

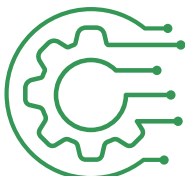
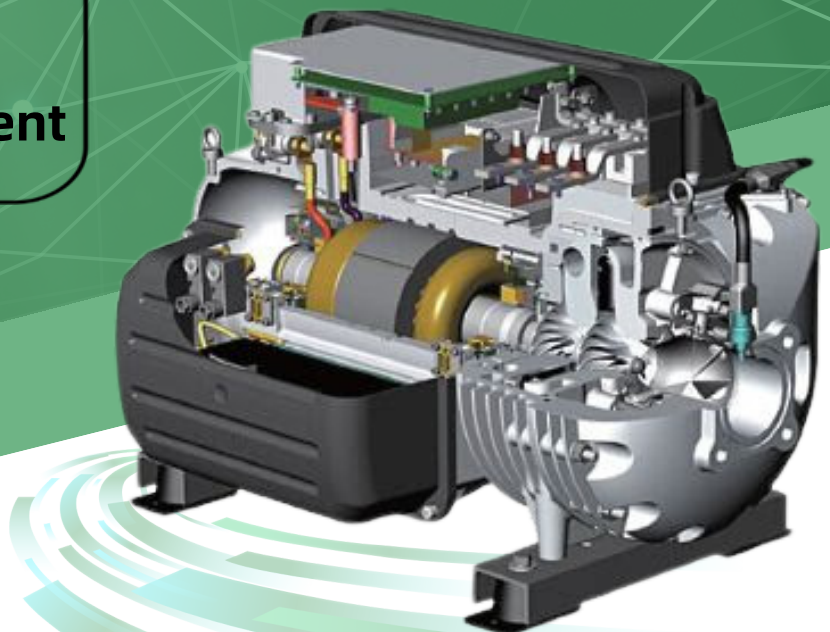


Magnetic levitation energy-saving technology

Brochure

40%

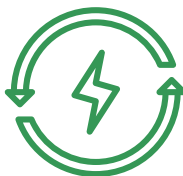
More Energy Efficient



Efficiency



Silent



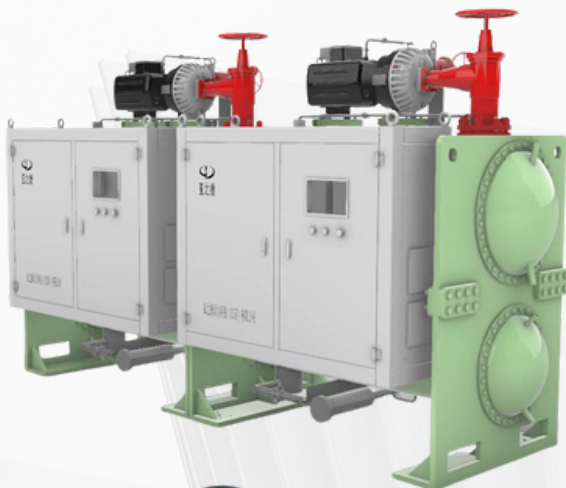
Energy saving

Product Brochure

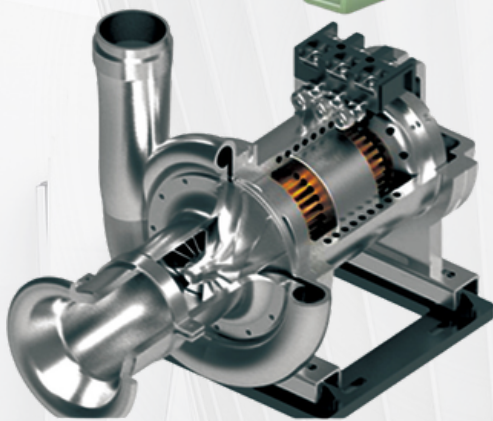
Energy-saving air compressor systems for various industries

Oil-free, magnetic bearings

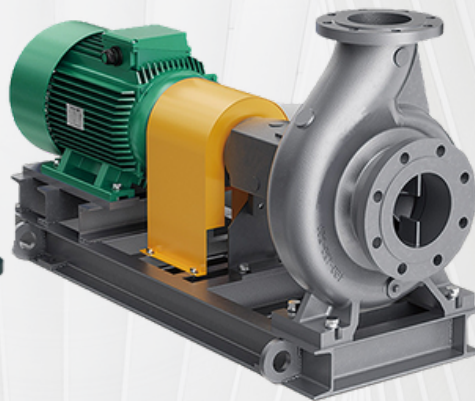
Magnetic levitation refrigeration
centrifuge unit



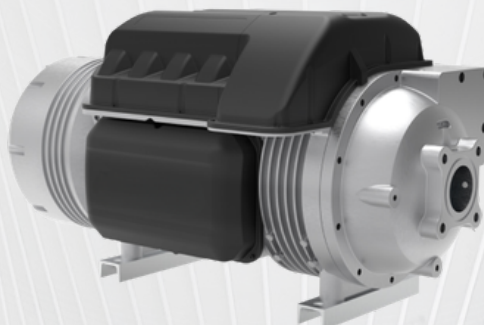
Magnetic levitation ORC
generator set



Magnetic levitation blower
30-300kW 20000-35000rpm



Magnetic levitation motor pump
5-500kW 750-3000rpm



Magnetic levitation refrigeration compressor
75-300kW 30000-400000rpm

01. Maglev Water-cooled Centrifugal Chiller



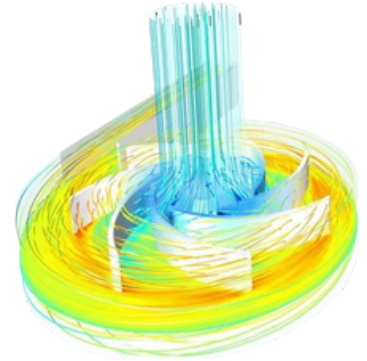
Compared to traditional units, magnetic levitation centrifugal chiller units offer energy savings of over 30%, with a maximum cooling capacity of 200 RT per compressor and a pressure ratio reaching up to 6. Boasting outstanding advantages—including high efficiency, silent operation, oil-free design, and maintenance-free performance—they represent an excellent choice for the upgrading and replacement of core equipment within the HVAC industry.



Core Technology

1. Three-Dimensional Flow Impeller

- Aerospace-grade forged materials
- High single-stage compression ratio
- Machined using a five-axis machining center
- Unique noise reduction design
- Variable efficiency up to 85%



2. Magnetic Bearings

- Derived from aerospace technology
- Permanent magnet biased magnetic bearing
- Superior to electromagnetic magnetic bearings
- Oil-free, friction-free, silent operation
- Long service life

3. High-Speed Permanent Magnet Motor

- Sensorless Control Technology
- Derived from high-speed rail motor control technology
- The motor efficiency can reach 98%
- The controller efficiency can reach 97%
- Direct-drive high-speed impeller



4. Intelligent Control System

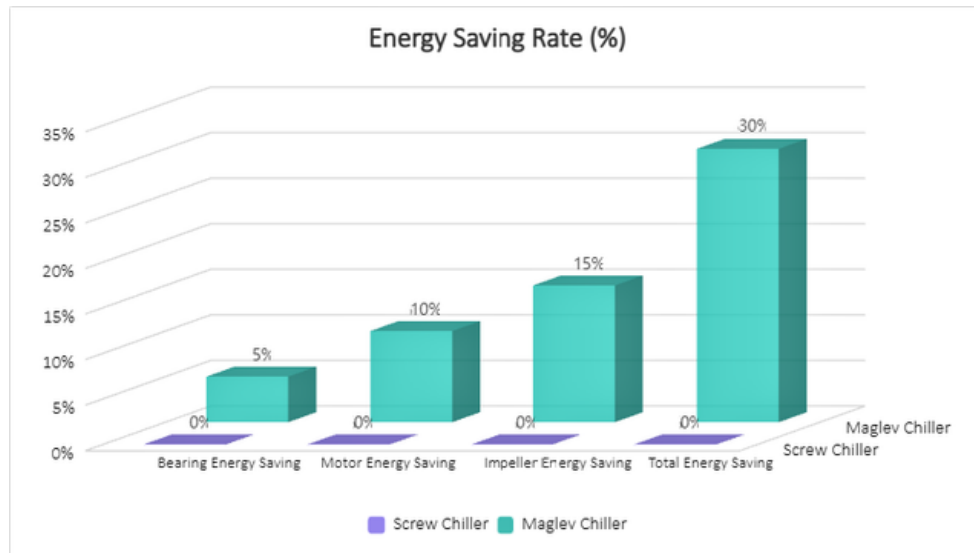
- Integrated design combining main controller, magnetic bearing, and frequency converter control.
- Automatically find the optimal operating point.
- Unattended operation, remote monitoring.



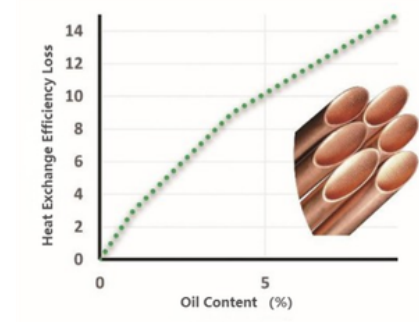
Features and Benefits



Ultra High Efficiency: COP > 6, PLV far exceeds National Grade1 standard, 30% - 50% annual electricity savings.



Low Lcc: Oil-free and friction-free operation ensures undiminished efficiency. No oil system maintenance, fewer wearing parts, significantly reduce O&M costs.



Environmental Reference	(dB)
Silent / Absolute Silence-----	0 dB
Whispering-----	20 dB
Quiet Park-----	40 dB
Normal Conversation-----	60 dB
Loud Talking (Maglev Unit Operating Noise)-----	70 dB
Noisy Street Traffic-----	80 dB
Heavy Duty Truck-----	90 dB
Indoor Electric Drill-----	100 dB
Siren (Screw Unit Operating Noise)-----	110 dB
Aircraft Takeoff-----	120 dB



Low Noise&Eco-friendly: Smooth operation without vibration, ultra-low noise. No expensive soundproofing required.



Intelligent Control: Supports remote monitoring, operation, and maintenance capabilities, enabling precise regulation of operational parameters and comprehensive historical data logging.



Parameter Table

Model Parameters

Model	Unit	LY120	LY200	LY240	LY400
Cooling Capacity	RT	120	200	240	400
	kW	422	703	844	1407
Input Power	kW	70	117	141	234
COP	kW/kW	>6	>6	>6	>6
Starting Current	A	2	2	2	2
Power Supply	380V-3P-50Hz				
Refrigerant	R134a				
Evaporator Flow Rate	m ³ /h	73	121	145	242
Condenser Flow Rate	m ³ /h	85	141	170	283
Unit Weight	kg	3000	4000	4300	6000

Unit Operating Specifications

Category	Requirement / Specification
Voltage Fluctuation	±10% (at constant rated frequency)
Voltage Sag	≤15% within 2ms
Harmonics	Complies with GB/T 14594 (Power quality—Harmonics in public supply network)
Phase Imbalance	Voltage phase unbalance ≤ 2%
Frequency	±5% (at constant rated voltage)
Ambient Temperature	0°C to 35°C (Temperature within the installation space)
Relative Humidity	< 80%, non-condensing
Altitude	< 1000m (Higher altitudes may affect electrical insulation and conductivity, requiring special configuration)
Installation Guidelines	Environmental Protection: The unit must be installed in a well-ventilated indoor environment. It is strictly prohibited to store or operate the unit in areas exposed to rain, water droplets, or direct sunlight.
	Safety Distance: Do not install the unit near facilities where there is a risk of flammable gas leakage.
	Special Environments: For installations in coastal areas (high salinity), chemical plants, or environments with high concentrations of corrosive gases, a specialized unit design is required.
	Ventilation Requirement: The machine room must maintain adequate airflow to ensure the indoor ambient temperature does not exceed 35°C.

Parameter Table

Technical Parameters for Maglev Water-Cooled Units (Cooling/Heating)

Model	Unit	LYS120L(L)	LYS200L(L)	LYS120 II L(L)	LYS200 II L(L)	LYS120IVL(L)	LYS200IVL(L)
Cooling Conditions	kW	422	703	844	1407	1688	2814
	Ton	120	200	240	400	480	800
Rated Power	kW	67	112	134	223	264	440
COP	W/W	6.3	6.3	6.3	6.3	6.4	6.4
Rated Current	A	104	173	208	346	409	682
Heating Conditions	kW	443	735	883	1450	1770	2950
	Ton	126	209	251	412	503	839
Rated Power	kW	78	129	155	250	311	500
COP	W/W	5.7	5.7	5.7	5.8	5.7	5.9
Rated Current	A	120	200	240	388	481	775
Max Operating Current	A	155	238	310	476	620	952
Power Supply Type		380V/3N~50Hz					
Load Control Range		25%~100% Stepless Adjustment					
Compressor	Type	Magnetic Bearing, Centrifugal Compression, High-speed PMSM					
	Starting Current	<5A					
	Quantity	1	1	2	2	4	4
Evaporator	Type	Shell and Tube Heat Exchanger (Flooded / Falling Film Type)					
	Water Flow Rate (m³/h)	73	121	146	243	292	485
	Water Resistance (kPa)	52	52	54	54	54	54
Condenser	Type	Shell and Tube Heat Exchanger					
	Water Flow Rate (m³/h)	44	73	87	146	175	291
	Water Resistance (kPa)	57	60	58	62	57	62
Refrigerant	Type	R134a	R134a	R134a	R134a	R134a	R134a
	Charge Amount (kg)	210	390	420	780	840	1400
	Expansion Device	Electronic Expansion Valve					
Dimensions	Length (mm)	2600	4100	4200	4100	4900	6700
	Width (mm)	1300	1250	1300	2500	2550	2700
	Height (mm)	1950	2250	1950	2250	1950	2550
Weight	Shipping (kg)	2300	4300	4550	7100	9050	11700
	Operating (kg)	2910	5090	5370	8280	10290	13500
Cooling Mode: Based on GB/T 18430.1. Chilled water inlet/outlet: 7/12℃; Cooling water inlet/outlet: 30/35℃. Heating Mode: Based on GB/T 19409. Hot water inlet/outlet: 38.6/45℃; Heat source water inlet/outlet: 15/6.3℃. For any non-standard requirements, please confirm with our professional technical staff.							

02. Maglev Air-cooled Centrifugal Chiller

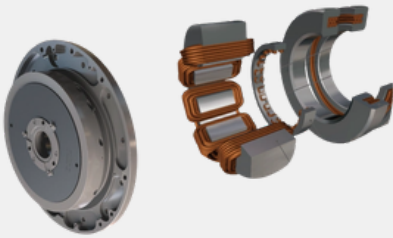
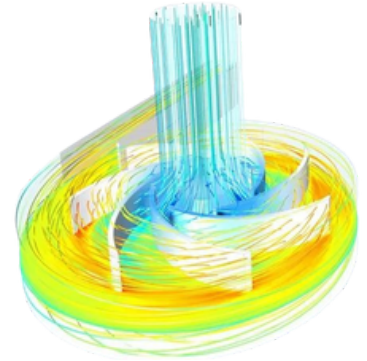


The Maglev Air-cooled Centrifugal Chiller/Heat Pump is a premium climate control solution integrating oil-free magnetic levitation compression, microchannel heat exchange, and intelligent variable-frequency control. By utilizing air-cooling technology, the system eliminates the need for cooling towers, water pumps, and complex piping, offering easy installation and simplified maintenance. Designed for both high-efficiency cooling and exceptional heating performance, it is the ideal choice for commercial and industrial buildings prioritizing energy savings and spatial efficiency.

Core Technology

1. Three-Dimensional Flow Impeller

- Aerospace-grade forged materials
- High single-stage compression ratio
- Machined using a five-axis machining center
- Unique noise reduction design
- Variable efficiency up to 85%



2. Magnetic Bearings

- Derived from aerospace technology
- Permanent magnet biased magnetic bearing
- Superior to electromagnetic magnetic bearings
- Oil-free, friction-free, silent operation
- Long service life

3. High-Speed Permanent Magnet Motor

- Sensorless Control Technology
- Derived from high-speed rail motor control technology
- The motor efficiency can reach 98%
- The controller efficiency can reach 97%
- Direct-drive high-speed impeller



4. Air-Cooled Heat Exchange System

- Utilizes advanced "V" or "W" shaped high-efficiency finned/micro-channel heat exchangers, characterized by a large heat exchange surface area and strong corrosion resistance.

Advantages and Benefits



Energy-Efficient: Incorporating a direct-drive permanent magnet motor and tri-dimensional flow impeller technology, it achieves a significant reduction in energy consumption—ranging from 20% to 30%—compared to traditional blowers.



Zero Contamination: 100% oil-free, zero risk of contamination. Meets strict green building and environmental standards.



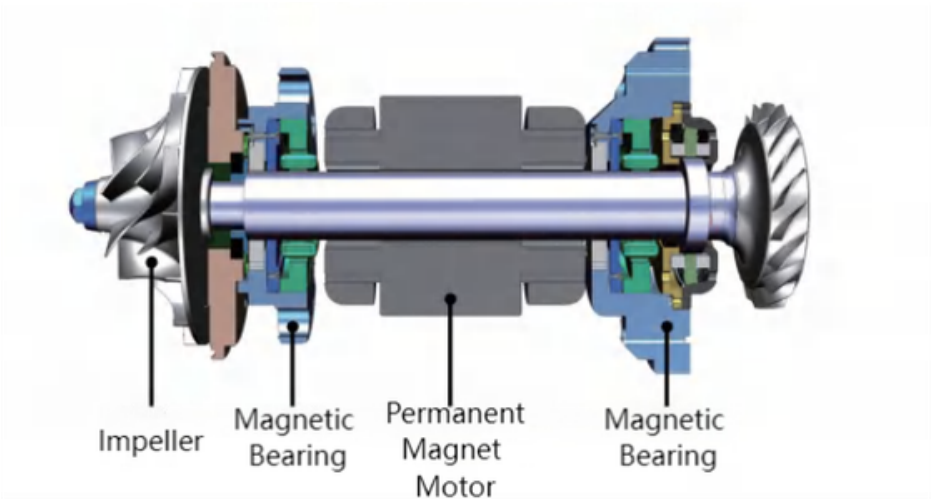
Tower-free: No cooling tower or water loop maintenance, lower CAPEX and smaller footprint.



Rapid Deployment: Modular design, "plug and play" installation. Shortens project duration and installation complexity.



Intelligent Control: Supports remote monitoring, operation, and maintenance capabilities, enabling precise regulation of operational parameters and comprehensive historical data logging.



Model Parameters

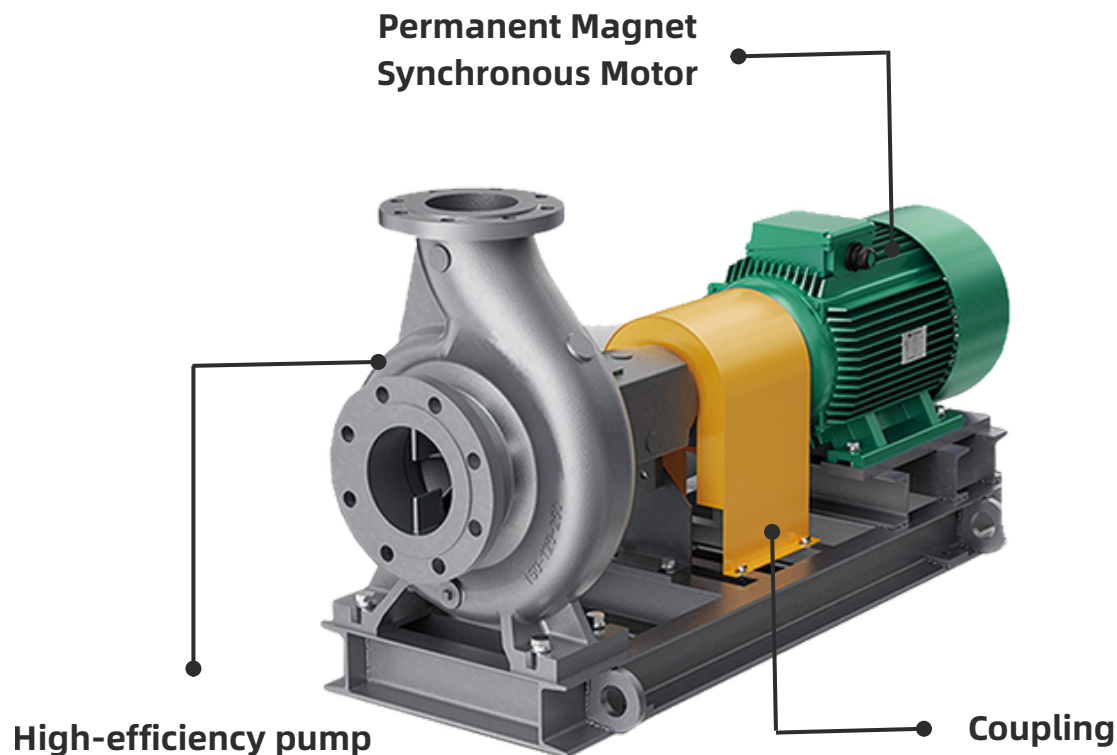
Model	Unit	LY120	LY200	LY240	LY400
Cooling Capacity	RT	120	200	240	400
	kW	422	703	844	1407
Input Power	kW	70	117	141	234
COP	kW/kW	> 6	> 6	> 6	> 6
Starting Current	A	2	2	2	2
Power Supply	380V-3P-50Hz				
Refrigerant	R134a				
Evaporator Flow Rate	m ³ /h	73	121	145	242
Condenser Flow Rate	m ³ /h	85	141	170	283
Unit Weight	kg	3000	4000	4300	6000

Parameter Table

Technical Parameters for Maglev Air-Cooled Units (Cooling/Heating)

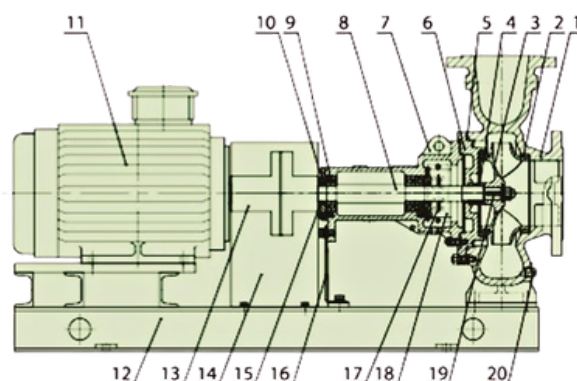
Model			LYK120(L)	LYK100(M)	LYK100II(M)
Cooling Mode	Cooling Capacity	kW	440	350	700
		Ton	125	100	200
	Rated Power	kW	123	96	192
	COP	W/W	3.57	3.65	3.65
	Rated Current	A	208	162	162
Heating Mode	Heating Capacity	kW	/	377	754
		Ton	/	107	214
	Rated Power	kW	/	92	184
	COP	W/W	/	4.1	4.1
	Rated Current	A	/	155	310
Electrical Power Supply			380V / 3N ~ 50Hz		
Load Control			25%~100% Stepless Adjustment		
Compressor	Type		Maglev Bearing, Centrifugal, High-speed PMSM		
	Starting Current		< 5A		
	Quantity	Set	1	1	2
Heat Exchanger	Air-Side Type		Finned Heat Exchanger		
Condenser	Type		Shell and Tube Heat Exchanger		
	Water Flow Rate	m³/h	76	60	121
	Water Resistance	kPa	50	45	45
Refrigerant	Type		R134a		
	Charge Amount	kg	280	240	480
	Expansion Device		Electronic Expansion Valve		
Dimensions	Length (L)	mm	5500	4500	9000
	Width (W)	mm	2550	2550	2550
	Height (H)	mm	2900	2900	2900
Weight	Shipping Weight	kg	5200	4500	9000
	Operating Weight	kg	5800	5100	10200
Notes & Standards: Rated Heating Conditions: Outdoor dry/wet bulb temperature 7°C/6°C, outlet water temperature 41°C.Executive Standards: GB/T 18430.1, GB/T 25127.1, GB/T 37480-2019.					
Disclaimer: Parameters are for reference only. Please refer to the actual nameplate on the unit for definitive data.					
Customization: For other non-standard requirements, please consult our technical personnel.					

03. Magnetic Levitation Motor Pump



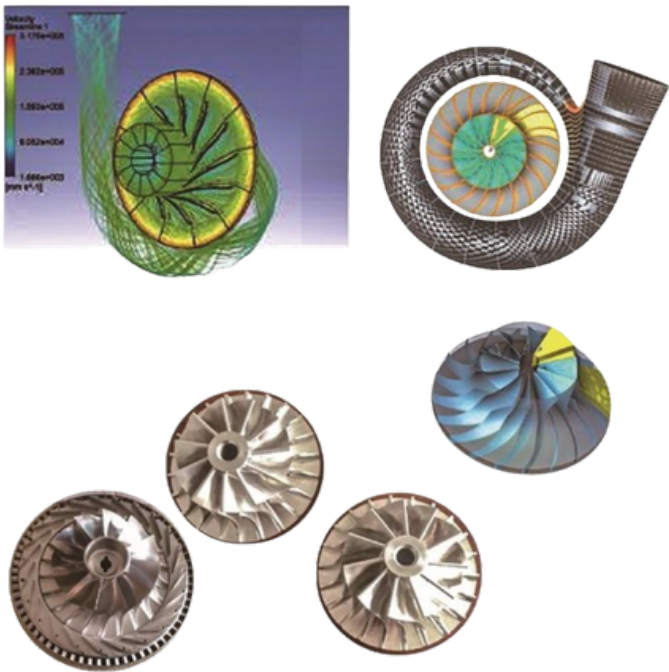
Structure

No.	Item	Material	
		HT	304
1	Pump	HT250	ZG07Cr19Ni10
2	Sealing ring	C/Cu	06Cr19Ni10-
3	impeller	HT22	ZG07Cr19Ni10
4	Mechanical seal	C/SiC-NBR	C/SiC-VITON
5	O-ring	NBR	VITON
6	Back cover	HT250	ZG07Cr19Ni10
7	Bearing housing	HT250	HT250
8	Spindle	20Cr13	06Cr19Ni10
9	Bearing	--	--
10	Bearing rear cover	HT250	HT250
11	Motor	--	--
12	Base	Q235A	Q235A
13	Coupling	--	--
14	Coupling cover	Q235A	Q235A
15	VD-ring	VITON	VITON
16	Bearing housing bracket	Q235A	Q235A
17	Water retaining ring	NBR	NBR
18	Protective plate	06Cr19Ni10	06Cr19Ni10
19	Key	20Cr13	06Cr19Ni10
20	Silk plug	Q235A	06Cr19Ni10



High-Efficiency Energy Saving Pump Head

Pump head design



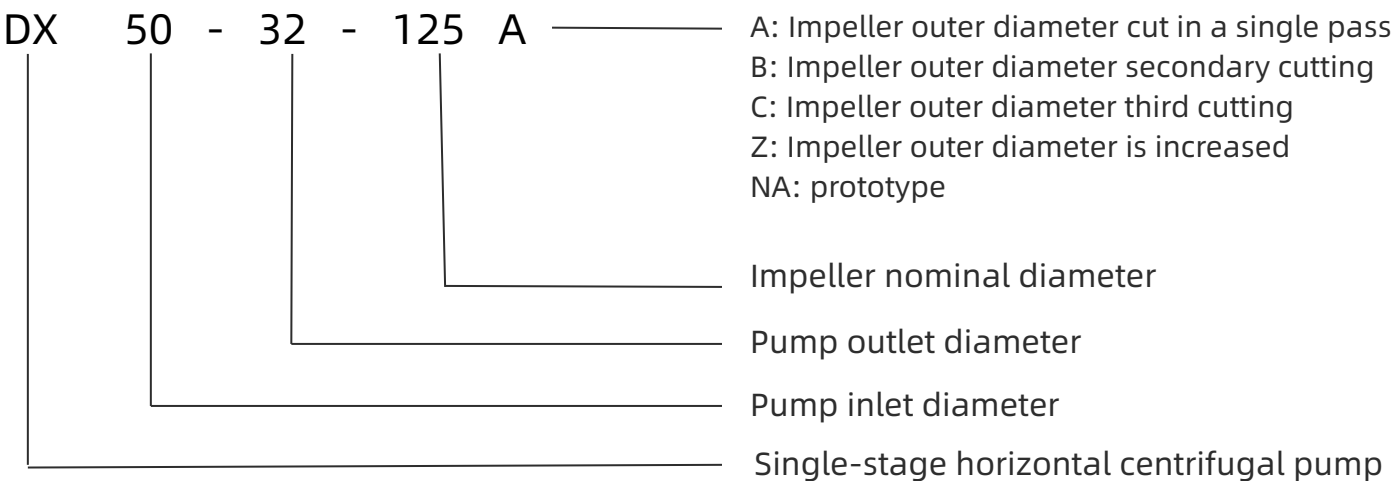
Design and simulation platform:

- CFD Simulation Design
- Using NUMECA aerospace design SMRCE software and applying fluid simulation and analysis technology, the hydraulic model was optimized and upgraded, resulting in excellent energy-saving performance that meets the GB-19762 standard.

Structural form:

- Three-dimensional flow technology
- Closed type/Open type
- High efficiency, variable efficiency greater than 82%

Product serial number identification diagram



Application

This is a new generation of single-stage, single-suction, high-efficiency centrifugal pumps, suitable for various pumping applications involving media similar to clean water. The pump head has a compact structure, allowing for installation even in limited spaces.



Advantages

- Utilizing lost-foam and resin-bonded sand casting processes, the product boasts high precision.
- The built-in self-flushing design of the mechanical seal extends its service life.
- The pump body features a base support design, capable of withstanding greater hydraulic forces and pipeline pressure.
- The entire series of bearing housings is equipped with protective plates for enhanced safety.
- The back pull-out design allows for easy installation and maintenance without removing the pump body or piping.
- It features a small size, compact structure, and low noise operation.

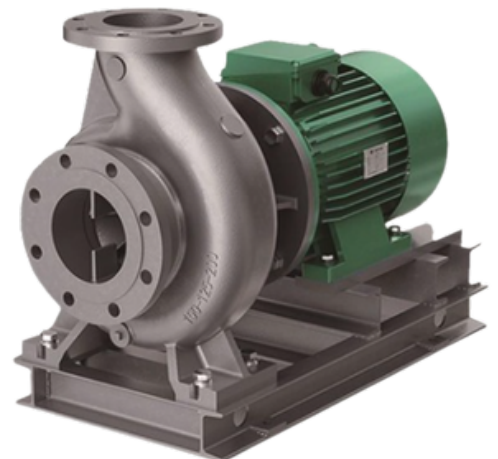
Working Conditions

Transported medium temperature: $-10^{\circ}\text{C}\sim 85^{\circ}\text{C}$

Maximum working pressure: 1.6 MPa

Maximum inlet pressure: 0.6 MPa

Inlet diameter: DN32~DN250



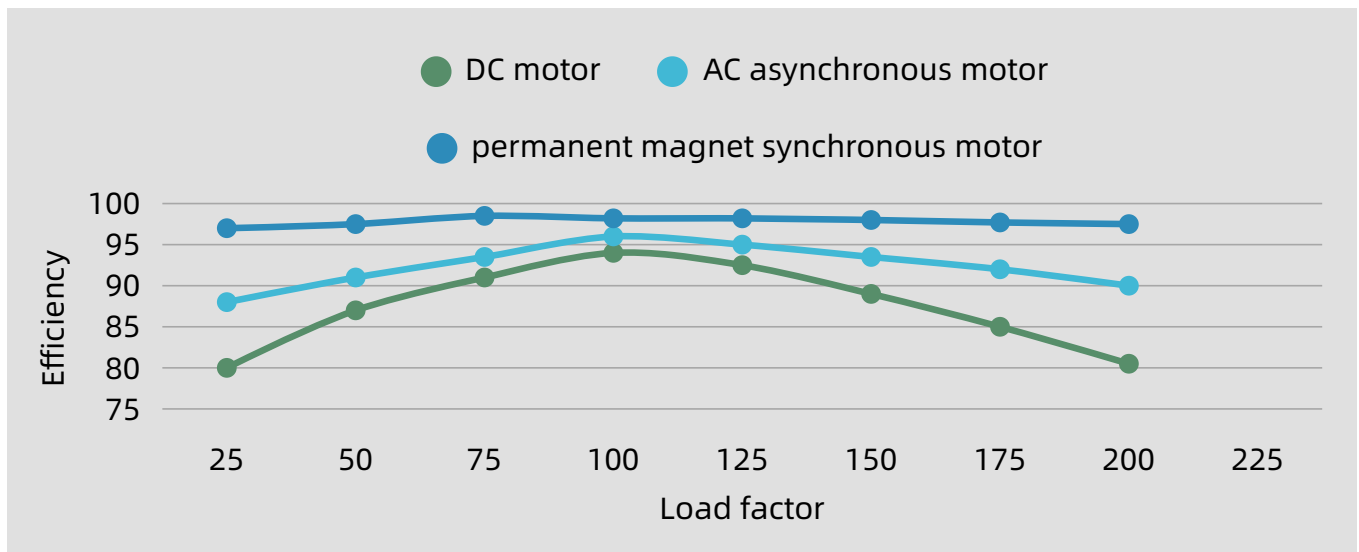
Permanent Magnet Synchronous Motor

Main Features

- **Adapting to different operating conditions**

For applications under variable frequency conditions, Hummi can provide high-efficiency permanent magnet motors with different speeds and power levels.

For applications under non-variable frequency conditions, Hummi can provide permanent magnet motors with self-starting capabilities. These motors do not require a dedicated starting controller (frequency converter), and the starting method is the same as that of ordinary asynchronous motors, eliminating the need for additional procurement and maintenance costs for motor controllers.



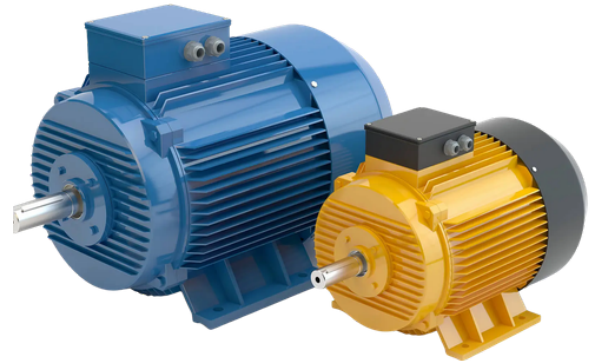
- **High efficiency, high power factor**

The no-load current and load current of permanent magnet synchronous motors are both lower than those of asynchronous motors.

Permanent magnet synchronous motors have a wide high-efficiency operating range, maintaining high efficiency in the load range of 25%-125%. The motor efficiency can reach up to 98.5%, and the power factor can reach up to 0.998.

Advantages

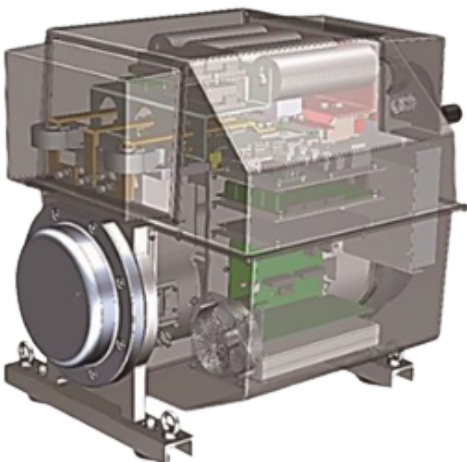
Three-phase asynchronous motors typically have a relatively small starting torque, and the starting current is usually 6-10 times the rated current. Permanent magnet synchronous motors, on the other hand, can have a starting torque up to 3 times the rated torque and do not require a surge current to start.



The efficiency of asynchronous motors fluctuates with the load, and the efficiency decreases as the load decreases.

Typically, permanent magnet motors are more than 6% more efficient than ordinary asynchronous motors, and the useful power output is increased by more than 15% (motor power $P_1 = 1.732 \cdot I \cdot U \cdot \text{power factor}$, asynchronous motor power factor = 0.85, permanent magnet motor power factor ≈ 1).

High-efficiency permanent magnet motor controller



Fully independently developed permanent magnet synchronous motor control system.

System efficiency exceeds 96.5%

Product power range: 3kW to 3000kW, control speed: 0 to 130,000 rpm. Similar products are widely used in aerospace, aviation, and high-speed rail applications.



Models of high-efficiency water pump

Model Parameters: High-Efficiency Water Pump

Model Type	Motor Power (kW)	Speed (RPM)	Capacity (m³/h)	Head (m)	Eff (%)	NPSHr (m)	Weight (kg)
YZJH/P80-50-315	5.5	1480	20	32	54	2.0	177 / 228
			28	30	57	2.2	
			33.5	28	58	2.5	
YZJH/P80-50-315Z	7.5	1480	21	36	54	2	188 / 238
			30	35	57	2.1	
			36	34	58	2.4	
YZJH/P100-65-315	11	1480	42	34	60	2.0	229 / 299
			60	32	66	2.2	
			72	29	64	2.6	
YZJH/P125-100-315B	15	1480	70	27	72	2.0	309 / 379
			100	26	77	2.1	
			120	24	73	2.5	
YZJH/P125-100-315	18.5	1480	98	33	74	2	356 / 426
			140	30	79	2.2	
			168	27	75	2.6	
YZJH/P150-125-315A	22	1480	140	29	73	2	392 / 462
			200	27	79	2.4	
			240	24	78	2.8	
YZJH/P150-125-315	30	1480	154	35	74	2	461 / 531
			220	33	80	2.5	
			264	30	79	2.9	
YZJH/P150-125-315A	22	1480	140	29	73	2	392 / 462
			200	27	79	2.4	
			240	24	78	2.8	
YZJH/P150-125-315	30	1480	154	35	74	2	461 / 531
			220	33	80	2.5	
			264	30	79	2.9	
YZJH/P150-125-400B	37	1480	140	46	69	2	589 / 659
			200	44	74	2.1	
			240	41	73	2.5	
YZJH/P150-125-400A	45	1480	147	53	70	2	595 / 665
			210	50	75	2.1	
			252	46	74	2.5	
YZJH/P200-150-315	55	1480	280	38	77	3	778 / 868
			400	35	83	4.1	
			480	32	82	4.8	
YZJH/P200-150-400B	75	1480	231	46	75	2.6	942 / 1032
			330	44	79	3.3	
			396	42	78	3.9	
YZJH/P200-150-400	90	1480	280	57	77	2.8	1012 / 1102
			400	55	81	3.8	
			480	50	80	4.4	

Operating Conditions: Conveyed Medium Temperature: 10°C – 85°C; Maximum Operating Pressure: 1.6 MPa; Maximum Inlet Pressure: 0.6 MPa; Inlet Diameter: DN32 – DN250.

Models of permanent magnet synchronous motors

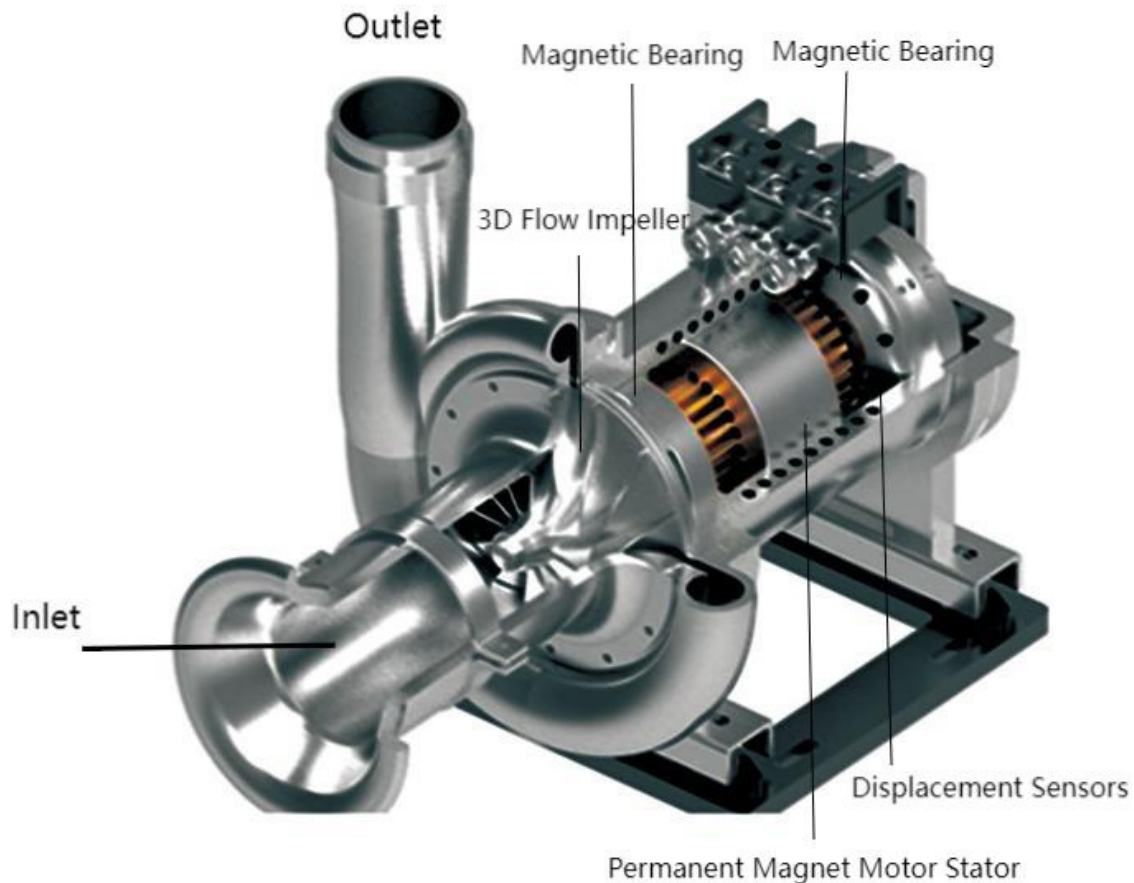
Model Parameters: High-Efficiency Permanent Magnet Motors

Model	Rated Power (kW)	Rated Current (A) 380V	Synchronous Speed (r/min)	Rated Torque (Nm)	Rated Efficiency (%)	Power Factor (COS)	Max Torque Multiple	Locked-Rotor Torque Multiple	Locked-Rotor Current Multiple	Weight (kg)
2-Pole Motors (3000 r/min)										
YZJ160L-2/18.5	18.5	30.6	3000	58.9	94.8	0.97	2.3	2	8.2	140
YZJ180M-2/22	22	36.2	3000	70	95.4	0.97	2.3	2	8.2	170
YZJ200L1-2/30	30	48.8	3000	95.5	95.5	0.97	2.3	2	7.6	220
YZJ200L2-2/37	37	60.1	3000	117.8	95.7	0.97	2.3	2	7.6	245
YZJ225M-2/45	45	72.8	3000	143.2	96.1	0.97	2.3	2	7.7	280
YZJ250M-2/55	55	88.6	3000	175.1	96.2	0.97	2.3	2	7.7	365
YZJ280S-2/75	75	122	3000	238.7	96.4	0.97	2.3	1.8	7.1	490
YZJ280M-2/90	90	145	3000	286.5	96.5	0.97	2.3	1.8	7.1	530
YZJ315S-2/110	110	178	3000	350.1	96.6	0.97	2.3	1.8	7.1	800
YZJ315M-2/132	132	212	3000	420.2	96.7	0.97	2.3	1.8	7.1	920
YZJ315L1-2/160	160	255	3000	509.3	96.8	0.97	2.3	1.8	7.2	1000
YZJ315L2-2/200	200	320	3000	636.6	97	0.97	2.3	1.6	7.2	1020

Models of permanent magnet synchronous motors

Model	Rated Power (kW)	Rated Current (A) 380V	Synchronous Speed (r/min)	Rated Torque (Nm)	Rated Efficiency (%)	Power Factor (COS)	Max Torque Multiple	Locked-Rotor Torque Multiple	Locked-Rotor Current Multiple	Weight (kg)
YZJ355M-2/250	250	405	3000	795.8	97.2	0.97	2.3	1.6	7.2	1148
YZJ355L-2/315	315	509	3000	1002.6	97.5	0.97	2.3	1.6	7.2	1650
4-Pole Motors (1500 r/min)										
YZJ180M-4/18.5	18.5	31	1500	117.8	95.3	0.97	2.3	2.2	9	187
YZJ180L-4/22	22	36.8	1500	140.1	95.7	0.97	2.3	2	7.8	170
YZJ200L-4/30	30	50	1500	191	96	0.97	2.3	2	7.8	200
YZJ225S-4/37	37	61.4	1500	235.5	96.3	0.97	2.3	2	7.3	230
YZJ225M-4/45	45	74.5	1500	286.5	96.5	0.97	2.3	2	7.4	270
YZJ250M-4/55	55	90.9	1500	350.1	96.6	0.97	2.3	2	7.4	300
YZJ280S-4/75	75	123.6	1500	477.5	96.8	0.97	2.3	2	6.9	375
YZJ280M-4/90	90	148.1	1500	572.9	97	0.97	2.3	2	6.9	545
YZJ315S-4/110	110	180.6	1500	700.3	97.4	0.97	2.2	2	7	630
YZJ315M-4/132	132	216.5	1500	840.3	97.6	0.97	2.2	2	7	835
YZJ315L1-4/160	160	262.4	1500	1018.6	97.8	0.97	2.2	2	7.1	930
YZJ315L2-4/200	200	327.7	1500	1273.2	98	0.97	2.2	2	7.1	1000
YZJ355M-4/250	250	403	1500	1591.5	98.2	0.97	2.2	2	7.1	1480
YZJ355L-4/315	315	515	1500	2005.3	98.5	0.97	2.2	2	7.1	1780

04. Active Magnetic Bearing (AMB) Blower

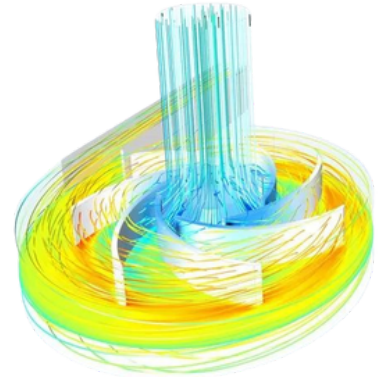


The Maglev Blower is a highly integrated, energy-saving industrial solution. By utilizing an active magnetic bearing system, the rotor is fully levitated during operation, completely eliminating mechanical friction. Integrating high-speed permanent magnet motors, high-efficiency ternary impellers, and intelligent control systems, it is the premier power source for achieving low-carbon and smart upgrades in industrial processes.

Core Technologies

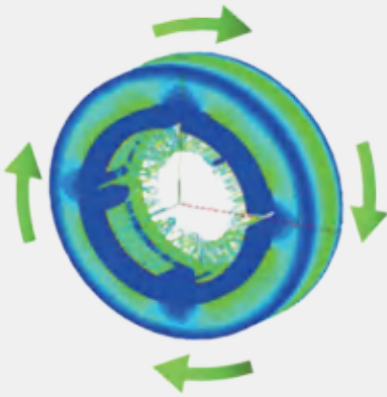
1. Three-Dimensional Flow Impeller

- 1). Military-to-Civilian Technology
- 2). Aerospace-Grade Forging Materials (Aluminum/Titanium Alloys)
- 3). Formed via 5-Axis Machining Center Milling
- 4). Polytropic Efficiency Up to 97%
- 5). Unique Noise Reduction Design
- 6). 112% Overspeed Testing; 100% Non-Destructive Testing



2. Magnetic Bearings

- 1) Utilizes permanent-magnet-biased magnetic bearings, offering lower power consumption and more stable control compared to purely electromagnetic types;
- 2) Active magnetic levitation bearings with 5-degrees-of-freedom control and a signal acquisition rate exceeding 10,000 samples per second;
- 3) High load-bearing capacity, capable of supporting rotor weights up to 2,650 kg, with power consumption of less than 400 W.



3. High-Speed Permanent Magnet Motor

- 1) Direct-drive design, operating at the same speed as the impeller;
- 2) Features low-carrier control, field-weakening control under MTPA (Maximum Torque Per Ampere), and high-speed restart control technologies;
- 3) Motor efficiency reaches up to 98.5%;
- 4) Motor controller efficiency reaches up to 97%.



Core Technologies

4. Displacement Sensors:



- 1) Eddy current type;
 - 2) Capable of simultaneously detecting rotor shaft displacement in the X, Y, and Z directions;
- Characterized by high precision, rapid response frequency, strong anti-interference capabilities, and high-temperature resistance.

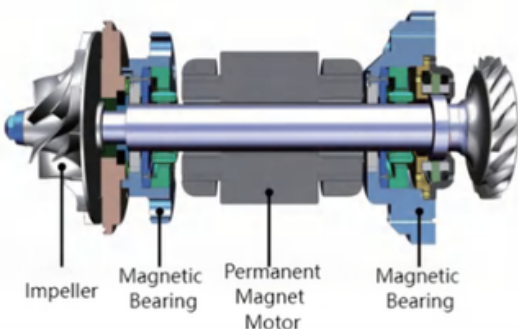
5. Intelligent Control:

- 1) Features precise aeration control capabilities;
- 2) Incorporates multiple protection functions, including anti-surge and power-failure safeguards;
- 3) Supports various communication protocols and operating modes;

Enables data recording, storage, transmission, remote monitoring, operation, and maintenance functions, facilitating comprehensive health management throughout the blower's entire lifecycle.



Features



The permanent magnet-biased magnetic levitation bearing system suspends and supports the rotor assembly through a combination of permanent and electromagnetic fields. During both startup and shutdown, the rotor remains in a suspended state; throughout the entire operating cycle, there is no physical contact between the bearings and the shaft journal—resulting in a completely friction-free operation. This design endows the fan with characteristics such as high efficiency, minimal wear, low noise, extended service life, and oil-free operation.

Advantages and Benefits



Energy-Efficient: Incorporating a direct-drive permanent magnet motor and tri-dimensional flow impeller technology, it achieves a significant reduction in energy consumption—ranging from 20% to 30%—compared to traditional blowers.



Environmentally Friendly: Featuring an oil-free, friction-free design and ultra-low operating noise levels, it delivers a clean air supply while allowing for flexible deployment in various office or residential environments.



Superior Operational Performance: The system requires absolutely no lubrication, and the main unit is maintenance-free; combined with an exceptionally long service life, this significantly reduces long-term operational and maintenance costs, as well as production-related risks.

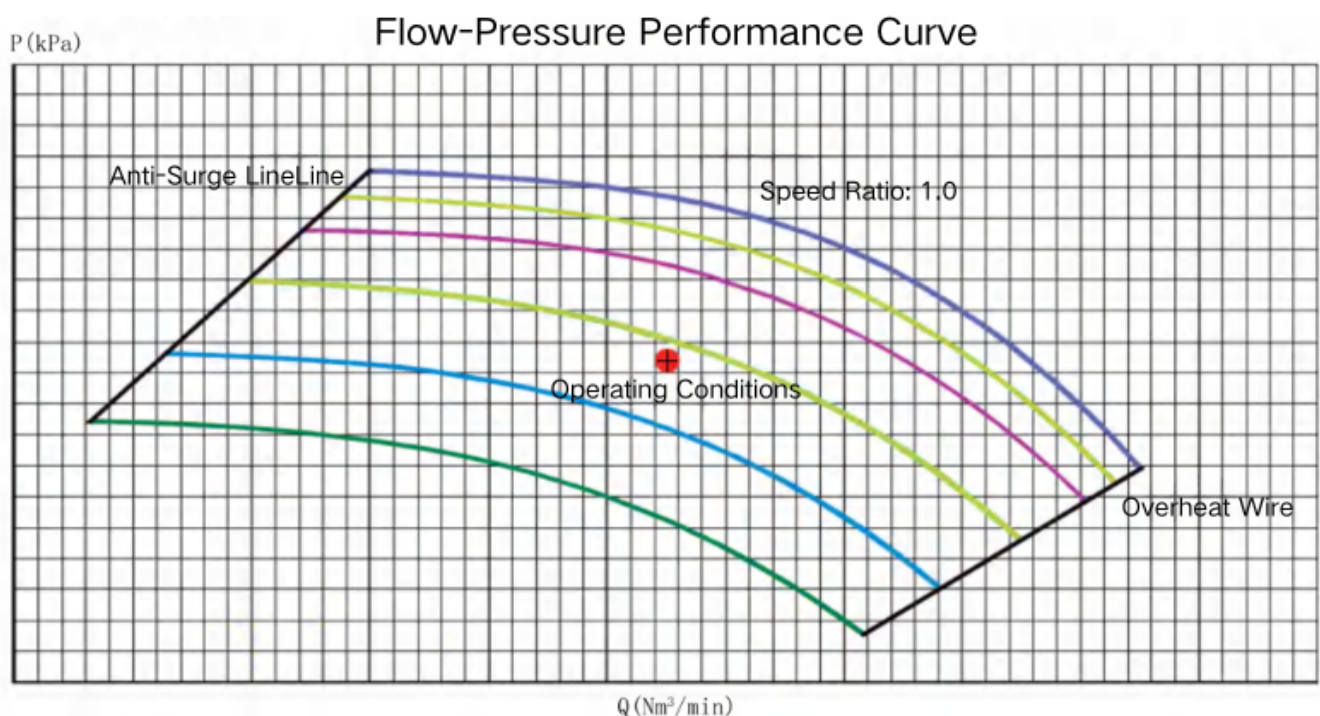


Power-Loss Safety: A built-in UPS power system provides real-time protection against power outages, ensuring the equipment can safely decelerate to a smooth, controlled shutdown in the event of a power failure.



Intelligent Control & Management: Supports remote monitoring, operation, and maintenance capabilities, enabling precise regulation of operational parameters and comprehensive historical data logging.

Thermal Performance Testing



Parameter Table

Blower Parameter Table (CF Series)

Product Model	CF-37A	CF-50A	CF-75A	CF-90A	CF-110A	CF-132A	CF-160A	CF-200A	CF-250W	CF-300W
Discharge Pressure (KPa): Flow Rate Unit: Nm³/min (at 1 standard atmosphere, 20°C)										
50	38	51	77	92	112	135	164	205	256	308
60	34	46	70	84	102	123	148	186	232	279
70	30	41	62	75	91	109	132	166	207	249
80	28	38	57	69	84	101	122	153	191	230
90	25	34	52	63	76	92	111	139	174	209
100	24	32	48	58	71	86	104	130	162	195

Magnetic Levitation Blower vs. Air-Bearing Blower

Feature	Air Bearing Blower	Maglev Blower
Start/Stop Cycles	Limited: Friction occurs at low speeds; coating wears out, leading to rotor seizure.	Unlimited: Levitation before rotation; remains levitated until static.
Cleanliness	High: Micro-level (µm) gap requirements.	Lower: Millimeter-level (mm) gap between rotor/stator.
Load Capacity	Small: Max system power ~200kW.	Large: Power up to 1000kW+; rotor weight up to 2650kg.

Comparison: Maglev Blower vs. Traditional Blowers

Performance Comparison	Roots Blower	Single-Stage Centrifugal High-Speed Blower	Maglev Blower
Bearing	Contact Bearing	Contact Bearing	Non-contact Bearing
Lubrication System	Yes	Yes	None
Mechanical Loss	3.5% of Shaft Power	3.5% of Shaft Power	100W Shaft Power
Mechanical Vibration	Large	Large	Small
Impeller Structure	Screw Rotor	Ternary Flow Centrifugal	Ternary Flow Centrifugal
Compression Form	Positive Displacement	Velocity Type	Velocity Type
Rotor Speed	Low Speed	High Speed	High Speed
Aerodynamic Efficiency	Low	High	High
Motor Speed	Low Speed	Low Speed (Requires Gearbox)	High Speed, Direct Drive
Motor Efficiency	85%	90%	98%
Speed Regulation	External Purchase Required (Efficiency drops sharply after regulation)	External Purchase Required (Efficiency drops sharply after regulation)	Built-in / Self-contained
Footprint / Volume	Large	Medium	Small
Transmission	Belt (3% Loss)	Speed-increasing Gearbox (2% Loss)	Direct Drive (Zero Loss)
Lubricating Oil	Regular Inspection & Replacement	Regular Inspection & Replacement	None
Wear Parts	Bearings, Seals, Lubrication Station	Bearings, Seals, Lubrication Station	None
Maintenance Cost	High	High	Low
Overall Efficiency	55%	65%	75%
Operating Cost	High	High	Low
Noise Level	High, >100dB	Medium, >90dB	Low, <80dB

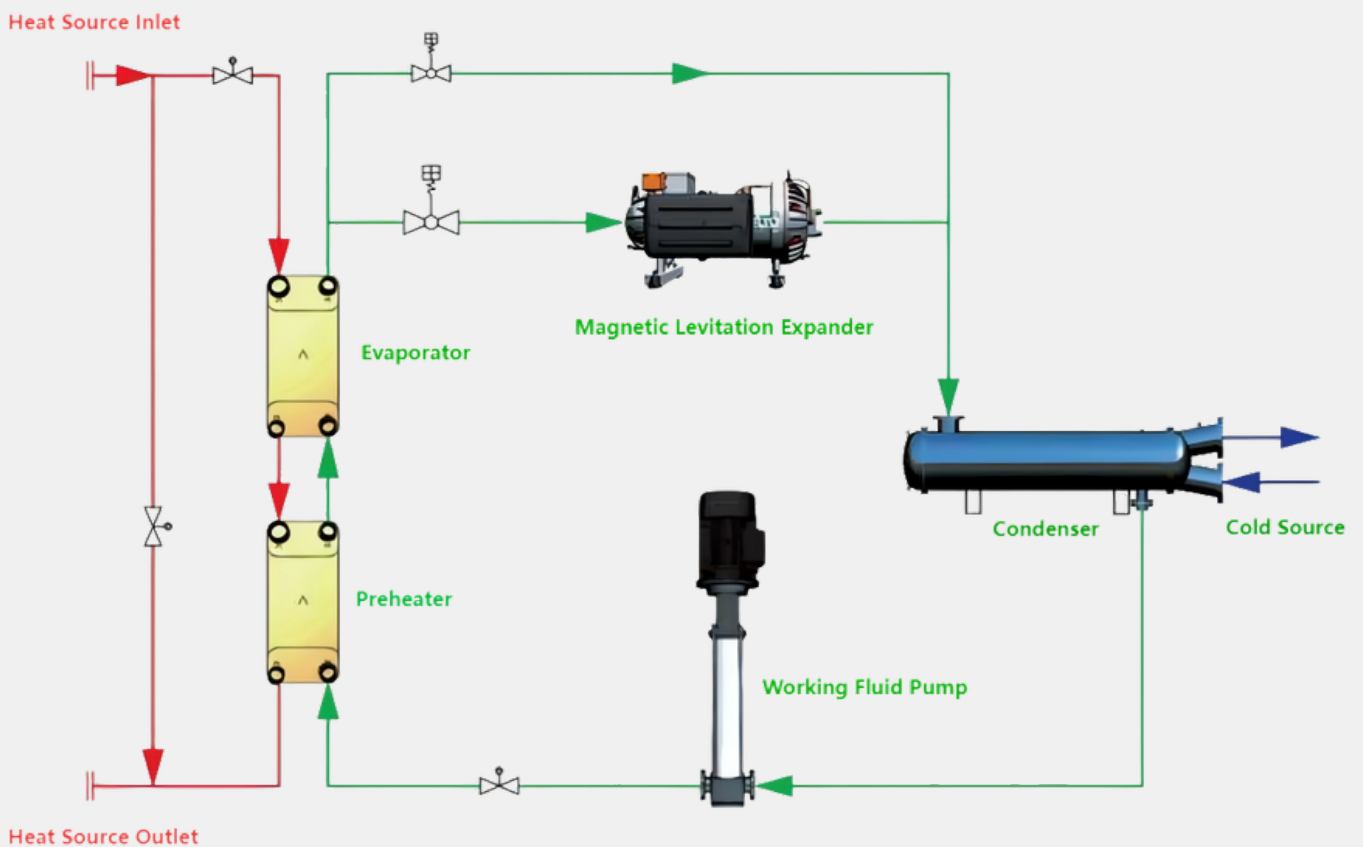
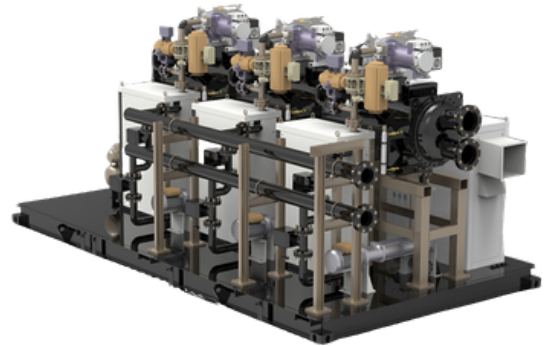
05. Magnetic Levitation ORC Generator Set



The Maglev Blower is a highly integrated, energy-saving industrial solution. By utilizing an active magnetic bearing system, the rotor is fully levitated during operation, completely eliminating mechanical friction. Integrating high-speed permanent magnet motors, high-efficiency ternary impellers, and intelligent control systems, it is the premier power source for achieving low-carbon and smart upgrades in industrial processes.

Working Principle

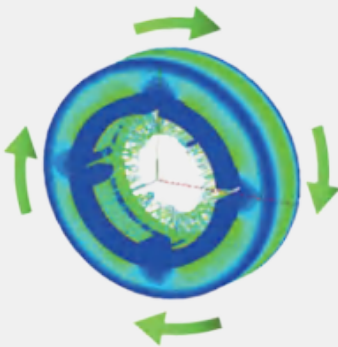
The system operates on the Organic Rankine Cycle (ORC). A low-boiling-point working fluid absorbs waste heat in a heat exchanger and vaporizes, driving the high-speed maglev turbine expander to generate power. After performing work, the fluid is condensed back into a liquid state and pumped back to the heat exchanger to begin the cycle again.



Core Technology

1. Three-Dimensional Flow Impeller

- Efficiency > 83%;
- High single-stage compression ratio;
- Wide high-efficiency operating range.



2. Magnetic Bearings

- Oil-free;
- Frictionless;
- Low vibration;
- Silent operation;
- Long service life.

3. High-Speed Permanent Magnet Motor

- Direct drive with high transmission efficiency;
- High speed, high power density, and compact size;
- Design efficiency > 98%;
- Stepless speed control.



4. Intelligent Control System

- Integrated design combining main controller, magnetic bearing, and frequency converter control.
- Automatically find the optimal operating point.
- Unattended operation, remote monitoring.

Advantages and Benefits

-  **Maglev & Frictionless:** Eliminates mechanical wear, resulting in a service life exceeding 20 years.
-  **High-speed turbine direct drive:** delivering 100% transmission efficiency, the overall unit efficiency is improved by over 30% compared to traditional screw-type compressors.
-  **Oil-free and friction-free operation:** Prevents heat exchanger fouling and oil contamination, maintaining long-term heat exchange efficiency and eliminating costly maintenance expenses.
-  **Organic Fluid Cycle:** Enables the efficient recovery of low-grade heat sources.
-  **Variable Frequency Technology and Intelligent Sensing Algorithms:** Ensures uninterrupted, high-efficiency power generation and enables unattended operation.

Model Parameters

Model	YR100	YR200	YR300	YR400	YR1000
Power Generation (kW)	100	200	300	400	1000
Thermal Efficiency	13%				
Heat Recovery Range (°C)	100-250°C				
Output Format	380V-3P-50Hz				
Working Medium (Refrigerant)	R245fa				
Cooling Type	Water Cooling				
Operating Noise	<85dB				

Economic Benefit Calculation (Case Study: YR1000)

Project Item	Specifications / Indicators
Model	YR1000
Gross Power Generation (kW)	1000
Net Power Generation (kW)	800
Annual Operating Hours (h)	8000
Electricity Price (USD/kWh)	0.15
Annual Power Generation (kWh)	6,400,000
Annual Power Generation Revenue (USD)	960,000
Annual Carbon Emission Reduction (Tons)	1740.8
Annual Carbon Reduction Revenue (USD)	13,050
Total Annual Revenue (USD)	973,050
Total Revenue over 5 Years (USD)	4,865,250
Total Revenue over 10 Years (USD)	9,730,500