90-160kW Micro Oil Screw Air Compressor 7-12.5barg 13-31.5m³/min

Our Product Introduction

Basic Information

- Place of Origin: China
- Brand Name: Aipu
- Model Number: GDK 90-160kW
- Minimum Order Quantity: 1PC
- Price: negotiable
- Packaging Details: container
- Delivery Time: 10
- Payment Terms: tt
- Supply Ability: 100t/y

Product Specification

- Exhaust Pressure: 7.0-12.5barg
- Air Flow: 13-31.5m³/min
- Type: Micro Oil Screw Air Compressor
- Rated Power: 90kW-160kW
- Noise Level: ≤80dB(A)
- Weight: 1720-2935kg
- Highlight: **90-160kW screw air compressor**, **oil lubricated air compressor 7-12.5barg**, **industrial air compressor 13-31.5m³/min**

Product Description

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The GDK90-160KW micro oil screw air compressor adopts advanced screw technology, combined with high-efficiency design and low fuel consumption characteristics, designed specifically for industries, manufacturing, construction, and other fields that require stable air sources. This series of products is known for high reliability, energy conservation, environmental protection, and low maintenance costs, and is suitable for medium and high voltage application scenarios.

Core Features:

Permanent magnet variable frequency motor

The Grundendfos permanent magnet frequency conversion series air compressor is equipped with a permanent magnet synchronous motor drive. Compared with traditional electric excitation motors, permanent magnet motors, especially rare earth permanent magnet motors, have a simple structure and reliable operation; Small size and light weight; Low loss and high efficiency; The motor has significant advantages such as flexible and diverse shapes and sizes. Therefore, its application scope is extremely wide, almost covering various fields such as aerospace, national defense, industrial and agricultural production, and daily life.

IE5 energy efficiency, super efficient and reliable motor

IP66 protection level

Large size bearings ensure service life

Compared with ordinary frequency motor driven air compressors, permanent magnet synchronous motor drive has the following advantages:

1.Motor performance advantages

A major feature of hybrid permanent magnet motors is their detachable stator winding, which can be replaced on site. Secondly, its small size and high power characteristics (only 33% of the volume of traditional variable frequency motors, while the magnetic flux is three times that of traditional variable frequency motors) allow it to be directly connected to and driven by the male rotor of the host. Finally, its unique layout eliminates the use of worn parts and motor bearings in the motor, eliminates losses in the rotor excitation system, and improves efficiency by 5-10%.

2.Wide frequency modulation range

The rotor does not require electrical excitation, and the low-speed performance of the motor is good. Advanced position free vector control technology is adopted, and the frequency conversion range of the motor can achieve 25% -150%, while asynchronous frequency conversion can only achieve 50% -100%. Therefore, compressors driven by permanent magnet motors can achieve lower speed no-load operation and achieve no-load energy saving.

3.Unlimited start/stop

Hybrid permanent magnet motors have the ability to start/stop infinitely to meet gas requirements and will not cause damage to the motor like traditional motors. When the gas consumption of the unit drops to its lowest point, it will shut down, saving energy waste caused by unloading traditional air compressors.

4.Low noise

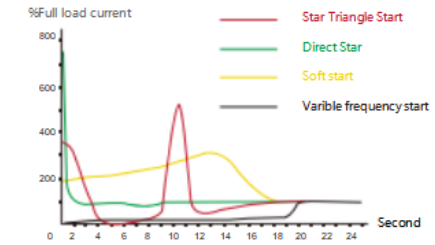
Reasonable slot pole coordination, magnetic field design, wider operating frequency, and lower operating noise.

5.Increase in motor air gap

The increased air gap of the motor can enable HPM motors to operate normally in more harsh environments, eliminating the trouble of shutdown.

6.Compact structure, small volume, and light weight

Permanent magnet rotors have a small volume and high power density.



Start smoothly

No peak starting current

Completely eliminating energy consumption during unloading and reducing the burden on electrical components

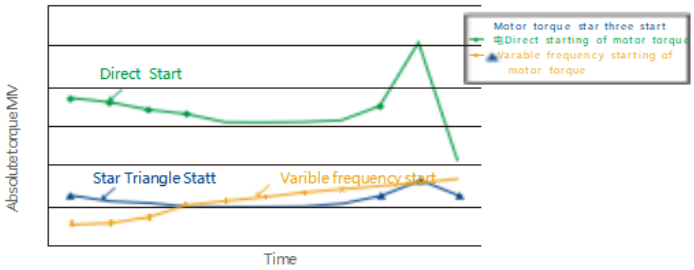
The variable frequency starting current is only about 1.5 times the rated current, without any impact on the power grid

Stable output pressure

Variable frequency control maintains the pressure band within 0.1 bar

The compressed air pressure for transmission is stable - no need to configure large air storage tanks

The pressure will not exceed the required value, and energy will not be wasted



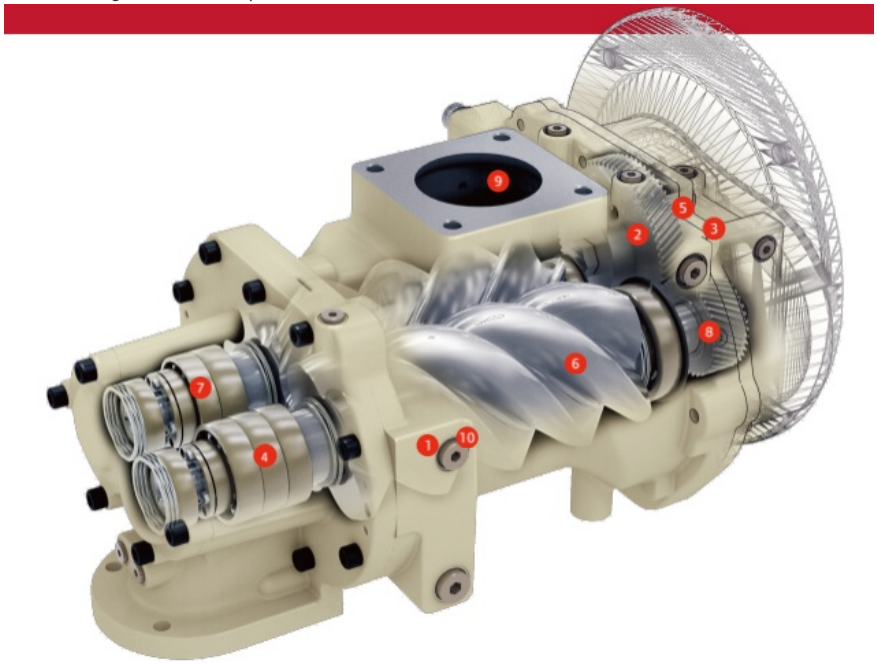
No startup impact

Low starting torque of the motor, no impact on mechanical components, longer working life of bearings, etc

Only transmit the required torque according to actual needs, without wasting any excess energy

Host

The host is the core part of the screw air compressor. The original intention of the host design is to ensure reliable quality, stable performance, and high operating efficiency, which not only reduces manufacturing deviations but also enables precise installation of the host. And some other components in the air compressor provide important support and control for the reliable operation of the host. The GDK90-160 series adopts a newly designed high-efficiency host, with an average energy efficiency improvement of over 10%, and achieves long-term reliable operation.



The meticulous arrangement of lubrication points can effectively deliver lubricating oil to the required location, improve reliability, and reduce energy consumption

Advanced gear design enables more efficient and reliable transmission of driving energy

Integrated gearbox can reduce wind resistance loss and transmission system length, making performance more efficient and maintenance more convenient

Enhanced bearing arrangement helps reduce resistance, improve energy management, and thus enhance reliability and performance

The maintenance free sealed transmission system does not require regular maintenance and can protect it from damage caused by dust and moisture

Optimized screw rotor profiles can greatly improve energy efficiency and exhaust volume, while also reducing energy costs

Low friction bearing arrangement helps improve energy efficiency

Optimized gear lubrication increases operational reliability and reduces energy consumption by cleverly injecting lubricating oil into the gear meshing area

The streamlined inlet and outlet channels reduce pressure drop

Optimized fuel injection process reduces temperature and improves efficiency during compression process

Transmission mode

The motor and host of the GDK permanent magnet frequency conversion series products adopt a coaxial direct drive system, which is a more effective, reliable, and robust design. Coaxial transmission reduces mechanical losses of equipment such as belts and gears. Coaxial connection method results in higher transmission efficiency. Simultaneously maintaining permanent coaxiality, the machine base is completely sealed to prevent impurities in the air and ensure smooth power transmission.

Efficient cold air intake system

intake filter

The efficiency of the intake filter is as high as 99.5%, with an accuracy of over 3 microns. The intake filter and intake valve are directly connected, making replacement more convenient; The intake valve integrated with solenoid valve reduces pipeline connections, minimizes leakage points, reduces intake resistance, increases suction efficiency, and improves compression efficiency.

Efficient nano coated air filter with high filtration performance, targeting 0.3um, which is more than three times that of ordinary filter materials.

Independent cold air intake channel

GDK has newly designed an independent cold air intake channel, which has a lower intake temperature, larger air volume, lower pressure drop, and greatly improves the efficiency of the host.
Reduce the exhaust temperature of the entire machine, extend the service life of the pipeline, and greatly improve the performance of the cooler.

Cooling system

The GDK series adopts an independent arrangement of oil coolers and aftercoolers. Compared with the traditional welded cooler arrangement, it avoids the failure of the cooler caused by thermal stress concentration at the weld seam due to the different expansion coefficients of cooling oil and compressed air, and extends the service life of the cooler. Replacing the cooler is more convenient, saving customers' usage and maintenance costs.

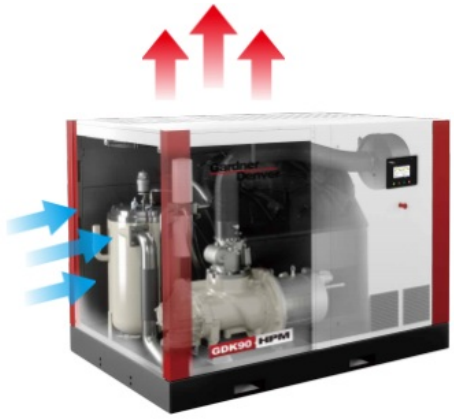
Independent air duct design for oil cooling and rear cooling - subverting the traditional parallel design mode, installing oil cooling and rear cooling separately on two sides, fundamentally eliminating the influence of thermal stress and thermal expansion

Side installation, compared to top installation, has higher after-sales maintenance efficiency

The air duct is completely independent, reducing the power consumption of the fan while ensuring that the core components can achieve the desired cooling effect

The synchronized cooling of the internal components of the unit through the rear air duct not only cools but also provides sound insulation and noise reduction for the entire machine

Large margin aftercooler,<10 º C CTD (air-cooled&water-cooled), can adapt to relatively harsh environments, ensuring normal operation of the entire machine at an ambient temperature of 46 º C



Cooling fan

variable-speed control

The fan adopts a star delta control logic to reduce the frequency conversion power. Three fans are linked for control, improving the energy efficiency of the unit and ensuring cooling performance

Tilted installation

The oil cooled fan is installed diagonally above the cooler, ensuring cooling air flow while greatly saving unit space; The tilt angle has undergone rigorous FEA simulation to ensure better cooling effect

Pull type maintenance

The cooling fan can be slid along the lower slide rail for maintenance, which can be easily operated by one person, greatly improving the efficiency of fan after-sales service

Suction cooling fan

Reduce the suction temperature on the surface of the cooler, distribute the air evenly on the surface of the cooler, and improve the cooling and heat transfer efficiency; Compared to blowing cooling methods, suction cooling has no dead corners and better cooling effect

Pipe system

All connecting components in key areas are sealed with fluorine rubber O-ring end faces

The possibility of leakage is almost completely eliminated, and the connection can be repeated infinitely

Eliminating the axial clearance required for typical sealed connections

chemical resistance

The O-ring seal is a more effective sealing structure that prevents oil leakage according to the standards of the American Association of Automobile Manufacturers. Compared with typical threaded connection seals, this advanced sealing method eliminates axial clearance, is easy to install, and the connecting parts will not deform due to tight fixation, fundamentally improving the leakage prevention level.

The whole machine adopts the same flange design - reducing vulnerable parts and facilitating maintenance.

High temperature resistant unit components - including intake solenoid valves, pipelines, electronic components, etc., all meet the high temperature resistance standard of over 100 º C.

Oil and gas separation system

The oil separation core adopts a specially designed folding+winding type oil separation core, made of multi-layer and two-stage reinforced special fiber materials. It has a large separation area, slow flow rate, excellent separation effect, long service life, and an accuracy of 0.5 microns, ensuring that the exhaust oil content of the unit is less than 3ppm.

Innovative integrated oil separation core design for secondary return pipes, eliminating the need for separate maintenance of the secondary return pipes, reducing unit height, and improving after-sales service efficiency.

Air compressor IoT platform iConn

The iConn air compressor IoT platform aims to provide customers with real-time data management of compressed air systems with peace of mind, thereby maximizing their unit stability. At the same time, with insights and analysis of big data, it helps Grundfos and customers continuously optimize services and improve production efficiency.

The components of the Internet of Things platform include

Hardware - For new machines, a controller with an embedded data box can be provided as standard at the factory; For existing units in the after-sales market, edge devices can be installed to connect and read the unit controller information

Communication - Transfer data from controllers and edge devices to the cloud via 4G network

Software - including the internal management platform of Grundfos and the client platform used by end-users, both including web versions and apps

Technical Support Team

Chinandenfu IoT Platform iConn Function

Unit operating parameter report and reporting function

Real time data based monitoring of unit operation status, fault alarms, and event notifications

Energy consumption and reliability diagnosis analysis of problem diagnosis based on predictive analysis

Application area

Manufacturing industry: automobiles, mechanical processing, injection molding, spraying, etc
Food&Medicine: Packaging, Filling, Pneumatic Conveying (with post-processing required)
Electronics industry: SMT surface mount, precision instrument manufacturing
Other: Mining, construction, textile, etc

Product functions and specifications

Model	Rated pressure barg-50HZ	Rated power kW	Rated gas volume m³/min	External dimensions L x W x H (mm)	Weight (air-cooled/water-cooled) kg
GDK fixed frequency standard unit performance					
GDK90FS-7A/W	7	90	17.5	2300 x 1500 x 1700	2220 / 2080
GDK90FS-8A/W	8	90	17	2300 x 1500 x 1700	2220 / 2080
GDK90FS-10A/W	10	90	15	2300 x 1500 x 1700	2220 / 2080
GDK90FS-12.5A/W	12.5	90	13	2300 x 1500 x 1700	2220 / 2080
GDK110FS-7A/W	7	110	20.6	2300 x 1500 x 1700	2250 / 2110
GDK110FS-8A/W	8	110	20	2300 x 1500 x 1700	2250 / 2110
GDK110FS-10A/W	10	110	17.6	2300 x 1500 x 1700	2250 / 2110
GDK110FS-12.5A/W	12.5	110	15	2300 x 1500 x 1700	2250 / 2110
GDK132FS-7A/W	7	132	25.5	2300 x 1500 x 1700	2880 / 2835
GDK132FS-8A/W	8	132	25	2300 x 1500 x 1700	2880 / 2835
GDK132FS-10A/W	10	132	22.5	2300 x 1500 x 1700	2880 / 2835
GDK132FS-12.5A/W	12.5	132	17.5	2300 x 1500 x 1700	2880 / 2835
GDK160FS-7A/W	7	160	30.6	2300 x 1500 x 1700	2980 / 2935
GDK160FS-8A/W	8	160	30	2300 x 1500 x 1700	2980 / 2935
GDK160FS-10A/W	10	160	26.2	2300 x 1500 x 1700	2980 / 2935
GDK160FS-12.5A/W	12.5	160	22	2300 x 1500 x 1700	2980 / 2935
Performance of GDK Permanent Magnet Variable Frequency Standard Unit					
GDK90HPM-A/W	7月10日	90	6.1-18.3	2300 x 1500 x 1700	1720 / 1580
GDK110HPM-A/W	7月10日	110	7.5-21.8	2300 x 1500 x 1700	1730 / 1600
GDK132HPM-A/W	7月10日	132	8.9-25.5	2300 x 1500 x 1700	1850 / 1805
GDK160HPM-A/W	7月10日	160	10.4-31.5	2450 x 1500 x 1700	2175 / 2058

Packing and Shipping:

Product Packaging:
The Micro oil screw air compressor comes in a sturdy cardboard box with the product image and specifications printed on the outside. Inside, the product is securely packaged with foam inserts to prevent any damage during transportation.
Shipping:
Our standard shipping time is 3-5 business days. For expedited shipping, please contact our customer service team. We ship via trusted carriers such as UPS, FedEx, and USPS and provide a tracking number for your convenience.

FAQ:

Q: What is the brand name of this product?
A: The brand name of this product is Aipu.
Q: What is the model number of this product?
A: The model number of this product is Micro oil screw air compressor.
Q: Where is this product made?
A: This product is made in China.
Q: Does this product have any certifications?
A: Yes, this product is certified by ce.ul.
Q: What is the minimum order quantity for this product?
A: The minimum order quantity for this product is 1pc.

Q: Is the price of this product negotiable?
A: Yes, the price of this product is negotiable.
Q: What is the packaging details for this product?
A: The packaging details for this product is container.
Q: How long is the delivery time for this product?
A: The delivery time for this product is 10 days.
Q: What are the payment terms for this product?
A: The payment terms for this product is tt.
Q: What is the supply ability of this product?
A: The supply ability of this product is 10000t/y

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