Gardner Denver Air Compressor

Gardner Denver

Ingersoll Rand

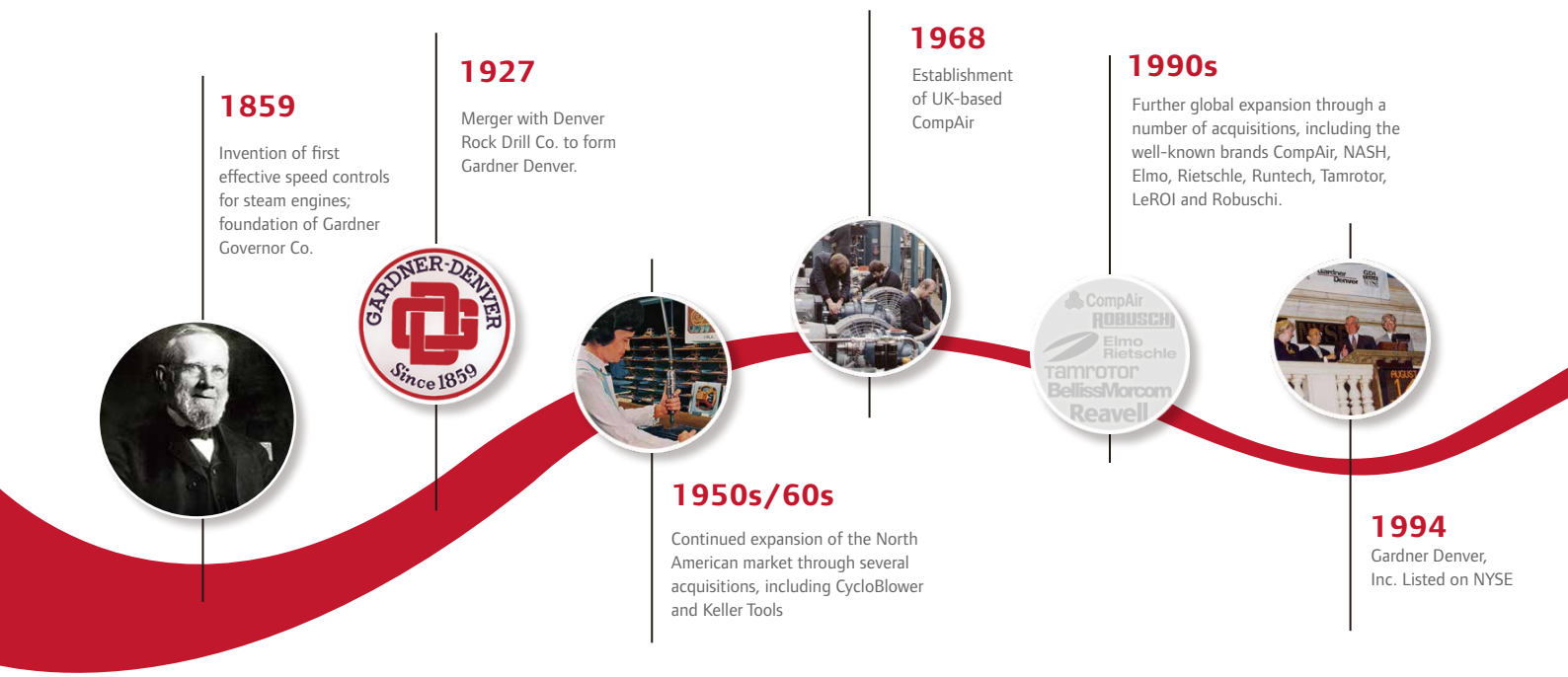
Ingersoll Rand Inc. (NYSE:IR), driven by an entrepreneurial spirit and ownership mindset, is dedicated to Making Life Better for our employees, customers, shareholders, and planet. Customers lean on us for exceptional performance and durability in mission-critical flow creation and industrial solutions. Supported by over 80+ respected brands, our products and services excel in very complex and harsh conditions. Our employees develop customers for life through their daily commitment to expertise, productivity, and efficiency. For more information, visit www.IRCO.com.

Gardner Denver

Founded in 1859, Ingersoll Rand, Inc. Gardner Denver focuses on developing innovative products and engineering solutions that solve operational challenges for our customers. With global collaboration, strong customer service and in-depth expertise, we offer reliable, energy-efficient equipment for a wide range of manufacturing and process applications. As of March 1, 2020, The Ingersoll Rand Industrial segment was formally merged with Gardner Denver on March 1, 2020 to form the new Ingersoll Rand.

Now, as a larger and stronger company, we can further provide you with more comprehensive solutions and a broader portfolio of products and services. The new Ingersoll Rand is driven by an entrepreneurial spirit and an ownership mindset to make life better for our employees, customers and those around us.

With the establishment of the new company, driven by Ingersoll Rand's new goals and values, and in line with the Company's multi-brand and multi-channel development strategy, we have integrated and upgraded the existing brands and products of Ingersoll Rand, and launched the newly-designed Gardner Denver air compressors, which cover oil screw air compressors, oil-free air compressors and complete compressed air after-processing products. With abundant products, continuous innovation, and high-quality service, Gardner Denver air compressors are believed to be able to help customers achieve greater success.



Gardner Denver air compressor production base - Ingersoll Rand Wujiang Industrial Park

Completed in 2008, Ingersoll Rand Wujiang Industrial Park covers a land area of 230,000m^2 and a gross floor area of 91,000m^2 and has nearly 1,000 employees, making it one of Ingersoll Rand' largest investments in the world. As an integrated enterprise of intelligent manufacturing, it aims to achieve professional manufacturing process, reliable product quality, constant optimization and improvement, and excellent customer experience, so as to provide premium services for different business groups and partners.

Early 2000s

Gardner Denver established itself as a global provider of compressed air and vacuum technology.

2009

Gardner Denver celebrates 150 years of industrial innovations.

2013

Acquired by American multinational private equity firm KKR & Co.

2017

Gardner Denver Rejoins NYSE on May 12, 2017 as a public company once again.

2020

Completion of the merger with the Ingersoll Rand Industrial segment

Oil-flooded Screw Air Compressor

GDK 07-75kW

Reliable, Intelligent, Craftsmanship

Gardner Denver

GDK07-75 screw air compressor (Fixed Speed/VSD)

The Grander Denver brand of Ingersoll Rand is committed to providing customers with advanced compressed air systems to improve production efficiency, reduce operating cost and extend equipment life, so as to contribute to customer success. Each oil-flooded screw air compressor of the GDK series adopts innovative design, with reliable quality, leading gas volume and excellent cost performance.

Excellent airend

- Performance can be fully improved with the Ingersoll Rand airends
- Gear geometry and lubrication are optimized for lower noise and higher reliability
- Dynamic simulation of airend inlet and exhaust channels is optimized to reduce pressure drop and improve efficiency

Innovative design

- Air inlet: The perfect combination of efficient air inlet filter and ultra-low pressure-loss inlet valve reduces pressure loss and improves efficiency
- Drive: use IEC-compliant high-efficiency motor with direct gear transmission mode and without wearing parts, thus being more efficient
- Exhaust: The convenient top exhaust allows for easy ventilation to remove or recover waste heat

Intelligent control

- Touch color screen
- Built-in IoT functions
- Multi-machine joint control
- Standard Modbus, remote/local monitoring

Multiple detection for security protections

- Discharge air temperature detection
- Pressure monitor before and after oil separator
- Maintenance and service tips

VSD energy conservation

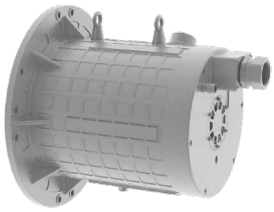
- No starting current peak, completely eliminating the energy consumption during unloading
- The VSD starting current is low and has no impact on the power grid, which is particularly important for users whose plants are located in the areas with unstable power grids. The VSD control keeps the pressure band within 0.1bar, eliminating the need for large gas storage tanks
- The pressure does not exceed the required value, and no energy is wasted
- The motor has low starting torque and small impact on mechanical parts, making the service life of mechanical parts (such as bearings) longer; the torque is transmitted based on actual needs, thus having no excess energy waste

Safe motor (fixed-speed unit)

- IP55 closed-type motor (Class F insulation, class B temperature rise), having effective dust and water-spray prevention
- Constant and stable operation at 55 °C / 131 °F

Permanent magnet motor (VSD unit)

- Compared with the AC asynchronous motor, rare-earth permanent magnet motor has simple structure, reliable operation, high power density and wide speed regulation range, becoming an ideal power choice for efficient and energy-saving air compressors
- Efficient
- Small, light
- Low noise
- Large starting torque
- No-shock starting
- Wide speed regulation range
- Equipped with efficient IE5, IP66 oil-cooled permanent magnet VSD motor, achieving Class H insulation and Class B temperature rise



Motor connection mode of the airend

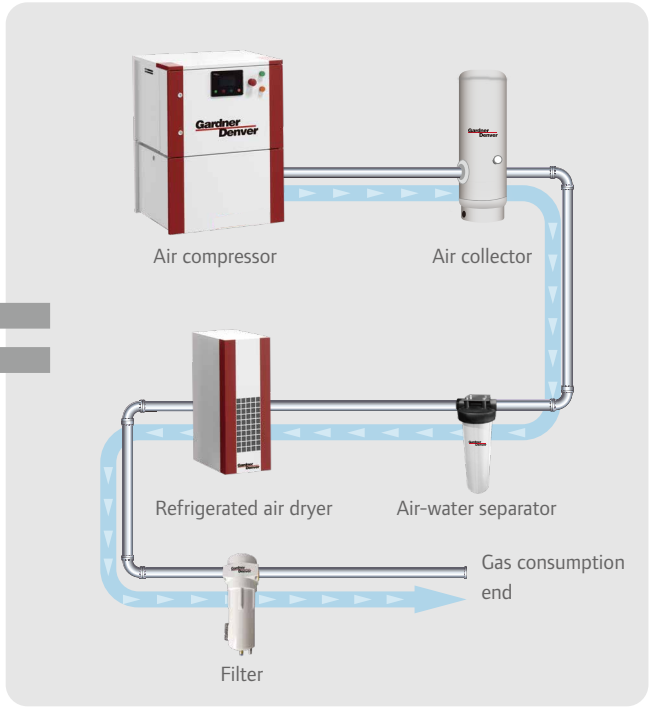
- GDK07-22 fixed-speed unit uses belt connection
- GDK30-75 fixed-speed unit uses gear direct connection
- GDK07-75 permanent magnet motor uses coaxial connection

GDK07-22TAS integrated air compressor with built-in refrigerated air dryer (fixed speed)

TAS is the abbreviation for “Total Air Solution” and can be understood as a "general solution".

When you buy a GDK07-22TAS product, you will have a complete unit of compressed air system:

TAS air compressor = air compressor + air storage tank + air-water separator + refrigerated air dryer + filter



Efficient refrigerated air dryer

- Standard environmental refrigerant R134a
- Pressure dew point at 7-10°C, more effective in water removal
- Three-in-one anti-corrosion aluminum alloy condensation purifier design, avoiding internal corrosion and rust of pipes

High-precision oil removal filter

- Filter particles above 0.01μm, water mist and oil mist, with residual oil content at 0.01ppm@7barg
- Filter element design with stainless steel inner/outer support mesh, enhancing filtration capacity
- The advanced filter design concept makes the filter structure more compact and the volume smaller

Air storage tank

- GDK07-11TAS standard 272L gas storage tank
- GDK15-22TAS standard 350L gas storage tank
- Optional 500L/700L gas storage tank

GDK07-75 Performance of oil-flooded screw air compressors

Model	Motor power kW	Exhaust pressure bar(g)	Volume flow m^3/min	Size (L x W x H)mm	Weight kg	Interface size BSPT
GDK07-75 fixed-speed unit parameters						
GDK07-7A	7.5	7	1.22	716 x 677 x 1061	222	G3/4
GDK07-8A	7.5	8	1.14	716 x 677 x 1061	222	G3/4
GDK07-10A	7.5	10	1.00	716 x 677 x 1061	222	G3/4
GDK07-12.5A	7.5	12.5	0.81	716 x 677 x 1061	222	G3/4
GDK11-7A	11	7	1.69	716 x 677 x 1061	225	G3/4
GDK11-8A	11	8	1.58	716 x 677 x 1061	225	G3/4
GDK11-10A	11	10	1.41	716 x 677 x 1061	225	G3/4
GDK11-12.5A	11	12.5	1.23	716 x 677 x 1061	225	G3/4
GDK15-7A	15	7	2.50	984 x 1017 x 1065	465	G1
GDK15-8A	15	8	2.40	984 x 1017 x 1065	465	G1
GDK15-10A	15	10	2.07	984 x 1017 x 1065	465	G1
GDK15-12.5A	15	12.5	1.70	984 x 1017 x 1065	465	G1
GDK18-7A	18.5	7	3.10	993 x 1020 x 1118	509	G1
GDK18-8A	18.5	8	3.00	993 x 1020 x 1118	509	G1
GDK18-10A	18.5	10	2.61	993 x 1020 x 1118	509	G1
GDK18-12.5A	18.5	12.5	2.15	993 x 1020 x 1118	509	G1
GDK22-7A	22	7	3.70	993 x 1020 x 1118	524	G1
GDK22-8A	22	8	3.60	993 x 1020 x 1118	524	G1
GDK22-10A	22	10	3.08	993 x 1020 x 1118	524	G1
GDK22-12.5A	22	12.5	2.72	993 x 1020 x 1118	524	G1
GDK30-7A	30	7	5.43	1544 x 884 x 1405	697	G1 1/2
GDK30-8A	30	8	5.21	1544 x 884 x 1405	697	G1 1/2
GDK30-10A	30	10	4.70	1544 x 884 x 1405	697	G1 1/2
GDK37-7A	37	7	6.50	1544 x 884 x 1405	742	G1 1/2
GDK37-8A	37	8	6.00	1544 x 884 x 1405	742	G1 1/2
GDK37-10A	37	10	5.50	1544 x 884 x 1405	742	G1 1/2
GDK45-7A	45	7	8.23	1544 x 884 x 1405	870	G1 1/2
GDK45-8A	45	8	8.00	1544 x 884 x 1405	870	G1 1/2
GDK45-10A	45	10	6.80	1544 x 884 x 1405	870	G1 1/2
GDK55-7A	55	7	10.60	1969 x 1234 x 1605	1472	G2
GDK55-8A	55	8	9.80	1969 x 1234 x 1605	1472	G2
GDK55-10A	55	10	8.60	1969 x 1234 x 1605	1472	G2
GDK75-7A	75	7	13.40	1969 x 1234 x 1605	1482	G2
GDK75-8A	75	8	13.00	1969 x 1234 x 1605	1482	G2
GDK75-10A	75	10	11.30	1969 x 1234 x 1605	1482	G2
GDK07-75HPM Permanent magnet VSD unit parameters						
GDK07HPM-A	7.5	7-12.5	0.15-1.18	840 x 680 x 810	169	G3/4"
GDK11HPM-A	11	7-12.5	0.15-1.65	840 x 680 x 810	182	G3/4"
GDK15HPM-A Level 1	15	7-12.5	0.92-2.54	900 x 800 x 1300	325	G1"
GDK18HPM-A Level 1	18.5	7-12.5	0.92-3.12	900 x 800 x 1300	340	G1"
GDK22HPM-A Level 1	22	7-12.5	0.92-3.66	900 x 800 x 1300	342	G1"
GDK30HPM-A Level 1	30	7-10	2.00-5.60	1544 x 884 x 1405	618	G1 1/2
GDK37HPM-A Level 1	37	7-10	2.00-6.80	1544 x 884 x 1405	628	G1 1/2
GDK45HPM-A Level 1	45	7-10	2.00-8.10	1544 x 884 x 1405	629	G1 1/2
GDK55HPM-A Level 1	55	7-10	2.00-10.10	1969 x 1234 x 1605	839	G2
GDK75HPM-A Level 1	75	7-10	2.00-12.60	1969 x 1234 x 1605	859	G2

GDK07-75 fixed-speed unit performance Sintegrated air compressors with built-in refrigerated air dryer

Model	Motor kW	Exhaust pressure bar(g)	Volume flow m^3/min	Size (L x W x H)mm	Weight kg	Air collector L
GDK07-22TAS fixed-speed unit parameters						
GDK07-7A TAS	7.5	7	1.22	1576×844×1644	457	272
GDK07-8A TAS	7.5	8	1.14			
GDK07-10A TAS	7.5	10	1.00			
GDK07-12.5A TAS	7.5	12.5	0.81			
GDK11-7A TAS	11	7	1.69	1576×844×1644	460	272
GDK11-8A TAS	11	8	1.58			
GDK11-10A TAS	11	10	1.41			
GDK11-12.5A TAS	11	12.5	1.23			
GDK15-7A TAS	15	7	2.50	1596×1246×1805	812	350
GDK15-8A TAS	15	8	2.40			
GDK15-10A TAS	15	10	2.07			
GDK15-12.5A TAS	15	12.5	1.70			
GDK18-7A TAS	18.5	7	3.10	1596×1246×1855	856	350
GDK18-8A TAS	18.5	8	3.00			
GDK18-10A TAS	18.5	10	2.61			
GDK18-12.5A TAS	18.5	12.5	2.15			
GDK22-7A TAS	22	7	3.70	1596×1246×1855	871	350
GDK22-8A TAS	22	8	3.60			
GDK22-10A TAS	22	10	3.08			
GDK22-12.5A TAS	22	12.5	2.72			

GDK07-11TAS 272L Air storage tank

GDK15-22TAS 350L Air storage tank

Service and Maintenance Kit

According to the maintenance needs of different customers at different operation time, Gardner Denver develops maintenance kits covering the whole operation cycle for customers. Customized maintenance kit can not only effectively cover the wearing parts that need to be replaced regularly, but also provide maintenance components for key parts to ensure the normal and healthy operation of the machine.

Reliability: Original professional parts constantly guarantee air quality
Planning: Perform regular maintenance according to plans to reduce the probability of failure and improve operation stability
High efficiency: One chart number replaces the individual parts list to improve the efficiency of procurement and management
Comprehensiveness: Covering all parts required for one-time maintenance or service, with shorter delivery time than individual parts
Economical efficiency: Visualized budget for maintenance service costs, and more competitive prices than buying separate parts

Content and cycle of replacement / maintenance

2000-hour service kit

- Air filter element
- Oil filter element

4000-hour service kit

- Air filter element
- Oil filter element
- Oil separator element

8000-hour service kit

- Air filter element
- Oil filter element
- Oil separator element
- Parts kit - Minimum pressure valve
- Temperature-control valve maintenance kit
- Intake valve maintenance kit
- Water cooler seal maintenance kit

Comprehensive and thoughtful after-sales service

As a professional system service provider, we have professional technical service modes and technical quality management, a strong technical service team and sufficient parts inventory, always ready for providing service for domestic and foreign customers.

- Technical guidance on newly-built air compressor stations
- Site commissioning by professional technicians
- Training of customer's equipment management personnel
- Regular visit to customers and free pre-inspection of equipment
- 24-hour free hot-line for receiving feedbacks and customer needs
- Genuine parts for quality assurance
- Multiple options for extended warranty service to meet different needs of customers
- Timing service kit for easier maintenance; by ordering the service kit, customers can have and use the right parts quickly and easily
- GD air compressor provides a variety of customization options to meet the needs of different industries and different processes
- Overall assessment of air compressor system: No matter what brand of air compressor and post-processing equipment customers use, we have a professional team and equipment to collect and analyze the data of the entire system, track system performance, and provide professional solutions to improve system efficiency, reduce leakage and reduce operation cost

New GDK Series Oil Lubricated Screw Air Compressor

90-160kW

Gardner Denver

Permanent Magnetic (PM) Variable Speed Drive (VSD) Motor

Gardner Denver PM VSD series air compressors are driven by PM synchronous motor. Compared to conventional electrically-excited motor, PM motor, especially rare earth PM motor, is featured by such significant advantages as simple structure, reliable operation, small size, light weight, low loss, high efficiency and a great variety of shapes and sizes, and thus has an extremely wide scope of application in aerospace & defense, industrial & agricultural production and almost all fields of daily life.

- IE5 superior energy efficiency and high reliability
- IP66 protection level
- Large-sized bearings ensure the service life

The air compressor driven by PM synchronous motor is superior to that driven by ordinary fixed speed motor mainly in the following aspects:

Superior Motor Performance

The hybrid permanent magnet (HPM) motor is mainly featured by its stator winds, which are detachable and field-replaceable, and can drive by directly connecting with the male rotor of the airend due to the small size and high power (with 33% smaller volume to deliver magnetic flux up to 3 times of the conventional VSD motor). Besides, the unique motor layout eliminates any wear parts and bearings, and achieves no rotor excitation loss and 5-10% higher efficiency.

Wide Range of Frequency Conversion

The motor can achieve VSD range of 25%-150% (vs 50%-100% of asynchronous VSD motor) due to its superior low speed performance without electrically excited rotor and adoption of advanced self-sensing vector control technique. Therefore, it can operate with no load at lower rotational speed to save energy.

Unlimited Start / Stop

Due to its unlimited start / stop capability, HPM motor can meet the air capacity requirement without causing any damages as a conventional motor does. When the air capacity of the unit drops to the lowest point, it will stop to prevent a waste of energy for unloading of conventional air compressor.

Low Noise

Rational slot-pole combination and magnetic field design ensures wider operating frequency and lower operating noise.

Enlarged Motor Air Gap

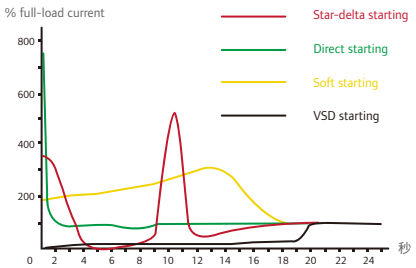
The enlarged air gap enables HPM motor to run normally in a more stringent environment with minimum downtime.

Compact Structure, Small Size & Light Weight

PM rotor has a small size and high power density.

Smooth Start

- No starting peak current
- Completely eliminate the energy consumption during unloading
- Reduced the burden on electrical components
- VSD starting current is only about 1.5 times of rated current to have no shock on the power grid

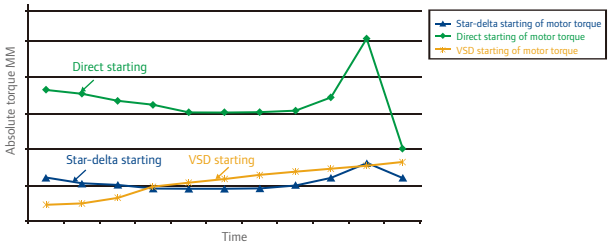


Stable Output Pressure

- VSD control can keep the pressure band within 0.1 bar
- Stable compressed air pressure - no need of a large air tank
- The pressure will not exceed the required value, resulting in no energy waste

Shock-free Start

- The starting torque of the motor is low, resulting in shock-free mechanical parts (e.g. bearings) with a longer service life
- Transfer torque as required, resulting in no energy waste



High Efficiency Fixed Speed Motor

Gardner Denver fixed speed series air compressors are driven by three-phase asynchronous motor, which is directly coupled with the gear and has IE3 superior energy efficiency as per IEC60034-30.

The main motor is elaborately selected for specific applications of the air compressor. The torque and load of the motor conforms to the special design standard for an optimization of efficiency and power coefficient under load by approximately 5% over other motors.

Motor Frame

The motor frame and end cover made of cast iron and cast aluminum can support the bearings more firmly, maintain a uniform gap between rotor and stator and make its flange coupled components permanently parallel.

Electrical Design

The rotational speed, torque and other operating parameters are designed to meet the load requirements of the compressor. The air capacity requirement of GDK series compressors can be met by the already optimal efficiency and power coefficient of the motor.

Bearing

As a powerful guarantee for smooth operation, the air compressors are fitted with vacuum exhaust bearings at the drive end and roller bearings at the discharge end, which can be lubricated by the coolant flowing through the bearing grooves. These oversized bearings have an average service life of 135,000 hours, 8 times longer than NEMA standard.

Insulation Materials

The high efficiency motor of GDK series with Class F insulation and Class B temperature rise is rated for 155℃ ambient temperature under continuous load, which delivers high reliability, longer service life and better adaptability to severe environment of the motor, as temperature is so critical to the service life of an engine.

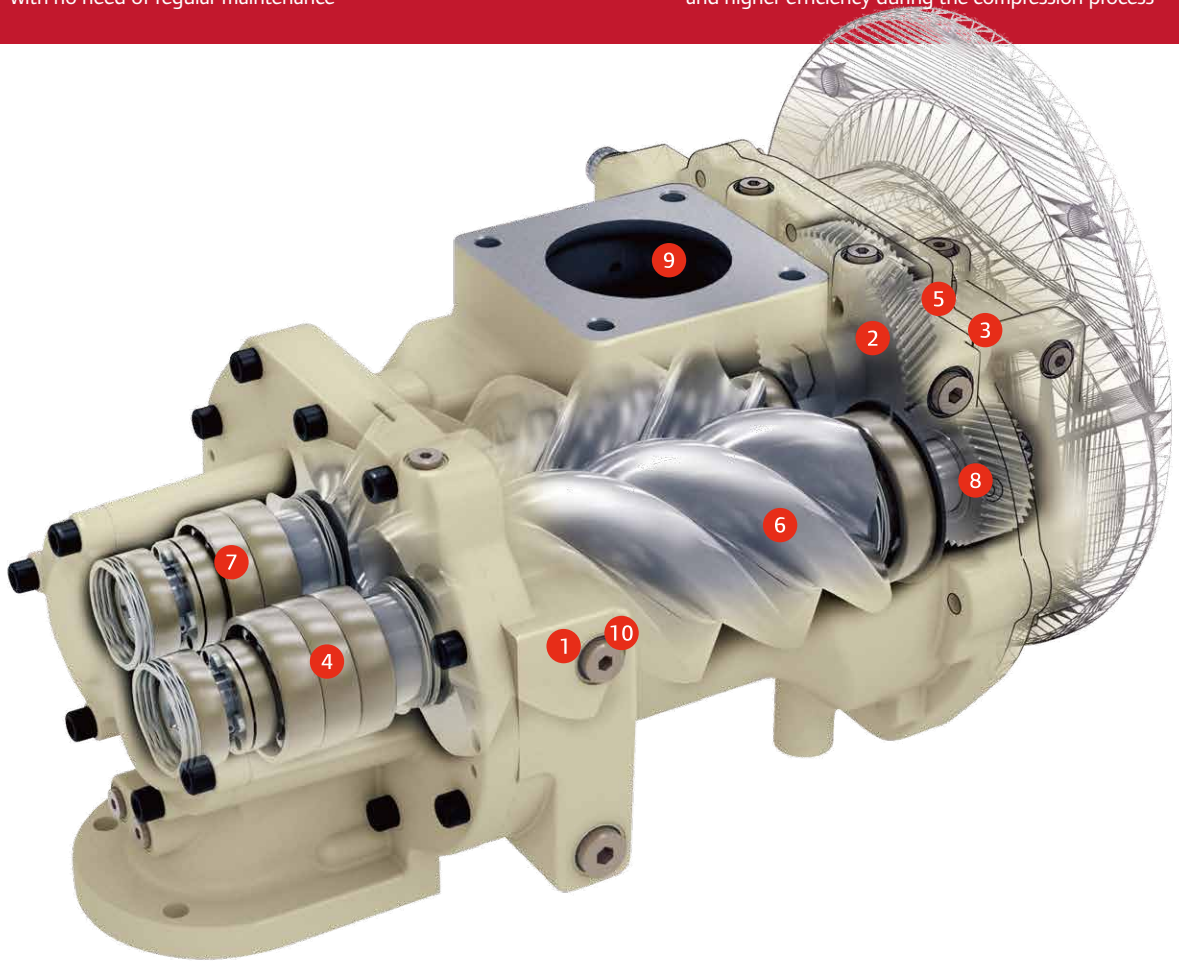
Protection Rating

The highly efficient GDK series motors are of closed type with a protection rating at IP 55, which effectively protects it against dust and moisture and guarantees the smooth operation even in a harsh environment.

Airend

As the core part of screw air compressor, the airend is designed to minimize manufacture deviation and enable accurate installation with its reliable quality, stable performance and high operating efficiency. Besides, some other components in the air compressor provide critical support and control for reliable operation of the airend. The newly designed airend with over 10% higher average energy efficiency is used in GDK90-160 series for long-term reliable operation.

1. The lubricating points are deliberately arranged to precisely deliver the lubricant to the required position effectively for higher reliability and lower energy consumption.
2. Advanced gear design enables more efficient and reliable transfer of drive energy
3. Integrated gearbox reduces windage loss and drive system length for higher efficiency & performance and easier maintenance
4. Enhanced bearing arrangement helps reduce the resistance and improve energy management for higher reliability and performance
5. The drive system is sealed to protect it against dust and moisture with no need of regular maintenance
6. The optimized screw rotor profile significantly improves energy efficiency and air capacity, and reduces energy cost
7. Low friction bearing arrangement improves the energy efficiency
8. Gear lubrication is optimized to cleverly inject the lubricant into the gear engaged position for higher operating reliability and lower energy consumption
9. Streamlined inlet and outlet passage reduces pressure drop
10. The oil spraying process is optimized for lower temperature and higher efficiency during the compression process



GDK90-160 series products

Innovative design, endorsement of patent

- **Air compressor unit** Patent No.: ZL 2022 2 0909446.6
- **Air ducting and air compressor unit** Patent No.: ZL 2022 2 0911427.7
- **Intake valve and VSD Air Compressor** Patent No.: ZL 2022 2 1382660.7.7
- **Combination valve, oil treatment components and equipment** Patent No.: ZL 2022 2 1694571.6
- **Oil separator element component, scavenge line to airend inlet, and oil-spray screw device** Patent No.: ZL 2022 2 086577.1

Type of Drive

The motor and airend of GDK PM VSD series products uses a coaxial direct-coupled drive system to be more efficient, reliable and robust, where coaxial drive reduces mechanical loss of belt gear and other devices, and coaxial connection delivers higher driving efficiency. It also maintains permanent concentricity and air-tight seal of the base to prevent intrusion of foreign materials in the air and ensure smooth power transmission.

High-efficiency Cold Air Intake System

Inlet Filter

The inlet filter, which is 99.5% efficient at 3μm and above, is directly connected to an inlet valve for simpler replacement; the inlet valve integrated with a solenoid valve reduces pipe connections & leak points and lowers inlet air resistance for higher intake & compression efficiency.

High-efficiency nano membrane air filter element has a 0.3μm particle filtration performance over three times higher than ordinary filter.

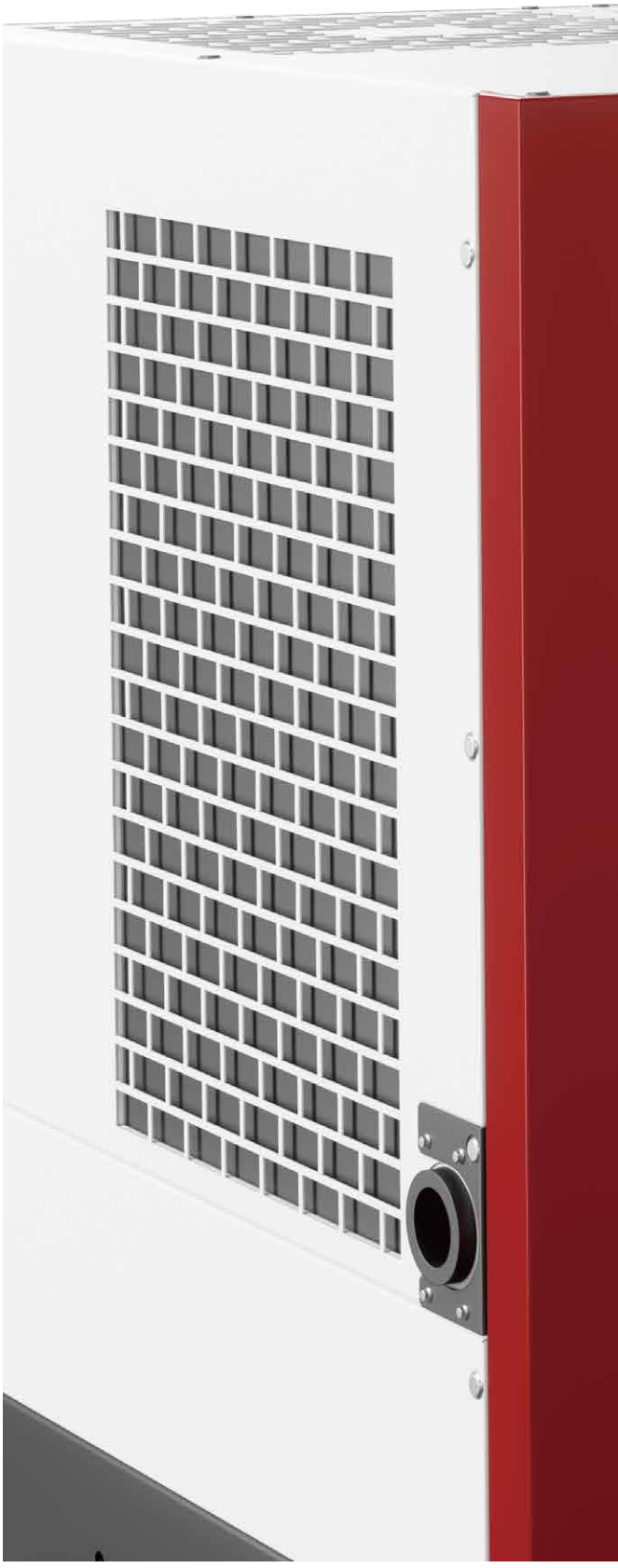
Independent Cold Air Intake Channel

The new independent cold air intake channel design of GDK with low intake temperature, greater air capacity and less pressure drop significantly improves the airend efficiency. It reduces exhaust temperature of the entire system, extends service life of pipelines, and greatly improves the cooler performance.

Cooling System

Compared to conventional welded cooler, the independent oil cooler / after-cooler arrangement of GDK series eliminates damages and failure of the coolers caused by thermal stress concentration at the weld seam due to different expansion coefficient of cooling oil and compressed air, extend the service life, and makes replacement more convenient to reduce operation & maintenance cost for customers.

- The independent oil cooler / after-cooler air duct design subverts the conventional parallel design to mount the oil cooler and after-cooler at each side, which fundamentally eliminate the influence of thermal stress & thermal expansion.
- Side mounting shows higher after-sales maintenance efficiency than top mounting.
- Completely independent air duct guarantees the ideal cooling effect for core components while reducing power consumption of the fan.
- After-cooler, as the only inlet channel of the entire system, cools and also reduces the noise of the system.
- Large margin after-cooler, <10 °C CTD (air-cooled & water-cooled) adapts to relatively harsh environment, and guarantee normal operation of the entire system at an ambient temperature of 46°C.



Cooling Fan

- **Ariable Speed Control**
  Star-delta logical control of the fan reduces VSD power, enables linkage control over three fans for higher energy efficiency of the unit, and guarantees the cooling performance.
- **Tilt Mounting**
  The oil-cooled fan is tilted above the cooler to guarantee cooling air capacity and save great space for the unit; the tilt angle achieves better cooling effect through strict FEA simulation.
- **Pull-out for Maintenance**
  The cooling fan can be slid out along the lower rail for maintenance, which can be easily done by a single person and greatly improves the after-sales service efficiency of the fan.
- **Induced Draft Cooling Fan**
  It reduces the induced draft temperature and evenly distributes air on the cooler surface to improve cooling heat transfer efficiency; compared to blazer cooling, induced draft cooling has better cooling effect with no dead corner.

Piping System

- Fluorine rubber O-ring face seal is used for all connections of key parts
- Almost no possibility of leakage
- Re-connections can be made indefinitely
- Axial clearance required for typical seal connections is eliminated
- Resistance to chemical corrosion

Using the advanced O-ring seal, as a seal structure which can prevent oil leakage more effectively in conformity with the American Automobile Manufacturers Association (AAMA) standard, to replace the typical threaded connection seal eliminates axial clearance, simplifies the installation, and requires no tightening which may cause the connector to deform, thus fundamentally improving the anti-leakage effect.

The same flange design is adopted for the entire system to reduce wearables and make maintenance convenient.

Heat-resistant components of the unit, including inlet solenoid valve, pipelines, electronic components, etc., can all withstand high temperature above 100 ºC.

Oil / Air Separation System

The custom-made folded + wound oil separator element is made of multi-layer two-stage reinforced special fiber material, and is featured by large area of separation, low flow rate, excellent separation effect, long service life and precision up to 0.5μm, which ensures that the discharge oil content of the unit is lower than 3 ppm.

The innovative oil separator element design integrated with the scavenge line to airend inlet eliminates the need for individual maintenance of the scavenge line, lowers the height of the unit, and delivers higher after-sales service efficiency.

iConn - the Air Compressor IoT Platform

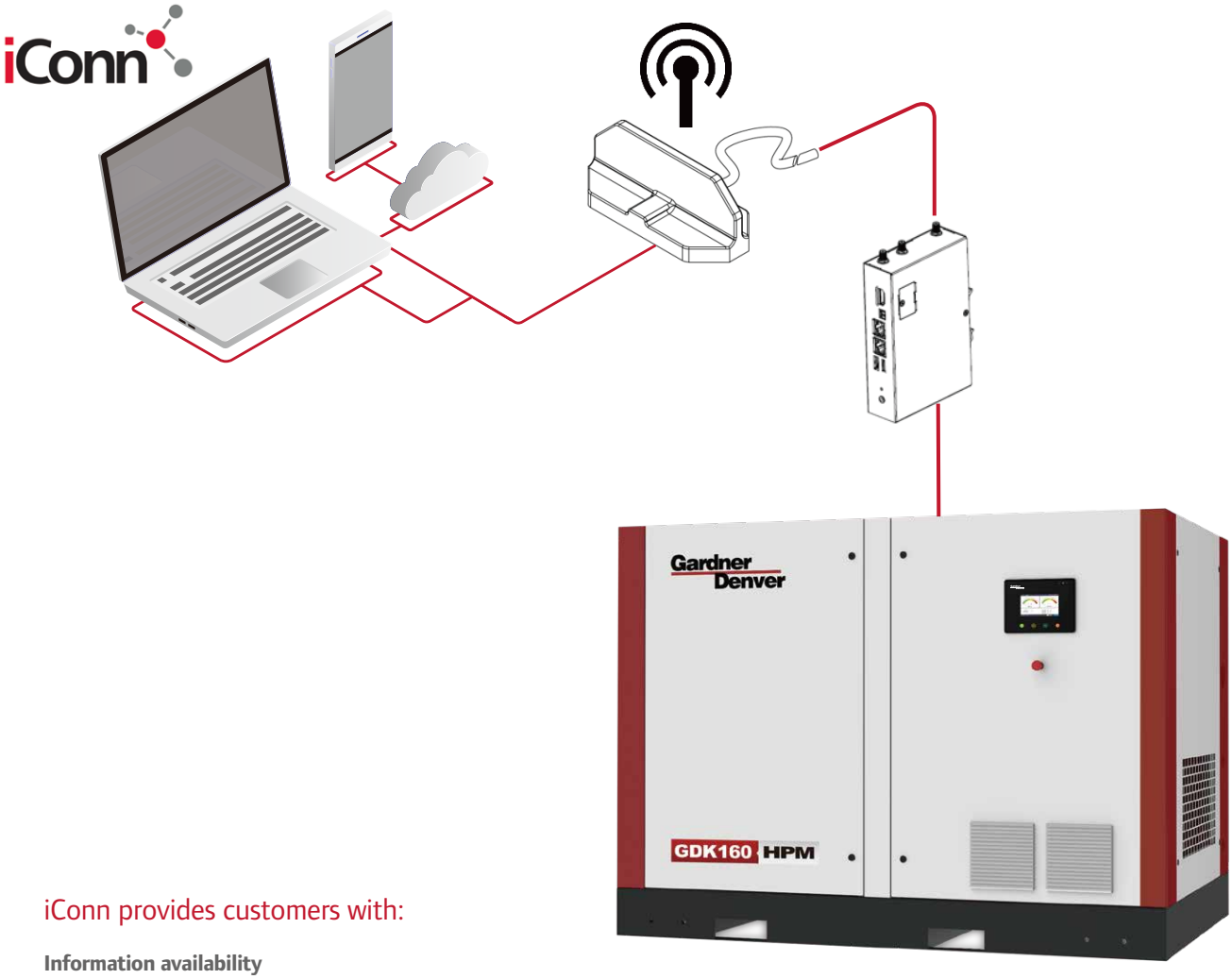
iConn, the air compressor IoT platform of Gardner Denver, aims to maximize the unit stability of our customers by enabling real-time data management on their compressed air system. The platform also helps Gardner Denver and customers to continually optimize the services and improve production efficiency through big data insight and analysis.

This IoT platform consists of:

- Hardware - a controller with embedded data cartridge can be equipped as standard for a new machine before leaving the factory; for a stock unit from the aftermarket, an edge device can be installed to connect to the controller of the unit and read information from it.
- Communication – to transmit data from the controller and edge device to the cloud through 4G network
- Software – including internal management platform of Gardner Denver and client platform used by end users, in both web and APP version
- Technical support team

Features of iConn

- List and report of operating parameters of the unit
- Condition monitoring of the unit based on real-time data
- Fault alarm and event notification
- Problem diagnosis based on predictive analysis
- Energy consumption and reliability diagnostics and analysis



iConn provides customers with:

Information availability

- Real-time operation data management and event notification of the unit
- Service schedule based on accurate run-time

Reliability for maximum uptime of the unit

- Operating state trend monitoring and fault alarm for each air compressor
- Early fault warning capability based on preset condition monitoring and predictive analysis
- Increase the first time fix rate

High efficiency

- Highly efficient business model - the customers can procure spare parts and services from the IoT platform
- Productivity enhancement - the cost of field equipment management personnel is reduced
- Peace of mind - real-time equipment operating state and notification can be obtained through APP and SMS
- Improve the reliability and efficiency of the entire compressed air system

Performance *

Model	Nominal Pressure barg-50HZ	Rated Power kW	Nominal Capacity m^3/min	Dimensions L x W x H (mm)	Weight (air-cooled / water-cooled) kg
Standard GDK Fixed Speed Unit					
GDK90FS-7A/W	7.0	90	17.5	2300 x 1500 x 1700	2220 / 2080
GDK90FS-8A/W	8.0	90	17.0	2300 x 1500 x 1700	2220 / 2080
GDK90FS-10A/W	10.0	90	15.0	2300 x 1500 x 1700	2220 / 2080
GDK90FS-12.5A/W	12.5	90	13.0	2300 x 1500 x 1700	2220 / 2080
GDK110FS-7A/W	7.0	110	20.6	2300 x 1500 x 1700	2250 / 2110
GDK110FS-8A/W	8.0	110	20.0	2300 x 1500 x 1700	2250 / 2110
GDK110FS-10A/W	10.0	110	17.6	2300 x 1500 x 1700	2250 / 2110
GDK110FS-12.5A/W	12.5	110	15.0	2300 x 1500 x 1700	2250 / 2110
GDK132FS-7A/W	7.0	132	25.5	2300 x 1500 x 1700	2880 / 2835
GDK132FS-8A/W	8.0	132	25.0	2300 x 1500 x 1700	2880 / 2835
GDK132FS-10A/W	10.0	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	7.0	160	30.6	2300 x 1500 x 1700	2980 / 2935
GDK160FS-8A/W	8.0	160	30.0	2300 x 1500 x 1700	2980 / 2935
GDK160FS-10A/W	10.0	160	26.2	2300 x 1500 x 1700	2980 / 2935
GDK160FS-12.5A/W	12.5	160	22.0	2300 x 1500 x 1700	2980 / 2935
Standard GDK PM VSD Unit					
GDK90HPM-A/W	7-10	90	6.1-18.3	2300 x 1500 x 1700	1720 / 1580
GDK110HPM-A/W	7-10	110	7.5-21.8	2300 x 1500 x 1700	1730 / 1600
GDK132HPM-A/W	7-10	132	8.9-25.5	2300 x 1500 x 1700	1850 / 1805
GDK160HPM-A/W	7-10	160	10.4-31.5	2450 x 1500 x 1700	2175 / 2058

* Subject to finally published engineering parameters

Summary of Product Features

The new Gardner Denver GDK series PM VSD screw air compressor design is time-tested and integrates multiple new technologies, such as high-efficiency cooling system and well-proven airend system, etc., which altogether ensure high reliability, efficiency and productivity for us. Our new high efficiency and energy saving products can fully meet customers' needs for product performance and value.

High Efficiency

- Well-proven high-efficiency ARES series airend
- High efficiency oil-cooled PM (VSD) motor
- Industry leading efficiency of the entire system

Reliability

- Oil-cooled PM (VSD) motor with high protection grade
- Premium Luminance controller
- Independently mounted oil cooler & after-cooler (air-cooled)
- Integrated stainless steel cooler (water-cooled)
- 100% O-ring face seal

Innovative Design

- Exquisite appearance design
- High-efficiency cold air intake system
- Independent cooler air duct
- Innovative cooling fan
- Integrated oil separation system
- IP protection for wearables

GDK Series Oil-flooded Screw Air Compressor

GDK185-315kW

Gardner Denver

Optimized internal structure design

Efficient air inlet system

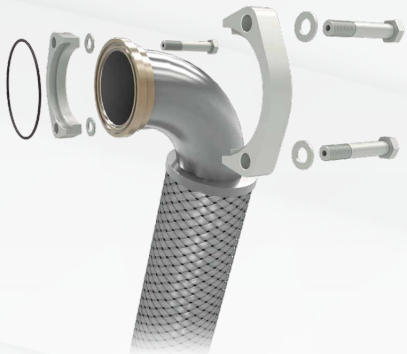
- Choose large-margin intake filters
- Adopt the air filter design with ultra-low pressure drop to improve unit efficiency
- Reduce maintenance frequency and maintenance cost

Intelligent controller

Luminance-series intelligent controllers can monitor system parameters in real time, with the standard IoT function realizing the monitoring of air compressor status anytime and anywhere as well as the early warning, so as to prevent unnecessary and sudden downtime, which may causes loss.

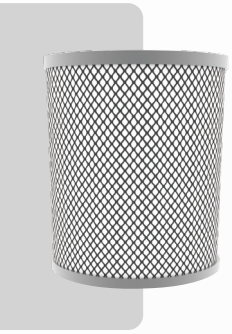
Robust and durable motor

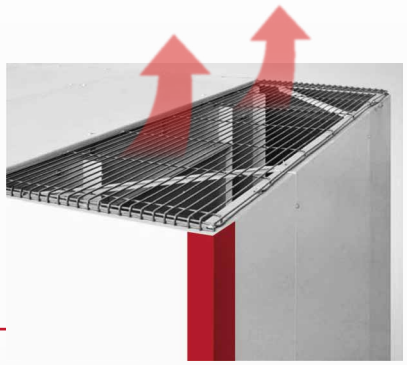
- 46℃ ambient temperature design
- Efficient quadrupole motor
- Adopt imported bearings of international famous brands
- Standard over-temperature protection for front bearing PT100
- Standard over-temperature protection for three-phase stator winding RTD



V-shield™ protection technology

- Use O-ring end sealing connectors made of fluorine rubber for all connectors at key positions.
- Almost eliminate the possibility of leakage completely.
- Repeated connection indefinitely
- Eliminate the axial clearance required for typical sealed connections
- Resistance to chemical corrosion



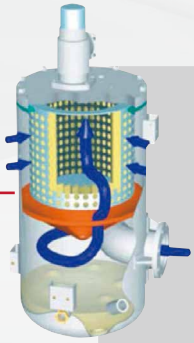


Cooling and exhaust system

- The CTD of the large-margin after-cooler is only 10.5℃, which ensures a better cooling effect.
- The water cooler uses the pipe bundles made of 304 stainless steel, which is resistant to corrosion and scaling and has better performance.
- The top exhaust design conforms to the thermodynamic principle and provides convenience for installing the air shield.

Innovative airend

Newly-designed efficient airend, with efficiency increasing by up to 16% and gas volume increasing by up to 14%, thus achieving long-term reliable operation.



Unique oil-gas separation system

- Unique two-stage buffer, and three-stage separator
- This separator reduces the oil content of the exhaust gas and reduces the number of times for coolant recharge
- Effectively reduce the impact of too much or too little oil in the separator on the oil content of compressed air.

Newly-designed efficient airend

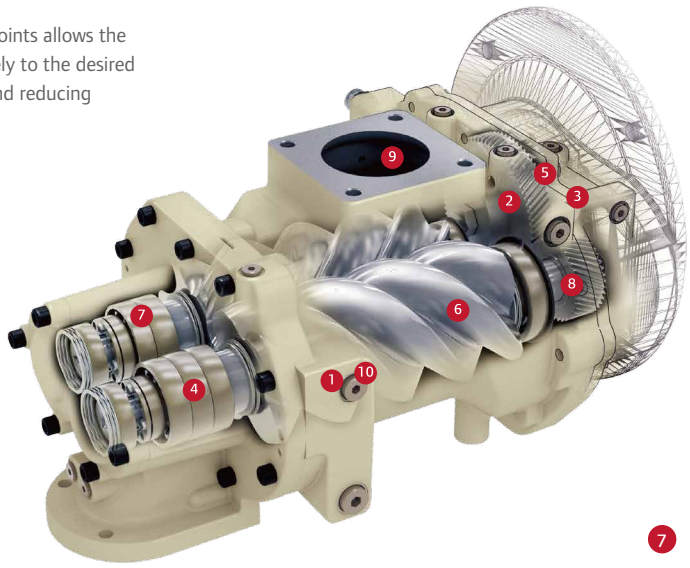
The energy consumption of air compressor accounts for a large proportion of your company's energy cost. Our engineers and designers use advanced computer-aided simulation technology to optimize the airend, which increases the efficiency by 12%. In addition, the airend has the outstanding gas production in the industry, with lower operation noise, longer service life and more reliable performance: Multiple advantages help your company further increase profits.

1. Careful arrangement of lubrication points allows the lubricating oil to be delivered precisely to the desired location, thus increasing reliability and reducing energy consumption.

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

3. Integrated gearbox reduces wind drag loss and drivetrain length, making performance more efficient and maintenance easier.

4. Enhanced bearing arrangements help reduce drag and improve energy management, thus increasing reliability and performance.



10. Optimized fuel injection process reduces the temperature and improves the efficiency in the compression process.

9. Streamlined inlet and outlet channels reduce pressure drop.

8. Optimized gear lubrication increases operational reliability and reduces energy consumption by skillfully injecting lubricating oil into gear engaging positions.

7. Low-friction bearing arrangement helps improve energy efficiency.

5. Maintenance-free sealed drive system requires no regular maintenance and protects it from dust and moisture.

6. Optimized screw rotor profile increases energy efficiency by 16%, increase displacement by 14%, and also reduce energy costs.

Advantage of VSD

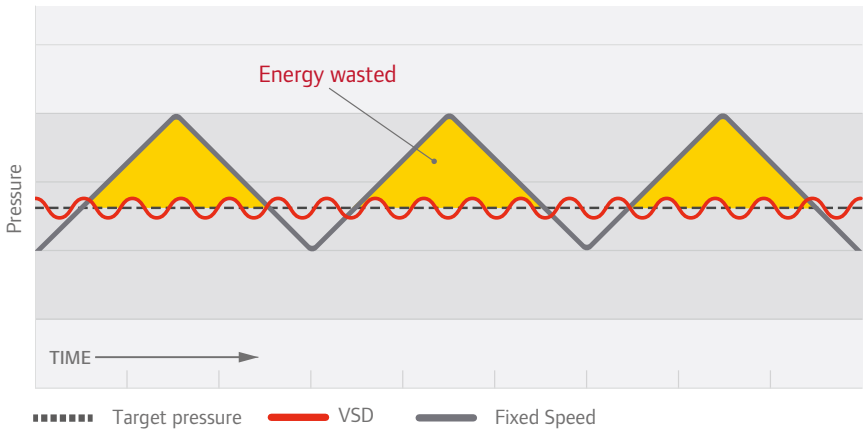
VSD air compressor improves its efficiency and reliability to a greater extent. GD air compressor can not only achieve a wide range of adjustment, but also allow the air compressor to enter the standby mode at ultra-low speed, without no-load operation. VSD air compressor can maximize energy savings, while reliably delivering clean compressed air.

Save

Energy by 35%

On the basis of traditional fixed-frequency compressor

Fixed-frequency compressor usually requires a larger control range of pressure, while variable-frequency compressor is closer to the target pressure. For every 1bar (14.5psi) above the required pressure, an additional energy consumption by 7% is required!



Performance parameters of GDK185-315VSD variable-frequency units

Unit model	Pressure range barg	Rated power kW	Gas displacement (FAD) m^3/min	Size* (L x W x H) mm	Weight kg
GDK185VSD_A	7-10	185	12.1-37.0	4076 X 1930 X 2102	4998
GDK185VSD_W	7-10	185	12.1-37.0	4076 X 1930 X 2102	4900
GDK220VSD_A	7-10	225	16.8-46.0	4000 X 1930 X 2146	6255
GDK220VSD_W	7-10	225	16.8-46.0	3517 X 1930 X 2147	6255
GDK275VSD-W	7-10	275	17.6-56.5	3140 X 2150 X 2005	5520
GDK315VSD-W	7-10	315	20.3-64.0	3140 X 2150 X 2005	5520

*GDK275/315VSD No air cooling unit

Performance parameters of GDK185-315FS fixed-frequency units

Unit model	Maximum working pressure barg	Rated power kW	Gas displacement (FAD) m3/min	Voltage V	Size (LxWxH) mm Air-cooled*	Size (LxWxH) mm Water-cooled	Weight** kg
GDK185_A/W7.5	7.5	185	37.0	380	4076 x 1930 x 2102	4076 x 1930 x 2102	4805/4725
GDK185_A/W8.5	8.5	185	35.7	380	4076 x 1930 x 2102	4076 x 1930 x 2102	4805/4725
GDK185_A/W10	10.0	185	32.4	380	4076 x 1930 x 2102	4076 x 1930 x 2102	4805/4725
GDK220_A/W7.5	7.5	225	45.6	380	4000 X 1930 X 2146	3517 X 1930 X 2147	5584
				6000	4650 X 1930 X 2146	4168 X 1930 X 2147	6600
				10000	4650 X 1930 X 2146	4168 X 1930 X 2147	6707
GDK220_A/W8.5	8.5	225	43.2	380	4000 X 1930 X 2146	3517 X 1930 X 2147	5584
				6000	4650 X 1930 X 2146	4168 X 1930 X 2147	6600
				10000	4650 X 1930 X 2146	4168 X 1930 X 2147	6707
GDK220_A/W10	10.0	225	38.8	380	4000 X 1930 X 2146	3517 X 1930 X 2147	5584
				6000	4650 X 1930 X 2146	4168 X 1930 X 2147	6600
				10000	4650 X 1930 X 2146	4168 X 1930 X 2147	6707
GDK275FS-7W	7.5	275	56.5	380	/	3140 X 2150 X 2005	5020
				6000	/	3140 X 2150 X 2005	6000
				10000	/	3140 X 2150 X 2005	6000
GDK275FS-8W	8.5	275	53.0	380	/	3140 X 2150 X 2005	5020
				6000	/	3140 X 2150 X 2005	6000
				10000	/	3140 X 2150 X 2005	6000
GDK275FS-10W	10.0	275	48.0	380	/	3140 X 2150 X 2005	5020
				6000	/	3140 X 2150 X 2005	6000
				10000	/	3140 X 2150 X 2005	6000
GDK315FS-7W	7.5	315	64.0	380	/	3140 X 2150 X 2005	5580
				6000	/	3140 X 2150 X 2005	6075
				10000	/	3140 X 2150 X 2005	6075
GDK315FS-8W	8.5	315	60.8	380	/	3140 X 2150 X 2005	5580
				6000	/	3140 X 2150 X 2005	6075
				10000	/	3140 X 2150 X 2005	6075
GDK315FS-10W	10.0	315	53.0	380	/	3140 X 2150 X 2005	5580
				6000	/	3140 X 2150 X 2005	6075
				10000	/	3140 X 2150 X 2005	6075

* GDK275/315FS without air-cooled unit ** Parameters of water-cooled unit after "/"

GDK Series Oil Lubricated Screw Air Compressor

200-355kW 2S (Two-stage) Compression

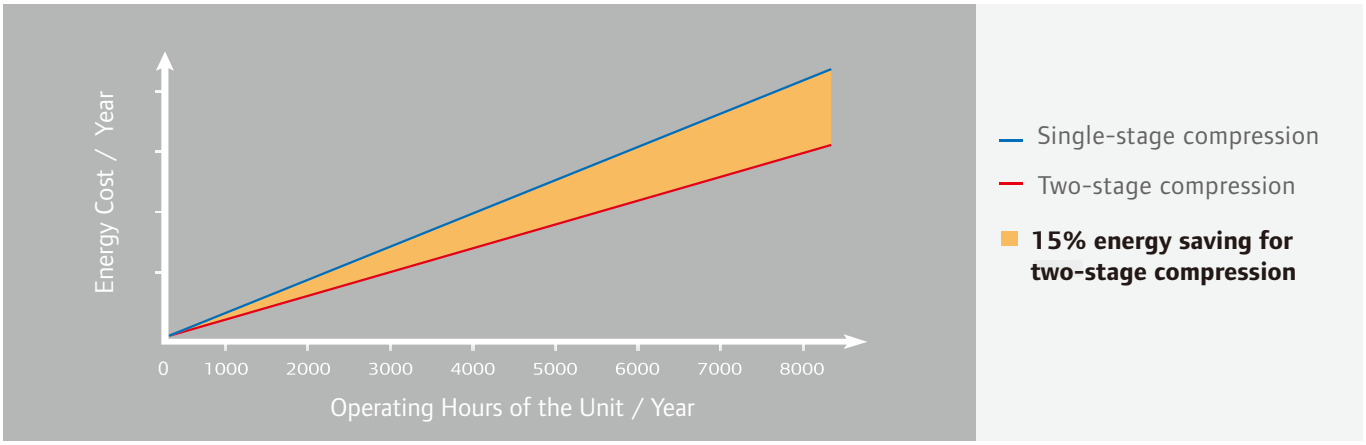
Reliability • Efficiency • Energy-saving

Gardner Denver

Two-stage Compression Technology with Higher Efficiency and Saving More Energy

During the two-stage compression process, a low compression ratio is achieved at each stage, thus reducing the bearing load and extending service life of the components.

- wo-stage compression lowers the compression ratio at each stage and reduces internal leakage
- Inter-stage cooling enables near isothermal compression at the 2nd stage to save energy



Two-stage Compression Airend Module

The compression module uses robust high-performance rotor, which contributes to more significant energy saving than single-stage compressors.

- High efficiency due to a low compression ratio
- Significantly lower impact load on rotors at all stages and heat load on components of the unit
- Effectively extended service life of the airend
- Individual compression process occurred in the 1st and 2nd stage rotor
- 15% higher efficiency than single-stage compression at full load

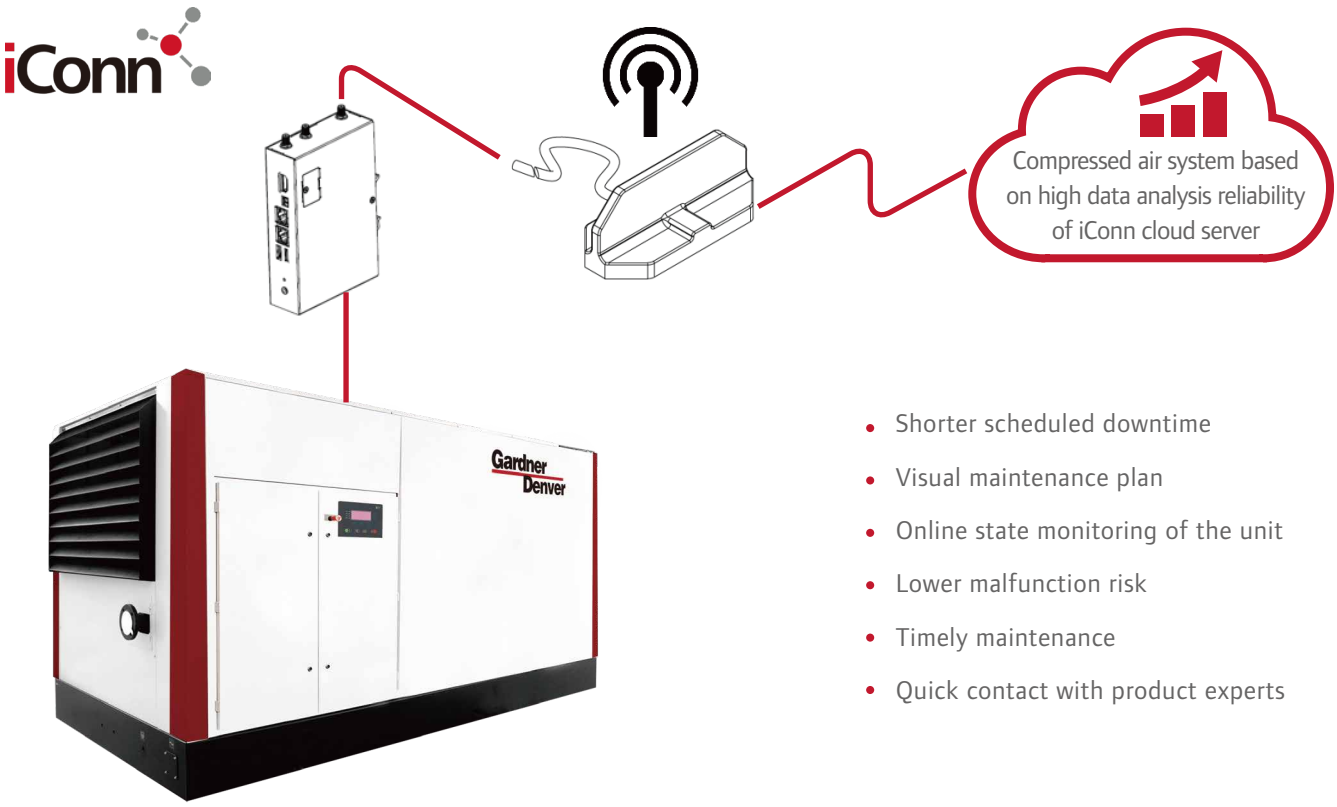
Coolant Spraying Curtain

The unique inter-cooling design ensures fast cooling by spraying coolant mist to the compressed air from the 1st stage.

- Coolant is ejected to form a curtain for unparalleled inter-stage cooling
- Compressed air is uniformly cooled before entering the 2nd stage, which greatly reduces the energy required for compression at this stage
- Less components are required without an inter-cooler

Intelligent Connectivity Platform

The data system in GD air compressor aims to maximize the uptime and facilitate safe management of the owner's operating data. The system regularly sends data to cloud data platform, which can be accessed by customers through laptop, tablet PC or intelligent mobile phone to keep up with the running status at all times. We offer layered services for customers to select the required monitoring and analysis services according to their specific operating needs.



- Shorter scheduled downtime
- Visual maintenance plan
- Online state monitoring of the unit
- Lower malfunction risk
- Timely maintenance
- Quick contact with product experts

Maintenance Service Package

Replacement / Maintenance Content and Periods

2,000 hours Package	4,000 hours Package	8,000 hours Package
Air filter element	Air filter element	Air filter element
Oil filter element	Oil filter element	Oil filter element
Greasing	Oil-air separator element	Oil-air separator element
	Motor grease	Spare parts package
		Minimum pressure valve
		Thermostatic valve care package
		Inlet air valve care package
		Water cooler seal care package
		Motor grease

Reliability: constant air quality guarantee with genuine spare parts
Scheduling: regular maintenance & care as planned to decrease failure probability and increase operating stability
Efficiency: one chart No. replacing a number of spare parts lists to increase procurement & management efficiency
Comprehensiveness: all parts and components required for maintenance or service at a time are included for shorter lead time than individual parts
Economy: visual service cost budget and superiority in price to purchase of individual parts

One-stop service with OEM quality guarantee

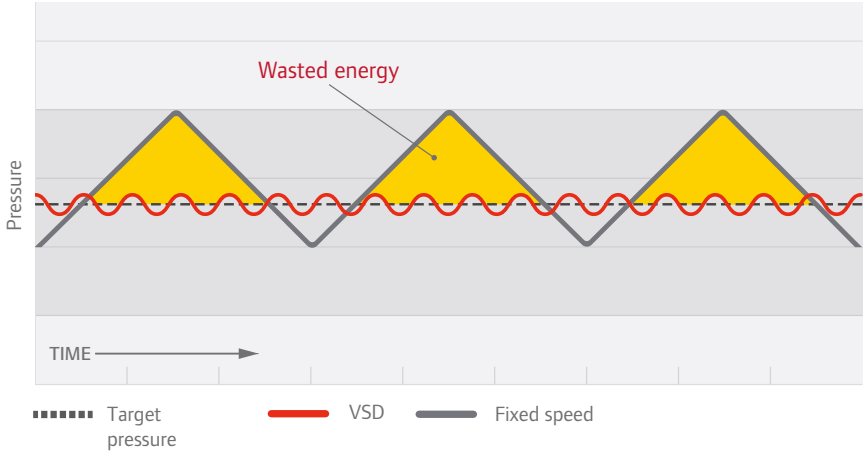
Benefits of Variable Speed Drive (VSD)

VSD further enhances the air compressor efficiency and reliability. GD air compressor enables a wide-range regulation, and can sleep, instead of running without load, when it runs at an ultra-low speed. VSD air compressor saves more energy, and also provides clean compressed air in a reliable manner.

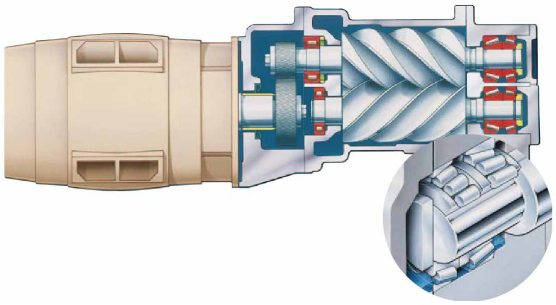
35% Less Energy

than Traditional Fixed Speed Compressors

VSD compressors are closer to the target pressure, while fixed speed ones generally require wider pressure band control range. 7% more energy will be consumed for every 1 bar (14.5 psi) increase in the required pressure!



Precise & Reliable Drive System



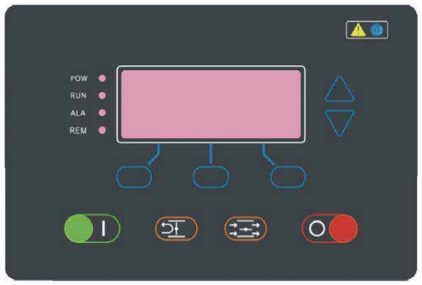
Integrated gear drive design for high reliability and efficiency

- The simple and reliable direct gear drive design with high precision and reliability, as one of the ideal power drive systems, is adopted to effectively optimize performance of the unit
- Roller bearings are fitted at the drive end for uniform force exertion and high stability
- Back to back taper roller bearings are fitted at the discharge end to maximally absorb axial thrust and radial load by means of linear contact, and also to offset radial and axial force
- Oil storage tank is designed to eliminate dry friction and extend service life. Without it, dry friction for one hour a year is expected to cause critical damage to the bearings

Robust Motor

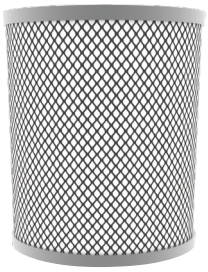
- Design for use in 46℃ ambient temperature
- Class F insulation and B temperature rise
- High efficiency four-pole motor
- International famous brand bearings
- Standard PT100 over-temperature protection for front bearings
- Standard RTD over-temperature protection for three-phase stator windings

New-generation Intelligent Controllers

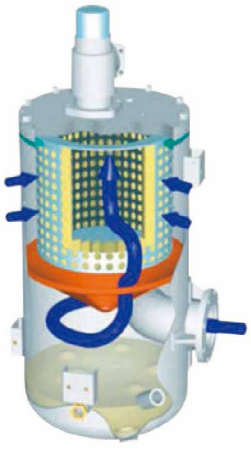


- High-resolution color display
- Flexible local and remote control options based on Modbus communication protocol
- Joint control and operation of up to 8 units

Efficient Inlet System



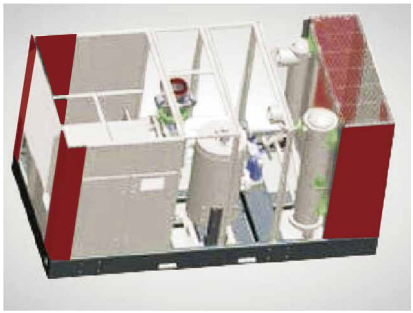
- Large-margin inlet air filter is selected
- Air filter with ultra-low pressure drop improves efficiency of the unit
- Less efforts and cost of maintenance is required



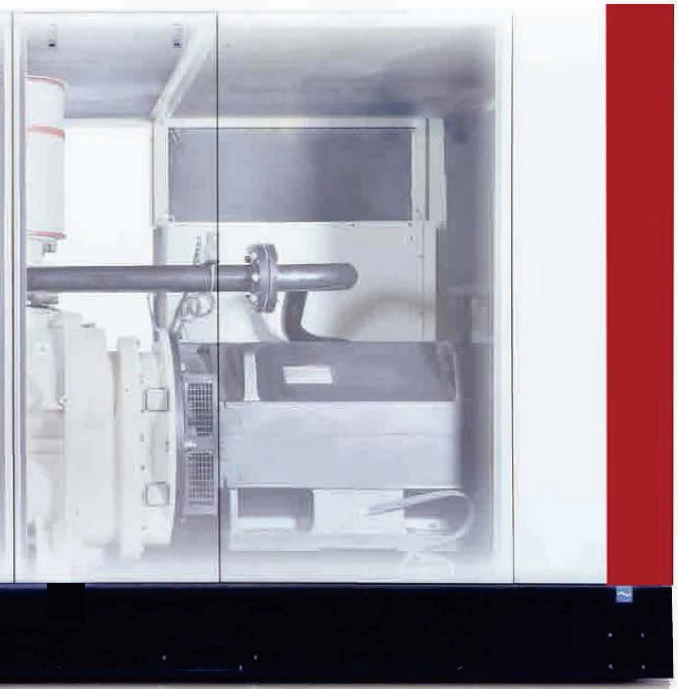
Unique Oil-air Separation System

- Distinctive three-stage separator with double buffer
- The separator minimizes exhaust oil content, and reduces coolant refills
- The impact on oil content in compressed air due to excessive or insufficient oil filled into the separator is effectively reduced

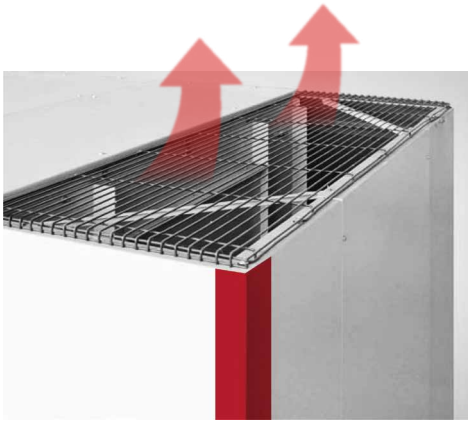
Cooling System Designed for 46°C Ambient Temperature



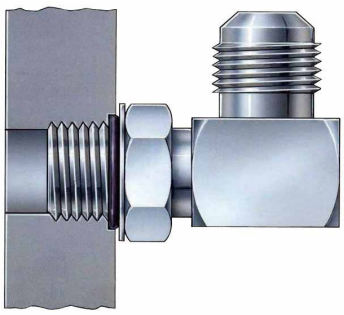
- Modular cooler design improves stability of the system
- Pipe arrangement of the unit is streamlined for better heat dissipation and higher maintenance efficiency



Venting from the Top



- The design conforms to the principle of thermodynamics
- An air guide hood can be readily installed to timely dissipate hot air



Leak-free Sealing System

ORFS"O ring"sealing

- Materials with high corrosion resistance to oil, water, gas and other mixed media
- Automatic elastic compensation function after the sealing surface is worn
- Acting as oil-free lubrication seal due to the superior self-lubrication property
- Reliable self-sealing

GDK200-355-2S Fixed Speed Performance

Model	Volume flow (m3/min)					Voltage	Dimensions mm			Weight(kg)	
	7barg	8barg	10barg	12.5barg	14barg	V	L	W	H	Air-cooled	Water-cooled
GDK200-2S	41.5	38.8	36.2	/*	29.6	380	4000	1930	2146	5860	5720
						6000	4650	1930	2146	6660	6520
						10000	4650	1930	2146	7160	7020
GDK250-2S	49.2	47.4	44.2	/	36.4	380	4000	1930	2146	6030	5890
						6000	4650	1930	2146	6740	6600
						10000	4650	1930	2146	7280	7140
GDK315-2S	65.0	62.1	56.2	50.6	/	380	4000	1930	2146	7250	7350
						6000	4650	1930	2146	7450	7550
						10000	4650	1930	2146	8080	8180
GDK355-2S	70.1	67.0	60.5	54.2	/	380	4000	1930	2146	7660	7760
						6000	4650	1930	2146	8150	8250
						10000	4650	1930	2146	8870	8970

* "/" Not available

GDK200-355-2S-VSD Performance

Model	Volume flow (m3/min)					Voltage
	7barg	8barg	10barg	12.5barg	14barg	V
GDK200-2S-VSD	16.6-41.5	15.5-38.8	14.4-36.2	/*	11.8-29.6	380
GDK250-2S-VSD	19.6-49.2	18.9-47.4	17.6-44.2	/	14.5-36.4	380
GDK315-2S-VSD	26.0-65.0	24.8-62.1	22.4-56.2	20.2-50.6	/	380
GDK355-2S-VSD	28.0-70.1	26.8-67.0	24.2-60.5	21.6-54.2	/	380

* "/" Not available

型号	Dimensions mm			Weight(kg)	
	L	W	H	Air-cooled*	Water-cooled
GDK200-2S-VSD	4000	1930	2146	5920	5780
GDK250-2S-VSD	4000	1930	2146	6090	5950
GDK315-2S-VSD	4000	1930	2146	/	7410
GDK355-2S-VSD	4000	1930	2146	/	7820

* 315/355kW air-cooled VSD compressor is not available

Gardner Denver

ENVS OIL-FREE SCROLL AIR COMPRESSOR SYSTEM

2-33 kW

FOCUS ON HIGH-QUALITY AIR

Air quality plays a decisive role in many cases. If solid particles, water vapor, oil and oil vapor are present in the compressed air system, it would lead to downtime, product damage, and even product recalls, causing damage to brand reputation, and worse, undermining the credibility of consumers and products.

Higher Reliability

The reliable product and system design can provide high-quality air, protect sensitive downstream air-using equipment, reduce maintenance work and extend equipment life

Improved Productivity

The use of a certified class 0 oil-free compressor ensures zero air pollution and eliminates the risk of product damage and waste

Enhanced Serviceability

Our oil-free equipment are specially designed for convenient maintenance and easy access to consumable components

Reduced Life Cycle Cost

The initial cost of the oil-free system is higher, but it can be offset by its operation and maintenance costs that remain lower throughout its life cycle, while keeping a higher air quality

ISO 8573 Class 0 Oil-Free Air

ISO 8573-1 Air Quality Classes

Quality Class	Oil and Oil Vapor mg/m^3
0	<0.01
1	0.01
2	0.1
3	1
4	5

Oil-free class 0 is the most stringent air class defined in part 1 of ISO 8573. Our oil-free scroll compressors are class 0 certified and contain no oil components, thus ensuring the air quality.

Oil-Free Scroll Compressors Catering to Your Applications

Gardner Denver provides a wide variety of reliable oil-free products, among which there must be ones that cater to your industry and applications. By evaluating and recommending more appropriate oil-free solutions to improve the productivity of devices, we are able to deliver final products with zero risk of pollution.

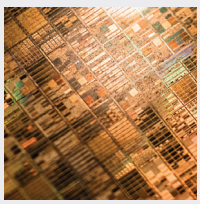

Hospitals, Laboratories, Universities


Pharmaceuticals, Biotechnologies

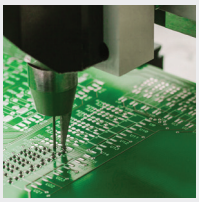

Medical Equipment, Plastics

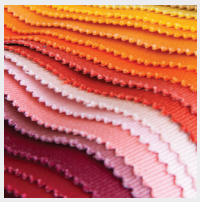

Cans, Beverage, Wines


Glass Manufacturing


Electronics, Semiconductors


Food Processing


Electronic Assembly


Textile Industry


Bottling, Distillation


Printing Industry


Lawn Management

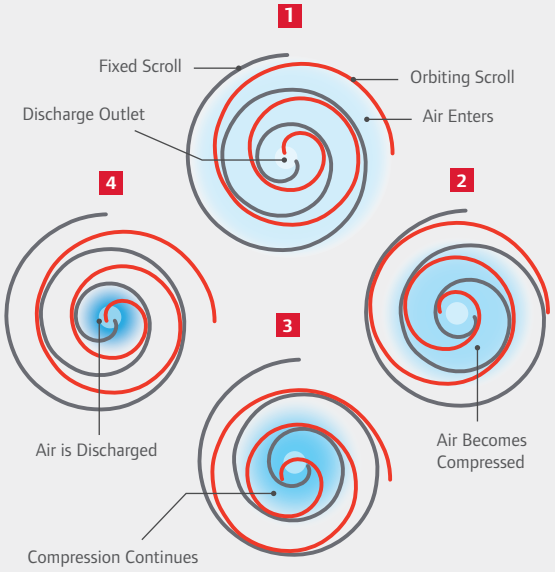
AIR COMPRESSORS

When quiet operation, low maintenance and a small footprint are critical, scroll air compressors are the smart choice. Their compact and innovative design make them ideal for many commercial applications where reliable, oil-free air is required.

How Scroll Compressors Work

Scroll compressors use two interlacing spiral scrolls to pump, compress and pressurise air.

1. One scroll remains in a fixed position, while the other scroll orbits around it without rotating.
2. This motion traps the air in the pockets between the two scrolls, and pushes the air towards the center. As the air moves closer to the center, the pockets become smaller, and the air is compressed.
3. The process constantly repeats to maintain suction.
4. Once the air reaches the center, it is discharged through an outlet.



NO OIL
ANYWHERE!

None in the compressor
None in the air
None in the condensate

Scroll Compressor Advantages

Smaller footprint	▶	Takes up less floor space
Fewer components	▶	Higher reliability, longer life, less maintenance
Lower sound level	▶	Healthy work environment
100% oil-free	▶	Can be used in any industry
Use less consumables	▶	Longer service intervals and life
No metal friction	▶	Less maintenance
Zero emissions	▶	Meets goals for sustainability
Fewer moving parts	▶	Lower vibration

100% Oil-Free Air

The simple tip seal design of a scroll compressor ensures no metal-to-metal contact anywhere. Therefore, the technology does not require lubrication, ensuring high-quality, oil-free air.

AIR COMPRESSORS

ENVS2-4 Scroll Compressor

Clean, Quiet and Efficient

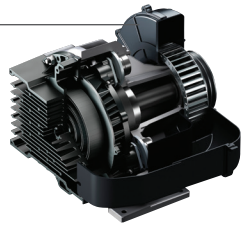
Our scroll compressors pack tremendous value into a small, efficient package.

ENVS7-11 Scroll Compressor

ENVS17-33 Scroll Compressor

What Makes Our Oil-Free Scroll Compressors Unique?

Efficient Design and Control



Our scroll compressors deliver more flow per kW and reach pressures up to 10 barg in a single stage of compression. We achieve this efficiency through design features such as:

- **Start/stop control** that minimises wasted energy in unloaded conditions
- **A dual-inlet airend design** for stable and efficient compression
- **Aluminum shell** reduces overal product weight

Multiplex Design

The ability to multiplex the design for part-load efficiency means you can operate the exact number of compressors to match your demand.

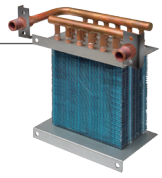
Cool Operation

Our generously sized fan insures cool operation and longer life of your components.

Microprocessor Control

Manages discharge pressure to meet your air demand, while measuring key operating parameters to reduce unwanted downtime.

Cooler Discharge Air Temperature



Aftercooler is included in all packages to cool the discharge air with forced air fans included in the enclosed models to insure heat is removed.

AIR COMPRESSORS

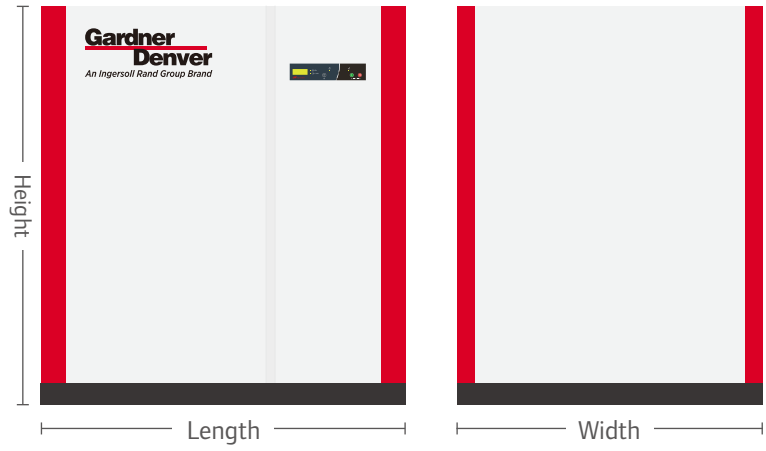
ENVS-Series Features and Specifications

STANDARD FEATURES	
Inlet filtration with replaceable element	Pressure gauge*
On/Off switch*	Automatic start/stop operation*
Power on light*	Control voltage starter with motor overload protection*
High temperature shutdown with indication light*	Air-cooled aftercooler
Run time hour meter*	Rugged motor sized for duty with ingress protection

* Included on front-mounted control panel

OIL-FREE SCROLL AIR COMPRESSOR (50 HZ)

Model	Max.Pressure barg	Rated power kW	Air Flow m^3/min	Connection Size BSPT	Dimensions (LxWxH) mm	Weight kg	Sound Level dB (A)
ENVS2-A8	8	2.2	0.24	1/2"	830 x 740 x 910	204	58
ENVS2-A10	10	2.2	0.21	1/2"		204	58
ENVS4-A8	8	3.7	0.40	1/2"		231	58
ENVS5-A8	8	5.5	0.60	1/2"		240	59
ENVS5-A10	10	5.5	0.53	1/2"		240	59
ENVS7-A8	8	7.7	0.84	1"	1445 x 800 x 1000	438	62
ENVS7-A10	10	7.7	0.74	1"		438	62
ENVS11-A8	8	11	1.20	1"		495	64
ENVS11-A10	10	11	1.06	1"		495	64
ENVS17-A8	8	16.5	1.89	R1	1280 x 770 x 1480	515	61
ENVS17-A10	10	16.5	1.50	R1		515	61
ENVS22-A8	8	22	2.52	R1	1330 x 880 x 1900	720	61
ENVS22-A10	10	22	2.00	R1		720	61
ENVS33-A8	8	33	3.78	R1.5	1360 x 1030 x 1670	1000	63
ENVS33-A10	10	33	3.00	R1.5		1000	63



AIR TREATMENT AND SOLUTIONS

Your Trusted Partner in Compressed Air

Air Treatment

Providing clean, dry, compressed air is especially improtant in applications where moisture or contamination can cause system corrosion, damge to air-powered tools or degradation of products or processed touched by the compressed air. Making our air treatment equipment an integral component of your compressed air system will improve product or process quality and productivity and system efficiency.

Desiccant Dryers

Choose desiccant dryers when very low dew points are necessary for high-quality air and to prevent potential freeze-up. Depending on whether you require lower initial capital costs, or lower energy use, choose heatless or heated desiccant models.

- Delivers reliable -20° C or -40° C pressure dew point in most operating conditions
- Low pressure drop design saves energy
- Advanced control is easy to use and maximise uptime

Air Filters

- Available in four different filtration grades, G,D,H and A to efectively remove particles, water and oil aerosols in your air stream.
- Advanced filter element design with high efficiency, compact size,easy installation

Refrigerated Dryers

Our cost-effective refrigerated dryers provide clean, dry air for most industrial applications.

- 3° C-10° C Dew points
- Low capital, operating and maintenance costs
- Corrosion-free heat exchanger design for reliable operation

Take a Systems Approach

Delivering reliable oil-free compressed air to your facility goes well beyond the compressor itself. Optimise total cost of ownership (TCO) with a systems approach that delivers industry leading value through experienced installation and maintenance support, genuine OEM parts, accessories and consumables that extend the life of your system.

Your business will benefit from Gardner Denver's partnership. Through our extensive experience and global expertise we help to ensure reliability, lower maintenance costs and ease of serviceability.

DH Series Oil-free Water Lubricated Permanent Magnetic Variable Frequency Screw Air Compressor

7-410kW

Gardner Denver

Why Oil-Free Compressors?

There's a lot riding on the quality of your air. The presence of particles, condensation, oil and oil vapor in a compressed air system can lead to downtime, product spoilage and recall, damage to your brand reputation, or worse, harmed consumers and product liability.

For reliability

A robust product and system design delivers top quality air, protecting sensitive downstream equipment, lowering maintenance and extending equipment life

For productivity

The use of an oil-free Class 0 certified compressor guarantees contamination free air, eliminating the risk of product spoilage and waste

For serviceability

Our oil-free equipment is designed specifically to make maintenance easy by providing clear access to consumable components

For lower cost of ownership

Higher initial costs for oil-free systems are more than offset by lower operational and maintenance costs over a system's life to maintain the highest air quality

ISO 8573 Class 0 Oil-Free Air

ISO 8573-1 Air Quality Grades

Quality Grades	Oil & Oil Vapor mg/m³
0	<0.01
1	0.01
2	0.1
3	1
4	5

Class 0 is the most stringent air class defined by ISO 8573, part 1. Our whole DH7-160(7/8/10bar), DH37-250 (3/4bar), DH55-410(20/30/40bar) series are certified Class 0 for no oil content to ensure your air quality exceeds specifications.

Oil-Free Water Lubricated Compressors for Your Application

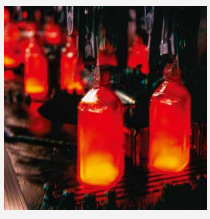
Ingersoll Rand offers a wide portfolio of reliable oil-free products that will adapt to your industry and application. We will assess and propose the best oil-free solution to increase the productivity of your installation, providing zero risk of contamination of your final product.

Hospitals, labs, universities

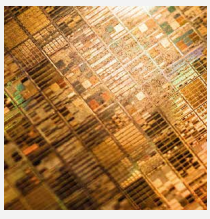
Pharmaceutical, biotechnology

Medical equipment, plastics

Beverage processing

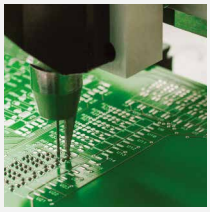


Glass manufacturing



Electronics, semiconductors

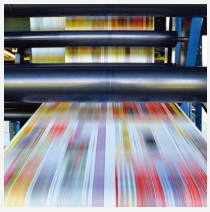
Food processing



Electronic assembly

Textile industry

Bottling, distillation



Printing industry

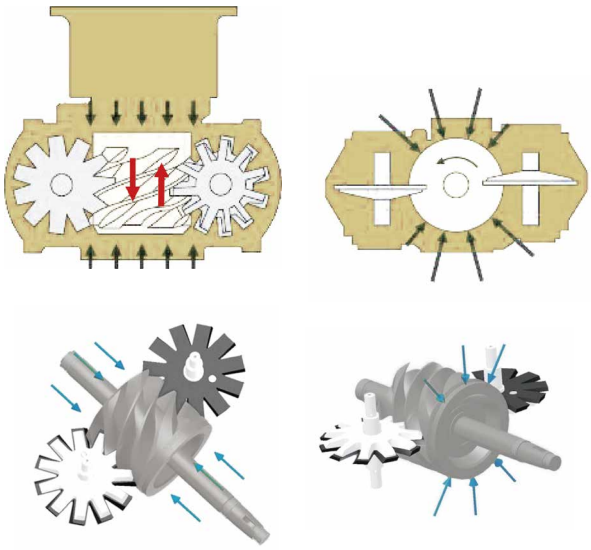
Turf management

Advantages of Oil-free Water Lubricated Single Screw Compressor

Energy Saving | Reliable | Oil Free | Soundproof

Efficient and Energy Saving

- When the single screw compressor is working, each screw groove in the screw is used twice in one rotation, so that its space can be fully utilized, thus its structure size is smaller than other rotary compressors
- The screw groove depth of single screw becomes shallower with the increase of compression chamber pressure, and it is zero when the exhaust is over, so there is no clearance volume theoretically
- When water is used as the coolant, resulting in lower temperature, higher efficiency and remarkable energy-saving effect during compression of the air end



Pure Oil-free

- Employing the water-lubricated cooling technology, with no oil coolant in the compression chamber, thus providing absolutely oil-free compressed air

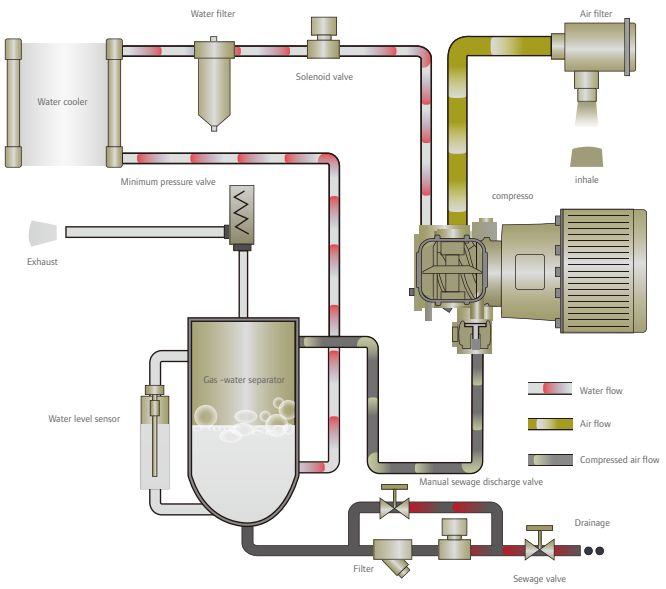
Soundproof and Environmentally Friendly

- The motor is directly connected with the screw to drive the gearless box, thus eliminating noisy parts
- The soundproof box type outer casing is designed to effectively enclose the noise inside the unit so that the operating noise of the complete machine is kept at a lower level

Safe and reliable

- One screw and two star wheels (left and right) form 12 compression chambers, which trigger 12 air compression processes per revolution
- The two star wheels of the single screw air compressor are symmetrically distributed on two sides of the screw, ensuring force balance . The axial force and radial force acting on the screw can offset each other, effectively restraining the vibration source
- The rotor is in force balance with small pulsation, low vibration, more reliable performance and longer service life

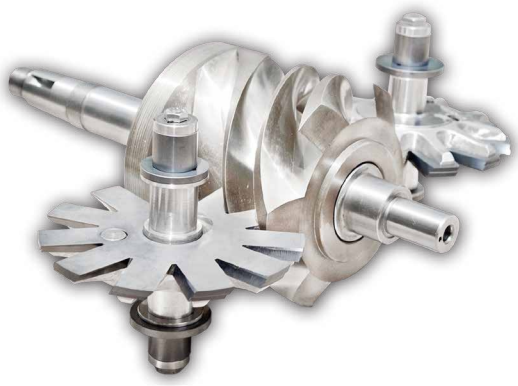
Working Flow Chart of Oil-Free Water Lubricated Single Screw Air Compressor



Oil-free Water Lubricated Permanent Magnetic Variable Frequency Screw Air Compressor of DH series

High Efficiency Air End

- Instead of using oil coolant, pure water is directly injected to cool down the compression chamber and get absolutely oil-free compressed air
- The compressor head rotor never rusts as it is made of the stainless steel of copper alloy
- The high-end bearing, made of special stainless steel, ensures the reliability of water lubrication, high efficiency and low noise
- As the air end has no metal-to-metal meshing parts, the rotor has such advantages as balanced force, reliable performance and longer service life



Rare Earth Permanent Magnet Variable Frequency Motor

Water-lubricated oil-free screw air compressors of Gardner Denver DH series are driven by rare earth permanent magnet variable frequency motor. Compared with AC asynchronous motors, rare earth permanent magnet motor has simple structure, reliable operation, high power density and wide range of speed regulation, which is ideal power choice for high-efficiency and energy-saving air compressors.

Electric rotor

Permanent magnet rotor with less loss, improving efficiency by 5-10%

Low Noise

Reasonable groove-pole coordination, magnetic field design, ensuring wider operating frequency and lower operating noise

Shock-free Start

Smooth soft start, starting current is less than 2 times of rated current

Small Size and Light Weight

The base is 1 to 2 sizes smaller than that of the asynchronous motor

Large Starting Torque

The starting torque and overload capacity of permanent-magnet synchronous motor are one power level higher than those of asynchronous motor

Wide Range of Speed Regulation

The rotor can achieve low speed and high torque without electric excitation

DH oil-free water lubricated permanent magnetic variable frequency screw air compressors employs the water-lubricated cooling technology without oil coolant used in the compression chamber, thus providing users with pure compressed air to meet various production needs

The whole DH7-160(7/8/10bar), DH37-250 (3/4bar), DH55-410(20/30/40bar) series are certified ISO 85733 Class 0.

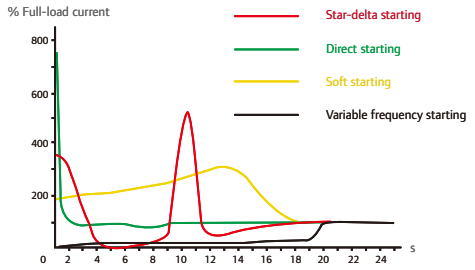
Oil-free Water Lubricated Permanent Magnetic Variable Frequency Screw Air Compressor of DH series

Advantages of Frequency Conversion

- Ordinary air Compressor usually adjust the air consumption by adjusting the air inflow of the air compressor, keeping the air compressor running at the rated speed. Therefore, the actual energy consumption will not decrease proportionally, even if the air consumption decreases.
- The exhaust volume of the variable frequency air compressor can be perfectly combined with the user's air consumption
- When buying an air compressor, the traditional cost (the purchase cost and the operation and maintenance cost) only accounts for 20% of the total cost, while the energy consumption accounts for 80%. Compared with traditional air compressors, variable frequency air compressor of DH series can save at least 30% of energy
- From the beginning of your investment and operation, variable frequency air compressor of DH series will save your costs

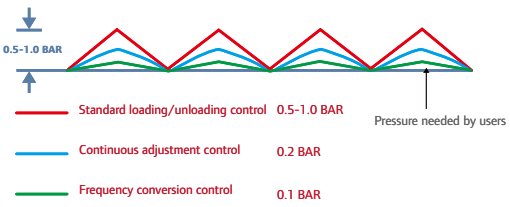
Smooth Start

- No starting current peak
- Completely eliminate the energy consumption during unloading
- Reduce the burden of electrical components
- Variable frequency starting current is low with no shock on the power grid, which is especially important for users in the area with the unstable power grid



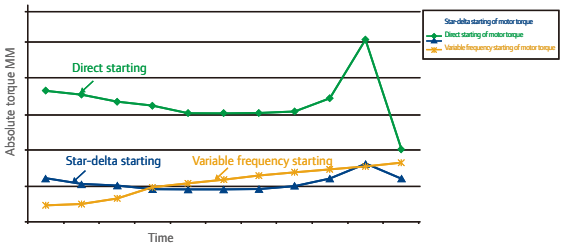
Stable Output Pressure

- Frequency conversion control can keep the pressure band within 0.1bar, so there is no need of a large gas tank
- The pressure will not exceed the required value, resulting in no energy waste



Shock-free Start

- The starting torque of the motor is low, resulting in a small shock on mechanical parts, so the service life of mechanical parts (such as bearings) is longer
- Transfer torque as required, resulting in no energy waste



Frequency Converter with Excellent Performance

- The built-in frequency converter with unique air duct design can ensure stability and reliability
- The cutting-edge vector control technology is adopted to provide good low-frequency speed and dynamic response features
- All-round protection function can realize all-round protection from frequency converter to motor
- The safe lightning protection design with built-in lightning overcurrent protection device effectively improves the inverter's self-protection ability against lightning induction

DH Series Permanent Magnetic (PM) Variable Speed Drive (VSD) Oil-free Water Lubricated Screw Air Compressor

Smart Control

- Powerful VSD control for automatic load regulation and comprehensive protection of motor and other components
- Unique design, and alarm, startup, shutdown, frequency hopping and other settings customized by users based on their needs
- Self-diagnostic LCD touchscreen controller with MODBUS RS485 communication port for remote control

Standard Stainless Steel (SS) Pipelines for Full Series

SS pipelines are equipped for Gardner Denver full series of water lubricated products as standard, which are obviously superior to ordinary carbon steel pipelines in that:

- Anti-corrosive SS free from scale or rust eliminates customers' worries about rusting of carbon steel pipelines
- Smooth inner wall of SS pipelines greatly reduces pressure losses due to low friction coefficient
- SS pipelines are resistant to high temperature & pressure, and can be used for long without leakage and aging, thus effectively extending service life of the air compressors

Automatic Control System for Water Circulation

- The water circulation system is comprised of softener, water filter, water cooler and water / gas separator, which are all automatically controlled and operated to keep the circulating water in a highly clean state and meet the requirements of the air compressor unit
- The quiet design of all components in the water circulation system eliminates high-frequency noise and significantly reduces operating noise of the water-lubricated unit
- Water filter and water / gas separator is made of stainless steel for higher quality, reliability and performance

Lower Life Cycle Cost

- Water-lubricated air compressor has few components requiring maintenance due to its simple inner structure
- No components, other than the easily replaceable air and water filters, requires routine maintenance
- Water-lubricated airend is used in the air compressor in an oil-free manner and at low maintenance cost
- Water-lubricated airend operating at low temperature and standard SS pipelines guarantees a longer service life of the whole unit

Performance parameters of 7.5-160kW Permanent Magnetic Variable Frequency Air Compressor

Model	Displacement m^3/min	Pressure barg	Power kW	Adaptor Diameter inch	Dimensions (L x W x H)mm Air cooling	Dimensions (L x W x H)mm Water cooling	Weight kg	Noise dB(A)
DH07VSD-7A	0.5-1.3	7	7.5	3/4"	1100 x 750 x 1350	-	430	57
DH07VSD-8A	0.4-1.1	8	7.5	3/4"	1100 x 750 x 1350	-	430	57
DH07VSD-10A	0.3-0.9	10	7.5	3/4"	1100 x 750 x 1350	-	430	57
DH11VSD-7A	0.7-1.7	7	11	3/4"	1100 x 750 x 1350	-	450	57
DH11VSD-8A	0.6-1.5	8	11	3/4"	1100 x 750 x 1350	-	450	57
DH11VSD-10A	0.5-1.3	10	11	3/4"	1100 x 750 x 1350	-	450	57
DH15VSD-7A	1.0-2.5	7	15	1"	1590 x 870 x 1500	-	570	57
DH15VSD-8A	0.9-2.2	8	15	1"	1590 x 870 x 1500	-	570	57
DH15VSD-10A	0.8-2.0	10	15	1"	1590 x 870 x 1500	-	570	57
DH18VSD-7A	1.3-3.2	7	18.5	1"	1590 x 870 x 1500	-	620	58
DH18VSD-8A	1.1-2.8	8	18.5	1"	1590 x 870 x 1500	-	620	58
DH18VSD-10A	1.0-2.5	10	18.5	1"	1590 x 870 x 1500	-	620	58
DH22VSD-7A	1.5-3.7	7	22	1"	1590 x 870 x 1500	-	640	60
DH22VSD-8A	1.4-3.4	8	22	1"	1590 x 870 x 1500	-	640	60
DH22VSD-10A	1.2-3.0	10	22	1"	1590 x 870 x 1500	-	640	60
DH30VSD-7A	2.1-5.3	7	30	1 1/2"	1690 x 1000 x 1600	-	980	61
DH30VSD-8A	1.9-4.7	8	30	1 1/2"	1690 x 1000 x 1600	-	980	61
DH30VSD-10A	1.7-4.3	10	30	1 1/2"	1690 x 1000 x 1600	-	980	61
DH37VSD-7A	2.5-6.2	7	37	1 1/2"	1690 x 1000 x 1600	-	1010	61
DH37VSD-8A	2.2-5.6	8	37	1 1/2"	1690 x 1000 x 1600	-	1010	61
DH37VSD-10A	2.0-5.0	10	37	1 1/2"	1690 x 1000 x 1600	-	1010	61
DH45VSD-7A/W	3.0-7.6	7	45	1 1/2"	1690 x 1000 x 1600	1590 x 950 x 1500	1100	65
DH45VSD-8A/W	2.7-6.8	8	45	1 1/2"	1690 x 1000 x 1600	1590 x 950 x 1500	1100	65
DH45VSD-10A/W	2.4-6.0	10	45	1 1/2"	1690 x 1000 x 1600	1590 x 950 x 1500	1100	65
DH55VSD-7A/W	4.0-10.0	7	55	2"	2350 x 1250 x 1750	2100 x 1250 x 1500	1200	67
DH55VSD-8A/W	3.6-9.0	8	55	2"	2350 x 1250 x 1750	2100 x 1250 x 1500	1200	67
DH55VSD-10A/W	3.1-7.8	10	55	2"	2350 x 1250 x 1750	2100 x 1250 x 1500	1200	67
DH75VSD-7A/W	5.2-13.0	7	75	2"	2700 x 1650 x 2020	2200 x 1250 x 1650	1500	71
DH75VSD-8A/W	4.8-12.0	8	75	2"	2700 x 1650 x 2020	2200 x 1250 x 1650	1500	71
DH75VSD-10A/W	4.0-10.0	10	75	2"	2700 x 1650 x 2020	2200 x 1250 x 1650	1500	71
DH90VSD-7A/W	6.7-16.8	7	90	2 1/2"	3500 x 2000 x 2100	2450 x 1450 x 1700	2250	72
DH90VSD-8A/W	6.0-15.0	8	90	2 1/2"	3500 x 2000 x 2100	2450 x 1450 x 1700	2250	72
DH90VSD-10A/W	5.6-14.0	10	90	2 1/2"	3500 x 2000 x 2100	2450 x 1450 x 1700	2250	72
DH110VSD-7A/W	8.0-20.0	7	110	3"	3500 x 2000 x 2100	2450 x 1450 x 1700	2450	74
DH110VSD-8A/W	7.4-18.5	8	110	3"	3500 x 2000 x 2100	2450 x 1450 x 1700	2450	74
DH110VSD-10A/W	6.4-16.0	10	110	3"	3500 x 2000 x 2100	2450 x 1450 x 1700	2450	74
DH132VSD-7A/W	10.0-25.0	7	132	3"	4000 x 2000 x 2350	2800 x 1500 x 1900	2450	77
DH132VSD-8A/W	9.2-23.0	8	132	3"	4000 x 2000 x 2350	2800 x 1500 x 1900	2450	77
DH132VSD-10A/W	8.0-20.0	10	132	3"	4000 x 2000 x 2350	2800 x 1500 x 1900	2450	77
DH160VSD-7A/W	10.8-27.0	7	160	3"	4000 x 2000 x 2350	2800 x 1500 x 1900	2600	78
DH160VSD-8A/W	10.2-25.5	8	160	3"	4000 x 2000 x 2350	2800 x 1500 x 1900	2600	78
DH160VSD-10A/W	9.6-24.0	10	160	3"	4000 x 2000 x 2350	2800 x 1500 x 1900	2600	78

Low-pressure Oil-free Permanent Magnetic Variable Frequency Screw Air Compressor

Widely used in the following industries

Chemical industry

Low-pressure compressed air is used in a variety of chemical processes

Textile industry

Chemical fiber & textile, various textile machines

Glass bottle blowing

Various glass bottles are blown with low-pressure compressed air

Powder conveying

Large amounts of low-pressure compressed air are used to convey powdery substances

Performance Parameters of 37-250kW Low-pressure Permanent Magnetic Variable Frequency Air Compressor

Model	Displacement m^3/min	Pressure barg	Power kW	Adaptor Diameter inch	Noise dB(A)	Dimensions (L x W x H)mm	Weight kg	Cooling water* t/h
DH37VSD-3A/W	3.1-10.0	3	37	2 1/2"	65	2350x1250x1750(A) 2450x1550x1850(W)	1200	8
DH37VSD-4A/W	2.5-8.5	4						
DH45VSD-3A/W	4.2-13.5	3	45	3"	70	2350x1250x1750(A) 2450x1550x1850(W)	1500	9
DH45VSD-4A/W	3.1-10.0	4						
DH55VSD-3A/W	5.3-17.5	3	55	4"	71	2700x1650x2020(A) 2700x1450x2000(W)	2200	10
DH55VSD-4A/W	4.1-13.5	4						
DH75VSD-3A/W	7.1-23.0	3	75	4"	75	2700x1650x2020(A) 2700x1450x2000(W)	2450	15
DH75VSD-4A/W	6.4-20.0	4						
DH90VSD-3A/W	8.7-27.0	3	90	5"	77	3500x2000x2250(A) 3600x1700x2030(W)	2600	17
DH90VSD-4A/W	7.5-24.0	4						
DH110VSD-3A/W	10.5-33.8	3	110	5"	78	3500x2000x2250(A) 3600x1700x2030(W)	3000	20
DH110VSD-4A/W	8.7-28.0	4						
DH132VSD-3A/W	14.0-45.0	3	132	6"	78	4000x2000x2350(A) 3600x1700x2030(W)	4500	25
DH132VSD-4A/W	10.8-35.0	4						
DH160VSD-3W	16.2-52.0	3	160	6"	79	3600x1700x2030	5000	28
DH160VSD-4W	13.4-43.0	4						
DH185VSD-3W	18.0-58.0	3	185	6"	79	3600x1700x2030	5100	35
DH185VSD-4W	18.0-45.0	4						
DH200VSD-3W	19.0-60.0	3	200	6"	79	3600x1700x2030	5200	37
DH200VSD-4W	19.0-48.0	4						
DH220VSD-4W	19.0-60.0	4	220	6"	79	3600x1700x2030	5300	39
DH250VSD-3W	35.0-70.0	3	250	8"	80	4100x2050x2350	5500	45

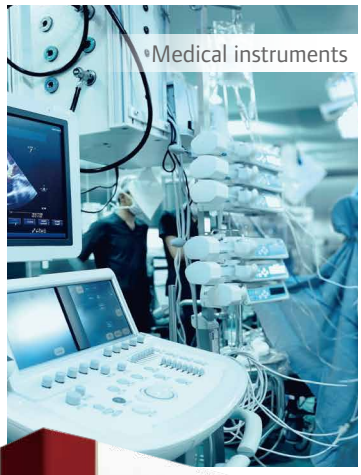
* Cooling water inlet temperature of 30℃ is applicable for water-cooled unit only

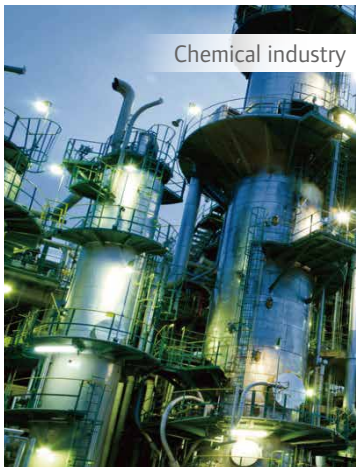
Performance parameters of 16bar Air Compressor for Laser Cutting Industry

Model	Displacement m^3/min	Pressure barg	Power kW	Adaptor Diameter inch	Dimensions (L x W x H)mm Air cooling	Dimensions (L x W x H)mm Water cooling	Weight kg	Noise dB(A)
DH22VSD-16A	0.80-2.20	16	22	1"	1590 x 870 x 1500	-	640	60
DH30VSD-16A	1.10-3.10	16	30	1 1/2"	1690 x 1000 x 1600	-	980	61
DH45VSD-16A/W	1.62-4.70	16	45	1 1/2"	1690 x 1000 x 1600	1590 x 950 x 1500	1100	65
DH55VSD-16A/W	2.10-6.10	16	55	2"	2350 x 1250 x 1750	2350 x 1250 x 1750	1200	67
DH90VSD-16A/W	3.51-10.0	16	90	2 1/2"	3500 x 2000 x 2100	2200 x 1250 x 1650	2250	72
DH110VSD-16A/W	4.20-12.0	16	110	3"	3500 x 2000 x 2100	2450 x 1450 x 1700	2450	74
DH132VSD-16A/W	5.18-15.5	16	132	3"	4000 x 2000 x 2350	2800 x 1500 x 1900	2450	77

Medium-pressure Two-stage Compression Oil-free Permanent Magnetic Variable Frequency Screw Air Compressor


PET bottle blowing


Medical instruments


Chemical industry


Shipping industry

Performance Parameters of 55-410kW Medium-pressure Two-stage Compression Permanent Magnetic Variable Frequency Air Compressor

Model	Displacement m^3/min	Pressure barg	Power kW	Adaptor Diameter inch	Noise dB(A)	Dimensions (L x W x H)mm	Weight kg	Cooling water* t/h
DH55VSD-20A/W	1.8-6.0	20	37+15	1"	70	3000x1400x1700(A) 2900x1400x1700(W)	2000	12
DH60VSD-30A/W	1.8-6.0	30	37+22	1"	70		2000	12
DH75VSD-40A/W	1.8-6.0	40	37+37	1"	70		2100	15
DH75VSD-20W	3.0-10.0	20	55+22	1 1/4"	73	3500x1500x1730	2400	17
DH90VSD-30W	3.0-10.0	30	55+37	1 1/4"	73	3500x1500x1730	2300	17
DH120VSD-40W	3.0-10.0	40	75+45	1 1/4"	73	3500x1500x1730	2400	20
DH110VSD-20W	3.8-13.0	20	75+30	1 1/2"	75	3500x1500x1730	2500	22
DH120VSD-30W	3.8-13.0	30	75+45	1 1/2"	75	3500x1500x1730	2500	22
DH145VSD-40W	3.8-13.0	40	90+55	1 1/2"	75	3500x1500x1730	2650	24
DH130VSD-20W	5.0-16.0	20	90+37	1 1/2"	76	4000x1700x1800	3200	27
DH145VSD-30W	5.0-16.0	30	90+55	1 1/2"	76	4000x1700x1800	3200	27
DH185VSD-40W	5.0-16.0	40	110+75	1 1/2"	76	4000x1700x1800	3200	35
DH165VSD-20W	6.1-20.0	20	110+55	2"	76	4000x1700x1800	3600	35
DH185VSD-30W	6.1-20.0	30	110+75	1 1/2"	76	4000x1700x1800	3600	35
DH220VSD-40W	6.1-20.0	40	132+90	1 1/2"	76	4000x1700x1800	3800	38
DH200VSD-20W	7.0-24.0	20	132+65	2"	77	4000x1800x2100	4200	38
DH220VSD-30W	7.0-24.0	30	132+90	2"	77	4000x1800x2100	4200	38
DH270VSD-40W	7.0-24.0	40	160+110	2"	77	4000x1800x2100	4300	45
DH235VSD-20W	8.5-28.0	20	160+75	2 1/2"	78	4200x2000x2100	4600	46
DH270VSD-30W	8.5-28.0	30	160+110	2"	78	4200x2000x2100	4600	46
DH310VSD-40W	8.5-28.0	40	200+110	2"	78	4200x2000x2100	4600	55
DH290VSD-20W	9.5-36.0	20	200+90	2 1/2"	80	4500x2250x2200	5000	50
DH330VSD-30W	9.5-36.0	30	200+132	2 1/2"	80	4500x2250x2200	5000	60
DH380VSD-40W	9.5-36.0	40	220+160	2 1/2"	80	4500x2250x2200	5000	68
DH330VSD-20W	10.0-40.0	20	220+110	2 1/2"	80	4500x2250x2200	5000	65
DH380VSD-30W	10.0-40.0	30	220+160	2 1/2"	80	4500x2250x2200	5000	70
DH410VSD-40W	10.0-40.0	40	250+160	2 1/2"	80	4500x2250x2200	5000	85

* Cooling water inlet temperature of 30℃ is applicable for water-cooled unit only

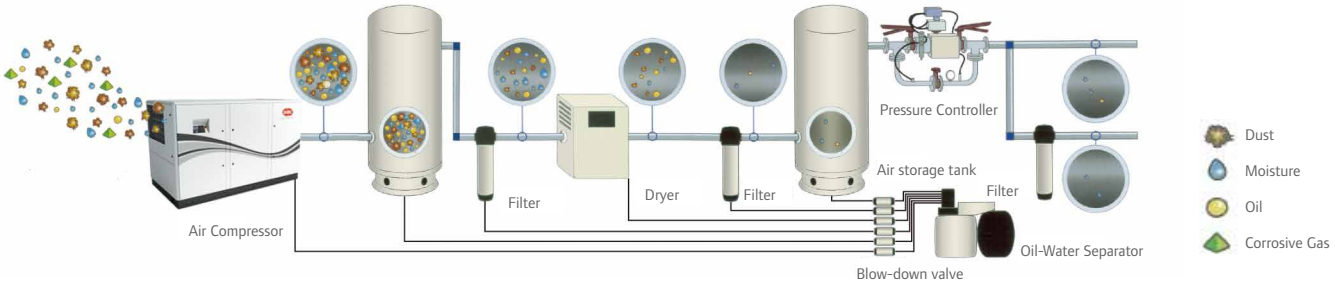
Clean and oil-free, quiet and environment-friendly
Increased efficiency and energy saving, high safety and reliability

Compressed Air Purification System

Gardner Denver

What is a clean, environmentally friendly and high-quality compressed air system?

- Owing to its safety, energy saving and stability, compressed air has become an indispensable power source in modern industry. However, condensates and contaminants in the compressed air are mixed with rust and bacteria in the pipeline to form harmful corrosive turbid liquid, which would lead to system corrosion and cause economic losses to users.
- Each cubic meter of air contains about 140 million dust particles and water vapor, 80% of which are less than 2 microns in diameter and brought into various systems of the process via the compressed air. These particles are a huge threat to the compressed air system.
- Gardner Denver provides industry-leading products to help enterprises reduce energy consumption and costs, while obtaining cleaner and drier air through more efficient, reliable and environmentally friendly solutions, thus substantially reducing failure rates and costs, bringing tangible benefits to customers and the environment.



As it is of great significance to maintain air quality, the International Organization for Standardization (ISO) specially classifies the levels of solid dust, water, oil and other contaminants in compressed air as follows:

ISO 8573-1:2001 Air Quality Classes

Quality Class	Solid - Largest Number of Particles Per Cubic Meter			Pressure Dew Point °C	Oil Content mg/m3
	0.1 to 0.5 microns	0.5 to 1 microns	1 to 5 microns		
0	Specified by different end users or manufacturers and more stringent than Class 1				
1	100	1	0	-70°C	0.01
2	100,000	1,000	10	-40°C	0.1
3	N/A	10,000	500	-20°C	1
4	N/A	N/A	1,000	3°C	5
5	N/A	N/A	20,000	7°C	N/A
6	N/A	N/A	N/A	10°C	N/A

Adsorption Dryer

The adsorption dryer is mainly composed of two adsorption towers filled with adsorbents. When the compressed air flows through the adsorption towers, the water is absorbed by the adsorbents, thus achieving the purpose of drying the compressed air. The two towers perform drying and regeneration alternately through the air-flow switching valve so that the adsorbents can be recycled.

Features of Adsorption Dryer

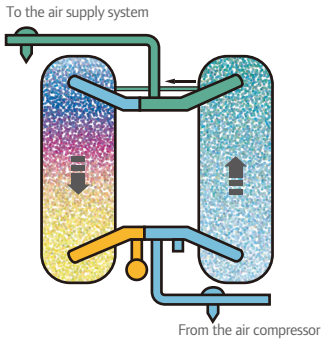
- High adsorption capacity and long service life owing to the use of high efficiency active adsorbents
- A consistent quality of the outlet air source is ensured with the intelligent control system of single chip microcomputer, which features the functionality of switching at reasonable time
- The unique sump structure design can preserve 98% of the adsorbed heat, thus improving the desorption capacity and allowing for a more thorough regeneration
- The superior air distribution design allows the air to evenly pass through the adsorption layer, thus avoiding the formation of voids
- The high quality pneumatic switching valve features sensitive action and reliable performance

The adsorption dryer is divided into two types, i.e. heatless type and micro-heat type, depending on the process used. The basic difference between the two processes lies in the way in which the moisture is removed from the desiccant, i.e. the way in which the adsorbent is regenerated. How to choose the adsorption dryer technology depends on the requirements on the compressed air flow and quality of the system, the service cycle cost and other factors.

Heatless Adsorption Dryer

This process regenerates the adsorbents by introducing some dry compressed air. The compressed air is discharged through the muffler after absorbing the moisture. This type of dryer requires some dry compressed air to be separated from the system for desiccant regeneration. As no external power supply is required, the initial investment is lower despite the relatively high operating cost.

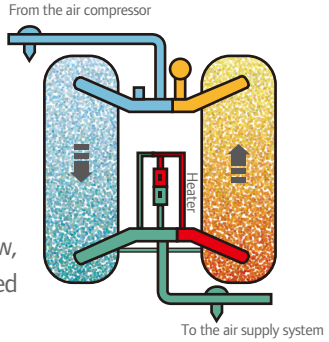
- Air flow: 1.1 to 127 m^3/min
- Rated working pressure: 0.7 MPa
- Maximum working pressure: 1.0 MPa
- Maximum intake air temperature: 45°C
- Pressure dew point: -40°C/-20°C for two product types
- Regeneration air consumption: 14%
- Low initial investment cost
- No external power supply
- Low-temperature running
- Safe and reliable
- Recommended places of application: small flow, intermittent air usage.Remote control, power plants or laboratories, etc



Micro-Heat Adsorption Dryer

It works in a way similar to that of a heatless adsorption regenerative dryer, but the compressed air from the system first passes through an efficient external heater before entering the regeneration tower to regenerate the desiccant, allowing the heated compressed air to absorb more moisture. For this type of dryer, the initial investment cost is relatively high because of the added heater and related parts, but the operating cost is lower because of the reduced regeneration air consumption.

- Air flow: 1.1 to 145 m^3/min
- Rated working pressure: 0.7 MPa
- Maximum working pressure: 1.0 MPa
- Maximum intake air temperature: 45°C
- Pressure dew point: -40°C/-20°C for two product types
- Regeneration air consumption: 8%
- Low operating cost
- Less regeneration air consumption
- Large-flow air usage
- Lower pressure dew point
- Recommended places of application: large flow, continuous air usage, requiring drier compressed air, availability of external power supply, etc



Adsorption Dryer

Performance Parameters Table

Heatless Adsorption Dryer

Model	Flow	Voltage	Air Connection Pipe Diameter		Dimensions L*W*H (mm)		Weight kg	
	m^3/min	V/Ph/hz	VLi	VLi20	VLi	VLi20	VLi	VLi20
GD66VLi / GD66VLi20	1.1	220/1/50	3/4"BSPT	3/4"BSPT	730*480*1550	730*480*1550	132	132
GD126VLi / GD126VLi20	2.1	220/1/50	3/4"BSPT	3/4"BSPT	950*550*1630	850*500*1610	168	144
GD198VLi / GD198VLi20	3.3	220/1/50	1"BSPT	3/4"BSPT	1050*600*1680	950*550*1630	321	168
GD282VLi / GD282VLi20	4.7	220/1/50	1-1/2"BSPT	1"BSPT	1050*600*1680	1050*600*1680	342	321
GD426VLi / GD426VLi20	7.1	220/1/50	1-1/2"BSPT	1-1/2"BSPT	1250*650*1760	1050*600*1680	405	342
GD660VLi / GD660VLi20	11	220/1/50	2"BSPT	1-1/2"BSPT	1350*700*1840	1250*650*1760	485	405
GD780VLi / GD780VLi20	13	220/1/50	2"BSPT	2"BSPT	1350*700*1840	1350*700*1840	565	485
GD960VLi / GD960VLi20	16	220/1/50	2-1/2"BSPT	2"BSPT	1450*800*1930	1350*700*1840	814	565
GD1260VLi / GD1260VLi20	21	220/1/50	3"BSPT	2-1/2"BSPT	1680*950*2060	1450*800*1930	955	814
GD1560VLi / GD1560VLi20	26	220/1/50	3"BSPT	3"BSPT	1750*950*2080	1680*950*2060	1112	955
GD1860VLi / GD1860VLi20	31	220/1/50	3"BSPT	3"BSPT	1850*1000*2150	1750*950*2080	1238	1112
GD2520VLi / GD2520VLi20	42	220/1/50	DN100FLG	3"BSPT	2000*1100*2260	1850*1000*2150	1537	1238
GD3060VLi / GD3060VLi20	51	220/1/50	DN125FLG	DN100FLG	2100*1200*2430	2000*1100*2260	1818	1537
GD3720VLi / GD3720VLi20	62	220/1/50	DN125FLG	DN125FLG	2200*1265*2430	2100*1200*2430	2156	1818
GD4920VLi / GD4920VLi20	82	220/1/50	DN150FLG	DN125FLG	2320*1400*2680	2200*1265*2430	2860	2156
GD6780VLi / GD6780VLi20	113	220/1/50	DN150FLG	DN150FLG	2420*1450*2680	2320*1400*2680	3820	2860
GD7620VLi / GD7620VLi20	127	220/1/50	DN150FLG	DN150FLG	2620*1500*2750	2420*1450*2680	4226	3820

Micro-Heat Adsorption Dryer

Model	Flow	Voltage V/Ph/hz		Heater Power Kw		Air Connection Pipe Diameter		Dimensions L*W*H (mm)		Weight kg	
	m^3/min	VEi	VEi20	VEi	VEi20	VEi	VEi20	VEi	VEi20	VEi	VEi20
GD66VEi / GD66VEi20	1.1	220/1/50	220/1/50	0.5	0.5	3/4"BSPT	3/4"BSPT	730*480*1550	730*480*1550	145	145
GD126VEi / GD126VEi20	2.1	220/1/50	220/1/50	1	1	3/4"BSPT	3/4"BSPT	950*550*1650	850*500*1600	186	152
GD198VEi / GD198VEi20	3.3	220/1/50	220/1/50	1.5	1	1"BSPT	3/4"BSPT	1050*600*1720	950*550*1650	347	186
GD282VEi / GD282VEi20	4.7	220/1/50	220/1/50	2.1	1.5	1-1/2"BSPT	1"BSPT	1050*600*1720	1050*600*1720	385	347
GD426VEi / GD426VEi20	7.1	220/1/50	220/1/50	3	2.1	1-1/2"BSPT	1-1/2"BSPT	1250*650*1800	1050*600*1720	447	385
GD660VEi / GD660VEi20	11	380/3/50	220/1/50	4.2	3	2"BSPT	1-1/2"BSPT	1350*700*1900	1250*650*1800	533	447
GD780VEi / GD780VEi20	13	380/3/50	380/3/50	4.8	4.2	2"BSPT	2"BSPT	1350*700*1900	1350*700*1900	611	533
GD960VEi / GD960VEi20	16	380/3/50	380/3/50	6	4.8	2-1/2"BSPT	2"BSPT	1450*800*1980	1350*700*1900	867	611
GD1260VEi / GD1260VEi20	21	380/3/50	380/3/50	7.8	6	3"BSPT	2-1/2"BSPT	1680*950*2100	1450*800*1980	1009	867
GD1560VEi / GD1560VEi20	26	380/3/50	380/3/50	9	7.8	3"BSPT	3"BSPT	1750*950*2110	1680*950*2100	1145	1009
GD1860VEi / GD1860VEi20	31	380/3/50	380/3/50	10.8	9	3"BSPT	3"BSPT	1850*1000*2190	1750*950*2110	1302	1145
GD2520VEi / GD2520VEi20	42	380/3/50	380/3/50	15	10.8	DN100FLG	3"BSPT	2000*1100*2300	1850*1000*2190	1611	1302
GD3060VEi / GD3060VEi20	51	380/3/50	380/3/50	18	15	DN125FLG	DN100FLG	2100*1200*2450	2000*1100*2300	1912	1611
GD3720VEi / GD3720VEi20	62	380/3/50	380/3/50	21	18	DN125FLG	DN125FLG	2200*1265*2470	2100*1200*2450	2280	1912
GD4920VEi / GD4920VEi20	82	380/3/50	380/3/50	30	21	DN150FLG	DN125FLG	2320*1400*2720	2200*1265*2470	3046	2280
GD6780VEi / GD6780VEi20	113	380/3/50	380/3/50	37.5	30	DN150FLG	DN150FLG	2420*1450*2720	2320*1400*2720	3982	3046
GD7620VEi / GD7620VEi20	127	380/3/50	380/3/50	42	37.5	DN150FLG	DN150FLG	2620*1500*2800	2420*1450*2720	4396	3982
GD8700VEi / GD8700VEi20	145	380/3/50	380/3/50	51	42	DN200FLG	DN150FLG	3000*1700*2900	2620*1500*2800	5060	4396

* The performance level complies with ISO 8573.1

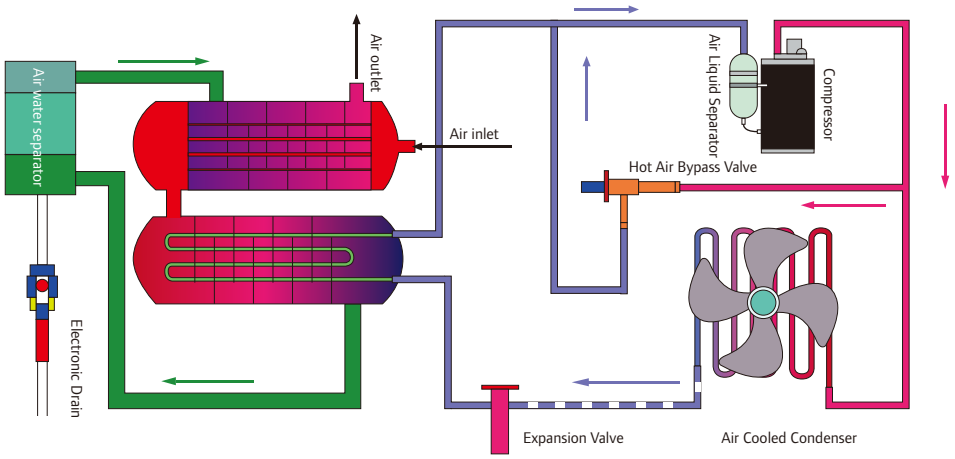
The performance parameters are designed with the ambient temperature 40 °C, the intake air temperature below 45 °C and the working pressure 7 barg

The front end of the adsorption regenerative dryer must be equipped with an H Class de-oiling filter, and the outlet end must be equipped with a G Class filter or a D Class high efficiency de-dusting filter

For larger or special models, contact your Ingersoll Rand sales representative

Refrigeration Dryer

The refrigeration dryer cools down the compressed air via the cooling medium so that the water vapor in the compressed air is condensed into liquid droplets, which are discharged after separating from the compressed air, thus achieving the purpose of drying the compressed air.



Working Principle Diagram of Refrigeration Dryer

Features of Refrigeration Dryer

- The heat exchanger is of a three-barrel structure that integrates the precooler, the evaporator and the preheater, greatly reducing the number of pipes
- Reduced volume and weight
- A three-in-one anti-corrosion aluminum alloy condensing and purifying device is designed to remove corrosion and rust of internal pipes caused by conventional materials
- The inner-core tubular structure of the precooler and the evaporator makes full use of the principle of aerodynamics to ensure efficient heat transfer and achieve the purpose of energy saving
- The high efficiency air water separator has remarkable water removal effect, separating over 99% of liquid water in a timely manner
- The condenser is mounted on the top, and the special design ensures that it delivers an excellent cooling effect and is not prone to clogging under various working conditions
- One-button start for easy maintenance; temperature-controlled fan auto start and stop, compressor operation controlled by the system, comprehensive safety guarantee

Performance Features

- Air flow: 0.7 to 145 m^3/min
- Rated working pressure: 0.7 MPa
- Standard intake air temperature: ≤45°C
- Ambient temperature: 2°C to 40°C
- Maximum working pressure: 1.0 MPa
- Pressure dew point: 3 to 10°C

Refrigeration Dryer

Performance Parameters Table

Air-Cooled Unit

Model	Flow	Voltage	Air Connection Pipe Diameter		Dimensions L*W*H (mm)	Weight kg	Drain Outlet Size
	m^3/min	V/Ph/hz					
GD42VNR-A	0.7	220/1/50	1"	BSPT	550*330*645	45	DN8
GD66VNR-A	1.1	220/1/50	1"	BSPT	550*330*645	45	DN8
GD96VNR-A	1.6	220/1/50	1"	BSPT	550*330*695	52	DN8
GD150VNR-A	2.5	220/1/50	1"	BSPT	620*330*765	56	DN8
GD186VNR-A	3.1	220/1/50	1"	BSPT	620*330*765	63	DN8
GD222VNR-A	3.7	220/1/50	1.5"	BSPT	620*380*780	68	DN8
GD282VNR-A	4.7	220/1/50	1.5"	BSPT	700*420*860	75	DN8
GD318VNR-A	5.3	220/1/50	1.5"	BSPT	700*420*860	78	DN8
GD378VNR-A	6.3	220/1/50	1.5"	BSPT	700*420*870	86	DN8
GD486VNR-A	8.1	220/1/50	1.5"	BSPT	700*420*870	82	DN8
GD636VNR-A	10.6	220/1/50	2"	BSPT	950*600*1000	145	DN8
GD810VNR-A	13.5	220/1/50	2"	BSPT	950*600*1000	176	DN8
GD1026VNR-A	17.1	380/3/50	2.5"	BSPT	1160*650*1100	216	DN8
GD1170VNR-A	19.5	380/3/50	2.5"	BSPT	1160*650*1100	255	DN8
GD1320VNR-A	22	380/3/50	3"	BSPT	1260*760*1200	318	DN8
GD1500VNR-A	25	380/3/50	3"	BSPT	1260*760*1200	366	DN8
GD1788VNR-A	29.8	380/3/50	3"	BSPT	1320*800*1300	402	DN8
GD2100VNR-A	35	380/3/50	3"	BSPT	1320*800*1300	443	DN8
GD2340VNR-A	39	380/3/50	4"	FLG	1320*1040*1750	498	DN8
GD2700VNR-A	45	380/3/50	4"	FLG	1320*1040*1750	524	DN8
GD3120VNR-A	52	380/3/50	4"	FLG	1320*1040*1750	556	DN8
GD3480VNR-A	58	380/3/50	5"	FLG	1500*1280*1700	742	DN8
GD4080VNR-A	68	380/3/50	5"	FLG	1500*1280*1700	788	DN8
GD4500VNR-A	75	380/3/50	6"	FLG	1860*1350*1900	989	DN8
GD4800VNR-A	80	380/3/50	6"	FLG	1860*1350*1900	1078	DN8

Water-Cooled Unit

Model	Flow	Voltage	Air Connection Pipe Diameter		Dimensions L*W*H (mm)	Weight kg	Drain Outlet Size
	m^3/min	V/Ph/hz					
GD636VNR-W	10.6	220/1/50	2"	BSPT	1000*600*950	189	DN8
GD810VNR-W	13.5	220/1/50	2"	BSPT	1000*600*950	233	DN8
GD1026VNR-W	17.1	380/3/50	2.5"	BSPT	1120*660*1120	265	DN8
GD1170VNR-W	19.5	380/3/50	2.5"	BSPT	1120*660*1120	335	DN8
GD1320VNR-W	22	380/3/50	3"	BSPT	1120*660*1120	412	DN8
GD1500VNR-W	25	380/3/50	3"	BSPT	1120*660*1120	463	DN8
GD1788VNR-W	29.8	380/3/50	3"	BSPT	1180*700*1180	495	DN8
GD2100VNR-W	35	380/3/50	3"	BSPT	1180*700*1180	522	DN8
GD2340VNR-W	39	380/3/50	4"	FLG	1260*1000*1420	605	DN8
GD2700VNR-W	45	380/3/50	4"	FLG	1260*1000*1420	645	DN8
GD3120VNR-W	52	380/3/50	4"	FLG	1260*1000*1420	718	DN8
GD3480VNR-W	58	380/3/50	5"	FLG	1380*1040*1470	820	DN8
GD4080VNR-W	68	380/3/50	5"	FLG	1380*1040*1470	878	DN8
GD4500VNR-W	75	380/3/50	6"	FLG	1660*1160*1600	1025	DN8
GD4800VNR-W	80	380/3/50	6"	FLG	1660*1160*1600	1100	DN8

Compressed Air Filter

Standard filter supply range:

- The filter element designed with stainless steel internal and external supporting net provides a high filtration capacity
- The advanced filter element design concept allows for a more compact and smaller filter structure
- Easy installation allows the housings to be connected in series, thus reducing the installation and maintenance space
- Comes standard with an automatic drain (built-in drain for GDF540V* and below, and external drain for GDF690V* and above)

Available with four filtration accuracy modes: G, D, H and A

- G- Main pipeline filter, which filters water and oil mist larger than 1 μm, with water removal efficiency exceeding 95%
- D- De-dusting filter, which filters dust particles larger than 1 μm
- H- De-oiling filter, which filters particles larger that 0.01 μm, water and oil mist, with residual oil content of 0.01ppm at 7barg
- A- Precision de-oiling filter, which filters oil mist larger than 0.001 μm, with the residual oil content not exceeding 0.001mg/m3

Working medium: compressed air or non-corrosive gas

Rated working pressure: 0.7 MPa

Intake air temperature: 80°C or below

Maximum working pressure: 1.0 MPa

Model	Flow 100 psig	Air Connection Pipe Diameter	Dimensions (mm)		Weight	Blow-Down Connection	Housing
	m^3/min	(Inlet\Outlet)	Height	Diameter	kg		
GDF42V*	0.7	0.75" BSPT	225	89	0.9	φ8	Aluminum alloy housing
GDF72V*	1.2	0.75" BSPT	225	89	0.9	φ8	Aluminum alloy housing
GDF108V*	1.8	0.75" BSPT	258	89	1.0	φ8	Aluminum alloy housing
GDF216V*	3.6	1" BSPT	333	120	2.4	φ8	Aluminum alloy housing
GDF294V*	4.9	1.5" BSPT	432	120	2.9	φ8	Aluminum alloy housing
GDF342V*	5.7	1.5" BSPT	432	120	2.9	φ8	Aluminum alloy housing
GDF390V*	6.5	1.5" BSPT	432	120	3.0	φ8	Aluminum alloy housing
GDF444V*	7.4	1.5" BSPT	432	120	3.0	φ8	Aluminum alloy housing
GDF540V*	9	1.5" BSPT	432	120	3.0	φ8	Aluminum alloy housing
GDF690V*	11.5	2" BSPT	521	162	5.1	R1/2	Aluminum alloy housing
GDF810V*	13.5	2" BSPT	521	162	5.1	R1/2	Aluminum alloy housing
GDF990V*	16.5	2.5" BSPT	845	162	6.5	R1/2	Aluminum alloy housing
GDF1050V*	17.5	2.5" BSPT	845	162	6.6	R1/2	Aluminum alloy housing
GDF1170V*	19.5	2.5" BSPT	845	162	6.6	R1/2	Aluminum alloy housing
GDF1380V*	23	3" BSPT	601	200	8.7	R1/2	Aluminum alloy housing
GDF1590V*	26.5	3" BSPT	601	200	8.7	R1/2	Aluminum alloy housing
GDF1740V*	29	3" BSPT	862	200	11	R1/2	Aluminum alloy housing
GDF2100V*	35	3" BSPT	862	200	11	R1/2	Aluminum alloy housing
GDF2340V*	39	3" BSPT	862	200	11	R1/2	Aluminum alloy housing
GDF2700V*	45	4"FLG	900	500	66	Rc1/2	Carbon steel housing
GDF3090V*	51.5	5"FLG	930	500	98	Rc1/2	Carbon steel housing
GDF3480V*	58	5"FLG	930	500	103	Rc1/2	Carbon steel housing
GDF4080V*	68	5"FLG	950	540	118	Rc1/2	Carbon steel housing
GDF4200V*	70	5"FLG	950	540	120	Rc1/2	Carbon steel housing
GDF4560V*	76	6"FLG	990	560	124	Rc1/2	Carbon steel housing
GDF4800V*	80	6"FLG	990	560	127	Rc1/2	Carbon steel housing
GDF5520V*	92	6"FLG	1040	640	132	Rc1/2	Carbon steel housing
GDF5940V*	99	6"FLG	1040	640	136	Rc1/2	Carbon steel housing
GDF7680V*	128	6"FLG	1040	640	148	Rc1/2	Carbon steel housing
GDF8700V*	145	8"FLG	1140	700	190	Rc1/2	Carbon steel housing

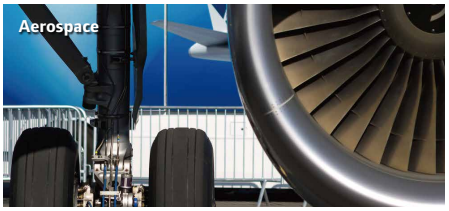
*Available with four filtration accuracy modes: G, D, H and A. The performance level complies with ISO 8573.1. For larger dimensions or special needs, contact your sales representative

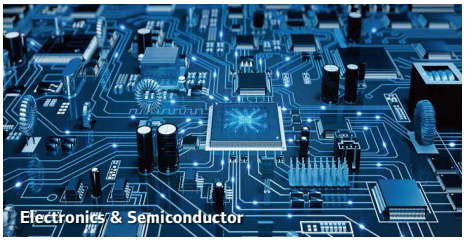
Comprehensive After-sales Services

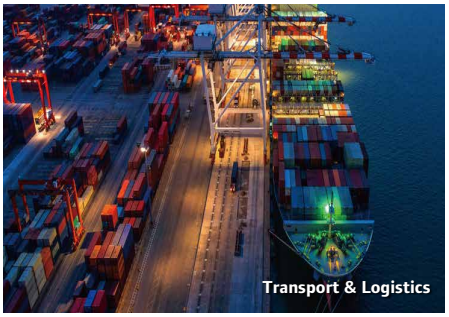
As a professional system service provider, we can serve customers at home and abroad whenever they need us by right of our specialized technical service model & technical quality management, strong technical service team and abundant supply of spare parts.

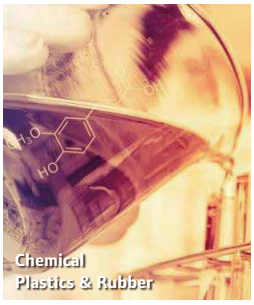
- Technical guidance on building new air compressor stations
- On-site commissioning by our skilled technicians
- Training for equipment management personnel of customers
- Regular visits to and free preventative inspection for customers
- 24-hour toll-free service hotline to receive timely feedback on customers' demand
- Quality guarantee with genuine spare parts
- Multiple extended warranty options to satisfy various needs of our customers
- Scheduled service package enables easier maintenance and convenient, correct use of spare parts for customers
- GD air compressor provides a variety of customized options to meet the needs of different industries and processes
- We can provide overall air compression system evaluation services, regardless of the brand of air compressors and after-treatment equipment used by our customers. Our dedicated team uses specialized tools to collect and analyze data and track the performance of the entire system, and provides professional solutions to improve system efficiency, reduce leakage and lower operating cost.

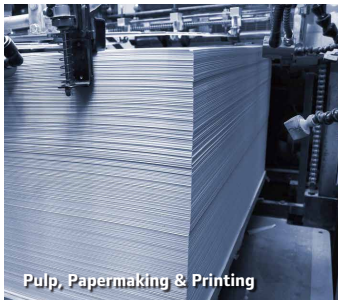
Application Industries











Gardner Denver Manages Your System with Heart and Soul

Gardner Denver has been manufacturing air compressors, blowers, vacuum pumps and related accessories for over 160 years. We are committed to helping customers achieve greater success by constantly improving the quality of our products and services through self-iteration and continuous innovation.

Gardner Denver is always ready to provide you with efficient, reliable and energy-saving compressed air and system solutions.

Oil-flooded Fixed Speed Air Compressor

Single-state air compressor
0.81-64.00m³/min
7~14barg

Two-state air compressor
29.60-70.10m³/min
7~14barg

Integrated Air compressor with inbuilt refrigerated dryer
0.81-3.70m³/min
7~12.5barg

Oil-flooded PM VSD Air Compressor

0.15-31.00m³/min
7~10barg

Oil-flooded general VSD air compressor (non-permanent magnet)

12.10-70.10m³/min
7~14barg

Oil-free Air Compressor

Oil-free scroll air compressor
0.21-3.78m³/min
8～10barg

Water lubricating oil-free permanent magnetic VSD air compressor

Normal-pressure model
0.30-27.00m³/min
7～10barg

Water lubricating oil-free permanent magnetic VSD air compressor

Low-pressure model
0.60-70.00m³/min
3~4barg

Medium-pressure model
1.40-40.00m³/min
20~40barg

Compressed Air Purification System

- Pipelined filter
- Refrigerated dryer
- Desiccant dryer

After-sales Services for Peace of Mind

- 24-hour toll-free service hotline
- Genuine spare parts
- Customized services

System Solutions

- Heat recovery system
- iConn intelligent connected platform