

LG HVAC

Chiller Reference Sites



LG Electronics

https://www.lg.com/global/business/air-solution
http://partner.lge.com
https://www.lghvacstory.com/

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LG HVAC Chiller Reference Sites

CONTENTS

Commercial

SM Mall	Philippines	Centrifugal Chiller	7
China South City	China	Centrifugal Chiller, A/C Screw Chiller W/C Screw Chiller, Airside(AHU, FCU)	9
Zall Town	China	Absorption Chiller	11
Robinson	Thailand	Centrifugal Chiller	13

Hotel

Palazzo Versace Hotel	UAE	Centrifugal Chiller	17
Hilton Da Nang	Vietnam	Centrifugal Chiller	19

Factory

Gul Ahmed Textile	Pakistan	Centrifugal Chiller	23
Richeese Factory	Indonesia	Air-Cooled Inverter Scroll Chiller	25
Kazan Soda	Turkey	Centrifugal Chiller	27
Titan Factory	India	Water-Cooled Screw Chiller	29
Youkang Mushroom Farm	China	Magnetic Bearing Oil-Free Centrifugal Chiller	31

Office

Indus Motor	Pakistan	Centrifugal Chiller	35
The Tower	Indonesia	Centrifugal Chiller	37

Hospital

Koç Hospital	Turkey	Centrifugal Chiller	41

Commercial

SM Mall, Philippines 7

Centrifugal Chiller

China South City, China 9

Centrifugal Chiller, A/C Screw Chiller

W/C Screw Chiller, Airside(AHU, FCU)

Zall Town, China 11

Absorption Chiller

Robinson Chonburi/Mahachai Thailand 13

Centrifugal Chiller



SM Mall

· Centrifugal Chiller / 75,000RT







Background & Challenge

SM mall is the largest shopping mall chain in the Philippines. While offering a pleasant shopping environment to the clients, SM mall wanted to bring down the enormous maintenance and operational cost for the malls across the country.

LG Solution

LG installed inverter centrifugal chiller, which boasts a world-class high-efficiency while lowering energy consumption and saving space with compact size. LG also offered energy audit service to SM malls and shared the HVAC system improvement proposal.

Client Benefit

The mall secured stable and pleasant shopping environment for clients while saving energy cost with LG's highly efficient centrifugal chiller especially in part load condition.

List of SM Mall with LG Chillers

- SM Grand Central
- SM Bicutan
- SM San Lazaro
- SM Daet
- SM Cubao
- SM Tarlac
- SM Mindpro
- SM Butuan
- SM Megamall
- [BPO] SM Mega Tower
- SM Olongapo Central
- SM Fairview Phase 2
- SM Manila Mall
- [BPO] SM North Edsa Bpo
- SM Telabastagan Mall
- SM Puli Urdan Mall
- SM Puerto Princesa Ph#2
- SM Keppel Phase #2
- SM Puerto Princesa
- SM Cagayan De Oro
- SM San Pablo
- SM Fairview Phase 2
- SM East Ortigas
- SM Bicutan
- SM Bacoor
- SM Clark Hotel (San Jose)
- SM Cabanatuan_Replacement
- SM Calamba
- SM Ilo Ilo Expansion
- SM Trece Martires
- SM Cabanatuan
- SM Fairview Mall
- SM San Mateo
- SM Tacloban City Project
- SM Center Angono

China South City

· Centrifugal Chiller / 85,700RT · A/C Screw Chiller / 1,230RT
· W/C Screw Chiller / 125RT · Airside(AHU, FCU)







Background & Challenge

China South City Holdings is a company with a nationwide network through branch offices in Harbin, Hefei, Zhenzhou, Nanning, Nanchang, along with the HQ in Shenzhen. With large-sized buildings for its HQ, along with other branch offices, it was necessary to install an efficient and stable chiller system capable of prompt services at any time and location.



LG Solution

LG offered LG centrifugal chiller boasting a world-class high cooling efficiency. It is suitable for reducing energy usage and establishing optimum environments in large buildings like the ones in China South City. Furthermore, LG's nationwide service network (SVC) provides local maintenance for all products installed in client sites.

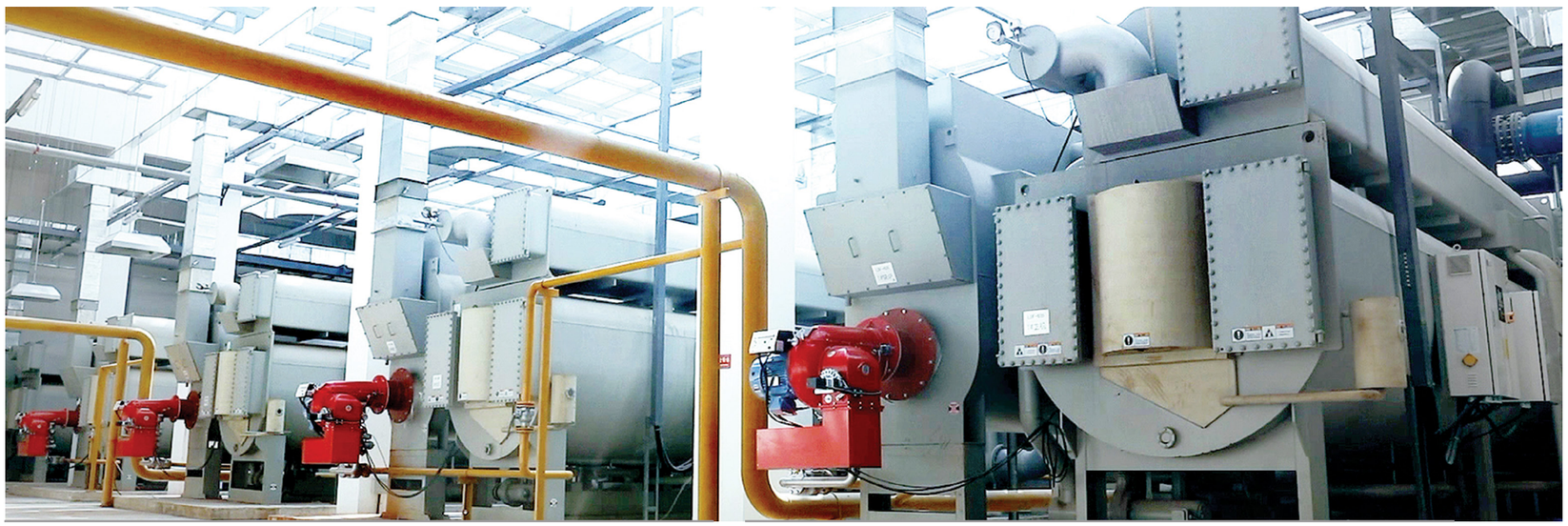
Client Benefit

The high efficiency of LG centrifugal chiller, needless to say, helps reduce operational cost. LG SVC, a direct management service group, allows to provide fast services without additional service charge whenever an issue occurs that guarantees business reliability.

Zall Town

· Absorption Chiller / 10,800RT





Background & Challenge

Zall town has large space with an area of 3 million square meters in total, occupied by electronics markets, extra-large warehouse, production facilities, bus terminal and hotels where a stable and efficient energy plan is needed. Considering the weather condition in Tianjin area, it was required to install HVAC system that can be used for cooling in summer and heating in winter.

LG Solution

LG absorption chiller leverages heat source, a combination of the different types of energy including hot water, exhaustion gas, LNG and steam. It is a single-unit system that can provide both cooling and heating in large commercial areas like Zall town. It can self-diagnose equipment failure and sensors to prevent malfunctions in advance.

Client Benefit

With LG absorption chiller, the client could save the initial investment as it was able to utilize the existing gas network without using high-voltage electricity. Additionally, the direct-fire-type chiller makes it possible to heat and chill at the same time without an additional installation so that the client could save a significant amount of energy cost.

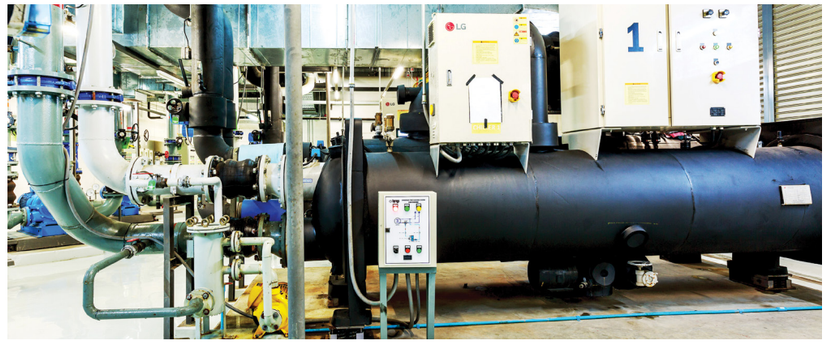
Robinson

· Centrifugal Chiller / 9,000RT

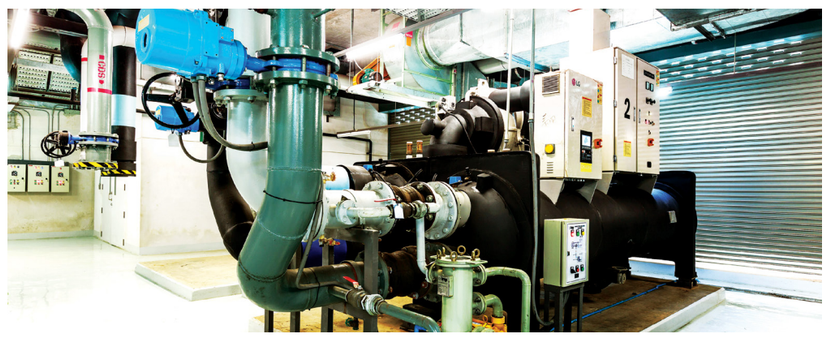












Background & Challenge

Robinson Department Store started their business in 1979 and recently, Robinson PCL and their subsidiaries operated the department store business under the brand “Robinson”. As of 2019, LG provided centrifugal chillers to a total of 5 branches of Robinson in Bangkok metropolitan area.

LG Solution

Thailand is tropical climate with an average annual temperature of 28°C and high humidity. So, the load of shopping mall is almost fixed during the whole year at 90% of rated capacity. The full load efficiency and reliability of chiller is most important to the owner.

Client Benefit

LG’s single stage centrifugal chiller has been constantly introduced and installed in the market for more than 20 years. LG’s P-type centrifugal chiller is one of the most optimized solution which provides enhanced reliability and easy maintenance for large shopping malls with a centralized HVAC system control.

List of Robinson with LG Chillers

- Robinson Mahachai
- Robinson Kampaeng Phet
- Robinson Suphan Bury
- Robinson Petchburi
- Robinson Chaiyaphum

Hotel

Palazzo Versace Hotel, UAE 17

Centrifugal Chiller

Hilton Da Nang, Vietnam 19

Centrifugal Chiller



Palazzo Versace Hotel

· Centrifugal Chiller / 5,800RT







Background & Challenge

Palazzo Versace Dubai is a luxury hotel and resort in Dubai Creek. In total area of 130,000 square meters, the hotel has 215 hotel rooms and suites and 169 residences along with restaurants and bars. To secure a high level of client satisfaction, maintaining a stable comfort level of hotel environment was critical. Also, as the hotel is operated all the time during the year, high-efficiency was required.

LG Solution

Palazzo Versace owns a chiller plant for district cooling that provides chilled water for indoor cooling to the hotel through a closed loop pipe network. LG has installed 2 stage centrifugal chillers in this chiller plant.

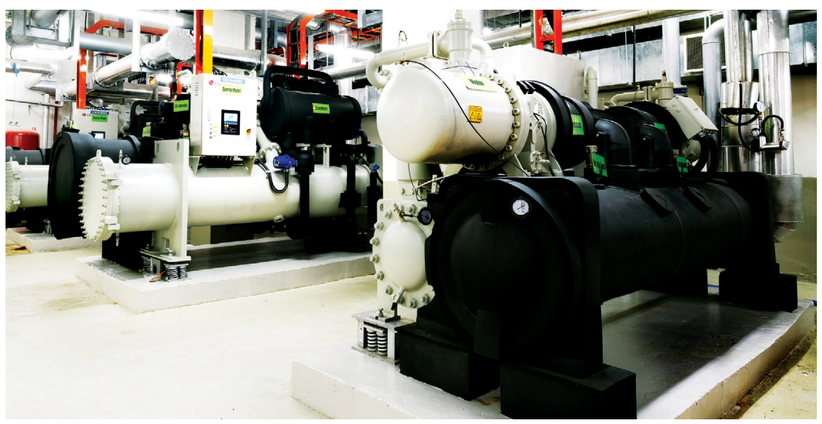
Client Benefit

Using both Inlet Guide Vain (I.G.V.) and variable diffuser for capacity control, LG Centrifugal chiller provides high energy efficiency in part load conditions, saving operational cost.

Hilton Da Nang

· Centrifugal Chiller / 1,200RT







Background & Challenge

The hotel is located at the heart of Da Nang city and along the Han River Bank. Rising up to 28 stories, the hotel has 220 guest rooms and suites with the river and ocean views. This hotel is to be a new landmark of Da Nang city.

LG Solution

Hilton Da Nang is a 4 star hotel and has a big restaurant to the side of lobby. A good performance in ventilation is one of major requirements of HVAC system to avoid discomfort from the smell when a guest enters the lobby. Also, at night, the total cooling load drops to 20% of rated capacity. A good partial load efficiency was another key factor to choose LG's HVAC system for their hotel.

Client Benefit

LG provided HVAC solutions with a wide operation range against variant outdoor temperature which changes from 15°C to 35°C throughtout the year. LG chiller and AHU are the perfect combination to supply cool and fresh air into public spaces like the lobby and the fittness club.

Factory

Gul Ahmed Textile, Pakistan 23

Centrifugal Chiller

Richeese Factory, Indonesia 25

Air-Cooled Inverter Scroll Chiller

Kazan Soda, Turkey 27

Centrifugal Chiller

Titan Factory, India 29

Water-Cooled Screw Chiller

Youkang Mushroom Farm, China 31

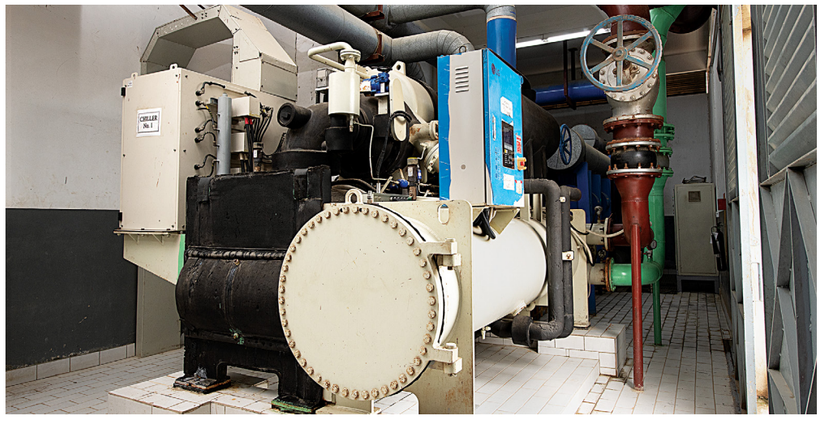
Magnetic Bearing Oil-Free Centrifugal Chiller



Gul Ahmed Textile

· Centrifugal Chiller / 1,800RT







Background & Challenge

The Gul Ahmed Textile Mills Limited is presently a composite unit with an installed capacity of 130,000 spindles, 30,000 rotors, 300 wide width air jet looms. It is a vertically full integrated textile unit, operating in all segments of the textile value chain. Today, the company has an extensive chain of more than 100 retail stores across the country with its flagship store 'Ideas by Gul Ahmed.'

LG Solution

Year by year, the price and use amount of gas are increasing in Pakistan. So, it costs a lot to operate absorption chillers in industrial field. The client looked for a solution to change the existing chillers with better efficiency.

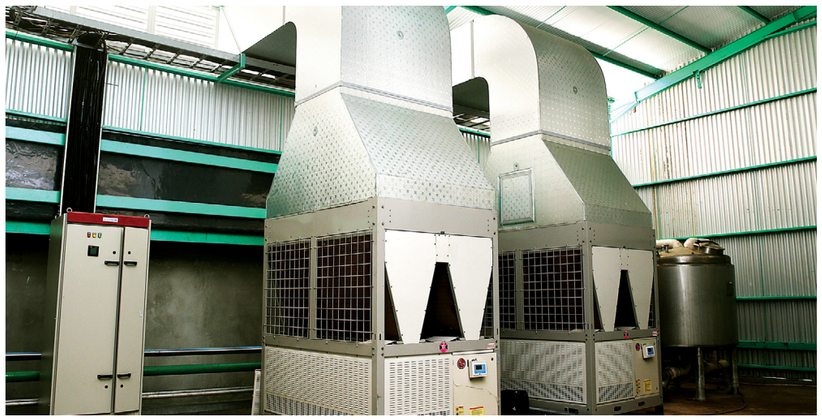
Client Benefit

Replacing the old absorption chiller, the client could save operational cost by more than 20%. The world class high COP of LG chiller has been proven in this job site since 2017.

Richeese Factory

· Air-Cooled Inverter Scroll Chiller / 80RT







Background & Challenge

PT Kaldu Sari Nabati Indonesia is one of the consumer product business groups in Indonesia, which was founded in 2002. This company is famous for producing branded snacks including Richeese fast food goods. In 2018, the brand names Richeese and Richoco are now used as flavor variants for Nabati Ahh.

LG Solution

In Indonesia, the electric power supply is very unstable so, a power outrage suddenly occurs in this site as well. The direct online starter for exisitng conventional non-inverter scroll chiller has affected the power grid on site, and it gave rise to trouble during the start-up of chiller.

Client Benefit

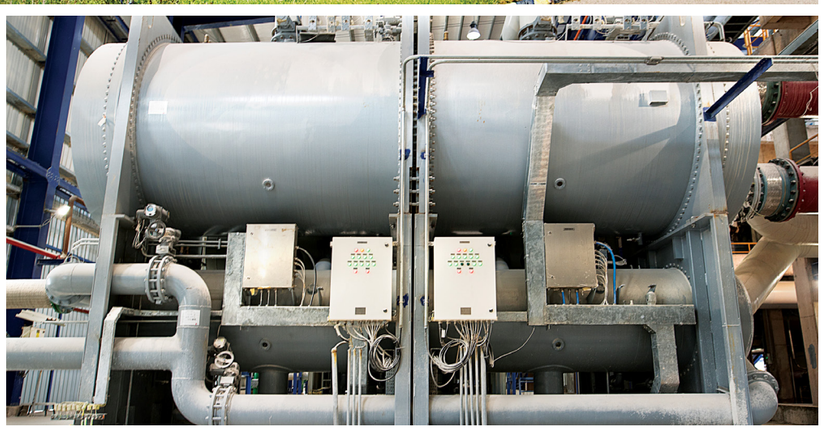
LG Inverter scroll chiller gave a superior reliability compared to the previously installed non-inverter scroll chillers. When the chiller starts up, the start-up current is nearly zero and it minimized the effect of the client's power grid disturbance.

Kazan Soda

· Centrifugal Chiller / 30,000RT







Background & Challenge

The Kazan Soda Elektrik consists of three sections, namely mining, processing and cogeneration. The annual production capacity of the plant is 2.5 million tons of soda ash (sodium carbonate, Na_2CO_3) and 200,000 tons of baking soda (sodium bicarbonate, $NaHCO_3$). The addition of produced soda ash to the global market increases the Europe's production of key glass feedstock by around 25%. The company employs around 1,000 people.

LG Solution

The Kazan mine was looking for an alternative solution for making hot water instead of using a steam boiler to increase energy efficiency of the whole site. LG's large-scale centrifugal heat recovery was a perfect solution for the client's requirement.

Client Benefit

LG provided a high capacity (3,500RT) centrifugal chiller with a unique heat recovery option that only LG can provide. Also, LG chiller reduced foot print in the machine room with a compact design.

Titan Factory

· Water-Cooled Screw Chiller / 430RT







Background & Challenge

The Titan Factory, an affiliate of the TATA group, is located in the Hosur region, 90km south of Bangalore, which is called 'India's Silicon Valley.' Aligned with the company motto 'keeping nature first,' highly efficient HVAC system was required to manage the temperature and humidity.

LG Solution

LG offered a screw chiller that uses water from a environmental friendly thermal energy source.

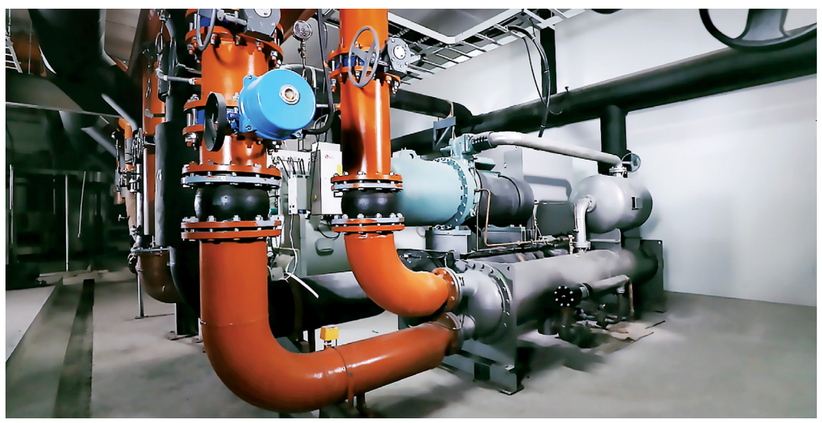
Client Benefit

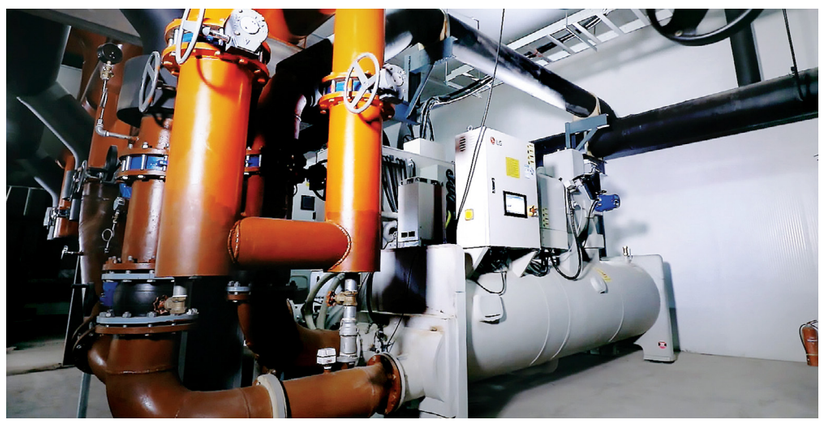
By leveraging thermal energy source, it operates HVAC system without harming the environment while securing efficient operation.

Youkang Mushroom Farm

· Magnetic Bearing Oil-Free Centrifugal Chiller / 1,500RT







Background & Challenge

Youkang Ecological Technology Co., Ltd, located in Jiangsu district, is a company that runs environmentally-friendly, non-pesticide farm based cutting-edge mushroom farm. Keeping an ideal and stable temperature throughout the facility is essential to the quality of mushroom. Efficient equipment that reduces the production costs is also key to the company's ongoing competitiveness.

LG Solution

LG recommended magnetic bearing oil-free centrifugal chiller for Youkang, delivering a COP as high as 11.0 in partial load operation. Comparing to the previously used screw chiller systems, LG's magnetic levitation technology reduced operating costs by 36%. In addition, using magnetic levitation rather than oil lubrication, it simplified the system's piping and the failure rate was significantly reduced.

Client Benefit

Thanks to its high-efficiency, the operational cost is significantly reduced and from the cost saving, Youkang expects to recover all the initial investment within two years. The magnetic bearing chiller requires only a small footprint of installation space compared to traditional chillers with low noise level that supports comfortable work environment. With easy maintenance and reduced failure rate, a high-level of stability is secured.

Office

Indus Motor, Pakistan 35

Centrifugal Chiller

The Tower, Indonesia 37

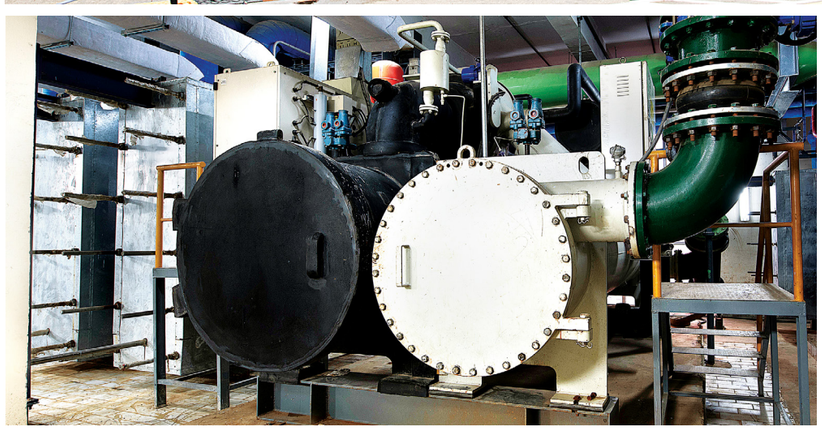
Centrifugal Chiller

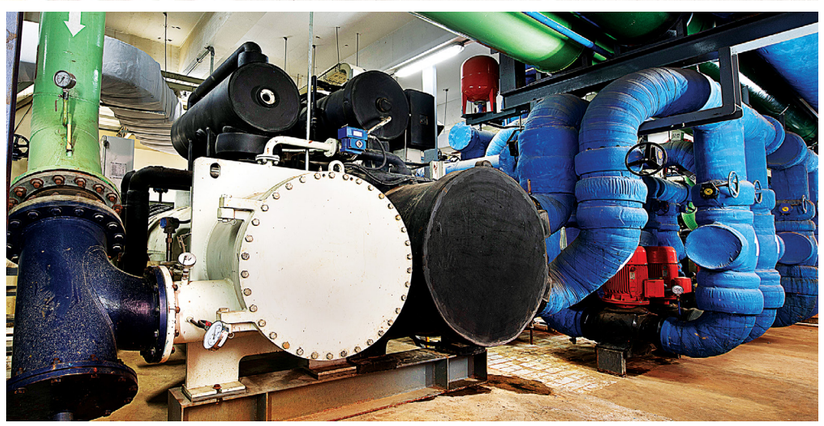


Indus Motor

· Centrifugal Chiller / 3,000RT







Background & Challenge

Indus Motor Company Limited, operating as Toyota Indus, is a Pakistani automobile manufacturer and joint venture between House of Habib, Toyota Tsusho and Toyota motors. It is based in Karachi city. The Company has played a major role in the development of the entire value chain of local auto industry and is proud to have contributed in poverty alleviation at the grass roots level.

LG Solution

At the site, chillers are operated for diverse zones from the engine room to assembly space. For the case of semi-clean room application, a precise temperature control was the most important criteria for HVAC facility in the factory.

Client Benefit

Two sets of LG's 1,000RT centrifugal chiller with VSD provide the chilled water that maintains constant temperature within +-0.1°C variant. It has enhanced the productivity of painting process in this factory.

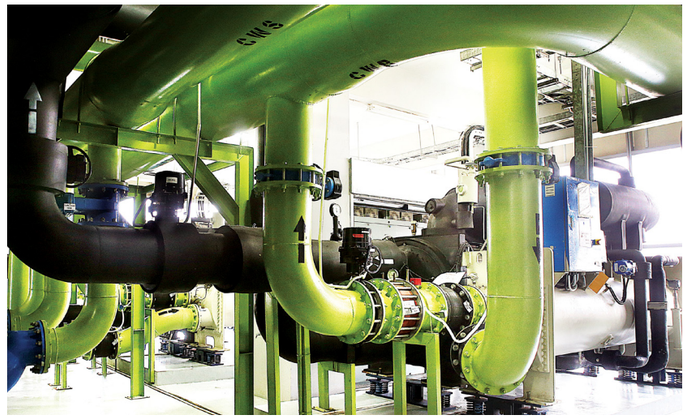
INDONESIA

The Tower

· Centrifugal Chiller / 2,000RT







Background & Challenge

The Tower is a commercial office skyscraper at Karet Semanggi, Setiabudi in South Jakarta, Indonesia. It is located at the Golden Triangle area of Jakarta, which is 211.8 meter tall, has 50 floors above and 5 floors below the ground. The total stories of this building are 50 with floor area of 100,931m^2.

LG Solution

The cooling load of building was reduced to 10% of partial load at night after closing the office floors. To optimize the operation of HVAC facility, the consultant tried to apply variable flow on the chilled water side. To get the best performance of HVAC system, a chiller with VSD was required.

Client Benefit

LG provided HVAC solution with a wide operation range against variant load conditions and the efficiency at off-design condition was fair enough to save energy.

Hospital

Koç Hospital, Turkey

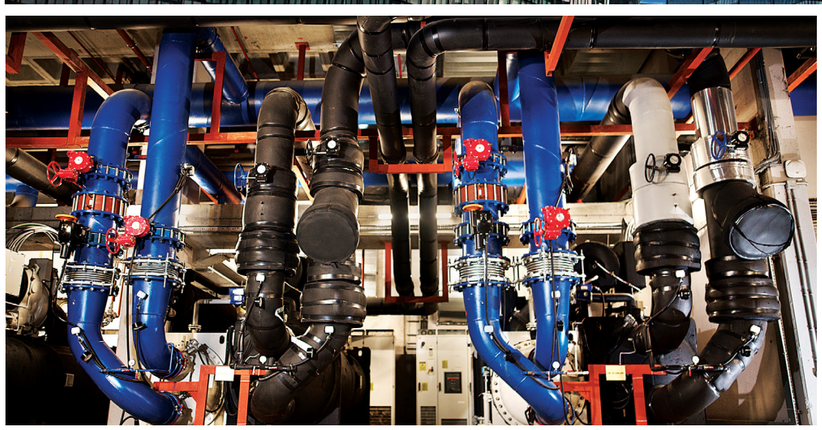
Centrifugal Chiller



Koç Hospital

· Centrifugal Chiller / 3,600RT







Background & Challenge

Koç University Hospital is one of several medical institutions that named after the Vehbi Koç Foundation located in Istanbul. This is a brand new modern medical center, located on the territory of more than 220,000m^2. As a multi-disciplinary hospital, it has all major medical fields, which makes it possible to treat patients with many different symptoms.

LG Solution

The desired operation range of chiller was from 100% to 50% while the main operation point of chiller was around 65% of rated capacity. The LG's VSD centrifugal chiller could gradually reduce the RPM according to given load, so the client was satisfied with the optimized energy consumption.

Client Benefit

The chillers are highly efficient with VSD Starter and especially in part load condition. The client could save the cost of electricity during part load operation.