LINGYU 凌宇

# —COMPRESSED AIR SYSTEM—

ZHONGSHAN LINGYU MACHINERY CO., LTD.


## Main Product:

- Air cooled/water cooled /energy-saving refrigerated dryer
- Heatless regeneration / heated regeneration / modular adsorption dryer
- Zero loss/ micro air consumption adsorption dryer
- PSA nitrogen generator
- Filter and accessories

**Corporate mission:**

To provide professional, comprehensive and competitive complete solutions and services for industrial gas separation and purification

**Corporate vision:**

To be a leading enterprise in the industry and create a world-renowned brand

**Corporate development philosophy:**

Technology-supported value-driven

**Marketing strategy:**

To win the market with high-quality products and professional service

# ZD SERIES

## PSA PRESSURE SWING ADSORPTION

## NITROGEN GENERATOR

## Operating conditions Intake air

**temperature:** ≤40℃

**Inlet pressure:** 0.5 MPa ~ 0.8 MPa

**Nitrogen purity: 95% ~ 99.999%**

**Nitrogen dew point:** ≤-40℃/tld

**Ambient temperature:** ≤40℃

**Switching cycle:** 45S ~ 60S

**Voltage/frequency:** 220V/50HZ

**Noise value:** ≤75dB

## Design Features

Automatic start/stop switching is implemented to achieve fully automated control.

Pneumatic valve switching is controlled automatically by a PLC.

Online real-time monitoring of nitrogen purity and flow rate is provided.

An alarm function for off-spec nitrogen is included; prolonged alarm conditions will trigger automatic shutdown.

An automatic carbon molecular sieve compaction device is incorporated.

A digital touchscreen displays real-time operating parameters, including pressure, purity, and flow rate.

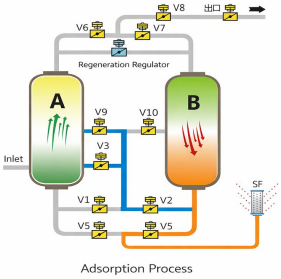
Unequalized pressure balancing technology is adopted, improving nitrogen recovery efficiency and indirectly reducing energy consumption by approximately 5%.

## Working Principle

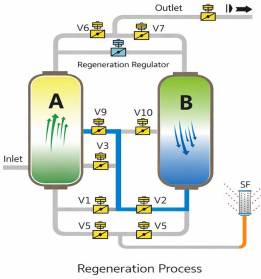
A PSA (Pressure Swing Adsorption) nitrogen generator operates by alternately switching between two pressure vessels to adsorb oxygen molecules. The vessels are filled with carbon molecular sieve (CMS), a specialized adsorbent designed specifically for oxygen adsorption.

Compressed air enters one vessel (Tower A), where oxygen is adsorbed by the carbon molecular sieve, allowing nitrogen to pass through the vessel and be collected as product gas. While Tower A is in the adsorption phase, the other vessel (Tower B) undergoes regeneration and desorption. During this process, the oxygen adsorbed on the carbon molecular sieve is released and discharged to the atmosphere using a small portion of nitrogen as purge gas.

When the adsorption tower becomes saturated, the regeneration tower completes its regeneration cycle. The system then switches operation: Tower B enters the adsorption phase while Tower A undergoes regeneration. Based on this operating principle, the two towers are automatically and alternately switched under PLC control to continuously maintain the required nitrogen purity.



Adsorption Process



Regeneration Process

## Technical Parameters/Nitrogen generator – Nitrogen purity: 98%

NITROGEN GENERATOR

| Model | Nitrogen Production | Intel pipe size | Outel pipe size | H*L*W | Effective air consumption |
|---|---|---|---|---|---|
| LYZD-A20 | 20 | DN20 | DN15 | 1500*850*500 | 0.66 |
| LYZD-A30 | 30 | DN20 | DN15 | 1800*900*600 | 1 |
| LYZ0-A50 | 50 | DN20 | DN20 | 1900*1000*600 | 1.67 |
| LYZ0-A70 | 70 | DN32 | DN25 | 2400*1150*70C | 2.33 |
| LYZD-A80 | 80 | DN32 | DN25 | 2400*1150*700 | 2.66 |
| LYZD-A100 | 100 | DN32 | DN32 | 2600*1150*800 | 3.33 |
| LYZD-A120 | 120 | DN40 | DN32 | 2600*1200*800 | 4 |
| LYZD-A140 | 140 | DN40 | DN32 | 2600*1400*900 | 4.66 |
| LYZD-A160 | 160 | DN50 | DN40 | 2600*1500*900 | 5.33 |
| LYZD-A180 | 180 | DN50 | DN40 | 2750*1600*900 | 6 |
| LYZD-A200 | 200 | DN50 | DN40 | 2750*1750*900 | 6.67 |
| LYZD-A250 | 250 | DN50 | DN50 | 2750*1900*1000 | 8.33 |
| LYZD-A300 | 300 | DN6 | DN50 | 2650*2160*1280 | 10 |
| LYZD-A350 | 350 | DN65 | DN50 | 2890*2200*1200 | 11.67 |
| LYZD-A400 | 400 | DN65 | DN65 | 2890*2200*1200 | 13.33 |
| LYZD-A450 | 450 | DN65 | DN65 | 2900*2500*1350 | 15 |
| LYZD-A500 | 500 | DN80 | DN80 | 2900*2500*1350 | 16.67 |
| LYZD-A550 | 550 | DN80 | DN80 | 2900*2500*1350 | 18.33 |
| LYZD-A600 | 600 | DN80 | DN80 | 2900*2500*1400 | 20 |

**Note:** The data listed in this table are based on the adsorption pressure of **0.8MPa** (gauge pressure) as the raw air, **20℃** ambient temperature, and **80%** relative humidity as the design basis. The data provided in this sample is for reference only.

## Technical Parameters/Nitrogen generator – Nitrogen purity: 99%

NITROGEN GENERATOR

| Model | Nitrogen Production | Intel pipe size | Outel pipe size | H*L*W | Effective air consumption |
|---|---|---|---|---|---|
| LYZD-B15 | 15 | DN15 | DN15 | 1500*850*500 | 0.55 |
| LYZD-B25 | 25 | DN20 | DN15 | 1800*900*600 | 0.91 |
| LYZD-B35 | 35 | DN20 | DN15 | 1900*1000*600 | 1.28 |
| LYZD-B45 | 45 | DN20 | DN15 | 2400*1150*70C | 1.65 |
| LYZD-B50 | 50 | DN25 | DN25 | 2400*1150*700 | 2 |
| LYZD-B60 | 60 | DN25 | DN25 | 2600*1150*800 | 1.83 |
| LYZD-B70 | 70 | DN32 | DN25 | 2600*1200*800 | 2.56 |
| LYZD-B90 | 90 | DN32 | DN32 | 2600*1400*900 | 3.3 |
| LYZD-B110 | 110 | DN40 | DN40 | 2600*1500*900 | 4.03 |
| LYZD-B120 | 120 | DN40 | DN40 | 2750*1600*900 | 4.4 |
| LYZD-B140 | 140 | DN40 | DN40 | 2750*1750*900 | 5.13 |
| LYZD-B160 | 160 | DN40 | DN40 | 2750*1900*1000 | 5.86 |
| LYZD-B180 | 180 | DN50 | DN40 | 2650*2160*1280 | 6.6 |
| LYZD-B220 | 220 | DN50 | DN40 | 2890*2200*1200 | 8.06 |
| LYZD-B260 | 260 | DN50 | DN50 | 2890*2200*1200 | 9.53 |
| LYZD-B310 | 310 | DN65 | DN50 | 2900*2500*1350 | 11.36 |
| LYZD-B350 | 350 | DN65 | DN50 | 2900*2500*1350 | 12.83 |
| LYZD-B400 | 400 | DN65 | DN50 | 2900*2500*1350 | 14.67 |
| LYZD-B440 | 440 | DN65 | DN50 | 2900*2500*1350 | 16.13 |
| LYZD-B480 | 480 | DN80 | DN80 | 2900*2500*1350 | 17.6 |
| LYZD-B530 | 530 | DN80 | DN80 | 2900*2500*1400 | 19.43 |

**Note:** The data listed in this table are based on the adsorption pressure of **0.8MPa** (gauge pressure) as the raw air, **20℃** ambient temperature, and **80%** relative humidity as the design basis. The data provided in this sample is for reference only.

## Technical Parameters/Nitrogen generator – Nitrogen purity: 99.5%

NITROGEN GENERATOR

| Model | Nitrogen Production | Intel pipe size | Outel pipe size | H*L*W | Effective air consumption |
|---|---|---|---|---|---|
| LYZD-C12 | 12 | DN15 | DN15 | 1500*850*500 | 0.6 |
| LYZD-C20 | 20 | DN20 | DN15 | 1800*900*600 | 1 |
| LYZD-C35 | 35 | DN20 | DN15 | 1900*1000*600 | 1.75 |
| LYZD-C50 | 50 | DN25 | DN25 | 2400*1150*70C | 2.5 |
| LYZD-C60 | 60 | DN32 | DN25 | 2400*1150*700 | 3 |
| LYZD-C70 | 70 | DN32 | DN25 | 2600*1150*800 | 3.5 |
| LYZD-C90 | 90 | DN40 | DN40 | 2600*1200*800 | 4.5 |
| LYZD-C100 | 100 | DN40 | DN40 | 2600*1400*900 | 5 |
| LYZD-C120 | 120 | DN40 | DN40 | 2600*1500*900 | 6 |
| LYZD-C130 | 130 | DN40 | DN40 | 2750*1600*900 | 6.5 |
| LYZD-C150 | 150 | DN50 | DN40 | 2750*1750*900 | 7.5 |
| LYZD-C220 | 220 | DN50 | DN40 | 2750*1900*1000 | 11 |
| LYZD-C250 | 250 | DN65 | DN50 | 2650*2160*1280 | 12.5 |
| LYZD-C290 | 290 | DN65 | DN50 | 2890*2200*1200 | 14.5 |
| LYZD-C330 | 330 | DN65 | DN50 | 2890*2200*1200 | 16.5 |
| LYZD-C370 | 370 | DN65 | DN50 | 2900*2500*1350 | 18.5 |
| LYZD-C400 | 400 | DN80 | DN65 | 2900*2500*1350 | 20 |
| LYZD-C440 | 440 | DN80 | DN65 | 2900*2500*1350 | 22 |

**Note:** The data listed in this table are based on the adsorption pressure of **0.8MPa** (gauge pressure) as the raw air, **20℃** ambient temperature, and **80%** relative humidity as the design basis. The data provided in this sample is for reference only.

## Technical Parameters/Nitrogen generator – Nitrogen purity: 99.9%

NITROGEN GENERATOR

| Model | Nitrogen Production | Intel pipe size | Outel pipe size | H*L*W | Effective air consumption |
|---|---|---|---|---|---|
| LYZD-D10 | 10 | DN15 | DN15 | 1500*850*500 | 0.66 |
| LYZD-D15 | 15 | DN20 | DN15 | 1800*900*600 | 1.00 |
| LYZD-D20 | 20 | DN20 | DN15 | 1900*1000*600 | 1.33 |
| LYZD-D25 | 25 | DN20 | DN15 | 2400*1150*70C | 1.67 |
| LYZD-D30 | 30 | DN25 | DN25 | 2400*1150*700 | 2.00 |
| LYZD-D35 | 35 | DN25 | DN25 | 2600*1150*800 | 2 33 |
| LYZD-D40 | 40 | DN32 | DN25 | 2600*1200*800 | 2.66 |
| LYZD-D50 | 50 | DN32 | DN25 | 2600*1400*900 | 3.33 |
| LYZD-D60 | 60 | DN40 | DN40 | 2600*1500*900 | 4.00 |
| LYZD-D70 | 70 | DN40 | DN40 | 2750*1600*900 | 4.66 |
| LYZD-D80 | 80 | DN40 | DN40 | 2750*1750*900 | 5.33 |
| LYZD-D90 | 90 | DN40 | DN40 | 2750*1900*1000 | 6.00 |
| LYZD-D120 | 120 | DN50 | DN40 | 2650*2160*1280 | 8.00 |
| LYZD-D150 | 150 | DN50 | DN40 | 2890*2200*1200 | 10.00 |
| LYZD-D170 | 170 | DN65 | DN40 | 2890*2200*1200 | 11 33 |
| LYZD-D200 | 200 | DN65 | DN40 | 2900*2500*1350 | 13 33 |
| LYZD-D220 | 220 | DN65 | DN40 | 2900*2500*1350 | 14.67 |
| LYZD-D250 | 250 | DN65 | DN50 | 2900*2500*1350 | 16.67 |
| LYZD-D270 | 270 | DN65 | DN50 | 2900*2500*1350 | 18.00 |
| LYZD-D300 | 300 | DN80 | DN50 | 2900*2500*1350 | 20.00 |

**Note:** The data listed in this table are based on the adsorption pressure of **0.8MPa** (gauge pressure) as the raw air, **20℃** ambient temperature, and **80%** relative humidity as the design basis. The data provided in this sample is for reference only.

## Technical Parameters/Nitrogen generator – Nitrogen purity: 99.99%

NITROGEN GENERATOR

| Model | Nitrogen Production | Intel pipe size | Outel pipe size | H*L*W | Effective air consumption |
|---|---|---|---|---|---|
| LYZD-E5 | 5 | DN15 | DN15 | 1500*850*500 | 0.43 |
| LYZD-E10 | 10 | DN20 | DN15 | 1800*900*600 | 0.86 |
| LYZD-E15 | 15 | DN20 | DN15 | 1900*1000*600 | 1.30 |
| LYZD-E20 | 20 | DN25 | DN25 | 2400*1150*70C | 1.73 |
| LYZD-E25 | 25 | DN32 | DN25 | 2400*1150*700 | 2.16 |
| LYZD-E30 | 30 | DN32 | DN25 | 2600*1150*800 | 2.60 |
| LYZD-E35 | 35 | DN32 | DN25 | 2600*1200*800 | 3.03 |
| LYZD-E40 | 40 | DN40 | DN25 | 2600*1400*900 | 3.46 |
| LYZD-E50 | 50 | DN40 | DN25 | 2600*1500*900 | 4.33 |
| LYZD-E60 | 60 | DN40 | DN40 | 2750*1600*900 | 5.20 |
| LYZD-E70 | 70 | DN50 | DN40 | 2750*1750*900 | 6.06 |
| LYZD-E90 | 90 | DN50 | DN40 | 2750*1900*1000 | 7.80 |
| LYZD-E120 | 120 | DN50 | DN40 | 2650*2160*1280 | 10.40 |
| LYZD-E130 | 130 | DN50 | DN40 | 2890*2200*1200 | 11.26 |
| LYZD-E150 | 150 | DN65 | DN40 | 2890*2200*1200 | 13.00 |
| LYZD-E170 | 170 | DN65 | DN40 | 2900*2500*1350 | 13.86 |
| LYZD-E180 | 180 | DN65 | DN40 | 2900*2500*1350 | 15.60 |
| LYZD-E200 | 200 | DN80 | DN40 | 2900*2500*1450 | 17.33 |

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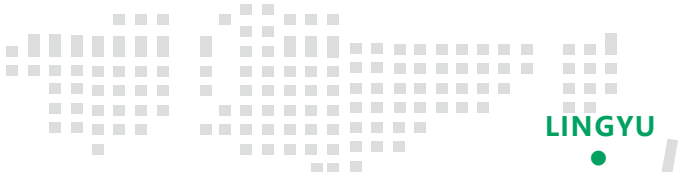
# OUR SERVICES

## LINGYU Services

**Professional efficient**

**Strive to improve customer satisfaction**

**National coverage fast response**




## Service Content

- **Provide free after-sales consultation;**
- Debug, repair, and maintenance of Lingyu equipment during the warranty period;
- Survey the site of other brands outside the warranty period of Lingyu and formulate plans.

## Complete Accessories

- **Refrigerated air dryer**

  Fans, compressors, condensers, evaporators, dry filters, expansion valves, bypass valves, pressure gauges, various drains, etc.
- **Adsorption air Dryers**

  Valves, electrical boxes, adsorbents, diffusers, silencers, solenoid valves, check valves, etc.
- **Other accessories**

  Various filter elements, differential pressure gauges, etc.


## CONTACT US

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