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SCREW CHILLER

AIR-CONDITIONING EQUIPMENT

a brand of ECO GLOBAL INDUSTRIES - www.ecogbl.com
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**SMART & ECO-FRIENDLY TECHNOLOGICAL-DRIVEN SOLUTIONS
FOR GREENER & HEALTHIER WORLD**

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CORPORATE PROFILE

Our eco° global industries is an enterprise specialising in products and services across: Energy Sector, Heavy Industries, Technology Sector, Education Sector, Transportation Sector and Lifestyle Sector such as Appliances, Health & Food

eco° focuses on delivering eco-friendly and smart solutions and services to improve lives and safeguard our environment

eco° is committed towards our clients to always deliver design and engineering solutions with great consideration given to our environments. We focus greatly on solving design and engineering challenges with sustainable solutions

MANUFACTURING PLANTS

Our manufacturing plants are located in: China, Turkey and Italy, serving our distributors and partners across the continents.

With our innovative R&D network, our equipment features latest technology and capable of delivering cooling and heating to harsh climates around the world.



HEADQUARTER
LONDON, UNITED KINGDOM

EUROPE OFFICE
MILAN, ITALY

MENA OFFICE
SOFIA, BULGARIA

ASIA OFFICE
SHANGHAI, CHINA

PLANT 1
NANJING, CHINA

PLANT 2
VICENZA, ITALY

PLANT 3
ISTANBUL, TURKEY

We specialise in the manufacturing of AIR CONDITIONER equipment for residential, commercial and industrial cooling and heating applications. Established in United Kingdom, we have regional offices across the world to serve our clients across the continents

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PRE Series COOLING ONLY R134a
PREMIUM SERIES

ECO Series COOLING ONLY R134a
ECONOMY SERIES



SCREW MODULAR COOLING

AIR-COOLED SCREW CHILLER

For Commercial & Industrial Applications

Our eco° PRE & ECO air-cooled screw chillers series adopts innovative engineering and smart components configuration programming to deliver superb efficiency and intelligent controls solutions. Utilising world-leading components, our eco° chillers series offers robust stability and reliability with the capability of connecting up to 8 modular chillers for high powered cooling for a wide range of climates around the world. Most suited for commercial and industrial infrastructures, we are proud to support our clients worldwide in achieving the most ideal indoor air comfort

STABLE & RELIABLE OPERATION

- + eco° PRE & ECO series adopts the high-efficiency semi-hermetical twin-screw design, featuring easier maintenance, minimal repairs, fewer vulnerable parts, zero energy loss and increased reliability
- + With the compressor motor directly connects to the rotor with no gearbox involved, energy loss through transmission is completely omitted, ensuring smoother and more reliable operation
- + The twin-compressors design offer two stand-alone passes, guaranteeing reliable operational and with no requirement for oil balance pipeline between the units, eco° PRE & ECO series provides better back-up and substantially improve the unit performance
- + Every unit undergoes rigorous testing and optimising procedure under a wide range of climate conditions to ensure performance reliability
- + Every unit adopts the low-noise type outer rotor axial flow fan with long type air duct for diversion to effectively reduce the airflow noise. Additional silencer feature and shock padding are built in with the compressor to offer further noise reduction

MODULAR CONFIGURATION

- + eco° PRE & ECO series adopts modular design with each micro-computer controller within every unit is pre-engineered with connection interface, allowing up to 8 units master-and-slave configuration
- + The master unit can manage all slave units via centralised controller system with management for operating data and operating status
- + Each unit within master-and-slave arrangement still operates independently - a single failure of any unit will not affect the operation of the rest of the system
- + Each unit is provided with standard RS485 interface and supports the MODBUS-RTU protocol. This can be implemented with centralised controller and remote monitoring programme to regulate chillers functionalities as required by the BAS

MICROCOMPUTER CONTROL

- + The industrial level microcomputer controller, together with LCD touch screen, forms the complete control system for each chiller.
- + The leading intelligent control program ensures accurate management of water temperature under any conditions, guaranteeing energy-saving protocol and stable operation as default functionality
- + The unit supports the compiling of weekly operating schedules and the implementation of automatic start and stop control to ensure the system can operate unattended
- + The advanced pre-control function enables measures to be taken timely before actual system failures to avoid preventable system shutdowns

SMART INSTALLATION

- + Air cooled chillers do not require any cooling towers connection, making it ideal for a wide range of climates around the world, where access to water is costly and difficult
- + The lifting lug design makes hoisting process simple and offers protection to the unit during the handling process
- + With the compact structure and well-engineered body, each chiller requires very minimal space and offer easy hoisting and quick installation process. The water pipe of the water-side heat exchanger is equipped with water flow switch and is ready to use on site. Inlet and outlet pipes are pre-clamped for quicker installation
- + Each unit comes with start-up cabinet and control cabinet. Refrigerant and refrigeration oil are pre-filled at the factory leaving only water pipe and power supply to be connectd upon installation on site
- + Built in hydraulic integration can be preinstalled at factory. This feature integrates all necessary hydraulic components such as water pump, filter, expansion tank, flow switch, safety valve, pressure gauge and drainage valve

WORLD-CLASS COMPONENTS

- + eco° PRE & ECO series uses the most advanced electronic expansion valve available, offering excellent performance for both under full load or partial load operation. When comparing with thermal expansion valve, electronic expansion valve reacts faster, offering higher efficiency heat exchange rate
- + The highly powered semi-hermetical twin-screw compressor adopts the world class latest generation 5:6 patented asymmetric tooth-type rotor to provide grater adiabatic efficiency
- + The high precision filter screen built in the compressor increases oil separation efficiency at up to 99.5%
- + eco° PRE & ECO series adopts the semi enclosed twin screw compressor and air suction cooling motor to ensure that the motor is fully cooled
- + The compressor adopts the slide valve for adjustment. A single compressor can precisely match 25% - 100% load changes and the dual compressor can achieve at up 12.5% - 100% load changes, which reduces the operational expenditure greatly

HIGH-EFFICIENCY HEAT EXCHANGER

- + The patented counter-current water-side heat exchanger combined with the inner-threaded heat exchanger pipe allow for increase of heat exchange efficiency at up to 20% to 30% more
- + The wind-side heat exchanger adopts an unique process design to ensure the refrigerant flow efficiently in any conditions. The refrigerant pressure in the wind-side heat exchange copper pipe is reduced to minimum, therefore reducing the power consumption of the unit greatly
- + The use of inverter M type heat exchanger reduces ventilation resistance, improves air flow velocity distributino and increases heat exchange efficiency
- + The use of large air volume silent fan increases the airflow through tube fins, which improves the heat exchange efficiency in the wind-side heat exchanger

SCREW

MODULAR

COOLING

AIR-COOLED SCREW CHILLER

For Commercial & Industrial Applications

MAIN FUNCTIONS

- + Local and Remote Automatic Control
- + Start and Stop Control of the Unit
- + Real-time Display of the Operating Status and Parameters
- + Display and Settings of Control Parameters
- + Self-test upon Unit Startup
- + Adjustment and Control of the Energy
- + Control of the Balanced Operation of the Compressor
- + Graded Energy-Saving Control of the Fan
- + Water Pump Interlock Control
- + Multi-Unit Control
- + RS485 Communication Interface (Communication Function)
- + Real-Time Displaying Operation Permission Grading Function Automatic Shutdown upon Alarm and Failure Display Function Historical Fault Memory

PROTECTION FUNCTIONS

- + Power Over-Voltage and Under-Voltage Protection
- + Protection of Power Supply Default Phase, Reverse Phase, and Unbalanced Phase
- + Compressor Oil Level Protection
- + Compressor Motor Overheat Protection
- + Compressor Motor Overload Protection
- + Compressor Overload Protection
- + Compressor Start Failure Protection
- + Protection of Over High Condensation Pressure (Exhaust)
- + Protection of Over Low Evaporation Pressure (Suction)
- + Protection of Air Suction / Exhaust Pressure Difference
- + System Pressure Warning Protection
- + Protection of Over Low Cooling Outlet Water Temperature
- + Water Flow Switch Protection

PRE Series COOLING ONLY R134a PREMIUM SERIES

SEMI HERMETICAL
SCREW COMPRESSOR

MODULAR

COOLING

		UNIT	110.1	145.1	170.1	210.1	230.2	260.2	285.2	345.2	405.2	
Nominal Cooling (water outlet temp at 7°C, dry-bulb at 35°C)	Cooling Capacity	kW	385	505	601	730	808	909	1001	1210	1425	
	Power Consumption	kW	123	159	189	233	254	285	319	379	464	
	Rated Current	A	219	288	341	419	479	507	578	690	840	
	Max Starter Current	A	615	845	845	965	1102	1264	1358	1358	1486	
	Max Running Current	A	419	513	523	521	900	932	1026	1026	1042	
Power Supply	-	380 - 415V / 3N / 50Hz										
Evaporator	Type	Tube-and-Shell Evaporator										
	Water Flow	m³/h	66	87	103	126	139	156	172	208	245	
	Inlet / Outlet DN	DN	125	125	125	150	150	150	150	200	200	
	Pressure Drop	kPa	40	53	56	57	68	72	73	70	68	
	Water Side Pressure	MPa	1.0									
	Connection Type	-	Victaulic Coupling									
Compressor	Type	-	Semi Hermetical Screw Compressor									
	Energy Control	-	25% - 100% Four Step Control					12.5% - 100% Eight Step Control				
	Starter Mode	-	Y - Δ									
Fan	Air Flow	m³/h	150,000	200,000	250,000	250,000	350,000	350,000	400,000	400,000	500,000	
	Quantity	Pcs	6	8	10	10	14	14	16	16	20	
Refrigerant	Type	-	R134a									
	System Quantity		1					2				
Dimensions	Length	mm	3787	4792	5797	5797	8707	8707	9712	9712	11700	
	Width	mm	2250									
	Height	mm	2420					2480				
Hydraulic Module (Option)	Built In Hydraulic Module (Option)	Water Pump, Expansion Tank, Filter, Safety Valve, Pressure Gauge, Butterfly Valve										
	Water Pump Type	Centrifugal Single Pump or Twin Pump (Option)										
Net Weight	kg	4350	4690	5500	6050	7850	7980	9200	9550	11800		
Running Weight	kg	4550	4910	5750	6340	8190	8340	9590	9980	12400		

1. Nominal cooling conditions: Chilled water inlet/outlet temperature 12/7°C, Ambient temperature 35°C

2. Power supply fluctuation range: ±10%

3. If you need low ambient temperature cooling function, please contact with sales representatives.

4. When choose built-in hydraulic kit, please remark pump lifting.

5. Due to possible product improvement, eco° reserves the right to make changes in design and construction at any time without notice. 6. For more details, please contact with eco° headquarter.

ECO Series COOLING ONLY R134a ECONOMY SERIES



SEMI HERMETICAL
SCREW COMPRESSOR

MODULAR

COOLING

		UNIT	110.1	145.1	180.1	210.1	255.2	290.2	325.2	360,2	390.2	420.2	
			-	-	-	-	110+145	145_145	145+180	180+180	180+210	210+210	
Nominal Cooling (water outlet temp at 7°C, dry-bulb at 35°C)	Cooling Capacity	kW	385	505	642	741	890	1010	1147	1283	1383	1482	
	Power Consumption	kW	124	160	201	242	284	319	361	402	443	484	
	Rated Current	A	216	278	349	421	493	555	627	699	770	842	
	Max Starter Current	A	615	683	845	965	1102	1164	1326	1368	1488	1486	
	Max Running Current	A	419	481	523	521	900	962	962	1046	1044	1042	
Power Supply		-	380 / 3N / 50Hz										
Evaporator	Type		Tube-and-Shell Evaporator										
	Water Flow	m ³ /h	66	87	110	127	153	174	197	221	238	255	
	Inlet / Outlet DN	DN	150	150	150	150	150+150	150+150	150+150	150+150	150+150	150+150	
	Pressure Drop	kPa	62	64	58	79	64	64	64	58	79	79	
	Water Side Pressure	MPa	1.0										
	Connection Type	-	Victaulic Coupling										
Compressor	Type	-	Semi Hermetical Screw Compressor										
	Energy Control	-	25% - 100% Four-Grade Regulation					12.5% - 100% Eight-Grade Regulation					
	Starter Mode	-	Y - Δ										
Fan	Air Flow	m ³ /h	132,000	176,000	220,000	250,000	308,000	352,000	396,000	440,000	470,000	500,000	
	Quantity	Set	6	8	10	10	14	16	18	20	20	20	
Refrigerant	Type	-	R134a										
	System Quantity	-	1					2					
	Charge Amount	kg	86	100	115	150	186	200	215	230	265	300	
Dimensions	Length	mm	3787	4792	5797	5797	9579	10584	11589	12594	12594	12594	
	Width	mm	2250										
	Height	mm	2470										
Shipping Weight		kg	4300	4650	5450	6000	9000	9350	10150	10950	11500	12050	
Operating Weight		kg	4500	4880	5700	6300	9430	9810	10630	11450	12050	12650	

1. Cooling conditions: water inlet/outlet temperature 12/7°C, ambient temperature 35°C

2. Allowable voltage fluctuation: ±10%

3. 260RT and later models adopt two modular units, which are transported separately and assembled in parallel on site. The water system pipes of the two units are connected by the client

4. The specifications are subject to change due to product improvement without prior notice

CORRECTION FACTOR DIAGRAM

Water Outlet Temperature °C	15		20		25		30		35		40		45		50	
	Cooling Capacity kW	Power kW	Cooling Capacity kW	Power kW	Cooling Capacity kW	Power kW	Cooling Capacity kW	Power kW	Cooling Capacity kW	Power kW	Cooling Capacity kW	Power kW	Cooling Capacity kW	Power kW	Cooling Capacity kW	Power kW
5	1.16	0.75	1.11	0.79	1.06	0.83	1.00	0.89	0.94	0.97	0.88	1.05	0.90	1.17	0.74	1.28
7	1.23	0.76	1.18	0.80	1.12	0.86	1.06	0.92	1.00	1.00	0.94	1.08	0.86	1.21	0.79	1.32
8	1.27	0.76	1.22	0.81	1.16	0.87	1.10	0.93	1.03	1.02	0.96	1.10	0.89	1.22	0.82	1.34
10	1.34	0.80	1.29	0.84	1.23	0.89	1.16	0.96	1.09	1.05	1.02	1.14	0.95	1.26	0.87	1.38
12	1.42	0.82	1.36	0.87	1.30	0.92	1.23	1.00	1.16	1.08	1.08	1.17	1.02	1.30	0.93	1.42
15	1.54	0.85	1.48	1.41	1.41	0.97	1.33	1.04	1.25	1.13	1.17	1.24	1.12	1.37	1.02	1.49

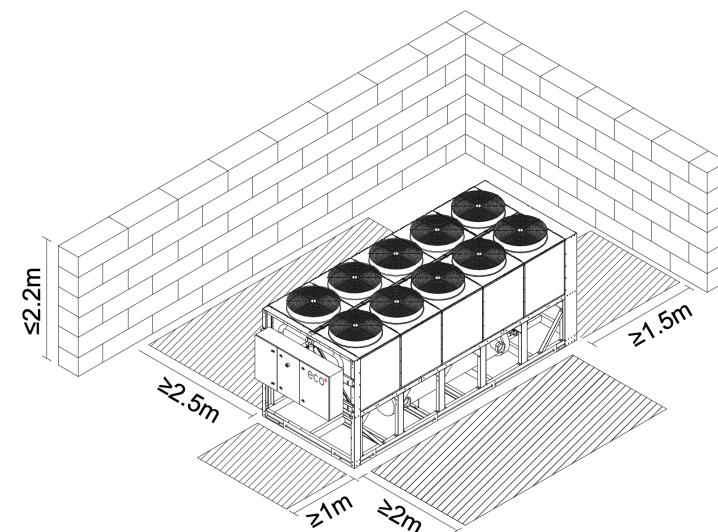
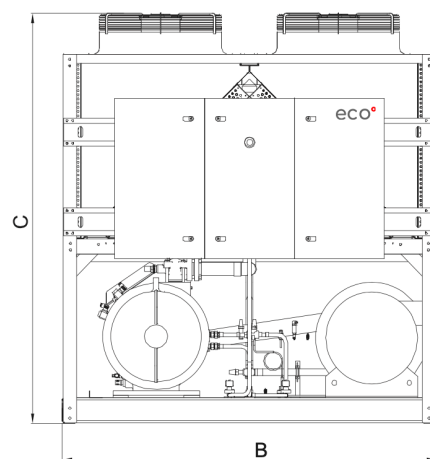
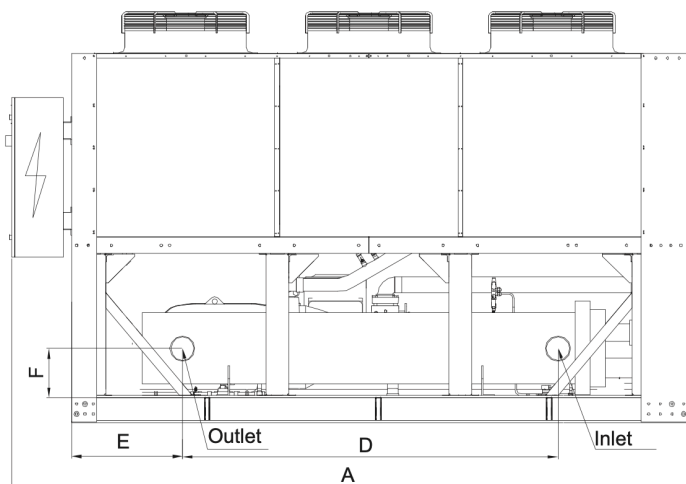
UNIT OPERATION CONDITION

Shell and Tube Heat Exchanger (Evaporator)	Minumum Temperature (°C)	Maximum Temperature (°C)
Inlet Water Temperature (Starting)	-	35
Outlet Water Temperature (Operating)	5	15
Shell and Tube Heat Exchanger (Evaporator)	Minumum Temperature (°C)	Maximum Temperature (°C)
Inlet Air Temperature	15	Request Factory Selection

RELIABLE PERFORMANCE

- + eco° engineers conduct optimal design for critical components and system pipelines using internationally design concepts integrated artificial intelligence aided engineering to achieve optimal performance
- + internationally branded compressors for higher stability and better performance
- + electronic expansion valves control liquid, oil and system oscillation to ensure stability
- + balanced design of high precision for distribution pipe of refrigerant in heat exchanger on air side of the chiller guarantees uniform distribution of refrigerant in heat exchanger, enhancing heating capacity and improves frosting condition
- + external oil cooler controls oil temperature of compressor, enabling more stable and reliable heating operations of the chiller at low temperature
- + long term simulation tests for various variable working conditions to ensure performance in a wide range of climates around the world

MODEL 110 / 145 / 180 / 210

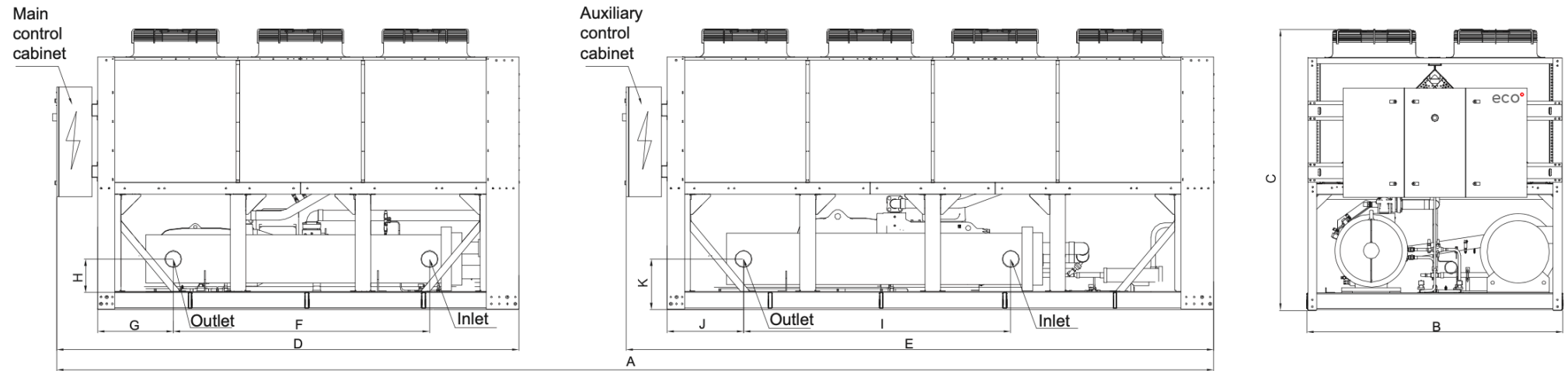


Model	External Unit Dimensions (mm)					
	A	B	C	D	E	F
110	3787	2250	2470	2300	369	606
145	4792	2250	2470	2300	611	606
180	5797	2250	2470	2300	1440	606
210	5797	2250	2470	2300	870	606

UNIT INSTALLATION GUIDE

- + The place for installation must be well ventilated. To prevent inverse flow of condenser air, it is recommended to reserve side spacing as shown above; under such conditions, there should not be any obstacles under the unit;
- + If the unit is blocked by buildings on top, a space height of at least 3 m shall be reserved, ensuring air ventilation of the unit.
- + Since the re-circulating hot air seriously affects the energy efficiency ratio of unit and even causes the condensing pressure to be too high or the fan motor to get faulty, be sure to reserve the above-mentioned installation space.

MODEL 255 / 290 / 325 / 360



Model	External Unit Dimensions (mm)										
	A	B	C	D	E	F	G	H	I	J	F
PRE & ECO255	9579	2250	2470	3787	4792	2300	369	606	2300	611	606
PRE & ECO290	10584	2250	2470	4792	4792	2300	611	606	2300	611	606
PRE & ECO325	11589	2250	2470	4792	5797	2300	611	606	2300	1440	606
PRE & ECO360	12594	2250	2470	5797	5797	2300	1440	606	2300	1440	606
PRE & ECO390	12594	2250	2470	5797	5797	2300	1440	606	2300	870	606
PRE & ECO420	12594	2250	2470	5797	5797	2300	870	606	2300	870	606

WATER QUALITY GUIDE

+ Since compositions of water quality in different areas are complicated, if the water different from ordinary water is applied, water quality should be inspected before the water enters heat exchanger of the chiller. If water quality is under the requirement for air conditioning water, it should be treated. Relevant water treatment can refer to standard "Design Specification for Treatment of Industrial Circulating Cooling Water" or other related standards.

PIPELINES DESIGN & INSTALLATION GUIDE

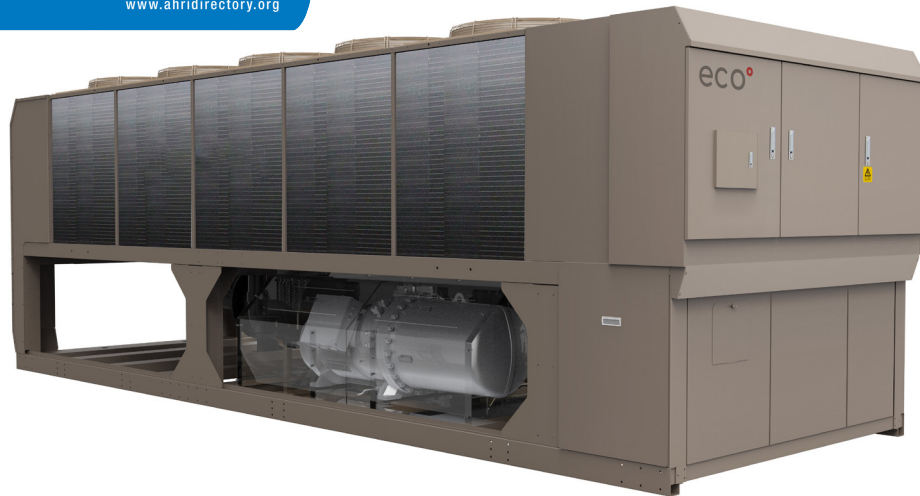
- + During joint control of modules in combination, heat pump chiller cannot be combined with single cold chiller.
- + Design of water circulating system should be as simple as possible to avoid excessive elbows, and straight pipelines should be on the same plane as much as possible.
- + Notice the positions of water inlets and outlet of heat exchanger to avoid incorrect connection.
- + Manual or automatic vent valves should be installed on all peaks of water circulating system.
- + Expansion water tank should be made of anticorrosive and antirust materials and must be installed on the highest point of the whole pipeline system.
- + Thermometers and pressure gages should be installed at water inlet/outlet.
- + For double-head chillers, temperature sensing blind tubes should be reserved by the user on water main for installation of temperature sensor.
- + On the bottom of all local elbows, drain valves should be installed so as to evacuate water in the whole system.
- + Shut-off valves are installed on water pipeline for connection of heat exchanger of the chiller with water pipes of the user. Bypass valves are installed between inlet and outlet water pipelines of heat exchanger of the chiller with convenience for overhaul and flush of pipelines.
- + Install elastic joints to reduce vibration of pipelines.
- + Impurities in water system will cause scaling of heat exchanger, so filter should be installed before water pump.
- + In order to improve refrigerating (heating) effect and save energy, pipelines should be strictly kept warm.
- + In order to prevent frequent tripping of the chiller due to too small load during operation, the user is recommended installing energy storage tank.

SELECTION OF WATER SYSTEM PARTS

- + Shut-off valve: determined based on water pipe diameter, and in general the valve diameter is selected in consistency with the diameter of pipe connected with the unit.
- + Water filter: play a role of filtering impurities in water system, and in general over 60-mesh filter is selected.
- + Check valve: installed at the outlet of water pump to prevent damage to water pump during backflow of water, the valve diameter is consistent with the diameter of pipe connected with the unit.
- + By-pass valve: installed between inlet and outlet water pipes of the unit container and opened when cleaning pipeline.
- + Thermometer: convenient for overhaul, maintenance and observation of operating conditions of the unit - in general 0-100°C is selected.
- + Water pump: its water yield is selected according to water flow parameters of the unit. Water yield of pump= $L*1.1$ (L-water flow of the unit), the delivery head of water pump is calculated as per the following formula: Delivery head of water pump= (water resistance of the unit + the most unfavorable pipe length * (2%~5%) + end water resistance of the most unfavorable path) * 1.1
- + Automatic vent valve: play a role of discharging the air in water system to enable normal operation of the unit and installed at the highest point of the unit.
- + Expansion water tank: play a main role of accommodating excessive water, stabilizing water pressure of the system and replenishing water into the system. In general installed at return water pipe higher than water pipeline inside the system to enable normal operation of the unit. It's volume is calculated as per the following formula: Volume of expansion water tank $V = (0.03\sim 0.034)V_c$ (V_c = system water volume)
- + Energy storage water tank: play a role of regulating energy to reduce frequent start/stop of compressor when system load changes, to improve operating efficiency of the system and meanwhile to extend service life of the unit. Its volume is calculated as per the following formula: Volume of energy storage water tank $V (m^3) = (Q/27.9n) - V_s$ (Q - refrigerating capacity kW) (n - number of heads) (V_s - water volume m^3 in pipeline and heat exchanger inside the chilled water system)

INV Series COOLING ONLY R134a INVERTER SERIES

AHRI CERTIFIED™
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SCREW INVERTER

18% MORE EFFICIENT THAN
FIXED-SCREW CHILLER

INVERTER

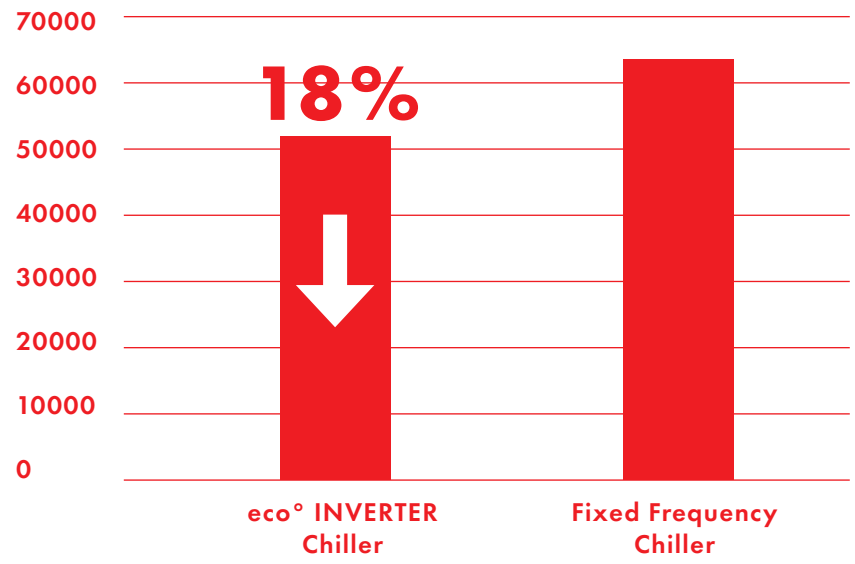
COOLING

INVERTER SCREW CHILLER For Commercial & Industrial Applications

Our eco° INV series offers HIGH EFFICIENCY, QUIET OPERATION, WIDE RANGE OF APPLICATIONS AND INTELLIGENT CONTROLS. By adopting variable frequency drive technology, our INVERTER chillers series can provide 0.1 Hz frequency regulation, zero in-rush current startup and 0.9+ power factor. Together with optimised heat exchangers, high precision EXV and double oil separation, the IPLV of the standard units can be as high as 5+ under AHRI conditions.

ENERGY SAVING

Inverter Chillers series offers massive energy reduction for commercial end users, making it ideal for large infrastructure constructions like airports, mega malls, manufacturing plants and hotel complex.



Data comparing a eco° 400RT inverter chiller with a typical fixed-frequency chiller (4000 hours, energy rate 0.0813 \$/kWh). The INVERTER technology can help end-users to save 18% energy consumption per year. Given the system service life, OPEX savings making investing in inverter chillers very worth the initial budget.

QUICK START

Our Inverter Chillers series requires only 180s to return to 100% capacity load, making it ideal for temperature sensitive applications such as data centres, manufacturing processes and pharmaceutical plants.

QUIET OPERATION

+ Optimised system design to reduce noise, by 5 ~ 10dBA, in comparison to conventional fixed-speed chillers, to include noise reduction box for compressor, usage of low noise fan and double-layered sound insulations.

WIDE RANGE OF AMBIENT

+ Our INVERTER chillers series offer operation ambient range from -25°C to 52°C to meet a wide range of climates around the world



FREE COOLING SOLUTIONS

For industrial or civil applications, where stable indoor condition is required regardless of outdoor environment, we can customise our chillers to provide DIRECT FREE c and INDIRECT FREE COOLING.

SUMMER	AUTUMN	WINTER	SPRING
Free Cooling is OFF	Free Cooling is ON	Free Cooling is ON	Free Cooling is ON
Compression Cycle is ON	Compression Cycle is ON	Compression Cycle is OFF	Compression Cycle is ON

INTELLIGENT CONTROL

Our intelligent control interface offers real-time operating parameters display, detailed fault information record and power-off memory function. Other functionalities included: three-level password protection, timer function, master and slave / back-up / duty cycling and compatible with BMS

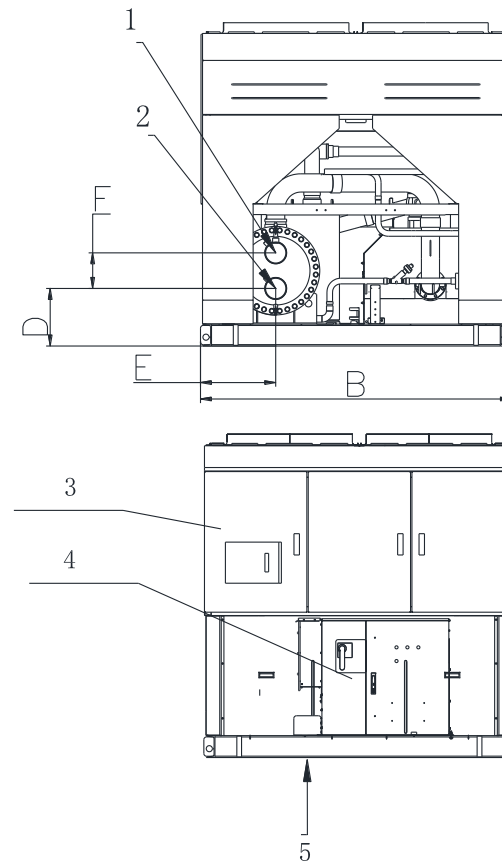
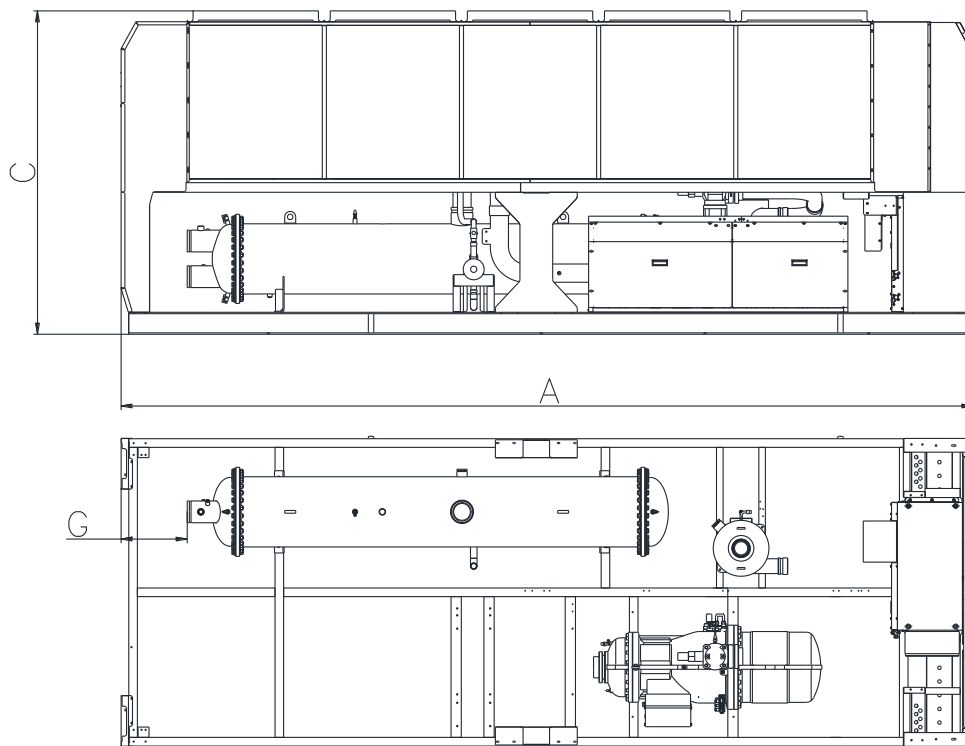
		115	140	175	205	240	275	330	385	410
Cooling Capacity	kW	397	493	618.1	723.8	844.5	965.0	1162	1368	1448
COP	kW / kW	3.40	3.43	3.40	3.40	3.41	3.40	3.41	3.41	3.40
IPLV	kW / kW	4.992	5.054	5.019	5.018	4.986	4.984	4.979	4.971	5.069
Compressor Quantity		1	1	1	1	1	1	2	2	2
Refrigerant		R134a								
Unit (L x W x H)	mm	4440 x 2300 x 2460	5240x2300 x2460	6245x2300 x2460	7250x2300 x2460	8255x2300 x2460	9260x2300 x2460	10265x2300 x2460	11270x2300 x2460	11270x2300 x2460
Unit Weight	kg	4240	4950	5500	6170	7050	7600	9800	10980	10980
Operating Weight	kg	4440	5150	5720	6410	7330	7940	10160	11380	11380

NOTES:

1. The above table is for the standard units. Cooling: chilled water outlet temperature 7°C, water flow cooling capacity $\times 0.172\text{m}^3/(\text{h} \cdot \text{kW})$, fouling factor = $0.018 \text{ m}^2 \cdot \text{°C}/\text{kW}$, outdoor ambient temperature 35°C DB
2. IPLV calculations according to standard performances (in accordance with AHRI 550/590)
3. T1 series and T3 series are AHRI certified
4. As a result of the continuous improvement of the product, the above parameters may be changed, please refer to the product nameplate

OPTIONAL FEATURES

- + Power supply - 50Hz: 400V, 415V; 60Hz: 400V, 440V, 460V
- + Water side pressure - 1.6MPa, 2.0MPa
- + Communication protocol - BACnet IP, BACnet MS/TP (RJ-45 port)
- + Water pipe connection - Flange
- + EC fans
- + Inverter fans
- + High water outlet temp. - 20°C
- + Large temp. difference - 8°C~10°C
- + Spring isolator
- + Water flow switch
- + Super low noise solution
- + Hydraulic module
- + All year around cooling series
- + Free cooling
- + ASME
- + Remote control panel



1. CHILLER WATER OUTLET

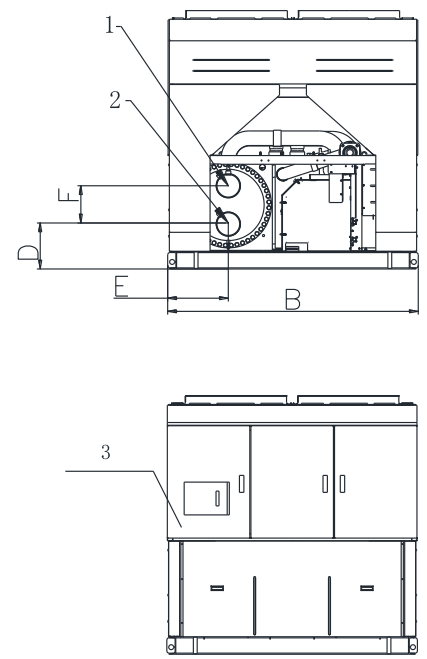
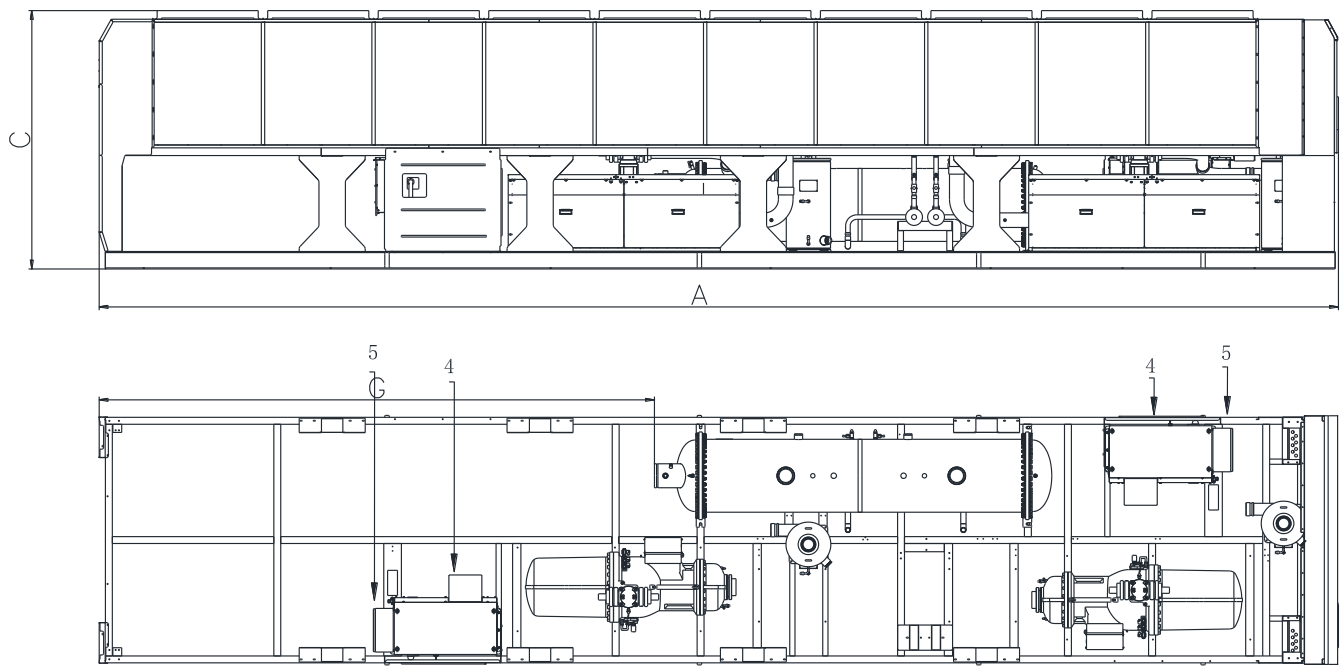
2. CHILLER WATER INLET

3. CONTROL PANEL

4. VFD

5. POWER INCOMING LINE

MODEL	DIMENSION (mm)						
	A	B	C	D	E	F	G
80 ~ 120	4440	2300	2460	420	550	260	60
125 ~ 145	5240	2300	2460	420	550	260	65
150 ~ 175	6245	2300	2460	420	550	260	405
185 ~ 205	7250	2300	2460	420	550	260	1300
215 ~ 255	8255	2300	2460	420	550	260	2305
265 ~ 275	9260	2300	2460	420	550	300	3310



1. CHILLER WATER OUTLET

2. CHILLER WATER INLET

3. CONTROL PANEL

4. VFD

5. POWER INCOMING LINE

MODEL	DIMENSION (mm)						
	A	B	C	D	E	F	G
285 ~ 295	9260	2300	2460	410	550	350	2960
310 ~ 340	10265	2300	2460	410	550	350	3965
350 ~ 410	11270	2300	2460	410	550	350	4970
420 ~ 450	11855	2300	2460	410	550	350	5555

MAINTENANCE GUIDE

- + The installation and routine servicing of air conditioning equipment must be carried out by professional technicians. Preventive maintenance is the best way to keep the unit in top condition:
- + Do not change the unit settings at will. Changing the unit setting at will may lead to abnormal operation. In order to ensure safe and stable operation of the unit, read this manual carefully before changing the unit setting.
- + Parameters of the unit can be changed as follows. Be sure to change the unit settings carefully after understanding the operation instructions of each setting
- + Before starting up the unit, check whether the water system operates normally and whether the air in the water system has been basically drained. Before startup for the first time, manually open the drainage valves at both ends of the shell-and-tube heat exchanger of the unit. And check whether the drainage valves still discharge air after the water pump is started. Ensure that the air in the water system is completely discharged before startup of the unit
- + Before starting up the unit, check whether the electric control panel door and the VFD panel door of the unit have been closed. If the doors have not been closed, water may flow into the electric control box and VFD, thus causing an electrical fault, and even electrical safety accident.
- + Before starting up the unit, check whether the water system is normal, whether the water pump is turned on, whether the valve of the engineering water system is in the normal position, and whether the water flow switch of the unit is closed. It is necessary to ensure that the water system is normal before starting up the unit.
- + Before starting up the unit, check whether the air inlet and outlet of the fin heat exchanger of the unit are blocked by foreign matters. In case of any abnormality, remove the foreign matter before starting up the unit.
- + Before starting up the unit in winter, check whether the unit is covered by ice and snow. For the use in an environment with ice and snow, it is recommended to turn on the automatic snow protection function, and check whether there is ice and snow blockage inside the unit before starting up the unit for the first time. If ice and snow blockage is found, the unit shall be started after the snow is discharged through the automatic snow protection function.
- + After startup, check whether the unit operates normally and whether there is any alarm message. In case of any alarm message, contact eco° after-sales personnel. Alarming is a normal protection measure for the unit, which can avoid the damage of the unit parts caused by the abnormal operation of the unit. For the alarm, full attention must be paid to during use. And contact eco° after-sales personnel in time for troubleshooting
- + If it is found that the unit is frequently alarming during startup or operation, stop the unit and contact eco° after-sales personnel. It is forbidden to continuously start the unit for forced operation under frequent alarm. This may lead to a sharp deterioration in the conditions of the unit, causing serious failures.
- + In case of unit failure alarm, it is prohibited to short-circuit the alarm device of the unit and forcibly operate the unit. This will cause the unit to operate in an unsafe state, thus causing serious failures.
- + The unit shall be shut down through the touch screen, remote control system or BMS. The unit shall be shut down first. And the water pump of the water system can be shut down after the shutdown instruction is given to the unit for 15 minutes. It is forbidden to shut down the unit directly, to turn off the pump without shut the unit down, and to turn off the pump before shutting the unit down. Such incorrect operation will result in unit compressor failure, electrical system failure and even frost and water intake of the unit.
- + In the condition with the temperature no higher than zero degree, the water in the unit shall be completely drained to avoid damaging the unit. When draining, the drain valves at both ends of the shell-and-tube heat exchanger of the unit must be opened and kept open all the time. For the unit with water pump, open the drain plug of the water pump and keep it open all the time. For water systems with anti-freezing solution, no water drainage is required at low temperature. But please make sure that the freezing point of the anti-freezing solution is always below the local minimum ambient temperature. It is particularly important to note that the freezing point of the anti-freezing solution in the water system will also change dynamically due to possible loss of anti-freezing solution and necessary water supplement. Please check the freezing point of the anti-freezing solution periodically according to its change during use to ensure that the freezing point is always below the local minimum ambient temperature.
- + For water systems using anti-freezing solution, it is important to note that anti-freezing solution (such as ethylene glycol solution or propylene glycol solution) will react slowly with oxygen, chloride ions and steel in steel pipeline, resulting in acidification of anti-freezing solution and final corrosion of steel and copper pipes. Therefore, for the corrosion of anti-freezing solution, it is recommended to regularly add corrosion inhibitor in the water system. Please consult the professional water treatment company for specific method. The user shall regularly monitor the pH value of the anti-freezing solution in the water system during the use of the unit, to ensure that the water system is in a neutral state, avoiding serious water intake accidents caused by corrosion of heat exchange pipes of the unit.
- + In winter with the temperature below zero degree, if the water is not drained from the water system, add anti-freezing solution to avoid freezing, or ensure that the water pump is always in operation (whether the unit is in operation or not), and provide additional heating to the water system according to the water temperature. Otherwise, the unit and the water system pipeline will freeze, and eventually be damaged, resulting in the water intake of the unit.
- + If the unit is not used for a long time, the unit shall be energized in advance before the first startup, and the lubricating oil of the unit shall be pre-heated, so as to ensure good lubrication of the bearing during startup of the compressor and prevent wear of the compressor bearing.

COMMERCIAL & INDUSTRIAL CHILLER EQUIPMENT



eco°

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2022 CATALOGUE

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