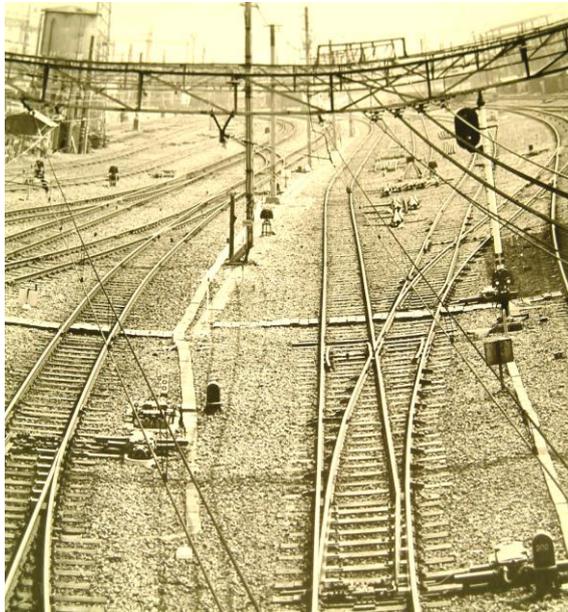


# CORPORATE GUIDE



**TEIKOKU SEIBYO CO. , LTD**

# As a fastener manufacturer that exists in needs in the age

**The railway,the building, the bridge ··· The infrastructure of the society is supported.**

Our history come walking with the development of the railway.

The improvements of the technology are produced as lead companies of the rail conclusion parts in an original manufacturing method after it establishes it in 1917 and products that are better than trying are Pleses patronize it more than JR Passennger Railways,a traffic bureau in the city, and the private railway. The high tension bolt and the bolt for engineering works,etc.are produced as a conclusion parts for construction.

## History

November,1917

Teikoku seibyō Co.,Ltd is established by the capital two million yen.

Track spike,the bolt nut,and the rivet for orbit are produced as a railway ministry spesification factory, and the foundation of the industry in our country is established.

May,1942

Teikoku seikikōgyō Co.,Ltd.and change of one's name.

The capital 10 million yen.

It is involved in the production of the military aircraft machine.

March,1950

Teikoku seikō Co.,Ltd.and change of one's name It advances to the electric machine section.

November,1954

The Teikoku seibyō Co.,Ltd.name of the company is retuned.

The capital is increased to the capital 15 million yen.

September,1962

The capital is increased to the capital 30 million yen.

April,1965

A cold forged section is set up, and the production of a high tention bolt begins.

July,1969

The capital is increased to the capital 60 million yen.

February,1974

The Mihara factory is constructed.

Start of manufacturing of bolt with fat special bolt and diameter.



## The user is useful for system of a certain technology and thorough.

It provides with between heat and a cold forged technology, each trait is manufactured, and making the best use of and a special bolt and the strange appearance bolt are manufactured.

### [ JIS display recognition article ]

October, 1951

JIS E1108 Rail spike

December, 1952

JIS E1109 Screw Spikes

December, 1953

JIS E1107 Steel bolts and nuts for fish—plates and fastenings

August, 1963

JIS B1180 Hexagon hed bolts and hexagon head screws (4.6–6.8)

November, 1973

JIS B1181 Sets of highstrength hexaon bolt,hexagon nut and plain washers for friction grip joints.

April, 1989

JIS B1198 Headed studs

November, 2000

JIS B1180 Hexagon hed bolts and hexagon head screws (8.8–12.9)

### Production facility

Bolt forging machine.....3  
Part forging machine .....1  
Friction forge machine.....10  
Cold head forge machine..... 2  
Hot head forge machine.....4  
Hot rolling machine ..... 5  
Track spike point machine.....5  
Screw Otsc machine.....9  
Numerically controlled latheGrinder....7  
Miller processing machine.....1  
Electrical discharge machine .....1  
Heat-treatment system line.....3

### Inspection equipmen

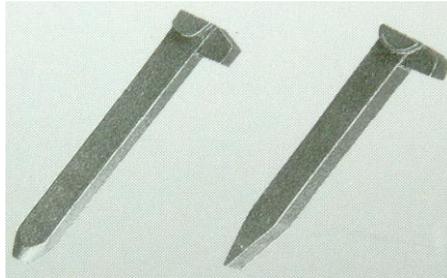
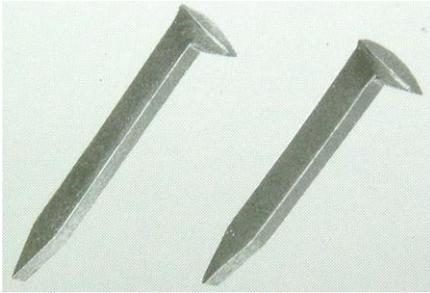
1000-kilo newton examination machine  
Bolt examination machine  
Profile projector  
Sclerometer  
Wound discovery machine  
Metallurgical microscope  
Impact tester

# I help the railway everywhere in the whole country.

## RAIL SPIKE

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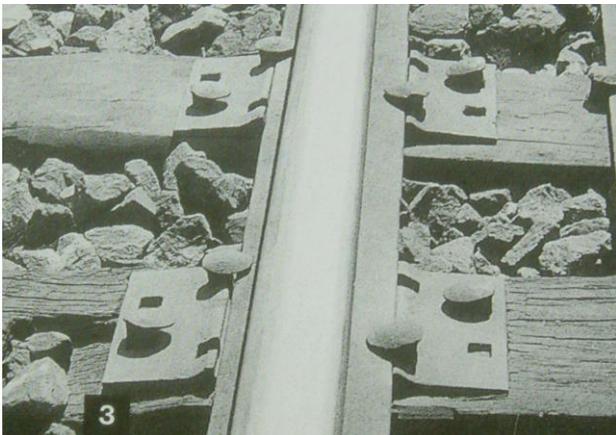
The rail spikes manufacturing of our company has walked with the history of a long railway in Japan. It still stops and it is used to conclude the rail for the tie of the tree. Our excellent track spikes is evaluated high regardless of the inside and outside the country.



## Screw Spike

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The tie has a lot of merits different from a concrete tie in the tree. Csruspaic that can gain conclusion power that is more advanced than the truck spike because those merits are made the best use of and is not loose is still used in countries of the world now. Our company is offering the screw spike with the thread part where it is strong and accuracy is high by the roll method between heat. It is a screw spike in the photograph that our company exported to every country in the world. Head and screw head's shape has the trait respectively according to originality in each country and the material of the tie.



## Track bolt and nut

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Our company usually produces the steel seam board bolt and the seam board heat-treatment bolt. There are especially two kinds of seam board heat-treatment bolts (8.8 and 10.9).

After 1958, JR (former Japan National Railways) is possessed, and the delivery results to the start each private railway reach indeed 40 million, obtain the display permission of JIS first in the industry, and have the production of the world the greatest by the excellent technology and system of management.



## Crossing bolt and others

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The bolt for the divergence is started, and the bolt that it is special and shape and length are long is produced with forged system between heat.

### [ ArticleManufacture eyes ]

- Segment bolt for engineering works
- Length are long bolt (1,000m/m)
- Bolt for divergence
- High-level, precise finish bolt
- Large diameter high tension bolt (76m/m  $\phi$ )
- Gauge block
- Bolt for vehicle
- Precise finish parts



## Trapezoid screw bolt for prestressed concrete sleepers

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The method of concluding this bolt is stopped in a concrete tie that buries made of plastic and it stops it in the rail by the spring.

It is maintained without the fiber organization of the steel material cutting unlike the bolt by the cutting method because the thread part is made by the hot rolling roll method.



### [ Feature of hot rolling roll method ]

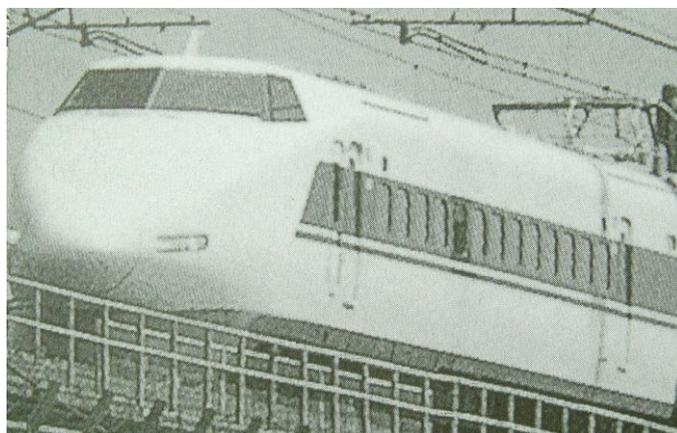
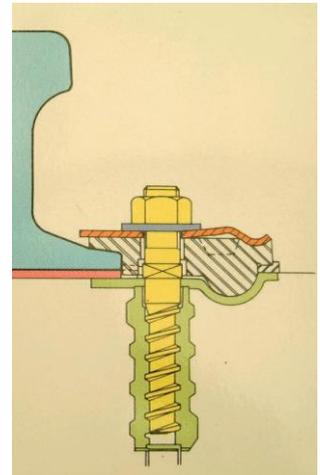
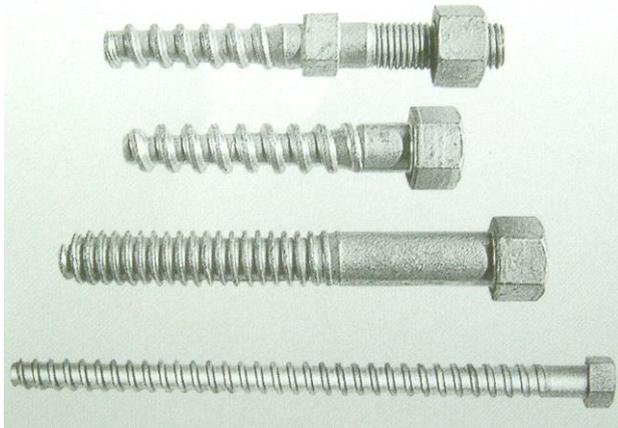
- Because the fiber organization doesn't cut, it excels in strength.
- There is not eccentric in high accuracy.
- For mass production
- It corresponds to the special order of all trapezoid strange appearance/screw.
- Special steel and the screw processing of the stainless steel are also possible.

### [ Range of processing ]

16–32 screw diameter/  $\phi$  m/m

100–300/m/m thread length

5–20 screw pinch/m/m



## Stainless bolt and non-magnetic steel bolt

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### Bolt that supports linear motor car

Because the magnetic field caused between the body and the orbit is not obstructed to the linear motor car, the stainless steel and cheaper austenitic high manganese steels not magnetized are used.

The linear motor car is a mechanism (surfacing by the repulsion power of the super conductive magnet installed in the coil and the body on the orbit, and the drive by the tensility between propellant coils). It makes it to a permanent magnet where electricity keeps flowing permanently by cooling this super conductive magnet at the extremely low temperature, and adjusting the electric resistance to 0.



## Resin film bolt for electric invasion and invasion prevention

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The polycarbonate and the film bolt of nylon 11 are produced for an electric invasion measures in the subway and the tunnel.

As for these resins, ductility, strength, and an impact are abundant, and the moisture absorption is extremely excellent few in the electric insulation resistance.

The epoxy resin film bolt with the loose stop function of the bolt is produced recently.

### [ The main use construction results ]

- Hankyu electric railway Kyoto line  
Polycarbonate resin finishing bolt in 1964
- Kobe high-speed railway whole line  
Polycarbonate resin finishing bolt in 1967
- Kinki Nippon Railway Nagoya line  
Polycarbonate resin finishing bolt in 1968
- Kita-Osaka Kyukou electric railway whole line  
Polycarbonate resin finishing bolt in 1969
- JR East Japan Railway  
Nylon resin finishing bolt in 1999
- JR West Japan Railway  
Epoxy resin processing bolt in 1999



- \* An underground orbit of Hankyu Kyoto Line, an electric invasion is not admitted at all though 30

# The fastener for construction has been enhanced, too

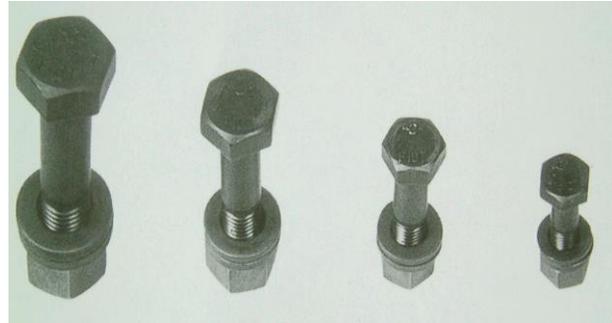
## High tension bolt

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A high tensile bolt (JIS display permission in November, 1973) active by the construction of the iron frame and the bridge etc. is one of the main products.

A strong weather resistance bolt and the paints groundwork processing are given to the atmospheric corrosion, and the high tensile bolt corresponding to all the environments such as rust prevention processing high tension bolts that prevent rust in the place where the corrosion such as coasts and seas is remarkable is made. Our company has produced a big bolt and the socket bolt of the diameter of strength 10.9(JIS standard) by an advanced heat-treatment technology that makes the best use of forged technology between heat since October, 1993.

These high power bolts play an important role to support tomorrow's construction industry as parts for the construction machinery.



## [ Feature ]

- Because the special steel material ((Sumitomo Metal Industries, Ltd. development)) for the high tensile bolts such as the low carbon manganese, chrome, and the boron steel is used, mechanical properties of the product are steady.
- Because new and powerful equipment of Boltoformar ( $\phi$  27mm or less) is consistently produced by making good use of, the quality is steady.
- Forged technology between heat during many years is made the best use of, and big high tensile bolts of the diameter (JIS standard: M27-M76) are produced.
- The product of a quality steady by strict lot management (JIS-B-1186) is heavily
- About standard goods, it has abundant stocks, and it responds to the order promptly.



## SS bolt (now, it does not manufacture)

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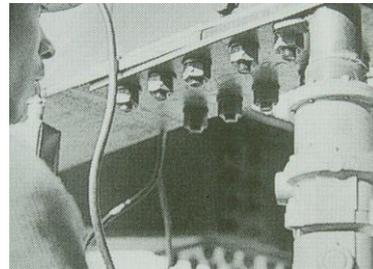
The SS bolt is a mechanism that the reaction force of the nut tightening torque is received with the bolt and the pin tail, the pin tail breaks in the one tightened statically by a prescribed torque, and prescribed axis power is introduced into the bolt.

© SS bolt for general

Ministry of Construction Housing Bureau Building Guidance Division The 98th living finger departure recognition on April 1, 1996

© SS bolt FR for fireproof structural building

Ministry of Construction Housing Bureau Building Guidance Division The 116th living finger departure recognition on April 1, 1996



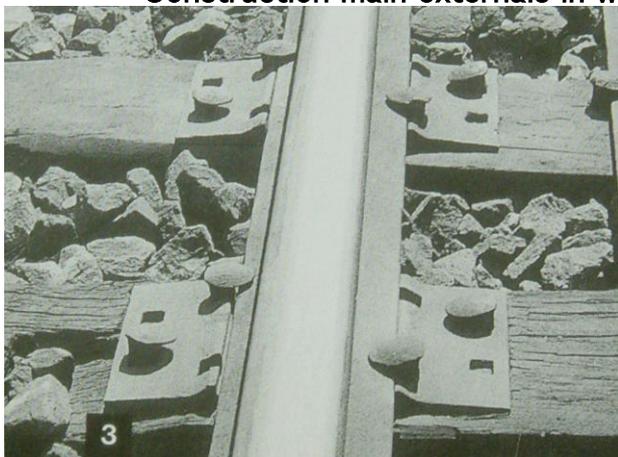
### [ Feature ]

- Well-set forgetting prevention function that tightening completion of bolt can be visually confirmed by breaking pin tail.
- The check with the torque wrench can be omitted.
- All the adjustments and the inspections of the tightening apparatus are unnecessary.
- Noises are fewer than the impact wrenches.
- Because a special lubricant is used for the nut, the change in the tightening axis power by the influence of the temperature and the weather is very small.

\* The execution management that uses the SS bolt is very easy.

### Construction main externals in which our high tensile bolt is used (titles omitted)

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Each administrative divisions  
 Nippon Telegraph and Telephone Co.  
 Each JR company  
 Private railway companies  
 Kansai Electric Power Company  
 Others

## Headed Stud

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Headed stud is used as a concrete gap stop and an anchor in steel and a concrete structure of the civil engineering and construction.

Applied field of the arc stud welding especially shows the tendency to be going to expand more and more in the future though the threaded stud builds a ship, and is used also for fields of the car, the electric machine boiler, and the steel tie, etc. now.

The one of various, special shape can be produced by headed stud's using the aluminum killed steel of Sumitomo Metal Industries, Ltd. by processing technology and the heat forge processing technology in the high-tension bolt manufacturing ..cultivating.. ..cooling...



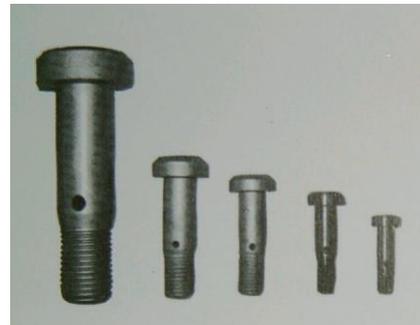
## TM Bolt

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The TM bolt is used for globular collaboration of TM solid truss (taiyou kougyou co. , Ltd.) that creates an ideal space without the pillar.

The TM bolt heat-treats chrome molybdenum steel (SCM435) and nickel chrome molybdenum steel (SNCM439) to high strength.

Our company can be high-quality, and process high strength and corrosion resistance of all the size bolt.



## Drift pin

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An advanced heat-treatment technology is necessary for the production of the drift pin. When the heat-treatment management is insufficient, the pin is lacked, and it is easy to bend and causes the trouble named.

Our company selects a severe steel material in addition to an excellent heat-treatment technology, produces the drift pin, and receives full trust from customers.



# P R O F I L E

## Company overview

Trade name	Teikoku seibyō co.,Ltd.	
Establishment	November 30,1917	
The capital	60 million yen	
Number of employees	70 peoples	
Activities	Manufacturing of parts related to fastener for rail railway Construction, and engineering works and others sales	
Address	〒 552-0022	
( headquarters and factory )	2-21,3-chome,kaigan-dori,minato-ku,Osaka TEL 06-6572-2951 FAX 06-6575-0769 JR TEL 071-4391	
[ Tokyo office ]	〒 101-0041 18-2,1-chome,kandasuda-cho,Chiyoda-ku,Tokyo Sudamachipark building 4F TEL 03-6206-9687 FAX 03-6206-9689 JR TEL 057-3565	
Outline of factory	Headquarters factory	Site/about/12,000m <sup>2</sup> Floor space/about 11,000m <sup>2</sup>
Handling bank	Risona itioaka branch Mitsuismitomo minato branch Mitsubisi Tokyo UFJ kuzyo branch	



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