



IBS PRODUCTS

PSA

Pressure Swing Adsorption

OXYGEN GAS GENERATOR NITROGEN GAS GENERATOR



Parts Number: ITOZ202-O16XR



Parts Number: ICX-006A

Fluid control technology and 20 years

IBS Group is a professional in the field of fluid control.

We will provide the best solution for your needs.

PSA Gas Generator

PSA is a method that a specific gas is taken out by repeating pressurization and depressurization using an adsorbent.

IBS has a wide variety of Oxygen and Nitrogen gas generator that have PSA method.

PSA gas generators are out of the scope of the Gas Safety Act.



Parts Number: ICX-006ALN

Easy
Touch panel operation
(Except for ITO Series)

Compact and Covered
Space saving and Silent

Oxygen concentration checkable anytime
Oxygen analyzer originally equipped

Installable any location
Outdoor specifications originally line-up
(ICXシリーズを除く)

Simple
Easy maintenance

PSA Processes

1. Raw Material Gas Feed Process

Air as the raw material gas is taken by the compressor.
The compressed air is dehydrated and the dry air is sent to the adsorption cylinder.

2. Product Gas Generation Process

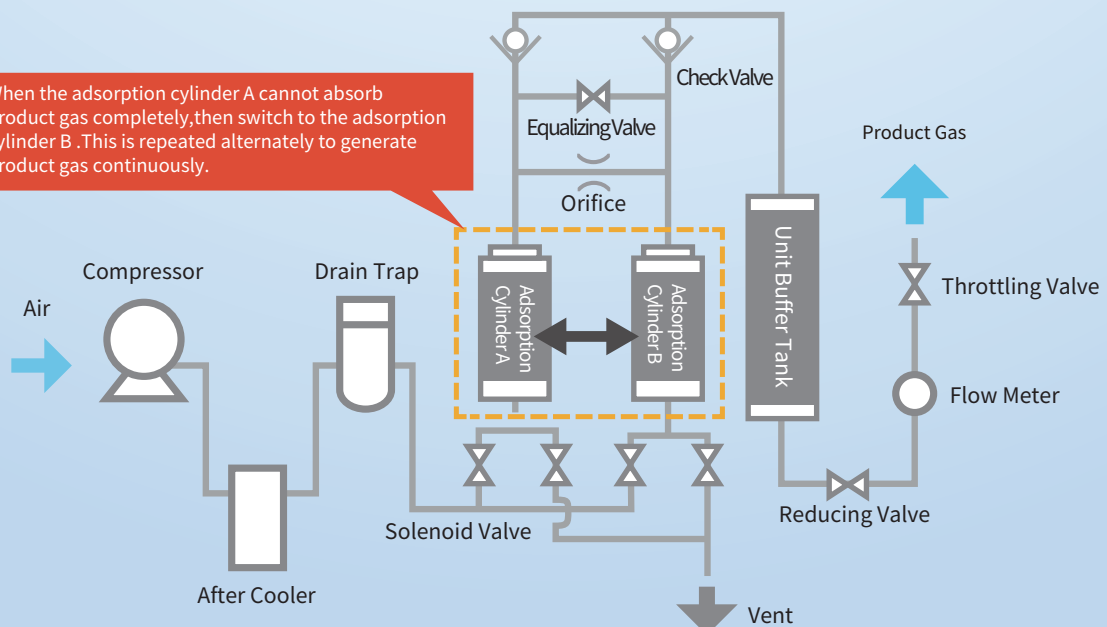
By operating the solenoid valve at the bottom of unit, the air is alternately sent to the two adsorption cylinders A and B in tens of seconds. The remaining gas and moisture in the air other than the product gas are adsorbed and removed by the filled adsorbent and only product gas is stored in the product buffer tank.

3. Desorption and Regeneration Process

The other adsorption cylinder is decompressed to the atmosphere and releases gas adsorbed in the adsorbent. In addition, purging a small amount of product gas from the orifice at the top of the unit will help regenerate the adsorbent more.

By repeating Process 1-3 alternately in the adsorption cylinders A and B, it can continuously generate high-concentration product gas.

When the adsorption cylinder A cannot absorb product gas completely, then switch to the adsorption cylinder B. This is repeated alternately to generate product gas continuously.



Parts Number: ITACL100-O2

PSA OXYGEN GAS GENERATOR

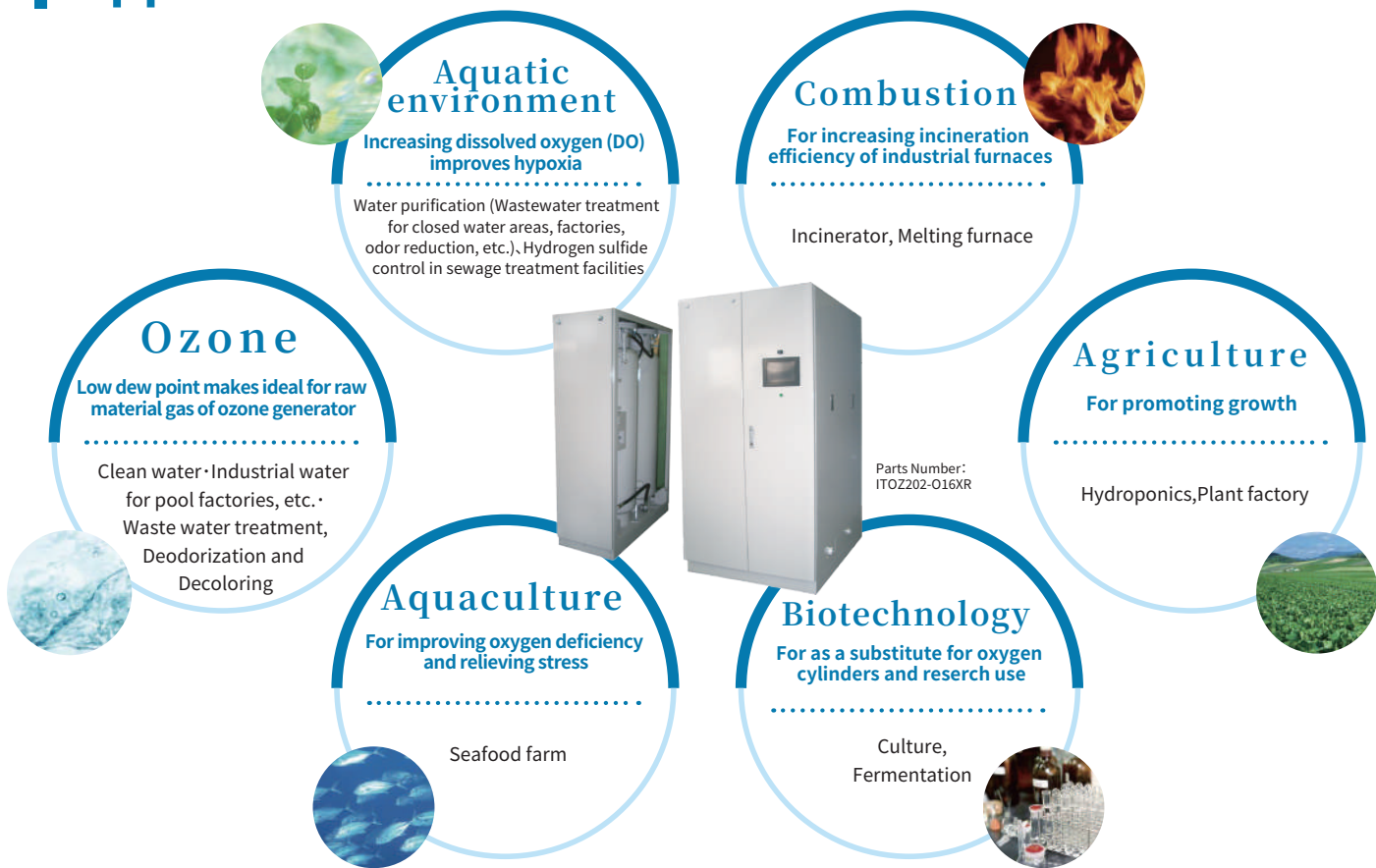
Pressure Swing Adsorption

PSA OXYGEN GAS GENERATOR uses synthetic zeolite as adsorbent. Synthetic zeolite is formed with silica gel, alumina, sodium metal etc., and has many pores of about 10Å. Electrostatic field is formed in these pores, pores adsorb more polar molecules such as nitrogen gas, water molecules and carbon dioxide. This characteristic improves to extract high purity oxygen gas selectively.



Parts Number: ITO-08

Applications



OXYGEN GAS GENERATOR

Products Lineup

[Oxygen Gas Model ICX]

◆ Easy operation with touch panel. Built-in oil-free compressor and oxygen concentration sensor. Available for AC200V. Easy maintenance for the end user.

Parts Number	Oxygen Concentration	Oxygen Generation Volume (NL/min)	Discharge Pressure (MPa)	Power Supply	Dimintions (W×D×H) mm	Weight (kg)	Compressor Output (kw)
ICX-005AHP	Over 90%	5.0	0.2	AC100V(Single Phase) 50/60Hz	350×400×700	38	0.5
ICX-006A	Over 90% (87% guaranteed only at 6L / min)	6.0	0.1	AC100V(Single Phase) 50/60Hz	350×400×700	38	0.5
ICX-006ALN							
ICX-010XHP	Over 90%	10.0	0.2	AC200V(Single Phase) 50/60Hz	450×550×850	58	1.0
ICX-012X	Over 90%	12.0	0.1	AC200V(Single Phase) 50/60Hz	450×550×850	58	1.0
ICX-015XHP	Over 90%	15.0	0.2	AC200V(Single Phase) 50/60Hz	450×550×1,640	130	1.5
ICX-018X	Over 90%	18.0	0.1	AC200V(Single Phase) 50/60Hz	450×550×1,640	130	1.5
ICX-020XHP	Over 90%	20.0	0.2	AC200V(Single Phase) 50/60Hz	450×550×1,640	140	2.0
ICX-025X	Over 90%	25.0	0.1	AC200V(Single Phase) 50/60Hz	450×550×1,640	140	2.0

Parts Number: ICX-005AHP



Parts Number: ICX-012X



Compressor built-in type

【Oxygen Gas Model ITO】

- ◆Model with a built-in oil-free mini compressor and oxygen concentration sensor. ※ITO-01 is only for indoor.
◆If the Part Number ends with 1, power supply is AC100V single-phase, and if it ends with 2, power supply is AC200V single-phase.

Parts Number	Oxygen concentration	Generation Volume (NL/min) Value in () at 60Hz	Discharge Pressure Value in () at 60Hz MPa	Power Supply	Dimensions (W×D×H) mm	Weight (kg)	Compressor Output (kw)
ITO-01	Over 90%	1.0 (1.2)	0.15	AC100V Single Phase	280×350×340	20	0.2
ITO-02-1 (2)	Over 90%	2.5 (2.5)	0.1 (0.12)	AC100V or AC200V 50/60Hz	400×460×850	52	0.3
ITO-04-1 (2)	Over 90%	4.0 (4.4)	0.1 (0.12)	AC100V or AC200V 50/60Hz	420×490×850	55	0.4
ITO-08-1 (2)	Over 90%	8.0 (8.8)	0.1 (0.12)	AC100V or AC200V 50/60Hz	480×620×950	90	0.8
ITO-12-2	Over 90%	12.0 (13.2)	0.1 (0.12)	AC200~220V Single Phase 50/60Hz	600×650×1,300	120	1.2
ITO-16-2	Over 90%	16.0 (17.6)	0.1 (0.12)	AC200~220V Single Phase 50/60Hz	600×650×1,300	140	1.6

【Oxygen Gas Model ITOK&IOHP】

- ◆PSA with compressor separated and comprehensive control by touch panel operation.

Parts Number	Oxygen Concentration	Generation Volume (Nm ³ /h)	Discharge Pressure (MPa)	Power Supply	Dimensions (W×D×H) mm	Weight (kg)	Compressor Output (kw)
ITOK-09HP	Over 90%	0.9	0.2	AC100~240V Single Phase 50Hz/60Hz	550×800×1,050	170	1.5
ITOK-12HP	Over 90%	1.2	0.2	AC100~240V Single Phase 50Hz/60Hz	550×800×1,050	185	2.2
ITOK-21HP	Over 90%	2.1	0.2	AC100~240V Single Phase 50Hz/60Hz	550×800×1,350	215	3.7
ITOK-30HP	Over 90%	3.0	0.2	AC100~240V Single Phase 50Hz/60Hz	550×800×1,650	250	5.5
IOHP-050	Over 90%	5.0	0.3	AC100~240V Single Phase 50Hz/60Hz	720×870×1,380	400	7.5
IOHP-075	Over 90%	7.5	0.3	AC100~240V Single Phase 50Hz/60Hz	960×870×1,380	540	11
IOHP-100	Over 90%	10.0	0.3	AC100~240V Single Phase 50Hz/60Hz	1,200×870×1,380	680	15
IOHP-125	Over 90%	12.5	0.3	AC100~240V Single Phase 50Hz/60Hz	1,440×870×1,380	860	22
IOHP-150	Over 90%	15.0	0.3	AC100~240V Single Phase 50Hz/60Hz	1,680×870×1,380	1,050	22

【Oxygen Gas Model ITOZ】

- ◆Large flow rate model with a product gas flow rate 4.5 m³ / H to 120 m³ / H
by combining the master unit (Master) and the Extra unit (Extra), and maintaining the conventional functions.

Parts Number	Purity	Generation Volume (Nm ³ /h)	Discharge Pressure (MPa)	Power Supply	Dimensions (W×D×H) mm	Weight (kg)	Compressor Output (kw)
IT0Z121-004XR	Over 90%	4.5	0.3	AC100V~200V Single Phase 50/60Hz	950×1,180×1,800	850	Over 1.1m ³ /min
IT0Z151-006XR	Over 90%	6.0	0.3	AC100V~200V Single Phase 50/60Hz	950×1,180×1,800	880	Over 1.5m ³ /min
IT0Z201-008XR	Over 90%	8.0	0.3	AC100V~200V Single Phase 50/60Hz	950×1,180×1,800	910	Over 2.0m ³ /min
IT0Z301-012XR	Over 90%	12	0.3	AC100V~200V Single Phase 50/60Hz	950×1,180×2,100	990	Over 2.5m ³ /min
IT0Z401-016XR	Over 90%	16	0.3	AC100V~200V Single Phase 50/60Hz	1,100×1,330×2,150	1,450	Over 3.9m ³ /min
IT0Z501-020XR	Over 90%	20	0.3	AC100V~200V Single Phase 50/60Hz	1,150×1,400×2,250	1,520	Over 4.8m ³ /min
IT0Z601-025XR	Over 90%	25	0.3	AC100V~200V Single Phase 50/60Hz	1,300×1,730×2,325	1,800	Over 6.0m ³ /min
IT0Z751-030XR	Over 90%	30	0.3	AC100V~200V Single Phase 50/60Hz	1,300×1,730×2,450	1,920	Over 7.2m ³ /min

【Model ITOZ-Ordering Table】

IT0Z □□□ - □□□ XR

Generating Volume (Nm³/h)
Basic Model
12, 15, 20, 30, 40, 50, 60, 75

Number of Units (Combination of Master unit and Extra unit)

- 1: Master with 0 Extra Unit
- 2: Master with 1 Extra Unit
- 3: Master with 2 Extra Units
- 4: Master with 3 Extra Units

※The contents of this catalog are subject to change without notice.



Oil Mist Filter Unit

When raw air included oil please use oil mist filter.

Model	Place of installation	Appropriate Compressor	Reference of replacement filter	Remarks
INHPF-20Pc	Left side with body	Under 22KW Under 37KW Under 75KW	8,000 hours	If it is used oil free dry air, oil mist filter is not required.
INHPF-20Uc	Separetly			
INHPF-25Uc				
ITSF-30Uc				
ITSF-50Uc				
ITZF-100Uc				

NITROGEN GAS GENERATOR

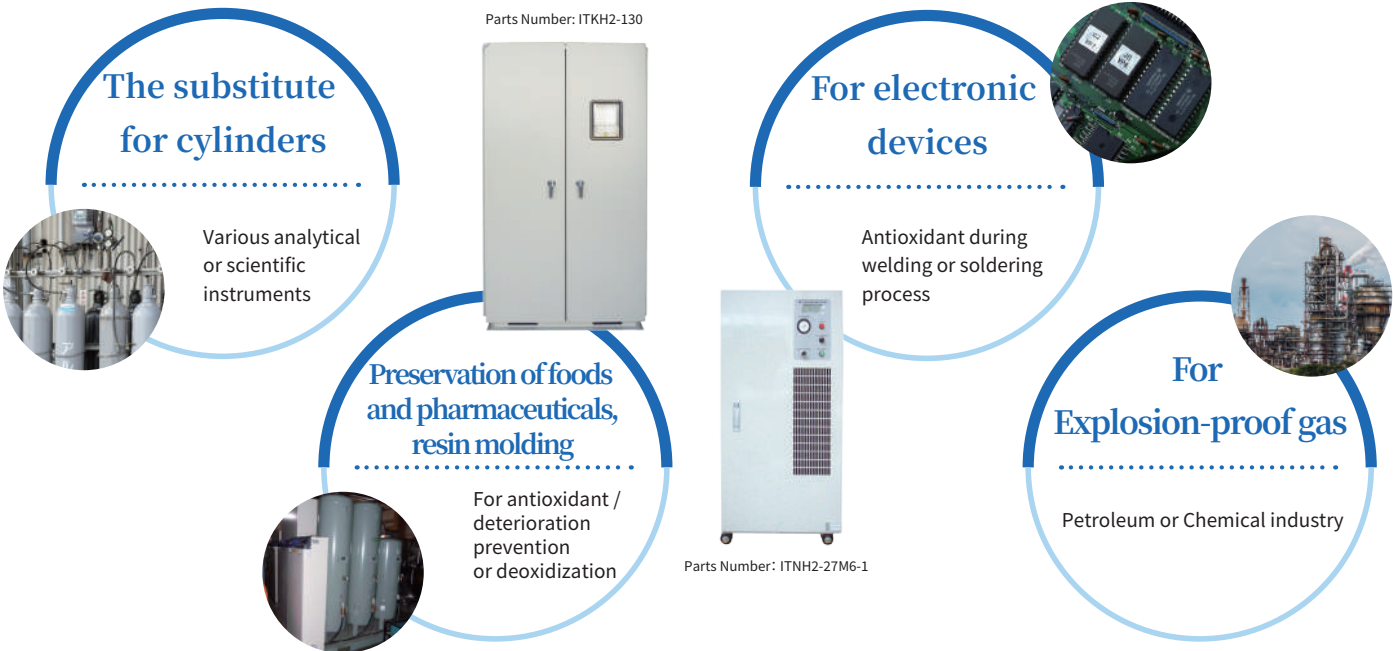


Parts Number: ITNH4-30M6-2

Pressure Swing Adsorption

PSA Nitrogen Gas Generator uses Molecular Sieving Carbon as the adsorbent. This molecular Sieving Carbon adsorb a large amount of oxygen, this property generates high-concentration nitrogen gas in the air, and selectively extracts 99% high-purity nitrogen gas or more.

Applications



NITROGEN GAS GENERATOR

Products Lineup

[Nitrogen Gas Model ITN]

◆Ultra-compact nitrogen gas generator built-in oil-free compressor. A desktop ultra-compact PSA for university / laboratory analyzers and research / experimental applications.

Built-in Air Pump
Long life and low noise

By using the built-in compressor at a pressure of 50% of the rating, it has a durability of 10,000 hours or more, and makes low power consumption, low noise and low vibration.

Built-in Solenoid Valve
Compact Unit

In-house developed manifold makes solenoid valve as small as possible and gas generator improves maintainability.

Equipped with various sensors / LED display
Available for same-day repairment even in sudden troubles

Built-in oxygen concentration / flow rate sensor / current sensor. Gas generator displays the operating status, and in the event of an abnormality, displays an error message with the fail-safe function and stops unit safely. For maintenance and sudden troubles, it is possible to repair on same-day because of ultra-small size.

Parts Number: ITN3-02-1

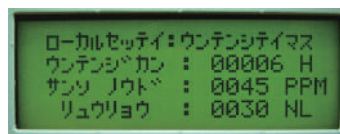


Compressor built-in type

Parts Number	Flow Rate (NL/min)	Purity(%)	Discharge Pressure (MPa)	Dimensions (W×D×H) mm	Power Supply Voltage	Power Consumption (kW)	Weight (kg)
ITN2-04-1	4.0	99	0.2	280×350×360	AC100V Single Phase 50/60Hz	0.18	20
ITN3-02-1	2.0	99.9	0.2				
ITN4-01-1	1.0	99.99	0.2				
ITN2-08-1	8.0	99	0.2	360×440×480	AC100V Single Phase 50/60Hz	0.3	54
ITN3-04-1	4.0	99.9	0.2				
ITN4-02-1	2.0	99.99	0.2				

【Nitrogen Gas Model ITNH】

- ◆Microcomputer controled, oil-free mini compressor built-in type.
Unit warranty term is one year (4,000 hours for Compressor)
- ◆Constant flow rate control valve for flow rate control standardly equipped, and no influence by pressure fluctuations from outlet port.
Water drain vaporizer built-in the unit, free selecting an installation place.
- ◆Microcomputer control circuit remewed, more informative LCD display.
- ◆A low noise and long life oil-free compressor made in Japan improved its discharge pressure and 10-20% operating performance in flow rate compared to the conventional model.
- ◆If the Part Number ends with 1, power supply voltage is AC100V / 110V single-phase, and if it ends with 2, power supply voltage is AC200V / 220V single-phase.



Parts Number: ITNH4-30M6-2



Compressor built-in type

50Hz				60Hz				Dimentions (W×D×H)mm	Power Supply Voltage	Power Consumption (kW)	Weight (kg)
Parts Number	Flow Rate (NL/min)	Purity (%)	Discharge Pressure (MPa)	Parts Number	Flow Rate (NL/min)	Purity (%)	Discharge Pressure (MPa)				
ITNH2-12M5-※	12	99	0.40	ITNH2-14M6-※	14	99	0.47	400×500×850	AC100V/110V or 200V/220V	0.4	60
ITNH3-09M5-※	9	99.9	0.45	ITNH3-11M6-※	11	99.9	0.47				
ITNH4-06M5-※	6	99.99	0.50	ITNH4-07M6-※	7.5	99.99	0.55				
ITNH5-03M5-※	3	99.999	0.50	ITNH5-03M6-※	3.7	99.999	0.55				
ITNH2-24M5-※	24	99	0.40	ITNH2-27M6-※	27	99	0.47	480×640×950	AC100V/110V or 200V/220V	0.8	95
ITNH3-18M5-※	18	99.9	0.45	ITNH3-21M6-※	21	99.9	0.47				
ITNH4-12M5-※	12	99.99	0.50	ITNH4-15M6-※	15	99.99	0.55				
ITNH5-06M5-※	6	99.999	0.50	ITNH5-07M6-※	7.5	99.999	0.55				
ITNH2-37M5-2	37	99	0.43	ITNH2-41M6-2	41	99	0.47	600×680×1,350	AC200V/220V Single Phase	1.2	200
ITNH3-28M5-2	28	99.9	0.47	ITNH3-32M6-2	32	99.9	0.50				
ITNH4-19M5-2	19	99.99	0.50	ITNH4-22M6-2	22	99.99	0.55				
ITNH5-09M5-2	9.5	99.999	0.50	ITNH5-11M6-2	11	99.999	0.55				
ITNH2-49M5-2	49	99	0.40	ITNH2-55M6-2	55	99	0.45	600×680×1,350	AC200V/220V Single Phase	1.6	220
ITNH3-36M5-2	36	99.9	0.45	ITNH3-43M6-2	43	99.9	0.48				
ITNH4-25M5-2	25	99.99	0.50	ITNH4-30M6-2	30	99.99	0.53				
ITNH5-12M5-2	12.5	99.999	0.50	ITNH5-15M6-2	15	99.999	0.53				

【Nitrogen Gas Model ITKH-HP, INHP-Eco, ILHP】

- ◆A compilation of patented energy-saving operation technology that reduces raw material air according to the product gas volume used and controls multiple PSA units
- ◆Equipped with energy-saving operation mode that reduces raw material air while maintaining purity by switching multiple units in operation and the adsorption and desorption time according to the generation volume. Easy touch panel setting.
- ◆Chinese, Korean and English standard.
- ◆Space saving with high discharge output, low noise, and reduced height.
- ◆High durability and long maintenance cycle (Approximately 2 years(=20,000 hours).

Parts Number:
INHP2-600ECO(Outdoor)

Compressor separated type

Parts Number	Nitrogen Generation Volume(Nm³/h) 0.69(0.83)MPa	Purity (%)	Discharge Pressure (MPa) 0.69(0.83)MPa	Material Air Volume 0.69(0.83) MPa	Appropriate Compressor (kW)	Unit Dimentions (W×D×H)mm	Weight (kg)	Sound Level dB(A)
ITKH5-11HP	1.1(1.3)	99.999	0.55(0.7)	165L/min(195L/min)	1.5	550×800×950	160	Under 60
ITKH4-18HP	1.8(2.1)	99.99						
ITKH3-24HP	2.4(2.8)	99.9	0.5(0.65)					
ITKH2-33HP	3.3(3.9)	99						
ITKH5-16HP	1.6(1.9)	99.999	0.55(0.7)	240L/min(284L/min)	2.2	550×800×950	175	Under 60
ITKH4-27HP	2.7(3.2)	99.99		250L/min(295L/min)				
ITKH3-37HP	3.7(4.4)	99.9						
ITKH2-52HP	5.2(6.1)	99						

[Nitrogen Gas Model ITKH-HP]

◆All models is available for outdoor use.

Parts Number	Nitrogen Generation Volume(Nm ³ /h) 0.69(0.83)MPa	Purity (%)	Discharge Pressure (MPa) 0.69(0.83)MPa	Material Air Volume 0.69(0.83)MPa	Appropriate Compressor (kW)	Unit Dimentions (W×D×H)mm	Weight (kg)	Sound Level dB(A)
ITKH5-27HP	2.7(3.2)	99.999	0.55(0.7)	400L/min(472L/min)	3.7	550×800×1,250	200	Under 60
ITKH4-45HP	4.5(5.3)	99.99						
ITKH3-62HP	6.2(7.3)	99.9		410L/min(484L/min)				
ITKH2-86HP	8.6(10.1)	99						
ITKH5-37HP	3.7(4.4)	99.999	0.55(0.7)	570L/min(673L/min)	5.5	550×800×1,700	230	Under 60
ITKH4-63HP	6.3(7.4)	99.99						
ITKH3-88HP	8.8(10.4)	99.9		610L/min(720L/min)				
ITKH2-127HP	12.7(15.0)	99		670L/min(790L/min)				

[Nitrogen Gas Model INHP-Eco]

Parts Number	Nitrogen Generation Volume(Nm ³ /h) 0.69(0.83)MPa	Purity (%)	Discharge Pressure (MPa) 0.69(0.83)MPa	Material Air Volume 0.69(0.83)MPa	Appropriate Compressor (kW)	Unit Dimentions (W×D×H)mm	Weight (kg)	Sound Level dB(A)
INHP5-048Eco	4.8 (5.6)	99.999	0.6 (0.7)	0.70 (0.83)	5.5	720×870×1,380	380	Under 60
INHP4-080Eco	8.0 (9.4)	99.99						
INHP3-112Eco	11.2 (13.2)	99.9		0.76 (0.90)				
INHP2-160Eco	16.0 (18.8)	99	0.55 (0.65)	0.80 (0.95)	7.5	720×870×1,380	400	Under 60
INHP5-060Eco	6.0 (7.0)	99.999	0.6 (0.7)	0.88 (1.04)				
INHP4-100Eco	10.0 (11.8)	99.99						
INHP3-140Eco	14.0 (16.5)	99.9		0.95 (1.12)				
INHP2-200Eco	20.0 (23.5)	99	0.55 (0.65)	1.00 (1.18)	11	960×870×1,380	540	Under 60
INHP5-090Eco	9.0 (10.6)	99.999	0.6 (0.7)	1.32 (1.56)				
INHP4-150Eco	15.0 (17.6)	99.99						
INHP3-210Eco	21.0 (24.7)	99.9		1.43 (1.69)				
INHP2-300Eco	30.0 (35.0)	99	0.55 (0.65)	1.50 (1.77)	15	1,200×870×1,380	680	Under 60
INHP5-120Eco	12.0 (14.1)	99.999	0.6 (0.7)	1.75 (2.06)				
INHP4-200Eco	20.0 (23.5)	99.99						
INHP3-280Eco	28.0 (33.0)	99.9		1.90 (2.24)				
INHP2-400Eco	40.0 (47.0)	99	0.55 (0.65)	2.00 (2.36)	22	1,440×870×1,600	860	Under 60
INHP5-180Eco	18.0 (21.2)	99.999	0.6 (0.7)	2.65 (3.12)				
INHP4-300Eco	30.0 (35.3)	99.99						
INHP3-420Eco	42.0 (49.4)	99.9		2.86 (3.38)				
INHP2-600Eco	60.0 (70.6)	99	0.55 (0.65)	3.00 (3.53)	22	1,680×870×1,650	1,050	Under 60
INHP5-220Eco	22.0 (23.5)	99.999	0.6 (0.7)	3.42 (4.03)				
INHP4-380Eco	38.0 (44.7)	99.99						
INHP3-530Eco	53.0 (62.4)	99.9		3.66 (4.31)				
INHP2-760Eco	76.0 (89.4)	99	0.55 (0.65)	4.00 (4.71)	37	2,450×870×1,650	1,600	Under 60
INHP5-330Eco	33.0 (35.2)	99.999	0.6 (0.7)	5.13 (6.05)				
INHP4-570Eco	57.0 (67.0)	99.99						
INHP3-800Eco	80.0 (93.6)	99.9		5.49 (6.47)				
INHP2-1140Eco	114.0 (134.0)	99	0.55 (0.65)	6.00 (7.07)				

[Nitrogen Gas Model ILHP]

Parts Number	Nitrogen Generation Volume(Sm³/h) 0.69(0.83)MPa	Purity (%)	Discharge Pressure (MPa) 0.69(0.83)MPa	Material Air Volume 0.69(0.83)MPa	Appropriate Compressor (kW)	Unit Dimentions (W×D×H)mm	Weight (kg)	Sound Level dB(A)
ILHP4-400	43(50)	99.99	0.6(0.7)	3.6(4.24)	22 or 30	1,060×1,140 ×1,790	980	Under 60
ILHP3-560	60(70)	99.9	0.55(0.7)	3.86(4.54)				
ILHP2-800	85(100)	99	0.5(0.65)	4.2(4.82)	30	1,536×1,140 ×1,790	1,500	Under 60
ILHP4-600	65(75)	99.99	0.6(0.7)	5.4(6.35)				
ILHP3-840	90(106)	99.9	0.55(0.7)	5.78(6.79)				
ILHP2-1200	129(151)	99	0.5(0.65)	6.32(7.43)				

※1.The above product gas generation volume is under the conditions that the raw material air temperature is 35°C(Humidity 85% R.H).

At 20°C(Humidity 60% R.H), it increases about 10%.

※2.Nitrogen gas generation volume and raw material air volume would change by the 【coefficient】 depending on the raw material air conditions.

Coefficient = (0.1MPa + Raw Material Air Pressure) ÷ (0.1Mpa + 0.69Mpa)

※3.With standard casters (including adjuster foot) assembled , the unit height increases 92 mm.

※4.For products improvements, the specifications of the units are subject to change without notice.

We have various lineups other than the listed products.



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