



LONGSUN



公众号
Official account



公司主页
Company homepage

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LONGSUN

电接触 材料行业领跑者

LEADER IN ELECTRICAL CONTACT
MATERIALS INDUSTRY

中希集团有限公司
LONGSUNGROUP CO.,LTD.



用心接触 世界因我而改变
Contact with heart
the world will be changed

中希集团 LONGSUN

一家集科研、生产、销售于一体的电接触材料龙头企业

A leading enterprise of electrical contact materials
integrating scientific research, production and sales



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企业简介

中希

Company profile

中希集团有限公司成立于1986年，集团总部坐落于温台沿海经济产业带的核心区和温州北翼经济发展的主平台-乐清经济开发区，占地面积160余亩，是一家集电接触材料研发、生产、销售、服务于一体的领先企业。

公司承载民族企业的历史使命，引领电接触材料的发展方向，产品包括粉末冶金触头、内氧化触头、银合金线材、异型丝材、铜合金、复合材料、组合件一体化、铆钉触头、太阳能正面银浆等九大类，产品应用范围覆盖全电接触领域，主要服务于施耐德、西门子、正泰、德力西、良信、公牛、厦门宏发、沈阳铁路、人民、天正、贵阳群英军工企业等国内外客户。

公司注重技术工艺与品质，依托较强的自主研发和创新功能，先后获得20余项实用新型专利和发明专利，并参与多项国家/行业标准的制定与修订，公司具有人才架构稳定、生产装备精良、技术成熟稳定、管理规范有序、产品质量可靠等优势，已通过了ISO9001、ISO14001、ISO45001管理体系认证以及客户的每次现场审核，深受好评。

中希将不断提升企业的科技创新能力，进一步调整优化产品结构，致力于打造国内一流、全球有影响的电接触头材料制造企业。

随着产品工艺和技术的不断升级与创新，中希将逐步向动力机车、电能、光能和风能等领域拓展，助力碳中和的发展，实现企业对社会的最大贡献。

Longsun group was found in 1986, integrating research and development, production, sales of electrical contact materials. The group has two production bases, SPM-Longsun (Shanghai) new material technology Co., Ltd. and Wenzhou Longsun Electrical Alloy Co., Ltd. Total occupied area is more than 160 mu.

Company carries national historical mission to lead the development of electrical contact materials, products include powder metallurgy contact, contact oxidation, silver alloy wire, shaped wire, copper alloy, composite materials, assembly, integration, rivet contacts, solar positive silver pulp and other nine categories, application range of products covers all electrical contact areas. Mainly serve Schneider, Siemens, Chint, Delixi, Liangxin, Bull, Xiamen Hongfa, Shenyang Railway, People, Tengen, Guiyang Qunying military enterprises and other domestic and foreign customers.

Companies focus on technology and quality, relying on the strong independent research and development and innovation capabilities, has won more than 20 practical new patents and invention patents, participating in the formulation and revision of the many national/industry standard. Company has the talent structure stability, excellent production equipment, mature technology, stable, orderly management standard, the advantages of the product quality is reliable, qualified with ISO9001, ISO14001, ISO45001 management system certification.

Longsun continues to improve the technological innovation capacity of the enterprise, further adjust and optimize the product structure, and strive to build a first-class domestic and global influential electrical contact material manufacturing enterprise

With the continuous upgrading and innovation of product technology and technology, the company will gradually expand to power locomotive, electric energy, light energy and wind energy and other fields to help the development of carbon neutrality and achieve the maximum contribution of the enterprise to the society.



发展历程

中希
Company history



2018年...

贵研中希(上海)新材料科技有限公司
(主要股东: 贵研铂业股份有限公司,
上市股票代码: 600459)

SPM-Longsun (Shanghai) New Material
Technology Co., Ltd.
(Major shareholder: Sino-Platinum Metals
Co., Ltd., Stock code: 600459)



2011年...

中希集团有限公司
2011 Longsun Group Co., Ltd.

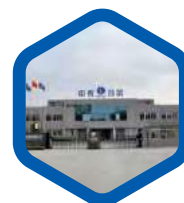


2005年...

2005年3月 浙江中希电工合金有限公司
March 2005 Zhejiang Longsun Electrical Alloy Co., Ltd.

2005年11月 温州中希电工合金有限公司
November 2005 Wenzhou Longsun Electrical Alloy Co., Ltd.

2005年12月 中希合金有限公司
December 2005 Longsun Alloy Co., Ltd.



1996年...

上海中希电工合金有限公司
1996 Shanghai Longsun Electrical Alloy Co., Ltd.



1991年...

乐清市电工合金有限公司
1991 Yueqing Electrical Alloy Co., Ltd.



1986年...

家庭作坊
1986 family workshop

企业文化 中希

Enterprise culture



企业精神

ENTERPRISE SPIRIT

中希合金以“诚实、勤奋”、“开拓、奉献”、“人诚客和、本业尊贵”与员工共勉，盼所有中希人皆能以最谦卑的心、最和善的态度，来繁盛企业的经营。

Longsun encourages employees with "honesty, diligence", "development and dedication", "sincere customers and noble industry", and hopes that all Longsun people can prosper the operation of the enterprise with the most humble heart and kind attitude.



企业愿景

CORPORATE VISION

用心接触、世界因我而改变!
Contact With Heart, the World Will Be Changed!



企业理念

CORPORATE PHILOSOPHY

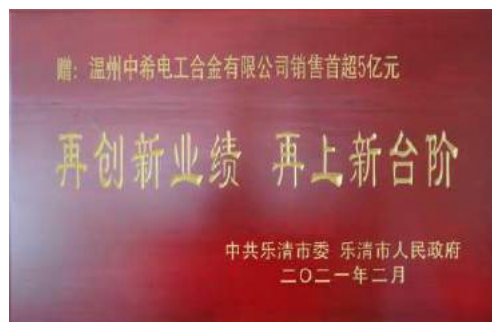
以人为本、勇于创新、追求卓越、回馈社会
People-oriented, Be brave in Innovation, Pursuit of excellence,
Contributing to society



企业荣誉

Enterprise honor

中希



企业资质 中希

Enterprise qualification

中希集团被评为“国家高新技术企业”、“国家火炬实施企业”、“上海市高新技术企业”、“浙江省高新技术企业”，并作为全国电工合金标委会单位，公司通过ISO14001环境管理体系和ISO45001职业健康安全管理体系，ISO9001质量管理体系。主持、参与了多项国家、行业标准的制修订工作。今天的中希正以全球化视野、开放性思维、创新精神统领全局，承载民族企业的历史使命，引领电接触材料的发展方向，着力打造中希品牌的国际影响力。

Longsun group has been awarded as "China famous trademark", "national high-tech enterprise", "national torch implementation enterprise", "Shanghai high-tech enterprise", "Zhejiang high-tech enterprise". As a unit of National Electrical Alloy Standard Committee, the company has passed ISO14001 environmental management system and OHSAS18001 occupational health and safety system certification, and ISO9001 quality management system certification. Presided over and participated in the formulation and revision of a number of national and industrial standards. Today, Longsun are leading the overall situation with global vision, open thinking and innovative spirit, carrying the historical mission of national enterprises, leading the development direction of electrical contact materials, and striving to build the international influence of Longsun brands.



实验研发

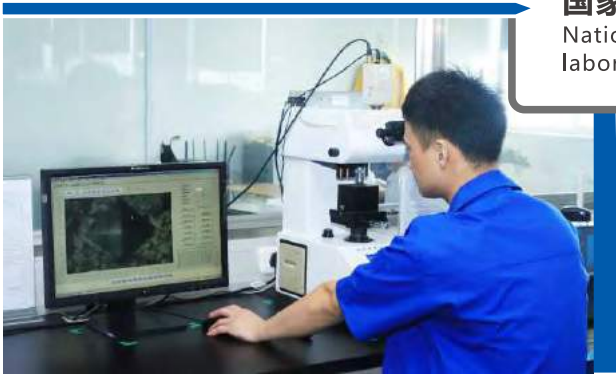
中希

Experimental research and development

拥有国际一流的检验检测仪器与研发设备成为行业最具规模的实验研发平台。



国家认可实验室
National accredited
laboratory



With world-class inspection and testing instruments and R & D equipment, it has become the largest experimental R & D platform in the industry.



产品研发

R&D

中希集团有限公司汇集了一批国内外知名的电工合金和复合带材方面的专家，致力于研制高性能、高品质的电接触材料。

Longsun has gathered a number of well-known experts in electrical alloy and cladded strip industry, devoted to develop high-performance and high quality electrical contact materials.

品质控制

QUALITY CONTROL

从原材料到种类繁多的银合金电接触材料及触点、复合带材及元件，贵研中希拥有全过程一体化的生产能力。采用SPC、FMEA等分析手段对关键的品质控制点进行重点控制，确保产品质量的稳定性。

From raw material to finished product, SPM-Longsun has the production capability of process integration. Adopting SPC, FMEA and other statistical analysis tools to control the key quality point to ensure stability of product quality.

优质服务

SERVICE

从技术和成本全方位满足客户的需求，在关注产品品质的同时，关注服务质量，并竭力成为客户推崇的合作伙伴。

Meet customers needs from all aspects of technology and cost, pay attention to service and product quality, and strive to become a customer-respected partner.



生产设备 中希

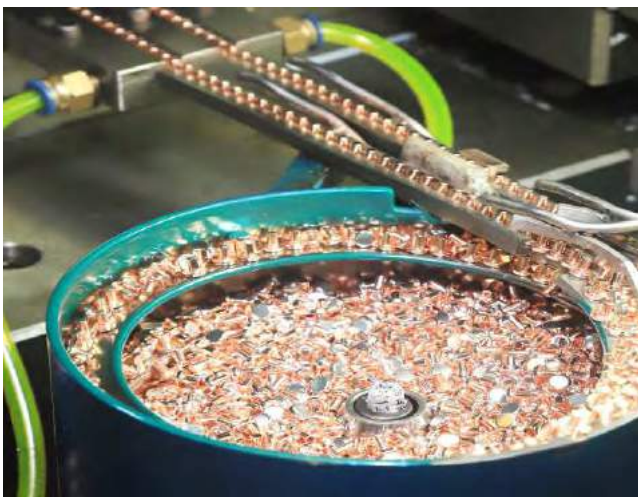
Production equipment



制造目标

MANUFACTURING GOAL

- 快速响应客户需求 追求卓越品质
- 成为首家自主研发自动化设备的电接触材料制造企业
- 以自动化、信息化打造国际一流电接触材料制造基地



每一处细节,
我们都在乎

WE CARE
ABOUT EVERY
DETAIL



市场布局

中希

Market layout

三大生产基地

Three production bases

- 贵研中希（上海）新材料科技有限公司
SPM-Longsun (Shanghai) New Material Technology Co., Ltd.
- 温州中希电工合金有限公司
Wenzhou Longsun Electrical Alloy Co., Ltd.
- 浙江中希电子科技有限公司
Zhejiang Longsun Electronic Technology Co., Ltd.

主要应用全电领域

Mainly used in all electric field



高/低压电器
High / low voltage apparatus



军工
Military Project



航空航天
Aerospace



5G通讯
5G communication



家电
Household electrical appliances



光伏
Photovoltaic

◎ 制造分公司

MANUFACTURING BRANCH



上海
Shanghai

温州
Wenzhou

东莞
Dongguan

天津
Tianjin

苏州
Suzhou

温州
Wenzhou

上海
Shanghai

◎ 销售网络

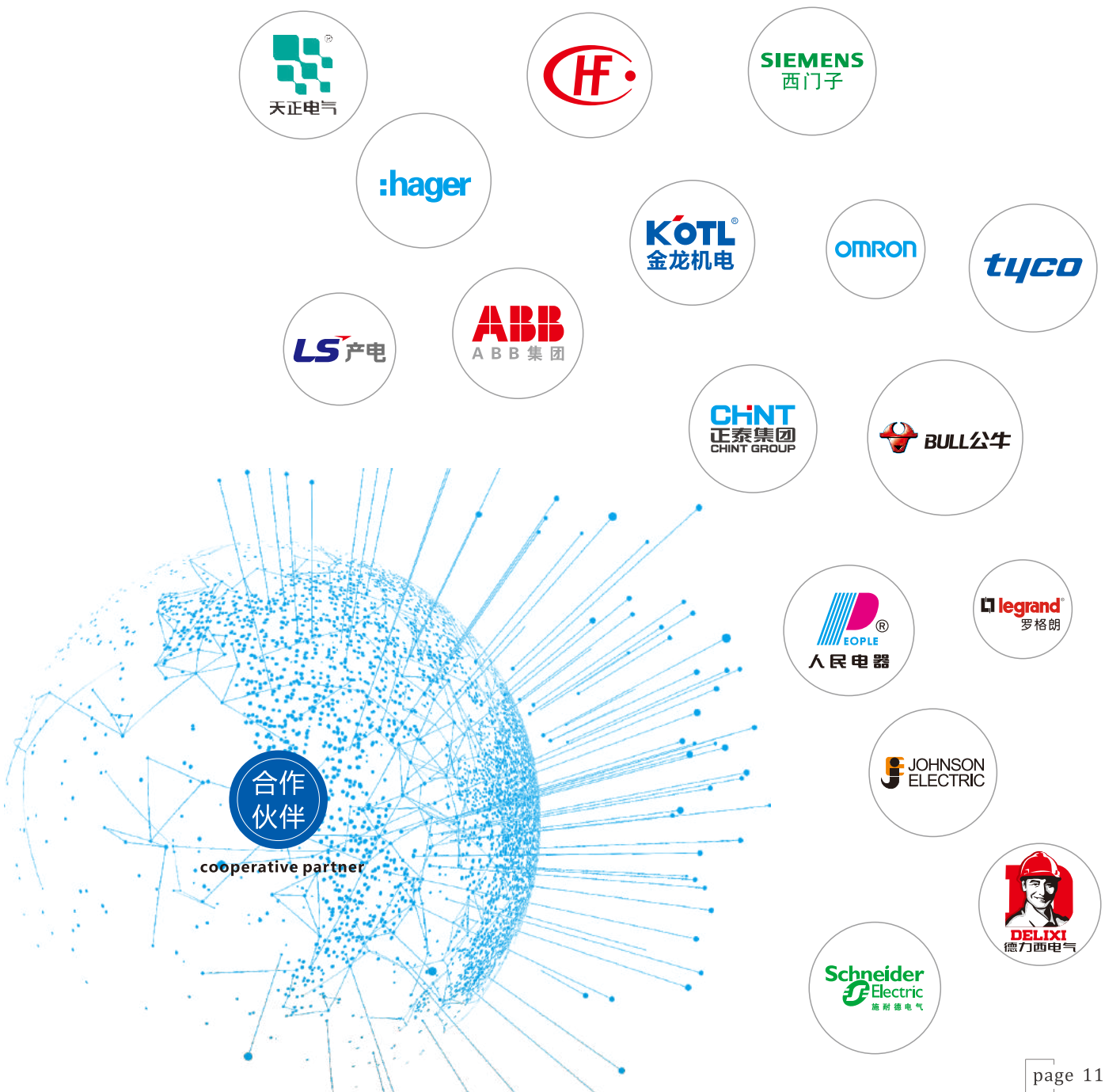
SALES NETWORK

战略合作 中 希

Strategic cooperation

当今社会高新技术迅猛发展，经济全球步伐加快，中希集团出于与客户长期共赢考虑，建立在共同利益的基础上，为国内外客户提供高品质的产品与服务，迈向全球全电领域。

With rapid development of high and new technology, acceleration of global economy, Longsun group based on the common interests, provides high-quality products and services for customers, moving towards global electric field.





中希

LONGSUN

匠心智造
Ingenuity and wisdom



触头组件 Contact assembly

▶ 主要应用：

接触器、继电器、断路器、开关、温控器等各类开关。

▶ 主要产品：

所有触头组件

▶ 产品优势：

工艺齐全，涵盖模内攻丝、电阻钎焊、感应钎焊、火焰钎焊和带材自动焊接生产线；产品采用全自动焊接，质量稳定，外观、钎着率、剪切力和金相等一致性高；设备精度、稳定性及自动化程度高，具有良好的柔性化生产能力，满足不同客户需求；具备成熟的触头组件一体化解决能力，产品应用于继电器、墙壁开关、温控器、接触器、微型断路器、塑壳断路器、框架断路器和双电源转换开关等。

▶ Main application:

Contactors, relays, circuit breakers, temperature controller and switches.

▶ Main products:

All contact assemblies

▶ Product advantages:

Complete process includes mold tapping, resistance brazing, induction brazing, flame brazing and automatic strip welding production line. Product adopts automatic welding, with stable quality and high consistency in appearance, brazing rate, shear force. With high precision and stability of equipment and automation, we have good flexible production capacity to meet the different customer's demand. Product are main applied to relay, wall switch, circuit breaker, molded case circuit breaker, frame circuit breaker and dual power transfer switch.



片状触头 Sheet contact

▶ 主要应用：

接触器、断路器、温控器、智能开关等。

▶ 主要产品：

AgCdO、AgZnO、AgNi、AgSnO₂In₂O₃、AgSnO₂、AgCuO、AgCdO/Cu、AgNi/Cu、AgCuO/Cu

▶ 产品优势：

材料和工艺各类齐全，都是自主研发，拥有自主知识产权，特别是内氧化和雾化预氧工艺水平及产品性能领先国内水平；设备制程自动化高，料带连续热轧生产，料带公差精度可控制在0.02mm，产品质量优良可靠；材料研发成熟，可根据客户需求研发各种特殊的材料产品。

▶ Main application:

Contactor, circuit breaker, temperature controller, intelligent switch, etc.

▶ Main products:

AgCdO, AgZnO, AgNi, AgSnO₂In₂O₃, AgSnO₂, AgCuO, AgCdO/Cu, AgNi/Cu, AgCuO/Cu

▶ Product advantage:

All kinds of materials and process are complete, independently developed and with independent intellectual property rights. In actual, the level of internal gasification, atomization internal oxidation process and product performance are ahead of domestic industry level. The equipment has high process automation, continuous hot rolling production of strip, the tolerance accuracy of strip can be controlled with 0.2mm. Product quality is excellent and reliable. Development and research of material is mature, various special material products can be developed meet customer's demand.



粉末冶金触头 Powder metallurgy contact

▶ 主要应用：

断路器、漏电保护开关、接触器、滑动电刷、线路保护开关等；

▶ 主要产品：

AgW系列、AgWC系列、AgWC-C系列、AgC系列、AgSnO₂系列、AgZnO系列、AgNiC系列、CuW系列。

▶ 产品优势：

采用日本包覆工艺，粉体组织均匀细小，性能稳定，分断能力、抗烧损能力、电寿命、温升均优于常规工艺60%的性能参数材料多样化，可根据客户不同要求制作各类形状规格产品，种类齐全，产品应用覆盖塑壳、框架、微断等各系列电器开关；为了提高焊接性能，所有产品均可预覆焊料，满足客户自动化焊接需求。

▶ Main application:

Circuit breaker, leakage protection switch, contactor, sliding brush and line protection switch;

▶ Main products:

AgW series, AgWC series, AgWC-C series, AgC series, AgSnO₂ series, AgZnO series, AgNiC series, CuW series.

▶ Product advantage:

Adopting coating technology from Japan, powder structure is more uniform and fine, with more stable performance. Breaking capacity, anti-burning loss capacity, electrical life and temperature rise become better than by traditional process. 60% of performance parameters are diversified. Products of various shapes and specification can be customized. Product are main applied to frame circuit breaker, moulded case circuit breaker, mini circuit breaker and others. To improve the welding performance, all product can be pre-coated with solder material for automatic welding.



异形丝材 Special-shaped wire

▶ 主要应用：

通讯继电器、通用继电器、汽车继电器、车门开关、微型开关、墙壁开关、断路器、接触器、各种冲压电子组件等。

▶ 主要产品：

Ag、AgNi、AgCdO、AgNi/Cu、AgCdO/Cu、AgC/BAg15CuP、AgNi/Cu/BAg15CuP、AgCdO/Cu/BAg15CuP等。

▶ 产品优势：

异型截面设计，降低触点单重，满足继电器产品的小型化、轻量化的需求；尺寸精密，表面光亮、接触电阻低；触点和簧片焊接融合、结合稳定牢固、带材便于自动化焊接生产；符合异型材料多样化，表面可镀金，兼有单一金属所没有的综合性能，节银70%左右。

▶ Main application:

Communication relay, general relay, automobile relay, door switch, micro switch, wall switch, circuit breaker, contactor, various stamping electronic components, etc.

▶ Main products:

Ag, AgNi, AgCdO, AgNi/Cu, AgCdO/Cu, AgC/BAg15CuP, AgNi/Cu/BAg15CuP, AgCdO/Cu/BAg15CuP, etc.

▶ Product advantage:

The special-shaped cross section design reduces single weight of contact, achieve miniaturization and lightweight of relay product. Precise size, bright surface and low contact resistance, combination of contact and spring welding is stable, firm, easy of automatic welding production. Conforming to the diversity of special-shaped material, it's available for surface gold coating, synthesis performance, saving 70% silver.



2/4

铆钉触点 Rivet contact

▶ 主要应用：

汽车电器、家用电器、继电器、接触器、温控器、各种开关、航空电器、定时器及电子电器等。

▶ 主要产品：

Ag/Cu、AgNi/Cu、AgCdO/Cu、AgCuO/Cu、AgSnO₂/Cu、AgSnO₂In₂O₃/Cu等。

▶ 产品优势：

双复合铆钉有效节约贵金属，降低成本。三复合铆钉可替代整体铆钉，主要用于需要两面电接触的动触点，在最大程度上降低材料成本。提高铆钉触点的铆合性能，适用于连续自动化生产。

▶ Main application:

Automotive appliances, household appliances, relays, contactors, temperature controllers, various switches, aviation appliances, timers and electronic appliances, etc.

▶ Main products:

Ag/Cu, AgNi/Cu, AgCdO/Cu, AgCuO/Cu, AgSnO₂/Cu, AgSnO₂In₂O₃/Cu etc.

▶ Product advantages:

Double composite rivets can effectively save precious metals and reduce costs. Three composite rivets can replace integral rivets, which are mainly used for moving contacts requiring electrical contact on both sides, so as to reduce the material cost to the greatest extent. It can improve the riveting performance of rivet contact and is suitable for continuous automatic production.



铜基高性能复合电触头材料 Copper based high performance composite electrical contact material

▶ 主要应用：

可同步使用在断路器、漏电保护开关、接触器、温控器、智能开关等。

▶ 主要产品：

高性能三复合材料、双复合铜合金、铜钨挤压带材产品。

▶ 产品优势：

铜基高性能复合电触头材料成本低，添加稀土元素为第三、四相组元成分，通过特殊工艺多层轧制复合制备出触头材料，使用复合铜基材料层替代原有的银基材料层，可以起到明显的节银效果，产品通过组装测试和客户的实际应用，能达到高银材料同类产品的性能，分断能力、抗烧损能力、电寿命、温升均可满足客户产品技术要求。

▶ Main application:

It can be used in circuit breaker, leakage protection switch, contactor, temperature controller, intelligent switch, etc.

▶ Main products:

High performance three composite material alloy, high performance double composite material alloy, CuW strip.

▶ Product advantage:

High performance copper base composite electrical contact materials are produced by multilayer rolling compound of special technology producing with rare element material adding as the third and fourth phase components composition. Using composite copper base material layer instead of silver base material layer saves silver and cost obviously. The product through assembly test and the practical application of customers, can achieve high silver material performance of similar products, on breaking ability, anti-burning ability, electric life, temperature rise can meet customer product technical requirements.



模内铆接及模内焊接件 Mould riveting and mould riveting component

▶ 主要应用：

接触器、断路器、温控器、智能开关，智能小型接触器等。

▶ 主要产品：

AgCdO/Cu、AgNi/Cu、AgCuO/Cu、AgSnO₂/Cu等。

▶ 产品优势：

进一步优化工艺，缩短生产工序，主要降低接触电阻和温升，提高电寿命20%以上。

▶ Main application:

Contactor, circuit breaker, temperature controller, intelligent switch, intelligent small contactor.

▶ Main products:

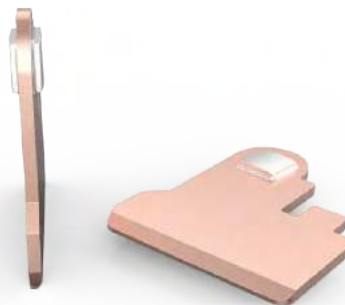
AgCdO/Cu, AgNi/Cu, AgCuO/Cu, AgSnO₂/Cu

▶ Product advantage:

Further optimize the process, shorten the production process, mainly reduce the contact resistance and temperature rise, and improve the electrical life by more than 20%.



图表1 模内焊接件 Chart 1 Mould welding component



图表2 模内焊接件 Chart 2 Mould welding component



三金属复合梅花触点 Tri-metal button contact

▶ 主要应用：

微型开关、温控器、按键、断路保护器等；

▶ 主要产品：

复层材料：Ag、FAg、AgNi、AgCu、AgSnO₂、AgZnO；基层材料：Cu/Fe、CuNi、BZn18-26等。

▶ 产品优势：

焊接面采用焊接性能好的冷轧低碳钢或铜镍合金，并配5-7个梅花点，充分保证触点与双金属片的焊接牢固，适用于自动连续焊接。

▶ Main application：

microswitch, thermostat, key and breaker protection, etc.

▶ Main products:

Ag layer: Fag, AgNi, AgCu, AgSnO₂, AgZnO, etc. Base layer: Cu/Fe, CuNi, BZn18-26

▶ Product advantage:

5-7 pcs tri-metal button contact on the welding side of cold rolling soft steel or copper-nickel alloy ensure firm welding performance. Suitable for automation continuous welding.



高熔银钨复合材料 High melting silver tungsten composite material

- ▶ **主要应用：**
接触器、断路器、智能开关，智能小型接触器等。
- ▶ **主要产品：**
银钨/铜/铁
- ▶ **产品优势：**
通过特殊工艺代替含银量高的银钨触头材料，分断能力、抗烧损能力、电寿命、温升均可满足客户产品技术要求，填补市场空白。

- ▶ **Main application：**
Contactor, circuit breaker, intelligent switch, intelligent small contactor, etc.
- ▶ **Main product：**
Composite layer material: Ag, FAg, AgNi, AgCu, AgSnO₂, AgZnO; Base layer material: Cu/Fe, CuNi, BZn18-26, etc.
- ▶ **Product advantage:**
By replacing the high silver tungsten contact material with special process, the breaking capacity, burning resistance, electrical life and temperature rise can meet the technical requirements of customers' products and fill the market gap.



复合带材 Clad composite strip

▶ 主要应用：

微机电刷、换向器、微动开关、温控器、连接器、调谐器、接触器、继电器、熔断器、开关等。

▶ 主要产品：

复层材料：LMT系列、AuAg(40)/LMT、AuAg(35)Cu(5)/LMT、AgPd(20)、AgPd(30)、AgPd(50)；
基层材料：Tu1、BZn18-26、MX96、MX215等。

▶ 产品优势：

优异的电接触性能和良好的抗氧化特性，降低贵金属成本、使用寿命长，高精度的厚度控制，并能严格控制复层位置。

▶ Main application：

Micromotor commutator & brush, micro switch, thermostat, connector, tuner, contactor, relay, fusion, switch, etc.

▶ Main products:

Fag, AgNi, AgCu, AgSnO₂, AgSnO₂In₂O₃, copper alloy.

▶ Product advantage:

Excellent electrical contact performance and antioxidant characteristics, precious metal cost reducing, longer service life, high-precision thickness control and strict controlling of compound layer position.



太阳能银浆料 Solar silver paste

▶ **主要应用：**

单晶PERC太阳能电池、HJT太阳能电池、N型Topcon太阳能电池等

▶ **主要产品：**

LP365、LB 6660、LN 365等。

▶ **产品优势：**

快印刷（450mm/s），高效能（光电转换率提高0.05%~0.1%），低耗量（湿重同比市场降低5%）。

▶ **Main application：**

monocrystal PERC solar cell, MCCE solar cell, N type Topcon solar cell, etc.

▶ **Main products:**

LP365 , LB6660 , LN365 , etc.

▶ **Product advantage:**

Fast printing (450mm/s), high efficiency (photoelectric conversion rate improves 0.05%~0.1%), low consumption (lower than competitor by 5%)

▶ **智能汽车应用解决方案**
THE APPLICATION SOLUTIONS OF INTELLIGENT VEHICLE

智享生活 一触即发
ENJOY LIFE INTELLIGENTL

- ▶ 应用于智能汽车高压直流断路器、继电器、开关、传感器、熔断器、锂电包开关等。
- ▶ It is used in high voltage DC circuit breaks of inelligent vehicle, relays, switches, sensors,fuse, lithium battery pack switches, etc.

智能汽车用触点材料 CONTACT MATERIALS FOR INTELLIGENT AUTOMOTIVE

接触电阻小且在整个服役条件下稳定
良好的抗大电流冲击能力
材料耐磨损性，良好的电气寿命
燃弧时间短
触点材料，满足汽车NHVZ指标

The resistance value decreases and the fever is reduced,Resistance to electric wear and prolong electrical life
Strong resistance to fusion welding
Strong anti surge capability
Fast arc extinguishing speed
Improving vehicle NVH index

▶ **清洁能源应用解决方案**
APPLICATION SOLUTIONS OF CLEAN ENERGY

绿色高效 安全节能
GREEN AND EFFICIENT SAFE AND ENERGY SAVING

- ▶ 应用于光伏、风电领域并网交/直流接触器等。
- ▶ It is used in grid-connected AC/DC contactors in PV and wind power fields.

光伏、风电用触点材料 CONTACT MATERIALS FOR PHOTOVOLTAICAND WIND POWER POWER

低接触电阻
高抗熔焊性
优异的抗电磨损性能
适应超大电流
达到国际水平

Low contact resistance
High resistance to fusion welding
Excellent electrical wear resistance
Adapt to large current
Reach international level

► 轨道交通应用解决方案

THE APPLICATION SOLUTIONS OF RAIL TRANSIT



小材料 实现新高度
SMALL MATERIALS ACHIEVE A NEW HEIGHT

- 应用于轨道交通信号继电器等。
- It is used in rail transit signal relay, etc.

轨道交通用触点材料 CONTACT MATERIALS FOR RAIL TRANSIT

超塑性材料	Superplastic materials
高可靠性	High reliability
电寿命≥200万次	Electrical life≥2 million times

► 工业控制应用解决方案

THE APPLICATION SOLUTIONS OF INDUSTRIAL CONTROL



精密科技“触”动数字化升级
PRECISION TECHNOLOGY PROMOTING DIGITAL

- 应用于工业控制领域继电器、控制开关，接触器等。
- It is used in relay, control switch, contactor, etc.

工业控制用触点材料 CONTACT MATERIALS FOR INDUSTRIAL CONTROL

高抗熔焊性	High resistance to fusion welding
高抗烧损性	High burn resistance
高可靠性	High reliability
高电寿命	High electrical life

▶ 智慧楼宇应用解决方案 THE APPLICATION SOLUTIONS OF INTELLIGENT BUILDING



开启属于你的智慧生活

OPEN YOUR SMART LIFE INTELLIGENTLY INTELLIGENT

智慧楼宇用触点材料 CONTACT MATERIALS FOR INTELLIGENT BUILDING

- ▶ 应用于建筑电器中低压微型断路器、塑壳断路器、框架断路器、漏电保护器、双电源开关等。
- ▶ It is used in low voltage MCB, MCCB, FCB, leakage protection, double power switch, etc.

高抗折力 $\geq 350\text{MPa}$
高抗烧损性
高抗熔焊性
降低客户熔焊失效率
机械寿命20000+

High bending strength $\geq 350\text{MPa}$
High anti-erosion
High anti-welding
Reduce the welding loss efficiency of customers
Mechanical life 20000+

▶ 5G通信应用解决方案 THE APPLICATION SOLUTION OF 5G COMMUNICATION



迅捷灵动 更懂5G

QUICK AND FL EXIBLE MORE UNDERSTANDING

5G通信用触点材料 CONTACT MATERIALS FOR 5G COMMUNICATION

- ▶ 应用于5G通信微型断路器等。
- ▶ It is used in 5G communication miniature circuit breakers, etc.

高抗熔焊性
较低的温升
高抗电烧损性
高分断能力
体积小量化

High welding resistance
Lower temperature rise
High resistance to electrical burnout
High interdisciplinary capacity
Volume miniaturization

▶ 部件化解决方案 COMPONENT SOLUTIONS

提高质量和生产效率
Improve quality and productivity

- ▶ 具备各类自动化焊接工艺及设备的自主开发能力，可满足客户不同产品的自动化焊接要求，以提高产品焊接质量和生产效率。
- ▶ Have the ability of independent development of various automatic welding processes and equipment, and meet the requirements of automatic welding of different products of customers, so as to improve the welding quality and production efficiency of products.

部件化优势 COMPONENT ADVANTAGE

缩短供应链	Shorten supply chains
降低生产成本	Reduce production costs
便于质量追溯	Facilitate quality traceability
全自动化焊接/铆接	Fully automated welding/ riveting

应用领域 Applications	产品名称 Product Name	触点材料 Contact Materials	应用需求 Application Requirements
智能汽车 Smart Car	油压传感器 Oil Pressure Sensor	高可靠性金镍触头材料 AuNi(5)/CuNi(20) Highly reliable gold-nickel contact material AuNi(5)/CuNi(20).	传感器、信号继电器要求触点高导电、高耐腐蚀。 Sensors, signal relays require contacts with high elec-con-ductivity and high corrosion resistance.
轨道交通 Rail Transit	信号继电器 Signal Relays	高可靠超塑性银金属氧化物触头材料 AgCdO(15) Highly reliable superplastic silver metal oxide contact material AgCdO (15).	高铁信号要求超高可靠性。常规工艺触点易断裂，导致信号不通 High-speed railway signals require high reliability. Conventional process contacts are prone to breaking, resulting in signal failure.
船舶舰艇 Ships & Naval Vessels	接触器 Contactors	高抗熔焊能力预氧化银氧化锡触头 AgSnO2(12) High resistance to welding pre-oxide silver tin oxide contacts AgSnO2 (12).	海洋环境要求触点接触电阻稳定，常规研磨工艺污染表面。 Marine environment requires stable contact resistance of contacts. The surface will be polluted by the conventional grinding process.
风力发电 Wind Power	交流接触器 AC Contactors	高抗电弧型内氧化工艺多元金属触头材料 AgSnO2(12) High arc resistance type multi-metal oxide contact material AgSnO2 (12) produced by internal oxidation process.	风能波动较大，常规触点无法承担极端大电流。 Wind energy fluctuates a lot and conventional contact cannot withstand extreme high currents..
光伏发电 Solar Power	直流断路器 DC Circuit Breaker	超细晶粒熔渗型银碳化钨触头材料 AgWC(40) Superfine grain infiltration type silver tungsten carbide contact material AgWC (40).	直流无过零点，燃弧时间超长，常规触点完全烧损。 DC does not go through the zero point, extra-long arcing time, the conventional contacts will burn out completely.
5G通讯 5G Communication	微型断路器 Miniature Circuit Breaker	高抗熔焊能力垂直纤维银石墨触头材料 AgC(4) High resistance to welding and vertical fibersilver graphite contact material AgC (4).	5G基站小型化，要求断路器体积减少一半。 The miniaturization of 5G base stations requires the size of circuit breakers to be reduced by half.
新能源汽车 New Energy Vehicles	电池包开关 Battery Pack Switch	高精度柔性化焊接触头部件 AgSnO2(12) High precision flexible welded contact parts AgSnO2 (12)	新能源汽车浪涌电流大，传统弥散铜触头易熔焊。 New energy vehicles have high surge currents and traditional dispersive copper contacts are prone to melting and welding.
数据中心 Data Center	双电源开关 Dual Power Switch	高分断能力一体化焊接触头组件 High breaking capacity integrated welded contact assembly AgWC40-a.	紧凑设计，电弧能量高，常规触头无法承载。 Compact design with high arc energy, which can not be carried by conventional contacts.
智慧楼宇 Smart Building	框架断路器 Frame Circuit Breaker	大功率高精度逆变电阻焊接触头部件 AgNi(30)C(3) High power high precision and inverting resistance welding contact parts AgNi(30)C(3).	触头易接触不良、抗烧损能力差而形成短路。 Short circuit is formed due to poor resistance to burning loss and poor contact working performance.