient temp.
Large cooling capacity

HYD-5~100HTN

Refrigerated Air Dryer (Customized)



HYD-ID series

Indirect refrigeration system
Cycling type
Flow rate : 21~210 Nm³/min

Highly efficient heat exchanger

Dew point indication
Air/water cooled type
Built-in
Circulation pump & coolant

HYD-150~2500ID



HYD-LP series

Low press. type
Flow rate : 0.5~85Nm³/min

Customized system

Highly efficient heat exchanger

Low differential pressure
Air & gas cooling under 1 barg
Intake air cooling of air comp.

HYD-5~600LP

(Upon request, customized product)



Compressed Air Supply System

All-in-one skid air dryer package
Flow rate : 0.5~85 Nm³/min

Customized system

Basic composition
Ref. air dryer / air filters / bypass piping

Optimized & compact design
Easy installation / Integrated management



Customized Ref. Air Dryer

Outdoor type(IP54)
Stainless steel material type
High pressure type
Marine applications
Special gas type
EPC project

Air & Gas Chiller



HYD-CH Series

1-stage refrigeration system
Above zero point type
Flow rate : 0.5~85 Nm³/min

Outlet temp. control system

Wifi/BT communication
4.3" TFT touch screen
Real time monitoring
Optimized & compact design
Easy installation
(Upon request, customized product)



HYD-CL Series

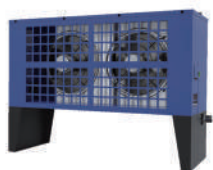
2-stage refrigeration system
Sub-zero point type

Customized system Max. -70°C outlet temp

RS485 or other communication
TFT touch screen
Real time monitoring
Optimized & compact design

Pre-treatment unit required

After-cooler



HYA Series

Air cooled type
Aluminum fin tube
Flow rate : 1~180 Nm³/min

Eliminating over 80% of the water in compressed air

HYA-20~1200

(Upon request, customized product)



HYA-W Series

Water cooled type
Shell & tube type
Flow rate : 18~180 Nm³/min

Eliminating over 80% of the water in compressed air
Water separator : option.

HYA-100~1200W

(Upon request, customized product)

Desiccant Air Dryer



PHL series

Heatless type
Flow rate : 45~6800 Nm³/hr

Variable cycle control

Solid state controller
Control air filter / Safety valve
Purge pressure indicator
-40°C dew point
Lower dew point : option

PHL-25~4000



POM series

Heatless type with carbon tower
Flow rate : 45~3400 Nm³/hr

Variable cycle control

Solid state controller
Control air filter / Safety valve
Purge pressure indicator
-40°C dew point
Lower dew point : option

POM-25~2000

(Upon request, customized product)



PEH series

Heated purge type
Flow rate : 150~15300 Nm³/hr

Variable cycle control

Solid state controller / PLC
High performance electric heater
Reliable desiccant (AA/MS)
Energy-saving technology
-40°C dew point
(Upon request, customized product)

PEH-100~9000



PEHB series

Heated blower purge type
Flow rate : 255~15300 Nm³/min

Variable cycle control

PLC & touch screen
High performance electric heater
Reliable blower motor / valves
Reliable desiccant (AA/MS)
Energy-saving technology / -40°C dew point
(Lower dew point : option)

PEHB-150~9000



ZEHB/ZEHC series

Zero purge loss type
Ambient air cooling(ZEHB)
Water cooling(ZEHC)
Flow rate : 730~11890 Nm³/hr

PLC & touch screen
High performance electric heater
Reliable blower motor / valves
Reliable desiccant (AA/MS)
Energy-saving technology
(Lower dew point : option)

ZEHB(C)-430~7000



Combination Air Dryer

Desiccant air dryer combined with a ref. air dryer
Flow rate : 45~3400 Nm³/hr

Extreme performance
Maximum energy efficiency
Low maintenance costs
Optimized & compact design
Easy installation



Compressed Air Supply System

All-in-one skid for air dryer package
Flow rate : 45~3400 Nm³/hr

Customized system

Basic composition
Desiccant air dryer / air filters / bypass piping

Optimized & compact design
Easy installation
Integrated management



Customized Desiccant Air Dryer

Outdoor type(IP54)
Stainless steel material type
High pressure type
Marine applications
Various design code
KS / ASME / DOSH / GOST / JIS

EPC project

Gas Generator / Gas Purifier / Gas Dryer



Nitrogen Generators

PSA type
Low(95%)~high(99.999%) purity
Max. 2000 Nm³/hr

Variable cycle control

Solid state controller / PLC
Reliable valves & CMS
Basic components :
(Nitrogen generators / filters / float flow meter / pressure regulator / receiver tank)



Oxygen Generators

PSA & VSA type
90%~95% purity / Max. 2500 Nm³/hr

Variable cycle control

Solid state controller / PLC
Reliable valves & ZMS
Basic components :
(Oxygen generators / filters / float flow meter / pressure regulator / receiver tank / air blower / vacuum pump)



Gas Purifiers

- H₂ purifier
- He purifier
- N₂ purifier
- O₂ purifier
- Ar purifier

Impurities gas removal up to
10 ppb from 10 ppm

High reliability and performance
Explosion / weather proof
Various design code
KS / ASME / DOSH / GOST / JIS



Gas Recovery & Purification equipment

- CO recovery & purification
- CO₂ recovery & purification
- CH₄ recovery & purification

environmentally friendly technology

High reliability and performance
Low operating cost
Various design code
KS / ASME / DOSH / GOST / JIS



Gas Dryer

- C₂H₄ gas dryer
- CnH_(2n+2) gas dryer
- CO₂ gas dryer
- Other gas dryer

Customized engineering

High reliability and performance
Low operating cost
Compact & optimized design
Various design code
KS / ASME / DOSH / GOST / JIS



Gas Liquefiers

- CO₂ liquefier
- Other gas liquefiers

Customized system

High reliability and performance
Low operating cost
Optimized design
Various design code
KS / ASME / DOSH / GOST / JIS



Gas Dryer (special)

H₂ deoxidization equipment
Gas dehumidifier

Customized engineering

Explosion / weather proof
High reliability and performance
Low operating cost
Optimized design
Various design code
KS / ASME / DOSH / GOST / JIS



Breathing Air Systems

All-in-one skid package
CO₂ below 1 ppm
CO below 1 ppm

High reliability and performance
Basic components :
(Ref. air dryer / desiccant air dryer / catalyst tower / filters)
Low operating cost
Various design code
KS / ASME / DOSH / GOST / JIS

Membrane Dryer / Other equipment



PMD series

Membrane air dryer
Flow rate : 135~600 LPM

**Variable purge volume control
environmentally friendly dryer**
All Aluminum material
High performance hollow fiber
Easy expansion / Easy maintenance
Long operating life
Small installation space
Easy & short installation time

PMD-135 ~ 600



HYF-AN series

Compressed air filters
Flow rate : 1~14 Nm³/min

Differ. Pressure indicator
All ALDC material
High performance element
Easy maintenance
Long operating life
Compact design / lightweight
Small installation space

HYF-15~50AN



HYF-A series

Compressed air filters
Flow rate : 26~504 Nm³/min

Inlet/outlet Pressure gauge
Stainless or carbon steel
High performance element
Long operating life
Pressure vessel
Various design code
KS / ASME / DOSH / GOST / JIS

HYF-65~300A



HYE-N series

Element cartridge for filter
Particulate / coalescing type

Easy replacement
High quality element
High efficiency multilayers
Long operating life
40/5 μ m particulate element
1/0.0/0.01/0.01F coalescing element

HYE-15~50N



GS series

Air & gas receiver tank
Design pressure : 9.7 barg
Volume : 0.3~20 m³

Pressure gauge
Safety valve
Stainless or carbon steel
Pressure vessel
Various design code
KS / ASME / DOSH / GOST / JIS

GS-003A ~ 20
(Upon request, customized product)



Condensate drain trap

Zero air loss float type
Electronic timer type
Zero air loss level sensor type

- Magnetic float drain
- HAD-10 / 20 auto drain
- HAD-100 power drain
- EDV-15/40T timer drain
- DM series level sensor drain

Easy maintenance
Long operating life
Higher resistance to foreign matter



DPI Series

Differ. pressure indicator
Max. operating press. : 16 barg
Measuring range : 0 ~ 0.9 bar



Differential pressure indicator is designed to indicate pressure drop across the filter element in compressed air system.

HDI 30 / HDI 50



Adsorbent

Activated alumina
Carbon molecular sieve
Zeolite molecular sieve(3A/4A/5A/13X)

Long life
High crush strength
High adsorptive capacity
Low abrasion

Customer Satisfaction

Our Customers are our priority and we provide them with first class products and service in a timely manner and listen to their needs attentively. We achieve our excellence through tireless effort of our staff that we support enthusiastically.

Quality Assurance

GSA provides high-quality products to serve our customers to keep their production optimal at all time and at the lowest operating cost. Standards and policies are used to ensure and maximize the quality of all our products. GSA periodically reviews quality issues and adjusts its programs and processes to ensure continuous quality improvement.

Reliability

Our aim is to achieve ZERO (0) defect for all of our products at all time. Defects are caused because of flaws in the process or work activity. As such, we are doing our best effort to create and design processes to literally eliminate defects. Our Quest for Zero Defects leads reliability for our products from our customers in the market.

Flexibility

We adopt maximum flexibility not only for production but also for design and manufacturing of our products. For example, we are not hesitated to lower the height or width of products to be put into container helping our customers save big charge of transportation or sea freight of the order products.



Timely Delivery

To ensure proper execution of production in the right time and on time delivery/shipment, our production planners distribute line wise production from buyer order list and set production target. At the same time, we exercise the greatest flexibility for meeting urgent special delivery orders.

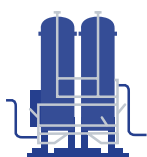
Reasonable Price

We do all in our power to keep reasonable price of our products by introducing economies in the manufacturing process without lowering standards, and by buying our materials in greater bulk. These economies have enabled us to keep our increase below those of our competitors.



Air / Gas Dryers

GSA is leading the industry of Compressed Air Treatment. We design and manufacture various types of air dryers such as refrigerated (cycling, non cycling, high inlet temp., air filter built-in) dryers, membrane dryers, desiccant (heatless, heated, heat of compression and zero purge loss) dryers in all capacity. Natural gas, breathing air dryer and various gas dryers are designed and produced upon request.



Gas Generators / Purifiers

GSA is leading the industry of Gas Generation and Purification. We design and produce a wide variety of gas generators and purifiers. They are PSA nitrogen / oxygen generators, PSA hydrogen purifier, PSA argon / CO / CO² / methane recovery purification plant and PSA other gases separation and purification plant.



Air / Gas Chillers

We design and manufacture Air/Gas Chillers specially applied. GSA's air-cooled and water-cooled chiller offers superior control and industry leading efficiency through advanced heat exchangers, brazed evaporators and microchannel condensers and smart controls, delivering lower equipment and installation costs and driving down the total cost of ownership.

