

- First China micro oil injection single screw air compressor was manufactured in 1988. Water lubricated oil-free compressor was designed 10 years later and research and development of water-lubricated PET oil-free air compressor in 2008
- Assigned air compressor supplier for 2010 World Exposition and 2008 Olympics
- 《The general water injecting single screw air compressor》Draft unit of industry standard

**GAIRS®**  
**GAIRS GROUP**

## Oil-free single screw air compressor with water lubricating

Range: 1m<sup>3</sup> ~ 60m<sup>3</sup> 0.2MPa~4.0MPa

**GAIRS®**

SHANGHAI GAIRS MACHINERY SALES CO., LTD

Add : No. 388, Tangming Rd., Shihudang Industrial Zone, Songjiang District, Shanghai  
电话 (Tel) : 0086-21-57842923 15821005771 邮编 (P.C.): 201617 (2020.9)  
Http : [www.gairs.cn](http://www.gairs.cn) E-mail : [m18918525134@163.com](mailto:m18918525134@163.com) / [chencx@gairs-sales.com](mailto:chencx@gairs-sales.com)

**Service Hotline : 0086-158 2100 5771**



**Environment friendly  
Highly efficient Reliable**





JIALISHI SONGJIANG INDUSTRIAL PARK

## Company profile

Shanghai GAIRS Machinery Co., Ltd. (Hereinafter referred to as GAIRS) is a joint-stock business integrating science, industry and trading and is committed to the R&D and manufacturing of universal machinery. With a registered capital of RMB 67.8 million, an area of 68,000 m<sup>2</sup>, and a construction area of 50,000m<sup>2</sup>, GAIRS is located in the Songjiang Industrial Zone of the international metropolitan of Shanghai. It is the pioneer developing single-screw air compressor in China, the major drafter of national standard of General Oil Injecting Single-screw Air Compressor and the industrial standard of General Water Injecting Single-screw Air Compressor, the single-screw air compressor production/export base designated in the 11th Five-year Plan of the national compressor industry, vice-chairman unit of China General Mechanical Industry Association, vice-director unit of China General Mechanical Industry Association Compressor Branch, member unit of China Compressor Standardization Technology Committee, National Contract-honoring & Promise-keeping Enterprise and one of China's Top 500 Machinery Units; while GAIRS obtained 2006 Most Competitive Brand from the Ministry of Commerce, Shanghai Famous Trademark; GAIRS air compressor was named Shanghai Famous Brand Product and GAIRS water-lubricating oil-free single-screw air compressor passed the TÜV certification.



TÜV CLASS 0



CE



ISO 9001: 2015 Standard



ISO 14001: 2015 Standard



OHSAS 18001: 2007 Standard



4.0mpa certificate of invention patent



0.8-1.0mpa second class compression patent certificate



High-tech enterprise certificate



Golden Rewards of water lubricated oil-free single screw air compressor



BRAND CHINA Authorized by Ministry of Commerce

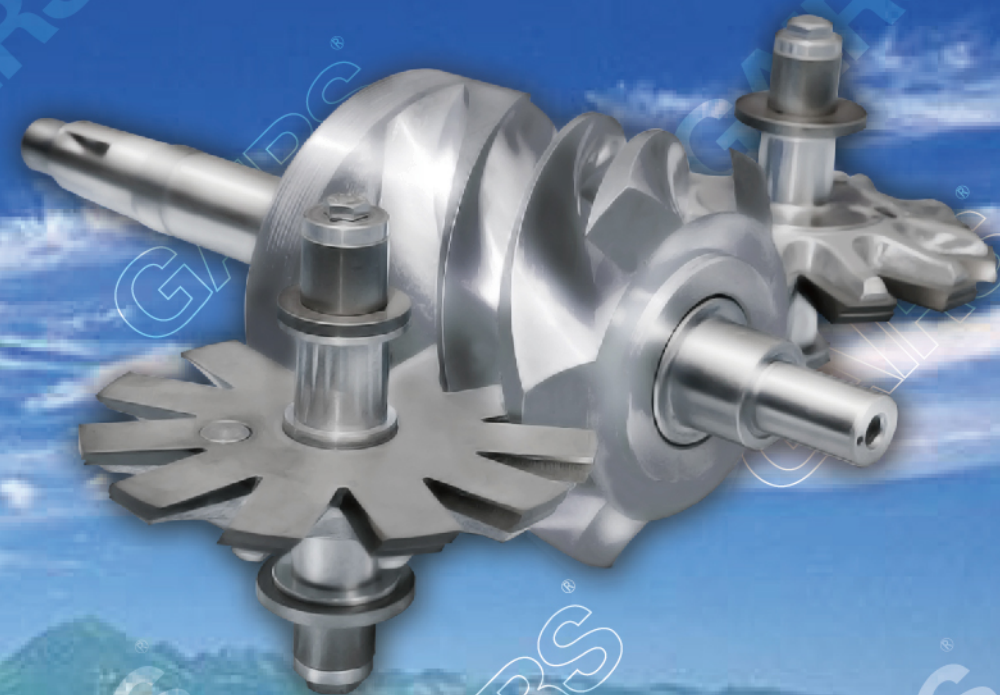


Water Lubrication Oil-Free  
Air compressor



# INGENUITY FOR AIR

With 30 years' experiences in air compressor, 18 years' in inverter and top end control technology, Gairs developed OGWB Series/OGWY permanent magnetic inverter, and low/medium pressure water lubricating oil-free single screw air compressors which will meet higher air compressor standard requirements. The products are widely used in food processing, pharmaceutical production, fermentation, PET bottle blowing, fine chemicals, precision electronics and instrumentation control and other industries.



intelligent

Efficient

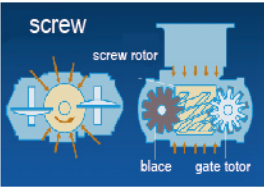
environmentally  
friendly



Working principle and characteristics of single screw compressor

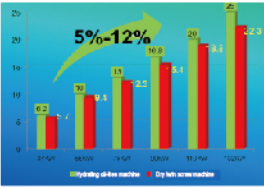
Simple constructionLow vibration

The single screw air compressor uses a single screw and two star wheels, one placed on either side of the screw. Radial and axial loads cancel each other, resulting a theoretically zero load. This is the most advanced design-ing structure of the single screw air compressor.



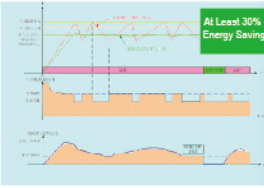
High efficiency

Firstly, single screw air compressor theoretically doesn't have any clear-  
ance volume. Secondly, the water used as a lubricating medium also  
seals gap inside the compression chamber, and enables high efficient  
operation at low speeds. Thirdly, using water as a cooling method keep  
compressor ideal isothermal compression.



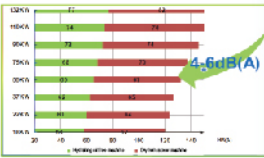
Energy saving

When the actual air usage is lower than rated air delivery, compressor  
consumes extra power without any air output during unloading. However,  
with inverter, compressor changes the rotation speed of motor depending  
on detected air pressure, resulting energy saving.



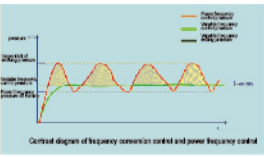
Less noise

First, the motor and screw are directly connected without any rotation  
gear to cause gear noise. Meanwhile, sound absorbing materials are also  
used in the equipment shell to reduce noise.



Stable air delivery

Depending on the valve of pressure sensor, the digital controller change  
the motor rotation speed through inverter. That is how it controls the  
discharge air pressure to make stable air output.



Monitorable

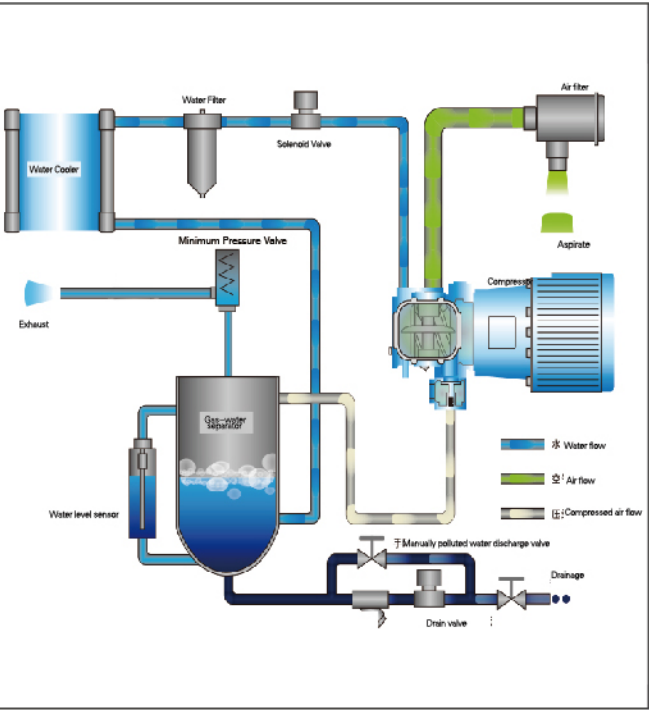
Intelligent monitoring is used to prevent accidents. Emergency alarm appears on computers and  
short messages will also be sent to managers. All these are substantial to the prevention of produc-  
tion accidents.



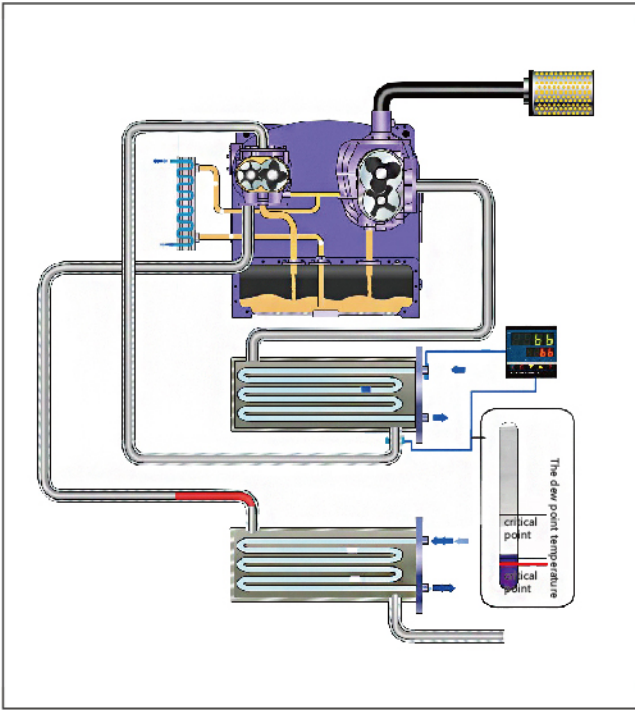
Comparison of water lubricated oil-free single screw air compressor and dry oil-free double screw air compressor

Comparison	Water lubricated oil-free single screw air compressor	Dry oil-free double screw air compressor
Air Discharge Temp.	Cool air discharge (about 50°C)	Hot air discharge (about 180–200°C)
Clearance Volume	Rotor has been used twice through one circulation, no clearance volume left.	Rotor has been used once through one circulation, existing clearance volume in main host.
Air Delivery	Ideal Isothermal Compression, air delivery volume is 5–12% more.	Energy lost due to hot air discharge, low air delivery volume
Efficiency	High efficiency, shaft power 5.5–6.0kW/(m³/min)	Low efficiency, shaft power 6.0–6.6kW/(m³/min)
Air Quality	Water sealing, completed no oil, safety air quality	Oil in the gear, high risk of air quality
Air Purity	Purified by water, clean air after separation	Directly compressed then discharge, containing dust and oil stain in discharged air.
Structure Balance	Radial and axial loads cancel each other	Radial load is not been balanced
Noise and Vibration	Simple structure, low vibration and less noise. Normally: 60–65dB(A)	High frequency noise due to two screw grinding. Normally: 64–78dB(A)
Durability	Rotation speed 3000r/min, theoretically zero load, long lifetime of screw (30000h), star wheel (50000h)	Rotation speed 18000r/min, high loads on screws, short lifetime of screw (8000–18000h)
Installation	Only a few spare parts, can be installed and adjusted separately	Complex construction, needs special technical support for installation
Maintenance	Only replaced air and water filter, easy maintenance and low cost	Many spare parts and less maintenance circle, high cost

Water lubricating oil free single screw air compressor engineering flow chart



Double screw dry oil free air compressor engineering flow chart





# COMPANY DEVELOPMENT HISTORY

**GAIRS®**

1988, Company was founded in Wenzhou. First OG series single screw micro-oil air compressor was designed and produced, breaking Euramerican long-time domination on Chinese market.

**1988**

1998, first oil-free water lubricated single screw air compressor came out, and the company launched OGWB series into the market on 2004.

**1998**

2002, OGWBD series low pressure (0.2–0.5MPa) oil-free water lubricated single screw air compressor was put onto the market.

**2002**

**2008**

2008, World's first two stage, medium pressure OGWBE 4.0 MPa oil-free water lubricated single screw air compressor was designed and tested, unblocking the piston compressor's domination in medium pressure compressor field.

**2016**

2016, Our company research and development of OGWBC series (0.8MPa~1.0MPa) two-stage compression energy-saving water lubrication air compressor into the market in 2016.



China's micro oil injection single screw air compressor was manufactured



0.7-1.2MPa Oil-free Water Lubricated Single Screw Air Compressor



0.2-0.5MPa Oil-free Water Lubricated Single Screw Air Compressor



4.0MPa Oil-free Water Lubricated Single Screw Air Compressor



Atmospheric pressure 0.8-1.0 MPA two-stage compression energy-saving single screw air compressor oil-free and water lubrication



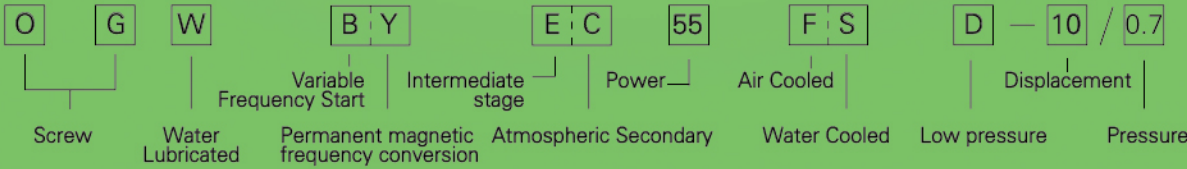
# OGWBD PERMANENT MAGNETIC FREQUENCY WATER LUBRICATING OIL-FREE AIR LOW PRESSURE COMPRESSOR

Water Lubrication  
Oil-Free

Applicable to blow glass bottle, textile, pharmaceutical, food, beverage, electronics, spraying, etc



Model indexes :



## OGWBD Single Stage VSD Compressor (3-4 Bar)

Model	FAD Capacity	Discharge Pressure	Motor Rating	Lubricant Water/Cycle	Discharge Connection	Noise Level	Dimensions	Weight	Cooling Water Capacity	Cooling Method
	m³/min	MPa	kW	litter	inch	dB(A)	L x W x H (mm)	kg	Ton/h	/
OGWB11FD	0.8-3.0 0.6-2.4	0.3 0.4	11	30	1 1/2"	58	1400 x 820 x 1500	620	/	Air
OGWB15FD	1.2-4.3 1.0-3.7	0.3 0.4	15	40	2"	60	1690 x 1000 x 1600	650		
OGWB22FD	1.8-6.1 1.4-5.0	0.3 0.4	22	60	2 1/2"	61	2000 x 1150 x 1670	1010		
OGWB37F(S)D	3.1-10.0	0.3	37	80	2 1/2"	65	2450 x 1550 x 1850	1200	8	Air
	2.5-8.5	0.4					2350 x 1250 x 1750			
OGWB45F(S)D	4.2-13.5	0.3	45	100	3"	70	2450 x 1550 x 1850	1500	9	Air
	3.1-10.0	0.4					2350 x 1250 x 1750			
OGWB55F(S)D	5.3-17.5	0.3	55	100	4"	71	2700 x 1650 x 2020	2200	10	Air
	4.1-13.5	0.4					2450 x 1450 x 1750			
OGWB75F(S)D	7.1-23.0	0.3	75	120	4"	75	2700 x 1650 x 2020	2450	15	Air
	6.4-20.0	0.4					2450 x 1450 x 1750			
OGWB90F(S)D	8.7-27.0	0.3	90	150	5"	77	3500 x 2000 x 2100	2600	17	Air
	7.5-24.0	0.4					2800 x 1500 x 2030			
OGWB110F(S)D	10.5-33.8	0.3	110	150	5"	78	3500 x 2000 x 2100	3000	20	Air
	8.7-28.0	0.4					2800 x 1500 x 2030			
OGWB132F(S)D	14.0-45.0	0.3	132	200	6"	78	4000 x 2000 x 2350	4500	25	Air
	10.8-35.0	0.4					3600 x 1700 x 2030			
OGWB160F(S)D	16.2-52.0	0.3	160	250	6"	79	4000 x 2000 x 2350	5000	28	Air
	13.4-43.0	0.4					3600 x 1700 x 2030			
OGWB185SD	18.0-58.0	0.3	185	260	6"	79	3800 x 1700 x 2300	5000	35	Water
	18.0-45.0	0.4								
OGWB200SD	19.0-60.0	0.3	200	280	8"	79	3800 x 1700 x 2300	5000	37	Water
	19.0-48.0	0.4								

Please note:  
1. OWGB55FD means an air-cooled unit, OWGB55SD means a water-cooled unit.  
2. For Lubricant Water/Cycle, "Per cycle" typically refers to 500 running hours.  
3. Cooling water capacity is only available with water-cooled units, and the water used should be reverse osmosis (RO) water.



Textiles



Fermentation



Glass blowing



**AIR WATER SEPARATOR**

Medical stainless steel would ensure the air to be clean and safe.



**SCREW ROTOR**

Imported Stainless steel, copper alloy, good wear resistance, heat resistance and corrosion resistance.



**STAR WHEEL**

With the use of imported polymers, the star wheels have good abrasion resistance, low noise and long service life.



**WATER FILTER**

Medical stainless steel would ensure the entire system to be clean.



**WATER SOFTENER**

To derive magnesium ions and calcium ion from water with the ion exchange principle to effectively prevent the host internal circulating water scale and extend the service life of the host.

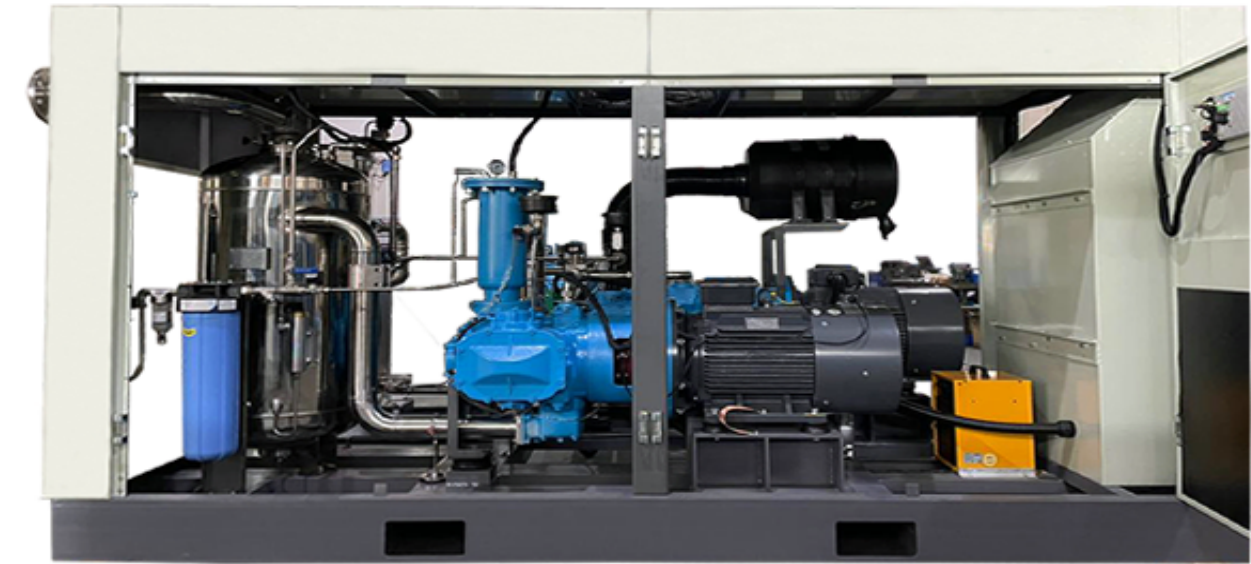


**CONTROL VALVE AND ELECTRICAL EQUIPMENT ACCESSORIES**

Adopt imported famous brand component to insure the equipment running stable.



**GAIRS®**  
**GAIRS GROUP**



INOVANCE HMI  
TOUCH SCREEN



INOVANCE  
INVERTER



INOVANCE PLC



# OGWY PERMANENT MAGNETIC FREQUENCY WATER LUBRICATING OIL-FREE AIR COMPRESSOR

Water Lubrication  
Oil-Free

ONE WORLD, PURER AIR



AT LEAST **30%** ENERGY SAVING

Gairs Air Compressor

## OGWY Single Stage VSD Compressor (7-10 Bar)

Model	FAD Capacity m³/min	Discharge Pressure MPa	Motor Rating kW	Lubricant Water/Cycle litter	Discharge Connection inch	Noise Level dB(A)	Dimensions L x W x H (mm)	Weight kg	Cooling Water Capacity Ton/h	Cooling Method
OGWY08F	0.5-1.3 0.4-1.1 0.3-0.9	0.7 0.8 1.0	7.5	20	3/4"	57	1100 x 750 x 1320	430	/	Air
OGWY11F	0.7-1.7 0.6-1.5 0.5-1.3	0.7 0.8 1.0	11	20	3/4"	57	1100 x 750 x 1320	450		
OGWY15F	1.0-2.5 0.9-2.2 0.8-2.0	0.7 0.8 1.0	15	25	1"	57	1370 x 820 x 1450	570		
OGWY18F	1.3-3.2 1.1-2.8 1.0-2.5	0.7 0.8 1.0	18.5	30	1"	58	1370 x 820 x 1450	620		
OGWY22F(S)	1.5-3.7 1.4-3.4 1.2-3.0	0.7 0.8 1.0	22	30	1"	60	1590 x 870 x 1500	690	5	Air or Water
OGWY30F(S)	2.1-5.3 1.9-4.7 1.7-4.3	0.7 0.8 1.0	30	40	1 1/2"	61	1690 x 1000 x 1600 1590 x 950 x 1500	980	6	Air or Water
OGWY37F(S)	2.5-6.2 2.2-5.6 2.0-5.0	0.7 0.8 1.0	37	60	1 1/2"	61	1690 x 1000 x 1600 1590 x 950 x 1500	1010	8	Air or Water
OGWY45F(S)	3.0-7.6 2.7-6.8 2.4-6.0	0.7 0.8 1.0	45	60	1 1/2"	65	2000 x 1300 x 1650 1590 x 950 x 1500	1110	9	Air or Water
OGWY55F(S)	4.0-10.0 3.6-9.0 3.1-7.8	0.7 0.8 1.0	55	80	2"	67	2450 x 1550 x 1850 2300 x 1250 x 1600	1500 (F) 1200 (S)	10	Air or Water
OGWY75F(S)	5.2-13.0 4.8-12.0 4.0-10.0	0.7 0.8 1.0	75	100	2"	71	2700 x 1650 x 2020 2300 x 1250 x 1600	2000 (F) 1550 (S)	15	Air or Water
OGWY90F(S)	6.7-16.8 6.0-15.0 5.6-14.0	0.7 0.8 1.0	90	100	2 1/2"	72	3100 x 1600 x 2000 2450 x 1450 x 1700	2600 (F) 2250 (S)	17	Air or Water
OGWY110F(S)	8.0-20.0 7.4-18.5 6.4-16.0	0.7 0.8 1.0	110	120	3"	74	3500 x 1650 x 2100 2450 x 1450 x 1700	2800 (F) 2450 (S)	20	Air or Water
OGWY132F(S)	10.0-25.0 9.2-23.0 8.0-20.0	0.7 0.8 1.0	132	120	3"	77	3500 x 1650 x 2100 2450 x 1450 x 1700	4100 (F) 2450 (S)	25	Air or Water
OGWY160F(S)	10.8-27.0 10.2-25.5 9.6-24.0	0.7 0.8 1.0	160	150	3"	78	4000 x 1700 x 2350 2800 x 1500 x 1900	4500 (F) 2600 (S)	28	Air or Water
OGWY185S	13.5-33.8 12.4-31.0 11.2-28.8	0.7 0.8 1.0	185	150	3"	78	2800 x 1500 x 1900	3000	35	Water
OGWY250S	17.2-43.0 16.4-41.0 15.5-38.8	0.7 0.8 1.0	250	200	4"	79	3600 x 1700 x 2030	4500	45	

Please note:

1. OGWY30F means an air-cooled unit, OGWY30S means a water-cooled unit.
2. For Lubricant Water/Cycle, "Per cycle" typically refers to 500 running hours.
3. Cooling water capacity is only available with water-cooled units, and the water used should be reverse osmosis (RO) water.



OGWBC TWO STAGE PERMANENT MAGNETIC FREQUENCY LUBRICATING OIL-FREE SINGLE SCREW AIR COMPRESSOR

Water Lubrication  
Oil-Free

Continuous innovation of national brands



AT LEAST 25% ENERGY SAVING

Gairs Air Compressor

OGWYC Two Stage VSD Compressor (8-10 Bar)

Technical parameters for ogwbe products with inverter water lubricating oil-free normal pressure compressor

Model	FAD Capacity	Discharge Pressure	Motor Rating	Lubricant Water/Cycle	Discharge Connection	Noise Level	Dimensions	Weight	Cooling Water Capacity	Cooling Method	
	m³/min	MPa	kW	litter	DN	dB(A)	L x W x H (mm)	kg	Ton/h	/	
OGWYC90S/F	20	0.8	55+37	120	65	75	3500 x 1650 x 2100	3500		Air	
								3000 x 1600 x 2100	3370	20	Water
OGWYC120S/F		1.0	75+45					4000 x 2000 x 2350	3500		Air
								3000 x 1600 x 2100	3370	17	Water
OGWYC120S/F	24	0.8	75+45	130	65	78	4000 x 2000 x 2350	3550		Air	
								3000 x 1600 x 2100	3450	25	Water
OGWYC140S/F		1.0	75+65					4000 x 2000 x 2350	3600		Air
								3000 x 1600 x 2100	3450	25	Water
OGWYC165S	30	0.8	90+75	150	80	80	3000 x 1600 x 2100	3500	26	Water	
OGWYC180S		1.0	90+90						30		
OGWYC185S	36	0.8	110+75	180	100	80	3600 x 2000 x 2100	4500	35		
OGWYC200S		1.0	110+90						37		
OGWYC200S	40	0.8	110+90	200	100	80	3600 x 2000 x 2100	4500	37		
OGWYC220S		1.0	132+90						38		
OGWYC240S	45	0.8	132+110	230	100	80	3600 x 2000 x 2100	4700	38		
OGWYC270S		1.0	160+110						40		
OGWYC270S	50	0.8	160+110	250	125	80	3800 x 2000 x 2100	5000	40		
OGWYC290S		1.0	160+132						43		
OGWYC330S	60	0.8	220+110	290	125	80	3800 x 2000 x 2100	5800	50		
OGWYC355S		1.0	220+132	310					53		

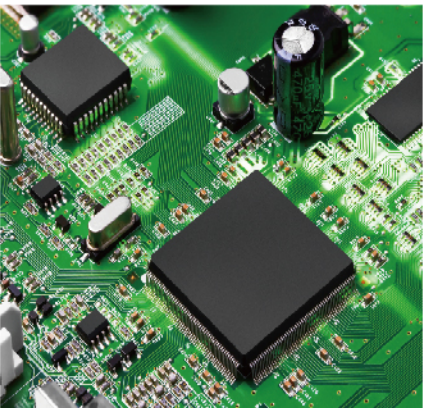
- Please note:
- 1. OGWYC90F means an air-cooled unit, OGWYC90S means a water-cooled unit.
  - 2. For Lubricant Water/Cycle, "Per cycle" typically refers to 500 running hours.
  - 3. Cooling water capacity is only available with water-cooled units, and the water used should be reverse osmosis (RO) water.



Food



Pharmaceuticals



Electronics



# OGWBE POWER SAVING TWO STAGE WITH INVERTER WATER LUBRICATING OIL-FREE SINGLE SCREW AIR COMPRESSOR

Water Lubrication  
Oil-Free

**Pet bottle blowing machine saves energy and environmental friendly, revolutionizes industry**



Gairs Air Compressor

## OGWBE Two Stage VSD Compressor (20-40 Bar)

Technical parameters for two stage ogwbe products with inverter water lubricating oil-free medium-pressure

Model	FAD Capacity	Discharge Pressure	Motor Rating	Lubricant Water/Cycle	Discharge Connection	Noise Level	Dimensions	Weight	Cooling Water Capacity	Cooling Method	
	m³/min	MPa	kW	litter	DN	dB(A)	L x W x H (mm)	kg	Ton/h	/	
OGWBE55S/F	6	2.0	37+15	86	25	70	3000 x 1400 x 1700	1820		Air	
								2900 x 1400 x 1700	1400	12	Water
OGWBE60S/F		3.0	22+37				3000 x 1400 x 1700	2000		Air	
							2900 x 1400 x 1700	2000	12	Water	
OGWBE75S/F		4.0	45+30	92			3100 x 1600 x 2000	2100		Air	
							2900 x 1400 x 1700	2100	15	Water	
OGWBE75S/F	10	2.0	55+22	110	32	73	3600 x 1750 x 2000	3000		Air	
								3500 x 1500 x 1730	2200	17	Water
OGWBE90S/F		3.0	55+37				3600 x 1750 x 2000	3000		Air	
							3500 x 1500 x 1730	2300	17	Water	
OGWBE110S/F		4.0	55+55	120			4000 x 1750 x 2030	3400		Air	
							3500 x 1500 x 1730	2400	20	Water	
OGWBE110S/F	13	2.0	75+30	135	40	75	4000 x 1750 x 2030	3500		Air	
								3500 x 1500 x 1730	2700	22	Water
OGWBE120S/F		3.0	75+45				4000 x 1750 x 2030	3500		Air	
							3500 x 1500 x 1730	2950	22	Water	
OGWBE150S		4.0	75+75	148			3500 x 1500 x 1730	3000	24	Water	
OGWBE130S		16	2.0	90+37			160	40	77		
OGWBE150S	3.0		75+75		4000 x 1700 x 1800	3500					27
OGWBE180S	4.0		90+90			3500					35
OGWBE165S	20	2.0	110+55	172	50	78		3650	35		
OGWBE185S		3.0	110+75		40		4000 x 1700 x 1800	4000	35		
OGWBE220S		4.0	110+110	185				4000	38		
OGWBE200S	24	2.0	132+65	200	50	78		4500	38		
OGWBE220S		3.0	132+90					4000 x 1800 x 2000	4500		38
OGWBE270S		4.0	160+110						4600		45
OGWBE235S	28	2.0	160+75	210	65	78		4600	46		
OGWBE270S		3.0	160+110		50		4000 x 1800 x 2000	4700	46		
OGWBE320S		4.0	160+160	225				4800	55		
OGWBE290S	36	2.0	200+90	220	65	80			50		
OGWBE330S		3.0	200+132	260			4300 x 2000 x 2100	5000	60		
OGWBE380S		4.0	220+160	290					68		
OGWBE330S	40	2.0	220+110	280	65	80			65		
OGWBE380S		3.0	220+160	300			4300 x 2000 x 2100	5000	70		
OGWBE440S		4.0	280+160	360					85		

Please note:

1. OGWBE60F means an air-cooled unit, OGWBE60S means a water-cooled unit.
2. For Lubricant Water/Cycle, "Per cycle" typically refers to 500 running hours.
3. Cooling water capacity is only available with water-cooled units, and the water used should be reverse osmosis (RO) water.