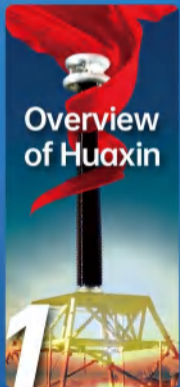


Liling Huaxin Insulator Technology Co., Ltd



CONTENT



OVERVIEW OF HUAXIN



ENTERPRISE OVERVIEW

We have been focused on research and development of the cutting-edge products in insulator industry since 1985 and we are the leader enterprise in hollow porcelain insulator industry. We have established the long-term and stable cooperative partnerships with the customers from more than 50 countries, and are long-term strategic partner of high voltage electric apparatus giants such as Hitachi Energy(ABB), Siemens Energy and GE etc. Exports account for between 35% and 45% of total sales.

We have two major factories. The main factory, which covers an area of 220,000 square meters, is located in Liling Pukou Industrial District. It owns six porcelain insulator production lines. The other factory, which covers an area of 40,000 square meters, is located in Liling Economic Development Zone and mainly produces composite insulators, bushings, low-voltage instrument transformers, etc. Huaxin was awarded the China's sixth batch "individual champion of manufacturing enterprises" and the second batch of national-level "professional, refined, specialized and innovative little giant enterprise".

ENTERPRISE GOALS

MISSION

Serve global power

VISION

Become a world-class
insulator manufacturer

CORPORATE
SPIRIT



Diligence Pragmatism Studiousness Innovation



Human effort is the decisive factor
Aim to be the perfect

ENTERPRISE HIGHLIGHTS

30

The products are supplied to State Grid and China Southern Power Grid, and performance well in more than 30 provincial regions in nationwide

50

Export to more than 50 countries

40

40 years experience in R&D and production in insulator industry

80

80% of overseas orders from global electrical engineering giants

DEVELOPMENT HISTORY

1985年

Formerly known as "Liling Pukou Porcelain Insulator & Electric Apparatus Co.,Ltd"

2003年

Restructured, renamed to "Liling Huaxin Insulator Technology Co., Ltd"

2006年

Set up an international trading department to explore the global markets

2007年

Annual sales reached to 100 million RMB

2012年

R&D hollow porcelain insulator for 1000kV UHV AC lightning arrester and CVT that can be used as post insulator

2018年

Joint established "Binhua Inspection". Established "H&G Insulator Co.,Ltd", entering the composite insulator filed.

2020年

Established "Huaxin Electric"

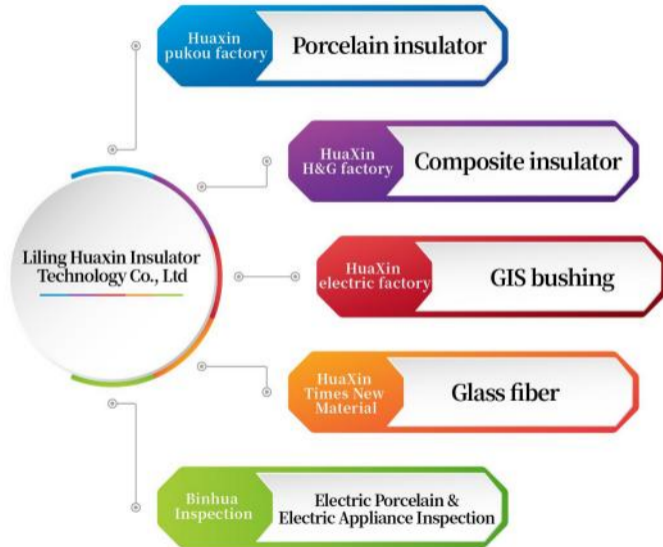
2021年

Established "Liling Huaxin Time New Material Technology"

2023年

1000kV GIS bushing passed national key laboratory's test, 750kV GIS bushing supported State Grid 750kV AC power transmission and transformation project.

INDUSTRIAL LAYOUT



The dual-wheel drive of the porcelain and composite Promote coordinated development



Huaxin Pukou factory

The factory, which covers a total area of 220,000m², is located in Liling Pukou industrial district. It includes building area of 87,000 m² and owns 6 production lines of porcelain insulators.

At present, the factory have the world's most advanced production equipments and quality inspection, test equipments.

Annual design capacity 52,000 tons. Holding fixed assets of RMB 700 million.

Now there are more than 849 employees among which 142 are the R&D staff, providing strong performance.



Ultra high voltage porcelain insulator
production line in Pukou factory



The NO.3 factory's production workshop in Pukou factory



The NO.3 factory's production workshop in Pukou factory

H&G Insulator Co.,Ltd (wholly-owned subsidiary)

Located in Liling Economic Development Zone.Approved as a national high-tech enterprise

H&G Insulator has the excellent mass production capacity of :Hollow composite insulators up to 800kV

Post composite insulators up to 1000kV Hollow insulators with composite housing and porcelain core up to 500kV Composite insulators for transmission lines up to AC750kv and DC±800kv.





Production workshop in H&G Insulator



Production workshop in H&G Insulator

Liling Huaxin Electric Co, Ltd. (wholly-owned subsidiary)

HuaXin set up the GIS bushing section in 2013 and established Liling Huaxin Electric Co., Ltd in 2020, which is located in the Hunan Liling Economic Development Zone. It has 2 dust-free workshops of 300,000-level, 57 sets of process equipments, 10,000 pieces annual design capacity. Huaxin Electric is the main GIS bushing supplier for most large-scale domestic switchgear manufacturers, such as Shanghai Siyuan / Shandong Taikai / Chint Electric, etc. Meanwhile, it provides GIS bushing design service and products for Suzhou GE & Siemens Energy & Xiamen ABB and other joint venture companies.





Huaxin Electric production workshop in Dongfu factory



Huaxin Electric production workshop in Dongfu factory

Liling HuaXin Time Innovative Material Technology Co., Ltd (wholly-owned subsidiary)

Established in 2021, focus on R&D and production of composite insulation, glass fiber core rod, cable pipes and other innovative material products.



Hunan Binhua Electric Porcelain & Electric Appliance Inspection Co., Ltd (Joint venture)

Established in 2017, committed to becoming a national-level quality supervision and testing center for porcelain insulator and electrical apparatus.

Furthermore, it is a strategic cooperative laboratory of XIHARI.





Binhua Inspection Center in Dongfu factory



Binhua Inspection Center in Dongfu factory

MAIN PRODUCTS



PRODUCT SERIES

Hollow porcelain insulator (World-class gold product, National manufacturing individual champion)

Use for:

Instrument Transformers SF₆ Circuit Breakers

Surge Arresters, Capacitors, Transformer, Wall bushing, Cable
Terminals, GIS bushing

Voltage Class : 10kV-1000kV

Annual capacity : 52,000 Tons

Production Line: 6 independent production lines

The highest single part: 2910 mm

Maximum ID: 1000 mm

Maximum overhang: 125mm

The highest inorganic bonding porcelain: 13680mm

Annual quantity: 300,000 pcs

Global market share: 30%



PRODUCT SERIES

Post porcelain insulator (Qualified supplier of State Grid and Southern Power Grid)

Voltage Class : 10kV–750kV

Bending strength :4kN–30kN

Creepage distance ratio:16–31mm / kV

Use for: Substations、 disconnectors、 reactor

Market performance:

Baihetan – Jiangsu ± 800 kV UHV DC project

Shan'xi North – Hubei ± 800 kV UHV DC transmission project

Anhui-to-east power transfer-1000kV UHV AC demonstration project

Zhejiang North – Fuzhou 1000kV UHV AC project

Ximeng-shandong 1000kV UHV AC project

Western Inner Mongolia – Tianjin South 1000kV UHV AC power transmission and transformation project

In April 2024, the 750kV post porcelain insulator passed the Class 9 seismic test of the Chinese Academy of Sciences.



PRODUCT SERIES

Transmission Line Insulators (Qualified supplier of State Grid and Southern Power Grid)

Voltage Class: 10kV-220kV

Product category:

Line post Insulator (3kN、5kN、8kN、12.5kN) Suspension Insulators (40kN、70kN、120kN、160kN) Pin Insulator (2kN)

Strain insulator, long rod insulator, Shackle insulator, cross arm insulator, stay insulator, spool insulator, etc.

In recent years, it has successfully won the bid in more than 30 provinces nationwide.

Main Characteristics:

High mechanical strength, using high-strength porcelain formula; Manufacturing and testing according to GB, IEC, DIN, ANSI, JIS, etc.

R&D direction:

Special glaze does not freeze at minus 4°C,
High anti-pollution, high hydrophobic self-cleaning glaze.



PRODUCT SERIES

Composite Insulator

Main products:

Hollow composite insulator

Composite post insulator for substation

Composite transmission line insulators

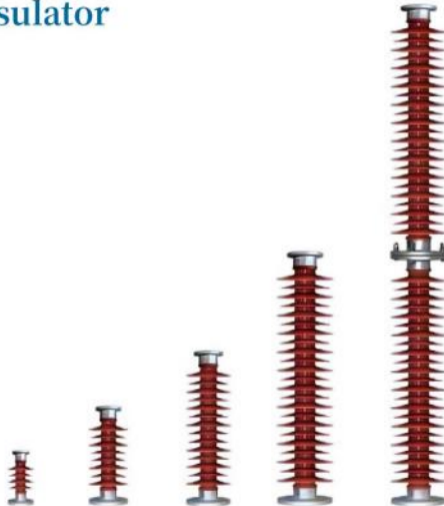
We have the ability to mass produce hollow composite insulator below 800kV, composite post insulator below 1000kV, hollow insulator with composite housing and porcelain core below 500kV. The biggest inner diameterterter can reach to 510mm.



PRODUCT SERIES

Composite transmission line Insulator

Through innovations in design, materials and processes, especially the in-depth and systematic research on high temperature vulcanized silicone rubber materials for external insulating shed covers, the performance has reached the international leading level and can meet the needs of applications under harsh environment.



PRODUCT SERIES

GIS Bushing

Voltage Class: 72.5kV-750kV

Main characteristics:

High strength inorganic bonding, double shielding pressure equalization structure, long creep distance, uniform internal field strength, high security.

Main Customers:

China National Electric Equipment Group

Shanghai Sieyuan High Voltage Switchgear Co., Ltd.

Shandong Taikai High Voltage Switchgear Co., Ltd.

Xiamen Hitachi Energy High Voltage Switch Co., Ltd.

Shanghai Siemens High Voltage Switchgear Co., Ltd.

General Electric High Voltage Electrical Switchgear (Suzhou) Co., Ltd.

Chint Electric Co., Ltd.



PRODUCT SERIES

Bushings for press-embedded capacitors

Mechanical strength: bending strength > 1KN, torsion strength > 45N.m

Sealing performance: Leak rate detection using helium mass spectrometer and the leakage rate is less than $1 \times 10^{-6} \text{ Pa} \cdot \text{m}^3/\text{s}$

Since 2013, more than 500,000 capacitor bushings are operating safely and reliably in national power grids in Brazil, India, Iran, Turkey and Kazakhstan, etc.



PRODUCT SERIES

Wall bushing

The wall bushing is composed of a hollow porcelain insulator, a conductor, an flange in the middle part and end accessories. Hollow porcelain insulator plays the main role of insulation. The flange normal grounding. High voltage current normally flows through the conductor.

The wall bushing produced by our company not only has high pollution resistance at the outdoor end, but also increases the creep distance at the indoor end as much as possible to prevent flashover caused by condensation and other reasons.



PRODUCT SERIES

Cast Resin Type Instrument transformer

Main products: 10–35kv current transformer, 10–35kv voltage transformer, ring main unit, C–GIS, transformers for column switches, low voltage and zero sequence current transformer, combination instrument transformer, electronic sensor

Application: Mainly used for voltage, current measurement and energy metering in power systems, and also provides voltage and current signals to relay protection devices and automatic control devices.

Characteristics: Excellent electrical performance, safe and reliable operation, high cost performance



TECHNOLOGY R&D



R&D CAPABILITIES

As a national manufacturing individual champion of hollow porcelain insulator; national-level professional, refined, specialized and innovative little giant enterprise; and national high-tech enterprise, we adhere to the strategy of technology-guided development, equipped with provincial enterprise technology center, provincial engineering research center, provincial industrial design center, provincial technology preparation platform, provincial expert workstation, and industry-leading porcelain insulator inspection and test center, and industry-leading equipment and instruments, to provide hardware support for comprehensive and refined material analysis, product testing and performance evaluation. Nearly 100 technical backbones, including experts and engineers in electrical engineering, materials science, chemical engineering and other fields, have formed a stable talent team and are committed to developing porcelain insulators with better performance, longer life and stronger adaptability.



The company has carried out in-depth cooperation with universities and research institutes such as Central South University, Hunan University, Hunan University of Technology, Changsha University of Science and Technology, China Electric Power Research Institute, and XIHARI, and has established student internship bases. We have achieved fruitful results in raw material formulation, process improvement, achievement transformation, and talent training.



中南大學
CENTRAL SOUTH UNIVERSITY



湖南大學
HUNAN UNIVERSITY



長沙理工大學
CHANGSHA UNIVERSITY OF SCIENCE & TECHNOLOGY



湖南工業大學
HUNAN UNIVERSITY OF TECHNOLOGY

XIHARI

西安高压电器研究院股份有限公司
Xi'an High Voltage Apparatus Research Institute Co.,Ltd.



20_{term}
Invention Patent

36_{term}
Utility Model Patent

16_{term}
Invention patents in progress





Many of the company's technical staff have been selected into the National Insulator Professional Technical Committee and have participated in the formulation and revision of national and industry standards many times, including GB/T 23752-2009 (Hollow pressurized and unpressurized porcelain and glass insulators for electrical equipment with rated voltages above 1000kv), GB/T 4109-2022 (Insulating bushings with AC voltage higher than 1000v), GB/T 1001.1-2021 (Overhead line insulators with nominal voltage above 1000v Part 1: Definitions, test methods and criteria for porcelain or glass insulator elements for AC systems), T/CEEIA 789-2024 (Bonded hollow porcelain insulators for electrical equipment).

INNOVATION BREAKTHROUGH



Equipment Innovation

In 2023, we built the industry's first automated, movable innovative kiln, which greatly improved production efficiency and reduced energy consumption.

Independently developed a 15-meter fully automatic inorganic jointing product interface cutting and grinding machine in 2022. The diameter range of grinding products is 500–1500mm, which is maximum in the industry. It effectively improved the grinding quality and stability of large-sized products.

Owens a 14.5-meter-high fully automatic kiln, and the maximum height of inorganic bonding products is 13.68 meters.



Technological innovation

In 2023, we achieved a major breakthrough in the production and manufacture technology of 1000kv hollow porcelain insulator (GIS), accelerating the localization of core parts of UHV construction projects.

In 2021, the hollow porcelain insulator (1000kv transformer) passed the lightning impulse wet withstand and flashover voltage test, and power frequency drywithstand voltage test at the Yangbajing in Nagqu, Tibet, at an altitude of 4,300 meters.

In 2015, we developed the welding technology of porcelain insulators and metal parts, and the sealing technology of porcelain insulators and metal accessories. Breaking the monopoly of the US in ceramic lead-out terminals for nuclear motor stators.



Formula Innovation

Mastered the formulas for the blank, glaze and bonding glaze of hollow porcelain insulator for 1000kv ultra-high voltage power equipment with high mechanical strength and seismic resistance of over level 8.

By introducing high-quality raw materials such as first-grade bauxite and British ball clay to optimize the formula. The maximum bending strength of pure porcelain of C130 porcelain insulators based on GB and IEC standards ($\geq 140\text{MPa}$) is increased to $\geq 160\text{MPa}$. Ensure the realization of high-strength technical goals by the improved blank formula.



Products Innovation

Developed and manufactured 110–220kv hollow hybrid insulator with porcelain core and silicone shed in 2018.

Developed hollow porcelain insulators for high-speed electric locomotive vacuum circuit breakers in 2016.

The hollow porcelain insulator for the AC UHV 1000kv capacitive voltage transformer produced by us is the first one in China to pass the 0.4g seismic test, with a safety factor of over 1.95; the hollow porcelain insulator for the AC UHV 1000kv lightning arrester produced by us is the first one in China to pass the 0.5g seismic test, with a safety factor of over 1.92.



Management innovation

In 2017, Huaxin Insulator adopted the "Amoeba-Business Model" and successfully implemented a daily efficiency summary mechanism at the team and individual levels, which greatly enhanced the flexibility of the organization and also significantly increased the enthusiasm of employees to participate in corporate operations.

The first enterprise college in Zhuzhou City was established in 2013, aiming to cultivate talents, impart knowledge, improve skills, focus on the field of insulator, and continuously expand the breadth and depth.



MARKET PERFORMANCE



MANAGEMENT ACHIEVEMENT

Sales revenue in recent years

	2021	2022	2023	2024
Operating income	409.79 million	438.90 million	618.72 million	798.00 million
Year-on-year growth	9.57%	7%	40.97%	28.98%

UHV Insulator

The first supplier to develop 1000kv hollow porcelain insulator (surge arrester/CVT) and successfully put them into commercial operation. We supply insulators for a lot of national key projects, such as The Three Gorges High-voltage Transmission and Transformation Project, Anhui-Eastern Power Transmission UHV Project, West-to-East Power Transmission UHV Project, UHV offshore project, Lanzhou East-Guanting 750kV Transmission and Transformation Demonstration Project, Southeast Shanxi-Nanyang-Jingmen 1000kv UHV AC test demonstration project, Zhumadian-Nanyang 1000kV AC UHV power transmission and transformation State Grid key project, Sichuan Xiangjiaba-Shanghai ± 800 kV UHV DC transmission demonstration project, Jinping-Sunanshi 800kV UHV DC project, North Zhejiang-Fuzhou 1000kV UHV AC project, Huainan-Nanjing-Shanghai 1000kV UHV AC project, Baihetan-Zhejiang ± 800 kV UHV DC transmission project, the Fujian-Guangdong inner connection project jointly built by State Grid and China Southern Power Grid, Wudongde-Guangdong-Guangxi UHV ± 800 kV UHV Flexible DC Transmission Project, Nanchang-Changsha 1000kV UHV AC project, Brazil Belo Monte ± 800 kV UHV DC transmission project.



Performance of power station insulators

- We have built long-term strategic cooperative relationship with global electrical engineering giants, such as Hitachi Energy(ABB), Simens Energy, GE, etc.
- We are the important cooperative partner of domestic excellent clients, such as State Grid, China Southern Power Grid, CEE, Sieyuan, Taikai, CHNT, TBEA, PG, BYE, CHANGGAO Group, etc. Products are used all over the country.
- Products are exported to more than 50 countries, such as US, Russia, Japan, Germany, South Korea, Sweden, France, Italy, Brazil, Turkey, Mexico, Canada, Iran, South Africa, India, etc.

Global strategic partner



Key Customers



Performance of transmission line insulator

As the qualified supplier of transmission line insulator 10-35kv and post insulator 10~750kv for State Grid and Southern Power Grid, we offer superior products and service to electricity companies on Beijing, Hunan , Shanxi, Jiangxi, Xinjiang, Anhui, Inner Mongolia, Jilin, Liaoning, Qinghai, Tibet, Shenzhen, Yunnan, Guizhou, etc. In 2023, won bid for post insulator totally RMB 48.863 million, and won bid for transmission line porcelain insulator totally RMB 91.7583 million.



Provinces with a performance rating of A

Beijing, Liaoning, Tibet, Qinghai, Henan, Jilin, Tianjin, Sichuan, Hunan, Xinjiang, Fujian, Jiangxi, Anhui



ENTERPRISE HONOR



COMPANY HONORS

- The sixth batch individual champion of Chinese manufacturing enterprises (2021)
- The second batch of national-level professional, refined, specialized and innovative little giant enterprise (2020)
- National intellectual property advantage enterprise(2022)
- First prize of state grid S&T progress award (2018)
- Second Prize of China Electric Power S&T Award (2018)
- High-tech Enterprise (2021/2018/2015/2012/2009)
- Industrial Design Center of Hunan Province (2023)
- Engineering Research Center of Hunan Province (2023)
- Hunan Province eco-friendly Manufacturing System Demonstration Entity(2021)



COMPANY HONORS

- ABB Outstanding Supplier(2012/2014/2016/2018/2020)
- Nanyang Jinguan Excellent(2020)
- GE(Alstom) Global Outstanding Supplier” (2019)
- Siemens Energy Outstanding Supplier(2020)
- Sieyuan Electric Best Strategic Partner (2008/2018)
- HITACHI ENERGY Strategic Partner Suppliers(2015)
- Alstom(US GE) First Prize for Lean Manufacturing Improvement (2009)
- Trench Outstanding Supplier(2004/2003)





THANK YOU

感谢观看

ขอบคุณ