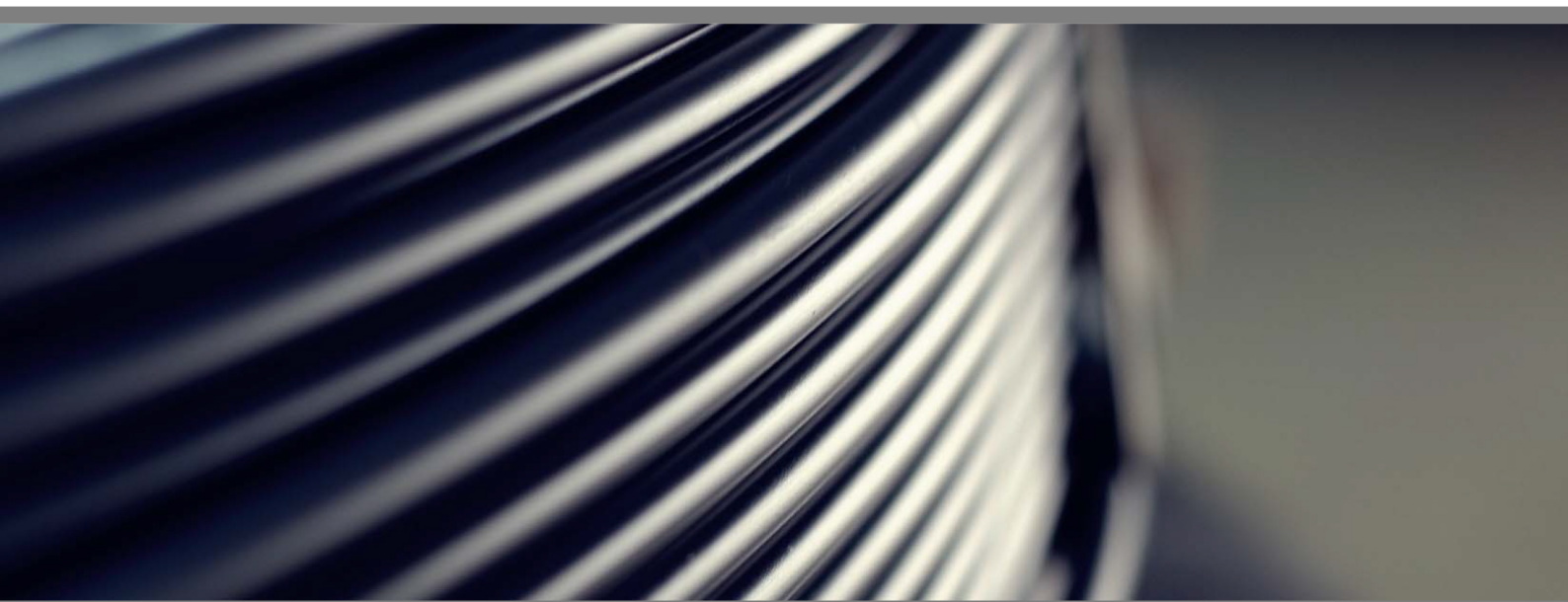
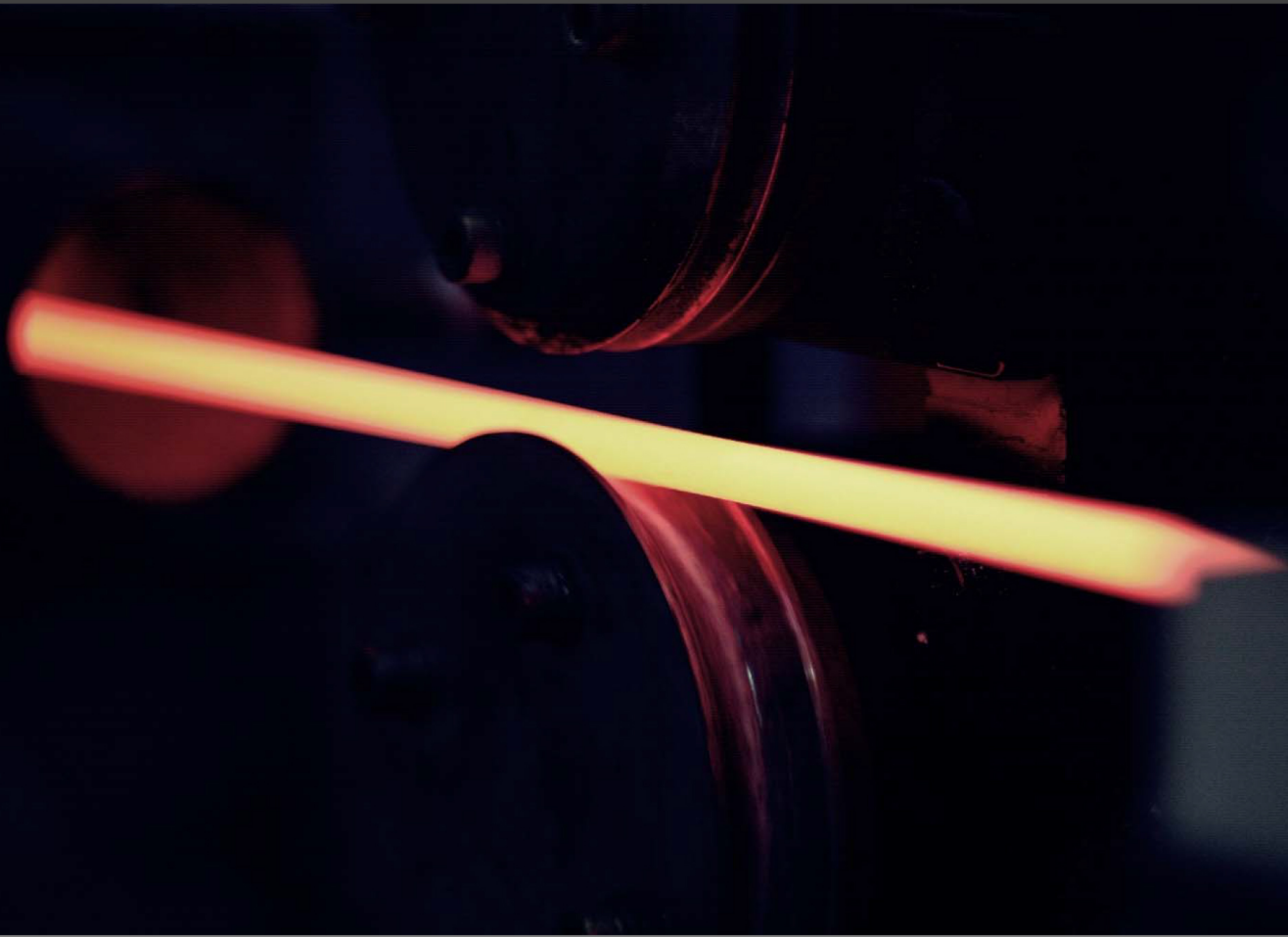




IT WIRE

INDUCTION HEATED, QUENCHED AND TEMPERED STEEL WIRE





IT WIRE is

IT WIRE is a superior spring wire used for automotive suspension coil spring produced by cold forming process. Using chromium-silicon steels and through quenching and tempering by induction heating, IT WIRE is the most optimized spring wire for the reduction of spring weight, high degree of flexibility, severe forming process and passenger's comfort.



CERTIFICATES

YOUNGHEUNG IRON & STEEL has implemented and maintains a Quality Management System.

- Certificate : IATF 16949 : 2016
- Scope : Manufacturing of IT WIRE
- Certificate Authority : DQS Korea



MATERIALS STANDARD

Standards

Materials	Standards		
	JIS	ASTM	DIN / EN
Chromium-Silicon Steels	G 3560	A401, A1000 Grade A	10270-2 17223-2 (FD SiCr)

- JIS G 3560 : Oil tempered wire for mechanical springs
- ASTM A 401 : Standard Specification for Steel Wire, Chromium-Silicon Alloy
- ASTM A 1000 : Standard Specification for Steel Wire, Carbon and Alloy Specialty Spring Quality
- DIN 10270-2 : Steel wire for mechanical springs - Part 2: Oil hardened and tempered spring steel wire
- DIN 17223-2 : Round Spring Steel Wire, Quality Specifications; Quenched and Tempered Spring Wire and Quenched and Tempered Valve Spring Wire Made of Unalloyed Steels

Materials Composition

Standard Steels	Chemical Composition (wt.%)						others
	C	Si	Mn	P	S	Cr	
JIS SWOSC-B	0.51 ~ 0.59	1.20 ~ 1.60	0.50 ~ 0.90	Max. 0.035	Max. 0.035	0.55 ~ 0.90	-
ASTM A1000 Grade A	0.51 ~ 0.59	1.20 ~ 1.60	0.50 ~ 0.80	Max. 0.025	Max. 0.025	0.60 ~ 0.80	-
ASTM A401	0.51 ~ 0.59	1.20 ~ 1.60	0.60 ~ 0.80	Max. 0.035	Max. 0.040	0.60 ~ 0.80	-
DIN FD SiCr	0.50 ~ 0.60	1.20 ~ 1.60	0.50 ~ 0.90	Max. 0.030	Max. 0.025	0.50 ~ 0.80	Cu : Max. 0.12

※ For the production of other material standards other than the above, additional consultation is required.

PRODUCTS

Products and Specifications

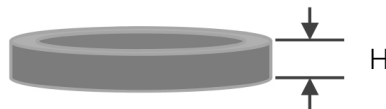
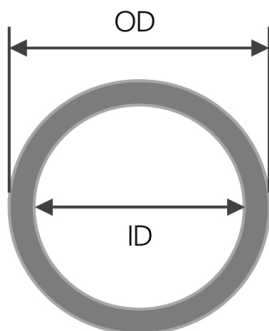
Grade	Specifications				
	Diameter (mm)	Tolerance (mm)	Out of Roundness (mm)	Tensile Strength (MPa)	Reduction of Area (%)
IT-180	5.0 ~ 15.0	±0.05	Max. 0.05	1750 ~ 1850	Min. 35
IT-190				1850 ~ 1950	Min. 35
IT-200				1950 ~ 2050	Min. 35
IT-210				2050 ~ 2150	Min. 30

PACKING

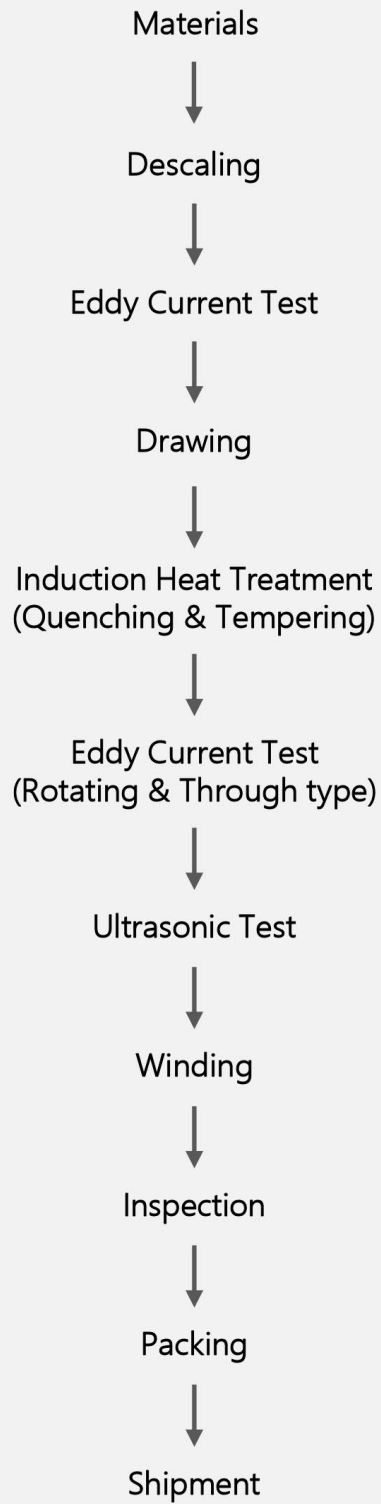
Package Standard

Weight		Coil Size (mm)		
LBS	kg	Inner Diameter (ID)	Outer Diameter (OD)	Height (H)
2000	1000	1600 ~ 1800	Max. 2100	180
4000	2000	1600 ~ 1800	Max. 2300	250

※ For the application of other package standards other than the above, additional consultation is required.



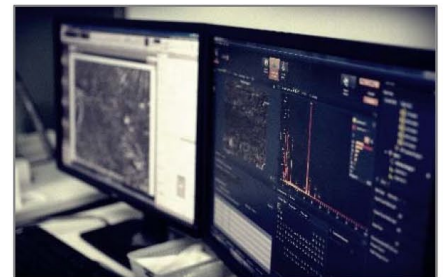
MANUFACTURING PROCESS



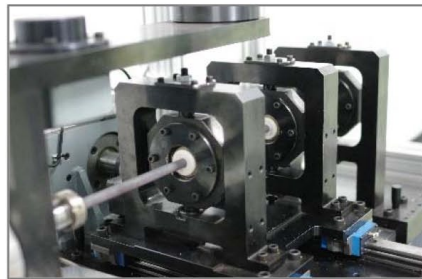


INSPECTION AND ANALYSIS

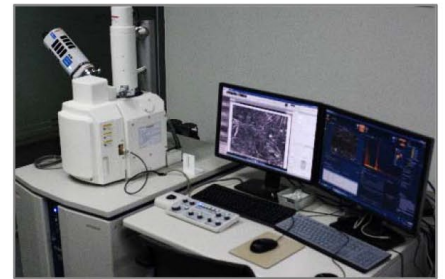
- Surface / Inner Defects Inspection (ECT, UT)
- Tensile Test
- Hardness Test
- Rotational Bending Fatigue Test
- Microstructure Analysis
- Grain Size Measurement
- Decarburization Inspection
- Failure Analysis



Eddy Current Test / Ultrasonic Test



Rotational Bending Fatigue Test



SEM-EDS Analysis

YOUNGHEUNG
IRON  STEEL

www.youngwire.com

BO RYEONG FACTORY (HEADQUARTERS) :
50, Gwanchanggongdan-gil, Jugyo-myeon, Boryeong-si, Chungcheongnam-do, Republic of Korea
TEL: 82-41-939-3900 , FAX: 82-41-933-3905

CHANG WON FACTORY :
193, Gongdan-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Republic of Korea
TEL: 82-55-239-5500 , FAX: 82-55-282-2676

SEOUL BUSINESS OFFICE :
8th floor, 4, Hangang-daero 71-gil, Yongsan-gu, Seoul, Republic of Korea
TEL: 82-2-2077-8500 , FAX: 82-2-2077-8515

