HYOSUNG HEAVY INDUSTRIES

www.hyosungheavyindustries.com

119 Mapo-daero, Mapo-gu, Seoul,
Republic of Korea

TEL 82-2-707-6000
FAX 82-2-707-7799

ECF
ELEMENTAL CHLORINE FREE

This eco-friendly paper is made from pulp bleached by chlorinated compounds like ClO_2 rather than elemental chlorine, so less dioxin is generated to reduce environmental impact.

30%
RECYCLED MATERIAL

This eco-friendly paper contains 30% regenerated pulp made from recycled paper.

HYOSUNG HEAVY INDUSTRIES PROFILE

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The Company that Leads the Low-Carbon, Green Growth Era

HYOSUNG HEAVY INDUSTRIES

COMPANY OVERVIEW

The future electrical grid system is growing into a new growth engine of green growth.

Hyosung Heavy Industries, a company that possesses the world's best technology in heavy electric equipment, the core of industrial energy, and exports its products all over the world such as to the Americas, the Middle East and Europe, is recognized not only for electric equipment such as transformers and switchgears, but also motors and gears. Also, it will lead the low-carbon green growth era based on the core technologies necessary for establishing future electrical grids such as energy storage systems (ESS), STATCOM and smart grids.

It builds a sustainable and eco-friendly infrastructure for both humans and the environment.

In addition to participating in various construction projects such as housing, reconstruction and redevelopment, business and commercial, civil and environmental, and SOC projects, Hyosung Heavy Industries practices eco-conscious management, where humans and nature form a symbiotic relationship, through continuous research and investment.

BUSINESS AREAS

Power Systems PU

- Produces 70% of the core products required for power supply in Korea
- Participates in establishing a production base in China and building a global power infrastructure

Industrial Machinery PU

- Korea's No.1 electric motor manufacturer and seller
- Performs system engineering business with a wide range of industrial product lineups

Wind Energy Business Division

- Korea's first developer of 750kW, 2MW, and 5.5MW-class wind power generation systems
- Provides total solutions in wind energy such as wind energy core components, wind power turbines, EPC, and O&M

Construction PU

- The first company in Korea to introduce villa-type residential buildings
- Participates in various construction projects such as apartments and office buildings

NEW HYOSUNG

In 2018, Hyosung established a new organization system with the aim to become a centennial company by restructuring into a holding company and four operating subsidiaries of Hyosung Heavy Industries, Hyosung TNC, Hyosung Advanced Materials and Hyosung Chemical. Hyosung will maximize management transparency and capabilities in business fields such as heavy industry, textiles, chemicals and information & communication to enhance corporate value and shareholder value as a company that can provide world-class technology and services in the global market.

POWER & INDUSTRIAL SYSTEMS / CONSTRUCTION	TEXTILE / TRADING	ADVANCED METERIALS	CHEMICALS	INFORMATION & COMMUNICATIONS	OTHER AFFILIATED COMPANIES

HYOSUNG WAY

By fulfilling the Hyosung Way, Hyosung will advance to become a global leader and a company that contributes to the improvement of customer quality of life.

The Hyosung Way is a value system created to turn dreams into reality by bringing together the will and capabilities of all Hyosung members throughout the world.

MISSION

Building a Better Life for the People based on the Best Technology and Management Capabilities.

The reason for Hyosung's existence is to provide products and services that maximize customer value with the "best talents" performing the "best technology" and "management capabilities."

CORE VALUE

Global Excellence

- ✔ Constantly learning to create a competitive edge that can win in any situation.
- ✔ Pioneering the world with a global mindset.

Innovation

- ✔ Eliminate all inefficiencies that do not add value.
- ✔ Challenge new possibilities with a positive mindset.

Accountability

- ✔ Take the initiative with a sense of ownership.
- ✔ Never give up until the goal is achieved.

Integrity

- ✔ Work transparently and fairly based on facts and principles.
- ✔ Respect each other and work together to create a happy workplace.

GLOBAL
ENERGY SOLUTION

It provides sustainable energy solutions all over the world.

Hyosung Heavy Industries has been leading the power transmission and distribution industry in Korea for the past 50 years with its main products, transformers, switchgears and substation solutions. Based on years of know-how in the local market, it has successfully expanded its business to markets across Europe, the Americas, the Middle East and Asia, gaining recognition for its high standards of quality and safety.

Heavy Electric Equipment, the Core of Industrial Energy

As the world's first developer of 800kV class double-break gas-insulated switchgear (GIS), Hyosung Heavy Industries is gaining a competitive edge in the global power transmission and distribution industry by strengthening its global production system based on transformers, switchgears and substation solutions.

- Power Transformer
- GIS (Gas Insulated Switchgear)

Future Energy Solutions

Hyosung is responding to changes in the urban environment, which is constantly advancing and becoming intelligent, through technical development in the IT-based power automation business and the smart grid business, which are evaluated as the core technologies of future energy.

- SMART GRID
- STATCOM
- ESS (Energy Storage System)
- POWER IT SYSTEM

GREEN
INFRASTRUCTURE

It builds an eco-friendly infrastructure where humans and the environment can coexist.

Hyosung Heavy Industries was the first company to develop a new concept in housing culture by introducing villa-type residential buildings in Korea in the 1970s, and is working hard to impress customers beyond customer satisfaction with its differentiated technical competence and construction capability in the residential, construction and industrial sectors.

Eco-Friendly Construction Technology

Hyosung is securing core capabilities in green smart construction through activities such as expanding the development of eco-friendly materials, etc. It is constantly striving to reduce cement consumption by developing a ternary system composite by mixing cement with blast furnace slag (a byproduct from steelworks) and fly ash (a byproduct from thermal power plants).

- GREEN SMART CONSTRUCTION
- Eco-Friendly Low-Carbon Concrete

Green Energy Solutions, New Renewable Energy

As a total energy solution provider in the global power market, Hyosung Heavy Industries developed geared-type 750kW and 2MW wind power turbines, and a 5.5MW wind power generation system for offshore wind farm projects, based on experience with photovoltaic EPC projects and technology.

- Solar Power Plant
- Wind Power Plant

BUSINESS AREAS

Power Systems PU

- Power transmission and distribution equipment
- System and engineering solutions
- New renewable energy
- Welding solutions

Industrial Machinery PU

- Motors
- Generators
- Industrial machines
- Gear solutions

Wind Energy Business Division

- Wind turbine (5.5MW, 2MW, 750kW)

Construction PU

- Housing (apartments, residential and commercial buildings, villas, terrace houses)
- Building (business, commercial facilities, leisure facilities)
- Civil Engineering (roads, railways, site development, golf courses)
- Industrial (plant facilities, power generation facilities, electric power facilities)

Power Systems PU

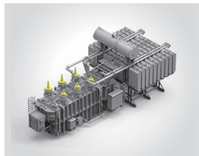
HIGHLIGHTS

- Supplier of 70% of the core products required for power supply in Korea
- Korea's first, world's sixth developer of 765kV-class ultra-high voltage transformers in 1992
- World's first developer of 800kV class double-break gas-insulated switchgear (GIS) in 1999

The Power Systems PU has been leading the power transmission and distribution industry in Korea for the past 50 years with its main products, transformers, switchgears and substation solutions. Based on years of know-how in the local market, it has successfully expanded its business to markets across Europe, the Americas, the Middle East and Asia, gaining recognition for its high standards of quality and safety. Furthermore, it is strengthening the IT-based power automation business and smart grid business. The Power Systems PU will give customers satisfaction by providing the best quality and service, and secure its competitiveness in the global market by constantly innovating in business and management sectors.

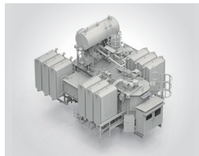
PRODUCT

< Power Transmission and Distribution Equipment >



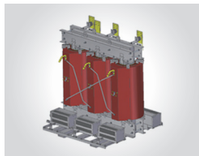
Ultra-High Voltage Transformer

Substation, Thermoelectric and Hydroelectric Power Plants, Nuclear Power Plants, New Renewable Energy Plants, Water Treatment Plants, Oil and Gas Facilities, Mining and Steel Plants, Industrial Plants



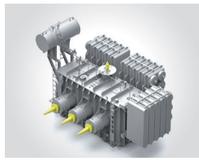
Oil-Immersed Distribution Transformer

Corrugated Radiator Type, Panel Radiator Type, Conservator Type, OLTC Type



Cast-Resin Transformer

Seismic Transformer, Zig-zag Transformer, OLTC Transformer, Excitation Transformer, Auto Transformer



Shunt Reactor

Variable Shunt Reactor, Reactor with Auxiliary Winding

Special Transformer

Gas-insulated Transformer, Ester-oil-insulated Transformer, Mobile Transformer, STATCOM Transformer, Scott Transformer, Furnace Transformer, Rectifier Transformer

Gas-Insulated Switchgear (GIS)

72.5kV, 145kV, 170kV, 245 / 300kV, 362kV, 420kV, 550kV, 800kV

Medium/Low Voltage Switchgears

Pro MV SWGR, Pro LV SWGH, Pro GIS, Pro IPB (Isolated Phase Bus)

STATCOM

Utility, New Renewable Energy Generation, Industrial Plants

HVDC

Grid Connection, Long-Distance Transmission (Overhead Wire), Long-Distance Transmission (Cable), Multi-Terminal, Offshore Power System Grid Connectivity

Turnkey Solutions

- **Turnkey Service**: Engineering, Procurement, Construction, Project Management, Operation and Maintenance, Installation Management, Technical Coordination & Assistance
- **Turnkey Solutions**: Gas-Insulated Switchgear (GIS) Substations, Air-Insulated Switchgear (AIS) Substations, Transmission Lines

< System and Engineering Solutions >

Preventive Diagnostic System

Preventive Diagnostic System for GIS, Preventive Diagnostic System for Transformers

Asset Health Management Solution (AHMS)

Asset Health Analysis & Reporting (AHMS Standard), AHMS System (AHMS Advanced), Consigned Management (AHMS Premium)

Power Automation Solution (ECMS)

Power System Analysis, System and Network Design, Quality Management, Prevention of Human Error, IEC Compliance, Input and Output Testing, Logic and Sequence Testing, Reliability Testing, Communication Network, Interconnection, Compatibility

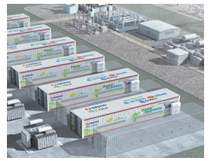
Power Equipment Maintenance Solution

Power Equipment Maintenance and Analysis, Renovation Project, Part Project, Driver Training and Supervisor Support

Process Automation Solution

TOSHIBA nV Series, TOSHIBA nV - light Series

< New Renewable Energy >



Energy Storage System (ESS)

Peak Shaving, Frequency Regulator, New Renewable Energy Integration, Microgrid

Solar Inverter

HS-P36GLO, HS-P50GLO, HS-P499GLO, HS-P500GLO, HS-P600GLO, HS-P1000GLO

Solar EPC

Ground Solar System, Rooftop Solar System, Floating Solar System, Efficiency Improvement Project

< Welding Solutions >

ARC Welding Machines

Thyristor-Type CO_2, MAG Welding Machine, Inverter-Type CO_2, MAG Welding Machine, Full Digital-Type Inverter CO_2, MIG/MAG/PULSE Welding Machine Series, Submerged Welding Machine Series (AC/DC), Inverter-Type Argon Welding Machine Series, Inverter-Type Plasma Cutter

Resistance Welding Machines

Inverter Adaptive Control Timer Controller, MFDC Inverter Transformer Series, AC Portable Spot Welding Machine, Multi Spot Welding Machine

Special Spot Welding Machines

Projection Welding Machine, Seam Welding Machine, Robot Seam SE-Rn Type

Industrial Machinery PU

HIGHLIGHTS

- Korea's No.1 electric motor manufacturer
- Provides optimized solutions through a wide range of industrial product lineups

The Industrial Machinery Performance Unit is a professional manufacturer specializing in rotating equipment such as motors, generators, and gear units, and also in industrial machinery such as chemical equipment and hydrogen gas filling stations. In addition to providing optimized, integrated solutions to fulfill a wide variety of customer demands, it enables innovative cost cutting by enhancing reliability and improving efficiency with the constant innovation of its products. Furthermore, it is committed to becoming a world-class comprehensive machinery and plant engineering company that not only supplies equipment but also provides solutions optimized for customers' operating plants. It is devoting its power for technological innovation by always striving to meet its customers' goals, and strictly adhering to international and industry standards.

PRODUCT

< Motors >

High Voltage Motors

IEC Standard Motor (HV),
NEMA Standard Motor (HV),
Explosion-Proof Motor (HV)

Low Voltage Motors

IEC Standard Motor (LV),
NEMA Standard Motor (LV),
Explosion-Proof Motor (LV)

DC Motors

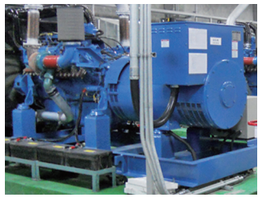
Special Motors

Marine Motor,
Inverter Duty Motor,
Wound Rotor Motor,
Pole Changer Motor,
Aluminum Frame Motor,
Traction Motor,
Line-Start Permanent

<Generators>

Commercial Generators

Steam/Gas/Hydro Turbine,
General and Steel Industries,
Petrochemical and Cement Plants,
Hydraulic and Thermal Power Plants,
Nuclear Power Plants, Ships



Emergency Power Generators

High-Speed Diesel Engine
Generator Set,
Medium-Speed Diesel Engine
Generator Set

< Industrial Machines >

Chemical Equipment

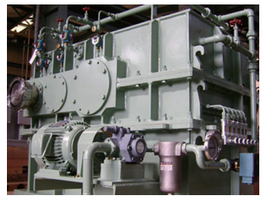
Column/Tower, Vessel/Drum,
Reactor, Heat Exchanger

Filling Stations

Hydrogen Gas Filling Station,
CNG Filling Station, LNG Filling Station

Industrial Gas Supply System

< Gear Solutions >

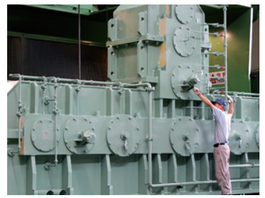


Gearbox

Parallel Shaft Gearbox,
Right Angle Gearbox,
Planetary Gear Units

Geared Motors

Parallel Shaft Geared Motor (F, RP Series),
Parallel Shaft Geared Motor (H Series),
Right Angle Geared Motor (K Series),
Planetary Geared Motor (P Series)



Special Gear Units

Wind Turbine Gear Unit,
Vertical Roller Mill Gear Unit,
Jacking System, Steel Mill Gear Unit, Marine
Gear Unit, Cooling Tower Gear Unit

Construction PU

HIGHLIGHTS

- The first company in Korea to introduce villa-type residences
- Developer of a ternary system composite by mixing cement with byproducts from steelworks and by products from thermal power plants

The specialized technology unique to Hyosung completes a beautiful city.

In the 1970s, the Construction PU developed a new concept of housing culture by introducing villa-type residential buildings for the first time in Korea. It is working hard to impress customers beyond customer satisfaction with its differentiated technical competence and construction capability in the residential, construction and industrial sectors. In particular, Hyosung Construction PU strives to create a new space culture where nature and technology are harmonized throughout the habitat of human living, while strictly complying with environmental laws and other requirements for beautiful symbiosis with the environment. The Construction PU's representative brand Harrington has been increasing synergy by presenting a combined BI with Chinhung International, Inc. (an affiliated company) since 2013.

HOUSING

- Apartments / Villas
- Residential and Commercial Buildings
- Terrace Houses
- Reconstruction
- Remodeling

Hyosung Heavy Industries was the first company to introduce villa-type residential buildings in Korea in the 1970s, and has been endeavoring to create a more comfortable and convenient living environment. Hyosung Harrington Place is recognized as a luxury living space where customer satisfaction is the top priority and humans, the environment and technology are all taken into account. Hyosung Heavy Industries will continue to grow and advance as the leader of housing culture trends with its continuous and differentiated customer service.

BUILDING

- Offices
- Hotels
- Studio Apartments
- Schools
- Complex Facilities

Hyosung Heavy Industries has been creating the best location and environment based on its advanced skills and superior construction capabilities. It is creating beautiful cityscapes with a unique, specialized technology. Hyosung Heavy Industries, a company that is achieving customer satisfaction not only in the functional sector but also in the aesthetic sector with continuous research into humans and space, will lead the paradigm of construction based on its unique know-how.

CIVIL ENGINEER-ING

- Roads and Bridges
- Railways
- Site Development
- Golf Courses

Hyosung Heavy Industries is becoming a trusted construction company that leads sustainable development by actively participating in large-scale civil engineering projects such as roads, bridges and site development. The company considers public interest by improving the convenience of people's lives, focusing on technology development, and extensively participating in civil engineering. Hyosung Heavy Industries will fulfill its responsibility to secure advanced technology and become a true global construction leader.

INDUSTRIAL

- Plant Facilities
- Electric Power Facilities

Hyosung Heavy Industries has been accumulating achievements in specialized construction by building industrial facilities that require a high level of expertise and new technology, and carrying out electric power projects that demand high technology. As the company that led the establishment of Korea's basic industry based on a dauntless pioneer spirit and a strong drive, Hyosung Heavy Industries has been actively involved in industrial projects and contributed to the development of national industry based on continuous research and know-how from design to construction.

Harrington is a new housing brand of Hyosung that endeavors to provide a comfortable and restful living space

Harrington Place

Refined exterior design that represents the class of the people living inside

Interior space that adds practicality to sensibility

Constant research for customer satisfaction

Wind Energy Business Division

HIGHLIGHTS

- For a national project, Hyosung developed 5.5MW offshore wind power generation systems that acquired international certification in 2019
- Korea's first developer of 750kW and 2MW-class wind power generation systems

As a leader in Korea's wind power industry, the Wind Energy Business Division succeeded in the development and commercialization of a geared-type 750kW wind power turbine. The group was internationally certified for 750kW and 2MW-class geared-type wind generation systems for the first time in Korea by DEWI-OCC, a German wind power generator certifier.

In 2011, Hyosung started commercial sales of 2MW models and signed contracts to supply a total of 35MW of onshore wind turbines to Jeju-do and Gangwon-do (Taebaek and Pyeongchang), and successfully performed EPC service as well. It is targeting the supply of its 5.5MW turbines to a Korean offshore wind farm project, which will contribute to the localization of offshore wind power equipment and strengthen national competitiveness.

PRODUCT

HS139-5.5MW

Hyosung was internationally certified by Germany's DEWI-OCC in 2015 for the 2014 installation and operation of its 5MW offshore wind power turbines in the Jeju Gimnyeong National Wind Power Demonstration Complex. It was also certified in June 2019 for the upgrade of its 5MW turbines to 5.5MW turbines.

HS90-2MW

Hyosung's HS90 wind power turbine system maximizes power production at an optimal angle, realizing customer satisfaction, high reliability, excellent performance, and customer-oriented service.

HS50-750kW

This is the HS50 wind power turbine system first developed by Hyosung Heavy Industries based on 30 years of power generator and gearbox manufacturing skills and know-how.

GLOBAL NETWORK

Domestic Business Establishments

Hyosung Heavy Industries Corporation
www.hyosungheavyindustries.com

HQ
(04144) 119, Mapo-daero, Mapo-gu, Seoul (Gongdeok-dong)
T. 82-2-707-6000 F. 82-2-707-7799

Seoul Office (Construction PG)
(04529) 67, Toegye-ro, Jung-gu, Seoul
T. 82-2-707-4400 F. 82-2-707-4401

Changwon Plant 1
(51529) 171, Yeondeok-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do (Nae-dong)
T. 82-55-268-8000 F. 82-55-268-9029

Changwon Plant 3
(51559) 303, Gongdan-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do (Ungnam-dong)
T. 82-55-279-7607 F. 82-55-281-0092

Sejong Plant
(30058) 142, Gongdan-ro, Yeongi-myeon, Sejong-si (Yeongi-ri)
T. 82-44-860-3114 F. 82-44-860-3113

Overseas Business Establishments

U.S.A
Hyosung HICO, Ltd
2865 Riverport Road, Memphis, TN38109, U.S.A
T. 1-901-979-8700 F. 1-901-942-0775

HICO America Sales and Technology, Inc.
Three Penn Center West, Suite 300, Pittsburgh, PA 15276, U.S.A
T. 1-412-787-1170 F. 1-412-787-2270

CHINA
Nantong Hyosung Transformer Co., Ltd.
No.88 Xiaoxing Avenue, Haian Development Zone, Nantong City, Jiangsu Province, China
T. 86-513-8883-2852 F. 86-513-8881-6379

INDIA
Hyosung T&D India Pvt. Ltd.
Plot No. Ip-11, Khed City, Village Nimgaon, Khed Taluka, Pune - 410505, Maharashtra, India
T. 91-21-3563-1700

SOUTH AFRICA
Hyosung South Africa (Pty) Ltd.
6th Floor, Fredman Towers, 13 Fredman Drive, Sandton, Johannesburg, Gauteng, Republic of South Africa.
T. 27-(0)72-723-0477

VIETNAM
Hyosung Vina Construction Company Limited
Suite #021, 17th Floor, Empress Tower, 138-142 Hai Ba Trung Street, Dakao Ward, District 1, Ho Chi Minh City, Vietnam
T. 84-283-8233-116 F. 84-283-8233-117

SAUDI ARABIA
Hyosung Heavy Industries Corporation Saudi Arabia Office
P.O BOX 2807 Jareer Street, Malaz, Riyadh, Kingdom of Saudi Arabia (12836-7151)
T. 966-11-473-5480 F. 966-11-292-1178

U.A.E
Hyosung Heavy Industries Corporation Abu Dhabi Office
P.O Box 133662, Office No. 326 A&B, Al Fahim Building, Street No.10, Plot M4, Musaffah Industrial Area, Abu Dhabi, U.A.E
T. 971-2-550-2866

U.K
Hyosung Heavy Industries UK Branch
15th Floor, CI Tower, St George's Square, New Malden, KT3 4TE, Surrey, United Kingdom
T. 44-20-8942-1612 F. 81-3-3459-9300

AUSTRALIA
Hyosung Heavy Industries Corporation Sydney Branch
Level 3, 201 Miller Street, North Sydney NSW 2060, Australia
T. 61-42-132-1190

CHILE
Hyosung Heavy Industries Corporation Agencia En Chile
Cerro El Plomo 5855, Oficina 308, Las Condes, Santiago, Chile
T. 56-9-7553-7260

KUWAIT
Hyosung Heavy Industries Kuwait Office
Office No. C, Floor 19, Jasim Tower, Al-Soor St, Block 1, Mirqab, Kuwait
T. 965-2228-6827 F. 965-2228-9118

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