

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

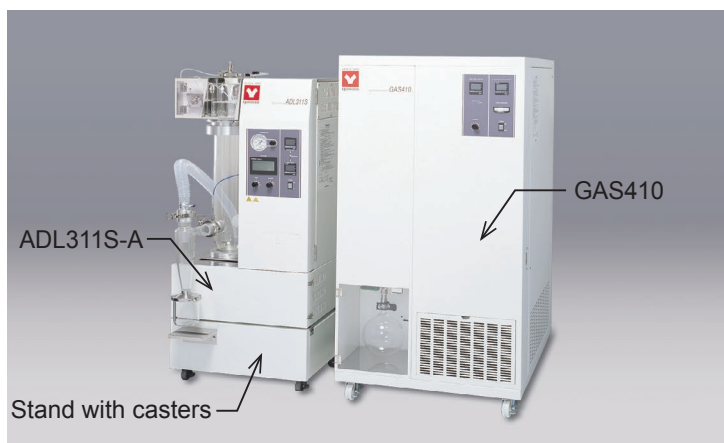


Major control functions and detection function

- 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

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	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



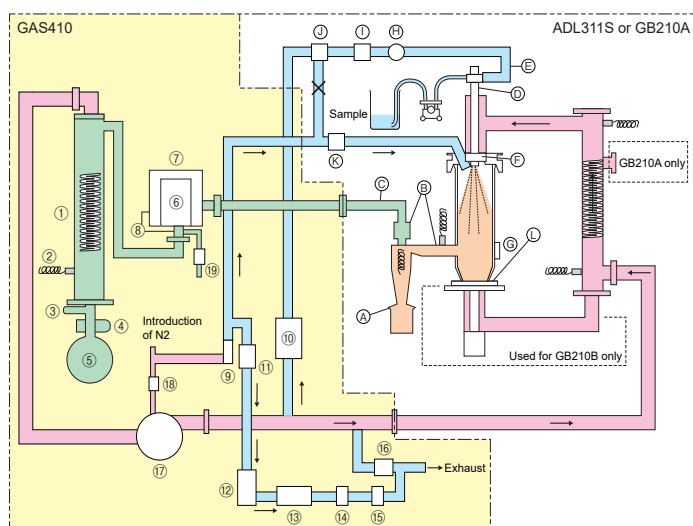
Example of installation : ADL311S-A+Stand with casters (Option)+GAS410

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

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

* Please specify when ordering main unit.