Inquiry Us

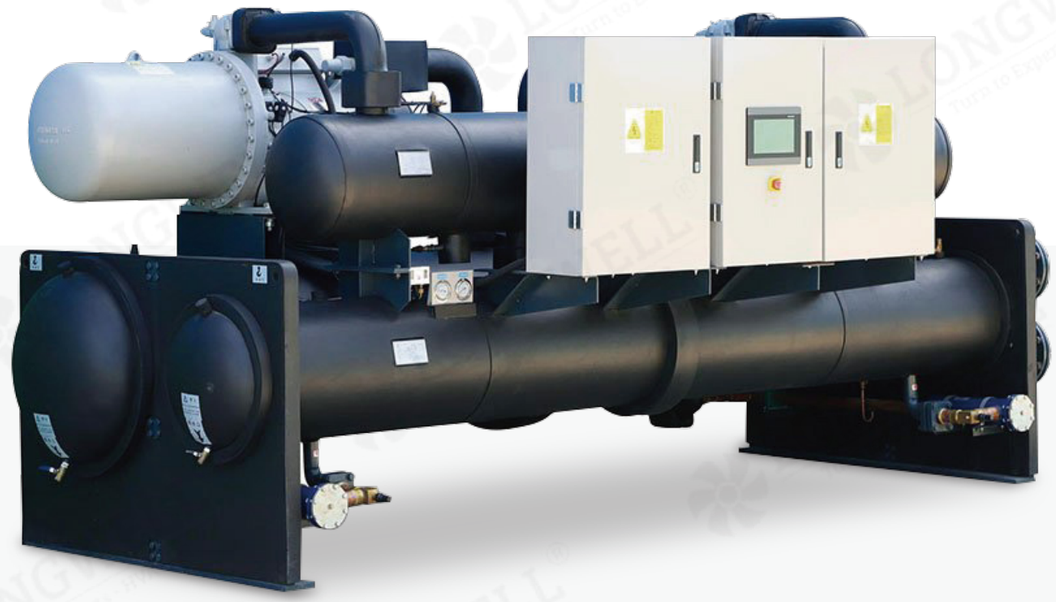
Website

LONGWELL®
Turn to Experts - HVAC&R

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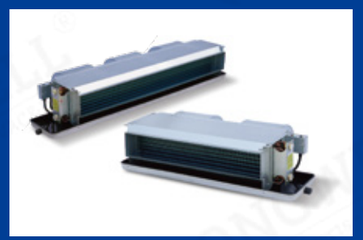


Longwell Technology Ventilation Equipment

Screw-Type Water-Cooled Chiller Unit / Water and Ground Source Heat Pump Unit

Ningbo Longwell Electric Technology Co., Ltd

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Fan Coil Unit



Combined Air Conditioner



Air Source Heat Pump Unit



Screw-Type Air-Cooled Chiller Heat Pump Unit



Precision Constant Temperature and Humidity Unit



Rooftop Air Conditioning Unit



Screw-Type Water-Cooled Chiller Unit



Water and Ground Source Heat Pump Unit



Cabinet Air Handling Unit--Suspended Ceiling



Air Handling Unit-Horizontal



Remote Jet Unit



Air Handling Unit-Vertical

CATALOGUE

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About Longwell

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The Ventilation and Drive Technology Partner for Mission-Critical Environments

Longwell Technology - Ventilation Equipment Division - primarily engages in the production and sales of central air conditioning equipment. Our products are sold all over the country and exported to more than 50 countries and regions worldwide. LONGWELL central air conditioning series includes a comprehensive range of products, such as air source heat pump units, Air-cooled chillers (heat pump) units, water (ground) source heat pump units, sewage source heat pump units, seawater source heat pump units, water-cooled chiller units, constant temperature and humidity units, heat pump drying units, combined air conditioners, roof air conditioning units, air handling units, remote jet units, fan coil units, etc. These products are widely used in factories, schools, hotels, hospitals, office buildings, shopping malls, residential communities, and other buildings.

We have passed the ISO9001 Quality Management System Certification, ISO45001 Occupational Health and Safety Management System Certification, ISO14001 Environmental Management System Certification, etc. Our company is committed to survival by product quality and development by technological innovation, continually researching and producing green, clean, environmentally friendly and energy-saving innovative products. With full work enthusiasm, swift and decisive actions, higher standards, continuous improvement, and innovation, we will strive to create more value for our customers.



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Factory Display

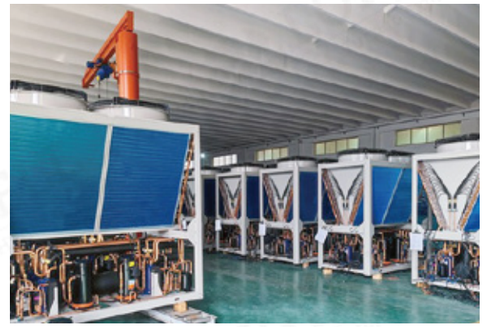
LONGWELL central air conditioning series includes a comprehensive range of products, such as air source heat pump units, Air-cooled chillers (heat pump) units, water (ground) source heat pump units, sewage source heat pump units, seawater source heat pump units, water-cooled chiller units, constant temperature and humidity units, heat pump drying units, combined air conditioners, roof air conditioning units, air handling units, remote jet units, fan coil units, etc. These products are widely used in factories, schools, hotels, hospitals, office buildings, shopping malls, residential communities, and other buildings.















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Certificate Display

We have passed the ISO9001 Quality Management System Certification, ISO45001 Occupational Health and Safety Management System Certification, ISO14001 Environmental Management System Certification, etc.


Patent


Patent


ISO


ISO


CRAA


CRAA


CRAA


CRAA


Patent


Patent


Patent


Patent

Type Code(Screw-type water-cooled chiller unit)

LW LS B LG - 430 A S F

F-Flooded type
Dry type

S-Single compressor
D-Double compressor
T-Triple compressor

A-R134a B-R22

430-Cooling capacity(KW)

LG-Screw unit

B-Semi-hermetic

LS-Water chiller

LW-Longwell

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Type Code(Water&ground source heat pump unit)

LW S S D R M - 430 A S F

- F-Flooded type / Dry type
- S-Single compressor / D-Double compressor
- A-R134a B-R22
- 430-Cooling capacity(KW)
- M-Vortex module type / Screw type
- R-Heat pump type / Single cooling type
- D-Groundwater type / HS-Seawater type / Water loop type
- H-Ground loop type / WS-sewage type
- S-Chilled and hot water type
- S-Water source heat pump
- LW-Longwell

Screw-Type Water-Cooled Chiller Unit



Advanced Control Features

The unit start-stop control methods include on-site control,remote control,and scheduled time-based control.Users can schedule and remotely control the start and stop of the unit.The pump interlock function ensures the safe and stable operation of the unit.Advanced control logic provides precise energy regulation and safety control modes.

Efficient Heat Exchange Tubes

Utilizing high-efficiency heat exchange tubes made of low-phosphorus P1 material,significantly enhancing the heat transfer coefficient;advanced expansion tube technology ensures more reliable structural sealing,preventing mutual infiltration.

Wide Applicability

It is widely applicable to various commercial,industrial production processes,and refrigeration storage facilities.

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Stable And Reliable

Equipped with an integrated secondary efficient oil separator,the lubricating oil volume in the heat exchanger is significantly reduced,resulting in a 3% to 5% increase in heat transfer efficiency;advanced oil return technology greatly reduces the risk of oil shortage.Main and auxiliary units operate automatically in balance.Based on the cumulative running time of the compressor recorded by the microcomputer controller,the main unit is set and compressor running time is balanced,extending the overall lifespan of the unit.

Convenient Installation And Commissioning

Each unit undergoes standard operating condition performance testing before leaving the factory,ensuring unit quality and reducing on-site commissioning time;refrigerant is injected into the unit before leaving the factory,requiring only water and power connections for commissioning,which is extremely convenient;major components of the unit are bolted for easy disassembly and assembly,allowing for modular transportation as per customer requirements.

User-Friendly Operating Interface

Touchscreen operation with simple and intuitive menus;Provides three control modes:local,remote (wired),and network; the control system includes an RS485 standard serial communication interface for remote or dedicated diagnostic tool analysis and assessment.Provides three control modes: local, remote (wired),and network; the control system includes an RS485 standard serial communication interface for remote or dedicated diagnostic tool analysis and assessment.

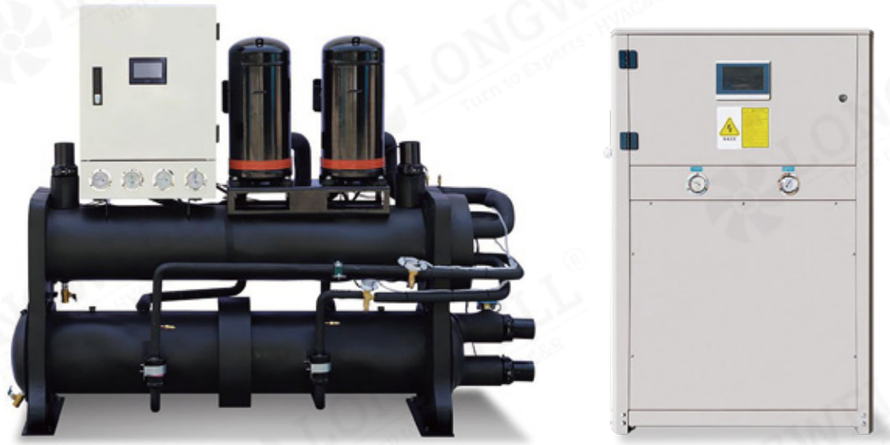
Efficient Compressor

Utilizing a highly efficient 5:6 patented asymmetric tooth profile,achieving higher volumetric efficiency;equipped with the latest motor design,increasing efficiency and power factor;capable of achieving stepless regulation through slide valve,significantly enhancing efficiency under partial loads;precision-machined semi-enclosed compressor rotors undergo dynamic balance correction,resulting in low vibration and extended lifespan;prioritizing cooling of the motor with low-temperature refrigerant gas, effectively improving motor operational characteristics.

Comprehensive Protection Features

The user accounts are equipped with multiple levels to prevent damage to the unit due to improper operation.Multiple protection functions are implemented,including current limiting unloading and high-pressure unloading,to prevent frequent shutdowns due to such faults, ensuring prolonged unit operation.Restart delay function prevents frequent compressor startups,extending the unit's lifespan. Other protection features include low temperature of chilled water outlet,high and low-pressure protection,high exhaust temperature protection,oil level protection,oil pressure difference protection,motor protection,voltage protection,flow protection,and more.

Modular Water (Ground) Source Heat Pump Unit



The modular water (ground) source heat pump unit is designed to exploit and utilize low-grade renewable energy sources that are inexhaustible but not easily utilized underground/surface,using water as the medium for cooling/heating,and serving as an integrated central air conditioning equipment capable of dual use of cooling and heating sources.With its advantages of high efficiency,low noise, reasonable structure,simple operation,safe operation,and convenient installation and maintenance,the unit is widely used in small and medium-sized places such as hotels,shopping malls,office buildings,and villas for comfort central air conditioning systems.It can also meet the higher usage requirements of process air conditioning systems in smaller places such as electronics,pharmaceuticals,and biology.

The modular water (ground) source heat pump unit is typically a preferred option in HVAC engineering designs where there is neither a boiler for heating nor a stable and reliable heating network available throughout the year but with a requirement for year-round air conditioning.This unit can be combined with fan coils,cabinet-type or ceiling-mounted air handling units,and fresh air units to form a semi-centralized air conditioning system,offering numerous advantages such as flexible layout,aesthetic appearance,space-saving,easy adjustment,independent control without affecting other rooms,and low operational noise.It can also be used in conjunction with indoor radiant heating pipes to provide comfortable heating sources.

The modular water (ground) source heat pump unit is a mature product developed based on the latest technological advancements in the international and domestic air conditioning fields.This unit is manufactured strictly in accordance with national industry standards and incorporates high-quality,branded compressors,refrigerant system control components,and computer controllers selected from world-renowned manufacturers.Through rational system matching and structural design,the unit operates independently of ambient temperature,ensuring efficient and stable operation in any location.

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Flexible Design,Flexible Application

The unit can be used individually or multiple unit modules can be combined.Different module quantities and cooling/heating capacities can be centrally controlled by computer controllers to achieve optimal energy management efficiency.

Highly Efficient Encapsulation,Ultra-Low Noise

The unit employs a highly efficient fully enclosed scroll compressor,ensuring ultra-low noise and stable operation.

Safe And Reliable,Stable Operation

Water bodies,serving as low-temperature heat sources,maintain relatively stable temperatures throughout the year,with fluctuations much smaller than those of air temperatures.This stability enhances the unit's reliability and stability during operation.There are no challenging issues such as defrosting in winter or reduced heating capacity,typical of air source heat pump units,ensuring the efficiency and economy of the system.

Simple Installation,Cost Saving

The unit is lightweight and compact,requiring no dedicated passages. Connections between units involve only water pipes and electrical wiring.Simply connecting the power and control lines eliminates the high costs associated with traditional installations.

Comprehensive Protection,Reliable Operation

The unit is equipped with high-pressure and low-pressure switches,overload relays,phase sequence protectors,antifreeze protection,delayed start,and other protective devices to ensure the safe and reliable operation of the main unit.

Environmental Protection And Energy Conservation

This series of units utilize water as the source of heating and cooling,operating with higher efficiency compared to air source heat pump units.During cooling,the need for cooling towers is eliminated,thereby avoiding noise and mold contamination associated with cooling towers.During heating,there is no combustion process,eliminating ash residue,wastewater,exhaust gases,and smoke emissions.This eliminates the need for coal,oil,or gas boilers and boiler rooms,resulting in zero environmental pollution and zero carbon emissions.

Reduced Footprint,Compact Size

Equipped with efficient heat exchangers,the unit features a small volume,minimizing its footprint and allowing for flexible placement according to actual conditions.

Intelligent Control,Automatic Operation

An automated intelligent control system centrally manages operations,adjusts cooling and heating outputs,monitors operational parameters,and automatically stops the unit or compressor in case of abnormalities.It also triggers automatic alarms and shutdowns.

Screw-Type Water(Ground) Source Heat Pump Unit



Efficient Compressor

All models in the series adopt the most advanced semi-enclosed screw compressors in the compressor field,featuring high efficiency,stability,reliability,and maintainability.Optimized linear structural design for high efficiency and energy savings;minimal internal friction surface area,low operating noise;built-in high-performance oil separator,compression-type oil supply,no oil loss phenomenon;four-stage capacity control (25%-50%-75%-100%) or stepless capacity control,adjusting compressor output according to load requirements;semi-enclosed structure eliminates shaft seal leakage issues,ensuring high reliability;separate design of motor and unit body for easy maintenance;motor with suction cooling,equipped with overload protection,thermal resistance,and current overload protection.

Multi-Purpose

In addition to cooling,heating,and providing domestic hot water (optional),the unit can also be used for ice storage and process heating/cooling.When cooling, the unit can provide 7°C chilled water,while during heating,it can provide 45~50°C hot water.It can supply chilled water/hot water for central air conditioning systems in large and medium-sized buildings such as office buildings,shopping malls,hotels,hospitals,schools,theaters,stadiums,entertainment centers,and industrial and mining enterprises.It can also provide process chilled water/hot water for industries such as textiles,chemicals,food,electronics,and research.

Ultra-Efficient

With a unique heat exchanger structural design and the application of a multi-circuit refrigerant circulation system,the unit ensures higher efficiency whether operating at full load or partial load,meeting international energy efficiency standards.

Automatic Operation

Due to stable operating conditions,the system can be designed to be relatively simple,with reliable operation,low maintenance costs,a high degree of automatic control,and a long service life.

High-Temperature Heating

Utilizing environmentally friendly refrigerants,high-temperature units can achieve water temperatures up to 65°C,suitable for boiler heating upgrades and domestic hot water supply.

Diversification of cooling and heating sources

In addition to utilizing sources such as soil,groundwater,and surface water for heating and cooling,industrial waste heat can also be utilized as a heat source.

Intelligent Control

The fully automatic controller can flexibly manage the state of the unit according to user needs,facilitating maintenance and management.Unattended operation can be achieved through automated devices.

Comprehensive Safety Protection

The unit is equipped with a comprehensive safety protection system,including high and low voltage protectors,exhaust overheat protectors,motor overheat protectors,overcurrent protectors,phase sequence protectors,emergency stop switches,antifreeze temperature protectors,safety valves,etc., ensuring system safety and reliability.

Screw-Type Water-Cooled Chiller Performance Parameter Table(R134a)

Model		LWLSBLG -370ASF	LWLSBLG -400ASF	LWLSBLG -460ASF	LWLSBLG -530ASF	LWLSBLG -600ASF	LWLSBLG -700ASF	LWLSBLG -750ADF
Refrigeration Capacity(KW)		367.8	402.8	456.8	527.4	587.4	688.5	735.6
Input Power(KW)		70.5	75.9	84.8	97.9	108.4	125.5	141.0
Compressor	Power Supply	3PH-380V-50Hz						
	Operating Current(A)	117.5	126.9	140.7	162.1	179.8	209.0	117.5*2
	Starting Current(A)	274.2	296.1	328.3	378.2	419.5	487.7	274.2*2
	Quantity(units)	1	1	1	1	1	1	2
	Starting Method	Y-△						
Chilled Water	Outlet Temperature(°C)	7						
	Flow Rate(m^3/h)	63	69	79	91	101	118	127
	Interface Diameter	100	100	100	125	125	125	150
Cooling Water	Outlet Temperature(°C)	30						
	Flow Rate(m^3/h)	79	87	98	113	126	148	158
	Interface Diameter	100	100	100	125	125	125	150
External Dimensions	Length(mm)	3030	3030	3030	3030	3030	3110	4029
	Width(mm)	1300	1300	1300	1420	1420	1440	1430
	Height(mm)	1780	1780	1800	1920	1920	1950	1817
Weight	Unit Weight(kg)	3400	3600	3700	3800	3900	4200	5500
	Operating Weight(kg)	3700	4000	4100	4200	4300	4600	6100
Refrigerant	Model	R134a						
	Weight(kg)	100	100	100	100	120	120	170
Refrigeration Oil	Model	HAR-A08						
	Weight(kg)	20	23	23	23	28	28	20*2

Remarks:

1.Standard Operating Conditions:Chilled water outlet temperature of 7°C,chilled water flow rate of 0.172m^3/(h·kW);Cooling water inlet temperature of 30°C,cooling water flow rate of 0.215m^3/(h·kW);

2.The fouling coefficient on the evaporator water side is 0.018m^2·K/kW,and on the condenser water side is 0.044m^2·K/kW;

3.Different types of chiller oil must not be mixed and must match the nominal type specified on the unit;

4.Maximum operating pressure for the water circuit is 10kgf/cm^2;

5.The above information may change due to product updates or other reasons.

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Screw-Type Water-Cooled Chiller Performance Parameter Table(R134a)

Model		LWLSBLG-800ADF	LWLSBLG-870ADF	LWLSBLG-950ADF	LWLSBLG-1060ADF	LWLSBLG-1180ADF	LWLSBLG-1230ADF	LWLSBLG-1380ADF
Refrigeration Capacity(KW)		805.6	867.1	913.5	1059.0	1174.7	1224.7	1377.0
Input Power(KW)		151.8	160.4	169.6	195.8	209.1	218.0	244.8
Compressor	Power Supply	3PH-380V-50Hz						
	Operating Current(A)	126.9*2	133.5*2	140.7*2	162.1*2	179.8*2	187.6*2	209.0*2
	Starting Current(A)	296.1*2	311.5*2	328.3*2	378.2*2	419.5*2	437.7*2	487.7*2
	Quantity(units)	2						
	Starting Method	Y-△						
Chilled Water	Outlet Temperature(°C)	7						
	Flow Rate(m^3/h)	139	149	157	182	202	211	237
	Interface Diameter	150	150	150	150	200	200	200
Cooling Water	Outlet Temperature(°C)	30						
	Flow Rate(m^3/h)	173	186	196	228	253	263	296
	Interface Diameter	150	150	150	150	200	200	200
External Dimensions	Length(mm)	4029	4176	4176	4142	4397	4397	4397
	Width(mm)	1430	1561	1561	1561	1691	1691	1691
	Height(mm)	1817	1879	1879	1879	2115	2115	2115
Weight	Unit Weight(kg)	5700	6100	6200	6900	7300	7400	7600
	Operating Weight(kg)	6300	6700	6800	7500	7900	8000	8200
Refrigerant	Model	R134a						
	Weight(kg)	170	170	170	220	220	250	250
Refrigeration Oil	Model	HAR-A08						
	Weight(kg)	23*2	23*2	23*2	28*2	28*2	28*2	28*2

Remarks:

1.Standard Operating Conditions:Chilled water outlet temperature of 7°C,chilled water flow rate of 0.172m^3/(h·kW);Cooling water inlet temperature of 30°C,cooling water flow rate of 0.215m^3/(h·kW);

2.The fouling coefficient on the evaporator water side is 0.018m^2·K/kW,and on the condenser water side is 0.044m^2·K/kW;

3.Different types of chiller oil must not be mixed and must match the nominal type specified on the unit;

4.Maximum operating pressure for the water circuit is 10kgf/cm^2;

5.The above information may change due to product updates or other reasons.

Screw-Type Water-Cooled Chiller Performance Parameter Table(R134a)

Model		LWLSBLG-1450ATF	LWLSBLG-1600ATF	LWLSBLG-1750ATF	LWLSBLG-2010ATF
Refrigeration Capacity(KW)		1451.4	1589.4	1735.8	2010.5
Input Power(KW)		258.8	283.5	309.3	357.6
Compressor	Power Supply	3PH-380V-50Hz			
	Operating Current(A)	152.0*3	168.0*3	180.2*3	206.2*3
	Starting Current(A)	354.7*3	392.0*3	420.5*3	481.1*3
	Quantity(units)	3			
	Starting Method	Y-△			
Chilled Water	Outlet Temperature(°C)	7			
	Flow Rate(m^3/h)	250	273	299	346
	Interface Diameter	200	200	200	250
Cooling Water	Outlet Temperature(°C)	30			
	Flow Rate(m^3/h)	312	342	373	432
	Interface Diameter	200	200	200	250
External Dimensions	Length(mm)	4693	4750	4750	4830
	Width(mm)	2211	2211	2211	2330
	Height(mm)	2166	2230	2230	2300
Weight	Unit Weight(kg)	12400	12600	12800	14000
	Operating Weight(kg)	13000	13200	13400	14600
Refrigerant	Model	R134a			
	Weight(kg)	500	550	550	600
Refrigeration Oil	Model	HAR-A08			
	Weight(kg)	23*3	28*3	28*3	28*3

Remarks:Refer to the note marked on the previous page

LWLSBLG-1450ATF~2010ATF Correction Factor

Condenser Inlet /Outlet Water Temperature	Evaporator Inlet/Outlet Water Temperature											
	10/5		11/6		12/7		13/8		14/9		15/10	
	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power
25/30	0.97	0.93	1.01	1.05	1.05	0.94	1.09	0.95	1.12	0.95	1.16	0.96
28/33	0.96	0.96	0.99	0.97	1.03	0.97	1.06	0.98	1.10	0.99	1.13	0.99
30/35	0.93	0.98	0.97	0.99	1.00	1.00	1.03	1.01	1.07	1.02	1.00	1.02
32/37	0.91	1.01	0.94	1.02	0.98	1.03	1.01	1.04	1.04	1.05	1.08	1.06

Screw-Type Water-Cooled Chiller Performance Parameter Table(R22)

Model		LWLSBLG-185BS	LWLSBLG-250BS	LWLSBLG-300BS	LWLSBLG-380BS	LWLSBLG-450BS
Refrigeration Capacity(KW)		184.6	244.4	288.0	376.0	454.2
Input Power(KW)		40.0	53.5	60.3	82.0	96.0
Compressor	Power Supply	3PH-380V-50Hz				
	Operating Current(A)	68.6	91.8	103.4	143.1	167.0
	Starting Current(A)	160.1	214.2	241.3	333.9	389.7
	Quantity(units)	1				
	Starting Method	Y-△				
Chilled Water	Outlet Temperature(°C)	7				
	Flow Rate(m^3/h)	40	53	62	81	98
	Interface Diameter	80	100	100	100	125
Cooling Water	Outlet Temperature(°C)	30				
	Flow Rate(m^3/h)	39	51	60	79	95
	Interface Diameter	80	100	100	100	125
External Dimensions	Length(mm)	3017	3085	3085	3105	3105
	Width(mm)	960	970	970	1040	1040
	Height(mm)	1610	1650	1759	1794	1794
Weight	Unit Weight(kg)	1600	1800	1900	2100	2300
	Operating Weight(kg)	1900	2200	2200	2400	2500
Refrigerant	Model	R22				
	Weight(kg)	40	55	60	80	100
Refrigeration Oil	Model	HAR-A01				
	Weight(kg)	8	14	16	16	18

Remarks:

1.Standard Operating Conditions:Chilled water outlet temperature of 7°C,chilled water flow rate of 0.172m^3/(h·kW);Cooling water inlet temperature of 30°C,cooling water flow rate of 0.215m^3/(h·kW);

2.The fouling coefficient on the evaporator water side is 0.018m^2·K/kW,and on the condenser water side is 0.044m^2·K/kW;

3.Different types of chiller oil must not be mixed and must match the nominal type specified on the unit;

4.Maximum operating pressure for the water circuit is 10kgf/cm^2;

5.The above information may change due to product updates or other reasons.

Screw-Type Water-Cooled Chiller Performance Parameter Table(R22)

Model		LWLSBLG-580BSF	LWLSBLG-630BSF	LWLSBLG-700BSF	LWLSBLG-820BSF	LWLSBLG-900BSF	LWLSBLG-960BSF	LWLSBLG-1080BSF
Refrigeration Capacity(KW)		571.9	626.2	704.2	820.2	900.7	961.7	1083.9
Input Power(KW)		107.1	116.1	128.9	148.6	165.0	175.2	196.8
Compressor	Power Supply	3PH-380V-50Hz						
	Operating Current(A)	175.9	194.2	215.7	248.5	275.7	292.8	329.2
	Starting Current(A)	410.4	453.1	503.3	579.8	643.3	683.2	768.1
	Quantity(units)	1						
	Starting Method	Y-△						
Chilled Water	Outlet Temperature(°C)	7						
	Flow Rate(m^3/h)	98	108	121	141	155	165	186
	Interface Diameter	125	125	125	150	150	150	150
Cooling Water	Outlet Temperature(°C)	30						
	Flow Rate(m^3/h)	123	135	151	176	194	207	233
	Interface Diameter	125	125	125	150	150	150	150
External Dimensions	Length(mm)	3080	3080	3080	3130	3130	3130	3170
	Width(mm)	1380	1380	1380	1510	1510	1510	1650
	Height(mm)	1620	1620	1780	1920	1920	1920	2020
Weight	Unit Weight(kg)	3800	3900	4000	4200	4300	4400	4900
	Operating Weight(kg)	4200	4300	4400	4600	4700	4800	5400
Refrigerant	Model	R22						
	Weight(kg)	130	130	130	180	180	180	230
Refrigeration Oil	Model	HAR-A01						
	Weight(kg)	20	23	23	23	28	28	28

Remarks:

1.Standard Operating Conditions:Chilled water outlet temperature of 7°C,chilled water flow rate of 0.172m^3/(h·kW);Cooling water inlet temperature of 30°C,cooling water flow rate of 0.215m^3/(h·kW);

2.The fouling coefficient on the evaporator water side is 0.018m^2·K/kW,and on the condenser water side is 0.044m^2·K/kW;

3.Different types of chiller oil must not be mixed and must match the nominal type specified on the unit;

4.Maximum operating pressure for the water circuit is 10kgf/cm^2;

5.The above information may change due to product updates or other reasons.

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Screw-Type Water-Cooled Chiller Performance Parameter Table(R22)

Model		LWLSBLG -1150BDF	LWLSBLG -1250BDF	LWLSBLG -1400BDF	LWLSBLG -1640BDF	LWLSBLG -1800BDF	LWLSBLG -1920BDF	LWLSBLG -2160BDF
Refrigeration Capacity(KW)		1143.9	1252.4	1408.5	1640.3	1801.4	1923.4	2167.8
Input Power(KW)		214.2	232.2	257.8	297.2	329.6	350.0	393.6
Compressor	Power Supply	3PH-380V-50Hz						
	Operating Current(A)	175.9*2	194.2*2	215.7*2	248.5*2	275.7*2	292.8*2	329.2*2
	Starting Current(A)	410.4*2	453.1*2	503.3*2	579.8*2	643.3*2	683.2*2	768.1*2
	Quantity(units)	2						
	Starting Method	Y-△						
Chilled Water	Outlet Temperature(°C)	7						
	Flow Rate(m^3/h)	197	215	242	282	310	331	373
	Interface Diameter	200	200	200	200	200	250	250
Cooling Water	Outlet Temperature(°C)	30						
	Flow Rate(m^3/h)	246	269	303	353	387	414	466
	Interface Diameter	200	200	200	200	200	250	250
External Dimensions	Length(mm)	4142	4224	4224	4417	4420	4510	4510
	Width(mm)	1561	1611	1691	1713	1750	1920	1920
	Height(mm)	1879	1985	1985	2140	2140	2190	2190
Weight	Unit Weight(kg)	6200	6600	6900	7700	8100	8600	8900
	Operating Weight(kg)	6800	7200	7500	8300	8900	9400	9700
Refrigerant	Model	R22						
	Weight(kg)	280	280	280	340	340	420	420
Refrigeration Oil	Model	HAR-A01						
	Weight(kg)	20*2	23*2	23*2	23*2	28*2	28*2	28*2

Remarks:

1.Standard Operating Conditions:Chilled water outlet temperature of 7°C,chilled water flow rate of 0.172m^3/(h·kW);Cooling water inlet temperature of 30°C,cooling water flow rate of 0.215m^3/(h·kW);

2.The fouling coefficient on the evaporator water side is 0.018m^2·K/kW,and on the condenser water side is 0.044m^2·K/kW;

3.Different types of chiller oil must not be mixed and must match the nominal type specified on the unit;

4.Maximum operating pressure for the water circuit is 10kgf/cm^2;

5.The above information may change due to product updates or other reasons.

R134a Single Compressor Correction Factor(LWLSBLG-370ASF~700ASF)

Condenser Inlet /Outlet Water Temperature	Evaporator Inlet/Outlet Water Temperature											
	10/5		11/6		12/7		13/8		14/9		15/10	
	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power
25/30	0.97	0.93	1.01	0.94	1.05	0.94	1.09	0.95	1.12	0.95	1.16	0.96
28/33	0.96	0.96	0.99	0.97	1.03	0.97	1.06	0.98	1.10	0.99	1.13	0.99
30/35	0.93	0.98	0.97	0.99	1.00	1.00	1.03	1.01	1.07	1.02	1.10	1.02
32/37	0.91	1.01	0.94	1.02	0.98	1.03	1.01	1.04	1.04	1.05	1.08	1.06

R134a Double Compressor Correction Factor(LWLSBLG-750ADF~1380ADF)

Condenser Inlet /Outlet Water Temperature	Evaporator Inlet/Outlet Water Temperature											
	10/5		11/6		12/7		13/8		14/9		15/10	
	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power
25/30	0.98	0.93	1.01	0.94	1.05	0.95	1.09	0.95	1.12	0.96	1.16	0.97
28/33	0.96	0.96	0.99	0.97	1.02	0.97	1.06	0.98	1.10	0.99	1.13	1.00
30/35	0.93	0.98	0.97	0.99	1.00	1.00	1.03	1.01	1.07	1.02	1.11	1.02
32/37	0.91	1.01	0.94	1.02	0.98	1.03	1.01	1.04	1.04	1.05	1.08	1.06

R22 Single Compressor Correction Factor(LWLSBLG-185BS~450BS)

Condenser Inlet /Outlet Water Temperature	Evaporator Inlet/Outlet Water Temperature									
	11/6		12/7		13/8		14/9		15/10	
	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power
25/30	1.02	0.92	1.05	0.93	1.09	0.93	1.12	0.94	1.16	0.95
28/33	0.99	0.96	1.02	0.97	1.06	0.98	1.09	0.98	1.13	0.99
30/35	0.97	0.99	1.00	1.00	1.03	1.01	1.06	1.02	1.10	1.03
32/37	0.94	1.03	0.98	1.03	1.01	1.04	1.04	1.05	1.07	1.06

R22 Single Compressor Correction Factor(LWLSBLG-580BSF~1080BSF)

Condenser Inlet /Outlet Water Temperature	Evaporator Inlet/Outlet Water Temperature											
	10/5		11/6		12/7		13/8		14/9		15/10	
	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power
25/30	0.98	0.91	1.02	0.92	1.05	0.93	1.08	0.94	1.12	0.95	1.15	0.96
28/33	0.96	0.95	0.99	0.96	1.02	0.97	1.06	0.98	1.09	0.99	1.12	0.99
30/35	0.94	0.98	0.97	0.99	1.00	1.00	1.03	1.01	1.06	1.02	1.10	1.03
32/37	0.92	1.02	0.95	1.02	0.98	1.03	1.01	1.04	1.04	1.05	1.07	1.06

R22 Double Compressor Correction Factor(LWLSBLG-1150BDF~2160BDF)

Condenser Inlet /Outlet Water Temperature	Evaporator Inlet/Outlet Water Temperature											
	10/5		11/6		12/7		13/8		14/9		15/10	
	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power	Refrigeration Capacity	Input Power
25/30	0.99	0.92	1.02	0.92	1.06	0.93	1.09	0.94	1.13	0.95	1.17	0.96
28/33	0.96	0.95	0.99	0.96	1.02	0.97	1.06	0.98	1.09	0.99	1.12	0.99
30/35	0.94	0.98	0.97	0.99	1.00	1.00	1.03	1.01	1.06	1.02	1.10	1.03
32/37	0.92	1.02	0.95	1.02	0.98	1.03	1.01	1.04	1.04	1.05	1.07	1.06

Performance Parameter Table of Modular Water (Ground) Source Heat Pump Units

Model		LWSSDRM-	26	32	38	52	64	75	112	150	300
Practical Conditions	Cooling	Refrigeration Capacity(KW)	25.75	31.90	37.65	51.50	63.80	75.30	112.95	150.60	301.20
		Input Power(KW)	4.57	5.40	6.51	9.14	10.80	13.02	19.53	26.04	52.08
	Heating	Refrigeration Capacity(KW)	29.65	36.80	43.57	59.30	73.60	87.14	130.71	174.28	348.56
		Input Power(KW)	6.75	8.30	9.87	13.50	16.60	19.74	29.61	39.48	78.96
Water Loop Conditions	Cooling	Refrigeration Capacity(KW)	22.85	28.50	33.65	45.70	57.00	67.30	100.95	134.60	269.20
		Input Power(KW)	5.50	6.59	7.93	11.00	13.18	15.86	23.79	31.72	63.44
	Heating	Refrigeration Capacity(KW)	34.79	43.05	51.00	69.58	86.10	102.00	153.00	204.00	408.00
		Input Power(KW)	6.84	8.30	10.00	13.68	16.60	20.00	30.00	40.00	80.00
Water Source Conditions	Cooling	Refrigeration Capacity(KW)	24.30	30.20	35.60	48.60	60.40	71.20	106.80	142.40	284.80
		Input Power(KW)	5.00	5.95	7.17	10.00	11.90	14.34	21.51	28.68	57.36
	Heating	Refrigeration Capacity(KW)	27.00	33.58	39.79	54.00	67.16	79.58	119.37	159.16	318.32
		Input Power(KW)	6.70	8.13	9.79	13.40	16.26	19.58	29.37	39.16	78.32
Ground Source Conditions	Cooling	Refrigeration Capacity(KW)	24.30	30.20	35.60	48.60	60.40	71.20	106.80	142.40	284.80
		Input Power(KW)	5.00	5.95	7.17	10.00	11.90	14.34	21.51	28.68	57.36
	Heating	Refrigeration Capacity(KW)	20.70	25.90	30.68	41.40	51.80	61.36	92.04	122.72	245.44
		Input Power(KW)	6.50	7.90	9.50	13.00	15.80	19.00	28.50	38.00	76.00
Refrigerant		Type	R22								
		Charge Amount(kg)	6	7.5	8.5	12	15	17	25.5	34	68
Compressor		Quantity (units)	1	1	1	2	2	2	3	4	8
		Speed(rpm)	2960								
		Capacity Adjustment Range (%)	0-100			0-50-100			0-33-67 -100	0-25-50 -75-100	
		Power Supply	Three-phase four-wire system 380V, 50Hz								
Evaporator		Form	Shell and tube heat exchanger								
		Pressure Drop (kPa)	⩽90								
		Fouling Factor (m²·°C/kw)	0.086								
		Water Pipe Size (DN)	40	40	40	50	50	50	65	65	65*2
Refrigeration Practical Operating Condition Cooling Water Flow Rate (m³/h)			4.429	5.487	6.476	8.858	10.974	12.952	19.427	25.903	51.806
Heating Practical Operating Condition Heat Source Water Flow Rate (m³/h)			3.939	4.902	5.796	7.878	9.804	11.593	17.389	23.186	46.371
Condenser		Form	Shell and tube heat exchanger								
		Pressure Drop (kPa)	⩽90								
		Fouling Factor (m²·°C/kw)	0.086								
		Water Pipe Size (DN)	40	40	40	50	50	50	65	65	65*2
Refrigeration Practical Operating Condition Cooling Water Flow Rate m³/h			5.215	6.416	7.596	10.430	12.831	15.191	22.787	30.382	60.764
RHeating Practical Operating Condition Heat Source Water Flow Rate m³/h			5.100	6.330	7.494	10.200	12.659	14.988	22.482	29.976	59.952
Outline		Length(mm)	1300	1300	1300	1850	1850	1850	2250	2480	2480
		Width(mm)	480	480	480	480	480	480	520	520	1100
		Height(mm)	1280	1280	1280	1420	1420	1420	1560	1560	1560

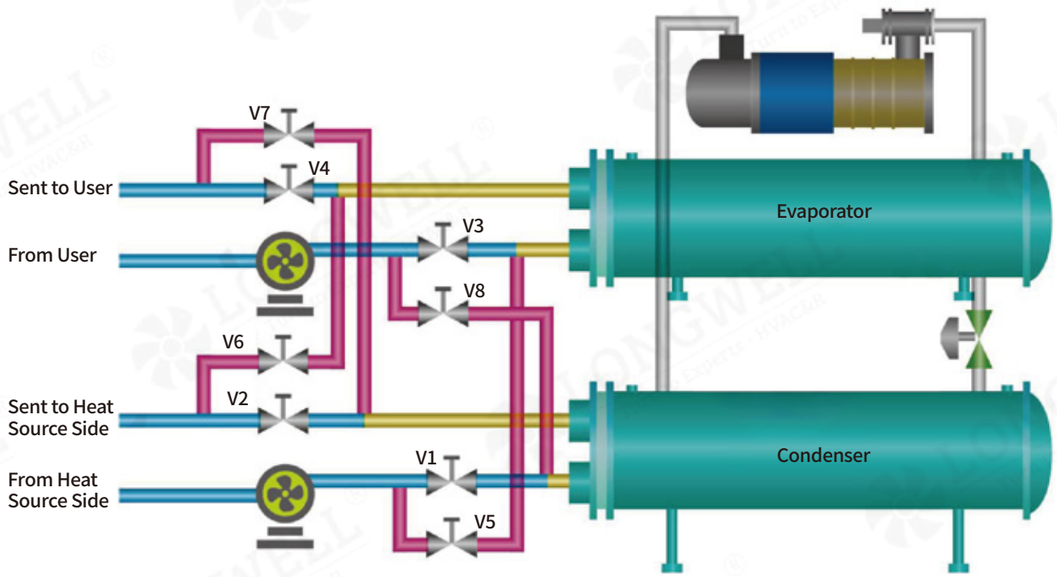
Remarks:

1. Nominal refrigeration operating conditions:refrigerant water inlet/outlet temperature (-/7°C),cooling water inlet/outlet temperature (18/-°C);Nominal heating operating conditions:hot water inlet/outlet temperature (-/45°C),heat source water inlet/outlet temperature (15/-°C);
2. Different types of refrigeration oils must not be mixed and must match those specified on the unit;
3. The fouling factor for the water side of the evaporator and condenser is 0.086 m²·k/kW;
4. The standard design pressure for the unit's water side is 10 kgf/cm²;
5. It is recommended to select electrical supporting facilities for the main unit at 1.3 times the heating input power;
6. The above content may change due to product updates or other reasons.

Diagram Of The Working Process Of Screw-Type Water (Ground) Source Heat Pump Unit

In the cooling mode during summer: Valves V1\V2\V3\V4 are open, while valves V5\V6\V7\V8 are closed.During cooling, the water source serves as the heat sink for the unit,where the refrigerant absorbs heat and evaporates in the evaporator,producing chilled water at 7°C to be supplied to the rooms.The compressed refrigerant, now in a high-temperature,high-pressure gas state,enters the condenser and releases heat to the hot water,which is then discharged into the well.

Winter heating operation: Close valves V1\V2\V3\V4,and open valves V5\V6\V7\V8.During heating,the heat source is the water absorbed by the unit.The refrigerant absorbs heat from the water in the evaporator and evaporates.The heated water from the heat source is returned,and the refrigerant is compressed by the compressor into high-temperature,high-pressure gas,which enters the condenser to heat the circulating water,producing hot water at 45-50°C.



The Various Operating Conditions Of Screw-Type Water (Ground) Source Heat Pump Units

Operating Conditions		Operating Outlet Water Temperature ℃/Flow Rate	Source Side Inlet and Outlet Water Temperature ℃			
			Water-loop Type	Groundwater Type	Ground Source Type	Surface Water
Cooling	Nominal Cooling	7/0.172	30/0.215	18/0.103	25/0.215	25/0.215
	Maximum Operation	15/0.172	40/0.215	25/0.103	40/0.215	40/0.215
	Minimum Operation	5/0.172	20/0.215	10/0.103	10/0.215	10/0.215
	Variable Operating Conditions	5~15/0.172	20~40/0.215	10~25/0.103	10~40/0.215	10~40/0.215
Heating	Nominal Heating	45/0.172	20/0.215	15/0.103	10/0.215	10/0.215
	Maximum Operation	50/0.172	30/0.215	25/0.103	25/0.215	30/0.215
	Minimum Operation	40/0.172	15/0.215	10/0.103	5/0.215	5/0.215
	Variable Operating Conditions	40~50/0.172	15~30/0.215	10~25/0.103	5~25/0.215	5~30/0.215

R134a Single-Stage Compressor Water Source Operating Condition Parameter Table

Model		LWSSDR -360ASF	LWSSDR -420ASF	LWSSDR -450ASF	LWSSDR -510ASF	LWSSDR -610ASF	LWSSDR -710ASF
Nominal Cooling Capacity(KW)		357.9	417.8	445.0	514.9	614.2	704.2
Input Power(KW)		57.9	65.0	71.3	80.8	94.2	109.0
Rated Operating Current(A)		111.1	112.6	123.5	141.7	168.0	191.9
Nominal Heating Capacity(KW)		374.7	439.1	459.6	530.2	636.1	730.6
Input Power(KW)		78.4	93.3	95.3	108.1	127.6	147.6
Rated Operating Current(A)		132.7	149.3	161.7	182.3	215.7	248.3
Compressor	Type	Semisealed screw compressor					
	Power Supply	3PH-380V-50Hz					
	Quantity(units)	1					
	Starting Method	Y-△					
Evaporator	Outlet Water Temperature (℃)	7					
	Cooling Flow Rate (m^3/h)	62	72	77	89	106	121
	Heating Flow Rate (m^3/h)	37	43	46	53	63	73
	Interface Pipe Diameter	100	100	100	125	125	125
Condenser	Inlet Water Temperature(℃)	18					
	Cooling Flow Rate (m^3/h)	37	43	46	53	63	73
	Heating Flow Rate (m^3/h)	62	72	77	89	106	121
	Interface Pipe Diameter	100	100	100	125	125	125
Dimensions	Length(mm)	3095	3095	3095	3105	3105	3105
	Width(mm)	1330	1330	1330	1506	1506	1506
	Height(mm)	1750	1750	1750	1861	1861	1861
Weight	Unit Weight(kg)	4300	4500	4800	5000	5200	5500
	Operating Weight(kg)	4600	4800	5100	5400	5600	5900
Refrigerant	Model	R134a					
	Weight(kg)	120	120	130	150	180	200
Refrigeration Oil	Model	HBR-B04					
	Weight(kg)	20	23	23	23	28	28

Remarks:

1. Nominal refrigeration operating conditions:refrigerant water inlet/outlet temperature (-/7℃),cooling water inlet/outlet temperature (18/-℃);Nominal heating operating conditions:hot water inlet/outlet temperature (-/45℃),heat source water inlet/outlet temperature (15/-℃);
2. Different types of refrigeration oils must not be mixed and must match those specified on the unit;
3. The fouling factor for the water side of the evaporator and condenser is 0.086 $m^2 \cdot k/kW$;
4. The standard design pressure for the unit's water side is 10 kgf/cm^2;
5. It is recommended to select electrical supporting facilities for the main unit at 1.3 times the heating input power;
6. The above content may change due to product updates or other reasons.

R134a Dual-Stage Compressor Water Source Operating Condition Parameter Table

Model		LWSSDR -720ADF	LWSSDR -840ADF	LWSSDR -880ADF	LWSSDR -1020ADF	LWSSDR -1230ADF	LWSSDR -1400ADF
Nominal Cooling Capacity(KW)		715.8	835.6	880.0	1019.8	1228.4	1408.4
Input Power(KW)		115.8	130.0	140.6	159.6	188.4	218.0
Rated Operating Current(A)		111.1*2	112.6*2	123.5*2	141.7*2	168.0*2	191.9*2
Nominal Heating Capacity(KW)		749.4	878.2	919.2	1060.4	1272.2	1461.2
Input Power(KW)		156.8	186.6	190.6	216.2	255.2	295.2
Rated Operating Current(A)		132.7*2	149.3*2	161.7*2	182.3*2	215.7*2	248.3*2
Compressor	Type	Semisealed screw compressor					
	Power Supply	3PH-380V-50Hz					
	Quantity(units)	2					
	Starting Method	Y-△					
Evaporator	Outlet Water Temperature (°C)	7					
	Cooling Flow Rate (m^3/h)	123	144	151	175	211	242
	Heating Flow Rate (m^3/h)	77	90	95	109	131	151
	Interface Pipe Diameter	150	150	150	200	200	200
Condenser	Inlet Water Temperature(°C)	18					
	Cooling Flow Rate (m^3/h)	77	90	95	109	131	151
	Heating Flow Rate (m^3/h)	123	144	151	75	211	242
	Interface Pipe Diameter	150	150	150	200	200	200
Dimensions	Length(mm)	4430	4430	4430	4430	4800	4800
	Width(mm)	1431	1431	1615	1615	1665	1665
	Height(mm)	1845	1845	2055	2055	2100	2100
Weight	Unit Weight(kg)	6300	6600	6700	7000	7500	7800
	Operating Weight(kg)	6600	7000	7100	7400	8000	8300
Refrigerant	Model	R134a					
	Weight(kg)	200	250	250	300	350	400
Refrigeration Oil	Model	HBR-B04					
	Weight(kg)	20*2	23*2	23*2	23*2	28*2	28*2

Remarks:

1. Nominal refrigeration operating conditions:refrigerant water inlet/outlet temperature (-/7°C),cooling water inlet/outlet temperature (18/-°C);Nominal heating operating conditions:hot water inlet/outlet temperature (-/45°C),heat source water inlet/outlet temperature (15/-°C);
2. Different types of refrigeration oils must not be mixed and must match those specified on the unit;
3. The fouling factor for the water side of the evaporator and condenser is 0.086 $m^2 \cdot k/kW$;
4. The standard design pressure for the unit's water side is 10 kgf/cm^2;
5. It is recommended to select electrical supporting facilities for the main unit at 1.3 times the heating input power;
6. The above content may change due to product updates or other reasons.

R22 Single-Stage Compressor Water Source Operating Condition Parameter Table

Model		LWSSDR -550SF	LWSSDR -580SF	LWSSDR -630SF	LWSSDR -700SF	LWSSDR -820SF	LWSSDR -900SF	LWSSDR -970SF	LWSSDR -1100SF
Nominal Cooling Capacity(KW)		541.3	572.3	625.9	703.8	816.9	901.1	965.8	1082.7
Input Power(KW)		88.1	93	100.8	111.9	130.2	145.9	155	171.6
Rated Operating Current(A)		150.3	160.6	172.4	191.2	222.1	247.4	263.4	292.4
Nominal Heating Capacity(KW)		582.1	604.6	667.4	748.7	867.4	957.4	1021.1	1143.1
Input Power(KW)		118.7	126.0	137.4	150.5	173.3	192.4	204.3	229.2
Rated Operating Current(A)		204.9	217.6	234.0	259.9	299.3	332.2	352.8	382.4
Compressor	Type	Semisealed screw compressor							
	Power Supply	3PH-380V-50Hz							
	Quantity(units)	1							
	Starting Method	Y-△							
Evaporator	Outlet Water Temperature (°C)	7							
	Cooling Flow Rate (m^3/h)	93	98	108	121	141	155	166	186
	Heating Flow Rate (m^3/h)	56	59	64	72	84	93	99	112
	Interface Pipe Diameter	125	125	125	150	150	150	200	200
Condenser	Inlet Water Temperature(°C)	18							
	Cooling Flow Rate (m^3/h)	56	59	64	72	84	93	99	112
	Heating Flow Rate (m^3/h)	93	98	108	121	141	155	166	186
	Interface Pipe Diameter	125	125	125	150	150	150	200	200
Dimensions	Length(mm)	3070	3070	3070	3070	3135	3135	3135	3167
	Width(mm)	1395	1395	1395	1395	1580	1580	1580	1670
	Height(mm)	1685	1685	1685	1755	1900	1900	1900	2000
Weight	Unit Weight(kg)	5100	5200	5300	5400	5700	5800	6000	6300
	Operating Weight(kg)	5700	5800	5900	6000	6300	6400	6600	6900
Refrigerant	Model	R22							
	Weight(kg)	200	200	250	250	300	300	320	320
Refrigeration Oil	Model	HBR-B01							
	Weight(kg)	18	20	23	23	23	28	28	28

Remarks:

1. Nominal refrigeration operating conditions:refrigerant water inlet/outlet temperature (-/7°C),cooling water inlet/outlet temperature (18/-°C);Nominal heating operating conditions:hot water inlet/outlet temperature (-/45°C),heat source water inlet/outlet temperature (15/-°C);
2. Different types of refrigeration oils must not be mixed and must match those specified on the unit;
3. The fouling factor for the water side of the evaporator and condenser is 0.086 $m^2 \cdot k/kW$;
4. The standard design pressure for the unit's water side is 10 kgf/cm^2;
5. It is recommended to select electrical supporting facilities for the main unit at 1.3 times the heating input power;
6. The above content may change due to product updates or other reasons.

R22 Dual-Stage Compressor Water Source Operating Condition Parameter Table

Model		LWSSDR -1080DF	LWSSDR -1150DF	LWSSDR -1250DF	LWSSDR -1400DF	LWSSDR -1640DF	LWSSDR -1800DF	LWSSDR -1940DF	LWSSDR -2200DF
Nominal Cooling Capacity(KW)		1080.6	1144.6	1249.2	1403.4	1629.6	1789.6	1924.8	2165.4
Input Power(KW)		176.2	186.0	201.6	223.8	260.4	291.8	310.0	343.2
Rated Operating Current(A)		150.3*2	160.6*2	172.4*2	191.2*2	222.1*2	247.4*2	263.4*2	292.4*2
Nominal Heating Capacity(KW)		1143.2	1209.2	1323.4	1483.4	1720.2	1893.0	2023.2	2286.2
Input Power(KW)		241	253.8	275.8	306.4	352.8	391.4	415.8	458.4
Rated Operating Current(A)		208.1*2	219.0*2	238.2*2	264.5*2	304.7*2	337.9*2	359.0*2	382.4*2
Compressor	Type	Semisealed screw compressor							
	Power Supply	3PH-380V-50Hz							
	Quantity(units)	2							
	Starting Method	Y-△							
Evaporator	Outlet Water Temperature (°C)	7							
	Cooling Flow Rate (m^3/h)	186	197	215	241	280	308	331	372
	Heating Flow Rate (m^3/h)	111	118	129	145	168	184	198	223
	Interface Pipe Diameter	200	200	200	200	200	250	250	250
Condenser	Inlet Water Temperature(°C)	18							
	Cooling Flow Rate (m^3/h)	111	118	129	145	168	184	198	223
	Heating Flow Rate (m^3/h)	186	197	215	241	280	308	331	372
	Interface Pipe Diameter	200	200	200	200	200	250	250	250
Dimensions	Length(mm)	4385	4385	4465	4465	4570	4570	4705	4755
	Width(mm)	1555	1555	1615	1615	1720	1720	1720	1910
	Height(mm)	1900	1900	1985	1985	2075	2075	2075	2185
Weight	Unit Weight(kg)	6700	6800	7100	7300	7400	7500	7800	8000
	Operating Weight(kg)	7200	7300	7600	7800	7900	8000	8400	8600
Refrigerant	Model	R22							
	Weight(kg)	320	320	360	360	390	390	420	420
Refrigeration Oil	Model	HBR-B01							
	Weight(kg)	18*2	20*2	23*2	23*2	23*2	28*2	28*2	28*2

Remarks:

1. Nominal refrigeration operating conditions:refrigerant water inlet/outlet temperature (-/7°C),cooling water inlet/outlet temperature (18/-°C);Nominal heating operating conditions:hot water inlet/outlet temperature (-/45°C),heat source water inlet/outlet temperature (15/-°C);
2. Different types of refrigeration oils must not be mixed and must match those specified on the unit;
3. The fouling factor for the water side of the evaporator and condenser is 0.086 $m^2 \cdot k/kW$;
4. The standard design pressure for the unit's water side is 10 kgf/cm^2;
5. It is recommended to select electrical supporting facilities for the main unit at 1.3 times the heating input power;
6. The above content may change due to product updates or other reasons.

The Correction Factor For R134a Variable Condition Heat Pump Units (Cooling)

Condenser Inlet /Outlet Water Temperature °C	Evaporator Inlet/Outlet Water Temperature																	
	10/5			11/6			11/7			13/8			14/9			15/10		
	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current
16-27	0.95	0.96	0.97	0.99	0.97	0.97	1.02	0.97	0.98	1.06	0.97	0.98	1.09	0.98	0.98	1.13	0.99	0.99
18-29	0.93	0.99	0.99	0.97	1.00	1.00	1.00	1.00	1.00	1.04	1.01	1.00	1.07	1.00	1.01	1.11	1.02	1.01
20-31	0.91	1.02	1.02	0.94	1.03	1.02	0.98	1.03	1.03	1.02	1.04	1.03	1.05	1.04	1.04	1.09	1.05	1.04
22-33	0.89	1.06	1.05	0.93	1.07	1.06	0.96	1.07	1.06	0.99	1.05	1.06	1.03	1.08	1.07	1.07	1.09	1.07
24-35	0.88	1.09	1.07	0.91	1.10	1.08	0.94	1.10	1.09	0.98	1.11	1.10	1.01	1.12	1.10	1.04	1.12	1.11
26-37	0.87	1.12	1.10	0.89	1.13	1.11	0.92	1.14	1.12	0.96	1.15	1.13	0.99	1.16	1.14	1.02	1.16	1.14

The Correction Factor For R134a Variable Condition Heat Pump Units (Heating)

Condenser Inlet /Outlet Water Temperature °C	Evaporator Inlet/Outlet Water Temperature																	
	13/5			14/6			15/7			16/8			17/9			18/10		
	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current
40/45	0.94	0.99	0.99	0.97	1.00	1.00	1.00	1.00	1.00	1.03	1.01	1.01	1.06	1.01	1.01	1.09	1.02	1.02
43/48	0.92	1.04	1.04	0.95	1.05	1.05	0.98	1.05	1.05	1.01	1.06	1.06	1.04	1.07	1.06	1.08	1.07	1.07
45/50	0.91	1.10	1.10	0.94	1.11	1.11	0.96	1.12	1.12	1.00	1.13	1.13	1.03	1.14	1.13	1.06	1.14	1.13
47/52	0.90	1.18	1.16	0.92	1.18	1.17	0.95	1.19	1.18	0.98	1.20	1.19	1.01	1.20	1.19	1.04	1.22	1.20
50/55	0.88	1.25	1.24	0.91	1.26	1.25	0.93	1.27	1.26	0.96	1.27	1.26	0.99	1.28	1.27	1.02	1.29	1.28
52/57	0.87	1.31	1.30	0.89	1.32	1.31	0.92	1.32	1.31	0.95	1.33	1.32	0.97	1.34	1.33	1.00	1.34	1.33

The Correction Factor For R22 Variable Condition Heat Pump Units (Cooling)

Condenser Inlet /Outlet Water Temperature °C	Evaporator Inlet/Outlet Water Temperature																	
	10/5			11/6			11/7			13/8			14/9			15/10		
	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current
16-27	0.96	0.95	0.96	0.99	0.96	0.96	1.02	0.97	0.97	1.05	0.97	0.97	1.08	0.98	0.98	1.12	0.98	0.98
18-29	0.94	0.99	0.99	0.97	0.99	0.99	1.00	1.00	1.00	1.03	1.01	1.01	1.06	1.01	1.01	1.10	1.02	1.01
20-31	0.92	1.02	1.02	0.95	1.03	1.03	0.98	1.04	1.03	1.01	1.04	1.04	1.04	1.05	1.04	1.08	1.05	1.05
22-33	0.90	1.06	1.06	0.93	1.07	1.06	0.96	1.07	1.07	0.99	1.08	1.07	1.02	1.09	1.08	1.06	1.09	1.09
24-35	0.88	1.10	1.09	0.91	1.10	1.10	0.94	1.11	1.10	0.97	1.12	1.11	1.00	1.13	1.12	1.04	1.13	1.12
26-37	0.86	1.14	1.13	0.89	1.15	1.14	0.92	1.15	1.14	0.95	1.16	1.15	0.98	1.17	1.16	1.01	1.18	1.16

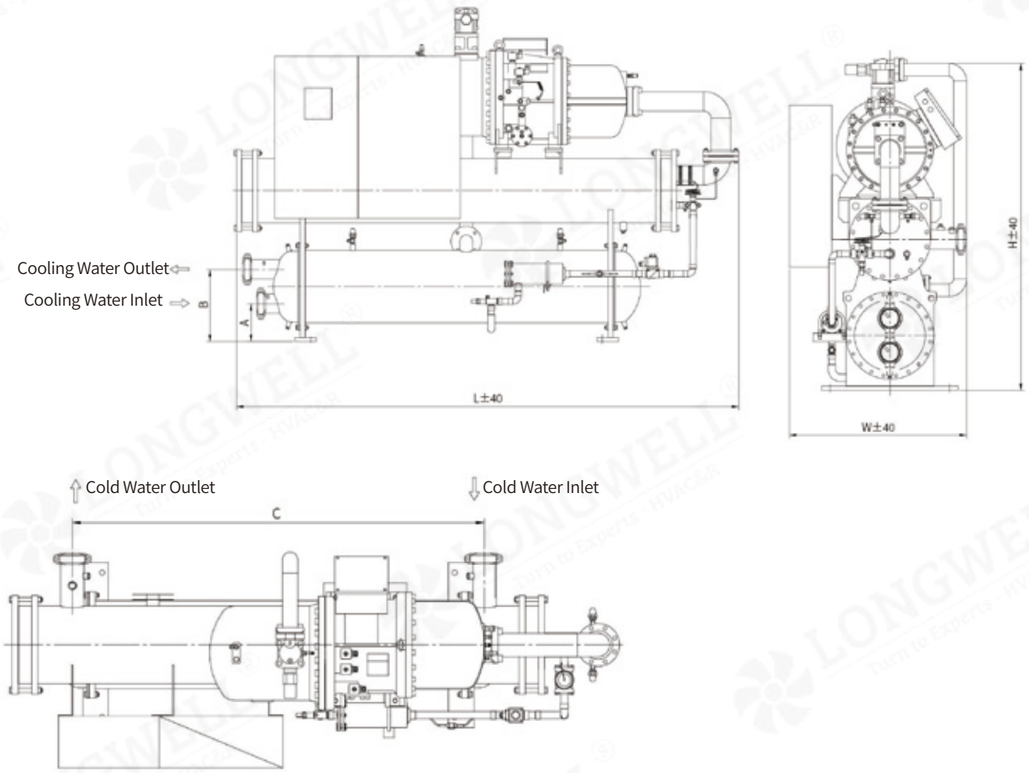
The Correction Factor For R22 Variable Condition Heat Pump Units (Heating)

Condenser Inlet /Outlet Water Temperature °C	Evaporator Inlet/Outlet Water Temperature																	
	13/5			14/6			15/7			16/8			17/9			18/10		
	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current	Refrigeration Capacity	Power	Current
38/43	0.96	0.95	0.95	0.98	0.96	0.96	1.01	0.97	0.97	1.04	0.98	0.97	1.06	0.98	0.98	1.09	0.99	0.98
40/45	0.94	0.99	0.99	0.97	0.99	1.00	1.00	1.00	1.00	1.02	1.01	1.01	1.05	1.02	1.02	1.08	1.03	1.03
43/48	0.92	1.04	1.04	0.95	1.05	1.05	0.98	1.06	1.06	1.01	1.06	1.06	1.03	1.07	1.07	1.06	1.08	1.08
45/50	0.91	1.08	1.08	0.94	1.09	1.09	0.96	1.09	1.09	0.99	1.10	1.10	1.02	1.11	1.11	1.05	1.12	1.12
47/52	0.89	0.12	0.12	0.92	1.13	1.13	0.94	1.13	1.14	0.97	1.14	1.14	1.00	1.15	1.15	1.03	1.16	1.16
50/55	0.87	1.19	1.20	0.89	1.20	1.21	0.92	1.20	1.22	0.94	1.21	1.23	0.97	1.21	1.23	1.00	1.22	1.24

Remarks:

1. The correction factor is the ratio of data under various conditions to the standard condition.
2. This correction factor is suitable for water-loop, groundwater, and ground-loop water (ground) source heat pump units. For designs requiring other conditions, please contact our company's design department.

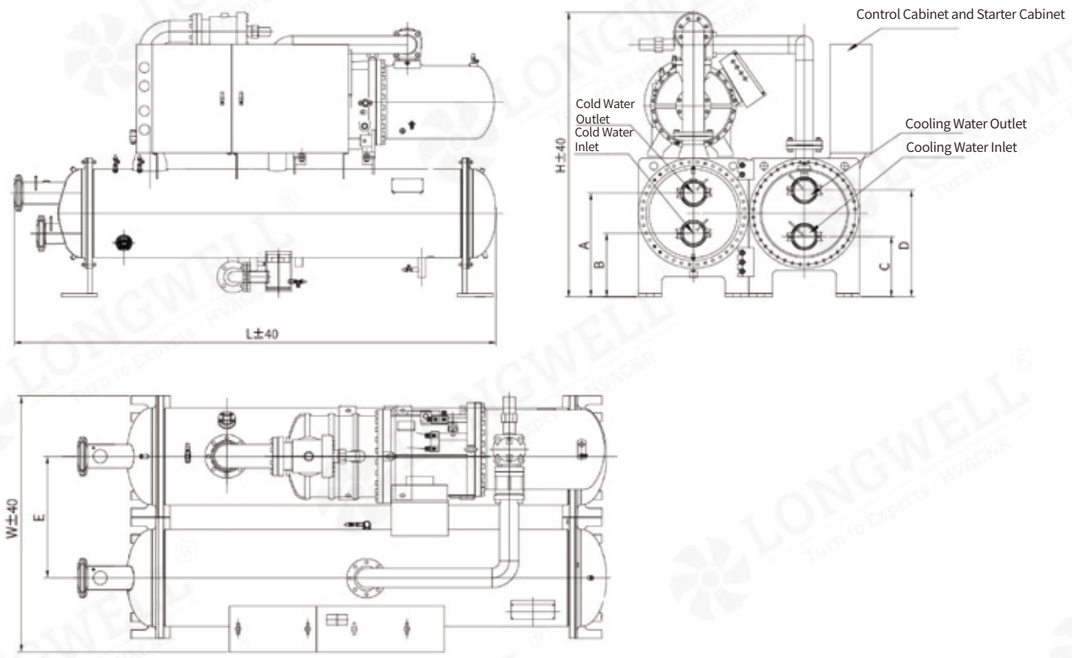
Screw-Type Water-Cooled Chiller Unit Outline Dimension Drawing:Dry Single-Stage Compressor



Outline Dimensions Of Dry Single-Stage Compressor

Model	L	W	H	A	B	C
LWLSBLG-185BS	3017	960	1610	183	333	2000
LWLSBLG-250BS	3085	970	1650	213	393	2000
LWLSBLG-300BS	3085	970	1759	213	393	2000
LWLSBLG-380BS	3105	1040	1794	223	423	2000
LWLSBLG-450BS	3105	1040	1794	223	423	2000

Outline Dimension Diagram Of Screw-Type Water-Cooled Chiller Unit:Single Compressor



R134a External Dimensions

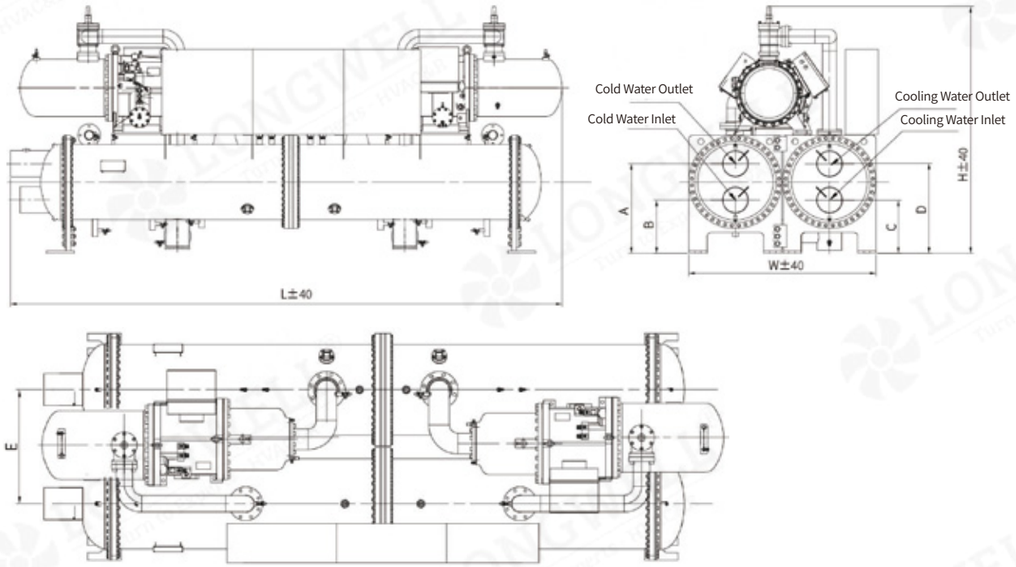
Model	L	W	H	A	B	C	D	E
LWLSBLG-370ASF/400ASF	3030	1300	1780	632	422	422	632	616
LWLSBLG-460ASF	3030	1300	1800	632	422	422	632	616
LWLSBLG-530ASF/600ASF	3030	1420	1920	710	450	450	710	670
LWLSBLG-700ASF	3110	1440	1950	710	450	425	685	695

R22 External Dimensions

Model	L	W	H	A	B	C	D	E
LWLSBLG-580BSF/630BSF	3080	1380	1620	710	450	450	710	665
LWLSBLG-700BSF	3080	1380	1780	710	450	450	710	665
LWLSBLG-820BSF~960BSF	3130	1510	1920	785	485	433	693	743
LWLSBLG-1080BSF	3172	1650	2020	835	485	357	757	830

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Outline Dimension Diagram Of Screw-Type Water-Cooled Chiller Unit:Dual Compressor



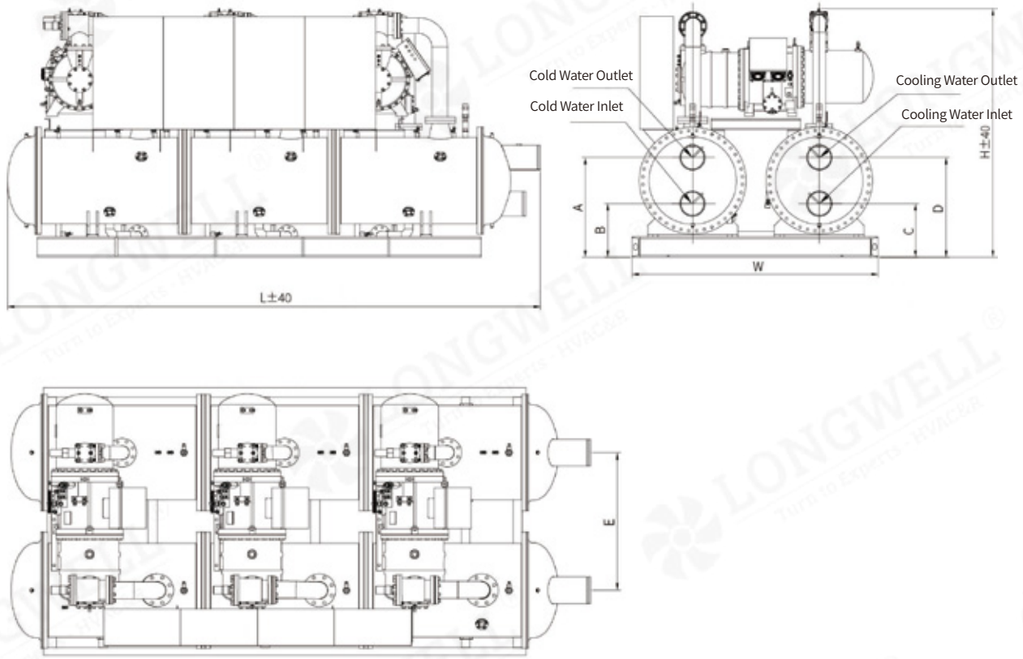
R134a External Dimensions

Model	L	W	H	A	B	C	D	E
LWLSBLG-750ADF/800ADF	4095	1495	1875	705	405	405	705	720
LWLSBLG-870ADF/950ADF	4176	1561	1955	737	437	437	737	776
LWLSBLG-1060ADF	4339	1561	2030	737	437	437	737	776
LWLSBLG-1180ADF	4547	1650	2136	825	475	527	827	803
LWLSBLG-1230ADF/1380ADF	4547	1691	2136	825	475	475	825	830

R22 External Dimensions

Model	L	W	H	A	B	C	D	E
LWLSBLG-1150BDF	4142	1561	1887	737	437	437	737	776
LWLSBLG-1250BDF	4224	1611	1948	737	437	475	825	803
LWLSBLG-1400BDF	4224	1700	1948	825	475	475	825	830
LWLSBLG-1640BDF	4639	1730	2066	825	475	500	850	855
LWLSBLG-1800BDF	4639	1770	2066	850	500	500	850	880
LWLSBLG-1920BDF	4673	1910	2146	920	510	510	920	920
LWLSBLG-2160BDF	4673	1910	2146	920	510	510	920	960

Outline Dimension Diagram Of Screw-Type Water-Cooled Chiller Unit:Triple Compressor

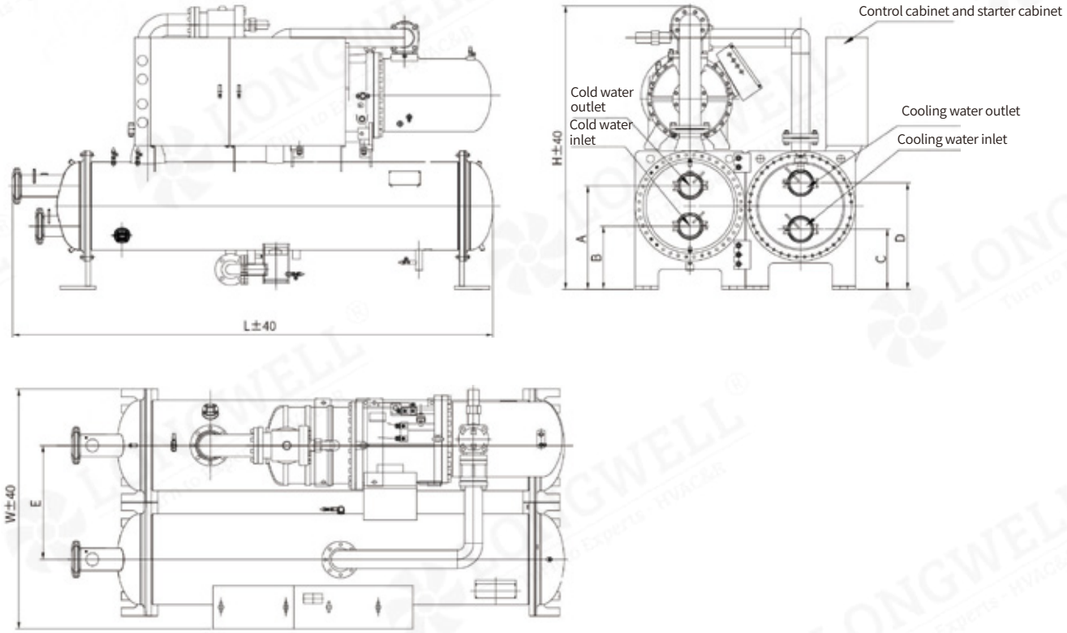


R134a External Dimensions

Model	L	W	H	A	B	C	D	E
LWLSBLG-1450ATF	4693	2211	2166	838	488	488	838	1131
LWLSBLG-1600ATF	4750	2211	2230	885	475	475	885	1196
LWLSBLG-1750ATF	4750	2211	2230	885	475	475	885	1196
LWLSBLG-2010ATF	4830	2330	2300	910	500	500	910	1266

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Outline Dimension Diagram Of Water (Ground) Source Heat Pump Unit:Single Compressor



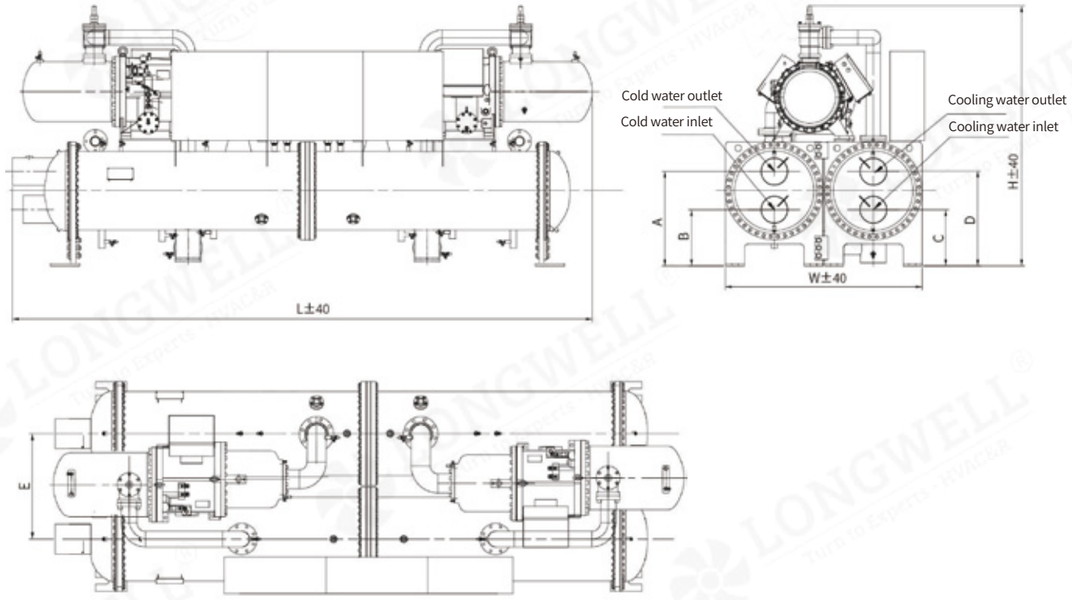
R134a External Dimensions

Model	L	W	H	A	B	C	D	E
LWSSDR-360ASF/420ASF	3095	1330	1636	710	450	422	632	638
LWSSDR-450ASF	3095	1330	1750	685	425	425	685	715
LWSSDR-510ASF~710ASF	3105	1506	1833	-	-	-	-	-

R22 External Dimensions

Model	L	W	H	A	B	C	D	E
LWSSDR-550SF~630SF	3096	1395	1685	710	450	485	835	670
LWSSDR -700SF	3096	1395	1772	-	-	-	-	-
LWSSDR-820SF~970SF	3135	1580	1900	-	-	-	-	-
LWSSDR-1110SF	3157	1670	1981	-	-	-	-	-

Exterior Dimensions Diagram For Water (Ground) Source Heat Pump Unit:Dual Compressor



R134a External Dimensions

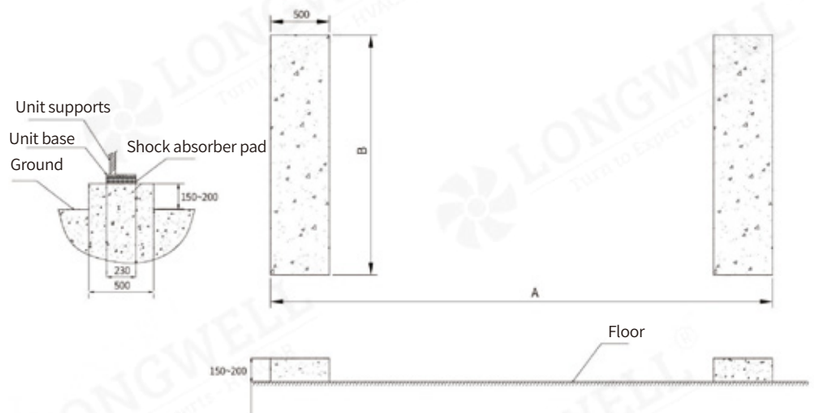
Model	L	W	H	A	B	C	D	E
LWSSDR-720ADF/840ADF	4411	1455	1838	737	437	450	710	718
LWSSDR -880ADF	4425	1615	2053	-	-	-	-	-
LWSSDR-1020ADF~1230ADF	4603	1615	2030	-	-	-	-	-
LWSSDR -1400ADF	4800	1665	2100	-	-	-	-	-

R22 External Dimensions

Model	L	W	H	A	B	C	D	E
LWSSDR -1080DF/1150DF	4411	1555	1900	920	510	510	920	960
LWSSDR -1250DF/1400DF	4465	1615	1985	-	-	-	-	-
LWSSDR -1640DF~1940DF	4705	1720	2075	-	-	-	-	-
LWSSDR -2200DF	4755	1910	2185	-	-	-	-	-

Installation Base Diagram

The foundation of the unit should be filled with concrete not less than 150# poured into a pre-made foundation frame.The anchor bolt holes of the foundation should be pre-drilled according to the dimensions on the drawings,and the pouring process of the foundation should be continuous.During the installation of the unit,first install the anchor bolts in the holes of the unit base,then place the unit on the foundation.Place diagonal irons near each anchor bolt and use them to adjust the unit base to be level.While leveling, each diagonal iron should be properly padded,then fill the anchor bolt holes with cement concrete similar to the poured foundation.Fill the gap between the base and the foundation with cement.After the grout is dry,polish the foundation.



Screw-Type Water-Cooled Chiller Unit

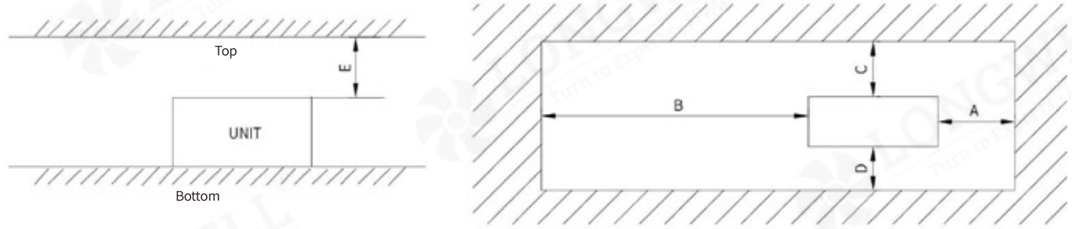
Model	A	B	Model	A	B
LWLSBLG-370ASF~460ASF	3042	1472	LWLSBLG-1080BSF	3042	1900
LWLSBLG-530ASF~600ASF	3042	1580	LWLSBLG-1150BDF	4097	1792
LWLSBLG-700ASF	3042	1630	LWLSBLG-1250BDF	4097	1846
LWLSBLG-750ADF~800ADF	4097	1680	LWLSBLG-1400BDF	4097	1900
LWLSBLG-870ADF~1060ADF	4097	1792	LWLSBLG-1640BDF	4097	1950
LWLSBLG-1180ADF	4097	1846	LWLSBLG-1800BDF	4097	2000
LWLSBLG-1230ADF~1380ADF	4097	1900	LWLSBLG-1920BDF	4097	2080
LWLSBLG-185BS~450BS	2010	900	LWLSBLG-2160BDF	4097	2160
LWLSBLG-580BSF~700BSF	3042	1580	LWLSBLG-1450ATF~1750ATF	2520	4000
LWLSBLG-820BSF-960BSF	3042	1736	LWLSBLG-2010ATF	2700	4000

Screw-Type Water (Ground) Source Heat Pump Unit

Model	A	B	Model	A	B
LWSSDR-360ASF~450ASF	3050	1521	LWSSDR-820SF~970SF	3050	1787
LWSSDR-510ASF~710ASF	3050	1675	LWSSDR-1100SF	3050	1900
LWSSDR-720ADF~840ADF	4250	1681	LWSSDR-1080DF~1150DF	4250	1787
LWSSDR-880ADF~1020ADF	4250	1841	LWSSDR-1250DF~1400DF	4250	1841
LWSSDR-1230ADF~1400ADF	4250	1891	LWSSDR-1640DF~1940DF	4250	1945
LWSSDR-550SF~700SF	3050	1575	LWSSDR-2200DF	4250	2160

Installation Space Diagram

When installing the unit, the installation space of the unit should be considered to facilitate the dismantling and lifting of components such as compressors. The minimum installation space is determined according to the table below. When multiple units are installed, the spacing between dual units should not be less than 120% of that of a single unit. If the space in the machine room is too small, please contact the company.



Installation Notes:

1. The water pump should be installed on the inlet side of the chilled water/cooling water.
2. Flexible connectors should be installed on both sides of the water pump to isolate pipeline vibrations. The water pump speed should preferably not be set to 2900RPM to avoid resonance.

Screw-Type Water-Cooled Chiller Unit

Model	A	B	C	D	E
LWLSBLG-185BS~450BS	1500	2500	1500	1500	1200
LWLSBLG-580BSF~700BSF	1500	2500	1500	1500	1200
LWLSBLG-820BSF~960BSF	1500	2500	1500	1500	1500
LWLSBLG-1080BSF	1500	2500	1500	1500	1600
LWLSBLG-1150BDF~1400BDF	1800	1800	1500	1500	1500
LWLSBLG-1640BDF~2160BDF	1800	1800	1500	1500	1600
LWLSBLG-370ASF~460ASF	1500	2500	1500	1500	1200
LWLSBLG-530ASF~700ASF	1500	2500	1500	1500	1500
LWLSBLG-750ADF~950ADF	1800	1800	1500	1500	1500
LWLSBLG-1060ADF~1380ADF	1800	1800	1500	1500	1600
LWLSBLG-1450ATF~2010ATF	2000	3600	2000	1500	1600

Screw-Type Water (Ground) Source Heat Pump Unit

Model	A	B	C	D	E
LWSSDR -360ASF~710ASF	2000	2500	2000	1500	1600
LWSSDR -720ADF~1400ADF	2000	3600	2000	1500	1600
LWSSDR -550SF~1100SF	2000	2500	2000	1200	1600
LWSSDR -1080DF~2200DF	2000	3600	2000	1500	1600

Water Quality Requirements

Proper water treatment can effectively prevent corrosion inside copper pipes,the accumulation of algae,and the formation of scale.Poor water quality can lead to serious problems such as copper pipe rupture or corrosion of heat transfer tubes,causing unit malfunction.Although the chilled water system is a closed-loop system,it is still advisable to conduct appropriate water quality treatment.Water treatment methods should comply with GB18430.1-2007 "Steam Compression Cycle Chilled Water (Heat Pump) Unit," DB131/T143-94 "Water Quality Standards for Hotel and Restaurant Air Conditioning and Cooling Water," or be determined by professional water treatment personnel.During unit operation,regular water analysis should be conducted,and the water quality should meet the requirements specified in the table below.

Project			Baseline Value	Tendency	
				Corrosion	Scalling
Baseline Item	Alkalinity pH(25°C)		6.5~8.0	○	○
	Conductivity(25°C)	μS/cm	<800	○	○
	Chloride Ions Cl^-	mg(Cl^-)/L	<200	○	
	Sulfate Ions SO^{2-}	mg(SO^{2-})/L	<200	○	
	Acid Consumption(pH=4.8)	mg($CaCO_3$)/L	<100		○
	Total Hardness	mg($CaCO_3$)/L	<200		○
Reference Project	Iron (Fe)	mg(Fe)/L	<1.0		○
	Sulfide Ions(S^{2-})	mg(S^{2-})/L	Not detectable	○	
	Ammonium Ions (NH^+)	mg(NH^+)/L	<1.0	○	
	Silica SiO_2	mg(SiO_2)/L	<5.0		○

Note: ○ indicates factors related to corrosion or scale formation tendency.

Water Quality Requirements for Air Conditioning Water (System Circulating Water)

Project	Indicators		
	Cooling Water	Heat Transfer Water	Chilled Water
PH	7.0-8.5	8.0-10.0	8.0-10.0
Total Hardness (ppm)	<800	<200	<200
Total Dissolved Solids (ppm)	<3000	<2500	<2500
Turbidity (NTU)	<50	<20	<20
Total Iron (ppm)	<1	<1	<1
Total Copper (ppm)	<0.2	<0.2	<0.2
Total Bacteria Count (per/ml)	<1x10	<1x10^3	<1x10^3

Water Source Quality Requirements Table For Water (Ground) Source Heat Pump

Number	Condition	Requirement	Remarks
1	Sediment Content	The sand content should be less than 1/200,000	If the sand content exceeds 1/200,000, installation of a cyclone sand remover is required.
2	Turbidity	The turbidity of cooling water used only for air conditioning is 50~150 milligrams per liter, while the turbidity of water injected into underground aquifers should be less than 20 milligrams per liter.	If the central air conditioning system of the ground source heat pump is equipped with plate heat exchangers, it is required that the solid particle size in the water source be less than 0.5 millimeters. For water sources with high turbidity, a water purifier can be installed for filtration.
3	Alkalinity	The acidity (pH value) of water used for the water source central air conditioning system should be between 6.5 and 8.5.	
4	Hardness	High hardness is prone to scaling. The water hardness requirement for the water source central air conditioning system is that the CaO content in the water should be less than 200 milligrams per liter.	During system operation, the circulating water in the condenser is prone to scaling due to the precipitation of calcium and magnesium ions in the water during heating in winter conditions, which affects heat exchange efficiency. Typically, an electronic water treatment device is installed in the circulating water pipeline of the condenser to prevent scaling in the pipeline.
5	Mineralization	The total amount of various ions, molecules, and compounds contained in a unit volume of water is referred to as the total mineralization. For water used in the water source central air conditioning system, the total mineralization of the water source should be less than 3 grams per liter	When the mineralization of the water source water is between 350 and 500 mg/L, stainless steel plate heat exchangers can be installed. When the mineralization of the water source water exceeds 500 mg/L, corrosion-resistant titanium alloy plate heat exchangers should be installed.
6	Corrosiveness	The presence of Cl^-, free CO_2 in water is corrosive, and the presence of dissolved oxygen increases the corrosion of the metal pipe network. In the water source used for the water source central air conditioning system, the requirements are Cl^- <100mg/L, free CO_2 <10mg/L, Fe^{2+}<1mg/L, Mg^{2+} <0.5mg/L.	When applied in ground source central air conditioning systems, for water sources with high corrosiveness and hardness, corrosion-resistant stainless steel heat exchangers or titanium plate heat exchangers should be installed in the system.