



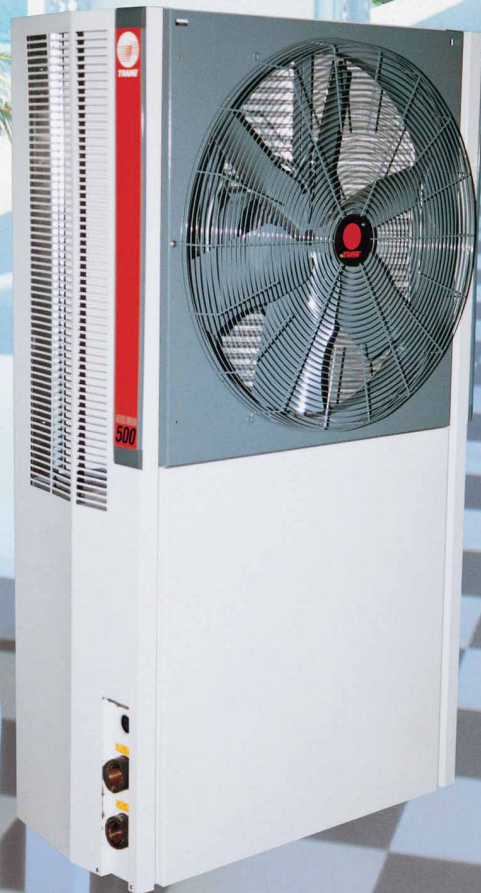
TRANE®

KOOLMAN 500

Air-Cooled Water Chiller

*Air-Cooled Water Chiller
with Heat Pump Option*

3~30 Tons





Features and Benefits

KOOLMAN 500

Air-Cooled Water Chiller

**Air-Cooled Water Chiller
With Heat Pump Option**

Appearance

The KOOLMAN 500 is superbly styled. The excellent appearance makes the chiller ideal for architecturally sensitive applications. The contemporary appearance blends into any neighborhood.

Small Footprint

All units are able to be installed in confine spaces. The small size and low profile of these units make them ideal for retrofit and renovation applications as well as new installation.

Noise Level

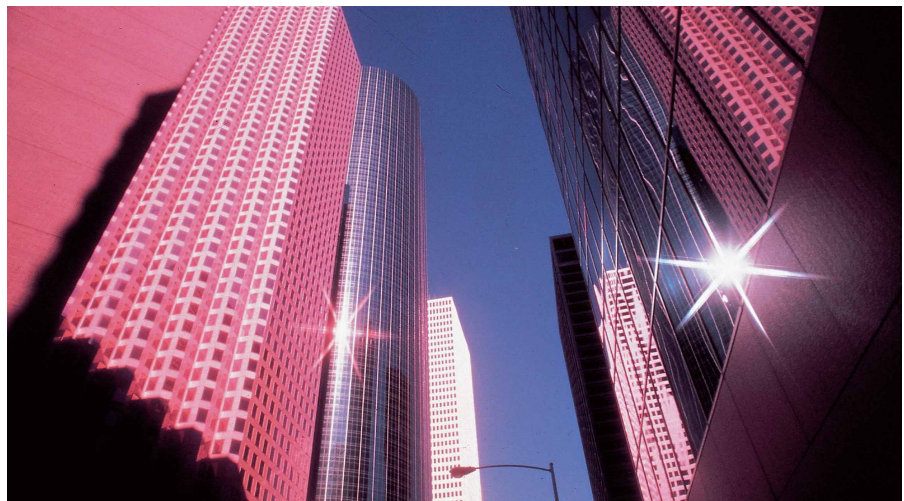
KOOLMAN 500 chillers use low noise fans and components, making the KOOLMAN 500 chiller a quiet unit.

Easy Service

Our design allows you to remove any or all panels for service. We have paid careful attention to service details, and all units feature coded wiring, hinged control boxes, and mechanical controls for easy service.

Simple Installation

Each chiller is charged with full factory refrigerant and oil charge further reducing field labor, materials, and installation cost. All units are factory run tested. Only power supply and water pipings are required to be connected on the jobsite.



Especially designed for homes, luxury housings, office buildings, small-sized restaurants, retail stores, hotels, etc.

By installing KOOLMAN 500

- It allows living in homes to spring-like weather throughout all four seasons.



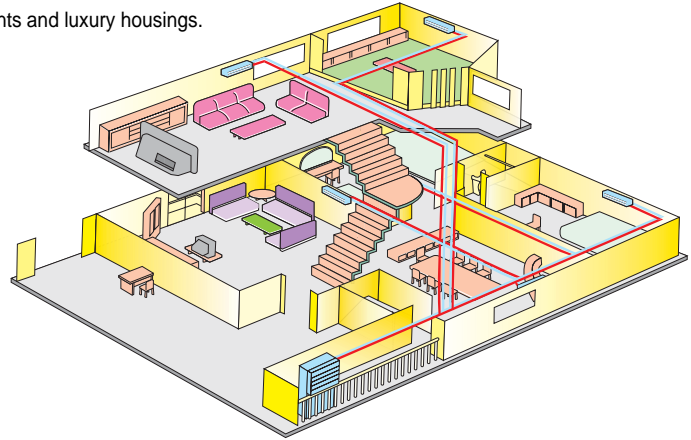
- It creates a better working environment in the office.



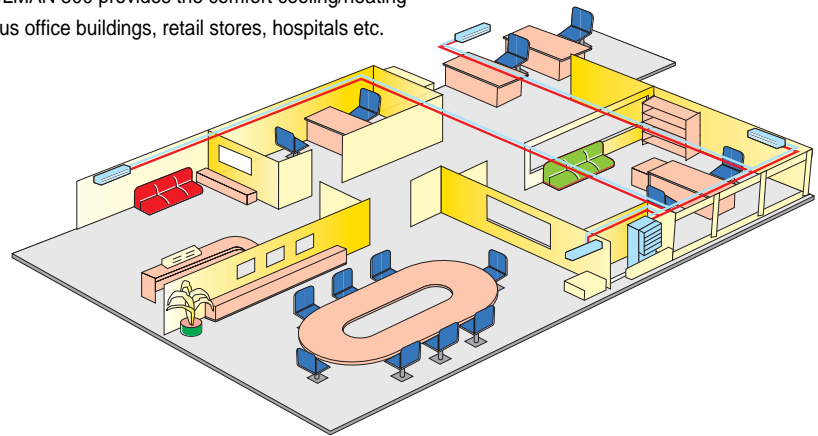
- It makes customers to feel comfortable while dining.



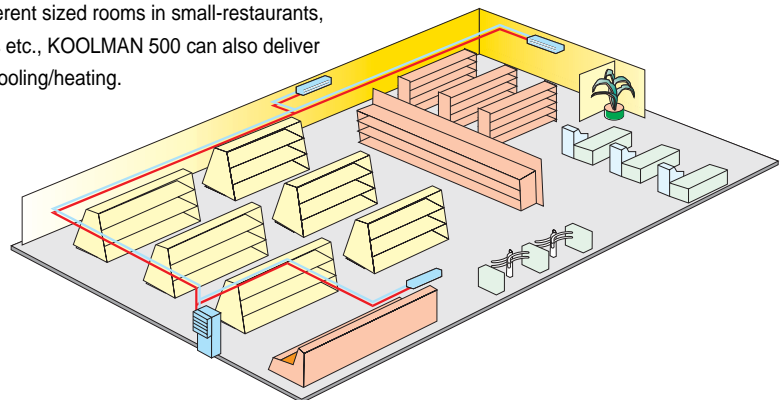
- 1 KOOLMAN 500 provides comfort cooling/heating in multi-storied apartments and luxury housings.



- 2 KOOLMAN 500 provides the comfort cooling/heating to spacious office buildings, retail stores, hospitals etc.



- 3 With different sized rooms in small-restaurants, stores, hotels etc., KOOLMAN 500 can also deliver the comfort cooling/heating.





Model Nomenclature

Dimensions

CGA K 050 5 D F R M R M A
1,2,3 4 5,6,7 8 9 10 11 12 13 14 15

DIGIT 1,2,3

CGA=Air-Cooled Water Chiller

DIGIT 4 - Model

K=Cooling Only

R=Cooling With Heat Pump Option

DIGIT 5,6,7 - Nominal Capacity (tons)

030
 040
 050
 075
 100
 125
 150
 175
 200
 250
 300

DIGIT 8 - Voltage

1=220V/60Hz/1Ph

(For models 030,040,050)

2=220V/60Hz/3Ph

(For models 050,075,100,125,150,175,200,250,300)

3=380V/60Hz/3Ph

(For models 050,075,100,125,150,175,200,250,300)

4=460V/60Hz/3Ph

(For models 050,075,100,125,150,175,200,250,300)

5=380V/50Hz/3Ph

(For models 050,075,100,125,150,175,200,250,300)

6=400V/50Hz/3Ph

(For models 050,075,100,125,150,175,200,250,300)

7=415V/50Hz/3Ph

(For models 050,075,100,125,150,175,200,250,300)

DIGIT 9 - Development Sequence

D=R22

E=R407C (For models 200,250,300)

DIGIT 10 - Controls

F=Fixed Entering Water Temperature Control (Standard)

A=Microprocessor Controller

(Adjustable Entering Water Temperature) (Option for CGAK / Standard for CGAR)

B=Microprocessor Controller with Fault Signal (Adjustable Entering Water Temperature) (All models Available Except CGAR 100 to 200)

DIGIT 11 - Water Pump

N=No Pump

R=Standard Pump

(For models 050,075,100,125,150,175,200,250)

T=Standard Pump

(For model 300)

DIGIT 12 - Refrigerant Pressure Gauges

M=No (Standard)

G=With High/Low Pressure Gauges

DIGIT 13 - Temperature Kit

R=Standard Ambient Temperature Kit

(15°C to 43°C for CGAK / 10°C to 43°C for CGAR)

L=Low Ambient Temperature Kit

(7°C to 43°C for CGAK with Microprocessor Controller / 4°C or above for CGAR)

DIGIT 14 - Other Options

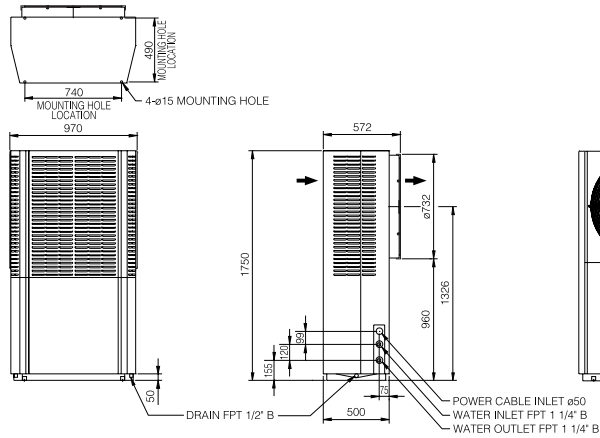
M=Standard Fin + Standard Grille Cover

C=Blue Fin + Standard Grille Cover

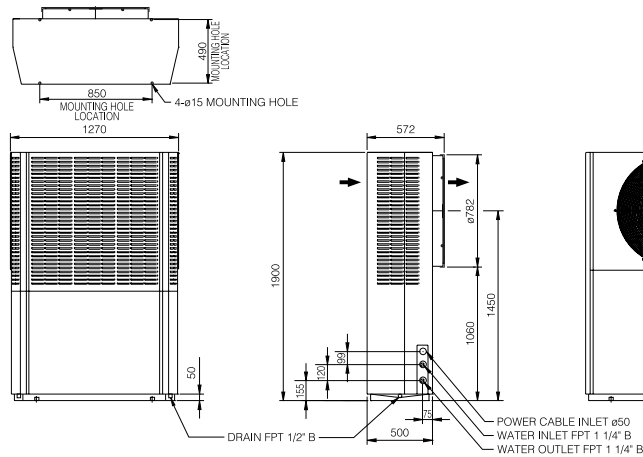
DIGIT 15 - Service Sequence

A=First

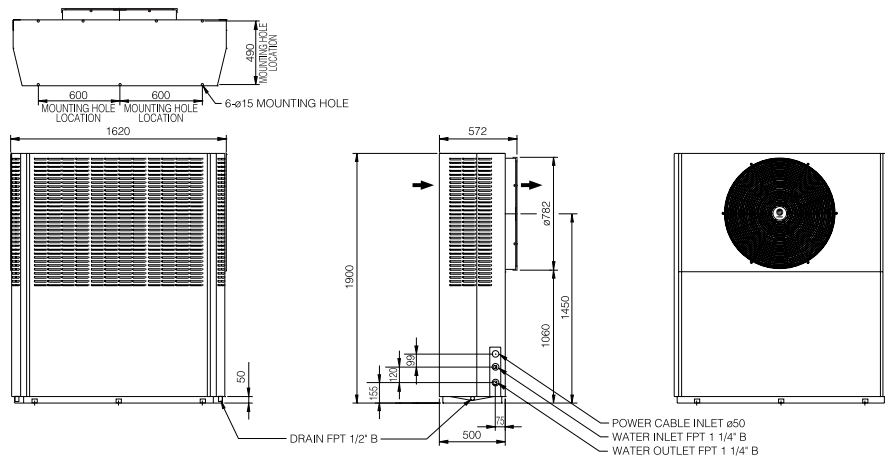
CGAK/R-030/040/050



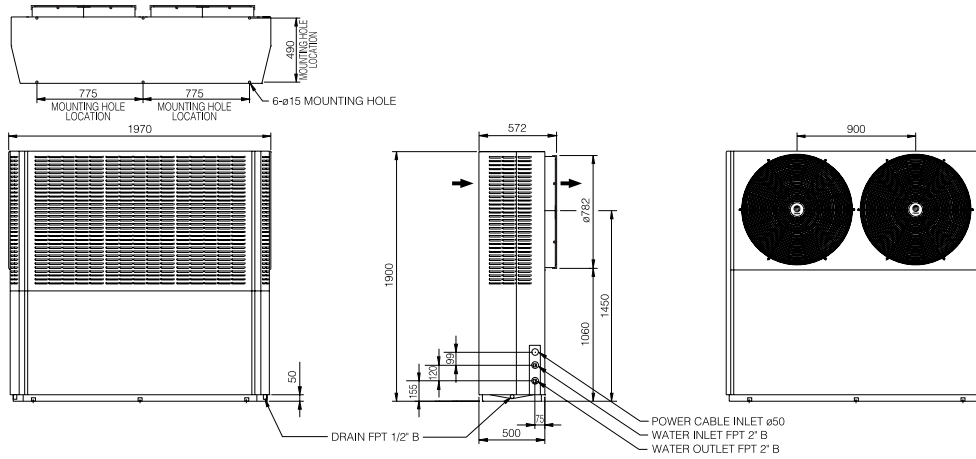
CGAK/R-075/100



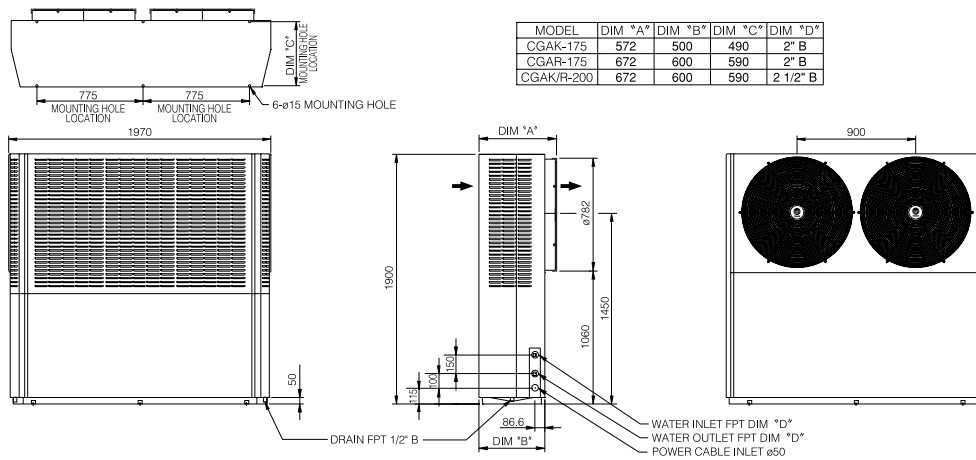
CGAK/R-125



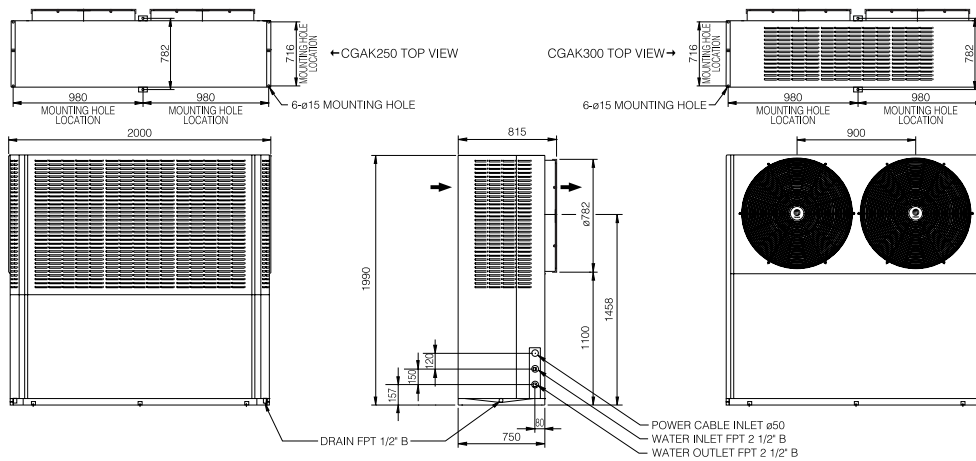
CGAK/R-150



CGAK/R-175/200



CGAK-250/300





General Data

50Hz

Item	Model	CGAK/R-050	CGAK/R-075	CGAK/R-100	CGAK/R-125	CGAK/R-150	CGAK/R-175	CGAK/R-200	CGAK-250	CGAK-300
Cooling Capacity	kW(R22/R407C)	13.1	19.5	25.7	32.5	38.9	44.7	51.9 / 49.3	65.7 / 62.4	78.5 / 74.6
Heating Capacity	kW(R22)	14.5	21.6	28.2	36.0	42.4	49.2	57.1	-	-
Voltage		380V/50Hz/3Ø								
Compressor	Type	High Efficiency Hermetic Scroll								
	Quantity	1	1	2	2	2	2	2	2	2
	Power Input (kW)	4.1	6.2	2 x 4.1	2 x 4.9	2 x 6.2	2 x 7.0	2 x 8.6	8.9+13.5	2 x 13.5
	Running Current (A)	7.4	11.6	2 x 7.4	2 x 8.7	2 x 11.6	2 x 13.0	2 x 15.1	15.5+24.0	2 x 24.0
	Starting Current (A)	44.5	69.6	51.8	60.9	81.2	91.0	106.0	181.0	188.0
Fan (Axial)	Diameter (mm)	711	762	762	762	762	762	762	762	762
	Number of Fan	1	1	1	1	2	2	2	2	2
	Speed (RPM)	460	460	550	550	460	550	550	550	550
	Air Flow (CMH)	4,600	7,000	10,600	11,000	14,500	20,300	20,300	20,700	21,300
Pump	Type	End Suction-Side/Top Discharge Centrifugal								
	Power Input (kW)	0.48	0.72	0.72	0.92	0.92	1.10	1.60	1.60	3.20
	E.A.H. (m HzO)	18	18	18	22	18	18	20	18	26
Evaporator	Type	Brazed Plate Heat Exchanger								
	Water Flow (l/m)	37.7	56.0	73.7	93.3	111.7	128.3	149.0	187.0	223.0
Protective Device		Internal Thermal Overload, High/Low Pressure Switches, Anti-freeze Thermostat								
Lubricant	Type	SUNISO 3GS(R22)						SUNISO 3GS(R22) / POE(R407C)		
	Charge (L)	2.0	3.5	2 x 2.0	2 x 2.0	2 x 3.5	2 x 3.5	2 x 3.5	3.8+6.6	2 x 6.6
Refrigerant	Type	R22						R22 / R407C		
	Charge (kg)	2.7	4.0	2 x 2.8	2 x 3.5	2 x 4.2	2 x 4.8	2 x 5.5	5.5+8.0	2 x 8.0
Dimensions	Height (mm)	1,750	1,900	1,900	1,900	1,900	1,900	1,900	1,990	1,990
	Width (mm)	970	1,290	1,290	1,640	1,990	1,990	1,990	2,000	2,000
	Depth (mm)	500	500	500	500	500	500/600	600	750	750
Water Connection (øPT)		1 1/4"			2"			2 1/2"		
Operating Weight (kg)		260	320	370	450	530	550	570	750	800

60Hz

Item	Model	CGAK/R-030	CGAK/R-040	CGAK/R-050	CGAK/R-050	CGAK/R-075	CGAK/R-100	CGAK/R-125	CGAK/R-150	CGAK/R-175	CGAK/R-200	CGAK-250	CGAK-300
Cooling Capacity	kW(R22/R407C)	9.6	12.0	15.8	15.8	23.5	30.9	39.0	46.8	53.8	63.0 / 59.9	77.8 / 73.9	92.4 / 87.8
Heating Capacity	kW(R22)	10.7	13.2	17.4	17.4	25.9	33.9	42.9	51.5	59.2	69.3	-	-
Voltage		220V/60Hz/1Ø				220V/60Hz/3Ø							
Compressor	Type	High Efficiency Hermetic Scroll											
	Quantity	1	1	1	1	1	2	2	2	2	2	2	2
	Power Input (kW)	2.7	3.8	5.1	4.9	7.6	2 x 4.9	2 x 5.9	2 x 7.6	2 x 8.0	2 x 10.3	10.6+15.4	2 x 15.4
	Running Current (A)	14.4	19.4	24.4	15.3	23.0	2 x 15.3	2 x 17.4	2 x 23.0	2 x 26.0	2 x 32.4	32.0+48.0	2 x 48.0
	Starting Current (A)	86.4	116.4	146.4	91.8	138.0	107.1	121.8	161.0	180.0	227.0	452.0	468.0
Fan (Axial)	Diameter (mm)	711	711	711	711	762	762	762	762	762	762	762	762
	Number of Fan	1	1	1	1	1	1	2	2	2	2	2	2
	Speed (RPM)	550	550	550	550	550	660	660	550	660	660	660	660
	Air Flow (CMH)	5,560	5,560	5,560	5,560	8,500	12,730	13,200	17,425	24,480	24,480	25,200	26,030
Pump	Type	End Suction-Side/Top Discharge Centrifugal											
	Power Input (kW)	0.88	0.88	0.88	0.78	1.27	1.27	1.60	1.60	1.80	2.70	2.70	3.90
	E.A.H. (m HzO)	32	28	23	23	25	23	26	18	22	31	29	22
Evaporator	Type	Brazed Plate Heat Exchanger											
	Water Flow (l/m)	27.7	34.3	45.3	45.3	67.3	88.7	112.0	134.3	154.0	180.0	221.0	263.0
Protective Device		Internal Thermal Overload, High/Low Pressure Switches, Anti-freeze Thermostat											
Lubricant	Type	SUNISO 3GS(R22)						SUNISO 3GS(R22) / POE(R407C)					
	Charge (L)	2.0	2.0	2.0	2.0	3.5	2 x 2.0	2 x 3.5	2 x 3.5	2 x 3.5	2 x 3.5	3.8+6.6	2 x 6.6
Refrigerant	Type	R22						R22 / R407C					
	Charge (kg)	1.7	2.2	2.7	2.7	4.0	2 x 2.8	2 x 3.5	2 x 4.2	2 x 4.8	2 x 5.5	5.5+8.0	2 x 8.0
Dimensions	Height (mm)	1,750	1,750	1,750	1,750	1,900	1,900	1,900	1,900	1,900	1,900	1,990	1,990
	Width (mm)	970	970	970	970	1,290	1,290	1,640	1,990	1,990	1,990	2,000	2,000
	Depth (mm)	500	500	500	500	500	500	500	500	500/600	600	750	750
Water Connection (øPT)		1 1/4"				2"				2 1/2"			
Operating Weight (kg)		230	250	260	260	320	370	450	530	550	570	750	800

Note: 1. Cooling capacity is based on 35°C ambient temperature, 7°C outlet water temperature and 12°C inlet water temperature.
 Heating capacity is based on 7°C ambient temperature, 45°C outlet water temperature and 40°C inlet water temperature.
 2. Tolerance of the listed data is ± 5% according with standard ARI 590.

Mechanical Specifications

General

TRANE KOOLMAN 500 Air-Cooled Water Chiller is specifically but not exclusively designed to couple with fan coil units and air handling units for residential or small commercial air-conditioning application.

Units come with scroll compressor(s), plate type evaporator, finned-tube-condenser & fan assembly, thermostatic expansion valve, four-way reversal valve (heating only), filter dryer, sight-glass, integral water pump, galvanized sheet metal housing with powder paint and factory mounted controls.

Units shall perform with flow rates between the maximum and minimum allowable level.

Compressor

Depending on capacity range, units come with single or double scroll compressors to cater for changing demand and efficient part load operation.

Finned-tube -condenser and Fan assembly

Units come with air-cooled fin-tube U or V shaped condensers. Copper tubes are of the 3/8" diameter, seamless type. Fins are aluminum with efficient Wavy-3B Slit fin. Copper tubes are expanded mechanically to bond with the fins for effective heat transfer. Light-weight axial flow fan(s) is(are) driven by high efficiency, low speed, low noise motor(s) to ensuring quiet and reliable operation.

Evaporator

Evaporators are compact brazed plate heat exchangers with AISI 316 SS plates and connections. All connected water and refrigerant suction piping is thermally insulated with 1/2" thick Armaflex. A 16-mesh strainer is installed at the water inlet to protect the evaporator and unit against fouling. The strainer (factory provided, field installed) can be removed for cleaning.

Housing

All parts are fabricated to precision by state-of-the-art CNC machines. The space frame design allows all panels to be removed for service without affecting the structure of the unit. All panels are internally insulated with rubber foam to reduce noise emission. Rubber tapes are placed in-between panels and structural members as well in order to reduce sound and vibration.

Pump

Pump is an end suction side/top discharge centrifugal-impeller type. The motor is totally enclosed, fan-cooled(TEFC), 2-pole induction type.

Controls and Safety Devices

Units come with an electrical control panel consisting of all, electrical and safety devices. They are designed into an effective, safe and reliable control system that needs minimal maintenance. The power supply portion consists of contactors, relays and overload protectors. The automatic control and safety portion consists of high and low pressure switches, thermostatic and anti-freeze cutouts.

Options

Adjustable Entering Water Temperature Control

Microprocessor controller with digital display of critical information of running a small chiller. The digital display shows the entering water temperature, leaving water temperature, all default values, any abnormal conditions. It also has LED indicator lights for heating mode and compressor status. It allows the user to adjust the entering water temperature giving the user more control over the system.

Water Pump

Units may be ordered without the pump.

Refrigerant Pressure Gauges

For service person or anyone to diagnose possible problems quickly.

Low Ambient Temperature Kit

With this kit, each unit can operate below the 15°C ambient temperature of a standard unit.

Other Options

A corrosion protective coating could be applied on condenser fins.



TRANE[®]

Trane
A business of
American Standard Companies

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An American-Standard Company



FM : 38631
ISO 9001 Qualified factory - Trane Taiwan

Literature Order Number	CGA-PRC001-EN-1006
File Number	CGA-TS-15
Supersedes	CGA-PRC001-EN-0106
Stocking location	Taipei, Taiwan

Since The Trane Company has a policy of continuous product improvement, it reserves the right to change design and specifications without notice.