

# Винтовые воздушные компрессоры с регулируемым приводом Серия АРМ



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# SERVO VARIABLE SPEED DRIVE SCREW AIR COMPRESSOR

## ① SMALL START SHOCK

Smooth soft start, Maximum starting current is within 1.6 times the rated current, Compare to Frequency start which is usually maximum starting current is 6 times, AirKing serve inverter compressor decreased much Starting inrush current, Reducing the share of transformer, Make sure the motor safety.

## ② SMALL EQUIPMENT MAINTENANCE

A small inverter starting current, Less than 2 times of the rated current, without repeated loading and unloading, Inverter compressor automatically adjust motor speed according to air consumption, The lower operating time, the longer life of equipment, the smaller maintenance work.

Its easy to control under internet, automatic the production control Compared to V / F inverter technology, its higher efficient of low-frequency operation, ste dynamic response, (So that the air compressor less load fluctuations) More accurate speed control (Greatly enhance the accuracy of the air consumption).

## ③ AIR SUPPLY PRESSURE STABLE

Improve the output frequency to Improve working efficiency.

## ④ AUTOMATICALLY ADAPT TO GRID VOLTAGE

Over-modulation technique of inverter, it Sufficient torque output When the AC voltage is slightly lower, Driving motor working well; If the AC voltage is higher, It will not lead to a high voltage output of the motor.

## HIGH QUALITY BEARINGS (SWEDEN SKF)

The high stability under changing conditions can adapt to the constant change of load and increase the service life of the rotor. The running speed is low and the bearing wear is reduced. The operating temperature is low, the bearing load is reduced, the bearing has high precision and long service life.



## AIR FILTER

Efficient imported original filter material, 99.9% dust removal effect, ensure that the compressor host is effectively dustproof, and the highly efficient heavy-duty intake filter ensures the quality of intake air and the safety of the host, which greatly improves the service life.



## ENERGY SAVING ⑤

Variable speed, Greatly improved the speed accuracy.

## LOWER NOISE ⑥

The inverter running according to air flow, there is no energy loss, the lower operation frequency of motor, the smaller noise of rotation. Because inverter to adjust the motor speed mode, Without repeatedly loading, unloading, Reduce the noise generated by the frequent loading and unloading, Continued loading, Reducing the noise produced by unstable Barometric pressure.

## FREQUENCY SPEED REGULATION ⑦

The traditional speed regulation method of air compressor is to adjust the intake valve by adjusting the inlet valve, its input power is large, and a large amount of energy is consumed in the flow of the valve. When using variable frequency speed regulation, if the flow requirement is reduced, it can meet the requirement by reducing the main engine speed.

## ENERGY SAVING BY POWER ⑧

Reactive power not only Increased line loss, but also heating Equipment, the more important is leads to lower power factory by reducing active power grid, Large amount of reactive power consumed in the circuit Low equipment efficiency, Wasted. Our AirKing servo inverter machine, As the role of the inverter internal filter capacitor, Thereby reducing the reactive power loss, increasing the active grid.

## INTAKE VALVE

World-renowned brand, can automatically adjust the gas volume according to the gas consumption requirements of the system to ensure smooth operation of equipment and reduce operating costs, save energy; automatic loading/unloading, with automatic shutdown protection function; fewer wearing parts-less maintenance work; large size, The pressure drop is small and the suction volume is large.



## STABLE COMPUTER CONTROL

1. Standardized design
2. Select high-tech microcomputer processor, can automatically adjust the air compressor load according to the air demand
3. Specialized wiring interface, reasonable, concise, clear, conducive to maintenance
4. Siemens/Schneider electrical components
5. Powerful fault diagnosis and protection function make air compressor more reliable and energy-saving



Servo motor refers to the engine that controls the operation of mechanical components in the servo system. It is an auxiliary motor indirect transmission. The servo motor can control the speed and position accuracy very accurately. It can convert the voltage signal into torque and speed to drive the control object. Servo motor rotor speed is controlled by the input signal, and can react quickly. In the automatic control system, it is used as an actuator. It has characteristics such as small electromechanical time constant, high linearity and starting voltage, etc., and can receive the electrical signal. Convert to angular displacement or angular velocity output on the motor shaft.



#### TECHNOLOGICAL INNOVATION:

Servo motors are used in the AirKing screw air compressors and their performance far exceeds that of ordinary air compressors.



SERVO SYNCHRONOUS MOTOR

### FEATURE COMPARISON

1. Small size, quick response, high overload capacity, narrow speed range
2. Low torque at low speed, small fluctuation, stable operation
3. Low noise, high efficiency
4. The back-end encoder feedback (optional) constitutes a DC servo and other advantages.
5. Large transformer range, adjustable frequency
6. The step angle of the asynchronous motor is generally 3.601.80, and the AC servo motor control precision is guaranteed by the rotary encoder at the rear end of the motor shaft. The step angle is 0.0360, which realizes the closed loop control of the position, speed and torque, and overcomes the step. Into the motor out of step
7. DIFFERENT OPERATING PERFORMANCE: The control of the asynchronous motor is open-loop control. If the start-up frequency is too high or the load is too large, the phenomenon of loss or stall may occur. When the speed is too high, overshoot may occur. Therefore, in order to ensure the control accuracy, it is necessary to handle the rise. Speed problem. The servo drive system is closed-loop control. The drive can directly sample the feedback signal of the motor encoder. The position loop and the speed loop are internally formed. Generally, there will be no stepping motor or overshoot phenomenon, and the control performance is more reliable.
8. DIFFERENT SPEED RESPONSE PERFORMANCE: It takes 200-400 milliseconds for the asynchronous motor to accelerate from rest to working speed (usually a few hundred revolutions per minute). The AC servo system has good acceleration performance. It needs only a few milliseconds to accelerate from standstill to its rated speed of 3000 RPM. It can be used to request quick start. Stop control
9. COMFORT: Heat and noise reduced significantly

**To put it simply, the kind of ordinary motor that you normally see, after a power failure, it will turn for a while because of its own inertia, and then stop, and the servo motor is said to stop and stop.**

### MAINTENANCE OF AIR COMPRESSOR



We provide selective maintenance services for customers equipment maintenance. The content is customized for your equipment. You can choose a single price maintenance or choose long-term parts supply or preventive maintenance contract, through the above contract, you can enjoy valued service and guarantee and overhauled and updated parts at competitive price. We also provide energy saving solution, such as energy recovery, frequency conversion, and energy-saving optimization systems, can greatly reduce your production cost.

# THE COMPARISON BETWEEN SERVO INVERTER COMPRESSOR, INVERTER COMPRESSOR AND SCREW AIR COMPRESSOR WITHOUT INVERTER

**For example:** A 90kw, Energy Efficiency (0.8Mpa international specific power is 7.3, 0.7MPa The motor energy efficiency remains unchanged, the specific power is 6.8)( Max pressure is 0.8Mpa, unloading pressure 0.7Mpa) air-cooled compressor 70% of displacement.  
Customer's actual air consumption: (Assumption) input power 90KW÷7.3KW/M3×70%=8.63Nm3

**AirKing servo inverter screw air compressor:** According to the actual displacement demand, Constant pressure 0.7MPa,  
**Required power = displacement 8,63Nm3\*specific power 6.8KW/M3=58.68KW**

Inverter compressor: The average actual input power per minute: (Load power:90KW×70%=63kw)+(Unloading power: 90KW×30%\*0.45=12.1KW)=75.1KW  
Screw air compressor without inverter:

The average actual input power per minute(Power 90KW\* Service Factor:1.1=99KW)

**Compare inverter compressor, the servo inverter compressor saving more energy power: 75.1kw-58.68kw=16.4kw/hour**

**The servo inverter compressor is 20% higher effectiveness than Inverter compressor**

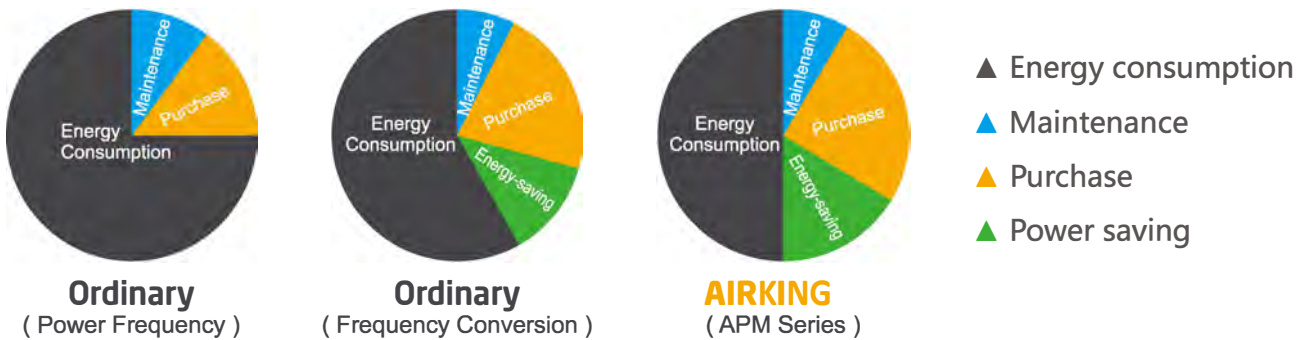
**Compare screw air compressor without inverter, the servo inverter compressor saving more energy power: 99KW-58.68KW = 40.3KW**

**The servo inverter compressor is 40% higher effectiveness than screw air compressor without inverter.**

If each machine is working 14 hours a day, working 240 days a year, energy power cost USD 0.19/degree,

**Compare screw compressor without inverter, the servo inverter compressor saving energy power cost: 40.3\*14\*240\*USD 0.19= USD 25727.00**

**Compare inverter compressor, the servo inverter compressor saving energy power cost: 16.4\*14\*240\*USD0.19=USD10469.00**



## 8000 hours of operation per year, **POWER SAVING:**

Power ( KW )	18.5kW	22kW	37kW	45kW	55kW	75kW	90kW	110kW	132kW	160kW
Saving ( KW-h )	51800	61600	103600	126000	154000	210000	252000	308000	369600	448000



Only use genuine parts and service of AirHorse Compressor Co., Ltd., to ensure the normal operation of the compressor group and normal life to the greatest extent.

## SERVO VARIABLE SPEED DRIVE SCREW AIR COMPRESSOR TECHNICAL PARAMETER LIST

Model	Exhaust Pressure (Mpa)	Air Flow (m³/min)	Motor Power (KW)	Size (L×W×H)mm	Outlet Size (size)	Unit Weight (Kg)	Motor Shell Material																																																																															
APM-20A	0.8	2.3	15	1160x700x1100	3/4"	350	Aluminum																																																																															
	1.0	2.0						APM-30A	0.8	3.8	22	1200X900X1150	1"	530	1.0	3.6	APM-40A	0.8	5.2	30	1560X1000X1365	1 ½"	630	1.0	4.8	APM-50A	0.8	6.5	37	1560X1000X1365	750	1.0	5.7	APM-60A	0.8	7.5	45	1560X1000X1365	830	1.0	6.8	APM-75A	0.8	10.5	55	1800X1070X1490	1120	1.0	8.9	APM-100A	0.8	13.5	75	1800X1070X1490	2"	1290	1.0	11.5	APM-120A	0.8	16.5	90	2100x1400x1780	1900	1.0	13.7	APM-150A	0.8	20.5	110	2500x1450x1800	2300	1.0	17.9	APM-175A	0.8	24.0	132	2700x1550x1800	2 ½"	3500	1.0	21.3	APM-220A	0.8	28.5
APM-30A	0.8	3.8	22	1200X900X1150	1"	530																																																																																
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