Nitrogen Gas Generator for LC-MS

N2 SUPPLIER

Vol.3

Nitrogen Gas Generator for Science Laboratory

N2 BOY Model 02B

Manufactured by SYSTEM INSTRUMENTS CO., LTD.

Distributed by EVER Seiko CORPORATION
Provided security and Safety  
Enables 24 hours’ Continuous Operation

LC-MS analysis requires constant supply of nitrogen. However, exchange of cylinder and confirmation of remaining volume of nitrogen are troublesome. 24 hours’ continuous operation is possible by using N2 Supplier, which provides security and safety for your laboratory.

- Free from daily troublesome work of exchange of the nitrogen cylinder
- No need of frequent confirmation of remaining volume of nitrogen
- Capacity of usually used 7 liters cylinder is only 7 hours at a flow rate of 15 liters/minute

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**N2 Supplier is Designed for Low Noise Operation**

■ Features

- Nitrogen gas is supplied several minutes after pressing the switch.
- Out of application of the high pressure gas control Law
- Oil-free scroll compressor improved for the equipment
- Low-noise compressor with noise level of below 51db
- Much less pressure fluctuation by compressor on & off

High pressure and high flow rate of nitrogen are required in accordance with high sensitivity of LC/MS in recent years. Our apparatus is sufficient for complying with improved performance of LC/MS.
N\textsubscript{2} SUPPLIER \textsuperscript{24} F (Standard)

More Quite! More Security!

**Standard Type Nitrogen Gas Generator for LC/MS**

- The height is 68cm and it is able to place under laboratory table
- 24 liter/min nitrogen gas generation & applicable to APCI
- Drainage operates internally
- Operable by single phase 100V (110V)

**Specifications**

1. **Electricity**
   
   AC100V, 11A/50Hz, 10.8A/60Hz

2. **Calorific Value**
   
   710 kcal/h (2.97MJ)

3. **Nitrogen Flow Rate**
   
   - Purity 99.9% 4 liter/min
   - 99.0% 13 liter/min
   - 97.0% 24 liter/min (max.)

4. **Size**

   485 mm (W) × 740 mm (D) × 680 mm (H)
   
   *Note: Without Projection. Install a Ventilation system (10 m\textsuperscript{3}/min) in case of use in a sealed room. Need 0.05m\textsuperscript{2} for air supply areas. Inform your power supply & frequency when placed an orders.*

5. **Weight**

   79 kg

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**Option exhaust duct adapter**

Available exhaust to outside using by optional duct adapter.

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**07 E-SDA**

Available to Supply Nitrogen Gas, Zero Air & Air!

**Specification**

1. **Electricity**

   AC100V, 11A/50Hz, 10.8A/60Hz

2. **Calorific Value**

   710 kcal/h (2.97MJ)

3. **Output Gasses**

   - N\textsubscript{2} Gas  
     
     Flow rate: 6 liter/min,  Purity: More than 99.5%, Pressure: 0.38 ~ 0.42MPa (55 ~ 60psi)

   - Zero Air  
     
     Flow rate: 22 liter/min,  Pressure: 0.69 ~ 0.72 MPa (100 ~ 105psi), Dew point -40 °C

   - Air  
     
     Flow rate: 6.4 liter/min,  Pressure: 0.42 MPa (60psi)

4. **Size**

   485 mm(W) × 740 mm(D) × 680 mm(H) (without Projection)
   
   *Note: Install Ventilation system (10 m\textsuperscript{3}/min) in case of use in a sealed room. And inform your power supply & frequency when placed an order.*

5. **Weight**

   79 kg
Nitrogen Gas Generator for LC-MS

Ready to Meet Your Demands Depending on Your Applications!

⭐ A Variety of lineups

- Separate Type

**Compressor SLP-551EBD-S**
- 3P 200V

**Compressor SLP-221EBD-S**
- 3P 200V

**Compressor SLP-551EBD-S**
- 3P 200V

**Note**
Compressor series “SLP-xxxxxx-x” which with Dryer are just for Japan market.
For High Flow Rate
- Afford for high flow rate
- May keep the separate type compressor out of the laboratory

Safety and Security Service
- While the compressor is safely operable with a margin, service network of Anest Iwata Co. is ready to solve troubles, if any, throughout the country.

Ready for installation in narrow laboratory

Outline:
Nitrogen gas is generated by separating nitrogen in air by taking advantage of differences of film permeation rate of gases.

Construction:
The apparatus is composed of a permeation membrane, a pressure reducing valve, a filter and a compressor.

Specification:
- N₂ Flow rate and pressure: Refer next page. Room Temp. at 25°C

Requirement:
1. For indoor installation (room temperature 15 to 40°C), non-explosion proof area
2. May cause current leakage and rust at high humidity
3. Place on a flat floor
4. Avoid direct sunlight
5. Avoid to place at a dusty area and an area containing toxic gases
6. Secure a space for maintenance

Note:
- A ventilation fan (capacity: 25 m³/min for 221EBD-S, 40 m³/min for 371EBD-S) is necessary when used in a sealed room

Power source and Pipeline:
- 3 phase breaker
- Compressor
- Main Unit
- LC/MS

Compressor
- 221EBD-S: 3 phase, 200V, 11.3A(50Hz) / 10.4(60Hz)
- 371EBD-S: 3 phase, 200V, 17.6A(50Hz) / 16.4(60Hz)

Breaker Capacity
- SLP-221EBD-S: 30A
- SLP-371EBD-S: 50A

Contactus
- Elongation of air pipeline is possible by optional construction
- Ready for complying with concomitant use of 3 or more LC/MS
- Prepared for power failure
We are ready to supply the N₂ Gas for LC/MS.

Separate type N₂ Suppliers

<table>
<thead>
<tr>
<th>Purity (%)</th>
<th>50EC</th>
<th>30EC</th>
<th>20EC</th>
<th>12EC</th>
</tr>
</thead>
<tbody>
<tr>
<td>99.9</td>
<td>20 L/min</td>
<td>111 L/min</td>
<td>9 L/min</td>
<td>4 L/min</td>
</tr>
<tr>
<td>99.5</td>
<td>43 L/min</td>
<td>27 L/min</td>
<td>20 L/min</td>
<td>9.5 L/min</td>
</tr>
<tr>
<td>99.0</td>
<td>60 L/min</td>
<td>36 L/min</td>
<td>26 L/min</td>
<td>13 L/min</td>
</tr>
<tr>
<td>98.0</td>
<td>86 L/min</td>
<td>58 L/min</td>
<td>40 L/min</td>
<td>20 L/min</td>
</tr>
<tr>
<td>97.0</td>
<td>*51 L/min (20EC-L)</td>
<td>25 L/min</td>
<td></td>
<td></td>
</tr>
<tr>
<td>96.0</td>
<td>*63 L/min (20EC-L)</td>
<td>30 L/min</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Size (mm)   | 250(W) × 280(D) × 1350(H) | 200(W) × 270(D) × 1300(H) | 200(W) × 150(D) × 1300(H) | 200(W) × 200(D) × 780(H) |
| Weight      | 35 kg                      | 28 kg                      | 22 kg                      | 18 kg                      |
| Base        | 440(W) × 480(D) × 50(H)    | 405(W) × 475(D) × 50(H)    | 400(W) × 400(D) × 50(H)    | 350(W) × 350(D) × 50(H)    |
| Compressor  | SLP-551EBD etc             | SLP-371EBD-S               | SLP-371EBD-S / SLP-221EBD-S | SLP-221EBD-S               |

SDA type (for ABI-MS)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>24E-SDA (for 2 sets)</td>
<td>12E-SDA</td>
</tr>
<tr>
<td>When N₂ 99.5%</td>
<td>10 ~ 20 L/min</td>
</tr>
<tr>
<td>-Ditto Pres.</td>
<td>0.38 ~ 0.42 MPa</td>
</tr>
<tr>
<td>Zero Air</td>
<td>34 ~ 45 L/min</td>
</tr>
<tr>
<td>-Ditto Pres.</td>
<td>0.69 ~ 0.72 MPa</td>
</tr>
<tr>
<td>Dew point</td>
<td>- 40 °C</td>
</tr>
<tr>
<td>Air</td>
<td>12 ~ 12.8 L/min</td>
</tr>
<tr>
<td>Air Pres.</td>
<td>0.35 ~ 0.42 MPa</td>
</tr>
<tr>
<td>Size (mm)</td>
<td>255(W) × 295(D) × 965(H)</td>
</tr>
<tr>
<td>Weight</td>
<td>37 kg</td>
</tr>
<tr>
<td>Base</td>
<td>440(W) × 480(D) × 50(H)</td>
</tr>
<tr>
<td>Compressor</td>
<td>SLP-371EBD-S</td>
</tr>
</tbody>
</table>

Compressor (Oil-free scroll type)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Flow Rate</td>
<td>SLP-371EBD-S</td>
</tr>
<tr>
<td>Volume of Integrated Tank</td>
<td>35 liter</td>
</tr>
<tr>
<td>Noise Level</td>
<td>50 db</td>
</tr>
<tr>
<td>Voltage</td>
<td>3 phase, 200 V</td>
</tr>
<tr>
<td>Current</td>
<td>17.6A / 50Hz (16.4A / 60Hz)</td>
</tr>
<tr>
<td>Calorific Value</td>
<td>4009 kcal/h (16.78MJ)</td>
</tr>
<tr>
<td>Size (mm)</td>
<td>545(W) × 622(D) × 1158(H) (Without Protrusion)</td>
</tr>
<tr>
<td>Weight</td>
<td>151 kg</td>
</tr>
<tr>
<td>Maintenance Interval</td>
<td>5000 Hour or 3 Years (which reaches earlier)</td>
</tr>
</tbody>
</table>

Option : Air Tank
- Air tank for prolonging maintenance time
  (Compressor SLP-371EBD-S, 221EBD-S)
  Which makes less ON/OFF switch of the compressor or more prolong of maintenance time.
  Volume: 60 liter, 310 φ × 1200 (H) mm, 30 kg (without protrusion)
- Air tank for power failure
  Volume: 400 liter, 612 φ × 1715 (H) mm, 175 kg
  Volume: 600 liter, 762 φ × 1710 (H) mm, 217 kg (without protrusion)

Option : Hydrocarbon Trap
- Collected Hydrocarbon in Nitrogen Gas
- Available for SIC N₂ Generators upon request
- Size : Overall length : 440mm × 60 φ with 1/4" Joint
Unique N2 Generator for Scientific Experiments

**Handy and Convenient for Experiments**
- ✔ No more worry for cylinder’s remainder.
- ✔ Supply N2 Gas within a few minutes after turning on the switch

**Features**
- ✫ Built-in compressor, Silent noise (no more than 45 db)

**Application**
- ✫ Used as purge device for catalyst evaporation
- ✫ To dry, solidify and concentrate the samples
- ✫ Explosion-proof frame body for purge device, etc.
Unique N$_2$ SUPPLIER

Model 02B

- **N2 Gas Pressure**: 0.15 ~ 0.3 MPa
- **Flow rate and Purity (at N2 Pres. 0.15 MPa)**:
  - 0.6 L/min: 99.9%
  - 2 L/min: 99%
  - 3 L/min: 97%
  - 4 L/min: 96%
- **Size and Weight (mm)**: 280(W) x 390(D) x 430(H) mm, 23 kgs
- **Power**: AC 100V, 6.5A
- **Temperature**: 25 ℃
- **Dew Point**: -40 ℃

Model 05B / 05BE / 05BL

- **Size and Weight (mm)**: 300(W) x 526(D) x 481(H) mm
- **Temperature**: 25 ℃
- **Dew Point**: -40 ℃

<table>
<thead>
<tr>
<th></th>
<th>[05B]</th>
<th>[05BE] For ELSD</th>
<th>[05BL] For ELSD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N2 Gas Pres.</strong></td>
<td>0.5MPa</td>
<td>0.5MPa</td>
<td>0.7MPa(Max)</td>
</tr>
<tr>
<td><strong>Flow Rate</strong></td>
<td>1 L/min: 99.9%</td>
<td>5 L/min: 99%</td>
<td>1 L/min: 99.9%</td>
</tr>
<tr>
<td></td>
<td>5 L/min: 99%</td>
<td>5 L/min: 99%</td>
<td>5 L/min: 99%</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>AC 100V, 7.5A</td>
<td>AC 100V, 7.5A</td>
<td>AC 100V, 9A</td>
</tr>
</tbody>
</table>

**Manufacturer**

SIC SYSTEM INSTRUMENTS CO., LTD.
776-2, Komiya - cho, Hachioji, Tokyo, Japan.
Tel : 81-426-46-3555. Fax : 81-426-46-8228

**Sole Distributor**

EVERSEIKO Corporation
ES Bldg., 4-39-5, Senzoku, Taitoku, Tokyo, Japan.
E-mail : info@everseiko.co.jp, Fax : 813-3874-8873
N₂ Supplier Model 30F

- This is the best seller N₂ Generator for LC/MS
- Extra Low Noise 47dB(A)
- Internal Drain System
- Built-in type Safety Hi-performance Compressor

**Model:** New Model 30F

**Composition:** N₂ Gas Generator with built-in Compressor

**Specification:**
1. Power AC220V, 50Hz, 5A
2. Calorific Value 710 kcal/h (2.97MJ)
3. N₂ Flow Rate Max. 30 L/min (at N₂ Gas Pressure 0.69MPa)
4. Purity Max. 99.9%
5. Dimension: 485(W)×740(D)×680(H)mm (without Projections)
6. Weight: 79kg

**Options:**
- Hydrocarbon Trap Set
- Duct Connecting Adaptor for Exhaust Air
- Aluminum Spiral Duct for Exhaust Air (1 to 3M; Connection extension available)
  - * Approach or connect the one tip of duct to a powered exhaust-fan.
  - * The duct installation can be done by customer or us with a proper additional fee.
- Auto Switching controller for 30FC/24F
  - * When the power shut-down, N₂ supplier will automatically stop.
    In that case, Auto Switching Controller changes the N₂ flow from the Generator to a N₂ cylinder and supplies N₂ gas to LC/MS continuously.

**Warning and Caution:**
- Install a Ventilation fan (10m³/min) in case of use in a sealed room.
  In addition, at least 0.05m² needs for the air supply area.
- Inform us Power supply (voltage and frequency) when you placed an order.

* Specifications are subject to change without prior notice.

**Manufacture by**
System Instruments Co., Ltd.

**URL:** http://www.sic-tky.com
1. **Model** : New Model 07E-SDA

2. **Composition** : N2 Generator with built-in Compressor Type

3. **N2 Gas Supply Capacity** :
   1) **N2 Gas**
      - Flow Rate : 6 L/min at purity more than 99.5%
      - Pressure : 0.38 ~ 0.42MPa (55 ~ 60psi)
   2) **Zero Air**
      - Flow Rate : 22 L/min
      - Pressure: 0.69 ~ 0.72MPa(100 ~ 105psi). Dew point: -40℃
   3) **Air**
      - Flow Rate : 6.4 L/min
      - Pressure: 0.42MPa (60psi)

4. **Gas Generation Method** :
   1) **N2 Gas**
      - N2 Gas Generates by injecting High-pressure Air to N2 separator membrane
   2) **Zero Air**
      - Zero Air Generates by injecting High-pressure Air to Zero Air generating separator membrane
   3) **Air**
      - Compressed Air after refined through each filters

5. **Control Section** :
   - **ON/OFF Switch**
   - Automatic-restarting operation after power failure
   - Display of maintenance sign by accumulated time and etc

6. **Display Sections** :
   - **Digital Display Section**
     - Compressor Air Pressure
     - Accumulated Working Time (Display of Switching)
     - Compressor’s Temperature Error, Maintenance Alert (Compulsion Display)
     - N2 Gas Flow Rate
   - **Analog Display Section**
     - N2 Gas Pressure
   - **Others**
     - Built-in Pressure Regulator (In left-side plate when face to front panel)
7. Connecting Section:
   1/4” tube with one-touch connector for N2 Gas, Zero Air and Air

8. Dimension: 485(W) × 740(D) × 680(H) mm (without Projections)

9. Weight: Approx. 79 kg

10. Power: AC 220V, 50 Hz or 60 Hz
    Power Cable 5M(L) with Standard Plug Type (without plug for export models)

11. Noise Level: 47dB

12. Using Parts:
    1) High-durable Compressor (SIC’s Spec.)
       ✤ Oil Free Scroll Type
       ✤ * The compressor shall be replaced at every cumulative operation time 16,000h (when annual working time 8,000h)
       ✤ Rust-proof coated lining Air tank (with Relief Valve)
    2) Auto Drain System
    3) Order Removal Filter (including Activated Carbon)
       ✤ * Install an optional “Hydrocarbon Trap” if the Activated Carbon can’t eliminate the hydrocarbon enough.
    4) N2 Separator Membrane
    5) Zero Air Generates Membrane
    6) Suction Air Filter

13. Attachments:
    1) Instruction Manual 1 each
    2) Warranty 1 each
    3) 1/4” tube for connecting LC/MS 1 roll (20M)

14. Warranty Period:
    1 year (excluded consumption parts)

15. Options:
    1) Duct Connecting Adaptor for exhaust, Size: 125 φ mm
    2) Hydrocarbon Trap assembly

* Specifications are subject to change without prior notice.

Manufacture by
System Instruments Co., Ltd.
HP: http://www.sic-tky.com