



# China Manufacturing Capability of Rail Fastening System

TO PROVIDE  
ENTIRE SOLUTIONS  
IN RAIL FASTENER INDUSTRY

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PART

01

# About Us





# About Us



中国质量认证中心  
CHINA QUALITY CERTIFICATION CENTRE



SAFE Rail Fastening System located in Zhejiang, China, which manufacture and implement strict quality control with over 100 state-of-art laboratory testing equipment. With annual production capacity of 5 million sets of fastening system. Products range includes fastenings for ballasted tracks and slab tracks for all roads profiles from heavy-haul to high-speed as well as conventional rails and metro & subway.

Regulated under ISO9001-Quality Management System , ISO14001-Environment Management System, ISO45001-Occupational health and safety management systems, adopted IMS (Information Management System) to monitor the manufacturing process.





# Shared Value



## *Stable Quality*

Cutting-edge research on robots selection about the defective products to make sure the highest efficiency and quality standards

## *Automated Workshops*

Automatic production line with robots and real-time computer monitoring , minimize idle time, minimize labor and managing costs

## *Flexible Production*

To acquire professional, comprehensive and sophisticated production skills, able to meet requirements of domestic and foreign markets

## *Environmental Friendly*

Selection and design of environmentally friendly production process, to be responsible for the environment protection

## *Mission*

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*To provide the entire solutions  
in rail fasteners industry  
“EPC+M+O”*



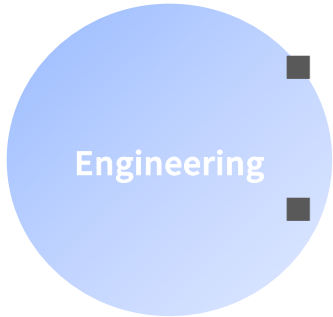
# EPC+M+O

- Engineering Procurement Construction
- Management
- Operation

*Entire solution*



# EPC



- Fastening system consultation
- Fastening system design - noise and vibration, passengers' comfort, weather condition, reduction in the cost of maintenance operation and etc.
- Fastening system test



Mould designing and manufacturing



Checking jig designing and procurement



Tools procurement



Test report provided



Production and assembly of components and parts



Packing and shipping



- On-site construction counselling
- Worker training



M+O

- **full-process management services** - fastening system design management, equipment manufacturing and procurement management, on-site installation engineering management, and project trial operation management.
- **Comprehensive operation management services** - according to regional needs, we will build a unique and complete global service center to provide design and technical consulting, equipment and components and parts procurement, after-sales maintenance and project expansion services.





# What is the KEY?

- **Localization**-Thailand & China, different in size and road condition;
- **Factors:** noise and vibration, passengers' comfort, weather condition (extreme weather, UV rays, acid rain), reduction in the cost of maintenance operation;
- **KEY:** R&D and “Thailand” products.



PART

02

# Product Display



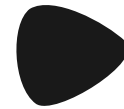
# Products Range



**Conventional Rail**



**High-speed Rail**



**Heavy-haul**



**Metro & Subway**



# Product Selections

## Metal Parts

Tension Clamp  
Bolt  
Spike  
Nut  
Washer  
Fish Plate  
Rail Gauge Baffle

## Non-Metal Parts

Resilient Tie Pad  
Rubber Pad  
Height Adjustment Pad  
Rail Pad  
Rail Gauge Baffle  
Rail Gauge Insulator  
Dowel  
Rubber Boot

## Casting Parts

Rail Tie Plate  
Embedded Casting Shoulder  
Adjustment Gusset Plate  
Rail Gauge Baffle



# Metal Parts

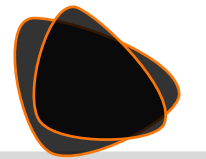
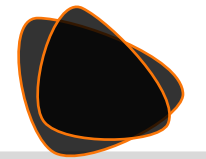
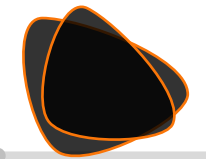
Tension Clamp



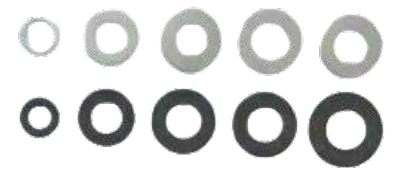
Bolt



Spike



Nut



Washer



Fish plate



# Non-metal Parts



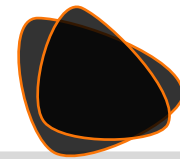
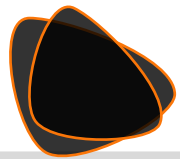
Rubber Pad



Rail gauge insulator



Resilient Tie Pad



Height Adjustment Pad



Dowel



Rubber Boots



# Casting Parts



Rail Tie Plate



Casting shoulder



Rail gauge Baffle





# High-speed rail fastening system



High speed rail

60kg/m



Concrete sleeper





# High-speed rail fastening system



High speed rail

60kg/m



Concrete sleeper



# Metro & Subway fastenings system



Metro & Subway

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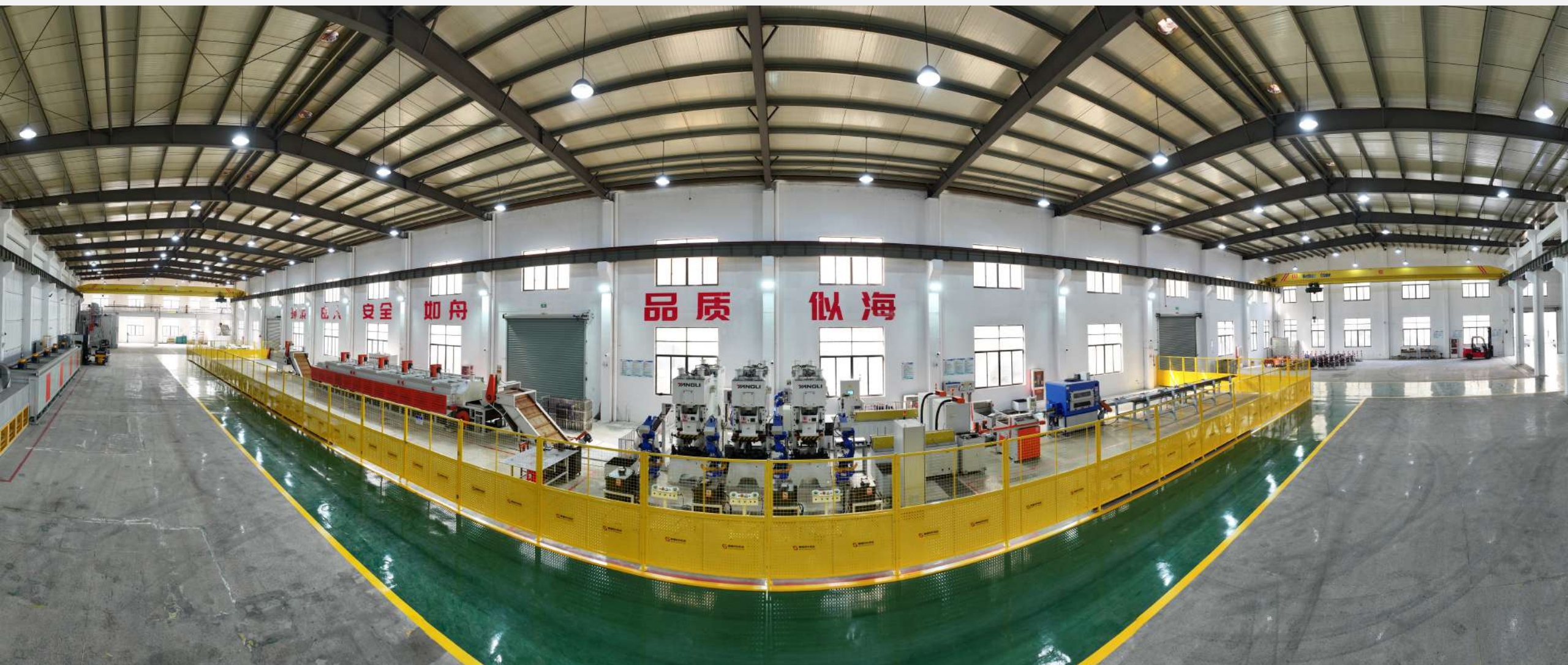
PART

03

# Production Lines Overview



# Automated Tension Clamp Production Line





# Automated Tension Clamp Production Line



Cutting, Heating, Molding, Quenching, Tempering, Surface Treatment, Antirust Treatment, Packaging, to Warehousing





# Automated Tension Clamp Production Line



All processes have been fully automated and mechanized-17pc/minute





# IMS-Information Management System



**Tension clamp production line Info Mgt. System**

在线通信状态: 5/5

Alert No. 产量 Today's Quantity

**Robot Line** (In operation/In fault/Manual)

- ① Robot 1 condition
- ② Robot 2 condition
- ③ Robot 3 condition
- ④ Robot 4 condition
- ⑤ Press 1 condition
- ⑥ Press 2 condition
- ⑦ Press 3 condition
- ⑧ Thermometer (°C)-1
- ⑨ Thermometer (°C)-2

**Line 1**

- ① Model
- ② Batch
- ③ Planned Quantity
- ④ Current Quantity
- ⑤ Pass rate
- ⑥ Estimated hours

**Line 2**

- ① Model
- ② Batch
- ③ Planned Quantity
- ④ Current Quantity
- ⑤ Pass rate
- ⑥ Estimated hours

**Tempering Info**

- Quenchant Temperature (°C)
- Tempering furnace zone temperature (°C)
- Tempering furnace zone power (kw)

**Robots Line**

① Beat

- ① Feeder condition
- ② Medium frequency furnace condition
- ③ Robot condition

① Thermometer (°C)

- ① Press condition
- ② Robot condition
- ③ Scrap No
- ④ Working condition

① Press condition

- ① Robot condition
- ② Working condition

① Thermometer (°C)

- ① Press condition
- ② Robot condition
- ③ Scrap No
- ④ Working condition

**Quenching cleaning Equip. (min.)**

- ① Stirring motor condition
- ② Conveyor motor condition
- ③ Conveyor motor speed

**Heating Equip. (min.)**

- ① Motor condition
- ② Motor speed

**Anti-rust Equip.**

- ① Motor condition
- ② Heating and drying motor condition

**Robot Line** (In operation/In fault/Manual)

- ① Robot 1 condition
- ② Robot 2 condition
- ③ Robot 3 condition
- ④ Robot 4 condition
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# Automatic Polyurethane Pouring Machine Production Line







# Automatic Polyurethane Pouring Machine Production Line

Which is automatically completed from pouring, mold opening and closing to demoulding and taking out parts





# Rubber pad production line

Production Lines Overview--Rubber Production Line



Various types of rubber products, customized products





# Injection Molding Production Line



Capable of manufacturing different size rail gauge insulator, baffle, dowel and etc.





PART

04

# Laboratory and QC



# Laboratory Tour



 Fully equipped lab with professional technicians

Vital testing items: Hardness, Metallographic structure, Decarbonization layer, Residual deformation, Fatigue performance, Antirust performance and etc. Raw Mat. & WIP & FG lab testing will make sure all the indicators meet the requirements, so that immediate actions could be taken accordingly, which is the key to achieve better quality control. So that we could reduce the defective rate in order to save production costs.

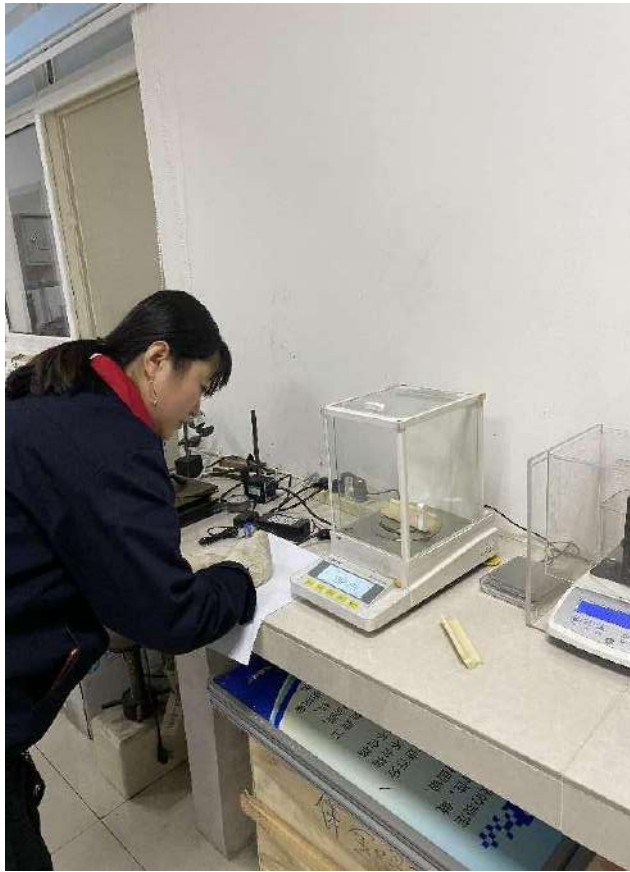




# Laboratory Tour



# Laboratory Tour





# Laboratory Tour







# Thanks



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