

Applications of the Group's Products and Technical Services

- Spring steel wire in various grades, including SAE 9254, 55SiCr, SWA through SWC, and SWPA through SWPC, with diameters ranging from $\Phi 1.6$ to $\Phi 18.0$ mm.
- Profiled wire with various cross-sectional shapes, with a specified size range of $\Phi 1.6$ to $\Phi 18.0$ mm.
- Suspension springs for automobiles and motorcycles, valve springs, engine valve springs, mechanical springs, precision springs for electronic products, and springs for aerospace and other high-reliability applications.
- Dies, stamping equipment, and high-load die springs.
- Plastic injection-molded parts for automobiles and motorcycles.
- Control cables or wiring harnesses for automobiles and motorcycles.
- PVC roll-up doors, turbine-type high-speed doors, steel rolling shutters, garage doors, and metal rolling doors and window roller shutters for buildings.
- Solar photovoltaic mounting structures, C-section steel products for construction, and services including laser punching and automated punching.
- Structural steel for greenhouse structures used in agriculture, fisheries, and livestock farming.

Product and Service Overview

1. Manufacturing and Quality Control

Depending on the product type and quality requirements, the manufacturing process may incorporate eddy current flaw detection, dimensional control, surface inspection, and any necessary heat treatment. Products are then packaged according to corrosion protection and transportation requirements.

2. Alloy Steel Wire

Sterler Tech uses wire drawing, eddy current testing, and quenching and tempering using induction heating as part of its manufacturing process to produce steel wire with a refined microstructure and higher strength while maintaining toughness.

For alloy steel wire grades such as SAE 9254 and SWOSC-B, the specifications published on the company's website indicate wire diameters of approximately 7.0 to 17.0 mm. Tensile strength can be adjusted to meet customer requirements, reaching up to approximately 2,000 MPa.

3. Piano Wire and Hard-Drawn Steel Wire

Piano wire and hard-drawn steel wire are primarily manufactured through wire rod surface treatment and cold drawing to achieve the wire diameter, tensile strength, and surface quality required for springs, steel

wire products, and other industrial applications.

The material range includes carbon steel and high-carbon steel wire grades such as SWRH, SW-B, SW-C, SWRS, SWP-A, SWP-B, and NLP, with reference to standards such as JIS G 3521 and JIS G 3522.

4. Profiled Wire

Profiled wire is one of Sterler Tech's representative customized products. Carbon steel, alloy steel, stainless steel, and other materials can be used to develop special non-circular cross-sections according to customer requirements.

Profiled wire development can incorporate DEFORM 3D computer simulation, residual stress analysis, dimensional and profile measurement, surface quality control, grain analysis, decarburized layer control, eddy current flaw detection, and tensile, torsion, bending, and hardness testing.

The company can develop designs addressing cross-sectional geometry, dimensional tolerances, aspect ratios, material flow, die loads, and forming passes to reduce the risks of cross-sectional nonuniformity, corner cracking, surface defects, and residual stress concentration.

Applications include internal machine structures, machine supports, furniture support frames, linear guide rails, suspension springs, precision springs, die springs, and other specially shaped metal components.

5. Cold-Formed C-Section Steel

Sterler Tech also supplies cold-formed C-section steel and related section products. Materials include galvanized steel, aluminum-zinc-coated steel, and zinc-aluminum-magnesium-coated steel.

Material strength grades include 350, 400, 490, and 590 MPa. Available thicknesses include 1.6, 2.0, and 2.3 mm. Finished lengths can be produced according to customer requirements, up to a maximum of 12 meters. Actual material grades, coatings, strength levels, dimensions, and supply capabilities must be confirmed on a case-by-case basis according to customer requirements and production conditions.

6. Cold-Coiled Springs

Yang Min Enterprise Corp. primarily manufactures cold-coiled springs. The products published on its website are mainly compression springs made from relatively large-diameter wire, with wire diameters ranging from approximately 2.0 to 18.0 mm.

Materials include SAE 9254 and SWOSC-B alloy steel wire, NLP carbon steel wire, and SWP-A and SWP-B piano wire. Other materials, such as SWOSC-V, SAE 9254M, SRS60, and SWC, are used according to specific product requirements.

7. Research and Development Services

DEFORM 3D metal forming simulation, ANSYS dynamic simulation, spring stress analysis, materials

testing, and external technical collaboration support customers in new product design.

R&D services can cover material grade comparisons, cross-sectional geometry design, wire drawing pass and die design, forming load assessment, die stress and wear assessment, heat treatment condition analysis, grain and decarburization control, residual stress assessment, fatigue performance validation, vehicle dynamics testing, and failure analysis.

8. Yang Min Vietnam Products and Services

Yang Min Vietnam's products and services include industrial springs, plastic injection-molded parts, wiring harness assembly, pistons, brake lever assembly, seatposts, and customized wire-formed components.

9. Rolling Doors and Window Roller Shutters

Sterler Tech also supplies finished metal products, including 3S high-speed rolling doors and 3S airtight window roller shutters. These products can be customized to suit building openings, operating environments, safety requirements, and appearance requirements.

The 3S window roller shutters combine burglary protection, typhoon resistance, sun shading, and sound insulation.

Company Profile

Sterler Tech Co., Ltd. specializes in the research, development, and manufacture of steel wire, profiled wire, steel sections, and related metal products. Its principal business areas include carbon steel wire in grades ranging from SWA through SWC and SWPA through SWPC, SWOSC-B alloy steel wire, profiled wire, and cold-formed steel sections.

The company has comprehensive manufacturing and quality verification capabilities covering wire rod materials, surface treatment, precision wire drawing, eddy current flaw detection, high-frequency induction heat treatment, profiled wire forming, steel section forming, mechanical property adjustment, surface quality control, laboratory testing, and finished-product packaging.

Sterler Tech provides customized development based on material type, wire diameter, tensile strength, cross-sectional geometry, dimensional tolerances, surface condition, heat treatment conditions, and downstream processing requirements. Applications extend from general industrial steel wire to vehicles, motorcycles, bicycles, machinery and equipment, precision springs, furniture structures, linear guide rails, molds and dies, building structures, agricultural and aquaculture facilities, and energy-related applications.

In addition to conventional round steel wire, the company develops technologies for profiled wire, alloy steel wire, high-strength oil-tempered wire, and cold-formed steel sections. It uses continuous wire drawing equipment from Germany and other European countries to manufacture carbon steel wire, piano wire, and hard-drawn steel wire, while progressively adding alloy steel heat treatment lines and profiled wire

production lines.

Sterler Tech uses DEFORM 3D metal forming simulation software and ANSYS dynamic simulation software to analyze metal forming and heat treatment processes. These tools can simulate material flow, forming loads, die stresses, rolling, roll forging, cross-wedge rolling, orbital forging, spinning, fracture behavior, die wear, heat treatment, and changes in grain size. They can also simulate the dynamic behavior of springs and various steel section products.

The company's laboratory and associated inspection equipment support tensile, torsion, bending, Vickers hardness, Rockwell hardness, surface roughness, residual stress, and rotating bending fatigue testing. Capabilities also include optical microscopy, 2.5D profile measurement, and metallographic analysis.

Sterler Tech obtained ISO 9001 quality management system certification in 2013. It manages product quality through an independent laboratory, standardized inspections, and employee training. As part of the Group's vertically integrated operations, Sterler Tech supplies steel wire to Yang Min Enterprise Corp. and its overseas facilities, which hold IATF 16949:2016, ISO 9001:2015, and ISO 14001:2015 certifications, for the manufacture and validation of various types of springs.

The Group's R&D partners include China Steel Corporation, the Metal Industries Research & Development Center, National Cheng Kung University, and National Sun Yat-sen University. Collaborative activities cover Gleeble thermomechanical simulation, material fatigue testing, failure analysis, chemical composition analysis, high-temperature tensile testing, steel material testing, hardness testing, vehicle dynamics testing, electric vehicle suspension system development, metal forming simulation, spring stress analysis, and X-ray residual stress measurement.

Through internal R&D, collaboration with external research institutions, and industry-academia cooperation, the Group has gradually established a technical support system covering material characterization, forming simulation, product design, prototyping, mass production, and failure analysis.

The Yang Min Group uses Taiwan as its operational and technological center and has established subsidiaries or manufacturing facilities in Bangkok, Thailand; Hanoi/Bắc Ninh, Vietnam; and Ho Chi Minh City, Vietnam. This production network serves markets in Taiwan and Southeast Asia.

The Group's products and technical services cover automobiles, motorcycles, electric vehicles, bicycles, industrial machinery, automation equipment, molds and dies, furniture, electronics, construction, energy, agricultural facilities, aquaculture facilities, livestock facilities, and general industrial applications.

Sterler Tech also develops downstream products, including 3S high-speed rolling doors and 3S airtight window roller shutters, with the aim of improving safety in residential and building applications. The company can develop metal rolling doors and window roller shutters with different functions to meet specific customer requirements.

Sterler Tech and its affiliated companies have established a vertically integrated structure covering materials, steel wire, profiled sections, heat treatment, spring manufacturing, surface treatment, quality verification, and finished metal products. Building on its expertise in materials engineering, metal forming, heat treatment, spring design, quality inspection, and customized mass production, the company continues to expand into markets for high-strength, high-reliability, lightweight, and special-profile metal products through its operations in Taiwan and overseas, industry–academia collaboration, and OEM/ODM services.



STERLER TECH CO., LTD.

YM GROUP



Team Work, Think Big, Enormous Potentiality

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Corporate Profile

Corporate Name	STERLER TECH CO., LTD
Established	June, 2013 (established new factory)
Main Businesses	Steel wire for Development, manufacturing and sales
Main Customers	SHOWA 、 HONDA 、 KYB 、 TOYOTA 、 BMW 、 ICHU 、 TYS 、 Tai Shan Spring 、 FU SHING 、 CHUHATSU 、 UNI-AUTO
Employees	40
Annual total production capacity	Carbon wire 8400 ton/year Alloy wire 3000 ton/year Shaped wire 300 ton/year

Began to mass production of high frequency alloy heat treatment.



2002

Started export new market area to Southeast Asia with SHOWA (the end user - HONDA).



2014

Expand the new plant and alloy wire heat treatment production.



Started development and research with SHOWA of high strength steel wire.

2016

New automatic repairing and continuous production line.

2018

2017

2015

2010

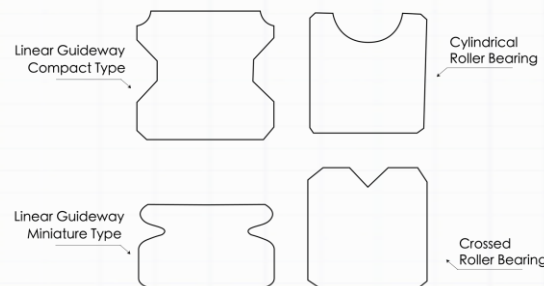
1995

Extended shaped wire applications in different area.

Start mass production with CHUHATSU FACTORY of high strength steel wire (the end user - TOYOTA).



Expand new material of shaped wires line of the Linear Guideway.

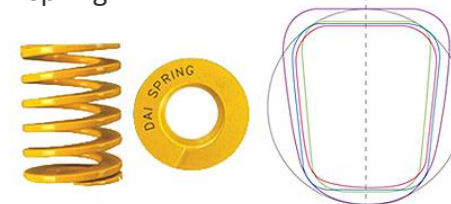


In cooperation with MIRDC to expand more shaped of wires.



Development of four-wheel alloy wire with CHUHATSU FACTORY CO., LTD (the end user - TOYOTA).

Successfully developed trapezoidal cross-section wire, apply in equipment of die spring.



Started to develop Spring Steel Wire, applicate in the automotive industry.

STERLER
History



STERLER
Application



Carbon Wire

Spring of carbon wire make in shock absorbers are applied in motorcycle and bicycle. Carbon wire can also use in bracket of furniture.

SHOWA

The best technology and the highest quality to meet every user's needs.



HONDA

KYB

Our Precision, Your Advantage



Motorcycle



Machinery



Furniture



Automotive



Bicycle

Bicycle Spring



The spring made by our spring wire, apply on the bicycle. Mostly sell to Europe bicycle brand.

STERLER
Application



Alloy Steel Wire

Alloy steel wire spring used in automotive sector and machinery.



CHUHATSU

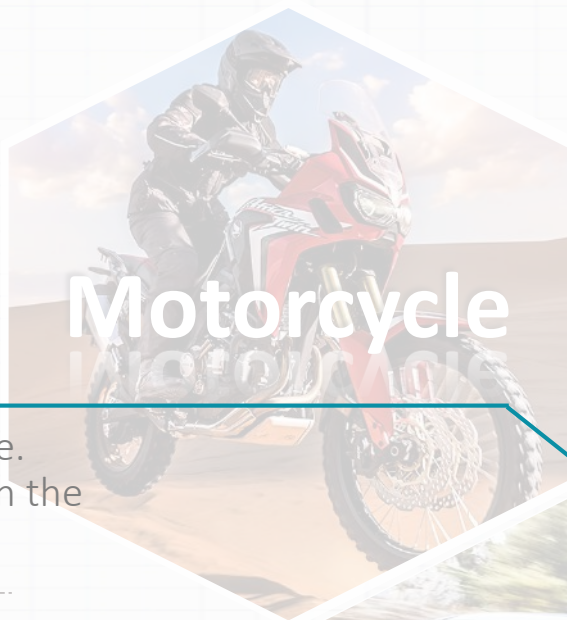
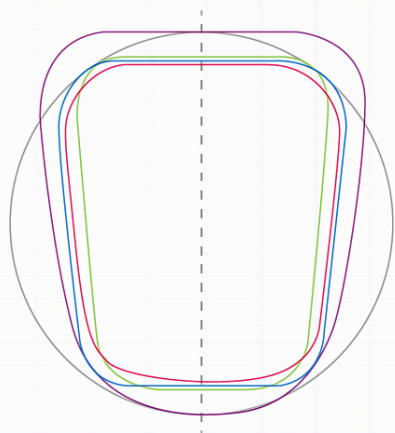


STERLER
Application



Die Spring Wire

Usually applied in machine.
This is high technique than the
spring.



Motorcycle



Machinery



Furniture



Automotive



Bicycle



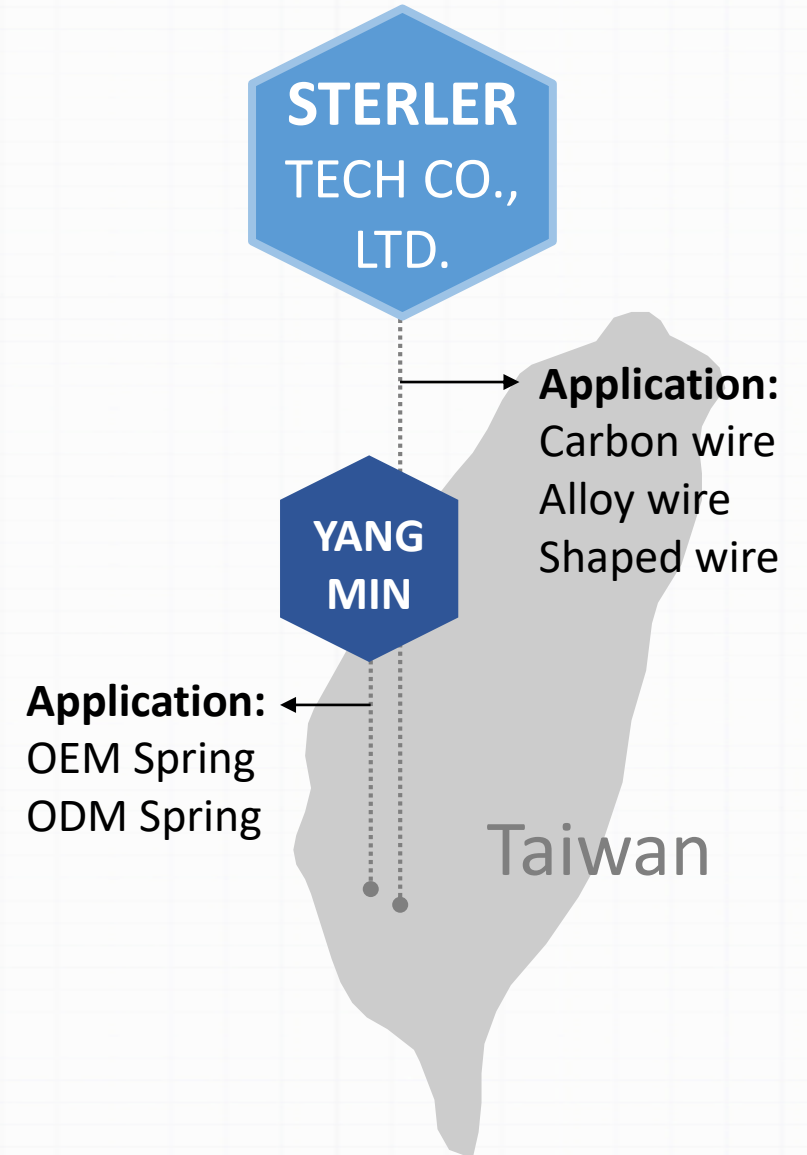
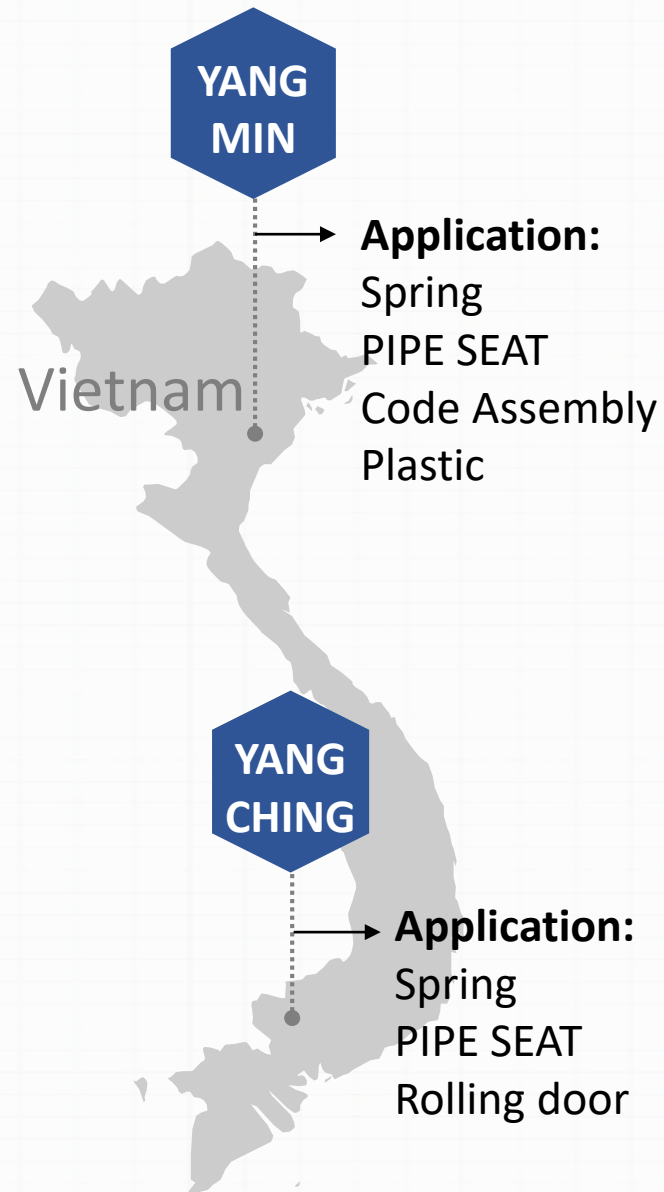
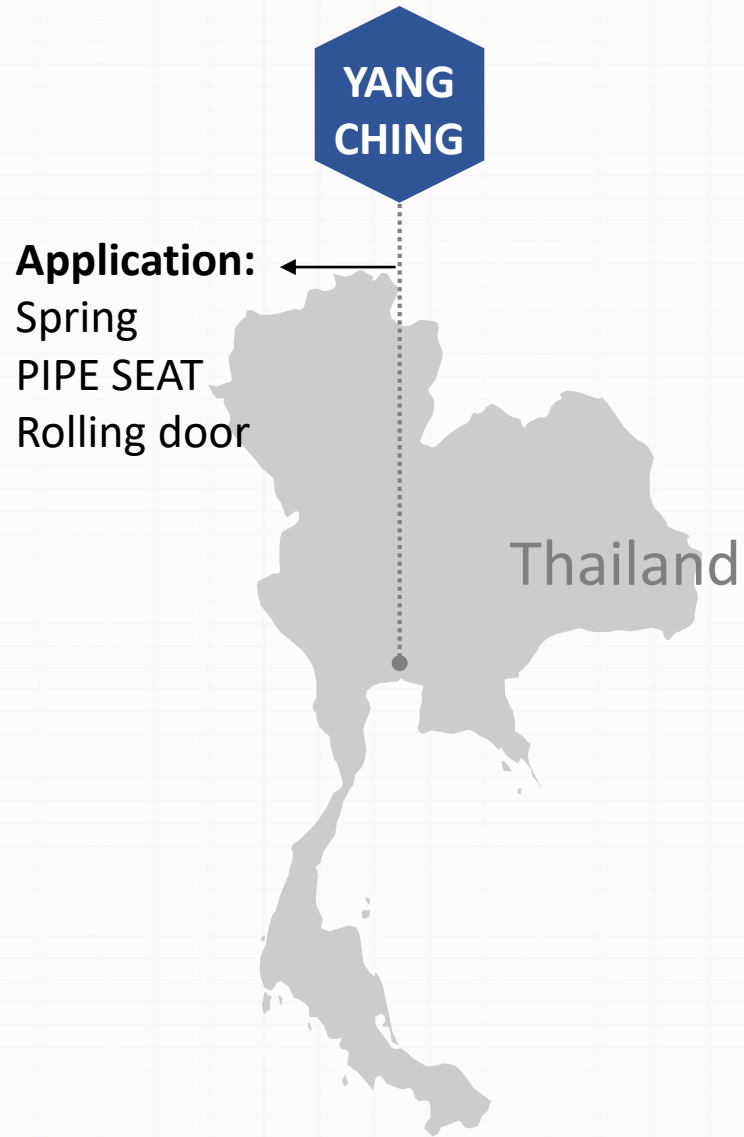
Shaped Wire

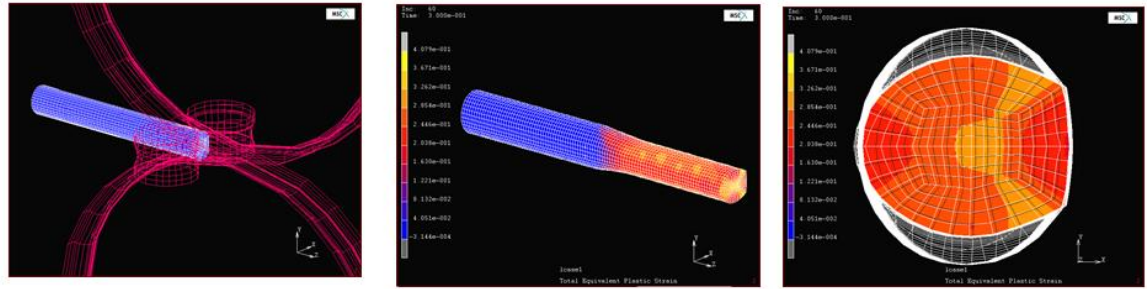
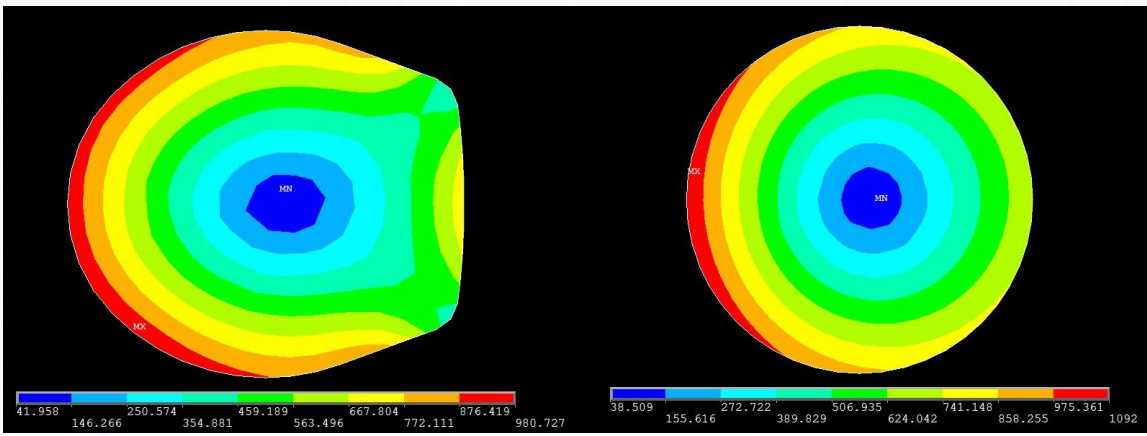
We have also produced
many different shaped of
wire, applied in wide
industry to our customers.

STERLER
Application

STERLER

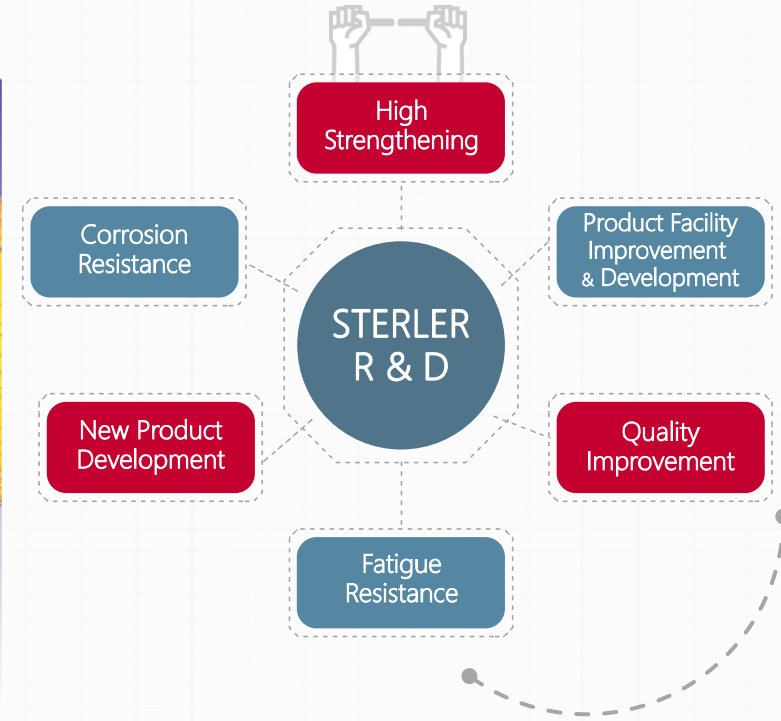
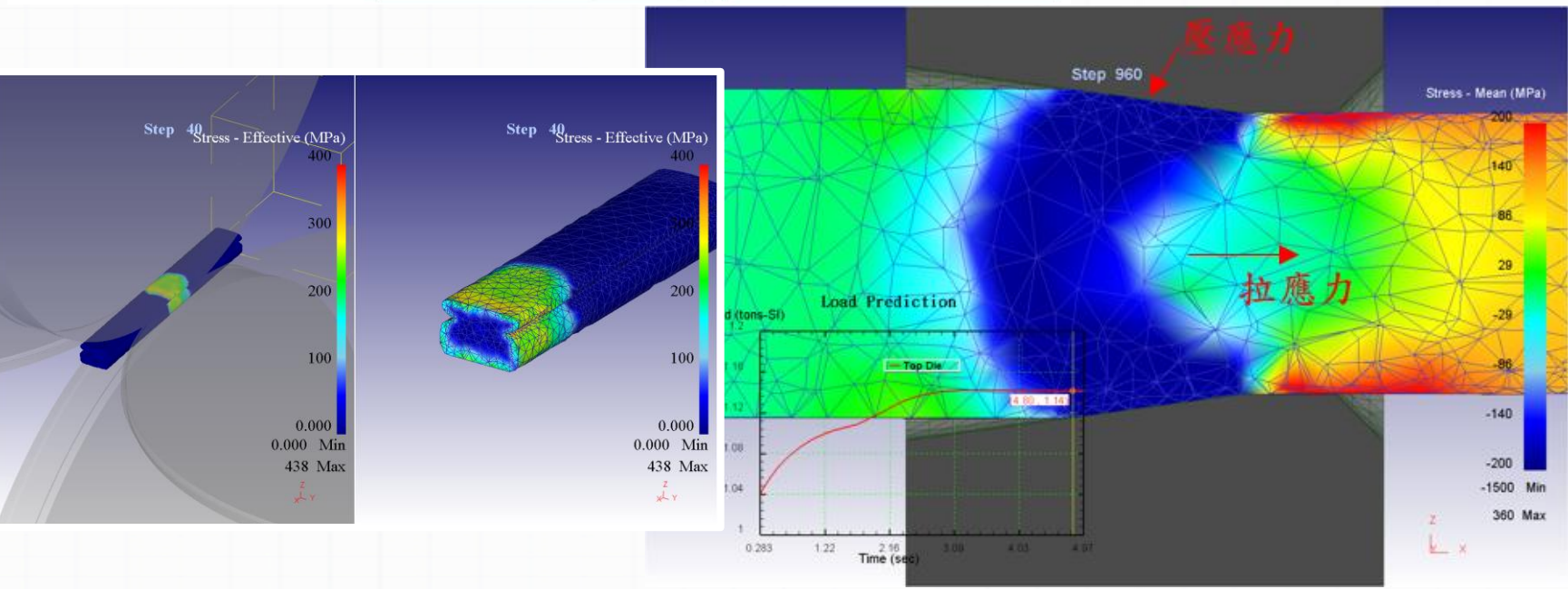
Global Network





Research & Development

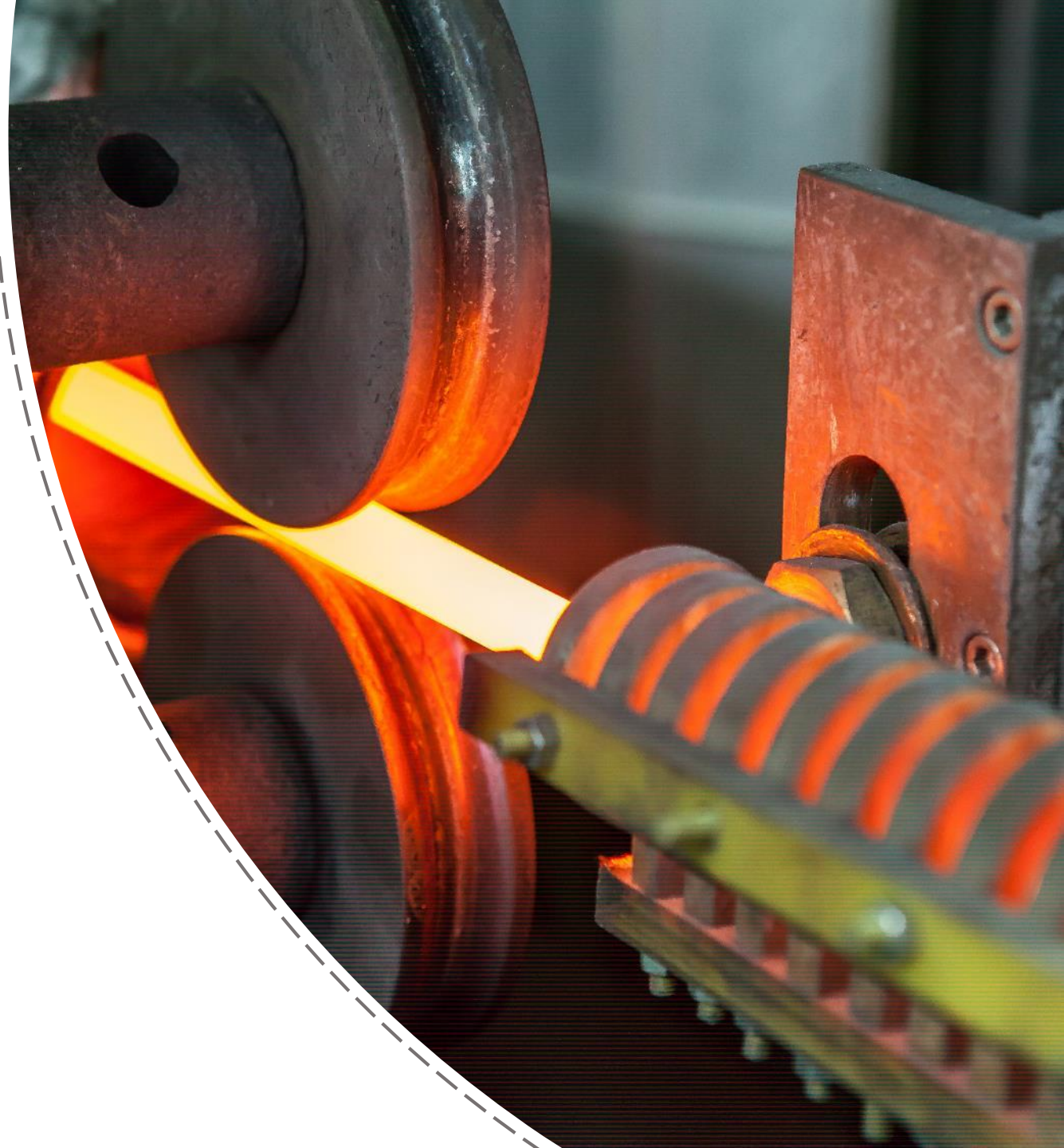
STERLER R&D has our own technique of the software DEFORM 3D simulation design which can analyze the three-dimensional (3D) flow through a complex metal forming processes. DEFORM 3D is a practical and efficient tool to predict the material flow in industrial forming operation that can improve the quality, reduce the costs and shorten the delivery.



Production & Products

Spring Wire/ Shaped Wire

Hard Drawn Wire
Piano Wire
Oil Tempered Wire
Shaped Wire

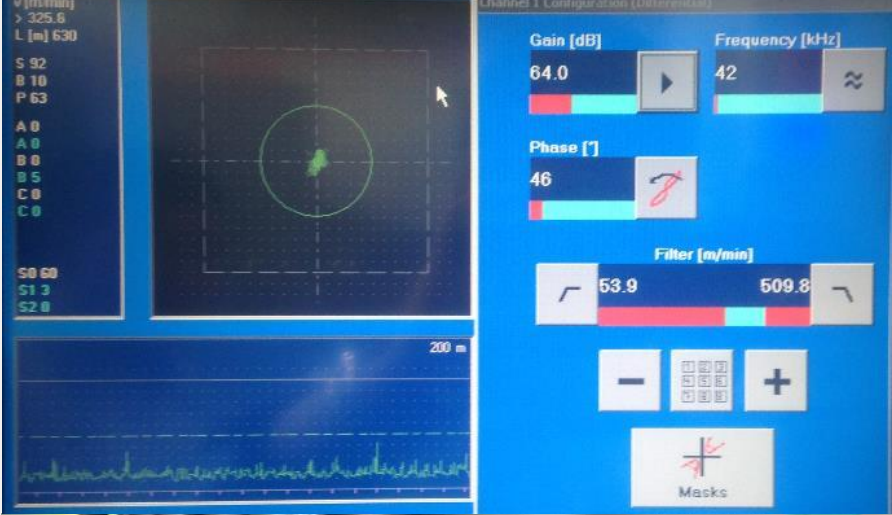


Piano Wire & Hard Drawn Wire

STERLER introduced the cutting-edge continuous drawing equipment from European, which achieve the best product quality through adjusting parameter automatically, patented cooling system and using high quality pressured die.

● Specific of Piano Wire & Hard Drawn Wire

Type	Specification	Diameter(mm)	Norm Standard
SWRH	SW-B	2.0mm~8.0mm	JIS G 3521
	SW-C	(.0787 ~ .2755 inches)	
SWRS	SWP-A	2.0mm~8.0mm	JIS G 3522
	SWP-B	(.0787 ~ .2755 inches)	
NLP	SWP-A	3.5mm~8.0mm	
	SWP-B	2.9mm~8.0mm	

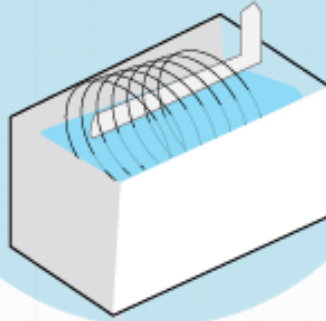


Piano Wire & Hard Drawn Wire

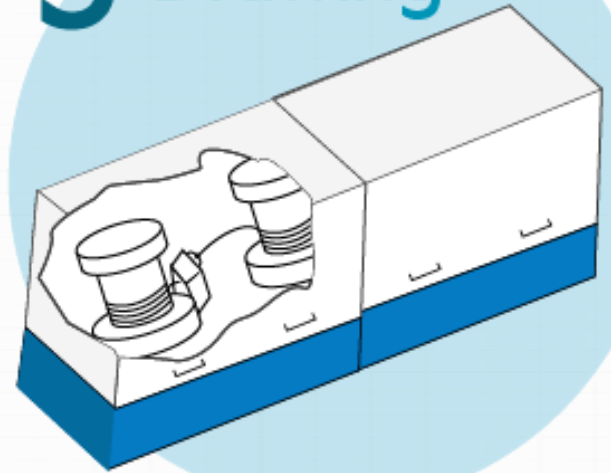
1 Wire Rod



2 Surface treatment



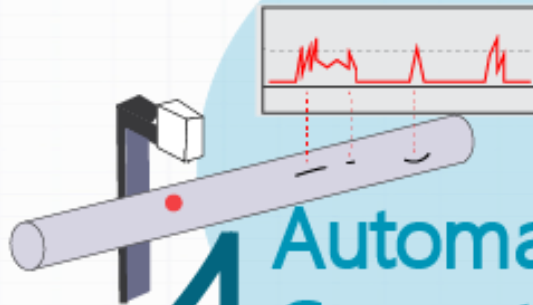
3 Drawing



5 Packing



4 Automative Eddy Current Testing



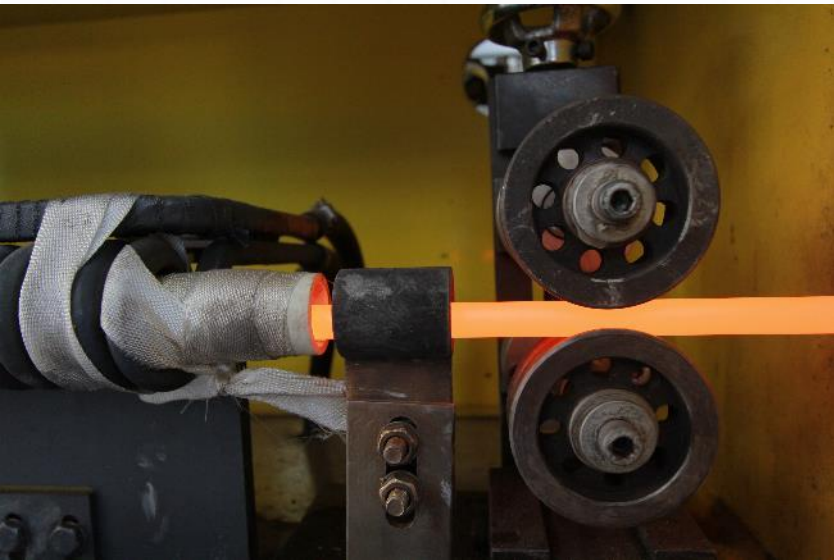
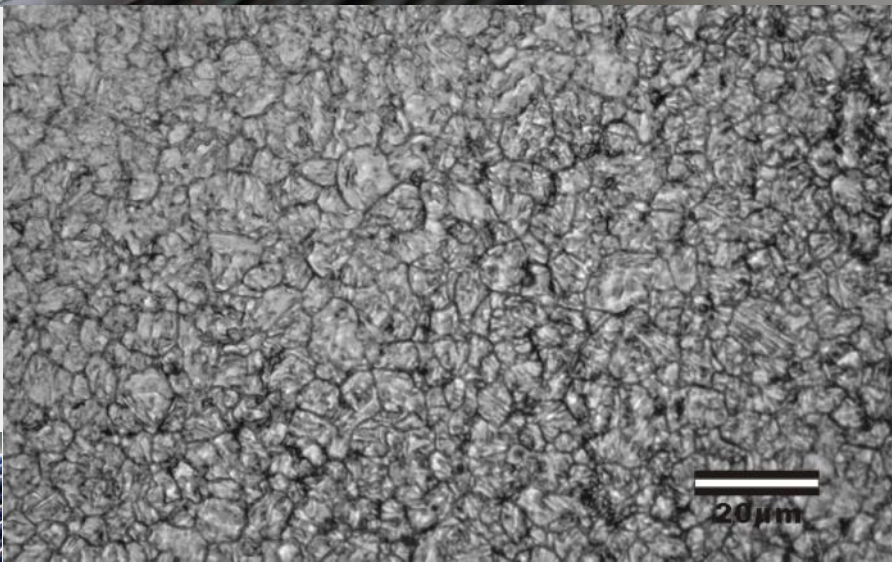
STERLER
Product Process

Oil Tempered Wire

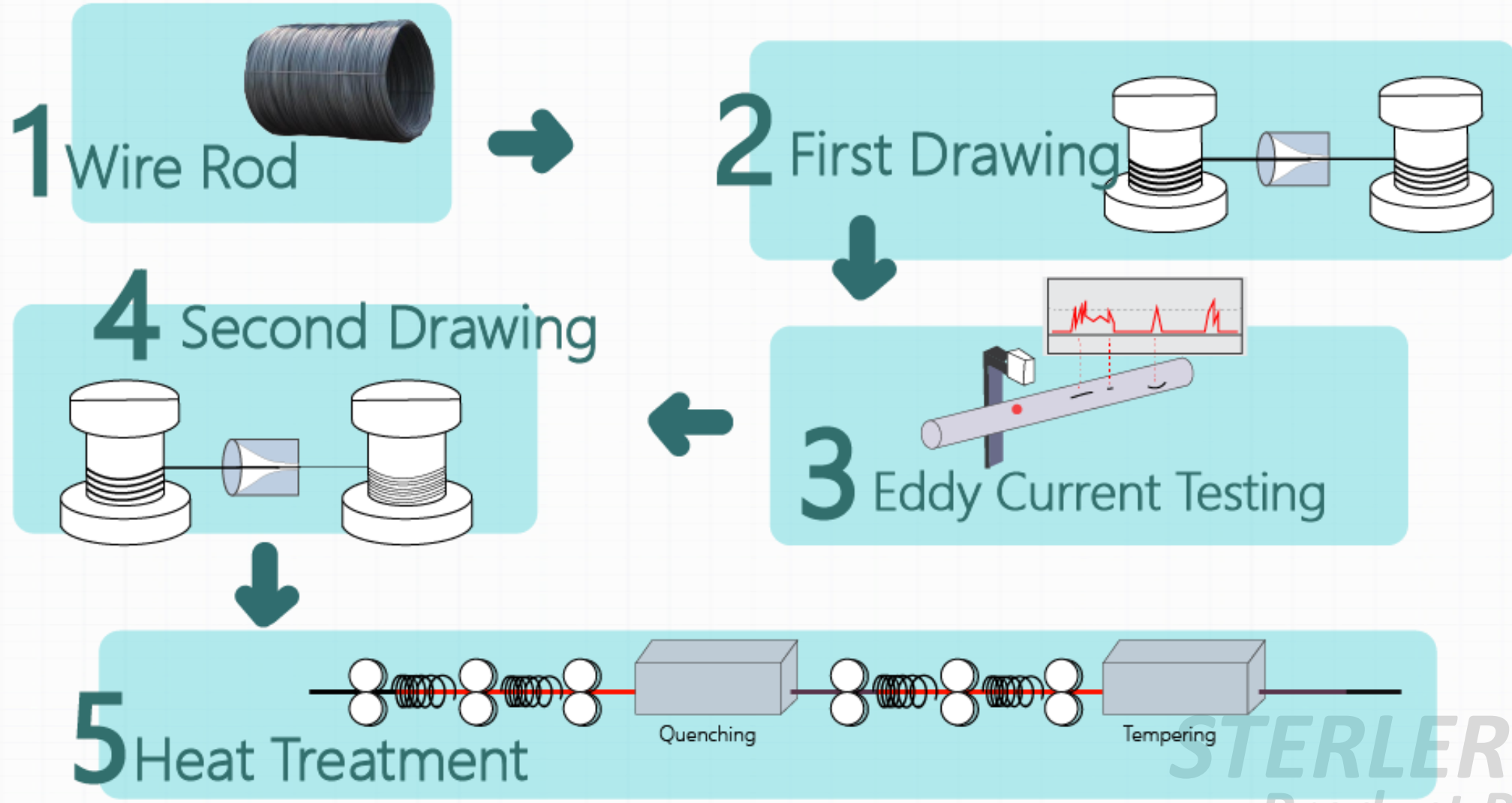
STERLER’s unique heat-treatment technology gain the fined microstructure and high strength and toughness steel wire.
Tensile strength of alloy steel can be customized up to 2000MPa.

● Specific of Oil Tempered Wire

Type	Diameter(mm)	Tensile Strength	Norm Standard
SAE9254 (SWOSC-B)	7.0mm~17.00mm (.2755 ~ .6692 inches)	1600MPa~2000MPa (can be customized)	JIS G 3560



[Oil Tempered Wire]



STERLER
Product Process

Shaped Wire

Shaped wire can development in "customized", suitable for carbon steel, alloy steel, stainless steel. We can do 2.0mm~20mm (.0787 ~ .7874 inches) 2.0mm~20mm (.0787 ~ .7874 inches). Like trapezoid form wire used in die springs.



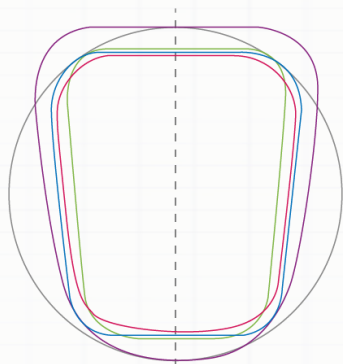
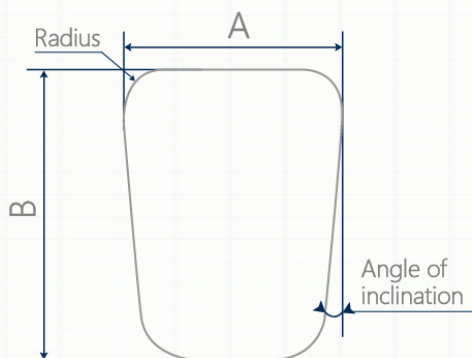
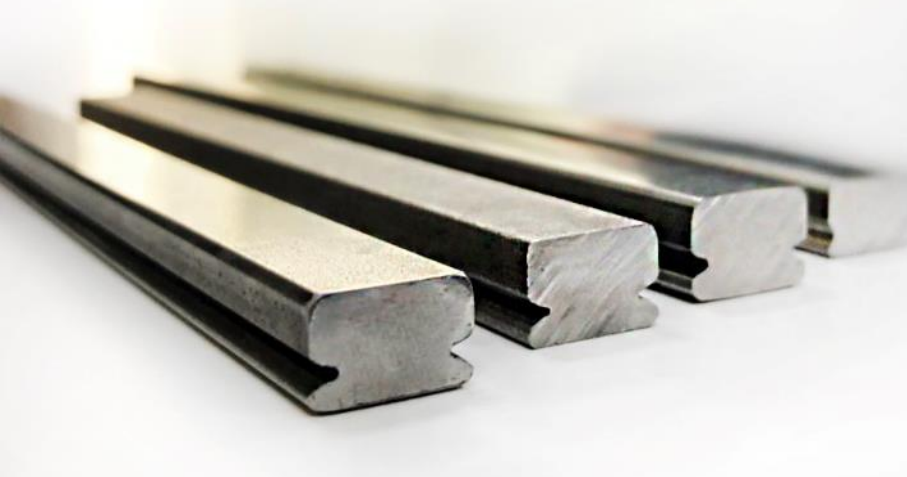
Trapezoid Form of Cross Section

Alloy Steel (SAE9254/SWOSC-B)

	A(mm)	B (mm)	Tensile Strength
Dimension Range	2.0~11.0 (.0787 ~ .4330)	4.0~15.0 (.1574 ~ .5905)	1600~2000MPa (can be customized)

Carbon Steel (Hard Draw Wire/ Piano Wire)

	A(mm)	B (mm)	Tensile Strength
Dimension Range	1.5~5.0 (.0787 ~ .4330)	1.5~5.0 (.1574 ~ .5905)	1600~2000MPa (can be customized)



Guarantee of Quality

STERLER has a Quality Management System certifies by a third party according to ISO 9001 as a minimum and the products quality are also regularly audited by SHOWA and CHUHATSU.

What STL testing in Laboratory?

- ✓ Bending test
- ✓ Torsion test
- ✓ Tensile test
- ✓ Hardness test
- ✓ Deform 3D simulation design
- ✓ Residual stress measurement
- ✓ Homogeneous surface quality



STERLER

Laboratory Measurement and Analysis

Metallographic
analysis

Zero Decarburization
Wire Organization
Prior austenite grain size

Wire films
testing

Corrosion resistance
Precision



Vickers
Hardness tester



Rockwell hardness
machine



Optical
microscope



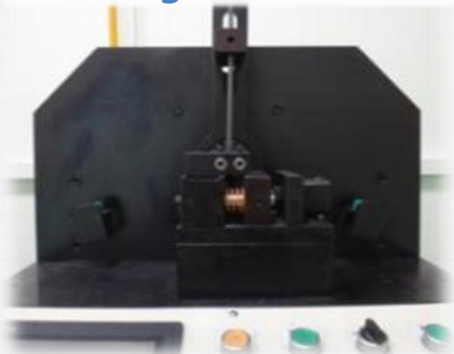
2.5D
microscope



Surface
roughness meter

Mechanical testing machine

Bending test machine



Torsion tester



Tensile tester

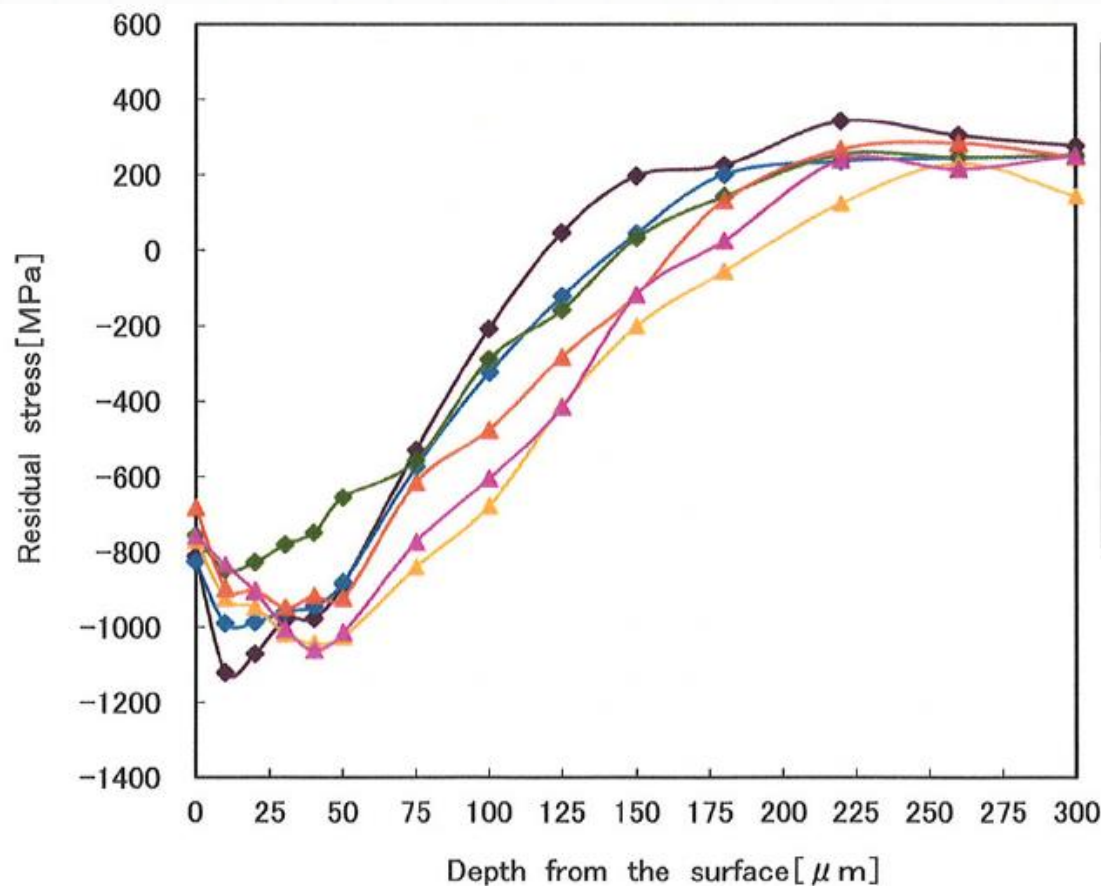


fatigue testing machine



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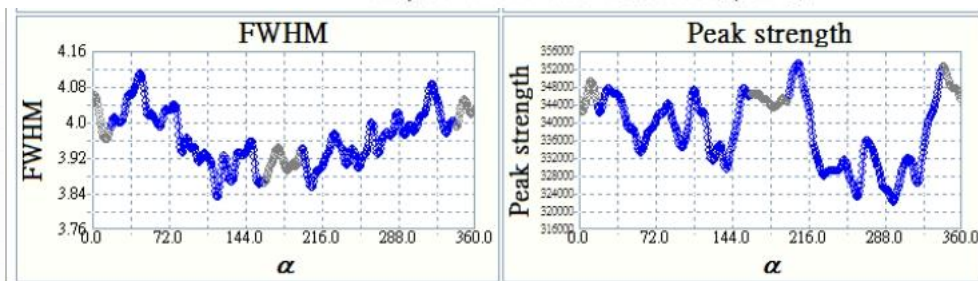
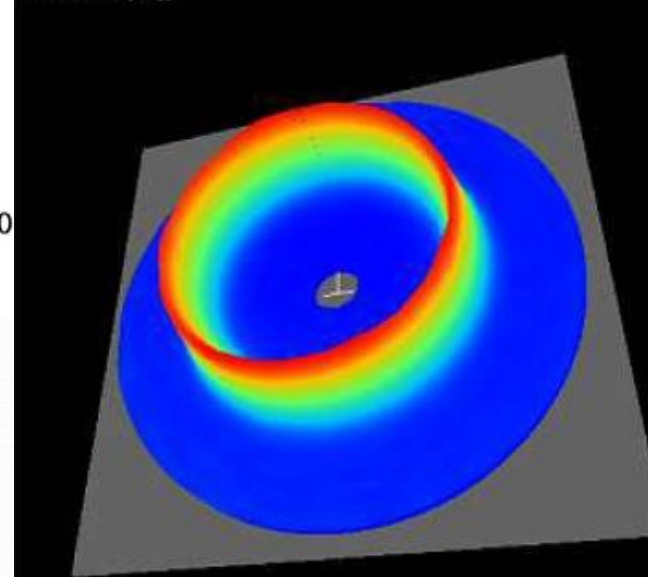
Residual Stress Measurement and Analysis



Camera image



Rotation: 0 [deg]



STERLER Core Value



Competitive Technology

STERLER maintains the global competitiveness including quality control, product diversity, price, delivery flexibility and customer service.



Research & Development

STERLER's R&D has achieved numerous breakthroughs. Now we have successfully improved productivity to reduce the costs and developed high value-added products.



Customer Trust

STERLER has earned customers trust in quality, price and new products development. Also becomes the partner with customers through technical cooperation and exchange.



Corporate Responsibility

We have established a deep trust relationship with all staff and make every efforts to become a leading Global Company.

THANKS
for listening



STERLER TECH CO., LTD.

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