Understand the customer
Provide the best products and services
Doing better than others

RSA

Air Cooled Screw Chiller (Heat Pump) Unit

RSA-100~480 | R134a

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Professional & Focus, All life service

About TECKA

The cold and heat source equipment suppliers and system integration service providers with leading technology and advanced concepts.

TECKA is a professional enterprise which integrated with R&D, production, sales, and service together for the energy equipment.

Since its establishment in 1970, TECKA people have always adhered to the enterprise spirit “professional and focus”, adhered to quality standards, and continued to innovate. TECKA supervise or participated in the compilation of various national and industry technical standards, and setting more and more milestones.

With the development of the construction of an energy saving society, TECKA cold and heat source systems continue to contribute value to customers, society and nature. The application of products and technologies such as air-cooled screw chiller, intelligent energy station, intelligent control, natural cold using chiller, etc., enables TECKA to provide smarter and more energy saving solutions with more value shared.

Decades of concentration
Achieve the professional enterprise

Focusing on the field of screw chillers for decades, TECKA has always adhered to the intention of "providing customers with the best products and services", and the products have been continuously improved and upgraded.

TECKA Air Cooled Screw Chiller (Heat Pump) Unit

Participate in the compilation of national standards

+ Fabricated Energy Station
+ Industrial, commercial and similar application chiller (heat pump) package
+ Water chiller energy efficiency limits value and energy efficiency levels
+ Steam compression cycle water chiller unit for nuclear power plant
+ Integrated air conditioner package
+ Water source heat pump package
+ Building technical norms for hospital clean surgery department
+ Evaluation standard for renewable energy building application construction
+ Ventilation and air conditioning engineering construction norms
+ Air conditioner variable capacity terminal device
+ Design norms of civil buildings HVAC system

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1993

TECKA launched the semi-closed double screw air cooled heat pump unit, creating a precedent in the field of screw chiller in the central air-conditioning industry in China.

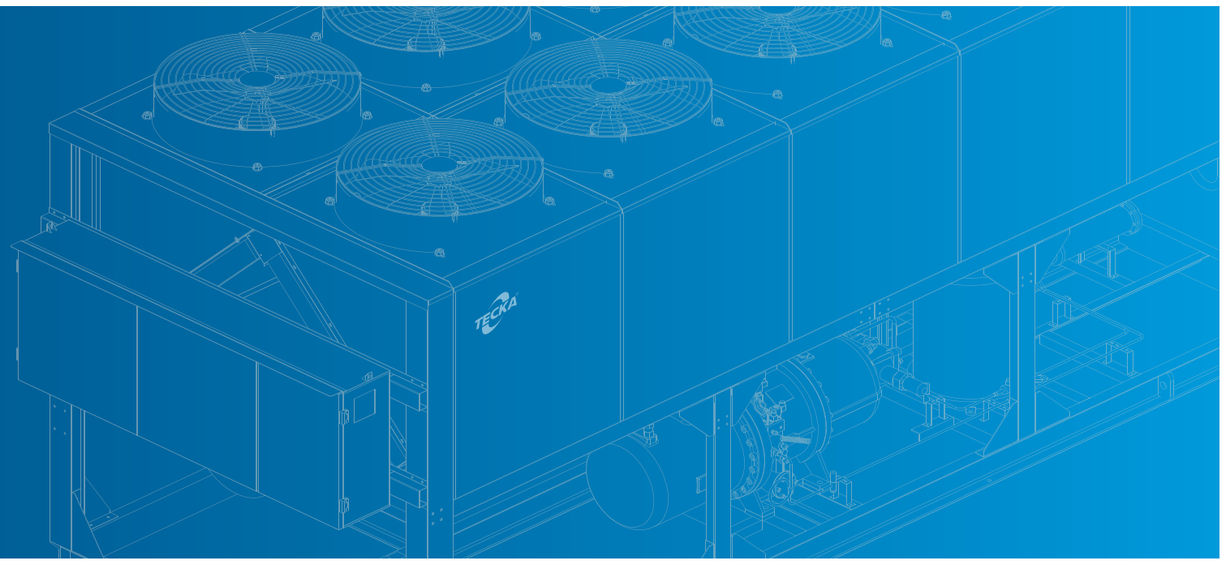
1970

TECKA brand was founded in Taiwan, China.

TECKA RSA

Air Cooled Screw Chiller (Heat Pump) Unit

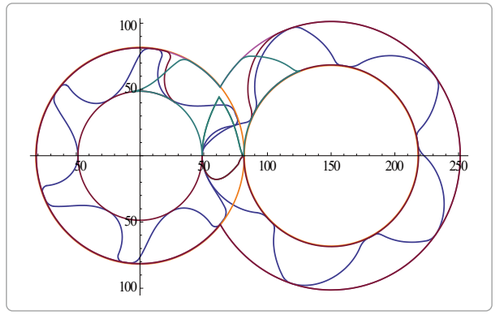
RSA air-cooled screw water chiller (heat pump) unit combines TECKA's innovative ideas and decades of air-cooled screw compressor R&D and application experience, and integrates a number of advanced designs and patented technologies: modular design, high-performance double screw compressor, Third-generation cyclone-type high-efficiency oil separation technology, E2C high-efficiency heat exchange tube technology, intelligent on-demand defrosting and asynchronous defrosting technology, evaporator distribution technology, anti-electromagnetic interference type electric box, intelligent control technology, etc. With the features of excellent performance, energy saving and reliable.

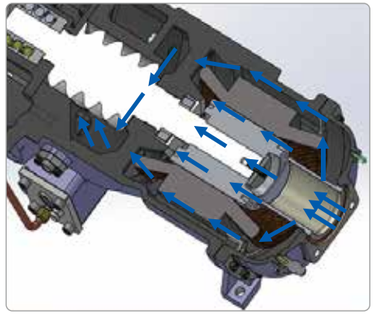


Excellent performance

● The rotor adopts a profile design optimized for the compression process. The new rotor profile ensures that the compressor has a higher speed and a better volumetric efficiency and a low limit of leakage.

● The high-efficiency motor improve the power factor. Adopts a two-in-one optimized motor internal air flow channel design, the refrigerant surrounds the motor stator to achieve the best heat dissipation effect. It ensures better cooling of the motor, at the same time, the pressure drop loss of the refrigerant is minimized.

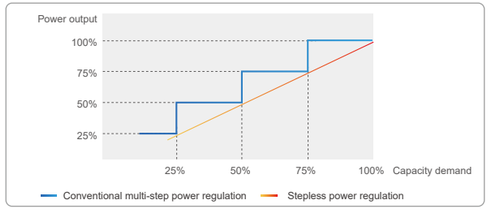




● The screw rotor is directly driven, with few moving parts and high mechanical efficiency.

● The new air-side heat exchanger has undergone professional airflow field simulation calculations to ensure the uniform air of the inner and outer heat exchangers, reduce the lower air side resistance, increase the heat exchange area, and improve the heat exchange capacity.

● Stepless adjustment technology and high-precision capacity control valve to ensure the perfect match between the output capacity of the unit and the user demand load, accurate supply, and ensure that the unit can operate efficiently under full load and partial load.



High applicability

● The design of the high-efficiency air-side heat exchanger increases the heat transfer area and reduces the heat transfer temperature difference, so that the unit can be suitable for cooling under high temperature conditions of 45℃ in summer and heating under low temperature conditions of -15℃ in winter.

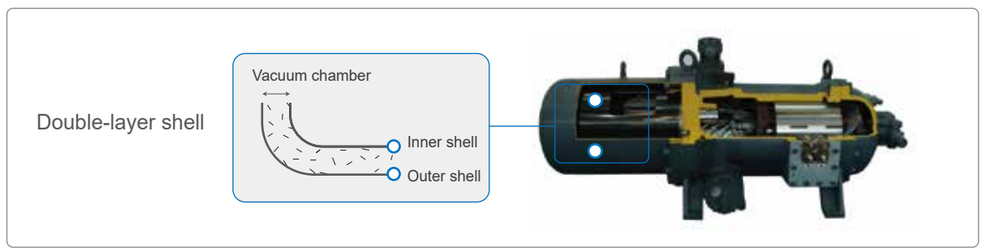
Easy to install

● The standard modular unit is small and light, which is especially suitable for lifting in tall buildings.
● The unit does not need to be specially equipped with cooling towers and dry coolers, saving space and materials.
● Integrated design for electrical components and host, no need additional electric control box.

Features

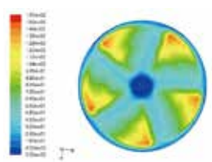
Low noise & Low vibration

● The compressor shell adopts double-layer and special dynamic balance design, which effectively reduce the compressor noise.



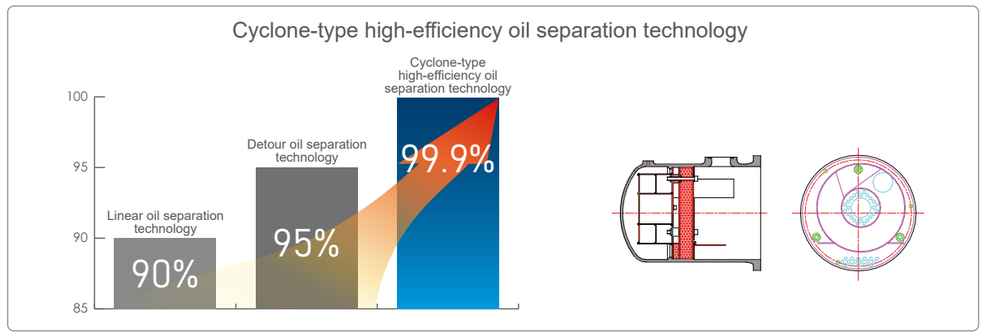
● The α-type balance drum adopts the elastic damping principle to balance the rotor's fine vibration to avoid rigid impact, reduce wear, and vibration noise.

● The fan impeller is optimized by professional flow field software to ensure that the impeller has good aerodynamic performance, and ensures that the fan operates with high static pressure and low noise under the maximum air capacity working condition.



Energy saving and environment friendly

● The third-generation cyclone-level high-efficiency oil separation technology, make the oil and gas separation rate are as high as 99.9%, so that the heat exchanger is always in the state of heat exchange without oil film, and the heat exchange efficiency is high.



● The patented high-quality E2C high-efficiency heat exchange tube is designed to increase the heat exchange area and the waterside fouling coefficient, reduce the heat transfer temperature difference, and increase the COP of the chiller.

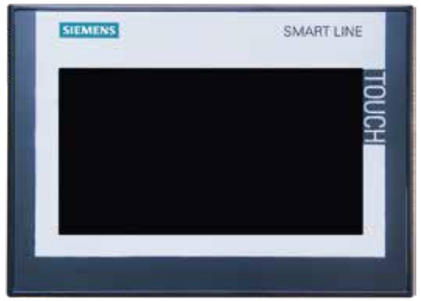
● Intelligent on-demand defrosting and asynchronous defrosting technology, automatic drying after defrosting, extent the defrosting interval time, to avoid heat loss and water temperature fluctuations.

Advanced control

Equipped with TECKA intelligent control system, with functions of independent analysis, self-diagnosis, automatic protection, remote control, automatic forewarning.

● Interface

+ Timer start-stop, fully automatic unattended operating.
+ Friendly interface, easy to operate.
+ Mode control, parameter design, user parameter setting, historical alarm.
+ Operating conditions and status check (unit status, inlet and outlet water temperature, system status, suction and exhaust pressure, suction and exhaust temperature and overheat, electronic expansion valve opening, ambient temperature).
+ Multi-level password to prevent misoperation.



● Intelligent

+ Automatic control unit start-stop and power adjustment.
+ Self-diagnosis and display of various operating faults.
+ Intelligent backup of the unit, quick start, and quick restoration of the best operating state.
+ Balance the load control and running time control of each unit and compressor.

● Protections

Compressor	Motor overheat High exhaust temperature Compressor oil pressure differential Compressor overload	Power	Power undervoltage Phase loss and sequence	Evaporator	Anti-freezing
		Pressure	System high pressure System low pressure		Controller failure, sensor pressure and temperature failure
		Fan	Fan overload		Water flow

● Network Control

+ The controller can add a variety of communication protocol interfaces, easy for centralized control, BMS, and multi-unit joint control.

+ (Optional) The controller can be added with APP function, through the mobile phone and Pad, you can control the machine and adjust the operating status at any time.

Model name

RSA - 200 - 1 A F 6 H0
① ② ③ ④ ⑤ ⑥ ⑦-⑧

① RSA: Air Cooled Screw type
② Model:
③ Compressor number:
④ Refrigerant: A = R134a
⑤ Evaporator: D = Dry shell-tube type F = Flooded type
⑥ Outlet water temperature: 0 = 12～21℃ 1 = 4～12℃ 2 = -6～5℃ 5 = 5～50℃ 6 = 5～60℃ 7 = Other
⑦-⑧ Function: C0 = Cooling-only C1 = Year-round cooling C2 = Natural cold use open type
C3 = Natural cold use close type H0 = Heat pump H1 = Heating-only
H2 = Low ambient temperature heat pump type H3 = Low ambient temperature heating-only type

Capacity

TECKA Air Cooled Screw Chiller adopts a continuous capacity adjustment method to achieve precise control of the chiller unit capacity and achieve optimal operating energy efficiency.

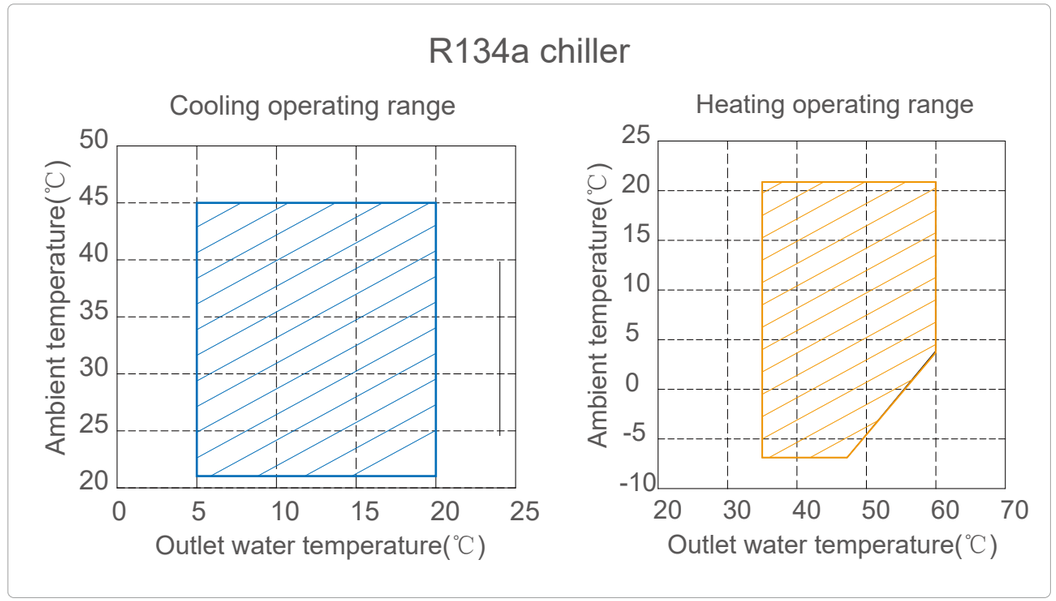
The capacity adjustment range of the chiller is shown in the following table:

Compressor No.	Start	Capacity adjustment range
1	25%	25%~100%
2	12.50%	12.50%~100%

Operating

	Cooling condition		Heating condition	
Refrigerant	R134a		R134a	
Shell tube heat exchanger (Evaporator)	Lowest temp. ℃	Highest temp. ℃	Lowest temp. ℃	Highest temp. ℃
Outlet water temp. ℃	5	20	35	60
Shell tube heat exchanger (Evaporator)	Min. temp. difference ℃	Max. temp. difference ℃	Min. temp. difference ℃	Max. temp. difference ℃
Water inlet/outlet temp. difference ℃	4	8	4	8
Fin heat exchanger (condenser)	Lowest temp. ℃	Highest temp.℃	Lowest temp. ℃	Highest temp. ℃
Ambient temp. ℃	21	45	-7	21

Note: The lowest ambient temperature of the year-round cooling unit is not limited by temperature.



Electrical data

Model	R22		Max. operating current (A)	R134a		Max. operating current (A)
	Nominal operating current (A)			Nominal operating current (A)		
	Cooling	Heating		Cooling	Heating	
RSA-100-1	-	-	-	195	194	239
RSA-120-1	-	-	-	213	211	265
RSA-135-1A	-	-	-	251	249	307
RSA-150-1	-	-	-	305	302	370
RSA-180-1	-	-	-	338	335	417
RSA-200-1	-	-	-	396	392	482
RSA-220-1	-	-	-	425	422	523
RSA-240-1B	-	-	-	-	-	-
RSA-220-2B	-	-	-	-	-	-
RSA-240-2	-	-	-	428	424	529
RSA-270-2	-	-	-	507	503	614
RSA-300-2	-	-	-	561	556	677
RSA-320-2A	-	-	-	615	609	739
RSA-340-2	-	-	-	648	642	786
RSA-370-2	-	-	-	681	675	833

Note

1. The diameter of the N and ground wire is generally two times smaller than the power wire (or refer to the general five-core cable standard).
2. The wire is selected according to the ambient temperature of 35℃.
3. Each power inlet should use a special PVC pipe for wiring, and cannot share a PVC pipe with other power wires.
4. The chiller configures the cable according to the maximum operating current.
5. The maximum operating current refers to the maximum operating current during cooling or heating within the operating range.
6. The power supply voltage fluctuation range is ±10%.

Parameters-R134a

Air-cooled screw type-R134a		RSA	100-1A	120-1A	135-1A	150-1A	180-1A	200-1A	220-1A	240-2A
Nominal cooling capacity		kW	372	413	471	555	645	731	797	826
Nominal heating capacity		kW	374	413	472	557	646	731	803	826
Input power	Cooling	kW	109.3	120.1	137.8	162.1	184.8	214.0	230.1	240.2
	Heating	kW	107.6	118.3	136.1	161.1	183.4	213.1	230.3	236.6
Maximum operating current		A	239	265	307	370	417	482	523	529
Power supply		/	380V/3Ph/50Hz (Please specify when ordering special voltage)							
Control Method		/	PLC programmable controller intelligent control with touch screen							
Refrigerant		/	R134a							
Compressor	Type	/	Semi-closed screw compressor/VFD type							
	Number	/	1	1	1	1	1	1	1	2
Air side heat exchanger	Heat exchanger type	/	High-efficiency copper tube string hydrophilic aluminum corrugated fin							
	Fan type	/	Low noise axial fan (Optional VFD fan and EC fan)							
	Fan qty.	/	6	6	8	10	10	12	12	12
	Input power	kW	10.8	10.8	14.4	18.0	18.0	21.6	21.6	21.6
Water side heat exchanger	Heat exchanger type	/	Flooded type heat exchanger with the pressure of 1.0MPa (please specify when ordering special pressure)							
	Water flow	m^3/h	64.0	71.0	81.0	95.5	110.9	125.7	137.1	142.1
	Inlet/Outlet pipe diameter	DN	125	125	125	125	150	150	150	200
	Water pressure drop	kPa	45	48	50	51	53	52	51	49
Partial heat recovery parameter	Cooling capacity	kW	383	425	485	572	664	753	821	851
	Machine input power	kW	106.0	116.5	133.7	157.2	179.3	207.6	223.2	233.0
	Heat recovery	kW	93	103	118	139	161	183	199	207
	Chilled water flow	m^3/h	65.9	73.2	83.4	98.3	114.3	129.5	141.2	146.3
	Chilled water pressure drop	kPa	48	51	53	54	56	55	54	52
	Hot water flow	m^3/h	16.0	17.8	20.3	23.9	27.7	31.4	34.3	35.5
	Hot water pressure drop	kPa	11	13	14	14	15	14	15	13
Dimensions	L	mm	3575	3575	4700	5825	5825	6950	6950	6950
	W	mm	2250	2250	2250	2250	2250	2250	2250	2250
	H	mm	2500	2500	2500	2500	2500	2500	2500	2540
Weight	Shipping weight	kg	4500	4650	5550	6580	6800	7760	8070	8900
	Operating weight	kg	4590	4750	5700	6800	7100	8080	8420	9250

Note:

1. Nominal cooling conditions: the chilled water outlet temperature is 7℃, the water flow is 0.172m3/(h.kW), and the outdoor ambient temperature is 35℃.

2. Nominal heating conditions: the hot water outlet temperature is 45℃, the water flow is 0.172m3/(h.kW), the outdoor dry bulb temperature is 7℃, and the wet bulb temperature is 6℃.

3. Design working conditions of partial heat recovery units: hot water inlet and outlet temperature is 45℃, chilled water inlet and outlet temperature is 7℃, outdoor ambient temperature is 35℃.

Air-cooled screw type-R134a		RSA	270-2A	300-2A	320-2A	340-2A	370-2A	400-2A	440-2A	480-4A
Nominal cooling capacity		kW	942	1026	1110	1200	1290	1462	1594	1652
Nominal heating capacity		kW	944	1029	1114	1203	1292	1462	1606	1652
Input power	Cooling	kW	275.6	299.9	324.2	346.9	369.6	428.0	460.2	480.4
	Heating	kW	272.2	297.2	322.2	344.5	366.8	426.2	460.6	473.2
Maximum operating current		A	614	677	739	786	833	482×2	523×2	529×2
Power supply		/	380V/3Ph/50Hz (Please specify when ordering special voltage)							
Control Method		/	PLC programmable controller intelligent control with touch screen							
Refrigerant		/	R134a							
Compressor	Type	/	Semi-closed screw compressor/VFD type							
	Number	/	2	2	2	2	2	2	2	4
Air side heat exchanger	Heat exchanger type	/	High-efficiency copper tube string hydrophilic aluminum corrugated fin							
	Fan type	/	Low noise axial fan (Optional VFD fan and EC fan)							
	Fan qty.	/	16	18	20	20	20	24	24	24
	Input power	kW	28.8	32.4	36.0	36.0	36.0	43.2	43.2	43.2
Water side heat exchanger	Heat exchanger type	/	Flooded type heat exchanger with the pressure of 1.0MPa (please specify when ordering special pressure)							
	Water flow	m^3/h	162.0	176.5	190.9	206.4	221.9	251.5	274.2	284.1
	Inlet/Outlet pipe diameter	DN	200	200	200	200	200	150×2	150×2	200×2
	Water pressure drop	kPa	52	53	51	52	54	54	53	51
Partial heat recovery parameter	Cooling capacity	kW	970	1057	1143	1236	1329	1506	1642	1702
	Machine input power	kW	267.3	290.9	314.5	336.5	358.5	415.2	446.4	466.0
	Heat recovery	kW	236	257	278	300	323	366	399	413
	Chilled water capacity	m^3/h	166.9	181.8	196.6	212.6	228.5	259.0	282.4	292.7
	Chilled water pressure drop	kPa	55	56	54	55	57	57	56	54
	Hot water flow	m^3/h	40.5	44.1	47.7	51.6	55.5	62.9	68.5	71.0
	Hot water pressure drop	kPa	15	16	16	17	17	14	15	13
Dimensions	L	mm	9200	10325	11450	11450	11450	13900	13900	13900
	W	mm	2250	2250	2250	2250	2250	2250	2250	2250
	H	mm	2540	2540	2540	2540	2540	2500	2500	2540
Weight	Shipping weight	kg	10700	11730	12760	12980	13200	7760×2	8070×2	8900×2
	Operating weight	kg	11070	12130	13200	13500	13800	8080×2	8420×2	9250×2

Note:

1. Nominal cooling conditions: the chilled water outlet temperature is 7℃, the water flow is 0.172m3/(h.kW), and the outdoor ambient temperature is 35℃.

2. Nominal heating conditions: the hot water outlet temperature is 45℃, the water flow is 0.172m3/(h.kW), the outdoor dry bulb temperature is 7℃, and the wet bulb temperature is 6℃.

3. Design working conditions of partial heat recovery units: hot water inlet and outlet temperature is 45℃, chilled water inlet and outlet temperature is 7℃, outdoor ambient temperature is 35℃.

Correction coefficient-R134a

Correction coefficient table of cooling capacity (Off-design cooling condition)

Ambient temperature (℃)	Outlet temperature (℃)															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	1.025	1.057	1.090	1.123	1.158	1.193	1.229	1.265	1.302	1.339	1.378	1.416	1.456	1.492	1.532	1.575
22	1.021	1.053	1.085	1.118	1.153	1.187	1.223	1.259	1.296	1.333	1.372	1.409	1.449	1.485	1.525	1.567
23	1.016	1.048	1.080	1.113	1.147	1.182	1.218	1.253	1.290	1.327	1.365	1.403	1.442	1.478	1.518	1.560
24	1.011	1.043	1.075	1.108	1.142	1.176	1.212	1.247	1.283	1.320	1.358	1.395	1.434	1.471	1.511	1.552
25	1.006	1.038	1.069	1.102	1.136	1.170	1.206	1.241	1.277	1.313	1.351	1.388	1.426	1.464	1.503	1.544
26	1.001	1.032	1.063	1.096	1.130	1.164	1.199	1.234	1.270	1.306	1.343	1.380	1.418	1.456	1.495	1.536
27	0.995	1.026	1.057	1.090	1.123	1.157	1.192	1.227	1.262	1.298	1.335	1.372	1.410	1.448	1.487	1.527
28	0.989	1.020	1.051	1.083	1.116	1.150	1.185	1.220	1.255	1.291	1.327	1.364	1.402	1.439	1.478	1.518
29	0.983	1.014	1.045	1.077	1.110	1.143	1.178	1.212	1.247	1.283	1.319	1.355	1.393	1.430	1.469	1.509
30	0.977	1.007	1.038	1.070	1.102	1.136	1.170	1.204	1.239	1.274	1.310	1.347	1.384	1.421	1.460	1.499
31	0.970	1.000	1.031	1.062	1.095	1.128	1.162	1.196	1.230	1.265	1.301	1.337	1.374	1.412	1.450	1.489
32	0.963	0.993	1.023	1.055	1.087	1.120	1.154	1.188	1.222	1.256	1.292	1.328	1.364	1.402	1.440	1.479
33	0.956	0.986	1.016	1.047	1.079	1.112	1.146	1.179	1.213	1.247	1.283	1.318	1.354	1.392	1.429	1.468
34	0.949	0.978	1.008	1.039	1.071	1.103	1.137	1.170	1.204	1.238	1.273	1.308	1.344	1.382	1.419	1.457
35	0.941	0.970	1.000	1.031	1.062	1.094	1.128	1.161	1.194	1.228	1.263	1.298	1.333	1.371	1.408	1.446
36	0.934	0.962	0.991	1.022	1.053	1.085	1.119	1.151	1.184	1.218	1.253	1.287	1.323	1.360	1.396	1.434
37	0.925	0.954	0.983	1.013	1.044	1.076	1.109	1.141	1.174	1.207	1.242	1.276	1.311	1.348	1.385	1.423
38	0.917	0.945	0.974	1.004	1.035	1.066	1.099	1.131	1.164	1.196	1.231	1.265	1.300	1.337	1.373	1.410
39	0.909	0.936	0.965	0.995	1.025	1.056	1.089	1.121	1.153	1.185	1.220	1.254	1.288	1.325	1.360	1.398
40	0.900	0.927	0.955	0.985	1.016	1.046	1.079	1.110	1.142	1.174	1.209	1.242	1.276	1.312	1.348	1.385
41	0.891	0.918	0.946	0.975	1.005	1.035	1.068	1.099	1.131	1.163	1.197	1.230	1.264	1.300	1.335	1.372
42	0.881	0.909	0.936	0.965	0.995	1.025	1.057	1.088	1.120	1.151	1.185	1.218	1.251	1.287	1.321	1.358
43	0.872	0.899	0.926	0.954	0.984	1.014	1.046	1.076	1.108	1.138	1.173	1.205	1.238	1.274	1.308	1.344
44	0.862	0.889	0.915	0.944	0.973	1.002	1.034	1.064	1.096	1.126	1.160	1.192	1.225	1.260	1.294	1.330
45	0.852	0.878	0.905	0.933	0.962	0.991	1.022	1.052	1.084	1.113	1.147	1.179	1.212	1.246	1.280	1.316

Correction coefficient table of power (Off-design cooling condition)

Ambient temperature (℃)	Outlet temperature (℃)															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	0.706	0.711	0.720	0.727	0.737	0.744	0.752	0.763	0.772	0.780	0.791	0.799	0.807	0.874	0.883	0.919
22	0.719	0.725	0.734	0.742	0.751	0.759	0.768	0.778	0.787	0.796	0.807	0.815	0.823	0.883	0.892	0.920
23	0.733	0.740	0.749	0.757	0.767	0.775	0.784	0.795	0.804	0.812	0.823	0.832	0.840	0.894	0.903	0.921
24	0.748	0.756	0.764	0.774	0.783	0.792	0.802	0.812	0.821	0.830	0.841	0.850	0.858	0.906	0.915	0.922
25	0.764	0.773	0.781	0.791	0.801	0.810	0.820	0.830	0.839	0.849	0.859	0.868	0.878	0.920	0.929	0.923
26	0.781	0.790	0.799	0.809	0.819	0.829	0.839	0.849	0.859	0.868	0.879	0.888	0.898	0.935	0.944	0.924
27	0.799	0.809	0.818	0.828	0.838	0.848	0.859	0.869	0.879	0.889	0.899	0.909	0.919	0.951	0.961	0.925
28	0.818	0.828	0.837	0.848	0.858	0.869	0.880	0.890	0.900	0.911	0.921	0.931	0.941	0.969	0.979	0.927
29	0.838	0.848	0.858	0.869	0.879	0.890	0.902	0.912	0.923	0.933	0.943	0.954	0.964	0.989	0.999	0.928
30	0.858	0.869	0.879	0.890	0.901	0.913	0.925	0.935	0.946	0.957	0.967	0.978	0.989	1.010	1.020	0.929
31	0.880	0.891	0.901	0.913	0.924	0.936	0.948	0.959	0.970	0.981	0.992	1.003	1.014	1.032	1.043	0.931
32	0.902	0.914	0.924	0.937	0.948	0.960	0.973	0.984	0.995	1.007	1.017	1.029	1.040	1.056	1.067	0.932
33	0.926	0.938	0.949	0.961	0.973	0.985	0.998	1.009	1.021	1.033	1.044	1.056	1.068	1.081	1.092	0.934
34	0.950	0.962	0.974	0.986	0.998	1.011	1.025	1.036	1.048	1.061	1.071	1.084	1.096	1.108	1.119	0.936
35	0.975	0.988	1.000	1.013	1.025	1.038	1.052	1.064	1.076	1.089	1.100	1.113	1.126	1.136	1.148	0.937
36	1.001	1.014	1.026	1.040	1.052	1.066	1.080	1.092	1.105	1.119	1.130	1.143	1.156	1.166	1.178	0.939
37	1.028	1.041	1.054	1.068	1.081	1.095	1.109	1.122	1.135	1.149	1.160	1.175	1.188	1.197	1.209	0.941
38	1.056	1.069	1.083	1.097	1.110	1.125	1.139	1.152	1.166	1.180	1.192	1.207	1.220	1.230	1.242	0.943
39	1.085	1.098	1.112	1.127	1.140	1.155	1.169	1.184	1.198	1.212	1.225	1.240	1.254	1.264	1.277	0.946
40	1.115	1.128	1.143	1.158	1.172	1.187	1.201	1.216	1.231	1.246	1.259	1.274	1.289	1.299	1.313	0.948
41	1.146	1.159	1.174	1.190	1.204	1.219	1.234	1.249	1.265	1.280	1.293	1.310	1.324	1.336	1.350	0.950
42	1.177	1.190	1.207	1.222	1.237	1.252	1.267	1.284	1.300	1.315	1.329	1.346	1.361	1.375	1.389	0.953
43	1.210	1.222	1.240	1.256	1.271	1.287	1.301	1.319	1.336	1.351	1.366	1.383	1.399	1.415	1.430	0.955
44	1.243	1.256	1.274	1.290	1.305	1.322	1.336	1.355	1.372	1.388	1.404	1.422	1.438	1.456	1.472	0.958
45	1.278	1.290	1.309	1.326	1.341	1.358	1.372	1.392	1.410	1.426	1.443	1.461	1.478	1.499	1.515	0.961

Correction coefficient table of heatling capacity (Off-design heating condition)

Dry bulb temperature (℃)	Outlet temperature (℃)												
	35	36	37	38	39	40	41	42	43	44	45	46	47
-7	0.642	0.641	0.640	0.639	0.638	0.637	0.636	0.635	0.634	0.633	0.632	0.630	0.629
-6	0.665	0.664	0.663	0.662	0.661	0.660	0.659	0.658	0.657	0.655	0.654	0.653	0.651
-5	0.689	0.688	0.687	0.686	0.685	0.683	0.682	0.681	0.680	0.678	0.677	0.676	0.674
-4	0.713	0.712	0.711	0.710	0.709	0.707	0.706	0.705	0.703	0.702	0.701	0.699	0.698
-3	0.738	0.737	0.736	0.735	0.733	0.732	0.731	0.729	0.728	0.726	0.725	0.723	0.722
-2	0.764	0.762	0.761	0.760	0.758	0.757	0.756	0.754	0.753	0.751	0.749	0.748	0.746
-1	0.790	0.789	0.787	0.786	0.784	0.783	0.781	0.780	0.778	0.777	0.775	0.773	0.771
0	0.817	0.815	0.814	0.812	0.811	0.809	0.808	0.806	0.804	0.803	0.801	0.799	0.797
1	0.844	0.843	0.841	0.840	0.838	0.836	0.835	0.833	0.831	0.829	0.827	0.825	0.823
2	0.872	0.871	0.869	0.867	0.866	0.864	0.862	0.860	0.858	0.857	0.855	0.852	0.850
3	0.901	0.899	0.898	0.896	0.894	0.892	0.890	0.888	0.886	0.884	0.882	0.880	0.878
4	0.931	0.929	0.927	0.925	0.923	0.921	0.919	0.917	0.915	0.913	0.911	0.908	0.906
5	0.961	0.959	0.957	0.955	0.953	0.951	0.949	0.947	0.944	0.942	0.940	0.937	0.935
6	0.992	0.990	0.988	0.986	0.984	0.981	0.979	0.977	0.974	0.972	0.970	0.967	0.964
7	1.023	1.021	1.019	1.017	1.015	1.012	1.010	1.008	1.005	1.003	1.000	0.997	0.995
8	1.056	1.053	1.051	1.049	1.047	1.044	1.042	1.039	1.036	1.034	1.031	1.028	1.025
9	1.089	1.086	1.084	1.082	1.079	1.077	1.074	1.071	1.069	1.066	1.063	1.060	1.057
10	1.122	1.120	1.117	1.115	1.112	1.110	1.107	1.104	1.101	1.098	1.095	1.092	1.089
11	1.157	1.154	1.152	1.149	1.146	1.144	1.141	1.138	1.135	1.132	1.128	1.125	1.122
12	1.192	1.189	1.187	1.184	1.181	1.178	1.175	1.172	1.169	1.166	1.162	1.159	1.155
13	1.228	1.225	1.223	1.220	1.217	1.213	1.210	1.207	1.204	1.200	1.197	1.193	1.189
14	1.265	1.262	1.259	1.256	1.253	1.249	1.246	1.243	1.239	1.236	1.232	1.228	1.224
15	1.303	1.300	1.296	1.293	1.290	1.286	1.283	1.279	1.276	1.272	1.268	1.264	1.260
16	1.341	1.338	1.334	1.331	1.327	1.324	1.320	1.316	1.313	1.309	1.305	1.300	1.296
17	1.380	1.377	1.373	1.370	1.366	1.362	1.358	1.354	1.350	1.346	1.342	1.338	1.333
18	1.420	1.417	1.413	1.409	1.405	1.401	1.397	1.393	1.389	1.385	1.380	1.376	1.371
19	1.461	1.457	1.453	1.449	1.445	1.441	1.437	1.433	1.428	1.424	1.419	1.414	1.409
20	1.503	1.499	1.495	1.491	1.486	1.482	1.478	1.473	1.468	1.464	1.459	1.454	1.449
21	1.545	1.541	1.537	1.532	1.528	1.523	1.519	1.514	1.509	1.504	1.499	1.494	1.489

Dry bulb temperature (℃)	Outlet temperature (℃)												
	48	49	50	51	52	53	54	55	56	57	58	59	60
-7	0.628	-	-	-	-	-	-	-	-	-	-	-	-
-6	0.650	0.649	-	-	-	-	-	-	-	-	-	-	-
-5	0.673	0.671	0.670	-	-	-	-	-	-	-	-	-	-
-4	0.696	0.694	0.693	0.691	-	-	-	-	-	-	-	-	-
-3	0.720	0.718	0.717	0.715	0.713	-	-	-	-	-	-	-	-
-2	0.744	0.743	0.741	0.739	0.737	0.735	-	-	-	-	-	-	-
-1	0.769	0.768	0.766	0.764	0.762	0.760	0.757	-	-	-	-	-	-
0	0.795	0.793	0.791	0.789	0.787	0.785	0.782	0.780	-	-	-	-	-
1	0.821	0.819	0.817	0.815	0.813	0.810	0.808	0.806	0.803	-	-	-	-
2	0.848	0.846	0.844	0.841	0.839	0.837	0.834	0.832	0.829	0.826	-	-	-
3	0.876	0.873	0.871	0.868	0.866	0.863	0.861	0.858	0.855	0.853	0.850	-	-
4	0.904	0.901	0.899	0.896	0.894	0.891	0.888	0.885	0.882	0.879	0.876	0.873	-
5	0.932	0.930	0.927	0.925	0.922	0.919	0.916	0.913	0.910	0.907	0.904	0.901	0.897
6	0.962	0.959	0.956	0.953	0.951	0.948	0.945	0.941	0.938	0.935	0.932	0.928	0.925
7	0.992	0.989	0.986	0.983	0.980	0.977	0.974	0.970	0.967	0.964	0.960	0.957	0.953
8	1.022	1.019	1.016	1.013	1.010	1.007	1.003	1.000	0.996	0.993	0.989	0.985	0.982
9	1.054	1.051	1.047	1.044	1.041	1.037	1.034	1.030	1.026	1.023	1.019	1.015	1.011
10	1.086	1.082	1.079	1.076	1.072	1.068	1.065	1.061	1.057	1.053	1.049	1.045	1.041
11	1.118	1.115	1.111	1.108	1.104	1.100	1.096	1.092	1.088	1.084	1.080	1.076	1.071
12	1.152	1.148	1.144	1.140	1.137	1.133	1.129	1.124	1.120	1.116	1.111	1.107	1.102
13	1.186	1.182	1.178	1.174	1.170	1.166	1.161	1.157	1.153	1.148	1.143	1.139	1.134
14	1.220	1.216	1.212	1.208	1.204	1.199	1.195	1.190	1.186	1.181	1.176	1.171	1.166
15	1.256	1.252	1.247	1.243	1.238	1.234	1.229	1.224	1.219	1.214	1.209	1.204	1.199
16	1.292	1.287	1.283	1.278	1.274	1.269	1.264	1.259	1.254	1.249	1.243	1.238	1.232
17	1.329	1.324	1.319	1.315	1.310	1.305	1.299	1.294	1.289	1.283	1.278	1.272	1.266
18	1.366	1.361	1.356	1.351	1.346	1.341	1.336	1.330	1.325	1.319	1.313	1.307	1.301
19	1.405	1.399	1.394	1.389	1.384	1.378	1.372	1.367	1.361	1.355	1.349	1.343	1.336
20	1.443	1.438	1.433	1.427	1.422	1.416	1.410	1.404	1.398	1.392	1.385	1.379	1.372
21	1.483	1.478	1.472	1.466	1.460	1.454	1.448	1.442	1.436	1.429	1.422	1.416	1.409

Correction coefficient-R134a

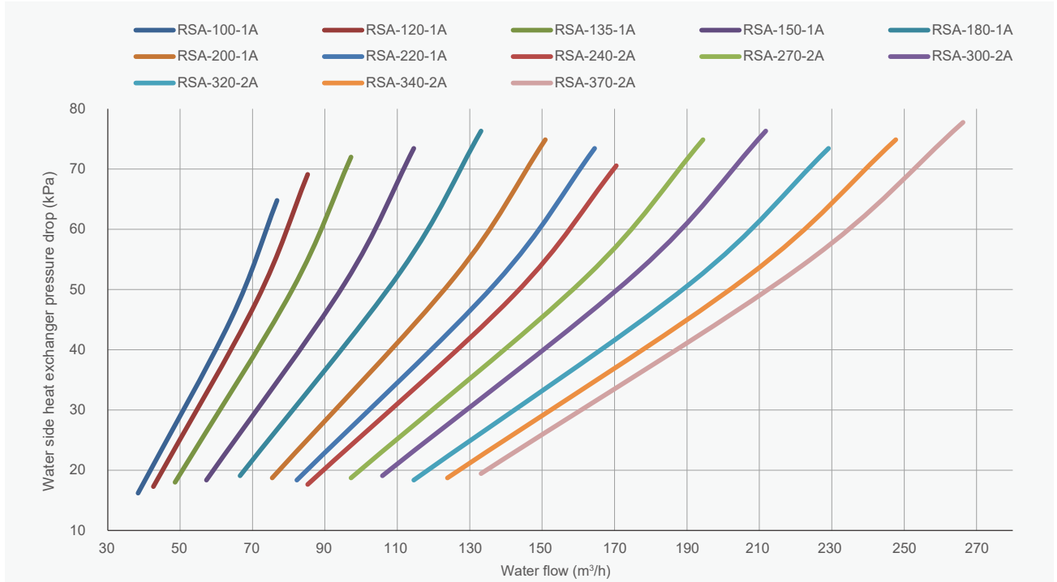
Correction coefficient table of power (Off-design heating condition)

Dry bulb temperature (℃)	Outlet temperature (℃)												
	35	36	37	38	39	40	41	42	43	44	45	46	47
-7	0.619	0.629	0.639	0.648	0.658	0.668	0.677	0.686	0.696	0.705	0.714	0.723	0.732
-6	0.635	0.645	0.655	0.665	0.675	0.685	0.695	0.705	0.714	0.724	0.733	0.743	0.752
-5	0.651	0.661	0.672	0.682	0.693	0.703	0.713	0.723	0.733	0.743	0.753	0.763	0.772
-4	0.667	0.678	0.689	0.699	0.710	0.721	0.731	0.742	0.752	0.762	0.772	0.783	0.793
-3	0.683	0.694	0.706	0.717	0.728	0.739	0.750	0.760	0.771	0.782	0.792	0.803	0.813
-2	0.699	0.711	0.723	0.734	0.745	0.757	0.768	0.779	0.790	0.801	0.812	0.823	0.834
-1	0.716	0.728	0.740	0.752	0.763	0.775	0.787	0.798	0.810	0.821	0.833	0.844	0.855
0	0.732	0.744	0.757	0.769	0.781	0.794	0.806	0.818	0.829	0.841	0.853	0.865	0.876
1	0.748	0.761	0.774	0.787	0.800	0.812	0.825	0.837	0.849	0.861	0.874	0.886	0.897
2	0.765	0.778	0.792	0.805	0.818	0.831	0.844	0.856	0.869	0.882	0.894	0.907	0.919
3	0.781	0.795	0.809	0.823	0.836	0.849	0.863	0.876	0.889	0.902	0.915	0.928	0.941
4	0.798	0.812	0.826	0.841	0.854	0.868	0.882	0.896	0.909	0.923	0.936	0.949	0.963
5	0.815	0.829	0.844	0.859	0.873	0.887	0.901	0.916	0.930	0.943	0.957	0.971	0.985
6	0.831	0.847	0.862	0.877	0.891	0.906	0.921	0.935	0.950	0.964	0.979	0.993	1.007
7	0.848	0.864	0.879	0.895	0.910	0.925	0.940	0.956	0.970	0.985	1.000	1.015	1.029
8	0.865	0.881	0.897	0.913	0.929	0.944	0.960	0.976	0.991	1.006	1.021	1.037	1.052
9	0.881	0.898	0.915	0.931	0.947	0.964	0.980	0.996	1.012	1.027	1.043	1.059	1.074
10	0.898	0.915	0.932	0.949	0.966	0.983	0.999	1.016	1.032	1.049	1.065	1.081	1.097
11	0.914	0.932	0.950	0.967	0.985	1.002	1.019	1.036	1.053	1.070	1.087	1.103	1.120
12	0.931	0.949	0.967	0.985	1.003	1.021	1.039	1.056	1.074	1.091	1.108	1.125	1.142
13	0.947	0.966	0.985	1.004	1.022	1.040	1.059	1.077	1.095	1.113	1.130	1.148	1.165
14	0.964	0.983	1.002	1.022	1.041	1.060	1.078	1.097	1.116	1.134	1.152	1.170	1.188
15	0.980	1.000	1.020	1.040	1.059	1.079	1.098	1.117	1.136	1.155	1.174	1.193	1.211
16	0.996	1.017	1.037	1.058	1.078	1.098	1.118	1.138	1.157	1.177	1.196	1.215	1.234
17	1.012	1.033	1.054	1.075	1.096	1.117	1.138	1.158	1.178	1.198	1.218	1.238	1.258
18	1.028	1.050	1.072	1.093	1.115	1.136	1.157	1.178	1.199	1.220	1.240	1.260	1.281
19	1.044	1.066	1.089	1.111	1.133	1.155	1.177	1.198	1.220	1.241	1.262	1.283	1.304
20	1.059	1.082	1.106	1.128	1.151	1.174	1.196	1.218	1.240	1.262	1.284	1.306	1.327
21	1.075	1.099	1.122	1.146	1.169	1.192	1.215	1.238	1.261	1.284	1.306	1.328	1.350

Dry bulb temperature (℃)	Outlet temperature (℃)												
	48	49	50	51	52	53	54	55	56	57	58	59	60
-7	0.741	-	-	-	-	-	-	-	-	-	-	-	-
-6	0.762	0.771	-	-	-	-	-	-	-	-	-	-	-
-5	0.782	0.792	0.801	-	-	-	-	-	-	-	-	-	-
-4	0.803	0.813	0.823	0.832	-	-	-	-	-	-	-	-	-
-3	0.824	0.834	0.844	0.854	0.864	-	-	-	-	-	-	-	-
-2	0.845	0.855	0.866	0.876	0.887	0.897	-	-	-	-	-	-	-
-1	0.866	0.877	0.888	0.899	0.910	0.920	0.931	-	-	-	-	-	-
0	0.888	0.899	0.910	0.922	0.933	0.944	0.955	0.966	-	-	-	-	-
1	0.909	0.921	0.933	0.944	0.956	0.967	0.979	0.990	1.001	-	-	-	-
2	0.931	0.943	0.956	0.968	0.979	0.991	1.003	1.015	1.026	1.038	-	-	-
3	0.953	0.966	0.978	0.991	1.003	1.015	1.027	1.040	1.051	1.063	1.075	-	-
4	0.976	0.989	1.002	1.014	1.027	1.040	1.052	1.065	1.077	1.089	1.101	1.113	-
5	0.998	1.012	1.025	1.038	1.051	1.064	1.077	1.090	1.103	1.115	1.128	1.140	1.153
6	1.021	1.035	1.048	1.062	1.076	1.089	1.102	1.116	1.129	1.142	1.155	1.168	1.180
7	1.043	1.058	1.072	1.086	1.100	1.114	1.128	1.141	1.155	1.168	1.182	1.195	1.208
8	1.066	1.081	1.096	1.110	1.125	1.139	1.153	1.167	1.181	1.195	1.209	1.223	1.236
9	1.089	1.105	1.120	1.135	1.150	1.164	1.179	1.194	1.208	1.222	1.237	1.251	1.265
10	1.113	1.128	1.144	1.159	1.175	1.190	1.205	1.220	1.235	1.250	1.264	1.279	1.293
11	1.136	1.152	1.168	1.184	1.200	1.216	1.231	1.247	1.262	1.277	1.292	1.307	1.322
12	1.159	1.176	1.192	1.209	1.225	1.241	1.257	1.273	1.289	1.305	1.320	1.336	1.351
13	1.183	1.200	1.217	1.234	1.251	1.267	1.284	1.300	1.317	1.333	1.349	1.365	1.381
14	1.206	1.224	1.241	1.259	1.276	1.293	1.310	1.327	1.344	1.361	1.377	1.394	1.410
15	1.230	1.248	1.266	1.284	1.302	1.320	1.337	1.355	1.372	1.389	1.406	1.423	1.440
16	1.253	1.272	1.291	1.309	1.328	1.346	1.364	1.382	1.400	1.417	1.435	1.452	1.470
17	1.277	1.296	1.316	1.335	1.354	1.372	1.391	1.409	1.428	1.446	1.464	1.482	1.500
18	1.301	1.321	1.340	1.360	1.379	1.399	1.418	1.437	1.456	1.475	1.493	1.512	1.530
19	1.324	1.345	1.365	1.385	1.405	1.425	1.445	1.465	1.484	1.503	1.523	1.541	1.560
20	1.348	1.369	1.390	1.411	1.432	1.452	1.472	1.492	1.512	1.532	1.552	1.571	1.591
21	1.372	1.394	1.415	1.436	1.458	1.479	1.500	1.520	1.541	1.561	1.582	1.602	1.622

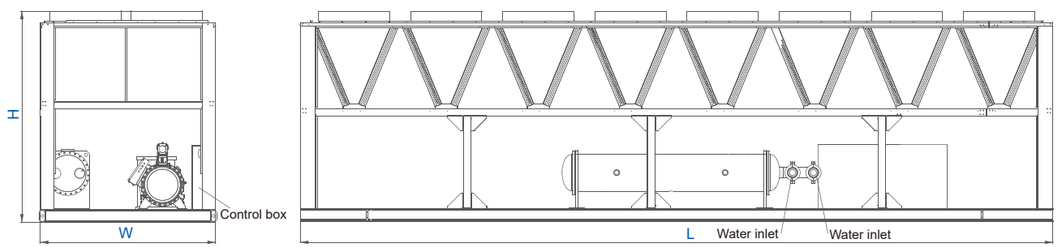
Water pressure drop curve

● Chiller R134a



Dimensions drawing

● Chiller R134a

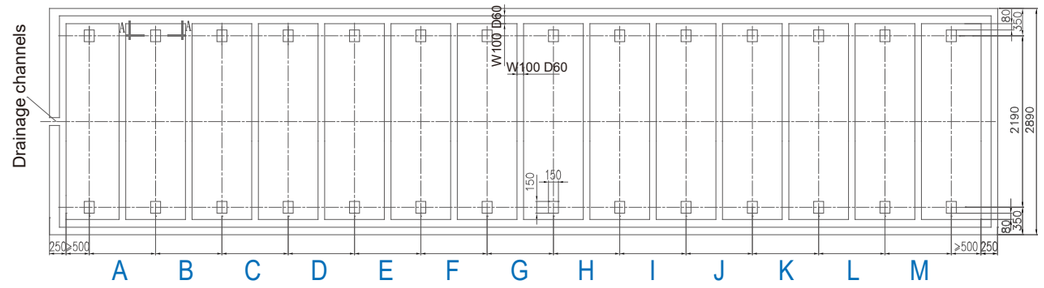


Model		R134a															
		100-1	120-1	135-1	150-1	180-1	200-1	220-1	240-2	270-2	300-2	320-2	340-2	370-2	400-2	440-2	480-4
Dimensions mm	L	3575	3575	4700	5825	5825	6950	6950	6950	9200	10325	11450	11450	11450	13900	13900	13900
	W	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250
	H	2500	2500	2500	2500	2500	2500	2500	2540	2540	2540	2540	2540	2540	2500	2500	2540

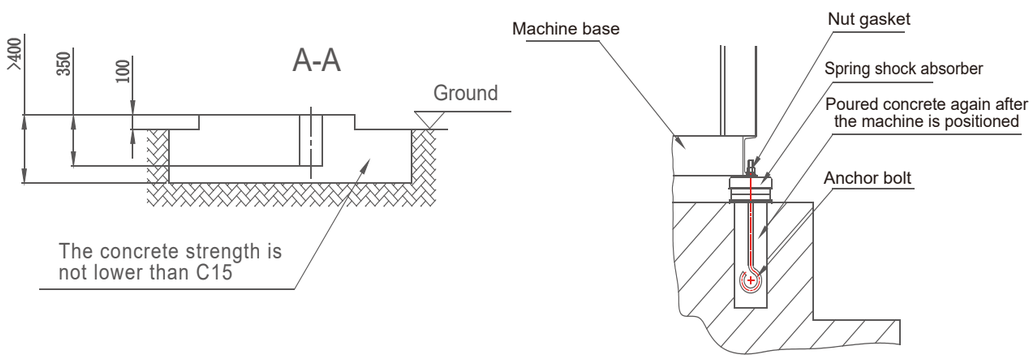
Sectional view of anchor bolts & foundation

The air-cooled screw chiller (heat pump) unit can be flexibly installed on the ground or roof.
The foundation dimensions and requirements should be configured according to the following standards.

● Chiller is installed on the ground



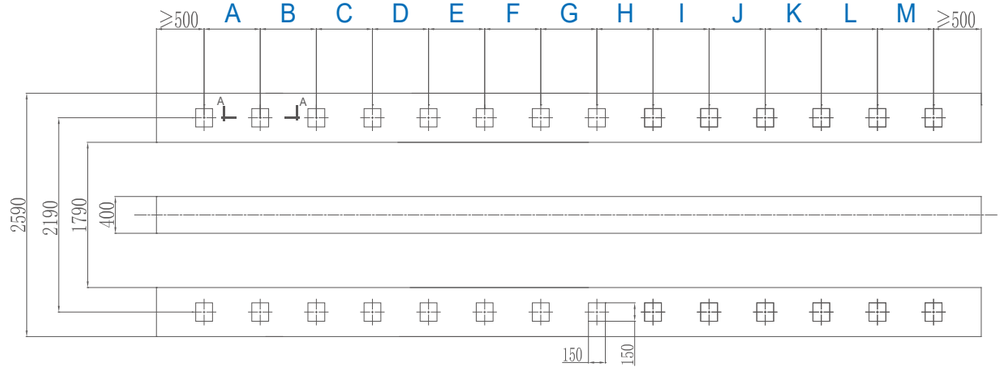
Sectional view of anchor bolts



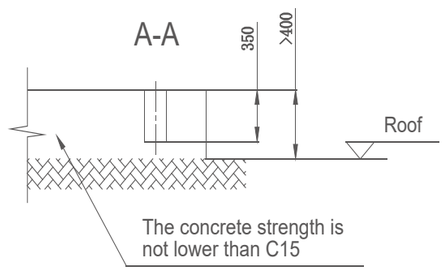
Note

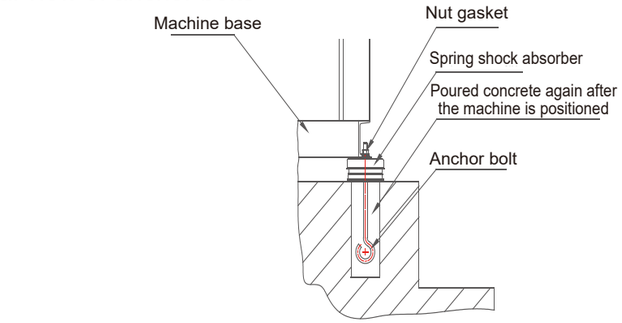
1. The base must be fixed on a solid foundation, and it must be able to withstand the weight of the machine during operation.
2. The machine base installation hole diameter is φ18, and the bolts should be prepared by the user.
3. The foundation bolt anchor pit should be reserved when making the foundation. The concrete will be poured again after the machine is positioned.
4. The level difference of the base plane is ≤5mm.
5. The above foundation drawing is for reference, the specific installation method is determined by the working site.

● Chiller is installed on the roof



Sectional view of anchor bolts



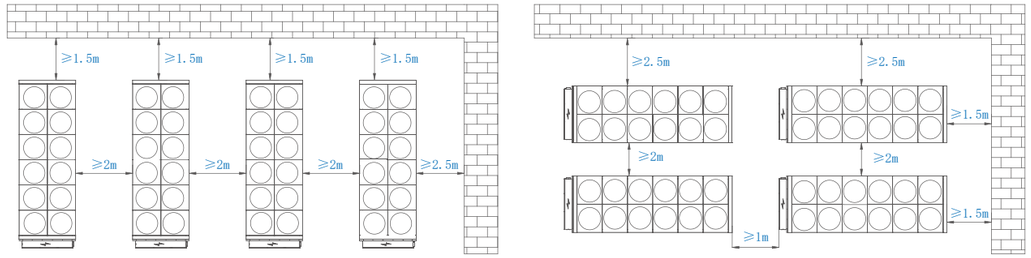


Note:

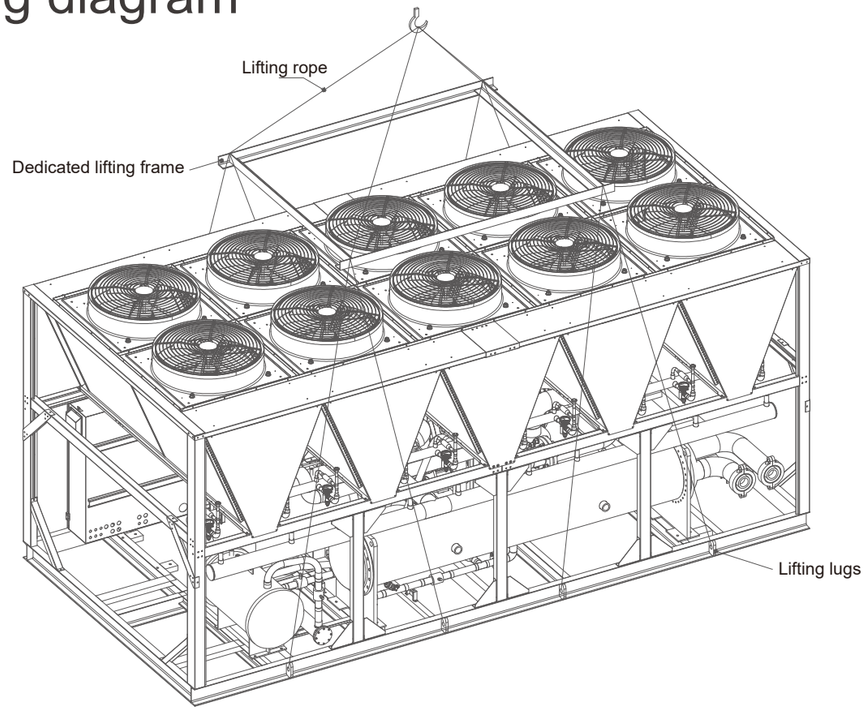
1. The chiller unit should be installed on a dedicated concrete foundation or a rigid base (such as channel steel) which does not deform.
2. The bearing capacity of the concrete foundation or rigid base must be greater than 1.5 times the operating weight.
3. There must be a shock absorber between the unit and the foundation. Especially when the machine is placed on the middle or top floor, spring shock absorbers should be installed. Please contact TECKA for specific installation matters.
4. Drainage ditch should be set around the concrete foundation to prevent water accumulation.
5. The above foundation drawing is for reference, the specific installation method is determined by the working site.

Model		R134a															
		100-1	120-1	135-1	150-1	180-1	200-1	220-1	240-2	270-2	300-2	320-2	340-2	370-2	400-2	440-2	480-4
Anchor bolt fixing and positioning (mm)	A	1430	1430	1330	1280	1280	1250	1250	1250	1415	1375	1340	1340	1340	1250	1250	1250
	B	1430	1430	1330	1280	1280	1250	1250	1250	1415	1375	1340	1340	1340	1250	1250	1250
	C	-	-	1330	1280	1280	1250	1250	1250	1415	1375	1340	1340	1340	1250	1250	1250
	D	-	-	-	1280	1280	1250	1250	1250	1415	1375	1340	1340	1340	1250	1250	1250
	E	-	-	-	-	-	1250	1250	1250	1415	1375	1340	1340	1340	1250	1250	1250
	F	-	-	-	-	-	-	-	-	1415	1375	1340	1340	1340	720	720	720
	G	-	-	-	-	-	-	-	-	-	1375	1340	1340	1340	1250	1250	1250
	H	-	-	-	-	-	-	-	-	-	-	1340	1340	1340	1250	1250	1250
	I	-	-	-	-	-	-	-	-	-	-	-	-	-	1250	1250	1250
	J	-	-	-	-	-	-	-	-	-	-	-	-	-	1250	1250	1250
	K	-	-	-	-	-	-	-	-	-	-	-	-	-	1250	1250	1250
	L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Installation space requirements



Lifting diagram

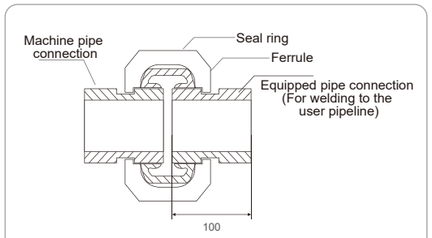


Lifting instructions

1. During the lifting and handling process, the equipment can't be damaged, especially for the components, pipes and frame panels of the cooling system.
2. The lifting rope should be fixed at the lugs of the base frame, and the dedicated lifting frame should be used for lifting.
3. Move the equipment to the position by pulling or rolling, and the stress part can only be placed on the equipment chassis.

Water system and pipeline connection

1. It is recommended to adopt the pipeline co-directional design to ensure that each module water capacity is the same while there are more than three modules combined in the chiller.
2. The pressure differential bypass device should be equipped while the system is running at partial load. It is necessary to ensure that the actual water capacity of the operating chiller unit is not less than 40% of the rated capacity while the VFD pump is adopted.
3. The Y-type filter of 60 mesh/inch2 or a bigger one should be installed on the water inlet pipe of the chiller unit, and the electronic descaler should be used together.
4. The PH value of the circulating water of the chiller unit should be controlled within 6.8-8.0, the total hardness should not exceed 70ppm, and the water quality should be tested regularly.
5. For other auxiliary valve fittings to be installed on the inlet/outlet pipes of the chiller, please refer to the relevant design manual and construction specifications.



Water pipeline connection

Instructions for use and installation

1. TECKA Air Cooled Screw Chiller (Heat Pump) Unit could be installed on any convenient place such as roof, balcony, ground, etc. Do not install the unit in a place where fallen leaves, insects, oily smoke or other contaminants are easy to gather to prevent blocking the air-side heat exchanger. There should be no flammable or explosive materials near the unit.
2. The chiller unit should be installed on a well concrete foundation or a channel steel structure, the foundation should be able to bear the weight of the chiller unit during operation. And there should be drainage ditches around the foundation. Chiller unit installation should comply with relevant regulations.
3. To keep the equipment run quietly and avoid affecting the building, damping measures should be taken between the chiller unit base and the foundation.
4. Obstruction is not allowed in the chiller air outlet at least 3 meters to avoid the poor air return and affect the chiller unit performance. The above requirements should be followed when install the canopy.
5. The chilled water pump should be installed on the water inlet pipe of the unit. To ensure the water quality, a water filter of 60 mesh/inch2 must be installed on the water inlet pipe.
6. Soft connection is recommended to avoid transmitting the chiller unit vibration when the chiller unit inlet and outlet pipes are connected to the system pipeline. The system pipeline should be effectively supported to avoid the weight of the external pipeline damage the internal pipeline of the chiller.
7. The system pipelines should be installed with anti-shock soft joints, water filters, electronic descaling instruments, check valves, flow meters, exhaust valves, stop valves and other components according to the regulations. The temperature gauge and pressure gauge should be installed on the pipeline to observed the chiller and the air conditioning system better.
8. All the pipelines should be tested strictly for leaking before working to ensure the safety of operation. All the pipelines should be strictly insulated and waterproofed.
9. The pipeline in the chiller should be cleaned and the impurities in the pipeline should be removed to avoid blockage of the equipment before the first running. The equipment should be isolated from the system pipeline when clean the pipeline.
10. The power supply and power capacity provided to the equipment should be sufficient, and the power wire should be configured in strict accordance with the data provided in the equipment power wiring requirements. The equipment should be reliably grounded as required.
11. The chiller unit shouldn't be installed in the places with heavy dust, dirt, corrosive gas, and high humidity.
12. The unit should be kept as horizontal as possible when moving. Do not tilt it more than 30° to avoid damage the unit.