

World-wide leader in Heating & Cooling business

## COMPANY PROFILE



**Kiturami Bumyang Air Conditioning Co., Ltd.**

1094, HWAGOK-6DONG, GANGSEO-GU, SEOUL, KOREA

Tel. +82-2-2600-9400, E-mail: [jina0106@krb.co.kr](mailto:jina0106@krb.co.kr), Home page : [www.bac.co.kr](http://www.bac.co.kr) / [www.krb.co.kr](http://www.krb.co.kr)

Kiturami HOMSYS ■ Kiturami BOILER ■ Kiturami BUMYANG

KBP1-PQ-0905-ir

## MANAGEMENT PHILOSOPHY

### **A worldwide heating & cooling system group focused on technology and human.**

- 1. Enterprise giving first priority to customer satisfaction**
- 2. Future-oriented enterprise investing aggressively in technology**
- 3. Best enterprise offering all employees a better environment to work for**

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**Total home system based enterprise, KITURAMI group, has integrated heating and cooling business, distribution getting closer to customers with happiness and well being.**

- 1962 Establishment
- 1978 Started exports to overseas for the first time as a Korean boiler company
- 1984 Establishment of Kiturami Foundation
- 1987 Establishment of Kiturami Incheon Factory
- 1990 Second Biggest Stockholder of SBS Broadcasting Station
- 1991 Establishment of Kiturami industry
- 1993 Establishment of Kiturami Cheongdo factory
- 1996 Establishment of kiturami Land(Golf Course)
- 1999 Establishment of First China Tianjin Factory
- 2001 Establishment of Second China Tianjin Factory
- 2002 Main stockholder of TBC Broadcasting Station
- 2003 Establishment of Kiturami Foundation. Merging two companies from CENTURY
- 2005 Launching Homsys project Business
- 2006 Merging [Bumyang Airconditioning Co., Ltd.](#)
- 2007 Establishment of Kiturami-Ilhanli JVC in Turkey
- 2008 Merging Dong-kwang Boiler  
Merging Shinsung Engineering
- 2009 Merging System Air-conditioning Division of Dae-woo Electronics

## Boiler Business

- KITURAMI Boiler
- NANOKEM Co., Ltd.
- KITURAMI Dong-kwang Boiler
- KITURAMI Tianjin China
- KITURAMI Turkey (JVC)

## Leisure, Food & Beverage

- KITURAMI Land Co., Ltd.
- Han-Tan River Hotel
- Dr. ROBBIN Co., Ltd.

## Distribution & Interior

- KITURAMI HOMSYS Co., Ltd.

## Broadcasting

- TBC (TV, FM, DMB)
- SBS (TV, FM, DMB)

## Cooling Business

- Kiturami Bumyang Air-conditioning
- Kiturami Refrigeration machinery

## Culture & Welfare Service

- KITURAMI Culture Foundation
- KITURAMI Welfare Foundation





## KITURAMI GROUP HEADQUARTERS

- Location : Seoul, Korea  
#1094, HWAGOK-6DONG, GANGSEO-GU,  
SEOUL, KOREA  
Tel : 82-2-2600-9400 Fax : 82-2-2600-9491/2  
<http://www.krb.co.kr>
- Business :
  - Heating & Cooling system Distribution8
- Organization : Headquarters of group

Kiturami  
**BUMYANG**



Kiturami as a cooling and heating business company opens the hopeful future with developing cutting edge technology.



Europe certification



New technology certification



Russia certification



China certification



North America certification



High efficiency energy certification

ISO 9001

World standard

ISO 14001

World standard

Kiturami group recognized for its reliability and safety by a half century technology



Main Business Center(13,500m<sup>2</sup>)



Second Business Center(12,368m<sup>2</sup>)



Cheong do factory(77,550m<sup>2</sup>)



Asan factory(199,420m<sup>2</sup>)



Incheon factory(23,760m<sup>2</sup>)



Posung factory (48,027m<sup>2</sup>)



Nanchang factory(12,148m<sup>2</sup>)



Sikyu factory(7,520m<sup>2</sup>)



Tianjin factory in China(15,300m<sup>2</sup>)



Turkey factory(7,100m<sup>2</sup>)

**KITURAMI BUMYANG AIR CONDITIONING CO., LTD.**

World-wide leader in HVAC business



**Kiturami Bumyang Air conditioning Co., Ltd**

1094, Hwagok-6Dong, Gangseo-Gu, Seoul, Korea.  
[www.bac.co.kr](http://www.bac.co.kr) / [www.krb.co.kr](http://www.krb.co.kr)

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## Compliments of the president

I wish to say thank you on behalf of Kiturami-bumyang and its employees. Our company **Kiturami-Bumyang**, which was founded in 1963, has been leading Korean Air-Conditioning industry, producing best quality goods and accumulating high technologies. I am proud of that so much.

Our enterprise motto is to provide best quality goods and service on the basis of upbringing the best brains and technology development. Now, Kiturami-bumyang has grown up to be one of the most outstanding manufacturers for Air-Conditioning equipment & system with creating comfortable living space to make contributions for all the human beings. However, Kiturami-bumyang doesn't stay locked. We continuously try to get size minimization, highest efficiency and least noise of the products along with developing diversity to use new energy material.

Coming 21st century is the era of all the human beings and is customer-oriented. We are always aware of it and are prepared to be with our customers as well as to be No. 1 manufacturer in this severe competition. We'd like to get a well-founded bases through continuing management revolution.

We have two big goals to achieve. They are the uppermost quality and maximum satisfaction of the customers. But it isn't all. Everything should be for customers first and that's what we are trying to get, providing top quality products to them.

And I promise.

Kiturami-bumyang will be near you for a better future, in the 21st century.

Thank you.

**Lee, Young-Soo**  
President



- **Name** - Kiturami-Bumyang Air Conditioning Co., Ltd. ([www.bac.co.kr](http://www.bac.co.kr))
- **Established** - September 30. 1963
- **Chairman & CEO** - Lee, Young-soo
- **Sales Volume** - US\$ 145 Million dollars (as of December 2016)
- **Employees** - Total 199 (Personnel, as of December 2016)
- **Main Products**
  - **Cooling.Heating System** : Wall Mounted A/C, Split Type A/C, Packaged Air-Conditioner, Cons. Temp. & Humi. P-A/C, Heat Pump, Ice Storage A/C, Oil Heater, Computer Room A/C.
  - **Chillers** : Centrifugal Chiller, Reciprocating Chiller, Screw Chiller, Absorption Chiller.
  - **Air-Conditioners** : Fan Coil Unit, Blowers, Air Handling Unit, Baltimore Cooling Tower, Industrial Cooling Tower, FRP Cooling Tower, Air Washer, Chicago Blower
  - **Others** : Ice Storage Cooling System, Condensing Unit, Built-Up Unit, HVAC System, etc.



## 1. KITURAMI Pyung-taek Test Laboratory

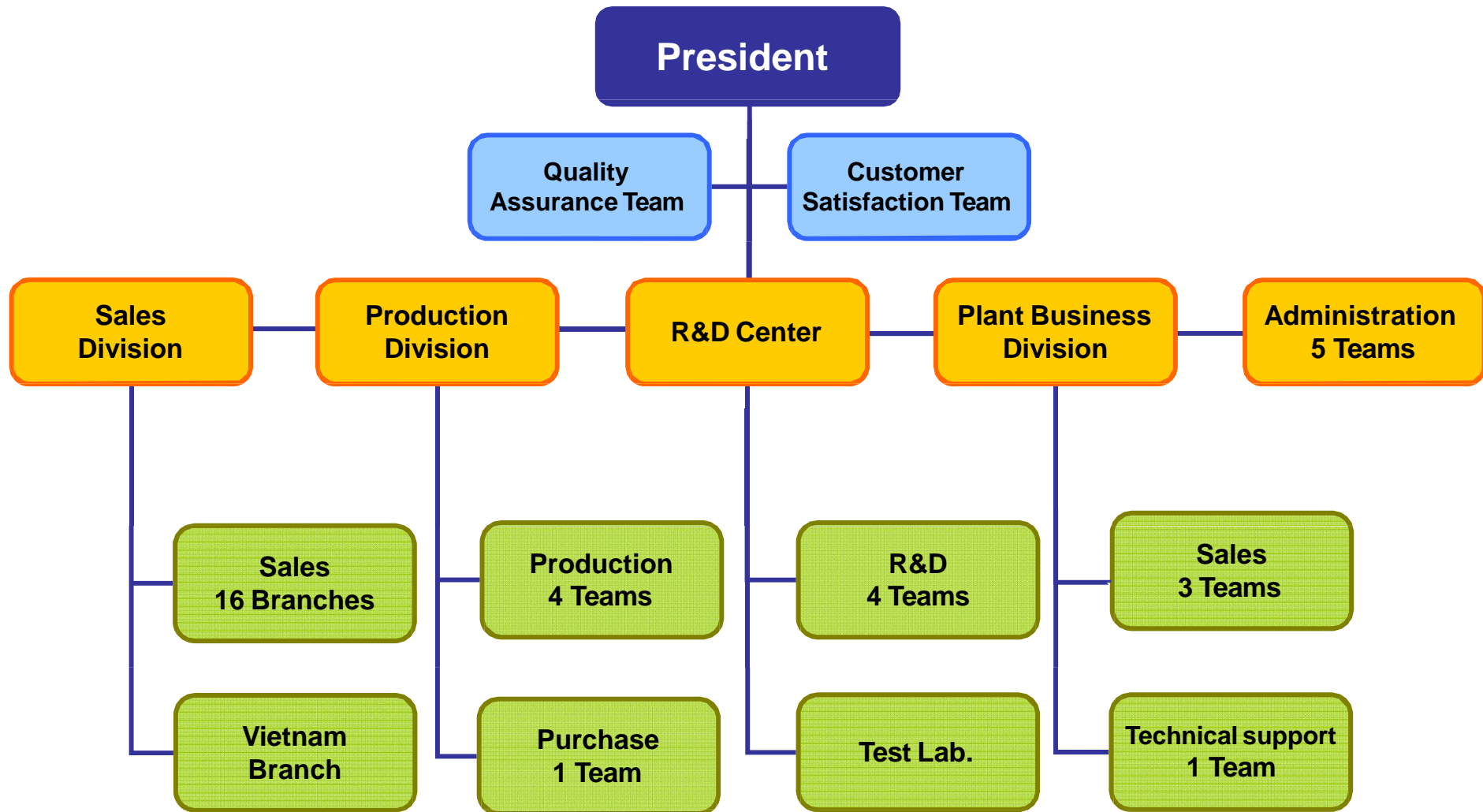
- Location : Pyung-taek, Korea
- Fan & Cooling Tower Test Laboratory
- Siting : 48,027 m<sup>2</sup>



## 2. KITURAMI A-SAN Works

- Location : A-san, Korea
- Products : Chiller, AHU, Cooling tower, Fan & Blower, etc. Air conditioner, FCU, coil, Electric boiler, etc.
- Siting : 214,876 m<sup>2</sup>

1960~70's	1963	Established SEUNG JUN Co., Ltd.
	1967	Registered and approved as foreign investment company. (The first air-conditioning manufacturer in Korea) Started PAC production.
	1972	Renamed as BUMYANG AIR CONDITIONING Co., Ltd.
	1975	Produced CHILLER, Marine type Air-Conditioner, AHU & FCU
1980's	1987	Obtained KS (Korean Standard Registered)
	1988	Signed a technical license agreement for fans and blowers with CHICAGO BLOWER Corp. in U.S.A.
1990's	1991	Obtained AMCA SEAL / Established a R&D center.
	1994	Signed a Manufacturing and Technical Assistance Agreement for COOLING TOWER with BALTIMORE AIRCOIL COMPANY.
	1996	Obtained [The Certification of ISO 9001]
2000's	2000	Blower was certified by KOLAS. (Korea Laboratory Accreditation Scheme)
	2005	Moved into POSEONG Factory. (Factory Movement)
	2006	<b>Bumyang became incorporated with KITURAMI GROUP.</b>
	2007	Obtained KEPIC (Korea Electric Power Industry Code) Certificate. Registered Korea Hydro & Nuclear Power Co., Ltd.
	2008	Obtained [The certification of ISO 14001]
	2009	Obtained the GOSSSTANDART of Russia (GOST-R)
	2009	Obtained the SEPRO certification of Ukraine





**Bumyang Business Line**  
 This contains a heat exchanger using highly efficient waffle slit fin  
 This is vert quietly operated because special sirocco fans are contained.

<p><b>Split type, Packaged type Air Conditioning System</b></p> <p><b>Multi Air Conditioning System (EHP/GHP)</b></p>	<p><b>Centrifugal Chiller</b></p> <p><b>Screw Chiller</b></p> <p><b>Absorption Chiller- Heater</b></p> <p><b>Steam type, Hot Water type, Absorption Chiller</b></p>	<p><b>Air-Handling Unit</b></p> <p><b>Constant Temp &amp; Humid System</b></p> <p><b>Dehumidifier</b></p> <p><b>Ice/Water Thermal Storage System</b></p> <p><b>Geothermal Heating &amp; Cooling System</b></p>	<p><b>HVAC System for</b></p> <p><b>General Plant, Power Plant, Marine (Vessel), Semi-conductor, Subway Station Etc.</b></p>
<p><b>Air Conditioning</b></p>	<p><b>Refrigeration</b></p>	<p><b>Air Handling &amp; System</b></p>	<p><b>Industrial HVAC</b></p>





**Baltimore Cooling Towers**



**Slim Type Air Conditioners**



**Chicago Blower**



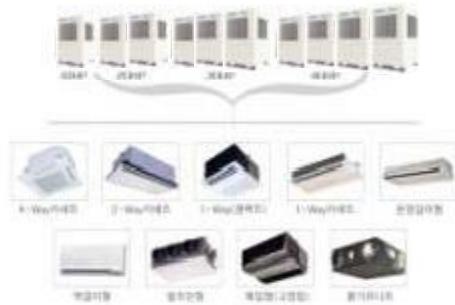
**Air/Water Cooled Packaged A/C**



**Air Handling Units**



**Fan Coil Units**



**Multi System A/C**



**Absorption Chilling  
/Heating Units**



**Screw Chiller (Water-Cooled Type)**



**Centrifugal Chiller**



**Screw Chiller (Air-Cooled Type)**

## < Standard Specification >

MODEL		Standard Specification	MODEL	Standard Specification
P-A/C	Air-Cooled	2~100R/T	Fan Heater	2,580~12,900kcal
	Water-Cooled	3~120R/T	Air / Water Cooled Chiller (Screw)	30~700R/T
Cooling & Heating		3~5R/T	Blower (Bumyang Chicago)	40~2,000CMM
Heat Pump		3~20R/T	Cooling Tower (Baltimore, Industrial)	50~1,500R/T
Cons. Temp. & Humi. A/C		3~30R/T	Ice Storage System	80~10,000TH
Room A/C		1,980~3,440kcal	Built-Up Unit	As customer's spec.
Warm Air Furnace		15,000~60,000kcal	A.H.U( General, DX Type)	As customer's spec.
Centrifugal Chiller		200~2,500R/T	Air Washer Unit	As customer's spec.
Absorption Chiller/ Heater		50~1,250R/T	Make-up Unit	As customer's spec.
Multi System A/C		5~48HP	Dry Cooling Coil	As customer's spec.
Fan Coil Unit		3~25CMM	Clean Room System	As customer's spec.

## Air Handling Unit

- ▶ Improvement in heat efficiency by Bumyang unique waffle plate
- ▶ Easy management, revision, and disassembly by AL or Steel structure
- ▶ Selecting zinc and stainless plate for inside plate
- ▶ Application of AMCA and high-efficiency air foil fan, reduction in operation cost and silent operation
- ▶ Minimization if installation space by compact design
  - Capacity Range (Chilled Water, DX type) : As customer's spec.
  - Refrigerant : R22, R407c, R134a



## Air Cooled Condensing Unit

- ▶ Micom control system (Possible to connect remote control by main control board)
  - ▶ Convenient to maintain repair service by using compact design and possible to set multi position.
  - ▶ Using suitable zinc galvanizing steel which is more durable for outside.
  - ▶ Using semi-hermetic screw comp. for quite operation.
  - ▶ Organizing the best refrigerant cycle for strong efficiency operation.
- Capacity Range (Chilled Water, DX type) : As customer's spec.  
- Refrigerant : R22, R407c, R134a



## Rooftop PAC Unit

- ▶ Fit to installation anywhere, The design of one single unit configuration, all refrigerant work at site can be eliminated.
- ▶ Quiet operating top condenser discharge.
- ▶ Optional supply/return air flow design, from side or bottom, It, could be flexibly applied to Multi-Position.
- ▶ Using a changeable and durable piston as thottle device can guarantee the system operates reliably.
- ▶ Minimization if installation space by compact design
  - Capacity Range : As customer's spec.
  - Refrigerant : R22, R407c, R134a





## Screw Chiller

- ▶ Wide ranges and various size models.
  - ▶ Micro-computer controller and automatic capacity control to fit heat load.
  - ▶ High efficiency, low energy consumption with our unique designed evaporator.
  - ▶ Reliability operation and long life.
- Capacity Range : 30 ~ 700RT (Water Cooled / Air Cooled Type)
- Refrigerant : R22, R407c, R134a



## Centrifugal Chiller (R134a)



- ▶ Achieved high efficiency and compactness of the product based on the high technology and abundant experiences.
  - ▶ Greatly Improved the efficiency in the winter season and the intermediate seasons through temperature control of the cooling water.
  - ▶ Enabled the high-functional operation by ASIC control.
  - ▶ Realized the user convenience and comfortableness through expansion of operational range and low noise.
  - ▶ The large-scaled ice-stored thermal system is applied to the product and large-capacity refrigerators are available.
- Capacity Range : 200 ~ 2,500RT
- Refrigerant : R134a

### High Efficiency

Accomplishment of **COP 6.1**  
(in terms of 800 USRT)  
The compressor's heat  
Exchanger attained  
Highest level efficiency in  
this field.

### Cost Efficiency

Maintenance costs are  
cut down through  
the accomplishment of  
economizing power

### Protect the Environment

Zero harm to the ozone layers  
by adopting **HFC134A**.  
Additional to the power  
efficiency, the CO<sub>2</sub> exhaustion  
has been dramatically lowered.

## Absorption Chilling / Heating Unit

- ▶ Easy operating with micro-computer controller.
- ▶ Inverter control quality guarantee - stable capacity according to heating/cooling load.
- ▶ Data processing & remote control system application by computer.
- ▶ KEMCO designated high efficiency certification products.
  - ※ KEMCO (Korea Energy Management Corporation)
- Capacity Range : 50 ~ 1,250RT



## Chicago Blower

- ▶ Chicago Blower Technology and Engineering.
  - ▶ High efficiency and low energy consumption.
  - ▶ Reliable operation and long life.
  - ▶ Low noise and silent operation.
  - ▶ AMCA Certified performance.
  - ▶ Heavy industrial application and engineering.
  - ▶ KEMCO designated high efficiency certification products.
- Capacity Range : 40 ~ 2,000CMM



## Baltimore Cooling Tower

- ▶ Baltimore Aircoil Company technology, engineering and design.
  - ▶ To meet demanding needs of today's industrial cooling, air conditioning and refrigeration systems.
  - ▶ High thermal efficiency and low energy consumption.
  - ▶ Reliable year-round operation.
  - ▶ BAC Certified Quality and CTI Certified Thermal Performance.
  - ▶ Easy maintenance and Long life.
- Capacity Range : 50 ~ 1,500RT / unit



## Air/Water Cooled Packaged A/C

- ▶ Very wide ranges and various models with air and/or water cooled types for commercial, office.
- ▶ High energy efficient ratio.
- ▶ Silent operation using sirocco fan.
- ▶ Easy installation for duct free or duct type application.
- Capacity Range / Air-Cooled : 2 ~ 100RT  
/ Water Cooled : 3 ~ 120RT
- Refrigerant : R22, R407c, R134a





## Slim Type Air Conditioner

- ▶ Remarkable space saving with slim Type A/Cs.
- ▶ Beautiful appearance, high glossy color surface
- ▶ Anti-bios, air purification function.
- ▶ High efficiency and high performance.
- ▶ High energy efficient ratio(1<sup>st</sup> class EER).
- Capacity Range : 4,042 ~ 7,138Kcal
- Refrigerant : R22, R407c



## Fan Coil Unit

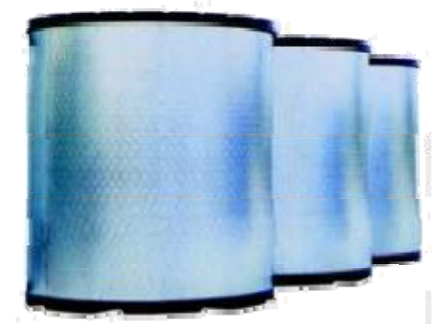
- ▶ Various type to matching with central cooling and/or heating system using chillers and/or boilers.
- ▶ Schools, hotels, banks etc. application.
- ▶ Excellent design and appearance.
- Capacity Range : 3 ~ 25CMM



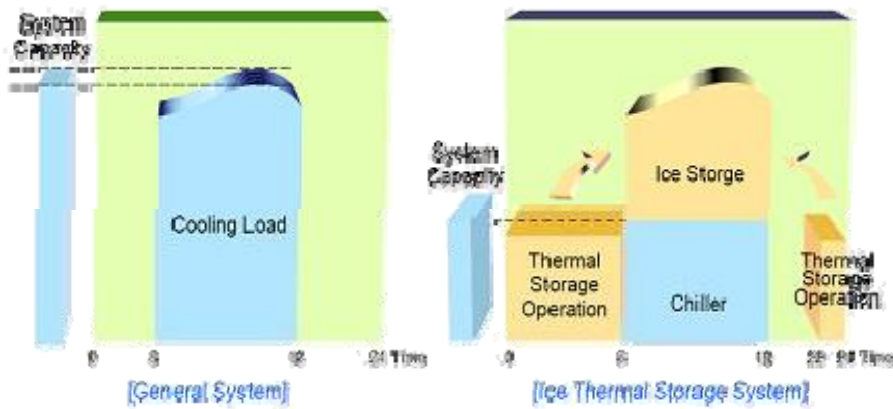
## Ice Thermal Storage System

### Principle

- ▶ Ice made by a chiller during a night (23:00 ~ 9:00) is kept in storage tank. It is melted in the daytime and used for cooling in building.



### Comparison With Each System Operation



## Dry Room System



### Where to Use

1. Second electric cell manufacturing line
2. Semiconductor manufacturing line
3. Food processing line
4. Environmental test chamber
5. Pharmaceutical facilities

- ▶ Minimized construction area from system unified equipment
- ▶ Economized energy by using PURGE SYSTEM
- ▶ Realized the lowest humidity by using ROTOR applied ceramic material compounding Silica gel.
- ▶ Easy control using DDC and long-distance monitoring control using remote control
- ▶ Minimized energy consumption by applying seasonal mode resulted from load change
- ▶ Efficient-manufacturing process thanks to stable temperature/humidity control
- ▶ Experiences and technology accumulated by up to 99 % constructions of domestic DRY ROOM market
- ▶ Realized customer satisfaction system from design to construction

## Geothermal Heating & Cooling System

### Advantages of Geothermal Heat Pump System



#### Economical Efficiency

- Saves above 50% of heating & cooling cost.
- Operated with the best efficiency during the hottest and coldest season.
- Semi-permanent life of geothermal pipe.
- No needed management cost and person.
- Available hot water without extra cost in cooling.



#### Convenient Operation

- Easy conversion between cooling and heating automatically operation.
- Possible cooling, heating and supplying hot water with only one system.
- Do not have to complicated authorization in its installment.
- Installation available without special machinery room.
- Protect good appearance of building without outdoor devices.



#### Safety

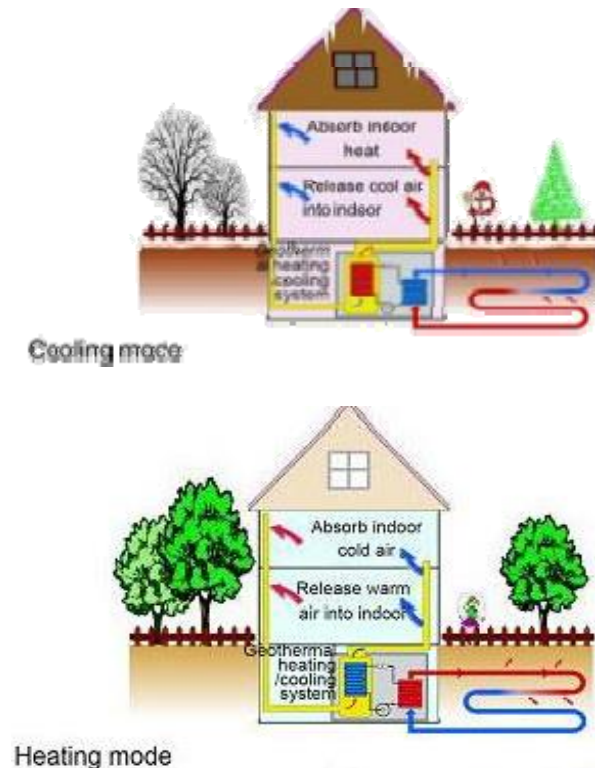
- No risk of fire or explosion due to no use of fossil fuel.
- Not necessary of authorization thanks to no pipe with high pressure.
- No worried bacterial propagation due to no cooling tower.



#### Friendly-Environmental System

- No CO2 emission.
- No emitted SOx, NOx, COx emission.
- No noise and emission from cooling tower.

### Concept of Geothermal Heating & Cooling System





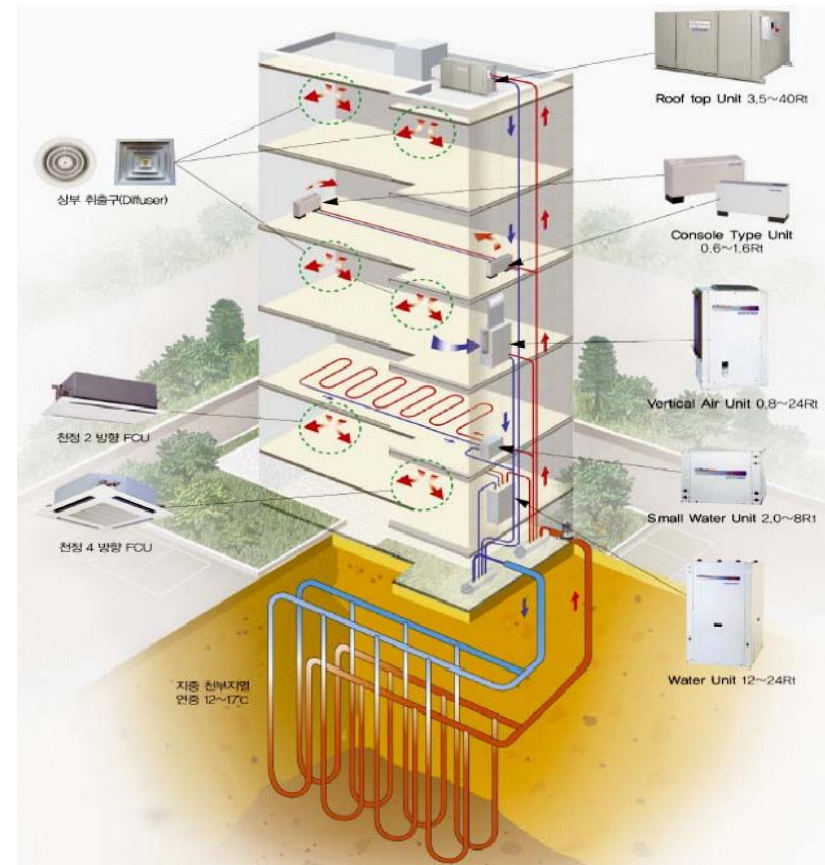
## Concept of Geothermal Heating & Cooling System

### ➤ Cooling mode

It release cool water or air,  
release the absorbed heat into the ground  
through geothermal pipe. (Heat Sink)

### ➤ Heating mode

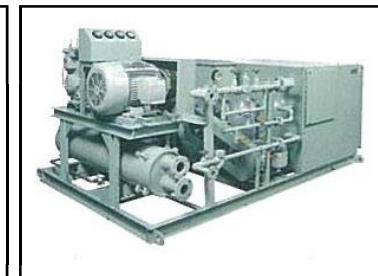
It release warm water or air,  
gets the heat from the ground through  
geothermal pipe. (Heat Source)



## Marine HVAC System

The Marine Division of Kiturami was established due to the demand to provide specialized equipment and contracting abilities to meet the special requirements of the Marine and Offshore industry both within Korea and Overseas.

The Marine Division undertakes HVAC & Refrigeration works on all marine vessels and offshore projects (including platforms, drill ships, jack-ups, semi-sub, marine vessels, F.P.S.O's etc).



## Multi System A/C

Strong power and high performance heating & cooling system with great reliability

### ■ Realization of outstanding energy efficiency

- Varying capacity is possible to adapting digital compressor
- No electricity loss with digital compressor
- Super cooling through double pipe heat exchanger
- Adjusting capacity is possible according to outdoor temperature and demanding load
- Realization of rapid heating & cooling with EEV(Electrically controlled Expansion Valve)

### ■ Economically efficient system

- Saves material cost adopting the new refrigerant(R-410A)
- Reduction in construction cost through power line communication and space availability increase by area optimization
- Economical oil/refrigerant recovery operation and oil distribution operation

### ■ Simple Maintenance and Repair

- Open/Close type control box
- System checkup and maintenance, repair function(Q-PASS)

### ■ Improvement on system reliability

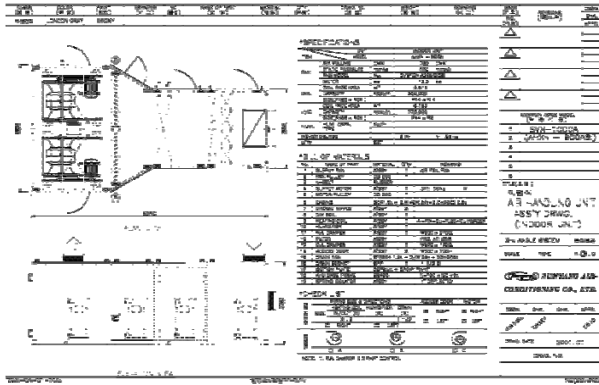
- Sensor controlling technology to secure the safety of compressor and stabilized controller.

### Economical oil/refrigerant recovery operation and oil distribution operation

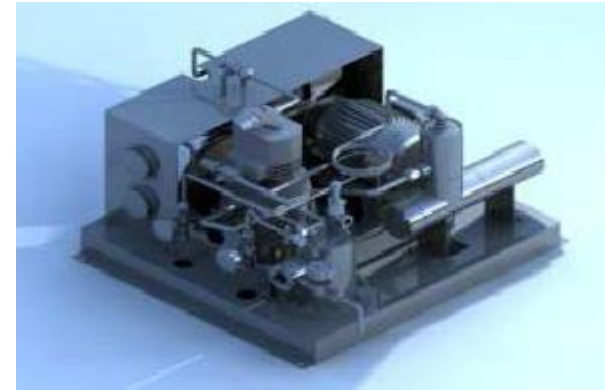
Optimum oil recovery operation and oil distribution operation to assure the reliability of heating and cooling, it carries out economical operation without the loss of indoor temperature by executing oil regarding operation with no operation mode conversion. Also for checkup and installation after moving, it recovers the refrigerant to indoor and outdoor units, thus making it economical and no environmental pollution without littering.



## < Design Tools >



**AUTOCAD**



**SOLIDWORKS**



**Design Program  
for  
Fan & Blower**



**Design Program  
for  
B.A.C Cooling Tower**



## < Design & Calculation Tools >



Design Program for Absorption Chiller



Design Program for Heat Exchanger



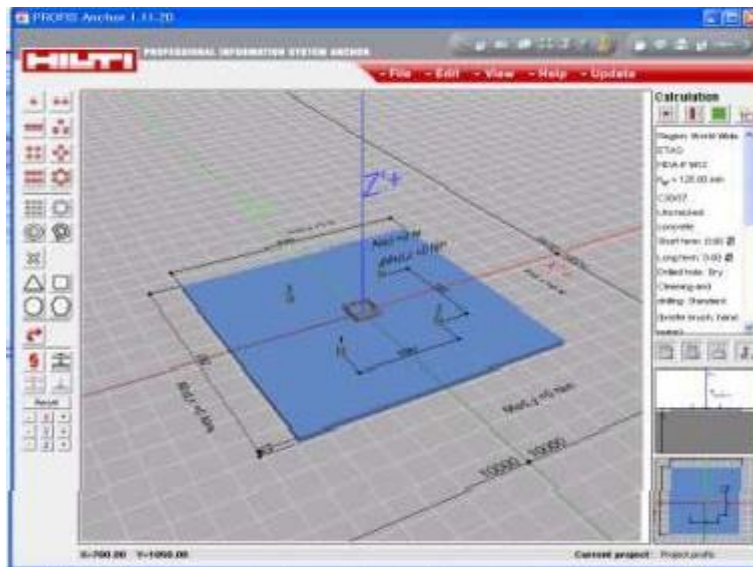
Design Program for Turbo Chiller



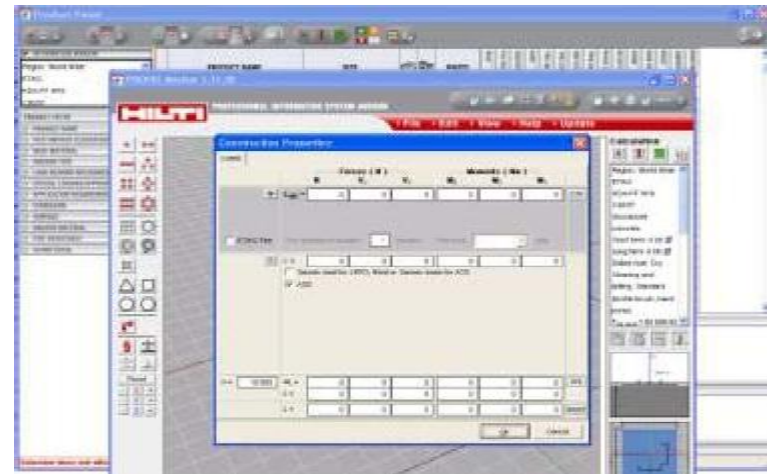
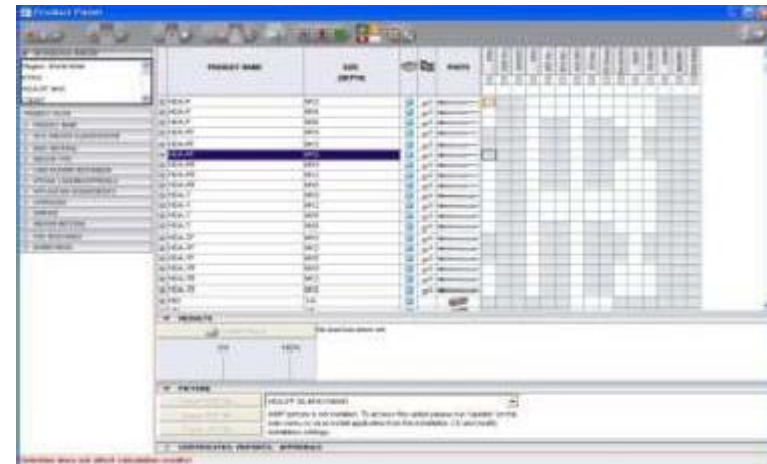
Design Program for Screw Chiller



## < Design & Caculation Tools >



**Design Program for  
Anchor Bolt**



<View of testing laboratory certified by KOLAS>



## < Test Room >

Equipment		Unit	Q'ty
General Test Room	P-A/C Capacity Test Room	Room	6
	W.A.F. Capacity Test Room	"	1
	Chiller & Turbo Test Room	"	2
	F.C.U. Test Room	"	1
	Half-finished Goods Test M/C	"	1
	Compressor Test M/C	Set	5
	Acoustical Test Room	Room	1
	Precision Measurement Room	"	1
	Blower Test Room	"	1

## < Instruments & Devices - 1 >

Equipment	Unit	Q'ty
Salt Spray Tester	Set	1
Thermometer	"	12
Pressure Measuring Instrument	"	20
Sound Level Meter	"	4

< Instruments & Devices – 2 >

Equipment	Unit	Q'ty
Vibration Measuring Instrument	set	2
Halogen Leak Detector	"	5
Universal Testing Machine	"	5
Angle Measuring Instrument	"	6
Tachometer	"	8
Coordinate Measuring Machine	"	1
Strength Test Machine	"	1
Surface Roughness Tester	"	1
Coating Thickness Tester	"	3
Combustion Optimizer	"	5
Rockwell Hardness Tester	"	2
Electro Magnetic Flow Meter	"	6
Oscilloscope	"	1
Block Gauge	"	2
Electronic Micrometer	"	1
W / I Auto tester	"	4

## < License Agreement >



Licensors	Products	Beginning	Remarks
Chicago Blower Corporation, USA	Air Foil Fan Axial Fan Industrial Heavy Duty Fan	1988	
Baltimore Aircoil Company, USA	VTL, VT0, VT1 F1000, FXV Series 1500 Series 3000 Ice on Coils	1994	



# LICENSE & CERTIFICATION



KOR  
EA



EURO  
PE



GOST  
(Russia)



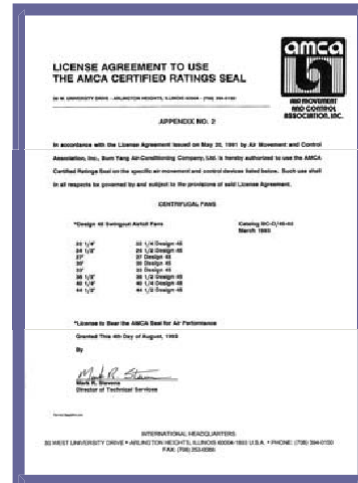
SEPRO  
(Ukraine)

ISO9001

INTERNATIO  
NAL

ISO14001

INTERNATION  
AL



## ■ Classification by Industry

Industry Fields	Main Customer
Semi-Conductor	SAMSUNG(Kiheung/Onyang/Tangeong/Gumi..), LG(Paju), HYNIX(Ichon, Wuxi(China), BOE HYDIS(Beijing)
Power Plant	Uijin /Yeonggwang/ Wolsung NULCEAR POWER, Yeosu / Dangjin THERMAL POWER, HYUNDAI Engineering & Construction (Jebel Ali, UAE) DAE WOO E & C (Libya) HYUNDAI HEAVY INUSTRY (Saudi Arabia, Cuba) POSCO E & C (Chile)
Special Plant (Chemical, Steel..)	SAMSUNG, HONAM, POSCO, SK (Kuwait)
General Plant	HYUNDAI & KIA Motors, HYOSUNG ...
Marine HVAC System	Korea Marine & Offshore Engineering Corp, Korea Navy ...
Subway Station	BUSAN, SEOUL 5/6/7, ILSAN, BUNDANG. INCHEON, GWANGJU
Others	Hotel, Laboratory, Hospital, University, B/D & Office etc.

## < Distribution Location for After Sale Support >

