We provide premium products backed by expert technical support, empowering you tosucceed in product development and implementation.

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HTBUR

METAL FIBER BURNER

In a Rapidly Evolving Global Arena
Huitong & Its Global Clients: Building Strategic Partnerships
Uniting Across Borders to Overcome Challenges and Build a Better Future

HUNAN HUITONG ADVANCED MATERIALS CO.,LTD.

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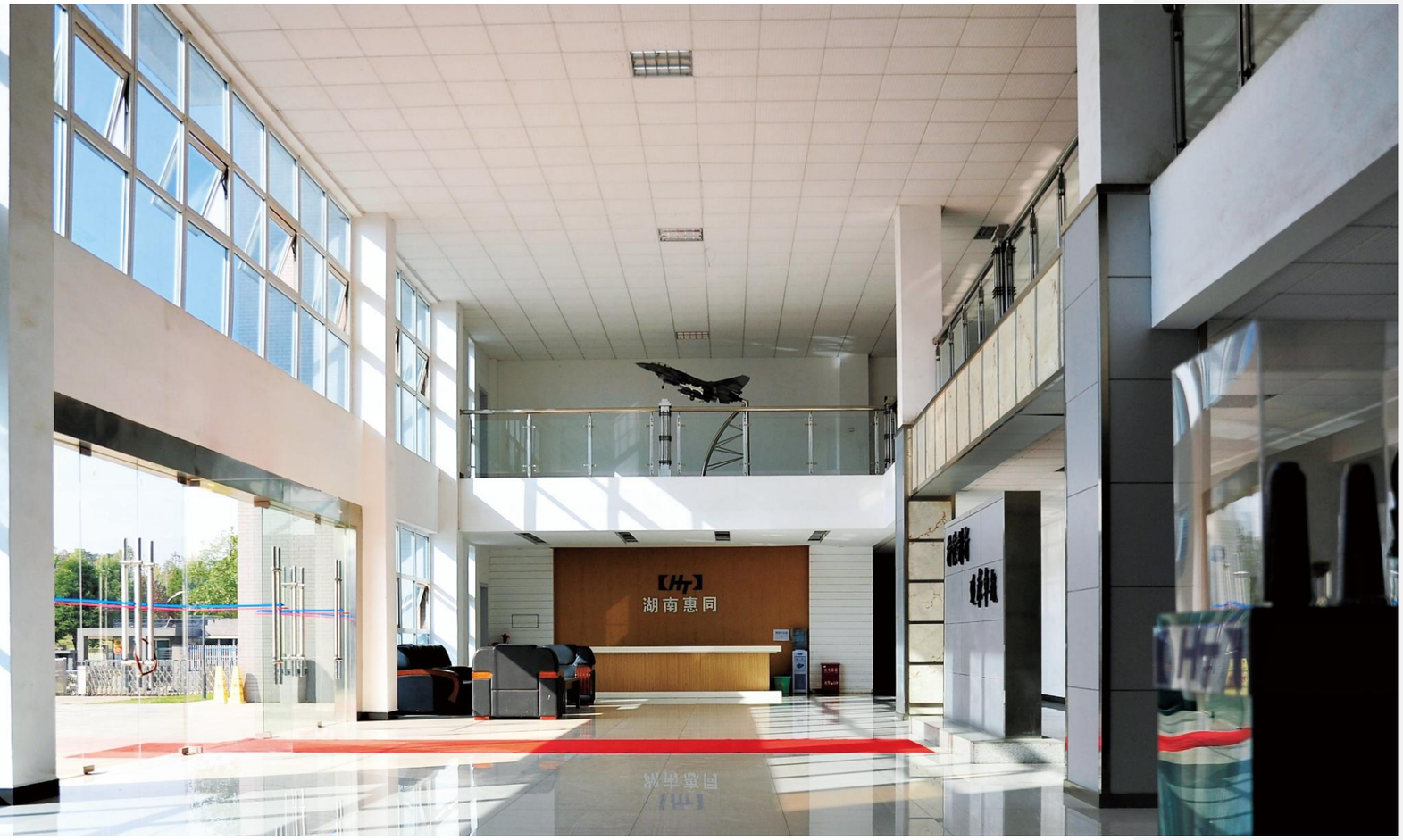
Innovate, Develop, Cooperate for Win-Win

Company Profile

Huitong, established in 2002, traces its origins to the Metal Fiber Factory under the Changsha Mining and Metallurgy Research Institute. Building on a solid foundation of over 40 years in metal fiber production and R&D, the company achieved a significant milestone by listing on the Beijing Stock Exchange in July 2023 (Stock Code: 920751).

Currently, Huitong has a registered capital of RMB 87.68 million and over 400 employees. We run two production bases in Yiyang and Changsha, located in Yiyang National High-Tech Industrial Development Zone and Lugu National High-Tech Industrial Development Zone respectively. Each covers over 66,667m^2 for large-scale production.

Our product portfolio has nearly 200 metal fiber and derivative products, exported to the US, Mexico, Germany, France, Italy, Japan, Turkey, South Korea and Southeast Asia, etc. With annual turnover over USD 30 million, we demonstrate stable performance and strong market competitiveness.



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Status

Huitong has been engaged in the research, development, production and sales of metal fibers and derivative products for more than 40 years. The company has maintained close cooperative relations with many domestic universities, such as the National University of Defense Technology, Central South University, Huazhong University of Science and Technology, etc. It has also cooperated with well-known domestic and foreign companies in project development. The company has completely independent intellectual property rights, and its technology and quality are at the world's advanced level, and many technologies have been widely used in the market.

- ※ Successfully developed and started mass production of stainless steel fiber flexible heating elements in 2002.
- ※ Successfully developed and started mass production of metal fiber conductive plastic masterbatch in 2009.
- ※ Engaged in the R&D and production of metal fiber high-temperature fabrics for burners in 2009.
- ※ Annual production reached 700 tons for metal fiber blended yarns.
- ※ A world-renowned manufacturer of automobile exhaust purification systems started using our iron-chromium-aluminum fibers.

Our Strengths

Huitong has mastered the whole processing technology from primary raw materials, high-temperature fabrics to burner heads, ensuring effective control over product quality and stability.

- ※ Masters the core technology for producing raw materials with special properties.
- ※ Possesses the patent for high temperature fabrics(patent NO.CN201310063660.X).
- ※ With combustion test conditions<3000KW,it is convenient to assist users in developing products with various power and special requirements.
- ※ With more than 10 years of product experience, we provide robust technical support for product development.
- ※ Our commitment to quality, environment, and occupational health & safety, as certified by ISO9001, ISO14001 and ISO45001 is embedded in our rigorously controlled processes and products.

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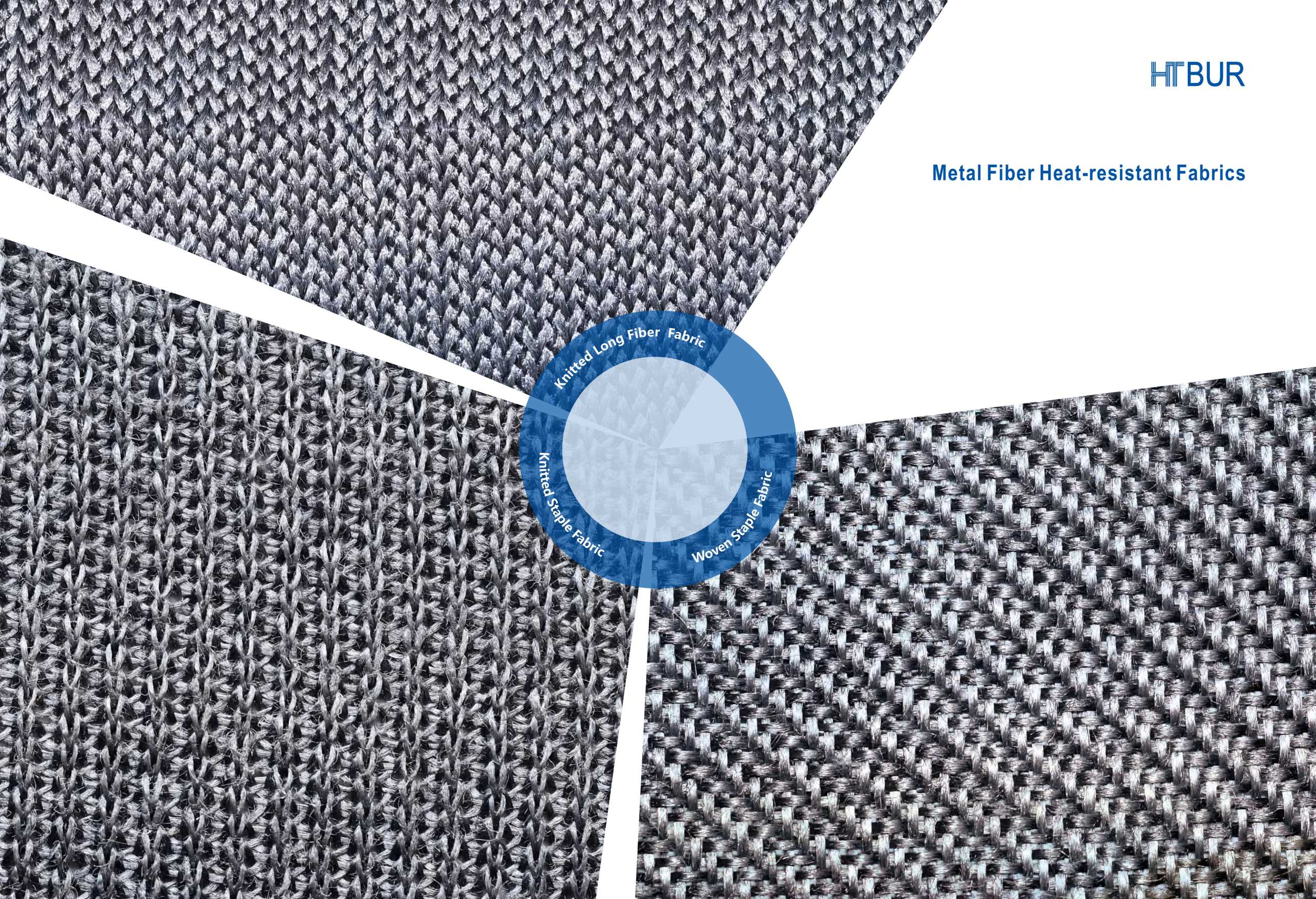
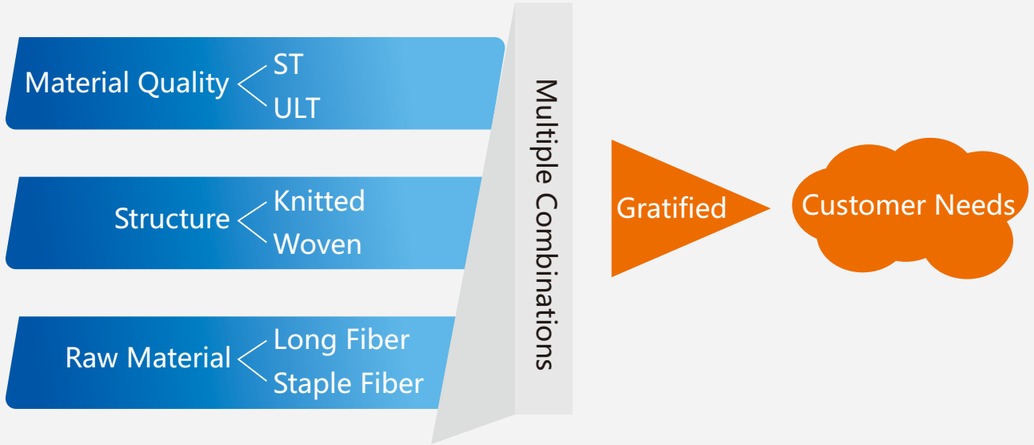
Metal Fiber Heat-resistant Fabrics

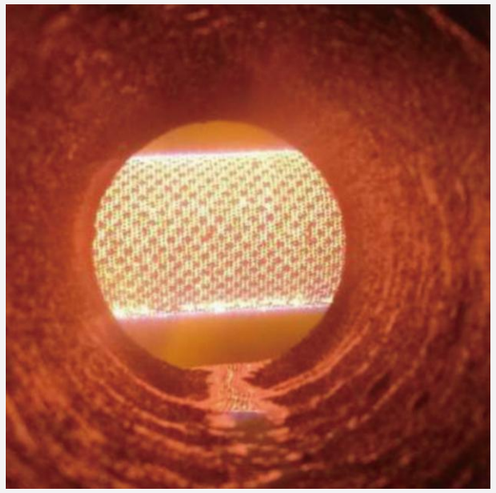


High Temperature Alloy Fabric

Huitong has already mastered a range of production and processing technologies for high-temperature alloy fabrics.

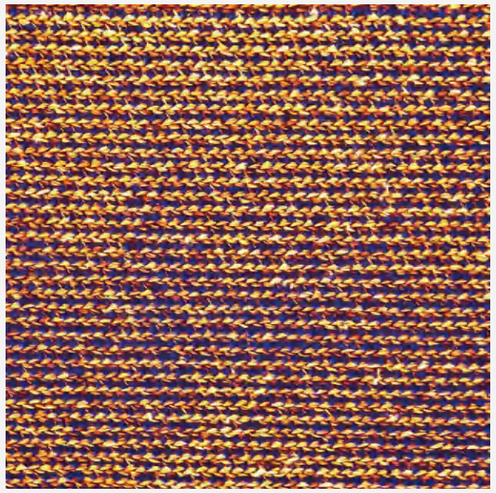


ULT Series



Special alloy formula, excellent performance in high temperature environment, stable work in the infrared region.

Knitted Series



The 3D structure provides a reliable shielding rate, large temperature gradient between the inner and outer layers of the fabric, which greatly improves combustion safety; the multi-layer structure offers excellent flame stabilization ability, effectively ensuring stable combustion.

Woven Series

Huitong patent fabric has excellent high temperature oxidation resistance and flashback resistance, and has a wide range of applications.

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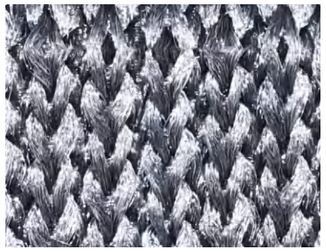
High Temperature Resistant Metal Fibre Alloy Fabric

Knitted Long Fiber Fabric



The F-ULT type is Huitong's patented fabric, offering excellent high-temperature oxidation resistance, flashback resistance, and thermal shock resistance. Its stable and uniform structure lends itself to a wide range of applications.

Knitted Staple Fabric

K-ULT type: Knitted short fiber type, general-purpose fabric good high temperature oxidation resistance type, anti-resonance, unique short fiber structure, good infrared radiation ability can adapt to most working conditions.

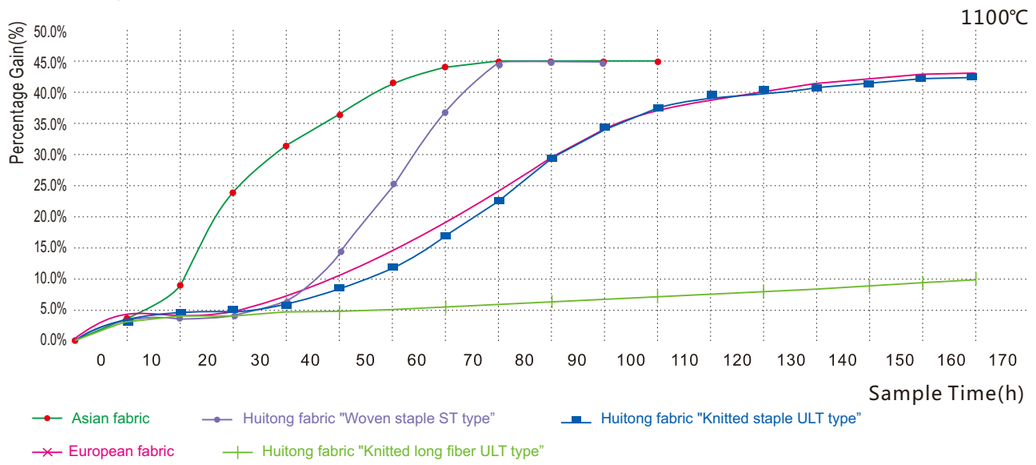
Woven Staple Fabric

W-ST type: Economy,high processing efficiency.

Projects \ Brand Name	F1400/290-ULT	K1400/290-ULT	W1500/240-ST	
Material	FeCrAl-ULT (RE)	FeCrAl-ULT (RE)	FeCrAl	
Weight(kg/m^2)	⩾1.3	⩾1.35	⩾1.4	
Mean Permeability (L/m^2*s) (127pa)	2900±300	2900±300	2400±350	May Adjust according to the customer demand
Width(mm)	1000	1000	1200/1500	
Thickness(mm)	⩾1. 6	⩾1.7	⩾1.5	Load: 200 cN
Service Temperature (℃)	⩽1100℃ (Continuous), 1250℃(Peak)			

Remark(s) : The provided data is for preliminary selection only. Final product specifications shall be governed by the technical agreement.

Life Comparison of Metal Fiber Fabrics



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Metal Fiber Burner

Products

Metal Fiber Burner

Huitong began to develop metal fiber high-temperature fabrics and burner heads in 2008.In 2010,it completed the finalization of the latest generation of high-temperature fabrics,since then, burners of different specifications and application fields have been gradually developed. So far, Huitong burners have been widely used in various fields at home and abroad.

Huitong burner has been put into the market for more than ten years, and has rich application experience. We can not only provide excellent burners, but also develop suitable solutions for customers.

Characteristic

- ※ Low Pollutant Emission
- ※ Low Combustion Noise
- ※ Strong Adaptability to Shape
- ※ Thermal Shock
- ※ Good Security
- ※ Wide Adjustment
- ※ Long Service Life
- ※ Anti Clogging

Main Application

- ※ Hot-Water/Steam Boiler
- ※ Wall Mounted Heater / Water Heater
- ※ Drying Equipment
- ※ Industrial Furnace
- ※ Engineering Heating Equipment
- ※ Industrial Thermal Equipment

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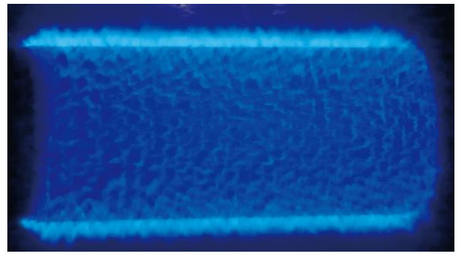
Our Capabilities

※ Burner with uniform flame distribution and stable combustion.



※ Made from a variety of Superalloy fabrics. Tailored structural dimensions.

Cylindrical Burner

Flat Burner

Conical Burner

※ The whole process of quality control, ensure the reliability of each burner.

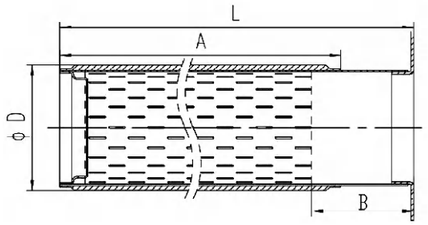
Raw Material

High-Temperature Alloy Fabric

According to your needs, we can provide customized metal fiber burners and solutions.

Cylindrical Type

The classical structure makes full use of the heat released by combustion.



Diameter(mm)	Length(mm)	Input(kW)
39	30-280	10-30
54	30-380	30-50
65.2	30-460	50-120
71	30-500	60-200
85.6	30-600	100-350
102	50-700	200-500
144	50-1200	350-1400
204	50-1500	700-2800
249	50-1800	700-3500
304	–	–
404	–	–

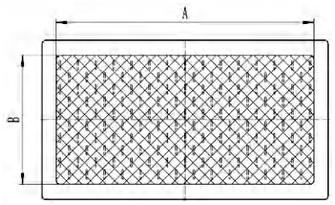
B. Non combustion zone

A. Combustion zone

※ Conventional parameter for type selection

Flat Type

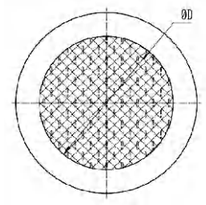
The simple structure and convenient installation significantly reduce the required combustion space.



A. Length ≤1000

B. Width ≤1000

Power：1-14000kW



D. Diameter ≤1000

Power：1-14000kW

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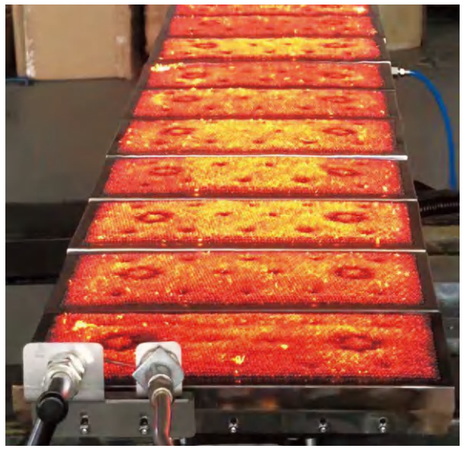
Tests and Applications

※ Fabric Rapid Oxidation Test
※ Fabric Air Permeability Test
※ Fabric Thickness Test
※ Raw Material Composition Testing
※ Testing of Mechanical Properties of Raw Materials
※ Burner Working Condition Test
※ Fast Burner Life Test
※ Icp Composition Analyzer
※ Burner Reliability Test
(Uniformity,Reliability, Cold Air Permeability)



Infrared Heating Equipment

Fully Premixed Low Nitrogen Condensing Boiler

Gas Drying Oven

Wall-Hung Boiler

Ultra Low Nitrogen Pure Copper Boiler

Fully Premixed Aluminum Condensing Boiler

Common Misconceptions

Misconception 1：Poor Safety, Easy to Backfire and Deflagration

The Real Situation：

※ When the structure design of the metal fiber burner and the matching heat exchanger is unreasonable or the debugging is improper, the unstable conditions such as serious overheating of the burner or combustion oscillation will occur.

※ It is necessary to adopt scientific furnace head design and ignition method. Different power burners have different requirements for ignition mode, so the power should be adjusted properly. If the design of combustion head is unreasonable, the ignition system cannot ignite the released combustible gas in time, which will cause deflagration.

Solution:

※ According to the adjustment range of furnace back pressure and output of different heat transfer structure, the matching combustion head and proper measures to eliminate combustion oscillation are designed, and the stable air-fuel ratio and output range can be adjusted before use to avoid tempering.

※ The design scheme of combustion head must be verified by outside test and working condition. Proper ignition power and back pressure design can avoid ignition and detonation.

Special Reminder:

※ The protection of furnace end must be well done, and the slight damage of surface fabric may lead to tempering.

※ The combustion head requires uniform flame distribution, and the equipment manufacturer must have the test conditions of combustion testing conditions outside and inside the furnace.

※ The boiler must be debugged by professional personnel. Improper debugging will easily break the furnace head to be damaged in a short time, or cause tempering and deflagration accidents in the subsequent use process.

Misconception 2 : Boiler Efficiency Decline

The Real Situation：

※ The mainstream low nitrogen combustion control technology will affect boiler efficiency to a certain extent. The traditional boiler simply replacing the metal fiber combustion machine will bring about 1% of the efficiency reduction, which is the inevitable result of increasing excess air. However, if the thermal supply management of heating project is not good, the heat loss caused by other reasons is often greater.

※ Different NOx emission requirements,will cause different efficiency.

Solution:

※ Any technology has a price. The implementation of refined thermal operation management, including the adoption of more energy-saving combustion control mode and the installation of new and more efficient flue gas waste heat recovery device, is conducive to reducing the heat loss of actual thermal operation.

※ Most importantly, the metal fiber fully premixed combustion mode greatly reduces the impact on the volume of the combustion chamber, redesigned of the boiler heat exchange structure, improve the heat exchange efficiency of the boiler, is an effective way to play the advantages of this combustion mode proved by foreign time.

Misconception 3 : Combustion Efficiency Poor

The Real Situation:

※ Although High Excess Air Coefficient is needed to achieve ultra-low nitrogen combustion, the combustion process is very sufficient, and the CO content can not be measured in most cases in traditional boilers. Excessively high CO emissions are typically caused by one of two issues: either an improper air-fuel mixture in the burner (or combustion engine), or an inefficient heat transfer structure in the furnace's design.

Misconception 4 : High Operating Costs

The Real Situation:

※ The effective filter cloth only protects the burner, but also protects the valve group and heat exchange device related to combustion operation, especially the heat exchange form of stainless steel coil, which extends the service life of the whole boiler system.

※ Huitong metal fiber fabric has independent intellectual property rights. Through comparative test, the service life of Huitong metal fiber fabric can reach the level of similar foreign products. With proper combustion and filtration methods, the service life of metal fiber furnace head can reach more than 10 years.

※ Through comparative test, Huitong metal fiber furnace head has greater dust holding capacity and is more difficult to block under the same conditions.

※ There are on-site operation and maintenance personnel on the boiler site, and the filter cleaning staff only need a little time.

Special Reminder

※ Currently, a variety of metal fiber fabrics are available on the market. These fabrics differ in weaving methods, materials, and fiber diameters, leading to significant variations in their performance. As a result, they are suited for different operating conditions, service life expectations, and load adjustment ranges. Therefore, selecting the appropriate fabric for the burner is crucial. An improper selection can easily lead to uneven combustion, flashback, burner damage, and other issues.

※ When Huitong burner is used in the initial stage, it is normal for it to have a short yellow flame. The metal fiber fabric is added with protective medium in the process of production and processing, which can burn out rapidly under certain temperature conditions, without affecting the normal use of the burner and the emission test results.

※ Metal Fiber burners do not belong to “plug and play” products, new operating conditions and furnace structure, matching burners need to be tested and confirmed.

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