

Inert N₂ Gas Sealed System

Highly safe N₂ gas sealed circulation system

GAS410

Circulation flow 0.12 to 0.65m³/min

Recovery capacity 1,300ml/h or more

Cost savings With integrated freezer
With integrated compressor

Inert N₂ Gas Sealed System used in conjunction with Spray Dryers



The Inert N₂ Gas Sealed System is used to prevent external discharge when combined with a spray dryer (ADL311SA or GB-210A) when using an organic solvent.

- Dehumidifier (Freezer) integrated in GAS410. No extra Freezer/dehumidifier equipment needed
- Compressor included, no need for a separate compressor to operate the spray dryer ADL311SA when using organic solvent samples
- Flammable or toxic solvents can be processed by combining a N₂ gas sealed circulation system and a solvent recovery system (with freezer and capacitor)
- Explosion safety with closed loop N₂ inert gas system
- Recovery of solvent to protect the environment and enable minimized pollution.
- Drying of easily oxidized materials is possible
- Supports low temperature drying of materials that easily deform with heat
- No freezing risk due to organic solvent with aqueous solution mixtures which could cause damage to the closed loop GAS410 system
- Spray drying and recovery of products and solvents are performed with meticulously devised safety measures

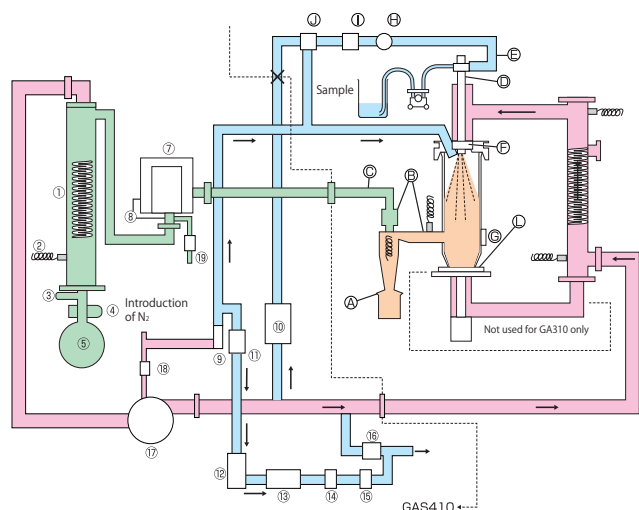


Example of installation: ADL311SA + GAS410

Specifications

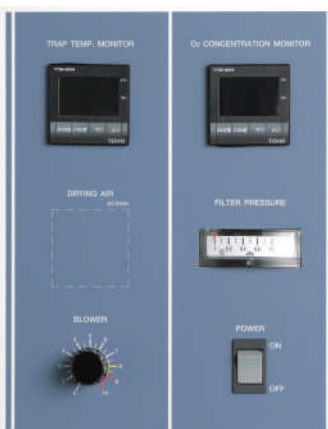
Model	GAS410
Solvent recovery system	Capacitor + freezer
Circulating gas	N ₂ gas (sealed circulation when connected to ADL311SA or GB-210A)
Circulating volume flow	0.12 to 0.65m ³ /min
Compressor (for spraying)	Linear compressor integrated
Circulation blower	Roots blower
Solvent recovery container	2L flask
Freezer	Air-cooled condensation full-sealed type: 400W R404A
Solvent recovery mechanism	Capacitor cooling mechanism
Filter	Cartridge filter
Instruments	Cooling trap temperature display monitor Filter differential pressure meter (monitor for clogging of filter) O ₂ density display monitor Blower wind amount adjusting volume
O ₂ Sensor	Solid electrolyte (Zirconium) limit current type
Pump	For circulation to measure Oxygen
Safety device	O ₂ density meter, flammable gas alarm, electric leakage breaker, N ₂ gas forced introduction (when removing nozzles)
External dimensions	W700 x D950 x H1,500 mm
Weight	~130 kg
Power source (50/60 Hz) rated current	AC200 to 240V 5A (15A)
Required N ₂ amount	15 L/h at 0.1 MPa
Accessories	Set of connection parts, anti-seismic clamps, interface cable, sample gas for gas alarm inspection, 2L flask

Diagram



No.	Part name	No.	Part name
(1)	Capacitor	A	O ring
(2)	Sensor	B	Packing
(3)	Ball valve	C	Hose
(4)	Clamp	D	Spray nozzle
(5)	Recovery flask	E	Tube
(6)	Filter element	F	Aluminum honeycomb
(7)	Filter case	G	Cap
(8)	Differential pressure meter	H	Pressure meter
(9)	Flow meter (for introduction of N ₂)	I	Needle valve
(10)	Compressor	J	3-way valve
(11)	Solenoid valve (for N ₂ control)	K	Solenoid valve
(12)	Flow meter (for measuring O ₂ density)	L	Packing
(13)	Filter		
(14)	Pump		
(15)	O ₂ Sensor		
(16)	Solenoid valve (for exhaust)		
(17)	Blower		
(18)	Solenoid valve (for introduction of N ₂)		
(19)	Solenoid valve (for air supply)		

Control Panel



Major control functions and detection function

- Closed system (N₂ gas sealed circulation type)
- O₂ density control function
- Flammable gas detection function
- Inlet temperature overheat detection function
- Outlet temperature overheat detection function
- In case of an abnormality, the alarm sounds and liquid flow stops
- Other self diagnostics functions
 - Detection of temp. sensor disconnection
 - Overheat prevention
 - Detection of absence of spray nozzle

Fields



- Non-oxide ceramics
- Polymer material
- Super conductivity materials
- Medicinal products
- Food products
- Material research

Connection



Rear of GAS410



ADL311SA + GAS410 + stand with caster wheels

Optional items

Product name	Product code
Filter element 0.1μ	212785
Viton packing for cyclone inlet/outlet (1 set of 2 types)	212781
Teflon packing for cyclone inlet/outlet (1 set of 2 types)	212782
Dry air flow meter (differential pressure type)*	212786

* The item marked "*" shall be ordered together with the main unit.