thermo Q

Air Cooled Srew Chiller

for Heavy Duty use

Capacity : 105 ~ 1400 KW

Unequaled Reliability :

- High cooling capacity , low power consumption
- Silent and low vibration
- High – efficiency profile Compressor , durable and easy maintenance
- Long life bearing with pressure unloading and Optimized oil management
- Intelligent electrics protection
- Suitable for R 22 ; R 134a , R 407C

thermo Q presents the complete line of Air cooled packaged type Screw Water Chiller . Ranging from 40 RT to 400 RT

Economical , easy installation and operation in a complete packaged design. Ideal for modern cooling applications in high rise building , commercial building , shopping mall , hotel , hospital , and industrial plant.

All units are compact , completely factory assembled , shape and modular system to be installed. its can reach on site easy to handling on transportation .

The unit is pressure tested , evacuated and fully oil charge .

Charge with Refrigerant 134a ; R 404A , R 407A or other Ozone Friendly refrigerant Type .

▪ Unique Floating Coil and Low Noise Condenser Fan

Floating coil concept prevents the refrigerant carrying tubes from coming into contact with the tube sheets. This concept allows for thermal expansion and contraction of the tubes without the risk of tube damage at the tube sheets, thereby reducing the chances of refrigerant leaks.

The highly efficient and compact Cross finned coil type are designed with Outdoor fan with best quality fan made convenience with low noise level , saving energy and high ambient resistance temperature use until 60 ○C .

Man Component

○ Durable Screw Compressor

New 5 to 6 rotor profile with multi-nations' patents (Taiwan, US,UK, Japan, China…) that has not only with the high volume efficiency profile designed dedicatedly as refrigerants' characteristics, but also with high precise CNC
machining centers, CNC rotor milling machines, ZEISS 3D coordinate measuring machines etc those high precision machining machines, inspection equipments and strict process control to render RC compressors with low vibration, low noise and high efficiency for all the customers of Hanbell worldwide

Multi-national Patens

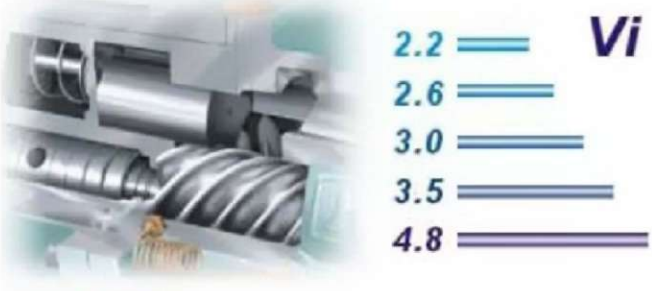
High Efficiency Motor

High Efficiency Motor

Premium-grade low-loss core steel with the special slot design for RC motors, and avail of an overall inner & outer guide design to pilot the suction gas flow with an equal distribution to pass the motor and gain the highest efficiency no matter what running capacity the compressor will be at.

Overall Range of Volume Ratio (Vi)

For different working conditions as water-cooled, air-cooled, refrigeration, cold room. Thermal storage…etc and different refrigerants like R22, R134a, R404A, R407C…etc, there are lots of various built-in volume ratio (Vi=2.2, 2.6, 3.0, 3.5, 4.8) offered for customers' applications. It is very economical for the customers to save the running cost due to the avoidance of compressor' over-compression or less-compression.



Comprehensive Vi

Evaporator

Shell and tube type Evaporator, compact and height efficiency heat transfer.
All evaporator complete with anti freeze protection and chilled water temperature sensor to reduce precision chilled water temperature . Manufacture standard TEMA , ASTM .

GENERAL DATA

AIR COOLED SCREW SEMI HERMETIC WATER CHILLER

TECHNICAL SPECIFICATION DATA

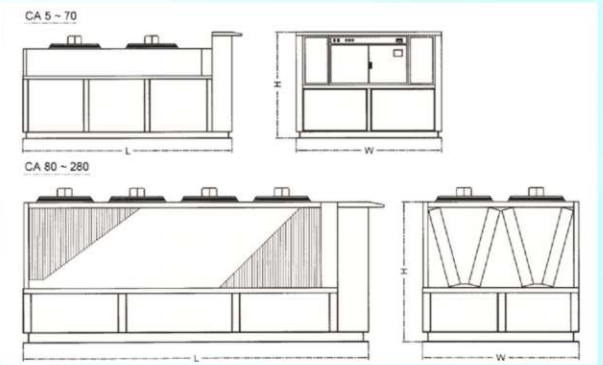
CA SERIES		50 ASC	60 ASC	70 ASC	80 ASC	90 ASC	110 ASC	125 ASC	140 ASC	160 ASC	180 ASC	220 ASC2	250 ASC2	280 ASC2	320 ASC2	360 ASC2	440 ASC2	480 ASC3	540 ASC3
COOLING CAPACITY	kW	105.6	133.8	150.9	199.8	235.5	256.3	290.3	321.2	366.1	428.0	501.9	580.6	642.4	732.2	856.0	1.003.8	1.098.3	1.284.0
	TR	30	38	43	57	67	73	83	91	104	122	143	166	182	208	244	286	312	366
COMPRESSOR Type		Semi Hermetic Screw Compressor																	
Motor Size	HP	50	60	70	80	90	110	125	140	160	180	220	250	280	320	380	440	480	560
RPM	1/min	2.900																	
Qty	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3	Qty
Power Input	kW	36.1	45.5	50.2	67.2	75.7	81,7	94.6	104.7	122.2	135.5	155.3	189.2	209.4	233.4	271	310.6	366.6	406.5
Capacity Control	%	25 – 50 – 75 -- 100																	
Oil Charge	L	7	8	14	14	16	16	18	18	23	23	32	36	36	46	46	64	69	69
CONDENSER COIL																			
Material		Copper Tubes – Aluminum Fins																	
Tubes Diameter	Inch (mm)	3/8 (9,5)				3/8 (9,5)				3/8 (9,5)					3/8 (9,5)				
Face Area	m^2	327	525	525	525	554	780	1090	1090	1090	1108	1560	2180	2180	2220	3000	3300	4360	4360
Fin Spacing	mm	2,1				2,1				2,1					2,1				
CONDENSER FANS Type		Propeller, Direct Drive																	
Fans Speed	RPM	1340				850			1340	850					850				
Blade Diameter	mm	630				900			630	900					900				
No. of Fans	3	3	3	4	3	3	3	4	4	6	6	6	8	10	10	12	12	16	No. of Fans
Total Power	kW	5,7	5,7	5,7	7,6	9,9	9,9	9,9	13,2	7,6	19,8	19,8	19,8	26,4	33	33	39,6	39,6	52,8
Total Airflow	M^3/h	45000	43500	43500	52000	81000	81000	81000	100000	110000	162000	162000	162000	200000	266000	262000	300000	324000	400000
EVAPORATOR Type		Shell and Tubes, Direct Expansion, Removable Tube-Bundle																	
No. of RefrigerantCircuit		1	1	1	1	1	1	1	2	2	2	2	2	3	3	3	4	4	No. of
Water Volume	L	35	41	46	54	65	81	95	100	114	133	162	184	215	230	278	334	382	453
Chilled water Flow	L/s	4,77	6,07	6,89	8,10	9,43	11,36	13,19	15,44	16,20	18,87	22,71	26,39	30,89	34,07	39,58	46,33	52,77	61,77
Pressure Drop	kPa	19	27	18,8	22,8	26,1	30,6	34	46,6	47,7	52,1	31,7	38,1	41,2	45,3	54,8	65,6	67,6	71
Inlet / Outlet Temperature	^0C	12 1 7																	
Water Connection																			
Inlet / Outlet	DN	80	80	100	100	100	125	125	150	150	150	200	200	200	200	200	200	200	200
Drain	FPT	1 -																	

Cooling Capacity Based on ambient 35^{0}C, 55% RH, Refrigerant R-22, te 2^{0}C, tc 50^{0}C

CA Series			50 ASC	60 ASC	70 ASC	80 ASC	90 ASC	110 ASC	125 ASC	140 ASC	160 ASC
Dimension	Length	mm	3400	3400	3400	3400	3600	4000	4600	4600	4600
	Width	mm	1800	1800	1800	1800	1200	1200	1200	1200	1200
	Height	mm	1100	1100	1100	1100	2400	2400	2400	2400	2400
Weight		kg	830	900	1120	1160	1200	1700	1800	1900	2400

CA Series			180 ASC	220 ASC	250 ASC2	280 ASC2	320 ASC2	360 ASC2	440 ASC2	480 ASC3	540 ASC3
Dinnenston	Length	mm	3600	4000	4600	4600	6100	6700	6900	9000	9000
	Width	mm	2400	2400	2400	2400	2400	2400	2400	2400	2400
	Height	mm	2800	3700	4100	4300	2400	2400	2400	2400	2400
Weight		kg	2800	3700	4100	4300	5500	5900	6300	8000	8000

We improve our products continuously; therefore we reserve the right to change in specification without prior notice.



Optional features :

- **Ozone friendly refrigerant use**
- **Epoxy coating fins or marine type copper fins**
- **Heat recovery from refrigerant hot gas to reduce hot water**
- **Brine chiller type with brine temperature from 2 °C to - 40 °C**

Programable Electronic Controller

A high performance 16-bit microprocessor guarantees high program running speed and efficient management of the interfaces and the expansion boards, including control of faster transients.

The parameters can be protected by various password levels (manufacturer, user).
All of components in this system can be connected to pLAN local networks without requiring additional cards , for the exchanger of data and information . Consequently, distributed control networks can be created simply and reliability for optimized management of the installation.

Refrigerant Waste Heat Recovery :

The Heat Recovery Unit captures waste heat discharged from the refrigerant cycle in an Water Chiller or Air Conditioning system, and transfers that heat into a Hot water tank, thereby creating low cost hot water for Hotel , Laundry , Feed water Boiler or Industrial use. Not only does the Heat Recovery Unit substantially reduce the amount of energy required to provide domestic hot water, but it also improves the cooling efficiency of the Chiller or Air Conditioner it is operating.

Heat recovery from refrigerant hot gas to water .
Temperature of water can be reach until 70 °C

PT. Metalindo Prima Engineering
Heat Transfer Engineering

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