

Solvent Recovery Unit

Highly safe N₂ gas sealed circulation system

GAS410

Circulation flow 0.12 to 0.65m³/min

Recovery capacity 1,300mL/h or more

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

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



Specifications

Product code	212774
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 (GWP:3920)
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*1	W700×D950×H1,500 mm
Weight	Approx. 130 kg
Power source (50/60 Hz) rated current	AC200 to 240V 5A
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

The length of the power cord is about 3m outside the unit.

*1 External dimensions do not include projections.

Note: This system is designed on the basis of isopropyl alcohol (IPA) and ethanol. There are restrictions on the use of other organic solvents, so please consult with us.



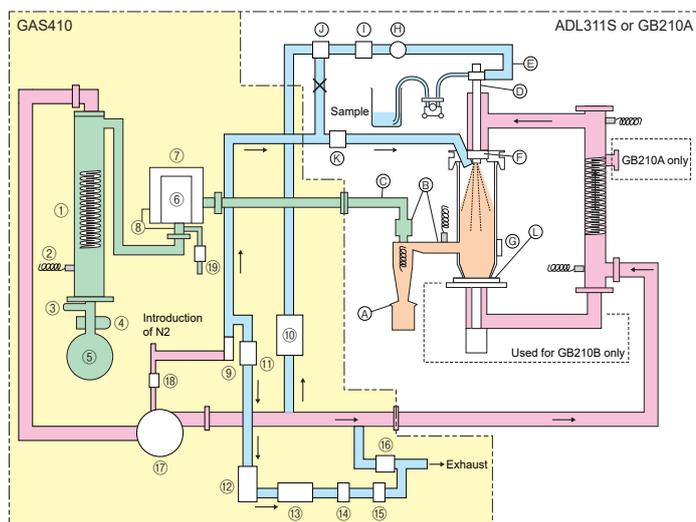
Example of installation : ADL311S-A+Stand with casters (Option)+GAS410

Fields



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

Diagram



No.	Part name
①	Capacitor
②	Sensor
③	Ball valve
④	Clamp
⑤	Recovery flask
⑥	Filter element
⑦	Filter case
⑧	Differential pressure meter
⑨	Flow meter (for introduction of N ₂)
⑩	Compressor
⑪	Solenoid valve (for N ₂ control)
⑫	Flow meter (for measuring O ₂ density)
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)

No.	Part name
(A)	O ring
(B)	Packing
(C)	Hose
(D)	Spray nozzle
(E)	Tube
(F)	Aluminum honeycomb
(G)	Cap (outside air inlet)
(H)	Pressure meter
(I)	Needle valve
(J)	3-way valve
(K)	Solenoid valve
(L)	Packing

Connection



Rear of GAS410



ADL311S-A + GAS410 + stand with casters (Option)

Optional items

No.	Product name	Product code
①	Filter element 0.1μ	212785
②	Viton packing for cyclone inlet/outlet (1 set of 2 types)	212781
③	Teflon packing for cyclone inlet/outlet (1 set of 2 types)	212782
④	*Dry air flow meter (differential pressure type)	212786

* Please specify when ordering main unit.