

www.feige-steelball.com.cn
www.feige-steelball.com



STEEL BALL

常州市飞鸽钢球有限公司
CHANGZHOU FEIGE STEEL BALL CO.,LTD.

SINCE/1989



常州市飞鸽钢球有限公司
地址：江苏省常州市武进区雪堰镇夏墅村
联系电话：0519-86200760
传真：0519-86202798
网址：www.feige-steelball.com.cn

ADD: Xiashu Xueyan Town Wujin District Changzhou City Jiangsu China
TEL: 0086-519-86201099
FAX: 0086-519-86202798
E-MAIL: Arron_yang@steel-balls.com.cn
HTTP: //www.feige-steelball.com





飞鸽钢球—飞向世界,飞向未来!

FEIGE STEEL BALL-Rolling the World, Rolling the Future!

企业简介 COMPANY INTRODUCTION

常州飞鸽钢球有限公司成立于 1989 年,是一家专业生产精密钢球的专业厂家。

公司通过了 ISO9001 和 IATF16949 认证。占地面积 18,000 平方米,包括办公室、车间、仓库和实验室。这个先进的实验室配备了经过精心培训的全球知名机器,并由经过适当培训的合格人员进行管理。飞鸽仍然在不断投资设备来测量和确保达到圆度,表面,直径和硬度的规格。

工厂主要生产符合国际标准的铬钢球和不锈钢球。此外,它非常灵活,可以接受非标准球尺寸和铜和陶瓷等多种材料的订单。月产能约为 180 吨。这些球广泛用于精密轴承、自行车和汽车部件、滑轨、循环滚珠丝杠、泵、喷雾器、铣床。

公司拥有一支专业的团队,致力于为客户提供价格合理、质量可靠的产品。由于严格的质量控制,快速交付和快速响应,它受到来自欧洲、亚洲、北美等许多客户的欢迎。

Changzhou Feige Steel Ball Co.,Ltd was founded in 1989, it's a professional manufacturer dedicated in producing precision steel ball.

The company is ISO 9001 and IATF 16949 certified. It covers an area of 18,000 square meters including office, workshop, warehouse and laboratory. The sophisticated laboratory equipped with precised, worldwide respected machines and is managed by properly trained and qualified personnel. Feige still continues to invest in equipment to measure and insure that specifications for roundness, surface, diameter and hardness are achieved.

The factory mainly produce chrome steel ball and stainless steel ball in accordance with international standard. Besides, it's extremely flexible and can accommodate orders for non-standard ball sizes and diverse materials such as copper and ceramic. The Monthly production capacity is around 180 tons. These balls are widely used in precision bearings, bicycle and automotive components, sliding rails, recirculating ball screws, pumps, sprayers, milling machines.

The company has a professional team dedicated to providing affordable and reliable quality products to all customers. it's welcomed by many customers from Europe, Asia, North America because of strict quality control, fast delivery and quick response.



企业文化 ENTERPRISE CULTURE

愿景：

- 追求客户、供应商、员工的满意及善尽社会责任。

使命：

- 以服务为导向，崇尚安全第一、品质至上、客户为尊；
- 成为中国精密钢球的知名品牌。

经营理念：

- 制造精品、创造典范；
- 不断拓展、不断追求；
- 保持积极姿态，不断向上；
- 在开拓中创发展，在发展中创未来。

精神：

- 真诚、奉献、超越。

质量方针：

- 科学管理、优质求实、服务顾客、持续改进。

Vision:

- The pursuit of satisfaction and good customer, supplier, employees' satisfaction and society responsibility.

Mission:

- Making service as a guide, advocating safety first, quality first, customer respect;
- To become a famous brand of high precision steel ball in China.

Philosophy:

- Manufacturing high quality products, creating a model;
- Continuing to expand, continuing to pursue;
- Keeping a positive attitude, keeping up;
- Creating development in innovation. Creating future in development.

Spirit:

- Sincere, dedication, beyond.

Quality Policy:

- Scientific management, high quality and realistic, customers service, continuous improvement.



环境方针：

- 充分通过再利用或回收，实现对资源的保持；
- 对工业污水进行合理有效的防治。

Environment Policy:

- To maintain the resources by reusing or recycling;
- Carry on rational and effective protection of industrial wastewater.

社会责任方针：

- 积极参与社会公益活动；
- 促进劳资和谐；
- 定期员工健康检查，保障劳资双方权益。

C.S.R.:

- Actively participate in social welfare activities;
- To promote harmonious labor relations;
- Regular health check rfor employees to protect rights of both labor and employees.



企业荣誉 CERTIFICATIONS

现代企业以技术和质量为第一要素,只有先进的技术和质量才能领导市场主流。

真诚、奉献、超越是我们的精神。制造精品、创造典范是我们的宗旨。

我们不断拓展,不断追求,我们一直保持积极的姿态,不断向上,

在开拓中创发展,在发展中创未来!

Modern enterprise makes technology and quality as the first element, only advanced technology and quality can lead the market mainstream.

Sincerity, dedication, transcending are our spirit. Manufacturing products, creating models is our aim.

We constantly expanding constantly pursue, we always maintain a positive attitude, constantly upward.

In development, the development of attempting build the future!

To create development in innovation, to creative future in development.



核心产品 OUR PRODUCTS



AISI 52100/GCr15 铬钢球

AISI 52100 chrome steel ball

化学成分 Chemical composition(%)

材质标准 Materials Standard	化学成分(%) Chemical Composition(%)						平面硬度 hardness (HRC measured on parallel flats)
	C碳	Si矽	Mn锰	P磷	S硫	Cr铬	
52100	0.95-1.05	0.15-0.35	0.25-0.45	0-0.025	0-0.020	1.40-1.65	HRC60~66

可做精度等级Grade of ball : G10-G1000 规格Size : 1.2mm~25.4mm

316和316L不锈钢球

AISI 316 & 316L Stainless Steel Ball

化学成分 Chemical composition(%)

材质标准 Materials Standard	化学成分(%) Chemical Composition(%)								平面硬度 hardness (HRC measured on parallel flats)
	C碳	Si矽	Mn锰	P磷	S硫	Ni镍③	Cr铬	Mo钼③	
AISI 316L (国内镍含量高)	≤0.03	≤1.00	≤2.00	≤0.045	≤0.030	12.0-15.0	16.0-18.0	2.0-3.0	HRC≤26
AISI 316L	≤0.03	≤1.00	≤2.00	≤0.045	≤0.030	10.0-11.0	16.0-18.0	2.0-3.0	
AISI 316	≤0.08	≤1.00	≤2.00	≤0.045	≤0.030	10.0-11.0	16.0-18.0	2.0-3.0	

可做精度等级Grade of ball : G100~G1000 规格Size : 2.381mm~12.7mm



304和304L不锈钢球

AISI 304 & 304L Stainless Steel Ball

化学成分 Chemical composition(%)

材质标准 Materials Standard	化学成分(%) Chemical Composition(%)								平面硬度 hardness (HRC measured on parallel flats)
	C碳	Si矽	Mn锰	P磷≤	S硫≤	Ni镍③	Cr铬	Mo钼③	
AISI 304L	≤0.03	≤1.00	≤2.00	≤0.045	≤0.030	8.0-13.0	18.0-20.0	-	HRC≤26
AISI 304	≤0.08	≤1.00	≤2.00	≤0.045	≤0.030	8.0-10.5	18.0-20.0	-	

可做精度等级Grade of ball : G100~G1000 规格Size : 2.381mm~12.7mm



201不锈钢球

AISI 201 Stainless Steel Ball

化学成分 Chemical composition(%)

材质标准 Materials Standard	化学成分(%) Chemical Composition(%)								平面硬度 hardness (HRC measured on parallel flats)
	C碳	Si矽	Mn锰	P磷≤	S硫≤	Ni镍③	Cr铬	Mo钼③	
201	0.15	≤1.00	≤5.50 7.5	0.06	0.03	3.05 5.50	16-18	-	HRC≤26°

可做精度等级Grade of ball : G100~G1000 规格Size : 2.381mm~12.7mm



核心产品

OUR PRODUCTS

302不锈钢球 AIS 302 Stainless Steel Ball

化学成分 Chemical composition(%)



材质标准 Materials Standard	化学成分(%) Chemical Composition(%)								平面硬度 hardness (HRC measured on parallel flats)
	C碳	Si矽	Mn锰	P磷≤	S硫≤	Ni镍③	Cr铬	Mo钼③	
302	≤0.15	≤1.00	≤2.00	≤0.045	≤0.030	8.0 10.0	17.0 19.0	-	HRC≤26

440(9Cr18)和440C(9Cr18Mo)不锈钢球 AISI 440 & 440C Stainless Steel Ball

化学成分 Chemical composition(%)



材质标准 Materials Standard	化学成分(%) Chemical Composition(%)								平面硬度 hardness (HRC measured on parallel flats)
	C碳	Si矽	Mn锰	P磷≤	S硫≤	Ni镍③	Cr铬	Mo钼③	
AISI 440C (9Cr18Mo)	0.95 1.10	≤0.80	≤0.80	≤0.04	≤0.03	≤0.60	16-18	0.40 0.70	≥58HRC

可做精度等级Grade of ball : G10~G1000 规格Size : 2.381mm~25.4mm

420(3Cr13)和420C(4Cr13/5Cr13)不锈钢球 AISI 420 & 420C Stainless Steel Ball

化学成分 Chemical composition(%)



材质标准 Materials Standard	化学成分(%) Chemical Composition(%)								平面硬度 hardness (HRC measured on parallel flats)
	C碳	Si矽	Mn锰	P磷≤	S硫≤	Ni镍③	Cr铬	Mo钼③	
AISI 420 (3Cr13)	0.26 0.35	≤1.00	≤1.25	≤0.04	≤0.030	≤0.60	12.00 14.00		HRC48-50
AISI 420C (4Cr13)	0.36 0.43	≤0.80	≤0.80	≤0.04	≤0.03	(≤0.60)	12.00 13.50		HRC52-60
AISI 420C (5Cr13)	0.36 0.50	≤0.60	≤0.80	≤0.035	≤0.03	(≤0.60)	12.00 14.00		HRC56-60

可做精度等级Grade of ball : G10~G1000 规格Size : 420: 1.5mm~25.4mm 420C: 1.5mm~25.4mm

AISI 1010/1015 碳钢球 AISI 1010/1015 Carbon steel ball

化学成分 Chemical composition(%)



材质标准 Materials Standard	化学成分(%) Chemical Composition(%)					平面硬度 hardness (HRC measured on parallel flats)
	C碳	Si矽	Mn锰	P磷	S硫	
1010/1015	0.08-0.18	0.10-0.35	0.30-0.60	≤0.040	≤0.050	HRC55~65

可做精度等级Grade of ball : G100-G1000 规格Size : 2.381mm~25.4mm

应用领域 PROCESS AND USE

铬钢 AISI 52100

精密滚珠轴承, 汽车零部件(刹车、方向盘、变速箱), 自行车, 喷雾罐, 家电, 抽屉滑轨, 快速接头, 机床工具, 锁装置, 传送带, 滑轨, 笔, 泵, 脚轮, 阀门。

不锈钢球 AISI 316/316L

轴承, 特种泵和阀门, 用于气雾剂 / 饮水机 / 香水 / 喷雾器的泵 / 阀门。用在食品, 造纸, 化工, 橡胶, 纺织军事工业。

不锈钢球 AISI 304/304L

特种轴承和泵, 喷雾泵和园艺、家用喷洒器, 香水微型喷雾泵, 接头, 医疗应用阀门, 农业喷药器泵, 滚珠再循环螺杆。食品, 航空航天, 军事工业。

不锈钢球 AISI 420/420C/440/440C

不锈钢精密滚珠 / 防摩擦 / 特殊轴承, 特种阀 / 用于炼油厂, 输送机带子 / 轧辊, 圆珠笔。用于食品工业, 医疗应用, 联轴器, 球形套筒, 固定装置。

碳钢 AISI 1010/1015/1085

家具导轨和轮子, 抽屉轴承, 低质量的滚动轴承, 锁具, 上油机和润滑器, 滑轮, 小车, 玩具。

AISI 52100 Chrome steel ball

High precision bearings, automotive components (brakes, steering, gearbox), bicycle, agitators, appliances, sliders, quick couplings, machine tool, lock mechanisms, conveyors or belts, skates, pens, pumps, castors, valves.

AISI 316/316L stainless steel ball

Special bearings, pumps and valves, aerosol and dispenser sprayers. Foodstuff, paper, chemical, rubber, military, textile industry.

AISI 304/304L stainless steel ball

Special bearings and pumps, aerosol pumps, gardening and household sprayers, perfume miniature pumps, seams, medical application valves, agricultural backpack sprayers. Foodstuff, aerospace and military industry.

AISI 420/420C/440/440C stainless steel ball

High precision bearings, anti-friction bearings, special valves, conveyor belts and rollers, ballpoint pens. They are used in foodstuff, medical instruments, quick couplings, recirculating ball bearings, knotting devices, oil refinery devices.

AISI 1010/1015/1085 Carbon steel ball

Furniture rails and rollers, drawers and rolling bearings, locks, oilers and greasers, skates, caddies, toys.



汽车零部件
AUTO PARTS



轴承
BEARING



研磨介质
GRINDING MEDIA



定量泵
QUANTITATIVE
SUPPLY PUMP



自行车零部件
BICYCLE PARTS



滑轨
SLIDE



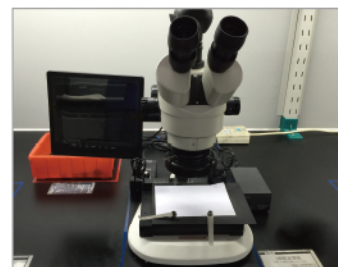
检测设备 DETECTION EQUIPMENT

三十年拼搏进取，我们领先脚步沿着“管理现代、产品多元化、技术数字化、企业国际化”发展方向。在未来的岁月里，飞鸽人将以辉煌成就为基础，以创新科技、超前自我的准则，走出一条世界顶尖钢球企业的未来发展之路。

More than 30 years of enterprising, our leading steps along the development direction of “management modernization, product diversification, digital technology, enterprise internationalization”. Based on criterion of innovative technology and advanced self, and stepping on the future developing road of world's top steel ball manufacturer.



0.2um三针仪
0.2um three needles instrument



100X显微镜
100X microscope



TESA电子测量仪器
TESA electronic measuring instrument



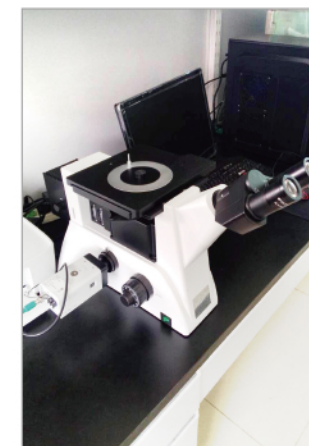
压碎试验机
Crushing test machine



振动仪
Vibration instrument



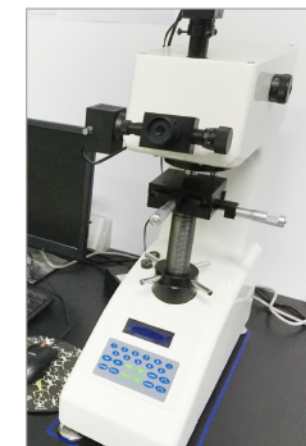
0.1um三针仪
0.1um three needle instrument



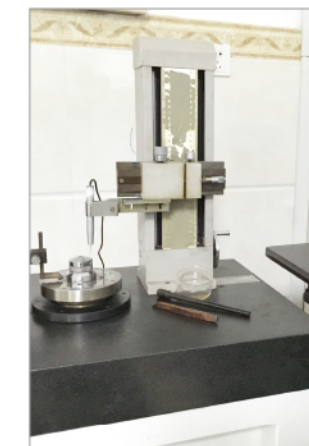
金相组织测仪
Metallographic measuring instrument



盐雾试验设备
Salt fog test equipment



硬度计
Hardness tester



圆度仪
Roundness meter

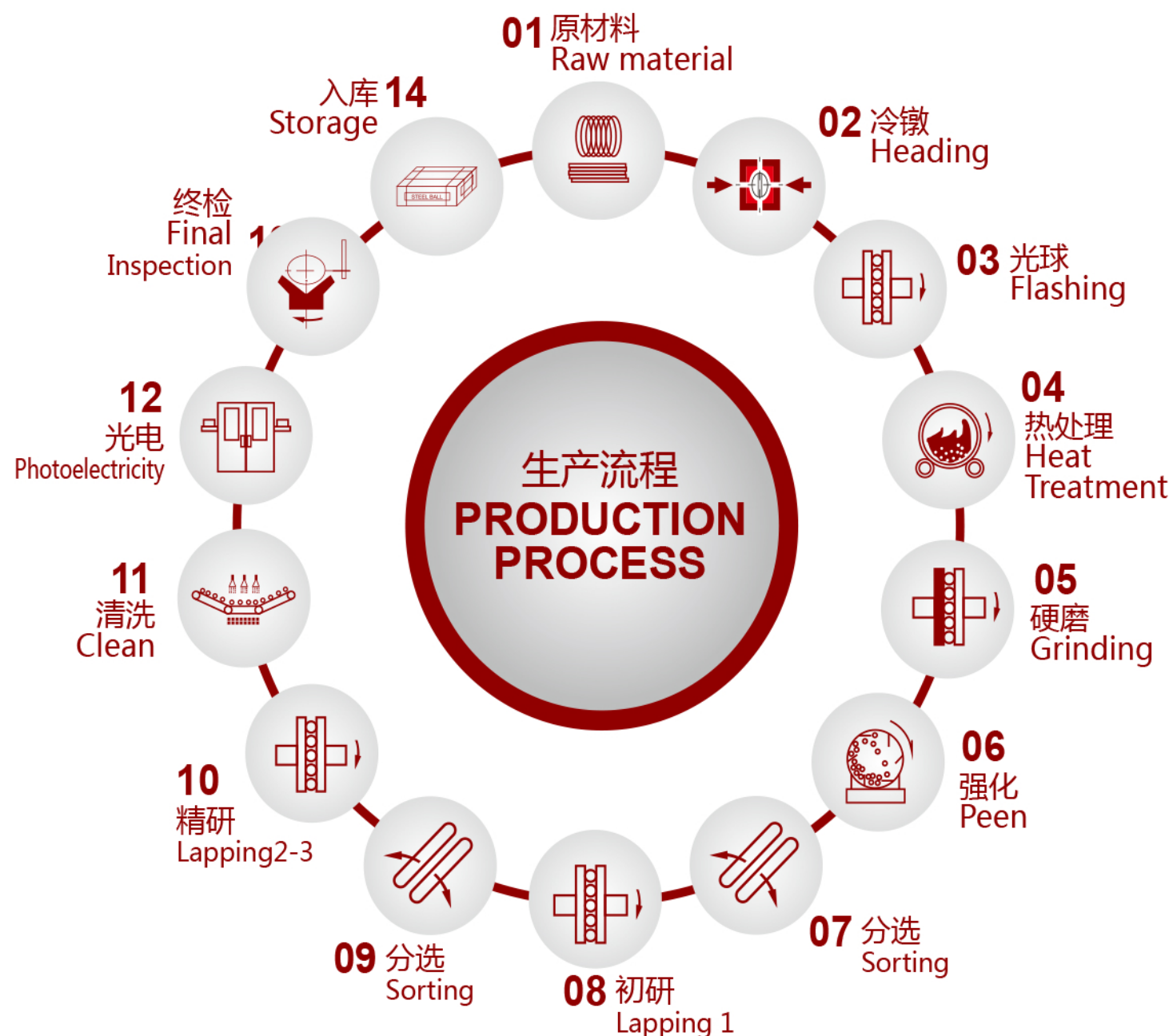
生产流程及设备 PRODUCTION PROCESS AND EQUIPMENT

飞鸽，一个在科技大潮中奋勇前进于苍茫大地崭露头角的快速发展的企业。

三十年拼搏进取，我们领先的脚步沿着“管理现代、产品多元化、技术数字化、企业国际化”发展方向。在未来的岁月里，飞鸽人将以辉煌成就为基础，以创新科技、超前自我的准则，走出一条世界顶尖钢球企业的未来发展之路。

FEIGE, a fast-growing company technology enterprises in the tide in the vast land of courageously coming forward.

More than 30 years of enterprising, our leading steps along the development direction of “management modernization, product diversification, digital technology, enterprise internationalization”. Based on criterion of innovative technology and advanced self, and stepping on the future developing road of word's top steel ball manufacturer.



技术参数

TECHNICAL PARAMETERS

尺寸、重量 SIZE, WEIGHT

钢珠直径 Diameter	1000个钢球 Per 1000pcs	每千克钢球 No.of ball per kg	钢珠直径 Diameter	1000个钢球 Per 1000pcs	每千克钢球 No.of ball per kg
mm in	重(kg)	个数(近似) about	mm in	重(kg)	个数(近似) about
0.5000	0.00051	1960780	11.5000	6.22	161
0.6800	0.00128	781250	11.5094 29/64"	6.22	161
0.800	0.00209	478470	11.9062 15/32"	6.88	145
1.0000	0.00408	245100	12.0000	7.04	142
1.2000	0.00705	141840	12.3031 31/64"	7.60	132
1.3000	0.00893	111980	12.7000 1/2"	8.35	120
1.4500	0.0124	80645	13.4938 17/32"	10.0	100
1.5800 1/16"	0.016	62350	14.0000	11.18	89
1.7500	0.0218	45871	14.2875 9/16"	11.9	84.0
2.0000	0.0325	30700	15.0812 19/32"	14.0	71.4
2.3812 3/32"	0.055	18182	15.8750 5/8"	16.3	61.3
2.5000	0.0637	15698	16.0000	16.69	59.9
3.0000	0.110	9091	16.6688 21/32"	18.9	52.9
3.1750 1/8"	0.131	7634	17.0000	20.02	50
3.5000	0.175	5717	17.4625 11/16"	21.7	46.1
3.9688 5/32"	0.255	3922	18.2562 23/32"	24.8	40.3
4.0000	0.261	3831	19.0000	27.96	35.77
4.7625 3/16"	0.441	2268	19.0500 3/4"	28.2	35.5
5.0000	0.510	1961	19.8438 25/32"	31.9	31.4
5.1594 13/64"	0.560	1786	20.6370 13/16"	35.8	27.9
5.5562 7/32"	0.699	1431	21.0000	37.75	26.49
5.9531 15/64"	0.860	1163	21.4313 27/32"	40.1	24.9
6.0000	0.881	1136	22.2250 7/8"	44.8	22.3
6.3500 1/4"	1.04	962	23.0000	49.95	20.17
6.5000	1.119	894	230188 29/32"	49.8	20.1
6.7469 17/64"	1.25	800	23.8125 15/16"	55.1	18.2
7.1438 9/32"	1.49	671	24.0000	56.34	17.75
7.9372 5/16"	2.04	490	24.6063 31/32"	60.8	16.5
8.0000	2.09	478	25.0000	63.68	15.70
8.5000	2.5	400	25.40000 1	66.89	15
8.7312 11/32"	2.71	369	26.9875 1 1/32"	73.3	13.64
9.0000	2.97	337	26.9875 1 1/16"	80.2	12.47
9.5250 3/8"	3.52	284	27.7812 1 3/32"	87.4	11.4
10.0000	4.08	245	28.0000	89.47	11.18
10.3188 13/32"	4.48	223	28.5750 1 1/8"	95.2	10.50
11.0000	5.42	185	30.1625 1 3/16"	112	8.93
11.1125 7/16"	5.60	179			

其他国家牌号对照表 OTHER COUNTRY GRADE COMPARISON TABLE

国家 Country	中国 China	美国 U.S.A	德国 Germany	日本 Japan	法国 France	英国 England	意大利 Italy	俄罗斯 Russia
标准 standard	GB	AISI	DIN	SUS	NF	BS	UNI	FOCT
铬钢	GCr15	52100	1.3505	SUJ2	100C6	534A99	100Cr6	9Ch1
不锈钢	0Cr17Ni12Mo2	316	1.4401	SUS316	Z6CND17.11	316S16	X5CrNiMo1712	08KH16N11M3
	0Cr19Ni12Mo2	316L	1.4404	SUS316L	Z3CND17-11-02	316S11	X2CrNiMo1712	03KH17N14M2
	0Cr18Ni9	304	1.4301	SUS304	Z7CN18-09	304S15	X5CrNi1810	08KH18N10
	00Cr19Ni10	304L	1.4307	SUS304L	Z3CN18-10	304S11	X2CrNi18-9	04KH18N10
	1Cr8Ni9	302	1.4373	SUS302	Z10CN18.09	302 S 25	--	12X18H9
	--	204 Cu	1.4597	--	X8CrMnCuNB17-8-3	X8CrMnCuNB17-8-3	X8CrMnCuNB17-8-3	--
	--	420	1.3541	SUS420	Z 40 C 13	--	X45Cr13	--
	2Cr13	420A	1.4021	420 J1	Z 20 C 13	420 S 37	X20Cr13	20 Kh 13
	3Cr13	420B	1.4028	420 J2	Z 33 C 13	420 S 45	X30Cr13	30 Kh 13
	4Cr13/5Cr13	420C	1.4034	--	Z 34 C 14	--	X46Cr13	40 Kh 13
	7Gr17	440A	1.4109	SUS440A	--	--	X 70CrMo15	--
	9Cr18/9Cr18Mo	440C	1.4125	SUS440C	Z100CD17	--	X 105CrMo17	95X18/--
碳钢	10	1010	1.1121	S10C	CC10	040A10	C10	10
	15	1015	1.1141	S15C	XC12	080M15	C15	15
	82B	1085	1.0616	SWRH87B	XC90	C85S	C90	85 (A)

GB/T 308-2002 中国标准 GB/T 308-2002 Chinese standard

等级 Grade	球直径变动量 Ball diameter variation	球形偏差 Deviation from spherical form	球表面粗糙度 Surface roughness	球批直径变动量 Lot diameter variation	基本直径公差 Nominal ball deviation tolerance
	Vdws	△Sph	Ra	Vdwl	Tdn
不超过 not over					
μm					
10	0.25	0.25	0.025	0.5	*
16	0.4	0.4	0.032	0.8	*
20	0.5	0.5	0.05	1	*
28	0.7	0.7	0.05	1.5	*
40	1.0	1.0	0.08	2	*
60	1.5	1.5	0.10	3	*
100	2.5	2.5	0.125	5	±12.5
200	5	5	0.5	10	±25
500	13	13	*	25	±50
1000	25	25	*	50	±125

技术参数

TECHNICAL PARAMETERS

ISO 3290-1 :2014国际标准

ISO 3290-1: 2014 INTERNATIONAL STANDARD

等级 Grade	滚珠直径的更改 Ball diameter variation	球形误差 Deviation from spherical from	表面粗糙度 Surface roughness	批次直径的改变 Lot diameter variation	选择组的间隔 Select group interval
	(VDws)(um) (a)	(tDw)(um) (a)	(Ra)(um) (a)	(VDwL)(um)	(IG)
3	0.08	0.08	0.010	0.13	0.5
5	0.13	0.13	0.014	0.25	1
10	0.25	0.25	0.020	0.5	1
16	0.4	0.4	0.025	0.8	2
20	0.5	0.5	0.032	1	2
24	0.6	0.6	0.040	1.2	2
28	0.7	0.7	0.050	1.4	2
40	1	1	0.060	2	4
60	1.5	1.5	0.080	3	6
100	2.5	2.5	0.100	5	10
200	5	5	0.150	10	15

说明 : (a) 值不考虑表面缺陷 ; 因此, 测量应采取这样的缺陷之外。

NOTES: (a) The values do not take into account surface defects; hence, measurement shall be taken outside such defects.

DIN 5401:2002-8国际标准

DIN 5401: 2002-8 INTERNATIONAL STANDARDS

等级 Grade	类 Class	公称直径 Dw (mm) Nominal diameter		极限偏差 (um)(5) Limit deviations	滚珠直径变化 Ball diameter	球形误差 Roundness	表面粗糙度 (6) Surface roughness	批次直径的改变 (5) Lot diameter variation
		从 From	到 To		最大 VDws (um)	最大 tDws (um)	最大 Ra (um)	最大 VDwL/A (um)
G3	-	-	12.7	± 5.32	0.08	0.08	0.010	0.13 (L)
G5	I	-	12.7	± 5.63	0.13	0.13	0.014	0.25 (L)
G10	II	-	25.4	± 9.75	0.25	0.25	0.020	0.50 (L)
G16 (1)	II	-	25.4	± 11.4	0.40	0.40	0.025	0.80 (L)
G20 (1)	III	-	38.1	± 11.5	0.50	0.50	0.032	1.0 (L)
G28 (1)	III	-	50.8	± 13.7	0.70	0.70	0.050	1.4 (L)
G40	III	-	100	± 19.0	1.0	1.0	0.060	2.0 (L)
G80 (2)	III	-	100	± 14.0	2.0	2.0	0.10	4.0 (A)
G100	III	-	150	± 47.5	2.5	2.5	0.10	5.0 (L)
G200	IV	-	150	± 72.5	5.0	5.0	0.15	10 (L)
G300 (1)	IV	-	25.4	± 70.0	10	10	0.20	20 (A)
G300 (3)	IV	25.4	50.8	± 105	15	15	0.20	30 (A)
G300	IV	50.8	75	± 140	20	20	0.20	40 (A)
G500 (4)	V	-	25.4	± 75.0	25	25	-	50 (A)
G500	V	25.4	50.8	± 112.5	25	25	-	75 (A)
G500	V	50.8	75	± 150	25	25	-	100 (A)
G500	V	75	100	± 187.5	32	32	-	125 (A)
G500	V	100	125	± 225	38	38	-	150 (A)
G500	V	125	150	± 262.5	44	44	-	175 (A)
G600 (4)	VI	tutti	tutti	± 200	-	-	-	400 (A)
G700 (4)	VI	tutti	tutti	± 1000	-	-	-	2000 (A)

说明 :

- 在某些情况下, 双方事前协议, 减少一半的选择的间隔可用于级别 G16, G20, G28 和 G300。
- 在 ISO 3290 中未规定。
- 在 ISO 3290 中未规定。
- 在 ISO 3290 中未规定。
- 有关滚珠的平均直径值, Dwm.
- 参见 DIN EN ISO 4288. 对于最小尺寸的滚珠(在本标准中不考虑), 这些值是须经事先同意。
- IG 相同间隔渐增。

NOTES:

- In some cases and subject to agreement, half teh gauge interval values may be used for grades G16, G20, G28 and G300.
- Not specified in ISO 3290.
- Not specified in ISO 3290.
- Not specified in ISO 3290.
- Values relate to the mean diameter of a ball, Dwm
- See DIN EN ISO 4288. For smaller ball sizes (not covered ib this standard), values are subject to agreement.
- Graded in intervals equal to IG.

钢球振动技术条件

TECHNICAL CONDITIONS OF VIBRATION

精度等级 Grade		G20		G16		G10 G5 G3	
振动组别 Vibration levels		Z1		Z2		Z3	
超过 over	到 to	平均值 average	单个值 Max	平均值 average	单个值 Max	平均值 average	单个值 Max
4.5	6.5	39.5	41.5	37.5	39.5	35.5	37.5
6.5	7.5	40	42	38	40	36	38
7.5	10	40.5	42.5	38.5	40.5	36.5	38.5
10	11	42	44	40.5	42.5	36.5	40.5
11	12	42.5	44.5	41	43	39	41
12	13	43	45	41.5	43.5	39.5	41.5
13	14	43.5	45.5	42	44	40	42
14	15	44	46	42.5	44.5	40.5	42.5
15	16	44.5	46.5	43.5	44.5	40.5	42.5
16	17	45	47	43	45	41	43
17	17.5	45.5	47.5	43	45	41	43

碳钢球表面硬化层深度

CASE DEPTH REQUIREMENTS FOR CARBON STEEL BALLS

公称尺寸 nominal diameter	最小硬化层 minimun case depth
≥ at least	< at least
0.3	1.5
15	2.0
2.0	3.0
3.0	4.5
4.5	5.5
5.5	6.5
6.5	9.5
9.5	11.0
11.0	12.5
12.5	14.0
14.0	19.0
19.0	38.0

技术参数

TECHNICAL PARAMETERS

英制钢球压碎载荷值
STEEL BALL CRUSH LOAD VALUE (BY INCH)

钢球公称直径 Diameter		压碎载荷 Crushing Load N		钢球公称直径 Diameter		压碎载荷 Crushing Load N	
inch	mm	热处理后 After Heat-treatment	成品 Finished Product	inch	mm	热处理后 After Heat-treatment	成品 Finished Product
1/8	3.1750	4210	5390	11/16	17.4625	127010	154840
5/32	3.6988	6570	8430	23/32	18.2562	138770	168560
3/16	4.7628	9410	12050	3/4	19.0500	151120	183260
7/32	5.5562	12840	16270	25/32	19.8438	164050	198940
15/64	5.9531	14800	18130	13/16	20.6375	177380	214620
1/4	6.3500	16760	21270	7/8	22.2250	203700	246960
17/64	6.7463	18910	24000	29/32	23.0188	220700	257740
9/32	7.1438	21270	26950	15/16	23.8125	236180	281260
5/16	7.9375	26260	32830	1	24.4000	368720	318500
11/32	8.7312	31750	39690	1 1/16	26.9875	303310	357700
3/8	9.5250	37830	47040	1 1/8	28.5750	340060	396900
13/32	10.3188	44390	54880	1 3/16	30.1625	378970	441000
7/16	11.1125	51450	63700	1 1/4	31.7500	419830	487060
29/64	11.5094	55470	68600	1 5/16	33.3375	462950	534100
15/32	11.9062	59000	73500	1 3/8	34.9250	508030	582129
31/64	12.3031	63010	78400	1 7/8	36.5125	555270	632100
1/2	12.7000	67130	83300	1 1/2	38.1000	604560	689000
17/32	13.4938	75850	94080	1 5/8	41.2750	709520	798700
9/16	14.2875	85060	104860	1 11/16	42.8625	765180	852600
19/32	15.0812	94770	116620	1 3/4	44.4500	822910	911400
5/8	15.8750	104960	128380	1 7/8	47.6250	944720	1038800
21/32	16.6688	115740	142100	2	50.8000	1074860	1166200



硬度换算表
HARDNESS CONVERSION TABLE

(HRC) 洛氏硬度 C级硬度	(HV) 维氏硬度	布氏硬度 (HB) 球体: 直径10mm 载荷3000kgf		洛式硬度 HRC HARDNESS		
		标准球	碳化钨压球	A标度 荷重: 60kgf 金刚石圆锥压子(HRA)	B标度 荷重: 100kgf 直径1.6mm(HRB)	D标度 荷重: 100kgf 金刚石圆锥压子(HRD)
68	940	-	-	85.6	-	76.9
67	900	-	-	85.0	-	76.1
66	865	-	-	84.5	-	75.4
65	832	-	(739)	83.9	-	74.5
64	800	-	(722)	83.4	-	73.8
63	772	-	(705)	82.8	-	73.0
62	746	-	(688)	82.3	-	72.2
61	720	-	(670)	81.8	-	71.5
60	697	-	(654)	81.2	-	70.7
59	674	-	(634)	80.7	-	69.9
58	653	-	615	80.1	-	69.2
57	633	-	595	79.6	-	68.5
56	613	-	577	79.0	-	67.7
55	595	-	560	78.5	-	66.9
54	577	-	543	78.0	-	66.1
53	560	-	525	77.4	-	65.4
52	544	(500)	512	76.8	-	64.6
51	528	(487)	496	76.3	-	63.8
50	513	(475)	481	75.9	-	63.1
49	498	(464)	469	75.2	-	62.1
48	484	451	455	74.7	-	61.4
47	471	442	443	74.1	-	60.8
46	458	432	432	73.6	-	60.0
45	446	421	421	73.1	-	59.2
44	434	409	409	72.5	-	58.5
43	423	400	400	72.0	-	57.7
42	412	390	390	71.5	-	56.9
41	402	381	381	70.9	-	56.2
40	392	371	371	70.4	-	55.4
39	382	362	362	69.9	-	54.6
38	372	353	353	69.4	-	53.8
37	363	344	344	68.9	-	53.1
36	354	336	336	68.4	(109.0)	52.3
35	345	327	327	67.9	(108.5)	51.5
34	336	319	319	67.4	(108.0)	50.8
33	327	311	311	66.8	(107.5)	50.0
32	318	301	301	66.3	(107.0)	49.2
31	310	294	294	65.8	(106.0)	48.4
30	302	286	286	65.3	(105.5)	47.7
29	294	279	279	64.7	(104.5)	47.0
28	286	271	271	64.3	(104.0)	46.1
27	279	264	264	63.8	(103.0)	45.2
26	272	258	258	63.3	(102.5)	44.6
25	266	253	253	62.8	(101.5)	43.8
24	260	247	247	62.4	(101.0)	43.1
23	254	243	243	62.0	100.0	42.1
22	248	237	237	61.5	99.0	41.6
21	243	231	231	61.0	98.5	40.9
20	238	226	226	60.5	97.8	40.1
(18)	230	219	219	-	96.7	-
(16)	222	212	212	-	95.5	-
(14)	213	203	203	-	93.9	-
(12)	204	194	194	-	92.3	-
(10)	196	187	187	-	90.7	-
(8)	188	179	179	-	89.5	-
(6)	180	171	171	-	87.1	-
(4)	173	165	165	-	85.5	-
(2)	166	158	158	-	83.5	-
(0)	160	152	152	-	81.7	-

地理位置 LOCATION

常州飞鸽钢球地理位置优越，处在沪宁铁路和沪宁高速公路中部，于锡宜高速公路 200 米左右，离美丽的太湖旅游城市无锡市和全国闻名的陶都宜兴市及新兴的轻纺织工业城常州市各 25 公里，交通十分便利。

最近的港口：上海
高铁：1.2 小时
高速公路：2.0 小时

Changzhou Feige steel ball has a good location, it's located in the middle of Shanghai-Nanjing railway and Shanghai-Nanjing expressway, 200 meters from Xiyi highway, beautiful Taihu Lake tourist city of Wuxi City and the famous Yixing City and the new light textile industrial city of Changzhou City, 25 km from, traffic is very convenient.

The nearest port: Shanghai
1.2 hours by train
2.0 hours by car

