

# TWIN-SCREW COMPRESSOR

ENERGY SAVING, ENVIRONMENTAL PROTECTION, HIGH EFFICIENCY



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High-quality grinding rotor



Assurance for high quality and accuracy



Professional from special machining





Green energy saving, low noise, high efficient and reliable

### Top technology, famous brand

Top original imported air end. As the most advanced brand of third generation product, it is far superior to other similar brands with 5:6 asymmetric screw, high performance and efficiency advantages.



Screw is not just a part of compressor, which is the heart and soul and the foundation to produce high quality, efficiency and reliability of air compressor. To achieve the same capacity, normally it has two options of design: large rotor with low speed or small rotor with high-speed. In contrast, a large rotor is more efficient, longer life and higher reliability in long-term use. Araki always adhere to use large rotor for all models. Araki rotor perfectly integrate the three parts of high precision rotor, high-grade and efficiency motor, stable and flexible Direct drive, which can reach the peak of the ultimate of efficiency and conservation.

### Highly efficient and stable motor



Adopt well-known brand of high-performance motor, protection class IP54, insulation class F-class, drive efficiency up to 95%, good insulation, resistance high temperature, long life using, safe and reliable, high efficient and energy save.

### PLC control makes the operation more easier



English interface, intelligent control can real-time monitor the peratin, Automatic alarm stop when abnormal. Real-time recording, autoatic reminder and maintenance. Multi-level interaction and remote control.

### Imported Electrical control



Araki air compressor adopts imported electrical appliances, which control the machine work in an orderly way.

### Well-known brand accessories

World famous brand electrical components with more durable life. Using well-known brands of high-performance three-phase electrical. Protection class IP54, insulation class F-class, resistance high temperature, using long life .



### Low oil content

Built-in imported and good sealing oil separator ,which can ensure the exhaust oil content less than 3PPM.The internal pipe adopt seamless steel pipe, flange and metal surface adopt ring interface technology which can total solve the oil leakage.

### High reliability is always the first choice of select accessories brands for quality brand



Perfect service from highly trained service team and stability from timely supply of spare parts



### Low pressure, high-efficiency, long-life



# ARAKI Inverter Compressor



## Variable screw compressor: the best choice of energy save

Most companies spend high energy consumption cost on the air compressor, which take up high proportion of the whole energy costs. In various production line, the actual air consumption of compressor is changing every month, week, day even every hour, the constant speed drive of air compressor can only use the way of repeatedly loading and unloading, which is very energy consumption.

The variable speed drive air compressor which can be changed and match with the actual demand of plant without operation way of frequent loading, unloading, stop and start again, can save cost almost 18%.

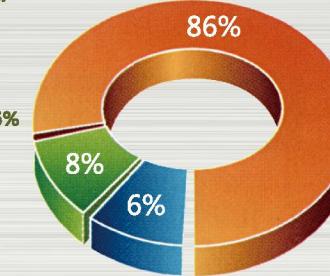
## Inverter compressor can save your cost from running consumption

The proportion cost of compressed air as follows:

Procurement cost of compressor 8%

Daily maintenance fee 6%

Energy consumption of compressor as high as 86%



Araki inverter energy-saving technology  
will help you to save 18% from 86% energy

## Use principle of inverter compressor

Normally the speed of air compressor can not change, and the fixed speed only can gain a certain amount of air. So most of plant select compressor capacity more or equal to their maximum air consumption, but the actual demand is changing constantly. The actual operating rate of air compressor is 50%-80%

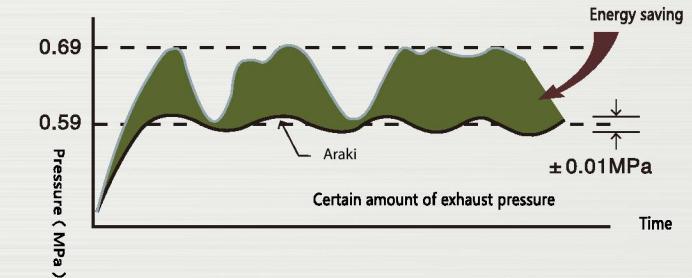
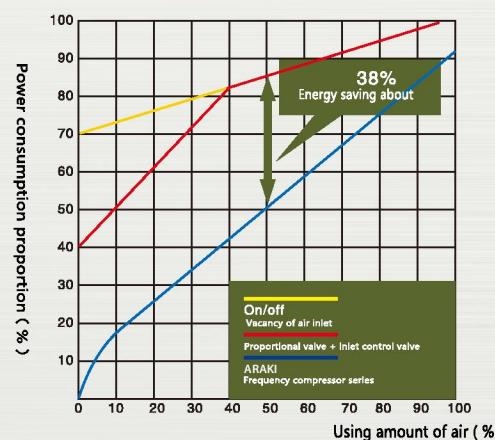
Araki Inverter Compressor: pressure change the frequency - which through the pressure transmitter to test the pressure changes and send to the PLC, and then PLC sends the signal to the inverter. the inverter change frequency by the signal control and change the adjustment speed, in order to supply the air capacity for how much you require.

## Adopt technology of frequency conversion can achieve perfect energy-saving effect

Araki variable speed drive compressor is different from normal compressor, which adopt high efficiency inverter and motor speed control to only produce necessary air. Therefore it can prevent the peak current of normal compressor when start, No load operation and power loss which caused by pressure change can maximize energy savings.

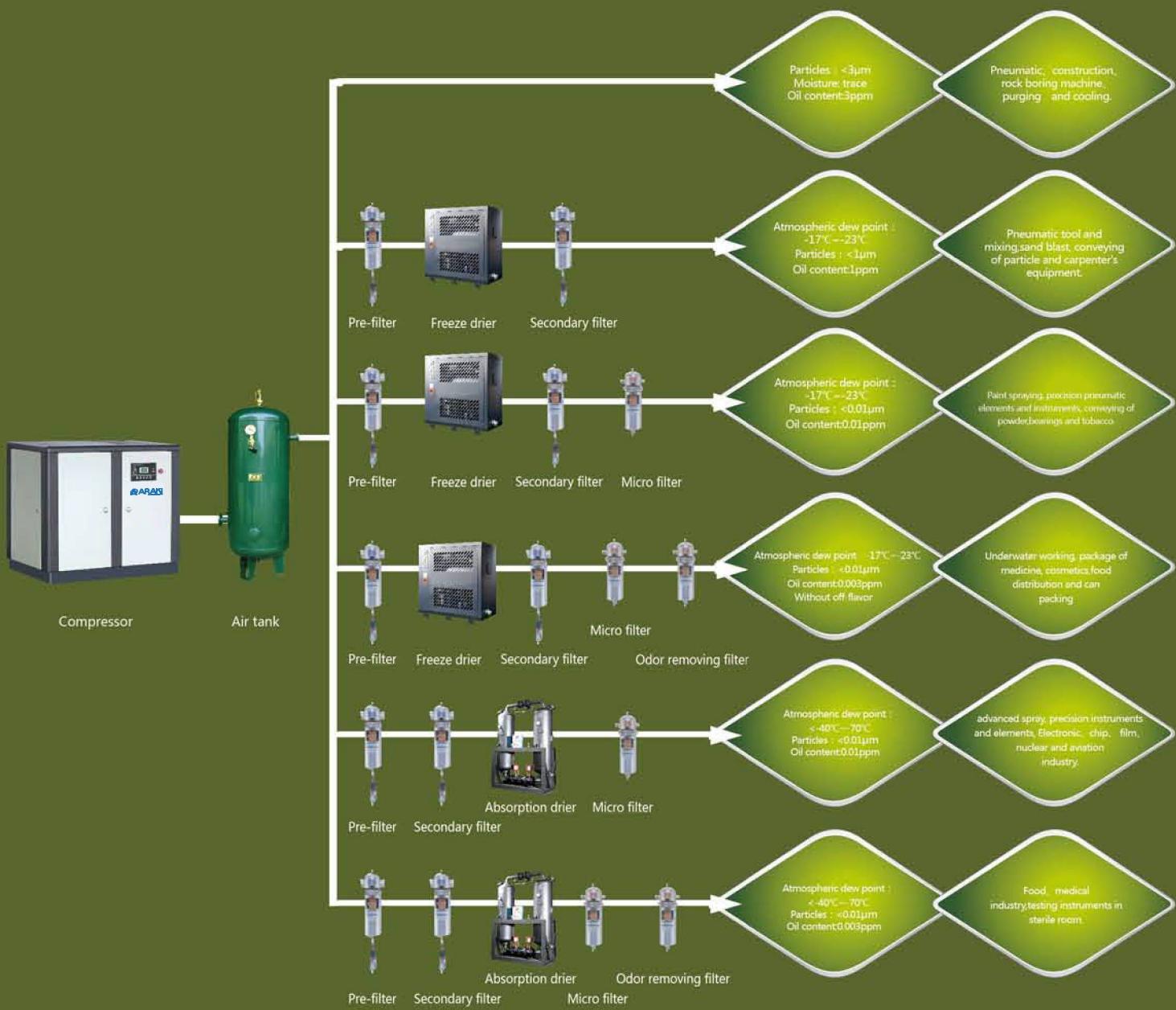
## A certain amount of pressure control

Frequency type compressor ( Araki ) adopt high precise control system, which can control the pressure changes in the scope of 0.01MPA and provide the most appropriate pressure for air .



## Supporting equipments improve the quality of compressor

For more efficient operation the compressor, we recommend you to use our ancillary equipments :



The moisture contained in the compressed air that is not treated with drying and purification processes may result in:

- Corrosion of pipelines
- Damages of air-related equipment or lower efficiency of production
- Adverse impact on quality of your product

We will provide customer tailored air compress system to assist you to achieve the best air compressing solution. We provide post treatment equipment and one stop purchase to you.



Technical parameter	Description		(Air cooling)	(Water cooling)
	Standard type	high temperature type	Standard type	high temperature type
Working condition	Ambient temperature	≤38°C	≤38°C	≤38°C
	Temp. of intake air	≤45°C	≤80°C	≤45°C
	Pressure of intake air	(Standard)0.7MPa,≤1.0MPa	(Standard)0.7MPa,≤1.0MPa	
Common parameters	Normal pressure dewpoint	-17°C ~ -23°C	-17°C ~ -23°C	
	pressure dewpoint	2°C ~ 10°C	2°C ~ 10°C	
	Coolant	R22	R22	



Working condition	Pressure of intake air	(Standard)0.7MPa , ≤1.0MPa	
	Ambient temperature	Temp. of intake air	Temp. of intake air
Common parameters	≤40°C	≤45°C	≤0.1ppm
	Absorbent	Activated aluminum oxide or molecular screen	
	pressure dewpoint	-20°C~ - 40°C , Micro-thermal type: - 40°C~ - 70°C	
Quantity of regenerated air	12~15% ( 6%for minor heat type )		
	Working cycle		



Filter	Description	Technical parameter	ppm (Accuracy for oil removing)	μ (accuracy for dust removing)
		Pre-filter for C class main line	3	3
	T class secondary filter	0.1	1	
	A class micro filter	0.01	0.1	
	H class odor removing filter	0.003	0.01	

## Freeze drier

The steam is cooled and the water is removed in a reliable, convenient and low cost manner by using the principle of steam freeze.

## Regenerative absorption drier with non-hear (minor heat)

Using principle of affinity adsorbent for water to adsorb and compress the moisture of air, which can achieve better drying effect .

## Air tank

If the air consumption required by customer is large and volatile, the air tank shall be equipped.

## ■ Air Cooling

Model	GTR-7.5AD	GTR-11AD	GTR-15AD	GTR-18.5AD	GTR-22AD	GTR-30AD	GTR-37AD	GTR45AD	GTR-55AD	GTR-75AD
Capacity /pressure (m <sup>3</sup> /min.MPa-1)	1.2/0.7	1.7/0.7	2.5/0.7	3.2/0.7	3.8/0.7	5.2/0.7	6.5/0.7	7.8/0.7	10.5/0.7	13.5/0.7
	1.1/0.8	1.6/0.8	2.3/0.8	3.0/0.8	3.5/0.8	5.0/0.8	6.3/0.8	7.5/0.8	9.5/0.8	13.0/0.8
	0.9/1.0	1.4/1.0	2.1/1.0	2.8/1.0	3.0/1.0	4.1/1.0	5.8/1.0	7.0/1.0	8.5/1.0	11.0/1.0
	0.8/1.2	1.2/1.2	1.8/1.2	2.3/1.2	2.5/1.2	3.7/1.2	5.0/1.2	6.0/1.2	7.5/1.2	9.5/1.2
Air supply temperature(°C)	≤Ambient temperature+15°C									
Power(KW/HP)	7.5/10	11/15	15/20	18.5/25	22/30	30/40	37/50	45/60	55/75	75/100
Motor Start	Y-△									
Voltage(V)	380									
Transmission	coupling drive									
Oil content(PPM)	≤3									
Pipe size	G3/4"	G3/4"	G3/4"	G1"	G1"	G11/2"	G11/2"	G11/2"	G11/2"	DN50
Dimension (mm)	Length	1000	1000	1300	1300	1300	1470	1470	1700	2000
	Width	600	600	800	800	800	930	930	1150	1250
	Height	900	900	1115	1115	1115	1300	1300	1550	1600
	Weight(Kg)	350	400	550	750	800	870	890	1200	1280
	Noise [dB(A)]±2	62	63	63	63	65	65	68	68	68

Model	GTR-90AD	GTR-110AD	GTR-132AD	GTR-160AD	GTR-185AD	GTR-200AD	GTR-220AD	GTR-250AD	GTR-315AD	GTR-355AD
Capacity /pressure (m <sup>3</sup> /min.MPa-1)	16.5/0.7	21.0/0.7	26.2/0.7	29.5/0.7	33.0/0.7	36.0/0.7	40.0/0.7	45.5/0.7	57.9/0.7	66.8/0.7
	16.0/0.8	20.0/0.8	24.6/0.8	28.0/0.8	31.0/0.8	34.5/0.8	37.5/0.8	42.5/0.8	54.7/0.8	62.5/0.8
	14.0/1.0	18.5/1.0	21.2/1.0	24.5/1.0	28.5/1.0	30.0/1.0	33.0/1.0	38.0/1.0	50.6/1.0	55.0/1.0
	12.0/1.2	15.5/1.2	18.0/1.2	21.0/1.2	25.0/1.2	26.8/1.2	28.0/1.2	33.0/1.2	45.0/1.2	48.8/1.2
Air supply temperature(°C)	≤Ambient temperature+15°C									
Power(KW/HP)	90/120	110/150	132/175	160/210	185/250	200/270	220/300	250/340	280/380	355/470
Motor Start	Y-△									
Voltage(V)	380									
Transmission	coupling drive									
Oil content(PPM)	≤3									
Pipe size	DN50	DN65	DN65	DN80	DN80	DN100	DN100	DN100	DN125	DN125
Dimension (mm)	Length	2000	2300	2300	2600	2600	3085	3085	3500	3500
	Width	1250	1500	1500	1850	1850	2050	2050	2350	2350
	Height	1600	1950	1950	2000	2000	2200	2200	2500	2500
	Weight(Kg)	1720	2650	2700	3700	3730	5350	5400	5440	6500
	Noise [dB(A)]±2	68	68	72	72	72	76	78	78	84

## ■ GTR - Inverter Permanent Magnet Variable Frequency Screw Air Compressor

Model	GTR-15AD inverter	GTR-18.5AD inverter	GTR-22AD inverter	GTR-30AD inverter	GTR-37AD inverter	GTR-45AD inverter	GTR-55AD inverter	GTR-75AD inverter	GTR-90AD inverter	GTR-110AD inverter	GTR-132AD inverter
Capacity /pressure (m <sup>3</sup> /min.MPa-1)	2.6/0.7	3.3/0.7	3.8/0.7	5.4/0.7	6.7/0.7	7.9/0.7	10.7/0.7	13.8/0.7	16.8/0.7	20.8/0.7	26.2/0.7
	2.4/0.8	3.1/0.8	3.6/0.8	5.1/0.8	6.4/0.8	7.6/0.8	9.8/0.8	13.3/0.8	16.2/0.8	20.0/0.8	25.3/0.8
	2.2/1.0	2.9/1.0	3.1/1.0	4.3/1.0	5.9/1.0	7.0/1.0	8.9/1.0	11.8/1.0	14.8/1.0	18.5/1.0	21.0/1.0
Air supply temperature(°C)	≤Ambient temperature+15°C										
Power(KW/HP)	15/20	18.5/22	22/30	30/40	37/50	45/60	55/75	75/100	90/120	110/150	132/175
Motor Start	Frequency conversion start										
Voltage(V)	380										
Transmission	Coaxial integration										
Oil content(PPM)	≤3										
Pipe size	3/4"	1"	1"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	DN50	DN50	DN65	DN65
Cooling water (m <sup>3</sup> /h)	0.3*1	0.55 * 1	0.55 * 1	0.75 * 1	1.1 * 1	1.1 * 1	1.1 * 1	0.75 * 2	0.75 * 2	1.5 * 2	1.5 * 2
Dimension (mm)	Length	1300	1300	1300	1470	1470	1700	1700	2000	2300	2300
	Width	800	800	800	930	930	1150	1150	1250	1500	1500
	Height	1115	1115	1115	1300	1300	1550	1550	1600	1950	1950
	Weight(Kg)	550	750	800	870	890	1200	1280	1640	2650	2700
	Noise [dB(A)]±2	60	60	60	66	66	66	69	71	73	73

Note: If for special voltages, start, frequency, mobile or explosion-proof air compressor, please contact our sales engineer for special custom .

## Features of Araki permanent magnetic variable frequency tank mounted screw air compressor:



### More energy saving

with permanent magnet motor & frequency conversion control, whole machine exceeds first degree energy efficiency, saving more than 35-40% energy.

### More environmentally friendly

low noise; high energy efficiency; small starting current reduces electrical shock to electrical components, which extends life of machine and accessories.

### More efficient

Integral design of compressor and air tank with movable bottom corner makes it more convenient and flexible to use.



## Technical Parameters

Model	Power (kW)	Horsepower (Hp)	Exhaust quantity (m<sup>3</sup>/min)	Pressure (Bar)	Dimension (mm)	Weight (Kg)	Outlet size





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#### Sophisticated digital display panel

Adopt large digital display panel, clear & fashion, the machine running status is clear at a glance, and easy to operate.



#### Charismatic power system

To insure the single screw and the star wheel accurate meshing running, and make the friction surface reduce to the limitation, the oil film sealed to ensure the high efficiency and stability, also save a lot of power.



#### High Quality Reason

##### High quality guarantee

- Araki GTR series provide the users high efficient and energy-saving air compressor with its incomparable reliability high-quality energ-saving efficiency superior technology and modular control system design.

##### Durability

- Designed longer life of the major component, strict evaluation test, ensured the long-term durability of the air compressor.
- After the artificial simulation accelerated aging test, the parts and the sheet metal parts are no discolor, no rust, ensured the high durability.
- The machine casing use the rust resistant material, which after anti-corrosion, to ensure the strength.

##### Install convenience

- Truly plug and play, put the machine on the flat floor, connect the power supply and piping system. No need additional installation, just press the power button.



##### Functions and applications

Araki GTR low pressure series screw air compressor is one of the most advanced model in domestic now, innovative design, better performance, longer operating life, meet a variety of operating conditions, pressure range (0.13-0.4Mpa). with large displacement, energy saving, easy installation, long life, low noise, environmental protection and other features. widely used in glass products, petrochemicals, gas transportation, food processing, pharmaceutical gas transportation and crush.

##### Technical parameter

Model	Exhaust volume/ Exhaust pressure (M <sup>3</sup> /min. Mpa <sup>-1</sup> )	Power (kw)	Rotation speed (r/min)	Noise {dB(A)}	Pipe size (inch)	Weight (kg)	Dimension (mm)
GTR 37A-L	8.6/0.4Mpa	37	2970	65	2 <sup>1</sup> / <sub>2</sub> "	1200	1700*150*1550
GTR 45A-L	10.5/0.4Mpa	45	2970	68	2 <sup>1</sup> / <sub>2</sub> "	1280	1700*150*1550
GTR 55A-L	13.2/0.4Mpa	55	2970	70	2 <sup>1</sup> / <sub>2</sub> "	1640	2000*1250*1600
GTR 75A-L	20.5/0.4Mpa	75	2970	72	4"	2650	2300*1500*1950
GTR 90A-L	24.0/0.4Mpa	90	2970	74	4"	2700	2300*1500*1950
GTR 110A-L	27.4/0.4Mpa	110	2970	75	4"	3700	2600*1850*2000
GTR 132A-L	30.5/0.4Mpa	132	2970	75	4"	3730	2600*1850*2000
GTR 160A-L	36.0/0.4Mpa	160	2970	78	5"	5350	3085*2050*2200
GTR 185A-L	42.2/0.4Mpa	185	2970	78	5"	5400	3085*2050*2200



**Diesel Movable Screw Compressor**  
**Diesel Portable Screw Machine**

ISO9001 ISO14001

**Electric Movable Screw Compressor**  
**Portable electric screw machine**

ISO9001 ISO14001



## ARAKI MACHINE HIGH QUALITY | ENERGY SAVING

### **Diesel movable screw compressor parameters**

Model	Capacity (m³/min)	Pressure (Mpa-1)	Diesel Engine	Engine Model	Fuel Tank (L)	(Kw)/(rpm)	L*W*H (mm)	Weight (kg)	Note
GTR 65-PD	7	0.8	93KW	4BTA3.9-C125	160	65/3000	3060*1800*1620	1800	2 (Wheels)
GTR 93-PD	10	1.0			180	93/2200	3121*1452*1368	2200	
GTR 93-PD	12	0.8			180	93/2200	3121*1452*1368	2200	
GTR 110-PD	12	1.0		6BT5.9-C150	200	110/2200	3121*1452*1368	2480	
GTR 110-PD	10	1.3			200	110/2200	3121*1452*1368	2480	
GTR 132-PD	13	1.3	132KW	6BTA5.9-C180	320	132/2500	3420*1960*1860	2800	
GTR 132-PD	17	0.8			320	132/2500	3420*1960*1860	2800	
GTR 132-PD	15	1.3			320	132/2200	3720*1740*2460	3000	4 (Wheels)
GTR 194-PD	17	1.45	194KW	6CTA8.3-C260	400	194/2200	3700*1800*2060	4000	
GTR 194-PD	16	1.7			400	194/2200	4000*1900*2330	3800	
GTR 194-PD	18	1.7			400	194/2200	3900*1800*2060	3900	2 (Wheels)
GTR 194-PD	18	1.9			400	194/2200	3900*1800*2060	4500	
GTR 194-PD	22	0.8			400	194/2200	3900*1800*2060	4000	
GTR 194-PD	21	1.3		250KW	500	250/2100	4250*1950*2800	4500	4 (Wheels)
GTR 250-PD	22	1.7			500	250/2100	4250*1950*2800	4500	
GTR 250-PD	22	2.1			500	250/2100	4250*1950*2800	4500	
GTR 250-PD	25	1.0			500	250/2100	4250*1950*2800	5000	
GTR 300-PD	32	1.0	300KW	YC6M395L-K20	500	300/2100	4250*1950*2800	5000	

## ARAKI MACHINE HIGH QUALITY | ENERGY SAVING

### **Electric movable screw compressor parameters**

Model	Capacity (m³/min)	Pressure (Mpa-1)	Power (KW)	Outlet Connection	L*W*H (mm)	Weight (kg)	Note
GTR 37-PE	6	0.8	37 KW	2-RP3/4	3069*1570*1395	1300	2 (Wheels)
GTR 45-PE	7.5	0.8	45 KW		3069*1570*1395	1400	
GTR 55-PE	10	0.8	55 KW		3530*1980*1887	1700	
	7.5	1.3	55 KW		3530*1980*1887	1700	
GTR 75-PE	14	0.7	75 KW		3300*1980*1831	1900	
	13	0.8	75 KW		3530*1980*1887	2000	
GTR 90-PE	10	1.3	75 KW		3530*1980*1887	1950	
	16	0.8	90 KW		3530*1980*1887	2500	
GTR 110-PE	13	1.45	90 KW		3530*1980*1887	2400	
	20	0.8	110 KW	2-RP2	3700*1980*1940	3000	4 (Wheels)
GTR 132-PE	17	1.3	110 KW		3700*1980*1940	2900	
	22	0.8	132 KW		3700*1980*1940	3200	
GTR 160-PE	17	1.45	132 KW		3700*1980*1940	3100	
	21	1.3	160 KW	1-RP2 2-RP1 1/4	3670*1820*2250	3900	4 (Wheels)
	26	0.8	160 KW		3670*1820*2250	3900	
	18	1.7	160 KW		3670*1820*2250	3800	
GTR 185-PE	30	0.8	185 KW		3670*1820*2250	4300	
GTR 200-PE	26	1.3	220 KW	1-RP2 1RP1	4200*1950*2350	4900	

## GTR Two Stage Compression Screw Air Compressor

Designed for High-end  
Manufacturing Industry



## PET Medium Pressure Compressor



## GTR Two Stage Compression Screw Air Compressor

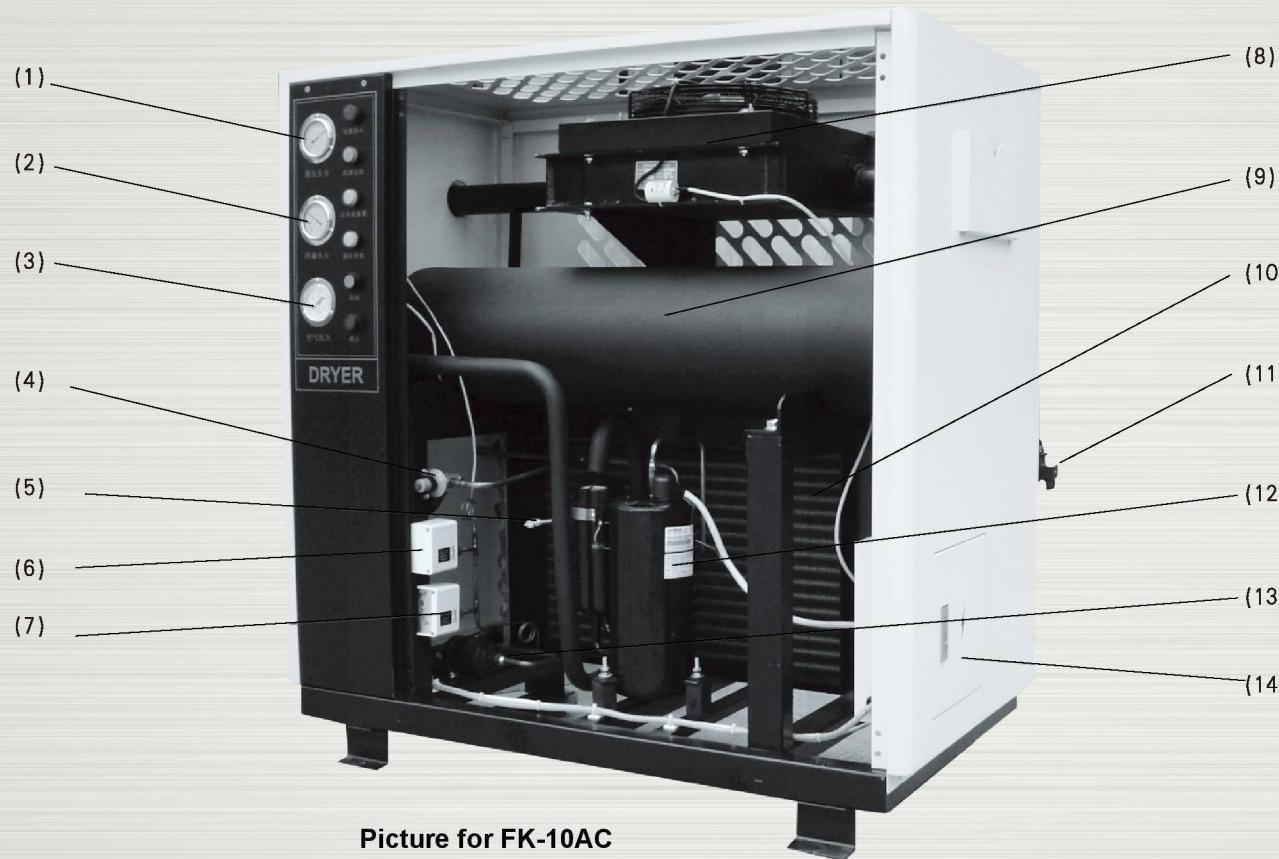
Type	Exhaust Pressure	Exhaust Volume	Motor Power	Voltage	Pipe Size(mm)	Weight	Dimension	
	MPa	m³/min	KW	V/Hz		Kg	mm	
GTR 15 AD	0.8	3.0	15.0	380/50	1"	750	1300X800X1115	
GTR 18.5 AD	0.8	3.8	18.5		1"	800	1470X930X1300	
GTR 22 AD	0.8	4.8	22.0		11/2	870	1470X930X1300	
GTR 30 AD	0.8	6.6	30.0		11/2	890	1570X1030X1300	
GTR 37 AD	0.8	7.6	37.0		11/2	1200	1570X1030X1300	
GTR 45 AD	0.7	10.65	45.0		DN50	1720	2300X1600X1950	
	0.8	10.03			DN50	1720	2300X1600X1950	
	1.0	9.68			DN50	1720	2300X1600X1950	
	0.7	13.0			DN65	2700	2300X1600X1950	
GTR 55 AD	0.8	12.35	55.0		DN65	2700	2300X1600X1950	
	1.0	11.71			DN65	2700	2300X1600X1950	
	0.7	18.35			DN65	2700	2500X1800X1950	
	0.8	16.05			DN80	3700	2500X1800X1950	
GTR 75 AD	1.0	12.08	75.0		DN65	2700	2500X1800X1950	
	0.7	23.22			DN65	2700	2500X1800X1950	
	0.8	21.86			DN100	3700	2500X1800X1950	
	1.0	20.08			DN100	5400	2500X1800X1950	
GTR 90 AD	0.7	26.15	90.0		DN100	3700	2500X1800X1950	
	0.8	24.2			DN100	5400	2500X1800X1950	
	1.0	20.05			DN100	5400	2500X1800X1950	
	0.7	32.08			DN100	5400	2500X1800X1950	
GTR 132 AD	0.8	28.16	132.0		DN100	5400	2500X1800X1950	
	1.0	24.09			DN100	5400	2500X1800X1950	
	0.7	37.98			DN100	5400	2500X1800X1950	
	0.8	33.56			DN100	5400	2500X1800X1950	
GTR 160 AD	1.0	31.02	160.0		DN100	5400	2500X1800X1950	
	0.7	44.2			DN100	5400	2500X1800X1950	
	0.8	40.09			DN100	5400	2500X1800X1950	
	1.0	34.26			DN100	5400	2500X1800X1950	
GTR 185 AD	0.7	42.55	185.0		DN100	5400	2500X1800X1950	
	0.8	41.15			DN100	5400	2500X1800X1950	
	1.0	40.2			DN100	5400	2500X1800X1950	

Medium Pressure Air Compressor was designed for the PET bottle-blown industry. It has many features such as stable air source, high reliability, long durability, and low running cost.

## Medium Pressure Compressor Specification

Model	Discharge Pressure (Bar)	(Capacity) (m³/min)	Power(KW)	Size(mm)	Weight(Kg)	Tank Storage	RPM
LZ - 0.35/30	30	0.35	5.5	1470*530*1020	280	180	600
LZ - 0.5/30	30	0.5	7.5	1470*530*1020	290	180	730
LZ - 0.6/25	25	0.6	7.5	1470*530*1020	295	180	850
LZ - 0.63/30	30	0.63	7.5	1580*630*1180	430	220	880
LZ - 0.7/25	25	0.7	7.5	1580*630*1180	430	220	900
LZ - 0.8/20	20	0.8	7.5	1580*630*1180	430	220	920
LZ - 0.8/40	40	0.8	11	1600*800*1300	560	160	700
LZ - 1.0/40	40	1.0	15	1600*800*1300	560	160	750
LZ - 1.0/30	30	1.0	11	1750*720*1300	530	320	800
LZ - 1.2/25	25	1.2	11	1750*720*1300	550	320	900
LZ - 1.2/30	30	1.2	15	1750*750*1350	550	320	800
LZ - 1.5/25	25	1.5	18.5	1750*750*1350	550	320	880
LZ - 1.4/3.0	30	1.4	18.5	1750*750*1350	550	320	860
LZ - 1.6/40	40	1.6	2*11	1450*1450*1100	850	-	700
2LZ - 2/30	30	2.0	2*11	1450*1450*1100	800	-	800
2LZ - 2/40	40	2.0	2*15	1450*1450*1100	850	-	750
2LZ - 2.4/25	25	2.4	2*11	1450*1450*1000	800	-	900
LZ - 3.5/30	30	3.5	3*11	1780*1500*1300	1050	-	800
LZ - 4.2/30	30	4.2	4*11	1780*1500*1300	1150	-	850

## Instruction Of Equipment Components



(1)	Evaporation pressure gauge	(8)	Liquid air separator
(2)	Condensation pressure gauge	(9)	Magnet valve
(3)	Air inlet gauge	(10)	Water air separator
(4)	Air outlet gauge	(11)	Refrigeration Compressor
(5)	Evaporator	(12)	Oil separator
(6)	Electrical box	(13)	E-drainage
(7)	Expansion valve	(14)	Water condenser

Freeze dyadic drying machine



## Refrigeration Dryer Working Principle

Refrigerated air compressed dryers are the most widely use and economical air compressed drying equipment. Our company's LC series of freeze-dryer is use of advanced technology and imported parts and components ,which can be matched with any air compressors to remove the water in compressor , and achieve the pressure dew point to 2-10 degrees of gas quality. When the temperature dropped, the water content of air also decreased , the original gaseous water will become liquid, that is the dehumidifier principle which the Refrigeration dryer use of . First ,do cooling treatment of the compressed air, to make the gaseous water Cohesion as a liquid pool, and then separate liquid through the separator , and finally discharge water by the drain valve ,in order to obtain the dry compressed air .

## Amendment Selection Table

Rated capacity of LC Series Refrigeration Dryer is based on approved of inlet pressure 0.7Mpa, intake air temperature 38 degrees . When the temperature and pressure deviate from the baseline value , or the ambient temperature and pressure dew point value changes, please amended as Table 1-4.

Selection amendment							
selected equipment capacity							= $\frac{\text{displacement of air compressor}}{\beta_1 \times \beta_2 \times \beta_3 \times \beta_4}$

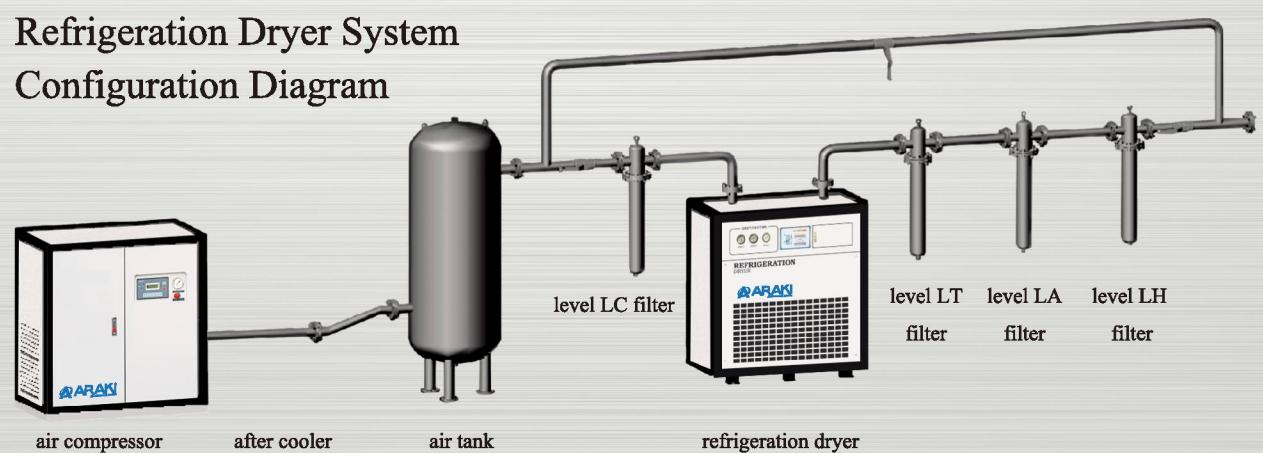
Working pressure amendment								Table 1
working pressureMpa	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
$\beta_1$	0.65	0.8	0.88	0.92	1	1.05	1.12	1.25

Air inlet temperature amendment								Table 2
S series of air inlet temperature °C	20	25	30	35	38	40	42	45
$\beta_2$	1.25	1.15	1.1	1.05	1	0.95	0.88	
H series of air inlet temperature °C	45	50	55	60	65	70	75	80
$\beta_2$	1.25	1.15	1.1	1.05	1	0.95	0.88	0.8

Ambient temperature amendment							
ambient temperature °C	25	30	32	35	38	40	Table 3
$\beta_3$	1.2	1.05	1	0.95	0.9	0.85	

Pressure dew point amendment							
pressure dew point °C	-2	0	2	5	7	10	Table 4
$\beta_4$	0.85	0.9	1	1.1	1.15	1.2	

## Refrigeration Dryer System Configuration Diagram





### Refrigerated Dryer Technology Parameter Table: Air-cooled with pre-cooler

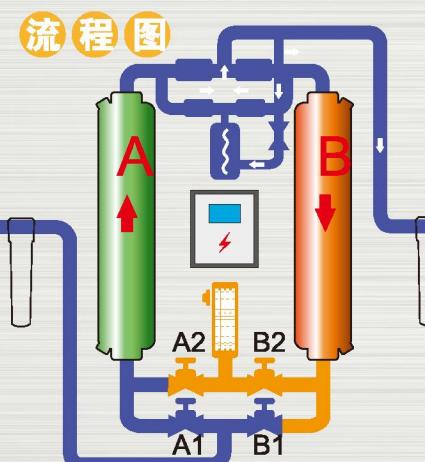
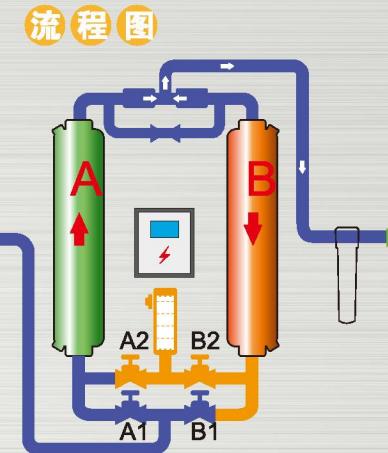
Design condition:

1. Working pressure: 7-10kg/cm<sup>2</sup> (7-14kg/cm<sup>2</sup> of SC-13A)
2. Environment temperature: max 38 °C
3. Pressure dew point: 2-10 °C
4. Entrance and exit pressure drop: ≤0.2kg/cm<sup>2</sup>
5. REFRIGERANT :NORMALLY R22 , R407 COST +5%

Model	Capacity Nm <sup>3</sup> /min	Power supply	Refrigerant compressor power(KW)	Cooling method	Cooling fin.Motor Type	Full load current (A)	Refrigerant Type	Refrigerant filling quantity (KG)	Entrance and exit pipe diamete	Overall dimension(MM)	Weight (KG)
FK-1A	1.3	1Ø220V	0.58	Mandatory air-cooled	12"	3.5	R22	0.45	3/4"	600×400×655	45
FK-1A.5A	1.7	1Ø220V	0.58	Mandatory air-cooled	12"	3.5	R22	0.45	3/4"	600×400×655	50
FK-2A	2.6	1Ø220V	0.83	Mandatory air-cooled	12"	0.83	R22	0.7	1"PT	675×400×655	55
FK-3A	3.6	220V/50HZ	0.83	Mandatory air-cooled	12"	5.1	R22	0.7	1-1/2"	725×400×815	60
FK-5A	5.2	1Ø220V	0.89	Mandatory air-cooled	12"	6.4	R22	0.7	1-1/2"	780×450×950	75
FK-6A	6.5	1Ø220V	1.25	Mandatory air-cooled	12"	7	R22	0.8	2"	840×550×1000	80
FK-8A	8	1Ø220V	1.38	Mandatory air-cooled	12"	8.2	R134a	0.85	2"	840×550×1100	95
FK-10A	10	1Ø220V	1.92	Mandatory air-cooled	12"	11.5	R22	1	2"	1000×600×1135	125
FK-13A	13	1Ø220V	2.34	Mandatory air-cooled	12"	14	R22	1.2	2-1/2"	1000×600×1450	135
FK-15A	16	3Ø380V	2.54	Mandatory air-cooled	12"	15.3	R22	1.2	2-1/2"	1000×600×1450	175
FK-20A	19	3Ø380V	3.43	Mandatory air-cooled	12"	5.8	R22	1.8	3"	1060×700×1515	220
FK-23A	23	3Ø380V	4.32	Mandatory air-cooled	12"	7.3	R22	2.3	3"	1330×700×1465	280
FK-25A	28	3Ø380V	4.64	Mandatory air-cooled	12"	10.7	R22	2.5	3"	1340×750×1465	310
FK-30A	33	3Ø380V	4.95	Mandatory air-cooled	12"	11.3	R22	2.5	3"	1530×750×1615	350
FK-40A	40	3Ø380V	4.95	Mandatory air-cooled	12"	10.6	R22	3	4" F	1540×750×1615	400
FK-45A	45	3Ø380V	5.8	Mandatory air-cooled	12"	15.1	R22	5.5	5" F	1600×900×1700	450
FK-50A	55	3Ø380V		Mandatory air-cooled			R22		6" F		

### LC-L No hot regeneration adsorption dryer Design features

- ◆ Variable pressure adsorption;
- ◆ Short cycle adsorption, isothermal operation , 100% save adsorption heat ,good thermal desorption;
- ◆ Can field programmable cycle site, factory setting 10( or 4)min;
- ◆ Through double calculation by thermal hydraulic, small resistance of Tower bed, Air and adsorbent contact time large than 5 seconds;
- ◆ Make sure the Adsorbent filling volume is extremely abundant and guaranteed it's minimum dew point of air outlet .
- ◆ All-electronic programmable logic controller, friendly machine interface and automatic continuous display the towers working condition;
- ◆ Accurate action, stable performance, easy operation;
- ◆ Cylinder wall by cold galvanized anti-rust treatment ,10 years without rust;
- ◆ The regeneration valves for structure of 4 valve or 3 valve , reliable work, the valve life for 500000 times action;
- ◆ Optimization valve can guarantee of the maintenance and replacement feasibility and convenience;
- ◆ High precision two-way regulating valves, which can ensure the regeneration gas stability, regeneration renewable air pressure low to critical
- ◆ Control the moisture content of Regeneration gas outlet in Sub-saturation, no need to worry about the concentration of muffler and exhaust passage
- ◆ Reserve low load renewable energy control and dew point on-line detection interface



### LC-L No hot regeneration adsorption dryer Technical parameters

- Rated air inlet temperature: ≤40°C  
 Rated pressure: 0.7Mpa(Allows the use of 0.4—0.95Mpa,  
 Under 45Mpa need special order)  
 Pressure drop: <0.02Mpa  
 Pressure dew point: -40° (0.7Mpa)  
 (Under -60°C need special order)  
 Regenerative way: No hot regeneration.  
 Control mode: All-electronic programmable time control  
 Regeneration gas consumption: capacity about 13%-15%  
 Adsorbent: Activated alumina(Under the DPD-68°C,  
 activated alumina and molecular sieve)  
 Inlet oil content: <0.1mg/m<sup>3</sup>  
 Installation: Indoor without foundation. mix the ground ,keep level  
 environment temperature > 0°C

### LC-H Micro-heat regeneration adsorption dryer Design features

A new generation of adsorption dryer ,which comprehensive the advantage of PSA and variable-temperature adsorption , absorb under the high steam partial pressure in room temperature; Low steam partial pressure in high temperature ,it is absorbed moisture in the course of absorbing , to completely remove the moisture by the thermal diffusion of high-quality Regeneration gas(heat the dryer air)and low partial pressure in the process of regeneration .

- ◆ Adsorption: The Wet air enter from the bleed pipe into dry tank A through A1 valve, Bottom-up flow through the adsorbent bed, then discharge from the upper pipe after drying
- ◆ Regeneration/Blow cold: A few dry air(about 7%)reduce pressure through regeneration gas valve of upper pipe then into heating heater, the part of the hot air (called regeneration gas)into the tank B. Resolve and regenerate the adsorbent in tank B , restore dry ability of adsorbent , and then discharge into the atmosphere by valve B2 of bleed pipe and Silencer
- ◆ Equal pressure: After Adsorbent regeneration ended, B2 valve closed , the deep pressure of try tank B gradually up to the working line, accurate pressure switch.
- ◆ Switch: B1 valve open,A1 valve closed,A2 valve open, A, B drying tank complete the switch, B tank into the adsorption, A tank discharging pressure and regeneration. The work order, time and heating temperature automatic control and complete by the controller .

### LC-H Micro-heat regeneration adsorption dryer Technical parameter

- Rated the inlet temperature: ≤40°C  
 Rated pressure: 0.7Mpa(Allow of 0.4—0.95Mpa,  
 Under 45Mpa need special order)  
 Pressure drop: <0.02Mpa  
 Pressure dew point: -40°C (0.7Mpa)  
 (Under -60°C to accept the order)  
 Regenerative way: Micro-heat regeneration.  
 Control mode: All-electronic programmable time control  
 Regeneration gas consumption: About 5%-8% capacity  
 Adsorbent: Activated alumina(Under the DPD-68°C,  
 activated alumina and molecular sieve)  
 Inlet oil content: <0.1mg/m<sup>3</sup>  
 Installation: Indoor, without foundation. mix the ground , make level environment temperature > 0°C



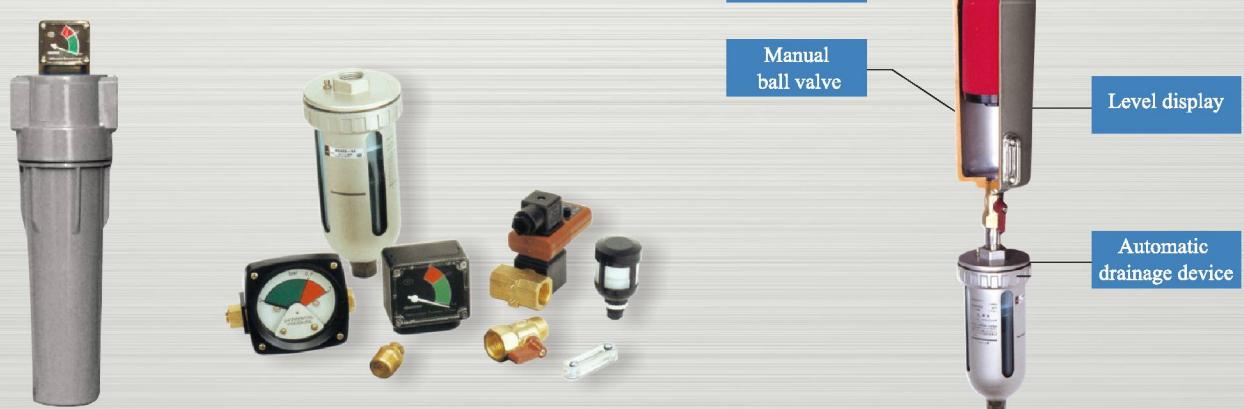
Non-thermal regeneration adsorption dryer						Micro-heat regeneration adsorption dryer						
Model	Capacity Nm³/min	Power supply	Overall dimension mm	Interface dimension	Weight KG	Model	Capacity Nm³/min	Power supply	Overall dimension mm	Interface dimension	Heating power KW	Weight KG
LC-0.4L	0.4		520 x 300 x 700		50	LC-3H	3.6		960 x 500 x 2140	G1"	3	180
LC-0.5L	0.6		650 x 400 x 1030	G2"	80	LC-5H	5.2		1000 x 500 x 1980	G1½"	3	250
LC-1L	1.2		780 x 500 x 1600	G1"	110	LC-6H	6.5		1070 x 600 x 1960	G1½"	4	380
LC-2L	2.3		960 x 500 x 1880	G1"	150	LC-8H	8.5		1230 x 600 x 1900	G2"	4	460
LC-3L	3.6		960 x 500 x 2080	G1"	160	LC-10H	11		1230 x 600 x 2100	G2"	6	500
LC-5L	5.2		1000 x 500 x 1920	G1½"	220	LC-13H	13.5		1230 x 600 x 2300	G2"	6	560
LC-6L	6.5		1070 x 500 x 1860	G1½"	350	LC-15H	17		1600 x 600 x 2280	DN65	6	760
LC-8L	8.5		1230 x 600 x 1820	G2"	430	LC-20H	22		1500 x 700 x 2425	DN65	9	930
LC-10L	11		1230 x 600 x 2040	G2"	460	LC-25H	27		1600 x 700 x 2650	DN80	9	990
LC-13L	13.5		1230 x 600 x 2240	G2"	520	LC-30H	32	380V /50Hz	1700 x 750 x 2690	DN80	12	1380
LC-15L	17		1600 x 600 x 2200	DN65	720	LC-40H	42		2000 x 900 x 2780	DN100	18	1620
LC-20L	22		1500 x 700 x 2230	DN65	890	LC-50H	55		2200 x 950 x 2830	DN100	21	1950
LC-25L	27		1600 x 700 x 2575	DN80	950	LC-60H	65		2200 x 1000 x 2830	DN100	25	2320
LC-30L	32	220V /50Hz	1700 x 750 x 2600	DN80	1320	LC-80H	85		2600 x 1100 x 2945	DN125	30	2880
LC-40L	42		2100 x 900 x 2690	DN100	1550	LC-100H	110		3000 x 1700 x 3065	DN150	40	4230
LC-50L	55		2200 x 950 x 2750	DN100	1880	LC-130H	140		3000 x 1700 x 3175	DN150	50	5060
LC-60L	65		2200 x 1000 x 2830	DN100	2250	LC-150H	160		3500 x 1800 x 3340	DN200	65	6350
LC-80L	85		2600 x 1100 x 2840	DN125	2810	LC-180H	190		3500 x 1800 x 3340	DN200	65	6560
LC-100L	110		3000 x 1700 x 3065	DN150	4150	LC-200H	210		3700 x 2000 x 3560	DN200	80	7400
LC-130L	140		3000 x 1700 x 3120	DN150	4980	LC-230H	240		3700 x 2000 x 3770	DN200	80	8640
LC-150L	160		3500 x 1800 x 3340	DN200	6250	LC-250H	260		3900 x 2200 x 3770	DN200	90	9510
LC-180L	190		3500 x 1800 x 3340	DN200	6460	LC-300H	310		4000 x 2200 x 3880	DN250	90	11150
LC-200L	210		3700 x 2000 x 3670	DN200	7280	LC-350H	360		4000 x 2200 x 3880	DN250	110	13150
LC-230L	240		3700 x 2000 x 3770	DN200	8520	LC-400H	410		4100 x 2200 x 3930	DN250	130	14390
LC-250L	260		3900 x 2000 x 3770	DN200	9360	LC-450H	460		4500 x 2400 x 4200	DN300	160	16200
LC-280L	290		4000 x 2000 x 3880	DN250	11000	LC-500H	510		4600 x 2600 x 4250	DN300	160	17400
LC-300L	310		4000 x 2000 x 3880	DN250	13000	LC-550H	560		4700 x 2600 x 4250	DN300	180	18650
LC-350L	360		4100 x 2100 x 3930	DN250	14240				5100 x 2600 x 4650	DN350	180	19600
LC-400L	410		4500 x 2400 x 4200	DN300	16000							
LC-450L	460		4600 x 2600 x 4250	DN300	17200							
LC-500L	510		4700 x 2600 x 4250	DN300	18400							
LC-550L	560		5100 x 2600 x 4650	DN350	19300							

## LQ-C-T-A-H Series Properties And Applications

Model	Name	Performance			Applications
		Precision of filter	Removal water rate	Removal oil fog rate	
LQ Series	Liquid air separator	5 μ	99%	40%	Separator of the rear cooler, separator of freezer dryer,director pipeline pre-filter
LC Series	Centrifugal oil air separator	3 μ			
LT Series	Director pipeline filter	1 μ	100%	70%	Pneumatic tools pre-filter, fine-filter pre-filter, prefilter &rear filter of adsorption dryer , director pipeline filter of air system
LA Series	Micro oil fog filter	0.01 μ	100%	99.999%	Provide oil-free air to the use of oil lubrication compressor, which can meet the requirements of precision instruments, painting, food and food packaging and electronics industries
LH Series	Activated carbon adsorption filter	0.01 μ	Residual oil rate: 0.03 ppm		Food ,hospital and drug factories, breathing gas for diving protection, efficient oil remover rear filter, activated carbon adsorption filters can remove the oil vapor

## Technical Parameter

Working media	Compressed air or non-corrosive gases
Air inlet temperature	<66°C
Working pressure	Standard 0.7Mpa, highest 0.95Mpa (blew 4.0Mpa need to order)
Initial step-down pressure	>0.015Mpa
Working life	LC/LT/LA:8000h; LH:2000h (reduce the pressure to 0.7 as prevail)
Water load	LC:2500ppm, LT:2000ppm, LA:100ppm
Attachment selection	Automatic drainage device, electron drainage device, Differential Pressure table





**Specification Table**

Model					Capacity Nm/min	Fitter quantity	Overall dimensions			Interface dimensions	Weight KG	Figure dimensions
LQ	LC	LT	LA	LH			A	B	C			
0.5	0.5	0.5	0.5	0.5	0.6	1	104	250	220	G 1/2"	1.3	
1	1	1	1	1	1.2	1	104	250	220	G 1"	1.5	
2	2	2	2	2	2.3	1	104	320	290	G 1"	1.5	
3	3	3	3	3	3.6	1	104	320	290	G 1"	1.5	
5	5	5	5	5	5.2	1	138	435	390	G 1 1/2"	3.5	
6	6	6	6	6	65	1	138	435	390	G 1 1/2"	3.5	
8	8	8	8	8	8.5	1	138	635	590	G 2"	4	
10	10	10	10	10	11	1	138	715	670	G 2"	4	
13	13	13	13	13	13.5	1	138	715	670	G 2"	4	
15	15	15	15	15	17	1	335	1015	865	DN65	35	
20	20	20	20	20	22	1	335	1140	995	DN65	35	
25	25	25	25	25	27	1	400	1055	870	DN80	80	
30	30	30	30	30	32	1	400	1155	970	DN80	85	
40	40	40	40	40	42	1	460	1240	1055	DN100	90	
50	50	50	50	50	55	3	525	1065	865	DN100	125	
60	60	60	60	60	65	4	610	1090	880	DN100	135	
80	80	80	80	80	85	5	615	1170	930	DN125	145	
100	100	100	100	100	110	6	615	1170	930	DN150	150	
130	130	130	130	130	140	8	610	1345	1015	DN150	210	
150	150	150	150	150	160	9	610	1345	1015	DN200	220	
180	180	180	180	180	190	10	665	1425	1050	DN200	235	
200	200	200	200	200	210	12	665	1365	1020	DN200	240	
230	230	230	230	230	240	13	730	1396	1045	DN200	265	
250	250	250	250	250	260	14	730	1395	1045	DN200	280	
280	280	280	280	280	290	16	800	1475	1100	DN250	335	
300	300	300	300	300	310	17	850	1490	1110	DN250	375	
350	350	350	350	350	360	20	855	1490	1095	DN250	390	
400	400	400	400	400	410	23	995	1740	1280	DN300	455	
450	450	450	450	450	460	25	995	1740	1280	DN300	465	
500	500	500	500	500	510	28	1100	1675	1190	DN300	520	
550	550	550	550	550	560	31	1100	1705	1220	DN350	550	

## Carbon Steel and Low Alloy Steel Air Tank (0.8-1.6MPa)

NO.	Specification volume/working pressure	Design Temperature °C	Total Height H1	Diameter Φ	Air Inlet		Air Outlet		Support		Safety Valve Interface	Blowdown Valve Interface		
					H2	DN	whorl style	H3	DN	whorl style	D	d		
1	0.3/0.8	110	1594	550	642	65	Rp1½	1242	65	Rp1½	400	20	Rp3/4	R1/2
2	0.3/1.0		1594		642			1242						
3	0.3/1.3		1598		644			1244						
4	0.3/1.6		1598		644			1244						
5	0.6/0.8	110	1905	700	680	65	Rp1½	1550	80	Rp1½	490	24	Rp3/4	R1/2
6	0.6/1.0		1907		681			1551						
7	0.6/1.3		1909		682			1552						
8	0.6/1.6		1907		681			1551						
9	1.0/0.8	110	2365	800	730	80	Rp1½	1960	100	Rp1½	560	24	Rp1	R1/2
10	1.0/1.0		2367		731			1961						
11	1.0/1.3		2367		731			1961						
12	1.0/1.6		2367		731			1961						
13	1.5/0.8	110	2727	900	736	80	Rp1½	2296	80	Rp1½	630	24	Rp1	R3/4
14	1.5/1.0		2729		737			2297						
15	1.5/1.3		2727		736			2296						
16	1.5/1.6		2731		738			2298						
17	2.0/0.8	110	2782	1000	761	80	Rp1½	2321	100	Rp1½	700	24	Rp1	R3/4
18	2.0/1.0		2786		763			2323						
19	2.0/1.3		2782		761			2321						
20	2.0/1.6		2786		763			2323						