

宝山钢铁股份有限公司
http://www.baosteel.com

BAOSHAN IRON & STEEL CO., LTD.
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Wire Rod 线材

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宝山钢铁股份有限公司
BAOSHAN IRON & STEEL CO., LTD.



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■ 线材简介

宝钢股份高速线材轧机于1999年3月投产，目前年生产量约57万吨。产品规格 $\phi 5.0-\phi 28.0\text{mm}$ 。主要品种有汽车用弹簧钢、冷镦钢、帘线钢、桥梁缆索用钢、高碳钢、焊接用钢和轴承钢等。

线材原料采用高炉铁水和优质废钢，经过转炉或电炉及精炼工序的纯净钢冶炼技术生产，确保钢质纯净。钢坯精整线对钢坯表面存在缺陷进行清理，确保钢坯表面质量。随着2008年

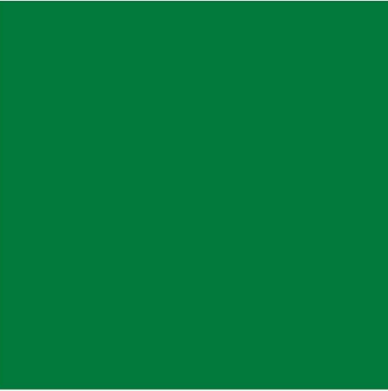
5月电炉大方坯连铸投产，线材原料水平得到大幅度改善，进一步提升了线材实物质量。

线材生产线的主要设备从美国摩根公司引进，单线无扭连续生产，最大轧制速度为120m/s。采用控制轧制和控制冷却工艺，通过对冷却水箱水量和斯太尔摩线冷却速度的控制可获得产品所期望的组织和性能。为保证产品表面质量和尺寸精度，在精轧机组和减定径机组后分别设置了影像探伤仪和测径仪，

产品尺寸精度可达0.1mm。

宝钢股份线材采用一贯质量管理方式，对产品从原料入厂直至产品出厂进行以质量为中心的全过程最优化控制，并借助先进的质量控制方法不断改进产品质量。

宝钢股份汽车用弹簧钢、冷镦钢、帘线钢盘条已稳定用于欧美系、日系汽车品牌。桥梁缆索用镀锌钢丝、特种焊丝盘条在重大工程中获得广泛应用。



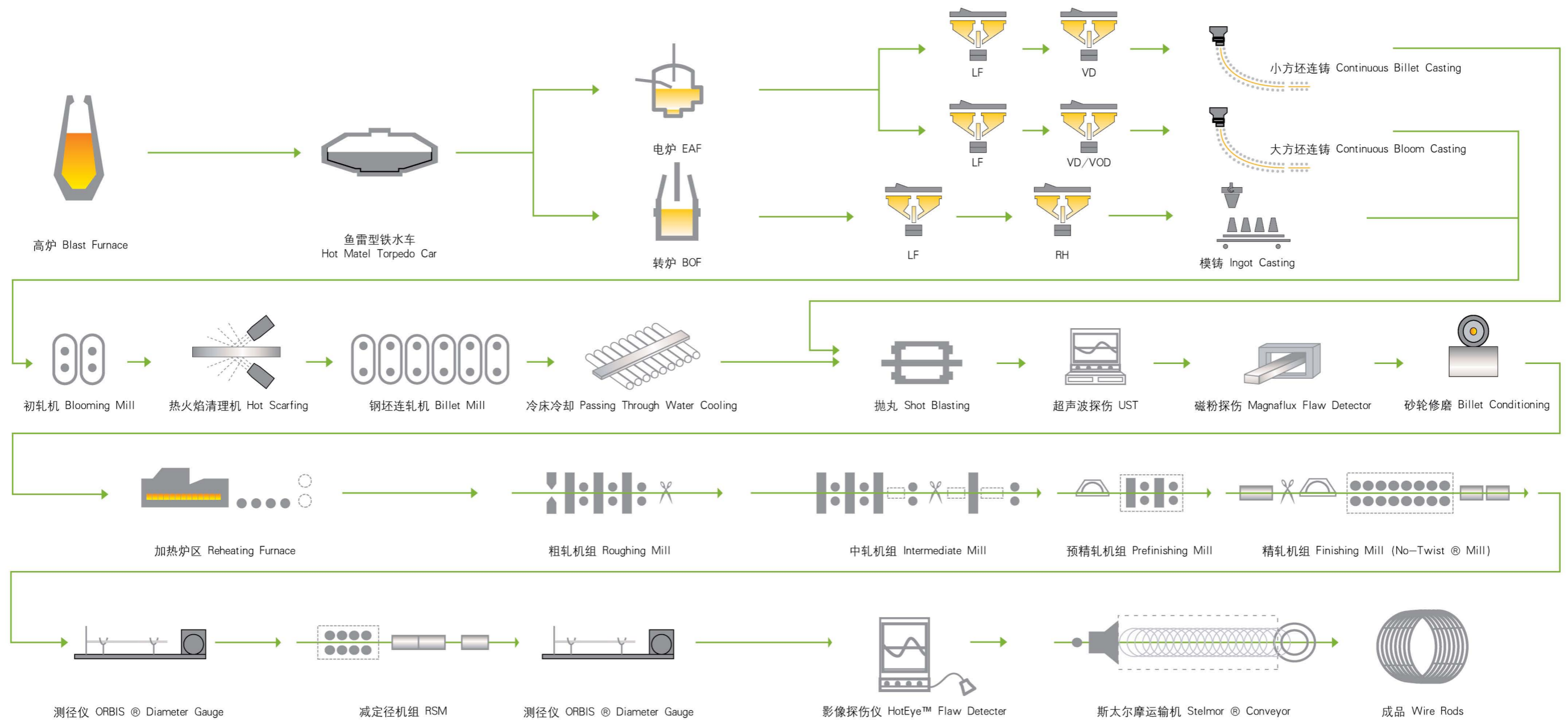
Introduction to Wire Rod

The high-speed wire rod mill of Baosteel was put into production in March 1999 and rolls plain rod from 5.0mm to 28.0mm with production capacity of up to 570,000 tons per year. The major products involve spring steel wire rod, cold heading wire rod, wire rod for tire cord, wire rod for bridge main cables, high carbon steel wire rod, welding wire rod, bearing steel wire rod, etc. Raw materials for wire rod include blast furnace hot metal and high quality scraps. Refining processes after BOF or EAF ensure the cleanliness of steel. The flaws are cleaned up on the billet conditioning line in order to obtain high surface quality. With the commissioning of new continuous bloom casting process in May 2008,

the practical quality of wire rod has been further upgraded due to the great improvement of the raw materials. The main rolling equipments of mill are supplied by Morgan Construction Company and the rolling line is single-strand with maximum finishing speed of 120 meters per second. Perfect microstructures and mechanic properties are gained through controlling water boxes and Stelmor Cooling System. In order to ensure accurate diameter with a tolerance of $\pm 0.1\text{mm}$ and high surface quality, one HotEye flaw detector and two ORBIS diameter gauges are located after the No-Twist Finishing Mill and Reducing/Sizing Mill. Integrating Quality Control is applied

throughout the entire manufacturing processes from the handling of raw materials to the delivery of finished products to guarantee full customer satisfaction. Spring steel wire rod, cold heading wire rod, wire rod for tire cord have been stable used for Europe, American, Japanese car brand. Galvanized wire for bridge cables and welding wire rod have been widely used in many key projects.

Process Flowchart
生产工艺流程图



Available Steel Grades 产品牌号

1、弹簧钢盘条 (Q/BQB 516) Spring Steel Wire Rod (Q/BQB 516)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其它 Others
60Si2MnA	0.56-0.64	1.60-2.00	0.70-1.00	≤0.025	≤0.025	Cr≤0.35, Ni≤0.35, Cu≤0.20
B55SiCr	0.51-0.59	1.20-1.60	0.60-0.90	≤0.025	≤0.025	Cr:0.60-0.80 Ni≤0.25, Cu≤0.12
60Si2CrA	0.56-0.64	1.40-1.80	0.40-0.70	≤0.025	≤0.025	Cr:0.70-1.00
60Si2CrVAT*	0.56-0.64	1.40-1.80	0.40-0.70	≤0.020	≤0.020	Cr:0.90-1.20, V:0.10-0.20 Ni≤0.35, Cu≤0.20
50CrVA	0.46-0.54	0.17-0.37	0.50-0.80	≤0.025	≤0.025	Cr:0.80-1.10, V:0.10-0.20 Ni≤0.25, Cu≤0.20
B55SiCrV	0.51-0.59	1.20-1.60	0.60-0.80	≤0.025	≤0.025	Cr:0.60-0.80, V:0.15-0.25 Cu≤0.12

注 Notes: * 按照协议供货

* According to the technical agreement reached by the Sellers and the Buyers.

2.1、冷镦钢盘条 (Q/BQB 517) Cold Heading Wire Rod (Q/BQB 517)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其它 Others
SWRCH6A	≤0.08	≤0.10	≤0.60	≤0.025	≤0.025	Al _i ≥0.02
SWRCH8A	≤0.10	≤0.10	≤0.60	≤0.025	≤0.025	Al _i ≥0.02
SWRCH10A	0.08-0.13	≤0.10	0.30-0.60	≤0.025	≤0.025	Al _i ≥0.02
SWRCH12A	0.10-0.15	≤0.10	0.30-0.60	≤0.025	≤0.025	Al _i ≥0.02
SWRCH15A	0.13-0.18	≤0.10	0.30-0.60	≤0.025	≤0.025	Al _i ≥0.02
SWRCH16A	0.13-0.18	≤0.10	0.60-0.90	≤0.025	≤0.025	Al _i ≥0.02
SWRCH18A	0.15-0.20	≤0.10	0.60-0.90	≤0.025	≤0.025	Al _i ≥0.02
SAE 1018	0.15-0.20	≤0.10	0.60-0.90	≤0.025	≤0.025	Al _i ≥0.02
SWRCH19A	0.15-0.20	≤0.10	0.70-1.00	≤0.025	≤0.025	Al _i ≥0.02

2.1、冷镦钢盘条 (Q/BQB 517) Cold Heading Wire Rod (Q/BQB 517)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其它 Others
SWRCH20A	0.18-0.23	≤0.10	0.30-0.60	≤0.025	≤0.025	Al _i ≥0.02
SWRCH22A	0.18-0.23	≤0.10	0.70-1.00	≤0.025	≤0.025	Al _i ≥0.02
SAE 1022	0.18-0.23	≤0.10	0.70-1.00	≤0.025	≤0.025	Al _i ≥0.02
SWRCH10K	0.08-0.13	0.10-0.35	0.30-0.60	≤0.025	≤0.025	
SWRCH15K	0.13-0.18	0.10-0.35	0.30-0.60	≤0.025	≤0.025	
S15C	0.13-0.18	0.10-0.35	0.30-0.60	≤0.025	≤0.025	
SWRCH17K	0.15-0.20	0.10-0.35	0.30-0.60	≤0.025	≤0.025	
SWRCH20K	0.18-0.23	0.10-0.35	0.30-0.60	≤0.025	≤0.025	
SAE 1020	0.18-0.23	0.10-0.35	0.30-0.60	≤0.025	≤0.025	
SWRCH22K	0.18-0.23	0.10-0.35	0.70-1.00	≤0.025	≤0.025	
SWRCH25K	0.22-0.28	0.10-0.35	0.30-0.60	≤0.025	≤0.025	
S25C	0.22-0.28	0.10-0.35	0.30-0.60	≤0.025	≤0.025	
SWRCH30K	0.27-0.33	0.10-0.35	0.60-0.90	≤0.025	≤0.025	
SWRCH35K	0.32-0.38	0.10-0.35	0.60-0.90	≤0.025	≤0.025	
SWRCH38K	0.35-0.41	0.10-0.35	0.60-0.90	≤0.025	≤0.025	
SWRCH40K	0.37-0.43	0.10-0.35	0.60-0.90	≤0.025	≤0.025	
SWRCH45K	0.42-0.48	0.10-0.35	0.60-0.90	≤0.025	≤0.025	
SWRCH50K	0.47-0.53	0.10-0.35	0.60-0.90	≤0.025	≤0.025	
ML35	0.32-0.39	≤0.20	0.30-0.60	≤0.025	≤0.025	
10B21	0.18-0.23	≤0.10	0.70-1.00	≤0.025	≤0.025	B≥0.0008
SCM435	0.33-0.38	0.15-0.35	0.60-0.90	≤0.025	≤0.025	Cr:0.90-1.20, Mo:0.15-0.30
SCr440	0.38-0.43	0.15-0.35	0.60-0.90	≤0.025	≤0.025	Cr:0.90-1.20
ML20MnTiB	0.19-0.24	≤0.30	1.30-1.60	≤0.025	≤0.025	Ti:0.04-0.10, B:0.0005-0.0035 Al _i ≥0.02
ML20MnVB	0.19-0.24	≤0.30	1.20-1.60	≤0.025	≤0.025	V:0.07-0.12, B:0.0005-0.0035 Al _i ≥0.02

注 Notes: * SWRCH6A~SWRCH22A、SWRCH10K~SWRCH50K为JIS G 3507-1中的牌号, SCM435、SCr440为JIS G 4053中的牌号, ML20MnTiB、ML20MnVB、

ML35为GB/T 6478中的牌号, SAE 1018~SAE 1022为SAE J403-2009中的牌号, S15C~S25C为JIS G 4051中的牌号。

* SWRCH6A~SWRCH22A、SWRCH10K~SWRCH50K are of standard JIS G 3507-1, SCM435、SCr440 are of standard JIS G 4053, ML20MnTiB、ML20MnVB、

ML35 are of standard GB/T 6478, SAE 1018~SAE 1022 are of standard SAE J403-2009, S15C~S25C are of standard JIS G 4051.

2.2、冷镦钢盘条 (协议) Cold Heading Wire Rod (Agreement)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其它 Others
SAE 1006	≤0.08		0.25-0.40	≤0.020	≤0.020	
SAE 1010	0.08-0.13		0.30-0.60	≤0.020	≤0.020	
SAE 4037	0.35-0.40	0.15-0.35	0.70-0.90	≤0.020	≤0.020	
S10C	0.08-0.13	0.15-0.35	0.30-0.60	≤0.020	≤0.020	Cr≤0.20, Ni≤0.20, Cu≤0.20
S20C	0.18-0.23	0.15-0.35	0.30-0.60	≤0.020	≤0.020	Cr≤0.20, Ni≤0.20, Cu≤0.20
S35C	0.32-0.38	0.15-0.35	0.60-0.90	≤0.020	≤0.020	Cr≤0.20, Ni≤0.20, Cu≤0.20
S40C	0.37-0.43	0.15-0.35	0.60-0.90	≤0.020	≤0.020	Cr≤0.20, Ni≤0.20, Cu≤0.20
S43C	0.40-0.44	0.15-0.35	0.60-0.90	≤0.020	≤0.020	Cr≤0.20, Ni≤0.20, Cu≤0.20
S45C	0.42-0.48	0.15-0.35	0.60-0.90	≤0.020	≤0.020	Cr≤0.20, Ni≤0.20, Cu≤0.20
S48C	0.45-0.51	0.15-0.35	0.60-0.90	≤0.020	≤0.020	Cr≤0.20, Ni≤0.20, Cu≤0.20
S50C	0.47-0.53	0.15-0.35	0.60-0.90	≤0.020	≤0.020	Cr≤0.20, Ni≤0.20, Cu≤0.20
40ACr	0.40-0.44	≤0.10	0.60-0.90	≤0.030	≤0.030	Cr:0.30-0.45, Al _l ≥0.01
10B30	0.28-0.34	0.15-0.35	0.80-1.00	≤0.025	≤0.025	Cr:0.10-0.25, B≥0.0008
10B33	0.30-0.36		0.70-1.00	≤0.030	≤0.050	B≥0.0008
10B35	0.32-0.38	≤0.35	0.60-0.90	≤0.025	≤0.025	Cr:0.20-0.35, B:0.0008-0.0030 Al _l :0.015-0.045 Ni≤0.20, Cu≤0.20, Mo≤0.05
10B38	0.35-0.42		0.60-0.90	≤0.030	≤0.050	B≥0.0008
15B25Mn	0.23-0.28	≤0.35	0.90-1.20	≤0.020	≤0.020	Cr≤0.40, B:0.0005-0.0030 Ti/N≥2.5, Ni≤0.25, Cu≤0.30
50BV30	0.27-0.33	≤0.10	0.70-1.00	≤0.030	≤0.035	Cr:0.30-0.50, V:0.10-0.50 B≥0.0005

2.2、冷镦钢盘条 (协议) Cold Heading Wire Rod (Agreement)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其它 Others
32CrB4	0.30-0.34	0.15-0.35	0.60-0.90	≤0.025	≤0.025	Cr:0.90-1.20, B:0.0010-0.0050 Al _l ≥0.02, Ti≥0.03, Cu≤0.05
20CrMoA	0.18-0.23	0.15-0.35	0.60-0.85	≤0.025	≤0.025	Cr:0.90-1.20, Mo:0.15-0.30 Ni≤0.25, Cu≤0.25
SWRCH40K-1	0.37-0.44	≤0.10	0.60-0.90	≤0.030	≤0.030	Cr:0.30-0.45, Al _l ≥0.01
ML15	0.13-0.18	≤0.10	0.30-0.60	≤0.025	≤0.025	Al _l ≥0.02
ML15MnVB	0.14-0.19	≤0.30	1.20-1.60	≤0.030	≤0.030	V:0.07-0.12, B:0.0005-0.0055
ML35CrMoZ	0.33-0.38	0.15-0.35	0.60-0.90	≤0.025	≤0.025	Cr:0.90-1.20, Mo:0.15-0.30
ML40Cr	0.38-0.43	0.15-0.35	0.60-0.90	≤0.025	≤0.025	Cr:0.90-1.20
ML42CrMo	0.38-0.43	0.15-0.35	0.60-0.90	≤0.025	≤0.025	Cr:0.90-1.20, Mo:0.15-0.30
ML42CrMoZ	0.38-0.43	≤0.15	0.60-0.90	≤0.020	≤0.015	Cr:0.90-1.20, Al _l :0.02-0.05 Mo:0.15-0.30
SCr415	0.16-0.20	0.15-0.30	0.60-0.90	≤0.030	≤0.030	Cr:0.70-1.00, Cu≤0.20
SCM415	0.13-0.18	0.15-0.35	0.60-0.90	≤0.030	≤0.030	Cr:0.90-1.00, Mo:0.15-0.35
SCM415-1	0.10-0.15	0.17-0.37	0.40-0.60	≤0.025	≤0.025	Cr:0.80-1.00, Mo:0.46-0.60
SCM420	0.18-0.23	0.15-0.35	0.60-0.85	≤0.025	≤0.025	Cr:0.90-1.20, Mo:0.15-0.30 Ni≤0.25, Cu≤0.25
SCM430	0.31-0.35	0.15-0.35	0.60-0.85	≤0.030	≤0.030	Cr:0.90-1.20, Mo:0.15-0.35
SCM435-1	0.35-0.38	0.15-0.35	0.60-0.85	≤0.030	≤0.030	Cr:0.90-1.20, Mo:0.15-0.35
SCM435-2	0.33-0.38	≤0.15	0.60-0.85	≤0.020	≤0.015	Cr:0.90-1.20, B≤0.0005 Al _l :0.02-0.05, Mo:0.15-0.30 Cu≤0.25
SCM440	0.38-0.43	0.15-0.30	0.60-0.90	≤0.025	≤0.025	Cr:0.90-1.20, Mo:0.15-0.30 Ni≤0.20, Cu≤0.20

注 Notes: * SAE 1006~SAE 1010为SAE J403-2009中的牌号, S10C~S50C为JIS G 4051中的牌号, ML*为GB/T 6478中的牌号, SC*为JIS G 4053中的牌号。其它为宝钢在国际标准基础上和用户共同开发的牌号。

* SAE 1006~SAE 1010 are of standard SAE J403-2009, S10C~S50C are of standard JIS G 4051, ML* series are of standard GB/T 6478, SC* series are of standard JIS G 4053. The other grades are made by Baosteel and customers on the basis of International Standards.

2.3、冷镦用超低碳钢盘条 (协议) Extra Low Carbon Cold Heading Wire Rod (Agreement)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其它 Others
B-CH1T	≤0.010		≤0.35	≤0.030	≤0.035	Ti≥0.06
B-CH1A	≤0.015		≤0.35	≤0.030	≤0.030	
B-CH2A	≤0.010		≤0.15	≤0.015	≤0.010	

3.1、焊接用钢盘条 (Q/BQB 511) Welding Wire Rod (Q/BQB 511)

牌号 Grade	化学成份 (成品) % Chemical Composition (Finished Product) %					
	C	Si	Mn	P	S	其它 Others
BH550NQ-II	≤0.10	≤0.60	1.20-1.60	≤0.025	≤0.020	Cu:0.10-0.40, Cr:0.30-0.90 Ni:0.20-0.60
BH600-II	≤0.12	≤0.80	1.00-2.00	≤0.020	≤0.020	Ni:0.10-1.00, Mo:0.10-1.00 Cr≤0.12
BH700-II	≤0.12	≤0.80	1.00-2.00	≤0.020	≤0.020	Ni:0.30-1.00, Mo:0.10-0.60 Cr:0.05-1.00
BH500J-III	≤0.18	≤0.30	1.60-2.20	≤0.020	≤0.020	Ni≤0.30
BH500NHY3-III	≤0.15	≤0.60	1.00-1.60	≤0.020	≤0.020	Ni≤0.65, Mo≤0.30 Cu≤0.40, Cr≤1.30
SWRY11	≤0.09	≤0.03	0.35-0.65	≤0.020	≤0.023	Cu≤0.20
ER70S-6	0.06-0.15	0.80-1.15	1.40-1.85	≤0.025	≤0.035	
H10Mn2	≤0.12	≤0.05	1.50-1.90	≤0.035	≤0.035	
BH10Mn2G	≤0.17	≤0.05	1.80-2.20	≤0.030	≤0.030	Ni≤0.30, Cr≤0.20
H08MnA	≤0.10	≤0.05	0.80-1.10	≤0.030	≤0.030	
H08Mn2SiA	≤0.11	0.70-0.95	1.80-2.10	≤0.030	≤0.030	
BH08MnMoTiB	≤0.11	≤0.25	1.40-1.60	≤0.030	≤0.030	Mo:0.30-0.60, Ti:0.03-0.08 B:0.004-0.008
BH08Mn2E	≤0.10	≤0.07	1.50-1.90	≤0.025	≤0.020	Ni≤0.25, Cu≤0.20, Cr≤0.20
H08MnSiCuCrNi	≤0.10	0.35-0.65	0.90-1.30	≤0.025	≤0.025	Cu, Cr, Ni:0.20-0.50

3.2、焊接用钢盘条 (协议) Welding Wire Rod (Agreement)

牌号 Grade	化学成份 (成品) % Chemical Composition (Finished Product) %					
	C	Si	Mn	P	S	其它 Others
ER70S-G	≤0.10	0.65-0.85	1.40-1.60	≤0.025	0.008-0.020	Ti:0.08-0.25, Cu≤0.10 Al ₁ ≤0.10
ER55-D2-Ti	≤0.12	0.40-0.80	1.60-1.90	≤0.025	≤0.025	Ti:0.05-0.15, Mo:0.20-0.35 Cu≤0.20
BH70GX-III	0.06-0.10	0.15-0.35	1.50-1.70	≤0.015	≤0.005	Ti≥0.081, B:0.0035-0.0065 Cu≤0.10, Mo:0.30-0.40 N≤0.0080
ER80S-B2	≤0.12	0.60-0.90	1.00-1.50	≤0.025	≤0.020	Mo:0.45-0.65, Cr:1.00-1.20 Ni≤0.25, Cu≤0.15
ER69-3	≤0.12	0.40-0.80	1.25-1.80	≤0.020	≤0.020	Mo:0.20-0.55, Ti≤0.20 Ni:0.60-1.10, Al ₁ ≤0.10 Cu≤0.35
BH08Mn2SiTiB	≤0.10	0.55-1.10	1.65-1.95	≤0.025	≤0.009	Cu≤0.10, N≤0.0080 Ti:0.08-0.18, B:0.0035-0.0060
BH800-II	≤0.12	≤0.80	1.00-2.00	≤0.030	≤0.030	Mo:0.10-0.60, Cr:0.05-1.00 Ni:0.10-1.50
BH900-II	≤0.15	0.30-0.80	1.20-2.20	≤0.015	≤0.010	Mo≤0.60, Cr≤0.40 Ni:1.00-2.50, Cu≤0.40
BH80GX-III	0.02-0.08	0.25-0.45	1.75-1.95	≤0.020	≤0.015	Mo:0.30-0.60, Nb:0.025-0.055 Ti:0.015-0.030 B:0.0020-0.0080
BH90GX-III	0.02-0.06	0.25-0.50	1.40-1.70	≤0.015	≤0.010	Mo:0.40-0.60, Ni:1.80-2.20 Cr:0.15-0.40, Ti:0.008-0.050 B:0.0030-0.0070

4、桥梁缆索镀锌钢丝用盘条 (Q/BQB 521) Wire Rod for Bridge Main Cables (Q/BQB 521)

牌号 Grade	化学成份 % Chemical Composition %					
	C	Si	Mn	P	S	其它 Others
B82MnQL	0.80-0.85	0.12-0.32	0.60-0.90	≤0.025	≤0.025	Cr≤0.20, Cu≤0.20
B87MnQL	0.85-0.91	0.12-0.32	0.60-0.90	≤0.025	≤0.025	Cr:0.10-0.25, V:0.02-0.06 Cu≤0.10
B90SiQL*	0.88-0.93	0.80-1.20	0.60-0.90	≤0.020	≤0.020	Cr:0.05-0.35, V≤0.02 Cu≤0.02

注 Notes: * 按照协议供货

* According to the technical agreement reached by the Sellers and the Buyers.

5、钢帘线盘条 (协议) Wire Rod for Tire Cord (Agreement)

牌号 Grade	化学成份 % Chemical Composition %						
	C	Si	Mn	P	S	P+S	其它 Others
B72LX	0.70-0.76	≤0.30	0.40-0.60	≤0.020	≤0.015	≤0.30	
B82LX	0.80-0.85	≤0.30	0.40-0.60	≤0.020	≤0.015	≤0.30	
B86LX	0.84-0.89	0.15-0.35	0.40-0.60	≤0.020	≤0.015		Cu≤0.06, Ni≤0.06 Al ₁ ≤0.003, N≤0.06
B92LX	0.89-0.95	0.15-0.30	0.25-0.45	≤0.020	≤0.015		Cu≤0.06, Ni≤0.06 Al ₁ ≤0.003, N≤0.06
B96LX	0.95-0.99	0.10-0.25	0.30-0.50	≤0.015	≤0.015		Cu≤0.02, Ni≤0.02 Al ₁ ≤0.003, N≤0.06



6、低碳钢盘条 (Q/BQB 513) Low Carbon Steel Wire Rod (Q/BQB 513)

牌号 Grade	化学成份% Chemical Composition %				
	C	Si	Mn	P	S
SWRM6	≤0.08	≤0.03	≤0.60	≤0.025	≤0.025
SWRM6-1	≤0.06	≤0.03	≤0.60	≤0.025	≤0.025
SWRM8	≤0.10	≤0.03	≤0.60	≤0.025	≤0.025
SWRM10	0.08-0.13	≤0.03	0.30-0.60	≤0.025	≤0.025
SWRM12	0.10-0.15	≤0.03	0.30-0.60	≤0.025	≤0.025
SWRM15	0.13-0.18	≤0.03	0.30-0.60	≤0.025	≤0.025
SWRM17	0.15-0.20	≤0.03	0.30-0.60	≤0.025	≤0.025
SWRM20	0.18-0.23	≤0.03	0.30-0.60	≤0.025	≤0.025

7、高碳钢盘条 (Q/BQB 512) High Carbon Steel Wire Rod (Q/BQB 512)

牌号 Grade	化学成份% Chemical Composition %				
	C	Si	Mn	P	S
SWRH32	0.29-0.36	0.15-0.35	0.30-0.60	≤0.025	≤0.025
SWRH42A	0.39-0.46	0.15-0.35	0.30-0.60	≤0.025	≤0.025
SWRH42B	0.39-0.46	0.15-0.35	0.60-0.90	≤0.025	≤0.025
SWRH47A	0.44-0.51	0.15-0.35	0.30-0.60	≤0.025	≤0.025
SWRH47B	0.44-0.51	0.15-0.35	0.60-0.90	≤0.025	≤0.025
SWRH52A	0.49-0.56	0.15-0.35	0.30-0.60	≤0.025	≤0.025
SWRH52B	0.49-0.56	0.15-0.35	0.60-0.90	≤0.025	≤0.025
SWRH57A	0.54-0.61	0.15-0.35	0.30-0.60	≤0.025	≤0.025
SWRH57B	0.54-0.61	0.15-0.35	0.60-0.90	≤0.025	≤0.025
SWRH62A	0.59-0.66	0.15-0.35	0.30-0.60	≤0.025	≤0.025
SWRH62B	0.59-0.66	0.15-0.35	0.60-0.90	≤0.025	≤0.025
SWRH67A	0.64-0.71	0.15-0.35	0.30-0.60	≤0.025	≤0.025
SWRH67B	0.64-0.71	0.15-0.35	0.60-0.90	≤0.025	≤0.025
SWRH72A	0.69-0.76	0.15-0.35	0.30-0.60	≤0.025	≤0.025
SWRH72B	0.69-0.76	0.15-0.35	0.60-0.90	≤0.025	≤0.025
SWRH77A	0.74-0.81	0.15-0.35	0.30-0.60	≤0.025	≤0.025
SWRH77B	0.74-0.81	0.15-0.35	0.60-0.90	≤0.025	≤0.025
SWRH82A	0.79-0.86	0.15-0.35	0.30-0.60	≤0.025	≤0.025
SWRH82B	0.79-0.86	0.15-0.35	0.60-0.90	≤0.025	≤0.025
SWRH90A	0.87-0.92	0.15-0.35	0.30-0.60	≤0.025	≤0.025



8、针布钢丝盘条 (Q/BQB 570) Wire Rod for Card Clothing (Q/BQB 570)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其他 Others
B72BNbV	0.69-0.74	0.15-0.25	0.50-0.70	≤0.025	≤0.025	Cr:0.20-0.40, V:0.08-0.15 Nb:0.04-0.08

9、预应力钢丝钢绞线盘条 (Q/BQB 514) Prestressed Steel Wire Rod and Strand (Q/BQB 514)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其他 Others
SWRH82B-1	0.79-0.86	0.15-0.35	0.60-0.90	≤0.025	≤0.025	Cr:0.13-0.22, Cu≤0.20
SWRH82B-2	0.79-0.86	0.15-0.35	0.60-0.90	≤0.025	≤0.025	Cr:0.13-0.23, V:0.04-0.09 Cu≤0.20

10、钢纤维盘条 (Q/BQB 518) Wire Rod for Steel Fiber (Q/BQB 518)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其他 Others
B04XW	≤0.06	≤0.05	0.20-0.50	≤0.035	≤0.035	Cu≤0.10, Cr≤0.10, Ni≤0.10 Al≤0.04, N≤0.0080

11、预应力钢棒盘条 (Q/BQB 515) Wire Rod for Prestressed Steel Bars (Q/BQB 515)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其他 Others
B30MnB	0.27-0.35	0.20-0.50	0.70-1.00	≤0.030	≤0.030	Cu≤0.20, B:0.0010-0.0050
B30Si2Mn	0.27-0.35	1.55-1.85	0.65-0.95	≤0.030	≤0.030	Cu≤0.20
B30MnSi	0.25-0.33	0.60-0.90	0.90-1.30	≤0.030	≤0.030	Cu≤0.20



12、合金结构钢盘条 (协议) Alloy Steel Wire Rod for Machine Structural Use (Agreement)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其它 Others
B20Cr2MoNi	0.17-0.23	0.15-0.30	0.40-0.60	≤0.015	≤0.010	Cr:1.80-2.10, Ni:0.15-0.25 Mo:0.15-0.25 Al:0.02-0.05, Cu≤0.30
20CrMnMo	0.17-0.23	0.17-0.37	0.90-1.20	≤0.035	≤0.035	Cr:1.10-1.40, Mo:0.20-0.30 Cu≤0.30, Ni≤0.30

13、高碳铬轴承钢盘条 (协议) High Carbon Chromium Bearing Steel Wire Rod (Agreement)

牌号 Grade	化学成份% Chemical Composition %					
	C	Si	Mn	P	S	其它 Others
GCr15	0.95-1.05	0.15-0.35	0.25-0.45	≤0.025	≤0.025	Cr:1.40-1.65, Mo≤0.10, Ni≤0.30 Cu≤0.25, O≤0.0012
GCr15SiMn	0.95-1.05	0.45-0.75	0.95-1.25	≤0.025	≤0.025	Cr:1.40-1.65, Mo≤0.10, Ni≤0.30 Cu≤0.25, O≤0.0012

Comparison of Steel Grades
线材相近牌号对照

品名	宝钢企业标准 Q/BQB	中国国家标准或 行业标准 GB or YB	日本工业标准 JIS	美国汽车工 程师协会 SAE	美国国家标 准协会 AISI	美国材料 试验协会 ASTM	美国焊接协会 AWS	德国 DIN	瑞典 SIS
弹簧钢盘条 Spring Steel Wire Rod	Q/BQB 516: 60Si2CrA 60Si2MnA B55SiCr 65Mn	GB/T 1222: 60Si2CrA 60Si2MnA YB/T 5365:55SiCrA GB/T 1222:65Mn	JIS G 4801: SUP6 SUP12	9260 9254	9260 9254	ASTM A 689	AWS A 5.18: ER70S-6		
冷墩钢盘条 Cold Heading Wire Rod	Q/BQB 517: SWRCH6A-SWRCH22A SWRCH10K-SWRCH50K SCM435 ML20MnTiB	GB/T 6478: M108A1~ML25 M125Mn~ML35Mn ML35CrMo ML20MnTiB	JIS G 3507-1: SWRCH6A-SWRCH22A SWRCH10K-SWRCH50K JIS G 4053:SCM435	1005~1050 4137	1005~1050 4137	ASTM A 510			
焊接用钢盘条 Welding Wire Rod	Q/BQB 511: SWRY11 ER70S-6 H10Mn2 H08MnA H08Mn2SiA	GB/T 3429: H11Mn2SiA H10Mn2 H08MnA H08Mn2SiA	JIS G 3503: SWRY11						
高碳钢盘条 High Carbon Steel Wire Rod	Q/BQB 512: SWRH32 SWRH42A-SWRH82A SWRH42B-SWRH82B	GB/T 4354: 30-80 40Mn~60Mn	JIS G 3506: SWRH32 SWRH42A-SWRH82A SWRH42B-SWRH82B	1030~1080	1030~1080	ASTM A 510			
低碳钢盘条 Low Carbon Steel Wire Rod	Q/BQB 513: SWRM6-SWRM20	GB/T 701: Q195-Q235C	JIS G 3505: SWRM6-SWRM20	1005~1020	1005~1020	ASTM A 510			
轴承钢 Bearing Steel Wire Rod		GB/T 18254: GCr15 GCr15SiMn	JIS G 4805: SUJ2	ASTM A 295 ASTM 534: 52100 52100.1				DIN ENISO683-17: 100Cr6 100CrMn6	SKF S&P D33: Grade 3

Sizes and Tolerances 产品规格及偏差

产品规格 Available Sizes

规格范围 Size Range (mm): 5.0-28.0

直径 Diameter			直径 Diameter		
毫米 mm	英寸 inch	(毫米 mm)*	毫米 mm	英寸 inch	(毫米 mm)*
5.0			13.5	17/32	13.49
5.5	7/32	5.56	14.0	35/64	13.89
6.0**	15/64	5.95	14.5**		
6.5			15.0	19/32	15.08
7.0	9/32	7.14	15.5**	39/64	15.48
7.5**	19/64	7.54	16.0		
8.0	5/16	7.94	17.0	43/64	17.07
8.5**			18.0		
9.0	23/64	9.13	19.0	3/4	19.05
9.5**	3/8	9.53	20.0		
10.0	25/64	9.92	21.0	53/64	21.03
10.5**			22.0		
11.0	7/16	11.11	23.0	29/32	23.02
11.5**	29/64	11.51	24.0		
12.0	5/32	11.91	25.0	63/64	25.00
12.5			26.0		
13.0	33/64	13.10	27.0		
			28.0		

注 Notes: * 括号内的数值是由相近英寸规格转换成毫米数。
* Figures in parentheses indicate figures converted from inches to mm.
** 如订购这些规格, 请先联系确认。
** When ordering these sizes, please contact us.

尺寸允许偏差 Size Tolerances

尺寸允许偏差与宝钢企业标准 Q/BQB 501 相一致。

The size tolerance shall conform to those described in Q/BQB 501.

缺省按 A 级精度交货, 可以协商按 B 级精度或 C 级精度交货。

If out of stock, things can be delivered according to A Class tolerances, Sizes manufactured according to B Class tolerances or C Class tolerances are available subject to negotiations.

允许偏差 Tolerance Specifications (mm)

直径 Diameter	A级精度 A Class tolerance		B级精度 B Class tolerance		C级精度 C Class tolerance	
	直径允许偏差 Tolerance	不圆度 Out-of-round	直径允许偏差 Tolerance	不圆度 Out-of-round	直径允许偏差 Tolerance	不圆度 Out-of-round
D≤10.0	±0.30	≤0.36	±0.20	≤0.24	±0.15	≤0.18
10.0<D≤14.5	±0.40	≤0.48	±0.25	≤0.30	±0.20	≤0.24
14.5<D≤19.0	±0.40	≤0.48	±0.30	≤0.36	±0.25	≤0.30
19.0<D≤26.0	±0.50	≤0.60	±0.30	≤0.36	±0.25	≤0.30
27.0	±0.60	≤0.72	±0.55	≤0.66	±0.50	≤0.60
28.0	±0.70	≤0.84	±0.65	≤0.78	±0.60	≤0.72

卷重范围 Coil Weight Range (kg): 1,900-2,400

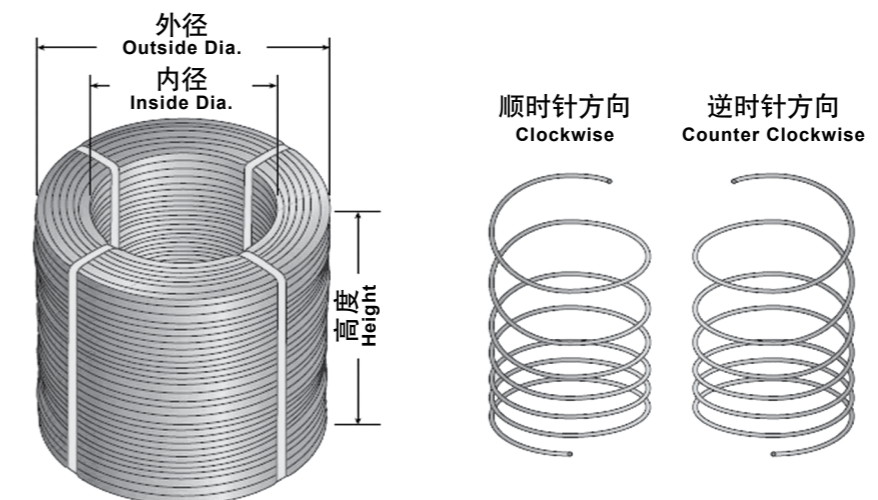
盘卷最大外径 Coil Outside Diameter Max. (mm): 1,250

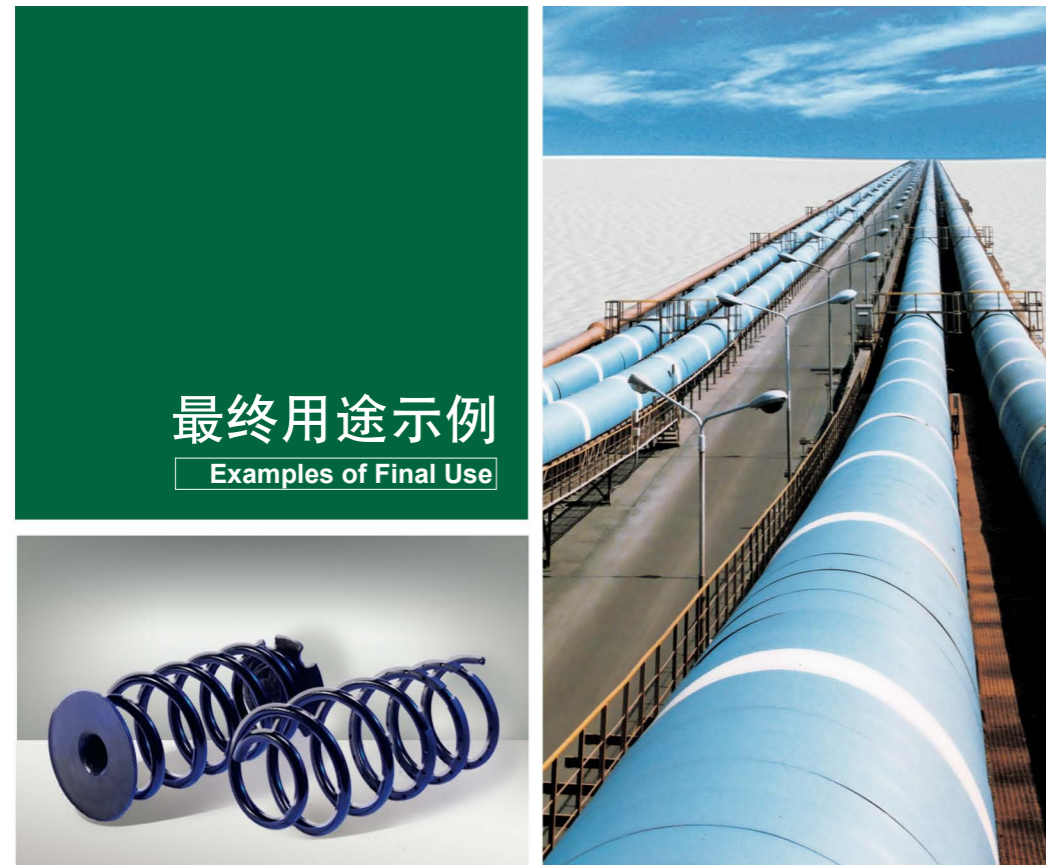
盘卷最小内径 Coil Inside Diameter Min. (mm): 850

线圈旋转方向 Direction of Rotation: Counter Clockwise

盘卷最大高度 Coil Height Max. (mm): 2,400

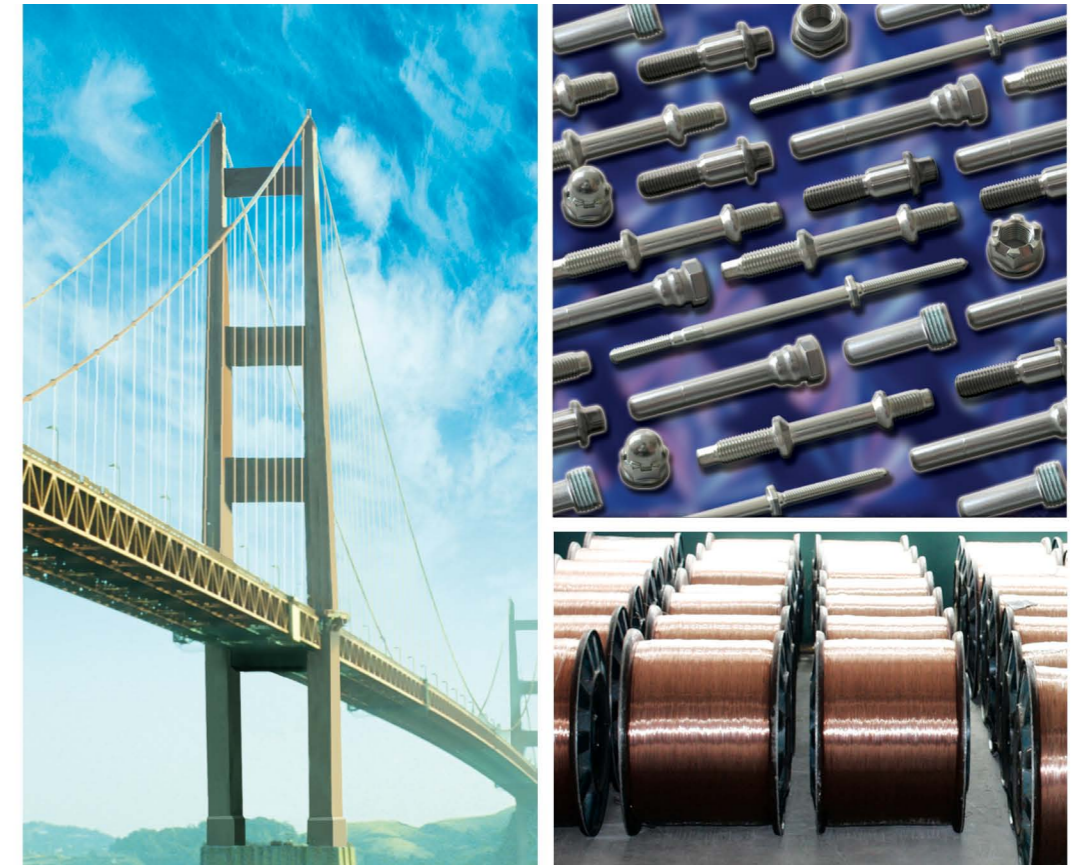
旋转方向 Direction of Rotation





宝钢高线自投产以来，产品已经广泛应用于国家重点建设工程、汽车、油田、矿山及输气管道等。

- 冷镦钢主要应用于一汽集团、二汽集团商用车，欧美系、日系、韩系以及自主品牌乘用车的紧固件；
- 弹簧钢应用于乘用车悬架簧、摩托车气门簧等；
- 桥梁缆索用镀锌钢丝已成功应用于西堠门大桥、苏通大桥、南京四桥、鹦鹉洲大桥等；
- 预应力钢丝及钢绞线应用于核电站领域，如秦山核电站、大亚湾核电站等；
- 焊接用钢已应用于西气东输、央视大楼、洋山深水港等重点工程；
- 高碳钢已应用于录井钢丝、电梯钢丝绳、油田用钢丝绳、航空用钢丝绳、矿山用钢丝绳等重要领域；
- 钢帘线盘条已大批量被国内、国外钢帘线厂使用于子午线轮胎制造。



Since the start of production, Baosteel's High-speed Wire Rod Mill has got its products widely applied in the state key construction projects, automobile, oil field, ore mine and gas transmission pipeline.

- The cold heading steel products have been made as bolts and nuts supplied to Chinese First Automobile Group, Second Automobile Group for Commercial Vehicles, Europe, American, Japanese, Korea Automobiles Companies and some Chinese self-owned automobiles companies.
- Spring steel wire rod is mainly used in passenger vehicles' suspension springs and motorcycle valve springs.
- Galvanized wire rod for bridge cables has been used successfully in Xihoumen Bridge, Sutong Bridge, Nanjing fourth Bridge, Yingwuzhou Bridge and so on.
- The prestressed steel wire rod and strand has been used in Qinshan Nuclear Power Station, Daya Bay Nuclear Power Station and so on.
- The welding wire rod has been used in some key construction projects such as West to East Gas Pipeline Project, the CCTV Building, Yangshan Deep-water Port, etc.
- The high carbon wire rod is mainly used in all kinds of wires and ropes for logging, oil field, elevator, mine and aviation.
- The wire rod for tire cord has been used widely by many famous tire manufacturers in domestic market as well as overseas markets.

Packaging and Marking
包装与标志

1.1、包装标准 Packaging Specifications

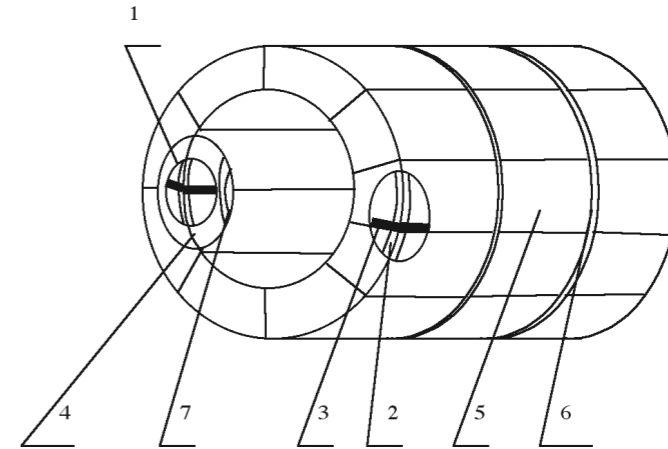
		包装材料追加组合 Additional Material Mix for Packaging									
包装类型 Packaging Type	包装方式基 准 Basis for Packaging	1	2	3	4	5	6	7	8	9	
A 普通包装 Normal Packaging	盘条+径向捆 带 (4处4道)	+纸护角 +pasteboard for side-ring protection	+套袋 +PP+PE bag	+复膜编织带 +precoated braid	+防锈纸 +薄膜 +rust-proofing paper +adhesive membrane	+纸护角 +复膜编织带 +pasteboard for side-ring protection +precoated braid	+纸护角 +防锈纸 +薄膜 +pasteboard for side-ring protection +rust-proofing paper +adhesive membrane	+复膜编织带 +薄膜 +precoated braid +adhesive membrane	+纸护角 +复膜编织带 +薄膜 +pasteboard for side-ring protection +precoated braid +adhesive membrane	+纸护角 +复膜编织带 +薄膜 +pasteboard for side-ring protection +precoated braid +adhesive membrane	+整体式套袋 +PP+PE wrap
	Wire Rod + Steel Bands (4 Bands at 4 positions)										
B 加强包装 Reinforced Packaging	盘条+径向捆 带 (4处8道)	+纸护角 +pasteboard for side-ring protection	+套袋 +PP+PE bag	+复膜编织带 +precoated braid	+防锈纸 +薄膜 +rust-proofing paper +adhesive membrane	+纸护角 +复膜编织带 +pasteboard for side-ring protection +precoated braid	+纸护角 +防锈纸 +薄膜 +pasteboard for side-ring protection +rust-proofing paper +adhesive membrane	+复膜编织带 +薄膜 +precoated braid +adhesive membrane	+纸护角 +复膜编织带 +薄膜 +pasteboard for side-ring protection +precoated braid +adhesive membrane	+纸护角 +复膜编织带 +薄膜 +pasteboard for side-ring protection +precoated braid +adhesive membrane	+整体式套袋 +PP+PE wrap
	Wire Rod + Steel Bands (8 Bands at 4 positions)										

推荐范围 Recommended Applications

A 普通包装 短途，中途及一般用途产品 For short distance transportation or for general purposed products

B 加强包装 出口，中途，长途及高附加值产品 For export, long distance transportation or for high value-added products

1.2、包装示意图 Packaging Descriptions



1, 2 – 纸护角 Pasteboard for Side-Ring Protection 3 – 捆带 Flat Steel Band 4 – 防锈纸 Rust-Proofing Paper
5 – 复膜编织带或薄膜 Precoated Braid or Adhesive Membrane 6, 7 – 胶带 Adhesive Tape

1.3、典型包装样式 Examples of Typical Packaging Type



1.4、标牌 Tag



Certifications
认证




Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM - ISO 14001:2004

This is to certify that: **Baoshan Iron & Steel Co., Ltd.** 宝山钢铁股份有限公司
 Fujin Road 中国
 Baoshan District 上海
 Shanghai 宝山区
 201900 富锦路
 China 邮编: 201900

Holds Certificate No: **EMS 83746**

and operates an Environmental Management System which complies with the requirements of ISO 14001:2004 for the following scope:

The production of iron and steel and related supporting system.
钢铁的生产及支持系统。

For and on behalf of BSI:

Gary Fenton, Global Assurance Director

Originally registered: 19/04/2004 Latest Issue: 23/12/2012 Expiry Date: 22/12/2015





Page: 1 of 2

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP, UK. Tel: +44 845 080 9000 BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK. A Member of the BSI Group of Companies.

EMS 83746



	Registered Activities
Co., Ltd.	The production of iron and steel and related supporting system. 钢铁的生产及支持系统。
Co., Ltd. In Road	The production of cold rolling steel products and related supporting system. 冷轧产品的生产及支持系统。

Originally registered: 19/04/2004 Latest Issue: 23/12/2012 Expiry Date: 22/12/2015

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Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2008

This is to certify that: **Baoshan Iron & Steel Co., Ltd.** 宝山钢铁股份有限公司
 Fujin Road 中国
 Baoshan District 上海
 Shanghai 宝山区
 201900 富锦路
 China 邮编: 201900

Holds Certificate No: **FM 70107**




and operates a Quality Management System which complies with the requirements of ISO 9001:2008 for the following scope:

The design and manufacture of steel products, including slabs, ingots, blooms, billets, rods and wires, hot rolled steel sheet and coils, cold rolled coated and uncoated sheet and coils, electrical steel sheet and coils, seamless tubes, coated and uncoated UOE and HFW welded pipes and heavy plates.
钢铁产品的设计和制造, 包括钢坯、钢锭、大方坯、小方坯、圆钢、线材、热轧板卷、冷轧板卷(含涂层产品)、电工钢板卷、无缝钢管、HFW及UOE焊管(含涂层产品)和厚板。

For and on behalf of BSI:

Gary Fenton, Global Assurance Director

Originally registered: 07/10/2002 Latest Issue: 03/11/2012 Expiry Date: 02/11/2015

Page: 1 of 2

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP, UK. Tel: +44 845 080 9000 BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK. A Member of the BSI Group of Companies.

FM 70107

	Registered Activities
Co., Ltd.	The design and manufacture of steel products, including slabs, ingots, blooms, billets, rods and wires, hot rolled steel sheet and coils, cold rolled coated and uncoated sheet and coils, electrical steel sheet and coils, seamless tubes, coated and uncoated UOE and HFW welded pipes and heavy plates. 钢铁产品的设计和制造, 包括钢坯、钢锭、大方坯、小方坯、圆钢、线材、热轧板卷、冷轧板卷(含涂层产品)、电工钢板卷、无缝钢管、HFW及UOE焊管(含涂层产品)和厚板。
Co., Ltd. Nan Road	The manufacture of cold rolled coated and uncoated sheet and coils. 冷轧板卷(含涂层产品)的制造。

Originally registered: 07/10/2002 Latest Issue: 03/11/2012 Expiry Date: 02/11/2015

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Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP, UK. Tel: +44 845 080 9000 BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK. A Member of the BSI Group of Companies.



Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO/TS 16949:2009

This is to certify that: **Baoshan Iron & Steel Co., Ltd.** 宝山钢铁股份有限公司
 Fujin Road 中国
 Baoshan District 上海
 Shanghai 宝山区
 201900 富锦路
 China 邮编: 201900

Holds Certificate No: **TS 30373**

and operates a Quality Management System which complies with the requirements of ISO/TS 16949:2009 for the following scope:

The design and manufacture of steel products, including slabs, ingots, blooms, billets, rods and wires, hot rolled steel sheet and coils, cold rolled coated and uncoated sheet and coils, electrical steel sheet and coils, seamless tubes.

Permitted Exclusions: None.
 钢铁产品的设计和制造, 包括钢坯、钢锭、大方坯、小方坯、圆钢、线材、热轧板卷、冷轧板卷(含涂层产品)、电工钢板卷和无缝钢管。
 允许删减: 无。

For and on behalf of BSI: 
 Managing Director, BSI (China), Dr. Yi Min Gao

Originally registered: 03/11/2012 Latest Issue: 03/11/2012 Expiry Date: 02/11/2015
 IATF Number: 0149569

IATF Contracted Office: BSI Group America Inc., 12110 Sunset Hills Road, Suite 200, Reston, VA20190, USA.
 China Headquarters: Floor 20 East Ocean Center, No. 24A Jianguomenwai Street, Beijing 100004, P. R. China.
 A Member of the BSI Group of Companies.

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30373

Registered Activities


Ltd. The design and manufacture of steel products, including slabs, ingots, blooms, billets, rods and wires, hot rolled steel sheet and coils, cold rolled coated and uncoated sheet and coils, electrical steel sheet and coils, seamless tubes. Including site extensions: Baoshan Iron & Steel Co., Ltd. No. 2288 Jiangyang Nan Road, Baoshan District, Shanghai 200431 China. The manufacture of cold rolled coated and uncoated sheet and coils. 钢铁产品的设计和制造, 包括钢坯、钢锭、大方坯、小方坯、圆钢、线材、热轧板卷、冷轧板卷(含涂层产品)、电工钢板卷和无缝钢管。包括扩充场所: 宝山钢铁股份有限公司 中国上海宝山区江杨南路2288号 冷轧板卷(含涂层产品)的制造。

Originally registered: 03/11/2012 Latest Issue: 03/11/2012 Expiry Date: 02/11/2015
 IATF Number: 0149569

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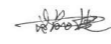


测试报告

No. SHAEIC1322169702 日期: 2013年11月13日 第1页,共4页

宝山钢铁股份有限公司
 上海市宝山区同济路333号1420室

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测试报告

No. SHAEIC1322169702 日期: 2013年11月13日 第2页,共4页

描述:
 号: SHA13-221697.001 描述: 银黑色金属

(1) 1 mg/kg = 0.0001%
 (2) MDL = 方法检测限
 (3) ND = 未检出 (< MDL)
 (4) ** = 未规定

201165EU

(1) 参考IEC 62321-5:2013, 用ICP-OES测定的含量
 (2) 参考IEC 62321-5:2013, 用ICP-OES测定的含量
 (3) 参考IEC 62321-5:2013, 用ICP-OES测定的含量
 (4) 参考IEC 62321:2008, 用点测试法/紫外-可见分光光度计比色法测定六价铬的含量

测试项目	限值	单位	MDL	Q07
铜(Cu)	100	mg/kg	2	ND
铅(Pb)	1000	mg/kg	2	ND
汞(Hg)	1000	mg/kg	2	ND
六价铬(CrVI)	-	-	0	阳性

备注:
 (1) 最大允许限值引用自指令2011/65/EU 附录II。
 (2) 点测试法:
 阴性 = 未检测到六价铬, 阳性 = 检测到六价铬;
 (当点测试结果无法确定时, 将采用沸水萃取法作进一步的结果验证。)
 沸水萃取法:
 阴性 = 未检测到六价铬
 阳性 = 检测到六价铬; 表明50 cm² 表面积的被测试样品的沸水萃取液中六价铬的浓度等于或大于0.02 mg/kg
 由于未知样品的存储条件和生产日期, 样品的六价铬测试结果仅能代表测试时样品含六价铬的状态。

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