QBF rubber®

百瑞福
QBF rubber

全球钢铁供应链
一站式解决方案

ONE-STOP SOLUTION
FOR GLOBAL STEEL SUPPLY CHAIN

+86-532 6673 9753
+86-166 7870 2644

Room 1008, Building No.9, Fortunate Plaza, 166 Zhengyang Road, Chengyang District, Qingdao
www.bestfriendrubber.com / www.qbfconveyorbelt.com
frank@bestfriendrubber.com / sunny@bestfriendrubber.com

Qingdao Best Friend Rubber & Plastic Co., Ltd.

青岛百瑞福橡塑有限公司
Qingdao Best Friend Rubber & Plastic Co., Ltd.

ABOUT US

QBF rubber deeply cultivates the global steel supply chain and provides one-stop supply services for full-process spare parts for steel enterprises. Its main products cover various equipment spare parts for core processes such as blast furnace, steelmaking, rolling, coil plate, and BAF, along with a wide range of heat exchanger products. It systematically meets the full-category spare parts needs of steel enterprises in daily production, equipment maintenance, and technical upgrading.

QBF rubber-- Powering steel production with efficiency.

全球资源
Global Resources

覆盖多国营销与服务网络
Marketing & Service Network
Covering Multiple Countries

降本增效
COST REDUCTION

优化供应链，降低采购成本
Optimized Supply Chain,
Reduced Procurement Cost

全链整合
Fullintegration

高炉到成品的全流程备件
Full-Process Spare Parts From
Blast Furnace To Finished Products

动态服务
Dynamic Service

7/24快速响应与本地支持
7/24 Quick Response & Local Support

全品类备件
Full-Range Spare Parts

高效交付
Eficient Delivery

国产化替代专家
Local Substitution Expert

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01
STEEL FULL-PROCESS SPARE PARTS

钢铁全流程配件产品

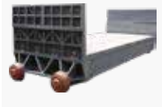
STEEL FULL-PROCESS SPARE PARTS
钢铁全流程配件产品

高炉炼铁系统 Blast Furnace Ironmaking System

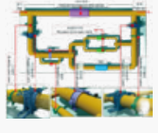
设备名称	Equipment Name	设备名称	Equipment Name	设备名称	Equipment Name
高炉冷却壁	Blast Furnace Cooling Stave	卷扬钢丝绳	Hoisting Wire Rope	液压接头	Hydraulic Fitting
高炉风口	Blast Furnace Tuyere	托辊	Idler Roller	压力表	Pressure Gauge
直吹管	Blowpipe	缓冲托辊	Buffer Idler Roller	冷却水管	Cooling Water Pipe
鹅颈管	Gooseneck Pipe	皮带清扫器	Belt Cleaner	喷淋嘴	Spray Nozzle
炉顶设备	Furnace Top Equipment	下料溜槽	Discharge Chute	过滤器滤芯	Filter Element
料罐	Material Tank	耐磨衬板	Wear-Resistant Liner Plate	润滑泵	Lubrication Pump
料斗	Hopper	导料槽	Guide Chute	分配器	Distributor
均压阀	Pressure Equalizing Valve	拉紧装置	Tension Device	油嘴	Grease Fitting
放散阀	Relief Valve	液压油缸	Hydraulic Cylinder	冷却器	Cooler
炉顶布料器	Bellless Top Distributor	液压阀块	Hydraulic Manifold Block	流量计	Flow Meter
气密箱	Sealed Gearbox	高压软管	High-Pressure Hose	螺栓	Bolt
高炉衬砖	Blast Furnace Lining Brick	密封件	Sealing Element	螺母	Nut
陶瓷杯	Ceramic Cup	球阀	Ball Valve	销轴	Pin
炉底耐火材料	Hearth Refractory Material	蝶阀	Butterfly Valve	挡圈	Retaining Ring
料车车轮	Skip Car Wheel	止回阀	Check Valve	密封垫	Gasket
料车衬板	Skip Car Liner Plate	过滤器	Filter		

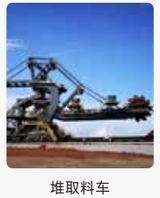

炉顶设备
Furnace Top Equipment


高炉送风装置
Blast Furnace Tuyere Assembly


烧结台车
Sintering Car


布料器
Distributor


Trt系统布置图
Trt System Lay-Out Chart


堆取料车
Boom-Type Stacker & Reclaimer

炼钢系统 Steelmaking System

设备名称	Equipment Name	设备名称	Equipment Name	设备名称	Equipment Name
转炉炉口砖	Converter Mouth Brick	滑板机构	Sliding Gate Mechanism	取样探头	Sampling Probe
转炉托圈	Converter Trunnion Ring	水口砖	Nozzle Brick	加料溜槽	Charging Chute
转炉耳轴	Converter Trunnion	座砖	Well Block	高温密封件	High-Temperature Seal
挡渣锥	Slag Stopper Cone	透气砖	Purging Plug	高温螺栓	High-Temperature Bolt
挡渣球	Slag Stopper Ball	电极夹持器	Electrode Clamp	缓冲垫	Buffer Pad
出钢口砖	Tap Hole Brick	电极臂	Electrode Arm	液压密封	Hydraulic Seal
氧枪喷头	Oxygen Lance Nozzle	炉盖密封件	Furnace Lid Seal	导轨	Guide Rail
氧枪枪体	Oxygen Lance Body	精炼透气砖	Ladle Refining Purging Plug	滑块	Slide Block
水冷烟罩	Water-Cooled Hood	测温探头	Temperature Probe		


钢包
Ladle


中间包
Tundish


铜水箱
Jet Box


水冷电缆
Water Cooled Cable


导电横臂 电机夹头
Conductive Cross Arm、Electrode Holder


石墨电极Rp、Hp&Uhp
Graphite Electroderp, Hp & Uhp

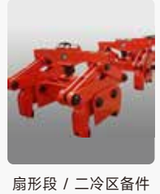
连铸系统 Continuous Casting System

设备名称	Equipment Name	设备名称	Equipment Name	设备名称	Equipment Name
结晶器	Mold	水口	Long Nozzle	液压剪	Hydraulic Shear
结晶器铜板	Mold Copper Plate	浸入式水口	Submerged Entry Nozzle(Sen)	拉矫机辊	Withdrawal & Straightener Roller
足辊	Foot Roller	中间包包盖	Tundish Cover	中间包耐火材料	Tundish Refractory
导向辊	Guide Roller	滑动水口	Slide Gate	结晶器保护渣	Mold Powder
夹紧辊	Pinch Roller	引流砂	Filling Sand	辊道轴承	Roller Table Bearing
扇形段	Segment Roller Unit	振动装置	Oscillator		


结晶器铜管
Mould Copper Tube


结晶器总成
Mould Assemblies


足辊/窄边铜板/调宽装置
Three-Roll / Narrow-Edge Copper Plate / Width Adjustment Device


扇形段 / 二冷区备件
Sector Segment / Secondary Cooling Area Spare Parts


夹持器 / 对中装置
Clamping Device / Centering Device


引锭杆 (柔性 / 刚性
Tying Rod (Flexible / Rigid)

轧钢系统 Steel Rolling System

设备名称	Equipment Name	设备名称	Equipment Name	设备名称	Equipment Name
工作辊	Work Roll	轧机牌坊	Mill Housing	刀座	Knife Holder
支承辊	Backup Roll	压下螺丝	Screwdown Screw	隔套	Spacer Sleeve
中间辊	Intermediate Roll	压下螺母	Screwdown Nut	乳化液喷嘴	Emulsion Nozzle
导卫	Guide	平衡缸	Balance Cylinder	喷淋管	Spray Pipe
固定导卫	Fixed Guide	平衡弹簧	Balance Spring	张力辊组	Tension Roll Unit
滚动导卫	Roller Guide	冷轧工作辊	Cold Rolling Work Roll	纠偏装置配件	Epc (Edge Position Control) Parts
耐热导管	Heat-Resistant Tube	冷轧支承辊	Cold Rolling Backup Roll	液压压下系统	Hydraulic Screwdown System
十字万向联轴器	Universal Joint Shaft	导向辊	Guide Roll	密封圈	Seal Ring
齿式联轴器	Gear Coupling	挤干辊	Squeeze Roll	垫板	Backup Plate
四列圆柱滚子轴承	Four-Row Cylindrical Roller Bearing	防皱辊	Anti-Wrinkle Roll	链条	Chain
轴承座	Chock	膜片联轴器	Diaphragm Coupling	链轮	Sprocket
轴瓦	Plain Bearing Bush	圆锥滚子轴承	Tapered Roller Bearing	顶丝	Set Screw
热轧剪刃	Hot Shear Blade	角接触轴承	Angular Contact Ball Bearing	润滑管路	Lubrication Pipe
输送辊道辊	Table Roller	冷轧剪刃	Cold Shear Blade		


轧辊-辊环
Roll-Roll Ring


导卫总成
Guide Unit Assembly


加热炉
Heating Furnace


联轴器
Coupling


直流电机
Dc Motor

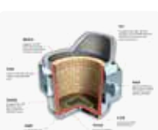

全系列轧机-开卷机
Full Series Of Rolling Mills-Decoiler

钢铁全系列耐火材料 Full Series Refractory Materials

设备名称	Equipment Name	设备名称	Equipment Name	设备名称	Equipment Name
高炉耐火砖	Blast Furnace Refractory Brick	耐火泥浆	Refractory Mortar	高铝砖	High Alumina Brick
转炉耐火材料	Converter Refractory	滑动水口砖	Slide Gate Brick	镁碳砖	Magnesia-Carbon Brick
钢包耐火砖	Ladle Refractory Brick	座砖	Well Block	硅砖	Silica Brick
中间包耐火材料	Tundish Refractory	透气砖	Purging Plug	粘土砖	Fireclay Brick
加热炉耐火材料	Reheating Fumace Refractory	出钢口填料	Tap Hole Filler	隔热耐火材料	Insulating Refractory
浇注料	Castable	保护渣	Mold Powder	耐火纤维	Refractory Fiber
耐火喷涂料	Refractory Gunning Mix	引流砂	Filing Sand	密封耐火泥	Sealing Refractory Mortar
保温板	Insulation Boardshaft				


热风炉
Hot Air Furnace


冲渣沟
Slag Flushing Ditch


铁水包耐材
Tundish Refractory


高炉用砖
Blast Furnace Block


炮泥
Waterless Taphole Mixfor Blast Fumace


蜂窝体
Honeycomb Ceramic Monolith

输送带系统 Conveyor Belt System


Dri竖炉挡边带 Dri Furnace Sidewall Conveyor Belt


电炉挡边带 Electric Furnace Sidewall Conveyor Belt


管状输送带 Pipe Conveyor Belt


钢丝绳芯输送带 Steel Cord Conveyor Belt


耐热输送带 Heat-Resistant Conveyor Belt


斗提机输送带 Bucket Elevator Conveyor Belt


环形裙边带 Endless Sidewall Belt

02
Steelmaking System

炼钢系统

GRAPHITE
石墨

石墨电极和接头理化指标 Physical & Chemical Properities of Graphite Electrodes & Nipples

性能 Properties		单位 Unit	石墨电极公称直径 Nominal Diameter of Electrodes									
			普通功率石墨电极 RP				高功率石墨电极 HP		超高功率石墨电极 UHP			
			Φ75-225 3-9″	Φ250-300 10-12″	Φ50-550 14-22″	Φ600-800 24-32″	Φ75-400 3-16″	450-600 18-24″	Φ300-400 12-16″	Φ450-500 18-20″	Φ550-650 22-26″	Φ700-800 28-32″
电阻率 Electric Resistance ≤	电极 Graphite Electrode	μΩ·m	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50	7.50
	接头 Electrode Nipple		5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50	5.50
体积密度 Bulk Density ≥	电极 Graphite Electrode	g/cm³	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
	接头 Electrode Nipple		1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
抗折强度 Flexural Strength ≥	电极 Graphite Electrode	MPa	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50
	接头 Electrode Nipple		15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
弹性模量 Elastic Modulus≤	电极 Graphite Electrode	GPa	9.30	9.30	9.30	9.30	9.30	9.30	9.30	9.30	9.30	9.30
	接头 Electrode Nipple		14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
热膨胀系数 C.T.E≤	电极 Graphite Electrode	10^{-6}/°C	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.80
	接头 Electrode Nipple		2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
灰分 Ash ≤		%	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50

石墨电极尺寸 Graphite Electrode Dimensions

公称直径 Nominal Diameter		实际直径 Actual Diameter		公称长度 Nominal Length (mm)	Allowance (mm)
英寸 Inch	毫米 mm	最大 Max	最小 Min		
12	300	307	302	1600/1800/2000	±100
14	350	357	352	1600/1800/2000/2200	
16	400	409	403	1800/2000/2200/2400	
18	450	460	454	1800/2000/2200/2400	
20	500	511	505	1800/2000/2200/2400	
22	550	562	556	1800/2000/2200/2400/2700	±150
24	600	613	607	2000/2200/2400/2700/3000	
26	650	663	657	2000/2200/2400/2700/3000	
28	700	714	708	2000/2200/2400/2700/3000	
30	750	765	759	2700	
32	800	816	810	2700	

注：如果有特殊需求或疑问请及时联系我们 Note: Please contact us for any special needs or questions.

3TPI超高功率接头外形尺寸重量表 Table of 3TPI Nipple Dimension & Weight

电极直径 Electrode Diameter		扣型 Nipple Shape	接头直径 Nipple Diameter	接头长度 Nipple Length	参考重量 (kg) Reference Weight (UHP)
英寸 Inch	毫米 mm				
10	250	155T3N	155.57	220.00	5.32
12	300	177T3N	177.16	270.90	8.56
14	350	215T3N	215.90	304.80	14.72
16	400	241T3N	241.30	338.70	20.66
18	450	273T3N	273.05	355.60	28.52
20	500	298T3N	298.45	372.60	36.24

4TPI超高功率接头外形尺寸重量表 Table of 4TPI Nipple Dimension & Weight

电极直径 Electrode Diameter		扣型 Nipple Shape	接头直径 Nipple Diameter	接头长度 Nipple Length	参考重量 (kg) Reference Weight (UHP)
英寸 Inch	毫米 mm				
10	250	152T4N	152.40	190.50	4.60
12	300	177T4N	177.80	215.90	7.40
14	350	203T4N	203.20	254.00	11.37
16	400	222T4N	222.25	304.80	15.95
16	400	222T4L	222.25	355.60	17.87
18	450	241T4N	241.30	304.80	19.27
18	450	241T4L	241.30	355.60	21.66
20	500	269T4N	269.88	355.60	28.04
20	500	269T4L	269.88	457.20	33.69
22	550	298T4N	298.45	355.60	35.24
22	550	298T4L	298.45	457.20	42.63
24	600	317T4N	317.50	355.60	40.49
24	600	317T4L	317.50	457.20	49.18
26	650	355T4L	355.60	558.80	74.20
28	700	374T4N	374.65	457.20	71.64
28	700	374T4L	374.65	558.80	83.40
30	750	406T4N	406.40	584.20	104.47
30	750	406T4L	406.40	609.60	107.76
32	800	432T4L	431.80	635.00	121.95

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GRAPHITE
石墨













石墨方参考技术指标 Graphite Blocks Technical Reference Indicators

性能 Properties	单位 Unit	参数 Specifications	
体积密度 Bulk Density	g/cm³	≥ 1.71	1.73
粒度 Grain Size	mm	2.00	0.80
电阻率 Specific Resistance	μΩ·m	≤ 9.5	8.90
抗折强度 Flexural Strength	MPa	≥ 12.0	13.50
抗压强度 Compressive Strength	MPa	≥ 28.0	32.00
热膨胀系数 C.T.E. (to 100°C)	10^{-6}/°C	≤ 2.7	2.50
热导率 Thermal Conductivity	W/mK	≥ 115	135.00
灰分 Ash Content	%	≤ 0.2	0.12

注:
1)体积密度为整块产品的数值;
2)电阻率、抗折强度、CTE 和热导率为平行方向的数值;
3)抗折强度使用四点法。

Note:
1) Bulk density is the value of the whole product;
2) Resistivity, flexural strength, CTE and thermal conductivity are the values in parallel direction;
3) Flexural strength adopts the four-point method.

标准尺寸: 500*500*1800mm, 650*500*1800/2400mm, 630*630*2100/2400/3300mm
其他尺寸及石墨加工件可根据客户要求提供。

Standard Sizes:500*500*1800mm, 650*500*1800/2400mm, 630*630*2100/2400/3300mm
Other sizes and graphite machined parts are available upon request.

硅钢连续退火炉用炭套的性能指标 Performance Indicators of Graphite Carbon Sleeve for Silicon Steel Continuous Annealing Furnace

性能指标 Properties	产品类别 Products		
	低温炭套 Low Temperature Carbon Sleeve	中温炭套 Medium Temperature Carbon Sleeve	高温炭套 High Temperature Carbon Sleeve
抗折强度 Flexural Strength MPa	≥ 15	≥ 18	≥ 15
抗压强度 Compressive Strength MPa	≥ 30	≥ 35	≥ 30
显气孔率 Apparent Porosity %	≤ 12	≤ 10	≤ 12
体积密度 Bulk Density g/cm³	≥ 1.73	≥ 1.75	≥ 1.73
石墨化度 Graphitized Degree %	70–90	70–90	70–90
肖氏硬度 Shaw Hardness HS	35–50	35–50	3 –50
气孔的最大直径 Max. dia. of stomata mm	≤ 0.2	≤ 0.1	≤ 0.2
Fe元素含量 Fe Element Content %	≤ 0.02	≤ 0.01	≤ 0.02
Ca元素含量 Ca Element Content %	≤ 0.02	≤ 0.01	≤ 0.02
Na、K各元素含量 Na K Element Content %	< 0.01	≤ 0.01	< 0.01
使用条件 Conditions of Use	常温-900°C 干/湿气氛 Normal Temperature -900°C Dry/Wet Atmosphere	850-950°C 干/湿气氛 850-950°C Dry/Wet Atmosphere	950°C以上 干气氛 950°Cabove, Dry Atmosphere

03
Blast Furnace Ironmaking System

高炉炼铁系统

Wz Series Bell-less Top Charge Equipment
WZ系列高炉无料钟炉顶装料设备

料罐 Tank

这个园形锥体的罐为料罐，锥体斜度为50°，它的功能好像人体的胃一样，储存大批炉料向炉膛输送。料罐有三种形式，一种是配有均料装置和称重功能的；一种是普通常规的；一种是炉顶设备受整体高度限制，将上密封阀与料罐做成一体的。这里介绍的是普通常规通用的料罐。

料罐的锥体内部衬有料磨料式耐磨钢隔板，衬板与壳体的紧固靠带有密封装置的镙钉连接，不得泄漏。顶部的两个立管，为一次均压、二次均压阀的连接管，对面的单管为安装雷达探料器的接口管。如果不使用雷达探料时在料罐锥体下部开孔安装射线探料装置。

This cone tank is burden tank it inclination angle 50o. It function as man's stomach can store many materials in it. This tank has 3 kinds form, one is has homogeneity and wei ghing devices , second is generality, the last one is upper sealing valve and this tank are combined.

Here we only introduction the second one, at inside of tank cone has wear-proof liner plate, both the liner plate and the tank used sealing bolts fixed. Between them have not any leak. At the top of this tank has two pipes, they are first balance pressureand second balance pressure valves connecting pipes. The other side of these pipes is radar sounder connecting pipe. If not use radar sounder, we can use a ray sounder, it at lower of cone.



布料器 Distributor

1、中心喉管：钢制园筒外壳、内衬槽型耐磨铸铁衬板。本部件为固定体，承接料流并导向。
2、水冷盘：钢结构组焊件，上部长期存有80mm流动水面，保证箱内温度小于50°，下部设有耐火层，减少炉火对箱体的辐射热。
3、炉顶钢圈：钢结构组焊件，侧臂为双层，四面对称设有排水孔，水的排放是由双层夹层中排出。

1. Center Throat Pipe
shell made by steel This Shell inside has wear-proof liner plate. This part can receiving the materials and make materials to correct direction.

2. Cooling Water Tray
It make by steel always 80mm water on it. It can keep the box temperature lower 50o, at bottom of this tray has some heat-resisting material so it can reduce the radiation hot from BF.

3. Steel Ring at Top of BF
Steel welding part, it side arms are double layers. At it four sides have some holes to drain off water. The water be out off from between of two layers.



波纹管 Expansion Bellow

下密封阀下部是下波纹伸缩节，它的伸缩补偿范围是0~200mm，外壳为不锈钢，内有耐磨衬套，外有拉紧支撑螺栓，工作状态为全松动，以便接受高炉本体的全部热胀冷缩变化。

The lower of this sealing valve is bellow, it compensation space is 0-200mm. This bellow 's shell made by stainless steel, inside it has liner plate, at outside has some regulating bolts, these bolts all relax when working time. The hot or cold expand from BF are all action it.





Matching Equipment Automation System
配套设备和自动化等系统

料罐物位探测设备—雷达 Sondefor Material Level Equipment

料位议室雷达式物位仪表，主要用于料罐料位传感信号，满足系统的控制需求，该仪表无辐射、无噪音固定安装于料罐的顶部，为西德进口设备。

Radar sondefor material level of burden tank detects mainly and transfer the single of material lever of burden tank to satisfies the demand from control system. It is without rediation, noise and fixed on the top of burden tank. The Radar Sondemade in Germany including software.



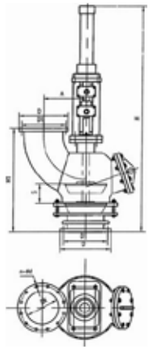
液动均压、放散阀 Hydraulic Equalize

1、用途：本阀主要用于料罐均压时做启闭用，介质为净煤气。

2、结构特点：阀门有阀体、阀座、阀板、和驱动油缸组成。密封面堆焊不锈钢，并加装硅橡胶密封座。形成软硬结合的复合密封。

液压油缸驱动阀板完成启闭，通过进程开关输出信号，实现远程自动控制。本阀密封性好，控制方便。

1. The valve is used as open/close valve by half-clearly cost gas when pressure-balance valve working in the burden tank.
2. This valve is composed by body,plateand drive hydraulic cylinder. Sealing face is stainless steel welded,itwith silicon rubber sealing seat. So the sealing is soft-hard complex seal. Hydraulic cylinder drive the valve plate to make the valve open or close. Used Signal from Limit switch to automatic control.
The valve sealing reliability.





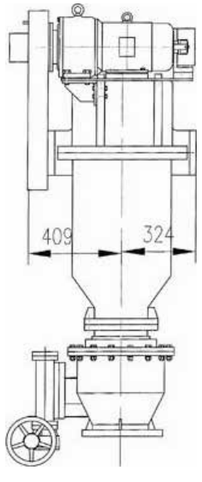
机械智能探尺（TC250-ZL型） Equipment Brief

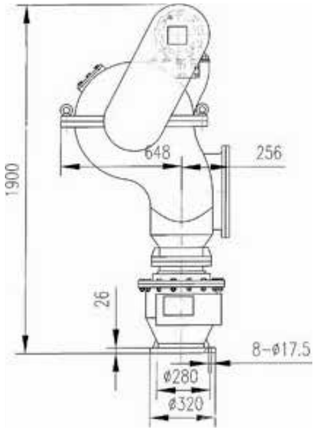
1、用途：本探尺用于高炉内料位线的测定。

2、结构特点：探尺有主体、传动箱、减速机、电机、编码器、电磁抱闸、DN200手动球阀及控制柜组成。本探尺为机械式料面计，又称重锤式料面计：通过交流电机控制重锤的尺度，本探尺能独立使用，又能与主控计算机连接，从而实现远程智能控制。

1. Ruler sondeused to menstruate lever of material in BF.
2. Ruler-sonde composed by main body, drivebox, motor, code, electromagnetic brake, DN200 ball valve and control cabinet. This Ruler-sondeis machine measuring device, it is named gravity material level measure instrument too. It control by AC. Motor, thisRuler-sondecan use by indepen-dent. Itcan be connect with computer to be intelligence control.







Coal Gas System Valve / TRT Redundant Pressure Reusing
煤气系统阀门 / TRT 余压发电

盲板阀 Blind Flange Valve

特点：该阀门适用于煤气和有毒、易爆气体的管路做绝对隔断（切断）用，主要用于高炉煤气的干法除尘系统、TRT余压发电系统，转炉煤气回收系统、煤气管网切断控制等。

It can cut off the coal gas 、harmful easy burst gas, it mainly used in dry dust catcher、TRT system、gas pipeline.





偏心蝶阀 Eccentric Butterfly Valve

特点：本系列蝶阀设计结构，适用于高温供风系统、煤气系统。在冶金系统主要作为高炉热风炉系统，做煤气切断阀、空气切断阀、冷风阀、主烟道阀、余热回收系统切断阀使用。炼钢系统及烧结系统做煤气、烟气、通风除尘管路切断用。
水泥工业系统、电力工业系统用于煤气、烟气、通风除尘管道的切断。

This series butterfly valve design structure, can fit for the high temperature provide wind system、coal gas system. In metallurgy system, it mainly used in hot blast stove, as gas cut off valve、air cutting off valve、cold wind valve、main flue valve、over heat callback system cutting off valve. Used in steel making system as cutting off valve of pipeline about coal gas 、smoke gas、air draft.
Used in cement system、electric power system as cutting off valve of pipeline about coal gas、smoke gas、air draft.





调节蝶阀 Regulating Butterfly Valve

本系列阀门主要用于通风管道中，控制与调节通风量，具有结构简单流阻小，重量轻等特点。

This valve is mainly used in the aeration pipe to control and regulating the air and is of the simply structure, small flow resistance and light weight.





放风阀 Air-escape Valve

特点：本阀门安装在热风炉前的冷风管道上，用来在不停止鼓风机工作的情况下，减少或停止向高炉送风。

The valve used in cold-wind line of the hot blast stove to reduce or stop the air to the BF without stopping the blast system.



紧急切断阀 Urgent Cut-off Valve

紧急切断阀用于TRT系统，其作用是保护透平机，在事故状态紧急切断煤气（在0.5秒迅速关闭阀门），该阀门采用弹簧力关闭阀门，液压开启，本阀具有快关、慢关及游动功能，其特点是快速切断，运动灵活可靠。

The emergency cut off valve for the TRT system which function is to protect the turbo machine on the emergency condition to cut off the gas (within 0.5 second to close the valve), The valve use the spring to close the valve and the hydraulic energy to open the valve and this valve has quickly close, slowly open, slowly close and sliding function .





04
Continuous Casting System

连铸系统

/27
结晶器 Mould

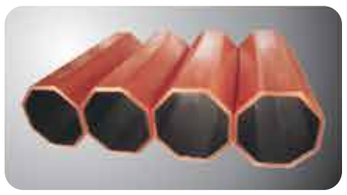
/33
辊　道 Roller Line

MOULD | Tubular Moulds
结晶器丨管式结晶器



目前结晶器铜管材质选用较多的是磷脱氧铜 (TP2)、银铜 (CuAgO.1)、铬锆铜 (Cu-Cr-Zr)。

At present, Deoxidized phosphorus copper (TP2), Silver-bearing copper (CuAg O.1) and Cu-Cr-Zr are normally selected as the material to produce copper mould tubes.









Cu-Cr-Zr H型结晶器铜管
Beam Blank Copper Mould Tubes



方型结晶器铜管
Square Copper Mould Tubes



圆型结晶器铜管
Round Copper Mould Tubes



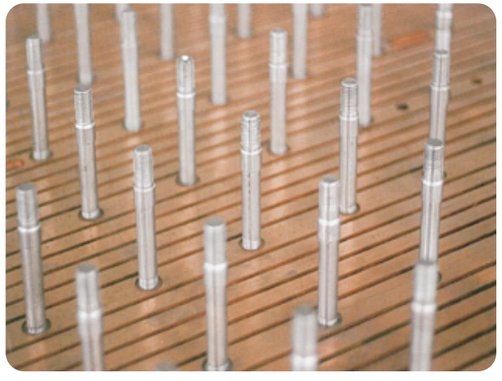
矩型结晶器铜管
Rectangular Copper Mould Tubes

项目Item / 名称Name	规格 Size(Mm)	弧形半径 Camber Radius	壁厚 Thickness	长度 Length	备注 Remarks
方坯结晶器 Square&Rectangular Copper Tubes	方坯Square 50x50 ~ 650x650 矩形Rectangular (100-500)*650	3000-17000 也可直弧形 Also Straight	6 ~ 50	602-1100	可带止口 With Slot 单锥、双锥、三锥、四锥、抛物线型及连续锥高效结晶器铜管 Single taper,double taper, triple taper, quadruplicate taper, parabolic taper and various kinds of continuous taper high efficiency copper mould tubes
圆坯结晶器 Round Copper Tubes	Φ600-Φ1500	5000-17000 也可直弧形 Also Straight	10-50	602-900	可带止口 With Slot 双锥、连续锥、及抛物线型及连续锥高效结晶器铜管 Double taper, quadruplicate taper, parabolic taper and various kinds of continuous taper high efficiency copper mould tubes
异形管 H型管结晶器 Non-Standard Copper Mould Tubes Beam Blank Copper Mould Tubes	535-150x120-70	6000-14000	12-50	700 - 1016	可带止口 With Slot 单锥、双锥、三锥及连续锥结晶器铜管 Single taper, double taper, triple taper, quadruplicate taper, parabolic taper

MOULD | Plate Moulds
结晶器丨板式结晶器



板式结晶器窄面板 Narrow Face of Slab Mould

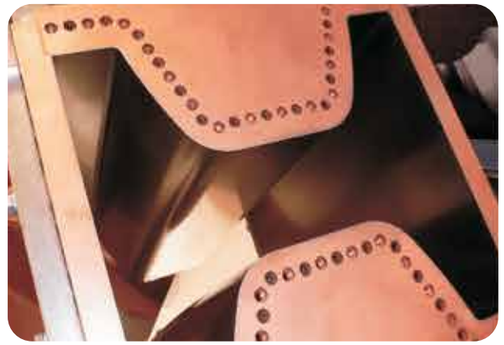


板式结晶器宽面板 Broad Face of Slab Mould



结晶器铜板坯料 Copper Plate Raw Material





铜板型号 Copper Plate Size	规格 Specifications mm			材 质 Material	镀 层 Coating
	长 Length	宽 Width	厚 Thickness		
板坯Slab	350~3800	700~1000	30~75	CuCrZr、CuAg	Ni-Co、Cr、Ni-Fe
异形坯Beam Blank	350~900	300~1000	35~300	CuCrZr、CuAg	Ni-Co、Cr 、Ni-Fe
矩形坯Retangular	700~900	200~3000	30~70	CuCrZr、CuAg	Ni-Co、Cr 、Ni-Fe
薄板坯Thin Slab	1200~2000	1100~1200		CuCrZr、CuAg	Ni-Co、Cr
超薄板坯Ultra-thin Slab	1530	1100		CuCrZr、CuAg	Ni-Co、Cr









结晶器铜管规格参数表
Tubular Copper Moulds Specification Sheet

结晶器铜管规格 (矩坯) Crystallizer Copper Tube Specification (Rectangular Billet)		
铸坯断面 Case Section	铸机半径 Casting Machine Radius	产品长度 Product Length
150x140	R=6000-8000	L=800-900
150x155	R=6000-8000	L=800-900
180x240	R=8000-9000	L=900
165x225	R=8000-9000	L=900
160x220	R=6000-9000	L=900
120x220	R=6000-9000	L=900
165x280	R=9000-10000	L=900
175x225	R=6000-9000	L=900
130x285	R=6500-8000	L=900
155x185	R=6000-8000	L=900
140x155	R=6000-8000	L=900
155x165	R=6000-8000	L=900
150x245	R=6000-8000	L=900
165x285	R=6000-10000	L=900
120x225	R=6000-10000	L=900
130x225	R=6000-10000	L=900
150x520	R=6000-10000	L=900
150x490	R=6000-10000	L=900

结晶器铜管规格 (方坯) Crystallizer Copper Tube Specification (Square Billet)		
铸坯断面 Case Section	铸机半径 Casting Machine Radius	产品长度 Product Length
70x70	R=3000-5000	L=812-850
80x80	R=3000-5000	L=812-850
90x90	R=3000-6000	L=812-850
100x100	R=3000-6000	L=812-900
110x110	R=3000-6000	L=812-900
120x120	R=4000-8000	L=812-900
130x130	R=4000-8000	L=812-900
135x135	R=4000-8000	L=812-900
140x140	R=4000-9000	L=812-900
150x150	R=4000-8000	L=812-900
160x160	R=6000-9000	L=812-900
175x175	R=6000-9000	L=812-900
180x180	R=6000-9000	L=812-900
195x195	R=6000-10000	L=812-900
200x200	R=6000-10000	L=812-900

结晶器铜管规格 (矩坯) Crystallizer Copper Tube Specification (Rectangular Billet)		
铸坯断面 Case Section	铸机半径 Casting Machine Radius	产品长度 Product Length
Φ90	R=3000-5000	L=812-850
Φ100	R=3000-6000	L=812-850
Φ105	R=5000-6000	L=812-900
Φ110	R=6000	L=812-900
Φ120	R=5250-8000	L=812-900
Φ130	R=5250-8000	L=812-900
Φ140	R=5250-8000	L=812-900
Φ150	R=5250-8000	L=812-900
Φ160	R=6000-9000	L=812-900
Φ180	R=6000-10000	L=812-900
Φ190	R=6000-10000	L=812-900
Φ200	R=6000-10000	L=812-900
Φ210	R=6000-10000	L=812-900
Φ220	R=6000-10000	L=812-900
Φ230	R=6000-10000	L=812-900
Φ280	R=6000-10000	L=812-900
Φ310	R=6000-15000	L=812-900
Φ320	R=6000-15000	L=812-900
4330	R=6000-15000	L=812-900
Φ340	R=6000-15000	L=812-900
Φ350	R=6000-15000	L=812-900
Φ400	R=6000-15000	L=812-900
Φ450	R=6000-15000	L=812-900
Φ500	R=6000-15000	L=812-900

MOULD | Assembly
结晶器 | 结晶器总成



水 套 Water Jacket



结晶器水套 Crystallizer Waterjacket









ROLLER LINE
辊道

矫直辊 / 矫平辊 Straightener / Leveller Rolls

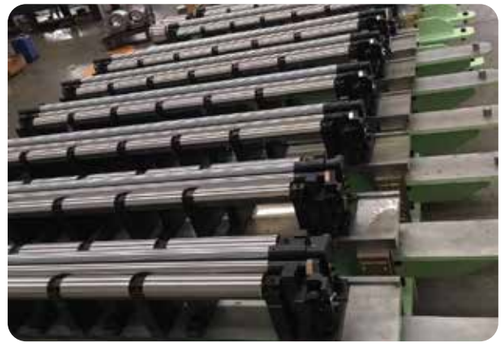
分类 Classification	材料 Material	应用 Application
WR	GCr15 (SUJ2) 86CrMoV7 60CrMoV	Multi-Roll Straightening Machine; Leveling Machine 多辊矫直机\矫平机
BUR	GCr15 (SUJ2) 42CrMo	

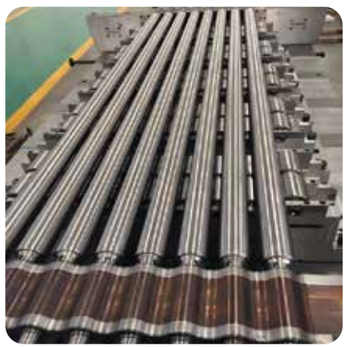





矫直辊盒 Straightener Roll Cassette

分类 Classification	材料 Material	应用 Application
WR	GCr15 (SUJ2) 86CrMoV7 60CrMoV	Multi-Roll Straightening Machine; Leveling Machine 多辊矫直机、 矫平机
BUR	GCr15 (SUJ2) 42CrMo	




ROLLER LINE
辊道

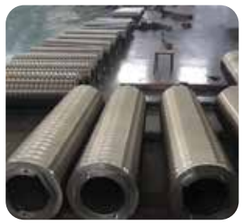
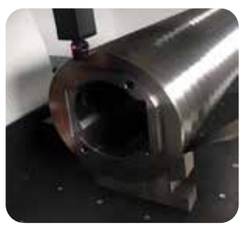
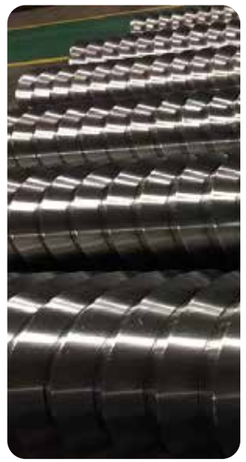
矫直辊系统 Straightener Roll System

分类 Classification	技术规格 Specification
矫直机 Straightening Machine	L400-L3000
多辊矫直机 Multi-Roll Straightening Machine	L400-L3000
板材矫直机 Plate Straightening Machine	L2500-L5200





型材矫直辊 Straightening Rolls for Profiles

热卷箱辊 Coil Box Rolls

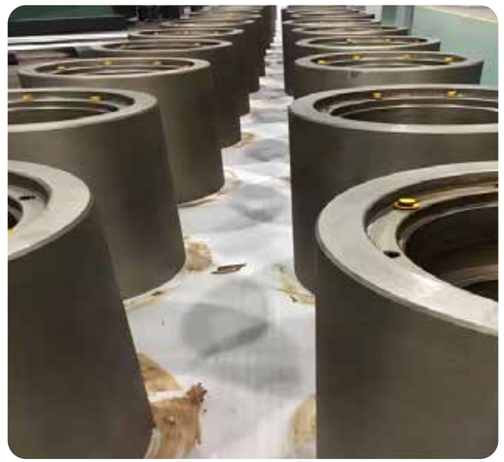


板材矫直辊 Plate Straightener Rolls

分类 Classification	技术规格 Specification	材料 Material
WR	L2500-L5200	60CrMoV　X40CrMoV5-1　60CrMnMo
BUR/SR	L200-L1200	55NiCrMoV7　42CrMo　60CrMoV








05
Steel Rolling System

轧钢系统

/39
轧辊 Roller

/51
轴承 Bearings

/52
联轴器 Coupling

/53
刀片 Blade

/67
导卫配件 Guide Accessories

ROLLER | Cast Iron Roll
轧辊丨铸铁轧辊



合金无限冷硬铸铁轧辊 Alloy Indefinite Chilled Cast Iron Rolls

01 化学成分及规格与制造方法 Chemical Analysis and Specifications and Manufacturing Methods

轧辊名称 Designation of Rolls	材质代码 Material Code	C	Si	Mn	Ni	Cr	Mo	规格及制作方法 Specifications and Manufacturing Methods
NiCrMo Ⅰ系合金无限冷硬 Ni CrMo Ⅰ alloy indefinite chill	AIC Ⅰ	3.1-3.4	0.6-0.9	0.5-1.0	0.8-2.0	0.7-1.3	0.2-0.6	离心复合 Φ250-500 Centrifugal composite Φ250-500
NiCrMo Ⅱ系合金无限冷硬 Ni CrMo Ⅱ alloy indefinite chill	AIC Ⅱ	3.1-3.4	0.6-1.0	0.5-1.0	2.1-3.0	0.7-1.5	0.2-0.6	离心复合 Φ250-1000 Centrifugal Composite Φ250-1000
NiCrMo Ⅲ系合金无限冷硬 Ni CrMo Ⅲ alloy indefinite chill	AIC Ⅲ	3.1-3.4	0.6-1.0	0.5-1.0	3.1-4.5	0.8-1.3	0.2-1.0	
超级合金无限冷硬类 Super Alloy Indefinite e Chilled class	SAIC	3.1-3.4	0.8-1.3	0.5-1.0	3.5-4.5	1.2-2.0	0.3-1.0	

02 物理性能 Physical Properties

轧辊名称 Designation of Rolls	材质代码 Material Code	辊身硬度HSD Barrel Hardness	辊颈硬度HSD Neck Hardness	抗拉强度Mpa Tensile Strength
NiCrMo Ⅰ系合金无限冷硬 Ni CrMo Ⅰ alloy indefinite chill	AIC Ⅰ	55-72	35-55	>160
NiCrMo Ⅱ系合金无限冷硬 Ni CrMo Ⅱ alloy indefinite chill	AIC Ⅱ	55-72	35-55	>160
NiCrMo Ⅲ系合金无限冷硬 Ni CrMo Ⅲ alloy indefinite chill	AIC Ⅲ	65-75	35-55	>350
超级合金无限冷硬类 Super Alloy Indefinite e Chilled class	SAIC	73-83	35-55	>350

03 产品特性 Product Features

轧辊名称 Designation of Rolls	材质代码 Material Code	产品特性 Product Features
NiCrMo Ⅰ系合金无限冷硬 Ni CrMo Ⅰ alloy indefinite chill	AIC Ⅰ	耐磨性与抗事故性合理匹配 Reasonable match for wear resistance and anti-accident
NiCrMo Ⅱ系合金无限冷硬 Ni CrMo Ⅱ alloy indefinite chill	AIC Ⅱ	良好的强韧性与耐磨性有机结合 Combination of good toughness and wear resistance
NiCrMo Ⅲ系合金无限冷硬 Ni CrMo Ⅲ alloy indefinite chill	AIC Ⅲ	优越的耐磨性及抗事故能力完美结合 Perfect combination of superior wear resistance and anti-accident ability
超级合金无限冷硬类 Super Alloy Indefinite e Chilled class	SAIC	具有超强的耐磨性及抗事故能力 With superior wear resistance and anti-accident ability

04 应用范围 Application

轧辊名称 Designation of Rolls	材质代码 Material Code	应用范围 Application
NiCrMo Ⅰ系合金无限冷硬 Ni CrMo Ⅰ alloy indefinite chill	AIC Ⅰ	小型钢、棒线中、精轧 Small steel bar, wire rod medium & finish rolling
NiCrMo Ⅱ系合金无限冷硬 Ni CrMo Ⅱ alloy indefinite chill	AIC Ⅱ	小型钢、棒线中、精轧及热轧板、带钢类轧机 Small steel bar, wire rod medium & finish rolling, hot rolled plate, strip mill
NiCrMo Ⅲ系合金无限冷硬 Ni CrMo Ⅲ alloy indefinite chill	AIC Ⅲ	小型钢、棒线精轧及热轧板、带钢类精轧机 Small steel bar, wire rod finish rolling, hot rolled plate, strip finishing mill
超级合金无限冷硬类 Super Alloy Indefinite e Chilled class	SAIC	棒线精轧及热轧板、带钢类精轧机 Wire rod finish rolling, hot rolled plate, strip finishing mill

05 承制规格 Scope of Supply

辊身直径 ≤ 1400mm Barrel diameter ≤ 1400mm　辊身长度 ≤ 4600mm Barrel length ≤ 600mm



合金冷硬铸铁轧辊 Alloy Chilled Cast Iron Rolls

01 化学成分及规格与制造方法 Chemical Analysis and Specifications and Manufacturing Methods

轧辊名称 Designation of Rolls	材质代码 Material Code	C	Si	Mn	Ni	Cr	Mo	规格及制作方法 Specifications and Manufacturing Methods
NiCrMo Ⅰ系合金冷硬 Ni CrMo alloy chilled Department Ⅰ	ACC Ⅰ	3.00-3.40	0.30 - 0.80	0.20-1.00	0.50-1.00	0.20-0.60	0.20-0.60	离心复合 Φ250-500 Centrifugal composite Φ250-500
NiCrMo Ⅱ系合金冷硬 Ni CrMo alloy chilled Department Ⅱ	ACC Ⅱ	3.00-3.40	0.30 - 0.80	0.20-1.00	1.10-2.00	0.30-1.20	0.20-0.60	离心复合 Φ250-500 Centrifugal composite Φ250-500
Ni CrMo Ⅲ系合金冷硬 Ni CrMo alloy chilled Department Ⅲ	ACC Ⅲ	3.00-3.40	0.30 - 0.80	0.20-1.00	2.10-3.00	0.50-1.50	0.20-0.60	离心复合 Φ250-500 Centrifugal composite Φ250-850

02 物理性能 Physical Properties

轧辊名称 Designation of Rolls	材质代码 Material Code	辊身硬度HSD Barrel Hardness	辊颈硬度HSD Neck Hardness	抗拉强度Mpa Tensile Strength
NiCrMo Ⅰ系合金冷硬 Ni CrMo alloy chilled Department Ⅰ	ACC Ⅰ	55-65	32-50	>150
NiCrMo Ⅱ系合金冷硬 Ni CrMo alloy chilled Department Ⅱ	ACC Ⅱ	60-70	35-52	>150
Ni CrMo Ⅲ系合金冷硬 Ni CrMo alloy chilled Department Ⅲ	ACC Ⅲ	65-73	32-45	>350

03 产品特性 Product Features

轧辊名称 Designation of Rolls	材质代码 Material Code	产品特性 Product Features
NiCrMo Ⅰ系合金冷硬 Ni CrMo alloy chilled Department Ⅰ	ACC Ⅰ	良好的耐磨性与抗事故性合理匹配 Reasonable match for good wear resistance and anti-accident
NiCrMo Ⅱ系合金冷硬 Ni CrMo alloy chilled Department Ⅱ	ACC Ⅱ	较高的耐磨性与强韧性有机结合 Combination of high wear resistance and toughness
Ni CrMo Ⅲ系合金冷硬 Ni CrMo alloy chilled Department Ⅲ	ACC Ⅲ	优越的耐磨性、抗事故能力 Superior wear resistance and anti-accident ability

04 应用范围 Application

轧辊名称 Designation of Rolls	材质代码 Material Code	应用范围 Application
NiCrMo Ⅰ系合金冷硬 Ni CrMo alloy chilled Department Ⅰ	ACC Ⅰ	小型钢、棒线中、精轧 Small steel bar, wire rod medium & finish rolling
NiCrMo Ⅱ系合金冷硬 Ni CrMo alloy chilled Department Ⅱ	ACC Ⅱ	棒线、窄带精轧 Wire rod, narrowband finish rolling
Ni CrMo Ⅲ系合金冷硬 Ni CrMo alloy chilled Department Ⅲ	ACC Ⅲ	棒线精轧及热轧板、窄带、带钢类精轧机 Wire rod finish rolling, hot rolled plate, narrowband, strip finishing mill

05 承制规格 Scope of Supply

辊身直径 ≤ 500mm Barrel diameter ≤ 500mm　辊身长度 ≤ 1000mm Barrel length ≤ 1000mm

合金球墨轧辊

Alloy Graphite Roll



01 化学成分及规格与制造方法 Chemical Analysis and Specifications and Manufacturing Methods

轧辊名称 Designation of Rolls	材质代码 Material Code	C	Si	Mn	Ni	Cr	Mo	Mg	规格及制作方法 Specifications and Manufacturing Methods
Ni CrMo I 系合金球墨铸铁 Ductile iron alloy Ni CrMo I	ASG I	3.00-3.40	1.40-1.90	0.20-0.80	0.50-1.00	0.20-0.60	0.20-0.60	≥0.04	静态整体φ350-650 Static whole0350-650
Ni CrMo II 系合金球墨铸铁 Ductile iron alloy Ni CrMo II	ASG II	3.00-3.40	1.50-1.90	0.20-0.80	1.10-2.00	0.20-0.80	0.20-0.60	≥0.04	静态、离心Φ350-650 Static,centrifugal0350-650
Ni CrMo III 系合金球墨铸铁 Ductile iron alloy Ni CrMo III	ASG III	3.00-3.40	1.60-1.90	0.20-0.80	2.10-2.80	0.20-1.00	0.20-0.60	≥0.04	静态、离心0350-650 Staticcentrifugal@350-650

02 物理性能 Physical Properties

轧辊名称 Designation of Rolls	材质代码 Material Code	辊身硬度HSD Barrel Hardness	辊颈硬度HSD Neck Hardness	抗拉强度Mpa Tensile Strength
Ni CrMo I 系合金球墨铸铁 Ductile iron alloy Ni CrMo I	ASG I	45-55	35-55	>320
Ni CrMo II 系合金球墨铸铁 Ductile iron alloy Ni CrMo II	ASG II	50-65	35-55	>320
Ni CrMo III 系合金球墨铸铁 Ductile iron alloy Ni CrMo III	ASG III	55-70	35-55	>320

03 产品特性 Product Features

轧辊名称 Designation of Rolls	材质代码 Material Code	产品特性 Product Features
Ni CrMo I 系合金球墨铸铁 Ductile iron alloy Ni CrMo I	ASG I	较高的强韧性、耐磨性有机结合 Combination of high toughness and wear resistance
Ni CrMo II 系合金球墨铸铁 Ductile iron alloy Ni CrMo II	ASG II	优越的抗事故能力、耐磨性 Superior anti-accident ability and wear resistance
Ni CrMo III 系合金球墨铸铁 Ductile iron alloy Ni CrMo III	ASG III	良好的耐磨性与抗事故性合理匹配 Reasonable match for good wear resistance and anti-accident

04 应用范围 Application

轧辊名称 Designation of Rolls	材质代码 Material Code	应用范围 Application
Ni CrMo I 系合金球墨铸铁 Ductile iron alloy Ni CrMo I	ASG I	型钢、棒线粗轧、中轧 Steel bar, wire rod rough & medium rolling
Ni CrMo II 系合金球墨铸铁 Ductile iron alloy Ni CrMo II	ASG II	型钢、棒线、窄带粗中轧 Steel bar, wire rod, narrowband rough & medium rolling
Ni CrMo III 系合金球墨铸铁 Ductile iron alloy Ni CrMo III	ASG III	型钢、棒线粗轧、中轧 Steel bar, wire rod rough & medium rolling

05 承制规格 Scope of Supply

辊身直径 ≤ 5000mm Barrel diameter ≤ 5000mm　辊身长度 ≤ 1000mm Barrel length ≤ 1000mm

珠光体球墨铸铁轧辊

Pearlitic Nodular Cast Iron Roll



01 化学成分及规格与制造方法 Chemical Analysis and Specifications and Manufacturing Methods

轧辊名称 Designation of Rolls	材质代码 Material Code	C	Si	Mn	Ni	Cr	Mo	Mg	规格及制作方法 Specifications and Manufacturing Methods
NiCrMo I 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department I	SGP I	3.00-3.40	1.50-1.90	0.40-0.80	1.50-2.00	0.20-0.60	0.20-0.60	≥0.04	静态、离心 Φ350-650 Static, centrifugalΦ350-650
NiCrMo II 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department II	SGP II	3.00-3.40	1.30-1.90	0.40-0.80	2.01-2.50	0.20-0.80	0.20-0.60	20.04	静态、离心 Φ350-650 Static, centrifugal Φ350-650
NiCrMo III 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department III	SGP III	3.00-3.40	1.20-1.90	0.40-0.80	2.51-3.00	0.20-1.20	0.20-0.60	≥0.04	静态、离心Φ350-650 Static, centrifugal Φ350-650

02 物理性能 Physical Properties

轧辊名称 Designation of Rolls	材质代码 Material Code	辊身硬度HSD Barrel Hardness	辊颈硬度HSD Neck Hardness	抗拉强度Mpa Tensile Strength
NiCrMo I 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department I	SGP I	55-65	32-50	>150
NiCrMo II 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department II	SGP II	60-70	35-52	>150
NiCrMo III 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department III	SGP III	65-73	32-45	>350

03 产品特性 Product Features

轧辊名称 Designation of Rolls	材质代码 Material Code	产品特性 Product Features
NiCrMo I 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department I	SGP I	良好的耐磨性与抗事故性合理匹配 Reasonable match for good wear resistance and anti-accident
NiCrMo II 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department II	SGP II	较高的强韧性、耐磨性有机结合 Combination of high toughness and wear resistance
NiCrMo III 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department III	SGP III	优越的耐磨性与抗事故能力 Superior wear resistance and anti-accident ability

04 应用范围 Application

轧辊名称 Designation of Rolls	材质代码 Material Code	应用范围 Application
NiCrMo I 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department I	SGP I	型钢、棒线、窄带粗中轧 Steel bar, wire rod, narrowband rough & medium rolling
NiCrMo II 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department II	SGP II	型钢、棒线、窄带粗中轧 Steel bar, wire rod, narrowband rough & medium rolling
NiCrMo III 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department III	SGP III	型钢、棒线、窄带中精轧 Steel bar, wire rod, narrowband medium & finish rolling

05 承制规格 Scope of Supply

辊身直径 ≤ 1000mm Barrel diameter ≤ 1000mm　辊身长度 ≤ 3000mm Barrel length ≤ 3000mm

贝氏体球墨铸铁轧辊

Bainite Nodular Cast Iron Roll



01 化学成分及规格与制造方法 Chemical Analysis and Specifications and Manufacturing Methods

轧辊名称 Designation of Rolls	材质代码 Material Code	C	Si	Mn	Ni	Cr	Mo	Mg	规格及制作方法 Specifications and Manufacturing Methods
贝氏体球墨离心复合铸铁轧辊 I Bainite nodular cast iron roll Centrifugal I	SGA I	3.00-3.40	1.20-1.90	0.40-0.80	3.01-3.50	0.20-0.80	0.50-1.00	≥0.04	静态、离心 Φ250-850 Static, centrifugal Φ250-850
贝氏体球墨离心复合铸铁轧辊 II Bainite nodular cast iron roll Centrifugal II	SGA II	3.00-3.40	1.20-1.90	0.40-0.80	3.51-4.50	0.20-1.00	0.50-1.00	≥0.04	静态、离心 Φ250-850 Static, centrifugal Φ250-850

02 物理性能 Physical Properties

轧辊名称 Designation of Rolls	材质代码 Material Code	辊身硬度HSD Barrel Hardness	辊颈硬度HSD Neck Hardness	抗拉强度Mpa Tensile Strength
贝氏体球墨离心复合铸铁轧辊 I Bainite nodular cast iron roll Centrifugal I	SGA I	60-70	32-45	>350
贝氏体球墨离心复合铸铁轧辊 II Bainite nodular cast iron roll Centrifugal II	SGA II	65-75	32-45	>350

03 产品特性 Product Features

轧辊名称 Designation of Rolls	材质代码 Material Code	产品特性 Product Features
贝氏体球墨离心复合铸铁轧辊 I Bainite nodular cast iron roll Centrifugal I	SGA I	较高的耐磨性与抗事故性合理匹配 Reasonable match for high wear resistance and anti-accident
贝氏体球墨离心复合铸铁轧辊 II Bainite nodular cast iron roll Centrifugal II	SGA II	优越的耐磨性、强韧性有机结合 Combination of superior wear resistance and toughness

04 应用范围 Application

轧辊名称 Designation of Rolls	材质代码 Material Code	应用范围 Application
贝氏体球墨离心复合铸铁轧辊 I Bainite nodular cast iron roll Centrifugal I	SGA I	型钢、棒线、无缝中精轧 Steel bar, wire rod, seamless medium & finish rolling
贝氏体球墨离心复合铸铁轧辊 II Bainite nodular cast iron roll Centrifugal II	SGA II	型钢、棒线、无缝中精轧 Steel bar, wire rod, seamless medium & finish rolling

05 承制规格 Scope of Supply

辊身直径 ≤ 5000mm Barrel diameter ≤ 5000mm　辊身长度 ≤ 1000mm Barrel length ≤ 1000mm

ROLLER | Cast Steel Roll
轧辊 | 铸钢轧辊



合金铸钢轧辊 Alloy Cast Steel Roll

01 化学成分及规格与制造方法 Chemical Analysis and Specifications and Manufacturing Methods

轧辊名称 Designation of Rolls	材质代码 Material Code	C	Si	Mn	Ni	Cr	Mo	规格及制作方法 Specifications and Manufacturing Methods
Zu60CrMoMn	AS60	0.55-0.65	0.20-0.45	0.90-1.20		0.80-1.20	0.20-0.45	静态、静态铸槽、镶套 Φ350-1800 Static, Static Cast Slot, Casement Φ350-1800
Zu6OCrMoMnNi	AS60 I	0.55-0.65	0.20-0.60	0.50-1.00	0.20-1.50	0.80-1.20	0.20-0.60	
Zu65CrNiMo	AS65 I	0.60-0.70	0.20-0.60	0.50-0.80	0.20-0.50	0.80-1.20	0.20-0.45	
Zu70Mn	AS70	0.65-0.75	0.20-0.45	0.80-1.40				
Zu70Mn2	AS70 I	0.65-0.75	0.20-0.45	1.40-1.80				
Zu70Mn2Mo	AS70 II	0.65-0.75	0.20-0.45	1.40-1.80			0.20-0.45	
Zu75CrMo	AS75	0.70 - 0.80	0.20-0.45	0.60-0.90		0.75-1.00	0.20-0.45	
Zu75CrNiMnMo	AS75 I	0.70-0.80	0.20-0.70	0.70-1.10	≥0.20	0.80-1.50	0.20-0.60	

02 物理性能和应用范围 Physical Properties and Application

轧辊名称 Designation of Rolls	材质代码 Material Code	辊身硬度HSD Barrel Hardness	辊颈硬度HSD Neck Hardness	抗拉强度Mpa Tensile Strength	
Zu60CrMoMn	AS60	35-45	≤45	>650	型钢、棒线粗轧，板带破鳞、开坯 Steel Bar, Wire Rod Rough Rolling, Strip Broken Scales, Cogging
Zu60CrMoMnNi	AS60 I	35-45	≤45	>750	
Zu65CrNiMo	AS65 I	35-45	≤45	>750	
Zu70Mn	AS70	32-42	≤45	>650	
Zu70Mn2	AS70 I	35-45	≤45	>680	
Zu70Mn2Mo	AS70 II	35-45	≤45	>700	
Zu75CrMo	AS75	35-45	≤45	>700	
Zu75CrNiMnMo	AS75 I	35-45	≤45	>800	

03 产品特性 Product Features

轧辊名称 Designation of Rolls	材质代码 Material Code	产品特性 Product Features
Zu60CrMoMn	AS60	较好的咬入性、强韧性和抗破环能力 Good biting,toughness and breaking resistance ability
Zu6OCrMoMnNi	AS60 I	较好的强韧性、咬入性和抗破环能力 Good toughness,biting and breaking resistanceability
Zu65CrNiMo	AS65 I	较好的强韧性、咬入性和抗破环能力 Good toughness,biting and breaking resistance ability
Zu70Mn	AS70	较好的咬入性、强韧性和抗破环能力 Good biting,toughness and breaking resistanceability
Zu70Mn2	AS70 I	较好的强韧性、咬入性和抗破环能力 Good toughness,bitingand breaking resistanceability
Zu70Mn2Mo	AS70 II	较好的强韧性、咬入性和抗破环能力 Good toughness,biting and breaking resistance ability
Zu75CrMo	AS75	较好的强韧性、咬入性和抗破环能力 Good toughness,biting and breaking resistance ability
Zu75CrNiMnMo	AS75 I	较高的抗破环能力、强韧性和咬入性 High breaking resistance ability, toughness and biting

04 承制规格 Scope of Supply

辊身直径 ≤ 1000mm Barrel diameter ≤ 1000mm　辊身长度 ≤3000mm Barrel length ≤ 3000mm

半钢轧辊

Adamite Roll



01 化学成分及规格与制造方法 Chemical Analysis and Specifications and Manufacturing Methods

轧辊名称 Designation of Rolls	材质代码 Material Code	C	Si	Mn	Ni	Cr	Mo	规格及制作方法 Specifications and Manufacturing Methods
ZuB140CrNiMo	AD140 I	1.30-1.50	0.30-0.60	0.70-1.10	0.50-1.20	0.80-1.20	0.20-0.60	静态、静态铸槽、组合镶套 Φ350 - 1800 Static, static cast slot, a combinationof casement Φ350 - 1800
ZuB160CrNiMo	AD160 I	1.50-1.70	0.30-0.60	0.80-1.30	≥0.20	0.80-2.00	0.20-0.60	
ZuB180CrNiMo	AD180	1.70-1.90	0.30-0.80	0.60-1.10	0.20-2.00	0.80-1.50	0.20-0.60	
ZuB200CrNiMo	AD200	1.90-2.10	0.30-0.80	0.80-1.20	0.60-2.50	0.60-2.00	0.20-0.80	

02 产品特性 Product Features

轧辊名称 Designation of Rolls	材质代码 Material Code	材质代码 Material Code
ZuB140CrNiMo	AD140 I	良好的耐磨、抗热裂、咬入性和抗断裂能力 Good wear resistance, thermal cracking resistance, biting and fracture resistance ability
ZuB160CrNiMo	AD160 I	良好的耐磨、抗热裂、咬入性和抗断裂能力 Good wear resistance, thermal cracking resistance, biting and fracture resistance ability
ZuB180CrNiMo	AD180	较高的耐磨、咬入性、抗热裂和抗断裂能力 High wear resistance, biting, thermal cracking resistance and fracture resistance ability
ZuB200CrNiMo	AD200	优越的耐磨、咬入性、抗热裂和抗断裂能力 Superior wear resistance, biting, thermal cracking resistance and fracture resistance ability

03 物理性能和应用范围 Physical Properties and Application

轧辊名称 Designation of Rolls	材质代码 Material Code	辊身硬度HSD Barrel Hardness	辊颈硬度HSD Neck Hardness	抗拉强度Mpa Tensile Strength	
ZuB140CrNiMo	AD140 I	40-50	≤60	500-800	大型钢，H型钢，棒线 板钢中，精轧BD辊，立辊，辊环 Large steel bar, H-shaped steel bar, wire rod, sheet steel medium & finishing BD roll, vertical roll,roll ring
ZuB160CrNiMo	AD160 I	40-50	≤50	500-800	
ZuB180CrNiMo	AD180	50-55	≤50	450-700	
ZuB200CrNiMo	AD200	50-60	≤50	450-700	

04 承制规格 Scope of Supply

辊身直径 ≤ 1000mm Barrel diameter ≤ 1000mm　辊身长度 ≤ 3000mm Barrel length ≤ 3000mm

石墨钢轧辊

Graphite Steel Roll



01 化学成分及规格与制造方法 Chemical Analysis and Specifications and Manufacturing Methods

轧辊名称 Designation of Rolls	材质代码 Material Code	C	Si	Mn	Ni	Cr	Mo	规格及制作方法 Specifications and Manufacturing Methods
G140CrNiMo	GS140	1.30-1.50	1.30-1.60	0.50-0.80		0.40-0.70	0.20-0.50	静态、静态铸槽、组合镶套 Φ350 - 1800 Static, static cast slot, a combinationof casement Φ350 - 1800
G160CrNiMo	GS160	1.50-1.70	0.80-1.50	0.60-1.00	0.20-1.00	0.50-1.50	0.20-0.80	
G180CrNiMo	GS180	1.70-1.90	0.80-2.00	0.60-1.50	0.80-1.50	0.50-1.50	0.20-0.80	
G200CrNiMo	GS200	1.90-2.10	0.80-2.00	0.60-1.50	0.80-1.50	0.50-2.00	0.20-0.80	

02 产品特性 Product Features

轧辊名称 Designation of Rolls	材质代码 Material Code	材质代码 Material Code
G140CrNiMo	GS140	良好的耐磨、抗热裂、咬入性和抗断裂能力 Good wear resistance, thermal cracking resistance, biting and fracture resistance ability
G160CrNiMo	GS160	良好的耐磨、抗热裂、咬入性和抗断裂能力 Good wear resistance, thermal cracking resistance, biting and fracture resistance ability
G180CrNiMo	GS180	较高的耐磨、咬入性、抗热裂和抗断裂能力 High wear resistance, biting, thermal cracking resistance and fracture resistance ability
G200CrNiMo	GS200	优越的耐磨、咬入性、抗热裂和抗断裂能力 Superior wear resistance, biting, thermal cracking resistance and fracture resistance ability

03 物理性能和应用范围 Physical Properties and Application

轧辊名称 Designation of Rolls	材质代码 Material Code	辊身硬度HSD Barrel Hardness	辊颈硬度HSD Neck Hardness	抗拉强度Mpa Tensile Strength	
G140CrNiMo	GS140	40-50	≤46	≥540	大型钢，H型钢开环 Large steel bar, H-shaped steel billet
G160CrNiMo	GS160	40-50	≤50	≥500	大型钢，H型钢，棒线，板钢中 精轧BD辊，立辊，辊环 Large steel bar, H-shaped steel bar,wire rod, sheet steel medium & finishing BD roll, vertical roll, roll ring
G180CrNiMo	GS180	50-55	≤50	≥500	
G200CrNiMo	GS200	50-60	≤50	≥500	

04 承制规格 Scope of Supply

辊身直径 ≤ 1000mm Barrel Diameter ≤ 1000mm　辊身长度 ≤ 3000mm Barrel Length ≤ 3000mm

高合金钢轧辊
High-alloy Steel Roll



01 化学成分及规格与制造方法 Chemical Analysis and Specifications and Manufacturing Methods

轧辊名称 Designation of Rolls	材质代码 Material Code	C	Si	Mn	Ni	Cr	Mo	V. Nb. W	规格及制作方法 Specifications and Manufacturing Methods
高铬钢 High-chromium steel	HCrS	0.80 - 1.80	0.40-1.00	0.50-1.00	8.00-15.00	0.50-1.50	1.50-4.50	0.20-0.40	离心复合Φ250-1200 Centrifugal compositeΦ250-1200
半高速钢 High Speed steel	SHSS	0.60-1.20	0.80-1.50	0.50-1.00	0.20-1.20	3.00-9.00	2.50-5.00	0.50-2.00	离心复合Φ250-1200 Centrifugal compositeΦ250-1200
高硼高速钢 High Speed steel boron	HSS I	2.50 - 3.00	0.30-1.00	0.50-1.20	0.70-1.70	15.00-18.00	0.70-1.50	BO.5-3.0	离心复合Φ250 - 1200 Centrifugal compositeΦ250-1200
高钒高速钢 High Speed steel vanadium	HSS II	1.50-2.00	0.30-1.00	0.40-1.00	0.50-1.50	3.00-8.00	2.00-8.00	V3.0-8.0	离心复合Φ250-850 Centrifugal compositeΦ250-850
高铌高速钢 High Speed steel niobium	HSS III	1.50-2.00	0.30-1.00	0.40-1.00	0.50-1.50	3.00-8.00	2.00-8.00	V+Nb3-8	离心复合Φ250-850 Centrifugal compositeΦ250-850

02 产品特性 Product Features

轧辊名称 Designation of Rolls	材质代码 Material Code	材质代码 Material Code
高铬钢 High-chromium steel	HCrS	较高的耐磨性、抗回火性和优越的抗裂纹扩展能力 High wear resistance, tempering resistance and superior crack propagation resistance ability
半高速钢 High Speed steel	SHSS	较高的耐磨性、抗回火性和优越的抗裂纹扩展能力 High wear resistance, tempering resistance and superior crack propagation resistance ability
高硼高速钢 High Speed steel boron	HSS I	较高的耐磨性、抗回火性和优越的抗裂纹扩展能力 High wear resistance, tempering resistance and superior crack propagation resistance ability
高钒高速钢 High Speed steel vanadium	HSS II	较高的抗磨性、红硬性和优越的抗裂纹扩展能力 High abrasion resistance, red hardness and superior crack propagation resistance ability
高铌高速钢 High Speed steel niobium	HSS III	较高的抗磨性、红硬性和优越的抗裂纹扩展能力 High abrasion resistance, red hardness and superior crack propagation resistance ability

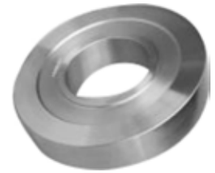
03 物理性能和应用范围 Physical Properties and Application

轧辊名称 Designation of Rolls	材质代码 Material Code	辊身硬度HSD Barrel Hardness	辊颈硬度HSD Neck Hardness	抗拉强度Mpa Tensile Strength	
高铬钢 High-chromium steel	HCrS	70-80	35-45	≥450	热轧板，带粗轧辊，立辊棒线粗，中轧工程辊 Hot-rolled plate, strip roughing roll, vertical roll wire rod rough & medium work rolls
半高速钢 High Speed steel	SHSS	75-80	35-45	≥450	热轧板，带粗轧辊，立辊棒线粗，中精轧工程辊 Hot-rolled plate, strip roughing roll, vertical roll wire rod rough & medium & finishing work rolls
高硼高速钢 High Speed steel boron	HSS I	70-80	35-45	≥450	
高钒高速钢 High Speed steel vanadium	HSS II	70-85	35-45	≥450	热轧板，带精轧辊棒线中，精轧，预精轧工程辊 Hot-rolled plate, strip finishing roll, wire rod medium & finishing & pre-finishing work rolls
高铌高速钢 High Speed steel niobium	HSS III	70-85	35-45	≥450	

04 承制规格 Scope of Supply

辊身直径 ≤ 1000mm Barrel diameter ≤ 1000mm　　辊身长度 ≤ 3000mm Barrel length ≤ 3000mm

ROLLER | Class Roll Ring Rolls
轧辊 | 辊环类轧辊



铸造辊环 Casting Roll Ring

01 化学成分及规格与制造方法 Chemical Analysis and Specifications and Manufacturing Methods

轧辊名称 Designation of Rolls	材质代码 Material Code	C	Si	Mn	Ni	Cr	Mo	规格及制作方法 Specifications and Manufacturing Methods
珠光体类铸铁辊环 Pearlite cast iron roll ring	SGP辊环 SGP roll ring	2.90 - 3.60	1.00-2.00	0.40-1.00	1.00-3.00	0.20-1.00	0.20-0.60	离心、静态 Φ450-1200 Static, centrifugalΦ450-1200
贝氏体类铸铁辊环 Bainitic cast iron roll ring	SGA辊环 SGA roll ring	2.90-3.60	1.00-2.00	0.40-1.00	3.00-4.00	0.30 - 1.00	0.20-0.80	离心复合 Φ350-1200 Centrifugal composite Φ350-1200
合金半钢类铸钢辊环 Semi-steel alloy steel roll ring	AD辊环 AD roll ring	1.20 - 2.20	0.30-0.80	0.70-1.30	0.50-2.20	0.80-3.00	0.20-0.80	离心、静态 Φ850-1200 Static, centrifugal Φ850-1200
合金石墨钢类铸钢辊环 Cast alloy graphite steel roll ring	GS辊环 GS roll ring	1.30-2.00	0.80-1.70	0.50-1.00	0.20 - 2.20	0.40-2.00	0.20-0.80	离心、静态 Φ850-1200 Static, centrifugal Φ850-1200

02 物理性能 Physical Properties

轧辊名称 Designation of Rolls	材质代码 Material Code	辊身硬度HSD Barrel Hardness	抗拉强度Mpa Tensile Strength
珠光体类铸铁辊环 Pearlite cast iron roll ring	SGP辊环 SGP roll ring	45-70	≥450
贝氏体类铸铁辊环 Bainitic cast iron roll ring	SGA辊环 SGA roll ring	60-73	≥350
合金半钢类铸钢辊环 Semi-steel alloy steel roll ring	AD辊环 AD roll ring	40-60	≥490
合金石墨钢类铸钢辊环 Cast alloy graphite steel roll ring	GS辊环 GS roll ring	40-60	≥500

03 产品特性 Product Features

轧辊名称 Designation of Rolls	材质代码 Material Code	产品特性 Product Features
珠光体类铸铁辊环 Pearlite cast iron roll ring	SGP辊环 SGP roll ring	良好的耐磨和抗热裂特性 Good wear resistance and thermal cracking resistance
贝氏体类铸铁辊环 Bainitic cast iron roll ring	SGA辊环 SGA roll ring	较高耐磨性和孔型保持能力 High wear resistance and the ability to keep the roller pass
合金半钢类铸钢辊环 Semi-steel alloy steel roll ring	AD辊环 AD roll ring	强韧性、耐磨性及抗热裂于一体 With toughness, wear resistance and thermal cracking resistance
合金石墨钢类铸钢辊环 Cast alloy graphite steel roll ring	GS辊环 GS roll ring	抗热裂、耐磨性及强韧性于一体 With thermal cracking resistance, toughness and wear resistance

04 承制规格 Scope of Supply

轧辊名称 Designation of rolls	材质代码 Material Code	应用范围 Application
珠光体类铸铁辊环 Pearlite cast iron roll ring	SGP辊环 SGP roll ring	型钢矫直、立辊、棒线中轧、无缝管定减径、万能水平 Steel straightening, vertical roll, wire rod medium rolling, reducing fixed seamless pipe, universal level
贝氏体类铸铁辊环 Bainitic cast iron roll ring	SGA辊环 SGA roll ring	万能精轧、棒线预精轧、无缝管定径、型钢矫直 Universal finishing, wire rod pre-finishing, seamless pipe sizing, steel straightening
合金半钢类铸钢辊环 Semi-steel alloy steel roll ring	AD辊环 AD roll ring	万能精轧、立辊、无缝定径 Universal finishing, vertical roll, seamless sizing
合金石墨钢类铸钢辊环 Cast alloy graphite steel roll ring	GS辊环 GS roll ring	万能粗轧、无缝管粗轧 Universal rough rolling, seamless pipe rough rolling

碳化钨辊环

Tungsten Carbide Roll Ring



材料特性值一览表 Material Propertier Chart

编号 Grade	晶粒度 Grain Size(um)	密度±0.1 Density(g/cm3)	硬度±0.5 Hardness(HRA)	抗弯强度 Transverse Rupture Strength(n/mm²)	冲击强度 Impact Force(Kg/cm²)	用途 Application
DG1F	3.2-3.4	14.92	88.5	2450	0.56	高速线材棒材轧制用辊环 Roll Ring for High Speed Rolling of steel Wires & Bars
DG1X	3.2-3.4	14.72	87.5	2600	0.58	
DG1A	3.0-3.2	14.50	86.5	2450	0.60	
DG2	3.0 - 3.2	14.30	85.5	2350	0.63	
DG2A	3.0-3.2	14.05	84.5	2350	0.65	
DG3T	1.2-1.6	14.2	87.0	2500	0.60	
DG4	3.0 - 3.2	13.70	83.0	2200	0.70	
DG5	3.2-3.4	13.60	82.0	2150	0.80	
DG5A	3.2 - 3.4	13.40	81.0	2150	0.82	
DG6	3.2-3.4	13.10	79.5	2100	0.86	
DG7	3.2-3.4	12.95	78.5	2080	0.88	
DG8	3.2 - 3.4	12.80	78.0	2050	0.90	
DG9	3.5	12.65	77.5	2000	0.95	
DG9A	3.5	12.65	79.0	2100	0.95	

我们能提供各种标准尺寸的辊环，同时也能够按照您的特殊要求供货，特殊是毛坯辊槽直接成形，可以有效地缩短交货时间，同时为您免去昂贵、费时的加工过程。
我们为每一片辊环做去应力处理，消除残余应力。
我们的工作程序：与客户充分沟通，了解客户的不同需求。因为我们的工程师能够在您选择各架次辊环材质牌号，确定磨削和切削数据，使用辊环以及跟踪辊环使用性能时，为您提供有效建议。
欢迎您在考虑购买辊环和需要提供服务的时候与我们联系，与您共同探讨您所关心的问题并寻求解决方案是我们的责任。
我们将为您提供最适合您的轧机和使用条件的辊环。

We can offer rollrings with different dimensions and can also produce roll according to your special requirements,like making groove before the sintering which can shorten the delivery time effectively and leave out the expensive and time-consuming maching process for you.
We make stress elimination for each product.
The working procedures:fully communicate with the customers to understand their different demands, So our engineers can give you advice when you choose the grade,determine the data of grinding and cutting,use rolland trace the roll performance.
Welcome to contact us at any time Ilt is our responsibility to discus with you and to work out the solutions for you.
We will offer you the most suitable roll rings in conformity with your mill and operation conditions.

STEEL BEARINGS
钢制轴承

工作特性：耐高温、耐强冲击、抗粉尘与蒸汽腐蚀，可 24 小时连续作业，高耐磨性。
Working Features: High temperature, heavyimpact, dust & steam corosion, 24h continuous operation, high wearresistance.

01 炼铁与炼钢系统 Ironmaking &Steelmaking System

应用 Application	轴承类型 Bearing Type	常见型号 Commonmodels
炉顶布料器Furnace Top Distributor	调心滚子轴承Spherical Roller Bearing	22318CC/W33、22320CC/W33
起升机构Hoisting Mechanism	圆柱滚子轴承Cylindrical Roller Bearing	NU2224、NJ2226、NUP2228
转炉倾动装置Converter Tilting Device	调心滚子轴承Spherical Roller Bearing	23972CC/W33、23076CC/W33
钢包回转台Ladle Turret	调心滚子轴承/四点接触球轴承SphericalRoler/Four point Bearing	23148CC/W33、QJ318
精炼炉炉臂Refining Furnace Arm	滚子轴承Roller Bearing	22226CC/W33、NU2226

02 连铸连轧系统 Continuous Casting &Rolling System

应用 Application	轴承类型 Bearing Type	常见型号 Commonmodels
结晶器振动装置Mold Oscillation Device	圆柱滚子轴承/滚针轴承Cylindrical/Needle Roller Bearing	NU2210、NUP2211、NK45/25
扇形段支撑辊（连铸机）Segment Support Roller	密封型调心滚子轴承Sealed Spherical Roller Bearing	22218CCK/W33、22220CCK/W33
热扎工作辊Hot Rolling Work Roll	多列滚子轴承Multi-row Roller Bearing	22230CC/W33、FC3246180
冷轧支撑辊Cold Rolling Backup Roll	四列圆柱滚子轴承Four-row Cylindrical Bearing	FC2842140、FC3046160
剪机&压下装置Shear & Screw-down Device	圆锥滚子轴承/推力滚子轴承Tapered /Thrust Roller Bearing	NU2232、32232、81140

03 辅助设备 Auxiliary Equipment

应用 Application	轴承类型 Bearing Type	常见型号 Commonmodels
风机&水泵Fan & Water Pump	深沟球轴承/调心滚子轴承DeepCGroove/Spherical RolerBearing	62/63 Series、222/223 Series
输送机托辊Conveyor Roller	密封球轴承/密封滚子轴承Sealed Ball/Roller Bearing	6312-2RS、22212CC/W33
齿轮箱&减速器Gearbox & Reducer	调心滚子轴承Spherical Roller Bearing	22324CC/W33、NU2224






定制非标准轴承，交货周期短；全系列可替代 NSK/SKF/TIMKEN。
Custom Non-Standard Bearings Fast LeadTime | Full-range Replacement for NSK/SKF/TIMKEN

COUPLING
联轴器

产品概览 An Overview of Products

向联轴器简称为万向轴，是应用最广泛的传动基础部件之一。
按轴承座形式的不同，可分为：SWC 型-整体式轴承座、SWP型-剖分式轴承座；
其中，SWC型万向轴结构最为紧凑、轴承承载能力最强、可靠性最高，是各类万向联轴器中应用最为广泛的一种；
SWC型万向轴主要分为以下5个系列：

Universal Joint Shafts for Industrial Applications which short name is cardan shaft,it is one ofthe most widely used transmission base parts. According to the type of bearing seat, it is divided into: SWC type Integral bearing seat andSWP type of split bearing seat. SWC type cardan shaft is the most compact structure, the stron-gest capacity of bearing, the highest reliability, it is the most widely used type among the univeral coupling. SWC type mainly has the following 5 series:



系列 Series	法兰直径 (mm) Flange Diameter (mm)	扭矩范围 (N·m) Torque Range (N.M)
SWC-I 系列 —— 轻载型设计 SWC-I Series -Light-Duty Designs	Ø58-225	Tn=180-22,000
SWC 系列 —— 中载型设计 SWC Series -Medium-Duty Designs	Ø160-620	Tn=2,100-1250,000
SWCZ 系列 —— 重载型设计 SWCZ Series -Heavy-Duty Designs	Ø680-1200	Tn=1640,000-9000,000
SWCD 系列 —— 短型设计 SWCD Series -Short Designs	Ø275-405	Tn=25,000-90,000
KSWC 系列 —— 隧道用轴（隧道万向轴） KSWC Series-Tunnel Shafts	Ø225-490	Tn=56,000-700,000

深耕二十余载，铸就专业品质。我公司长期专注于万向轴的设计、研发、生产与销售，积累了深厚的技术与工艺经验。我们立足引进国外先进技术，并在此基础上对 SWC 万向轴进行了多轮优化升级，使其结构日趋完善、性能显著提升、外观更加精美。公司已荣获国家专利十余项，可为不同行业的客户提供多元化、定制化的万向轴解决方案。

After twenty years of unremitting efforts, our company has accumulated rich experience in the process of cardan shaft design, research and development, production and sales. We not onlydraw on foreign advanced technology, but also optimize the SWC cardan shaft for many times, so that its structure is constantly improved, its performance is significantly improved also, and its ap-pearance is more elegant. In addition, we have won more than ten national patents to meet the various requirements of customers for cardan shafts.

COUPLING
联轴器

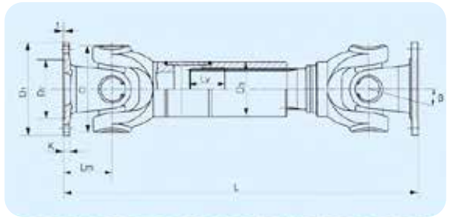
产品概览 Engineering Data

1、SWC-I 系列 —— 轻载型设计 SWC-I Series-Light-Duty Designs

设计 Designs

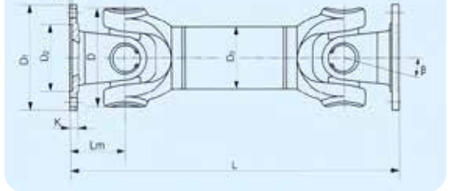
A 型·焊接式轴设计·带长度补偿

Type A—Welded shaft design, with length compensation



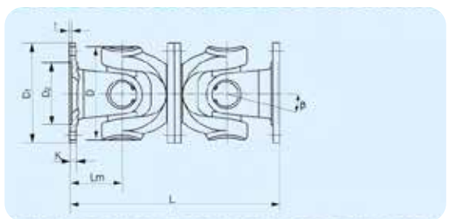
B 型 · 焊接式轴设计 · 无长度补偿

Type B—Welded shaft design, without length compensation



C 型 · 短法兰式设计 · 无长度补偿

Type C—Short flanged design, without length compensation



法兰螺栓孔分布

Flange bolt hole patterns

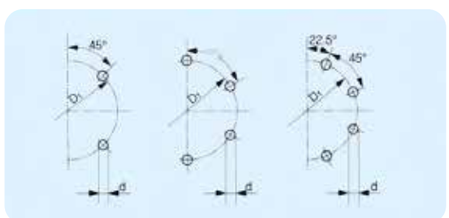


Table 1 SWC-I 系列万向轴的技术数据与尺寸
Data and Sizes of SWC-I Series Universal Joint Shafts

类型 Type	数据 Data / 项目 Item / 设计 Design	SWC-I 58	SWC-I 65	SWC-I 75	SWC-I 90	SWC-I 100	SWC-I 120	SWC-I 150	SWC-I 180	SWC-I 200	SWC-I 225
A	L	255	285	335	385	445	500	590	640	775	860
	Lv	35	40	40	45	55	80	80	80	100	120
B	m (kg)	2.2	3.0	5.0	6.6	9.5	17	32	40	76	128
	L	150	175	200	240	260	295	370	430	530	600
C	m (kg)	1.7	2.4	3.8	5.7	7.7	13.1	23	28	55	98
	L	128	156	180	208	220	280	360	400	440	480
	m (kg)	1.3	1.95	3.1	5.0	7.0	8.6	22	34	56	96
	Tn (N·m)	180	240	500	800	1250	2500	4500	8400	16000	22000
	Tf (N·m)	90	120	250	400	630	1250	2250	4200	8000	11000
	β (°)	35	35	35	35	35	35	25	25	25	25
	D	52	63	72	92	100	112	139	154	187	210
	Df	58	65	75	90	100	120	150	180	200	225
	D1	47	52	62	74.5	84	101.5	130	155.5	170	196
	D2 (H9)	30	35	42	47	57	75	90	110	125	140
	Ds	38	38	42	50	60	70	89	102	114	140
	Lm	32	39	45	52	55	70	90	100	110	120
	k	3.5	4.5	5.5	6.0	7.0	10.0	14.0	15.0	15.0	18.0
	t	1.5	1.7	2.5	2.5	2.5	2. 5	3.0	4.0	4.0	6.0
	n	4	4	6	4	6	8	8	8	8	8
	d	5.1	6.5	6.5	8.5	8. 5	10.5	13	15	17	17
	Ml (kg)	0.14	0.16	0.38	0.38	0.53	0. 53	0. 87	0.87	1.65	2.14
Flange bolt	size	M5	M6	M6	M8	M8	M10	M12	M14	M16	M16
	Tightening torque (N·m)	7	13	13	32	32	64	110	180	270	270

1. 符号说明：
L —— 标准长度，或（带长度补偿设计的）压缩后长度
Lv —— 长度补偿量
m —— 重量
Tn —— 公称扭矩（屈服扭矩为 Tn 的 1.5 倍，即 50% 以上）
Tt —— 疲劳扭矩，即根据交变载荷下的疲劳强度所确定的许用扭矩
β —— 最大偏转角
δ —— 管壁厚度
Ml —— 每 100mm 管长的重量
2. 除特别注明外，均以毫米（mm）为计量单位；
3. 有关长度、长度补偿及法兰连接（DIN 或 SAE 等）的定制需求，请咨询我方。

1. Notations
L=Standard length,or compressed length for designs with length compensation;
Lv=Length compensation;
m=Weight;
Tn=Nominal torque (Yield torque 50%over Tn);
Tt=Fatigue torque, i.e.permissible torque as determined according to the fatigue strength under reversing loads;
β=Maximum deflection angle;
δ=Thickness of the tube;
Ml=Weight per 100mm tube.
2. Millimeters are used as measurement units except where noted;
3. Please consult us for customizations regarding length, length compensation and flange connections. (DIN or SAE etc.)

示例 Example

SWC-I 150 A 590

- 590 — 最小长度 Minimum Length (mm)
- A — 产品类型 Product Type
- 150 — 法兰直径 Flange Diameter (mm)
- SWC-I — 设计编号 Design No.

COUPLING
联轴器

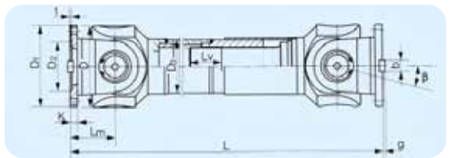
产品概览 Engineering Data

2、SWC 系列 —— 中型设计 SWC Series-Medium-Duty Designs

设计 Designs

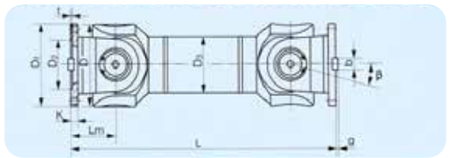
A 型·焊接式轴设计·带长度补偿

Type A—Welded shaft design, with length compensation



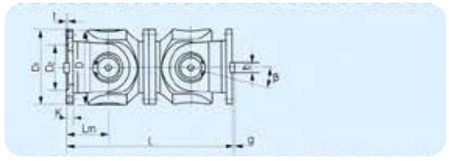
B 型·焊接式轴设计·无长度补偿

Type B—Welded shaft design, without length compensation



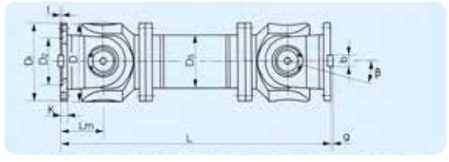
C 型·短法兰式设计·无长度补偿

Type C—Short flanged design, without length compensation



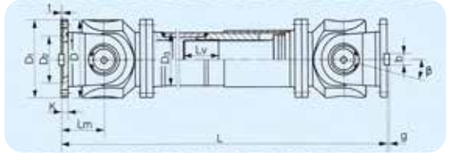
D 型·长法兰式设计·无长度补偿

Type D—Long flanged design, without length compensation



E 型·法兰式轴设计·带长度补偿

Type E—Flanged shaft design, with length compensation



法兰螺栓孔分布

Flange bolt hole patterns

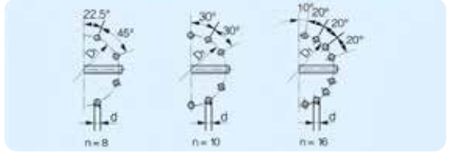


Table 2 SWC 系列万向轴的技术数据与尺寸
Data and Sizes of SWC Series Universal Joint Shafts

类型 Type	数据 Data / 项目 Item / 设计 Design	SWC 160	SWC 185	SWC 200	SWC 225	SWC 250	SWC 265	SWC 285	SWC 315	SWC 350	SWC 390	SWC 440	SWC 490	SWC 550	SWC 620
A	L	740	800	900	1000	1060	1120	1270	1390	1520	1530	1690	1850	2060	2280
	Lv	100	100	120	140	140	140	140	140	150	170	190	190	240	250
B	m (kg)	65	83	115	152	219	260	311	432	610	804	1122	1468	2154	2830
	L	480	530	590	640	730	790	840	930	100	1010	1130	1240	1400	1520
C	m (kg)	44	60	85	110	160	180	226	320	440	590	820	1090	1560	2100
	L	420	480	500	500	580	600	640	720	776	860	1040	1080	1220	1360
D	m (kg)	35	48	66	90	130	160	189	270	355	510	780	970	1330	1865
	L	520	580	620	690	760	810	860	970	1030	1120	1230	1360	1550	1720
E	m (kg)	48	65	90	120	173	220	250	355	485	665	920	1240	1765	2390
	L	800	850	940	1050	1120	1180	1320	1440	1550	1710	1880	2050	2310	2540
	LV	100	100	120	140	140	140	140	140	150	170	190	190	240	2580
	m(kg)	70	92	126	168	238	280	340	472	660	886	1230	1625	2368	3135
	Tn (kN·m)	21	28	40	56	80	100	120	160	225	320	500	700	1000	1250
	Tf (kN·m)	10.5	14	20	28	40	50	58	80	110	160	250	350	500	625
	β (°)	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	D	160	180	200	225	250	265	285	315	350	390	440	490	550	620
	Df	160	180	200	225	250	265	285	315	350	390	440	490	550	620
	D1	137	155	170	196	218	233	245	280	310	345	390	435	492	555
	D2 (H9)	100	105	120	135	150	160	170	185	210	235	255	275	320	380
	D3	108	114	140	159	168	180	194	219	245	273	325	351	402	426
	Lm	105	120	125	125	145	150	160	180	194	215	260	270	305	340
	k	16	17	18	20	25	25	27	32	35	40	42	47	50	55
	t	4	5	5	5	6	6	7	8	8	8	10	12	12	12
	n	8	8	8	8	8	8	8	10	10	10	16	16	16	16
	d	15	17	17	17	19	19	21	23	23	25	28	31	31	38
	b	20	24	28	32	40	40	40	40	50	70	80	90	100	100
	δ	6.0	7.0	8.0	9.0	12.5	12.5	12.5	15.0	15.0	18.0	20.0	22.5	22.5	25.0
	Ml (kg)	2.57	3	3.85	3.85	5.17	6	6.75	8.25	10.6	13	18.5	23.75	29.12	38.08
Flange bolt	size	M14	M16	M16	M16	M18	M18	M20	M22	M22	M24	M27	M30	M30	M36
	Tiorqauen (N(.m)	180	270	270	270	372	372	526	710	710	906	1340	1820	1820	3170

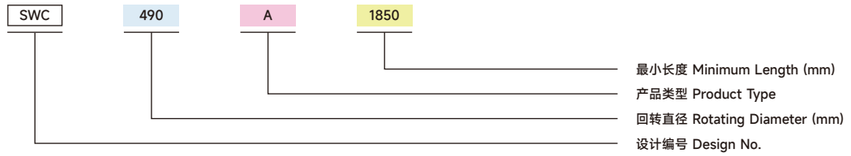
1. 符号说明：

L —— 标准长度，或（带长度补偿设计的）压缩后长度
Lv —— 长度补偿量
m —— 重量
Tn —— 公称扭矩（屈服扭矩为 Tn 的 1.5 倍，即 50% 以上）
Tt —— 疲劳扭矩，即根据交变载荷下的疲劳强度所确定的许用扭矩
β —— 最大偏转角
δ —— 管壁厚度
Ml —— 每 100mm 管长的重量
2. 除特别注明外，均以毫米（mm）为计量单位；
3. 有关长度、长度补偿及法兰连接（DIN 或 SAE 等）的定制需求，请咨询我方。

1. Notations

L=Standard length,or compressed length for designs with length compensation;
Lv=Length compensation;
m=Weight;
Tn=Nominal torque (Yield torque 50%over Tn);
Tt=Fatigue torque, i.e.permissible torque as determined according to the fatigue strength under reversing loads;
β=Maximum deflection angle;
δ=Thickness of the tube;
Ml=Weight per 100mm tube.
2. Millimeters are used as measurement units except where noted;
3. Please consult us for customizations regarding length, length compensation and flange connections. (DIN or SAE etc.)

示例 Example



COUPLING
联轴器

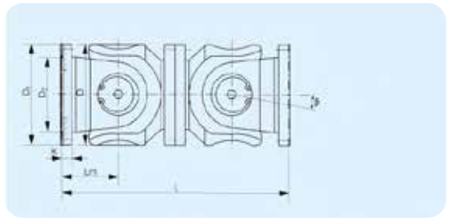
产品概览 Engineering Data

3、SWCZ 系列 —— 重载型设计 SWCZ Series-Heavy-Duty Designs

设计 Designs

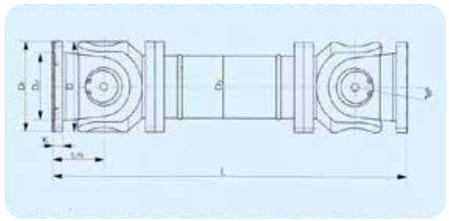
C 型·短法兰式设计·无长度补偿

Type C—Short flanged design, without length compensation



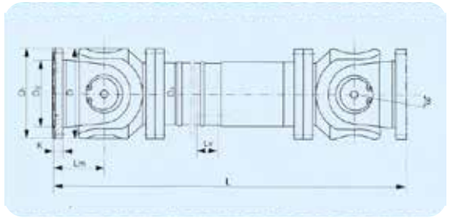
D 型·长法兰式设计·无长度补偿

Type D—Long flanged design, without length compensation



E 型·法兰式轴设计·带长度补偿

Type E—Flanged shaft design, with length compensation



Hirth 端齿法兰螺栓孔分布

Hirth serration flange bolt hole patterns

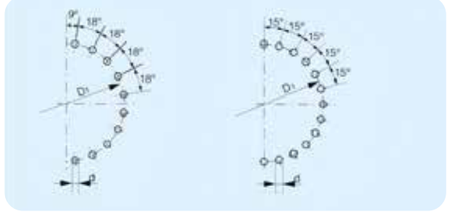


Table 3 SWCZ 系列万向轴的技术数据与尺寸
Data and Sizes of SWCZ Series Universal Joint Shafts

类型 Type	数据 Data / 项目 Item / 设计 Design	SwCZ 680	SwCZ 700	SwCZ 750	SwCZ 780	SwCZ 800	SwCZ 840	SwCZ 900	SwCZ 920	SwCZ 1000	SwCZ 1060	SwCZ 1100	SwCZ 1200
C	L	1540	1600	1840	1920	1920	2120	2280	2280	2380	2480	2500	2720
	Lv	3150	3450	4300	4680	5050	6400	8420	8950	10600	12100	13500	16900
D	m (kg)	1940	2100	2400	2500	2500	2680	2950	2950	3130	3200	3300	3570
	L	3220	3530	4500	5400	2800	7470	9980	10500	12300	14500	15800	19500
E	m (kg)	3230	3460	3620	4000	4000	4250	4580	4850	4770	4950	5100	5660
	L	250	250	250	250	250	250	300	300	300	300	300	300
	m (kg)	4880	5400	8000	8450	9070	11800	15900	16500	19900	22000	27500	34800
	Tn (kN·m)	1640	1750	2250	2500	2670	3100	3800	4050	5200	6500	6900	9000
	Tf (kN·m)	980	1050	1350	1500	1600	1860	2280	2430	3120	3900	4140	5400
	β (°)	15	15	15	15	15	15	15	15	15	15	15	15
	D	680	700	750	780	800	840	900	920	1000	1060	1100	1200
	Df	680	700	750	780	800	840	900	920	1000	1060	1100	1200
	Di	635	635	695	725	745	775	835	855	915	980	1015	1100
	D2 (H9)	550	570	610	640	660	710	740	760	840	840	920	1000
	D3	560	560	620	660	660	660	750	7520	790	800	850	900
	Lm	385	400	480	480	480	530	570	570	595	620	625	680
	k	70	70	95	95	95	110	120	120	130	130	130	130
	n	24	24	24	24	24	24	24	24	20	20	20	20
	d	26	26	31	31	36	38	38	38	50	45	50	58
	Flange bolt	M24	M24	M30	M30	M30	M36	M36	M36	M48	M42	M48	M56

1. 符号说明
L —— 标准长度，或（带长度补偿设计的）压缩后长度
Lv —— 长度补偿量
m —— 重量
Tn —— 公称扭矩（屈服扭矩为 Tn 的 1.5 倍，即 50% 以上）
Tt —— 疲劳扭矩，即根据交变载荷下的疲劳强度所确定的许用扭矩
β —— 最大偏转角
2. 除特别注明外，均以毫米（mm）为计量单位；
3. 有关长度、长度补偿及法兰连接（DIN 或 SAE 等）的定制需求，请咨询我方。

1. Notations
L=Standard length,or compressed length for designs with length compensation;
Lv=Length compensation;
m=Weight;
Tn=Nominal torque(Yield torque 50%over Tn);
Tt=Fatigue torque,i.e.permissible torque as determined according to the fatigue strength under reversing loads;
β=Maximum deflection angle.
2. Millimeters are used as measurement units except where noted;
3. Please consult us for customizations regarding length,length compensation and flange connections. (DIN or SAE etc.)

示例 Example

SWCZ 1000 D 2060

- 2060 — 最小长度 Minimum Length (mm)
- D — 产品类型 Product Type
- 1000 — 回转直径 Rotating Diameter (mm)
- SWCZ — 设计编号 Design No.

COUPLING
联轴器

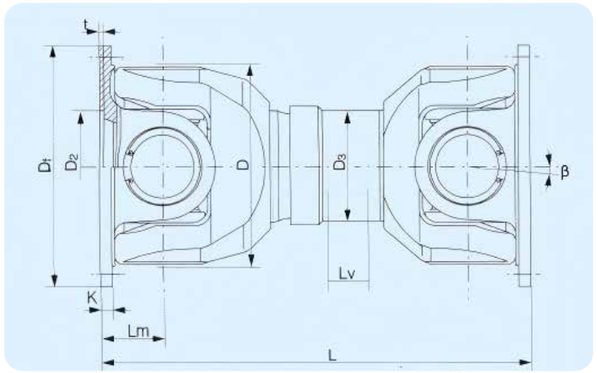
产品概览 Engineering Data

4、SWCD 系列 —— 短型设计 SWCD Series-Short Designs

设计 Designs

法兰螺栓孔分布

Flange bolt hole patterns



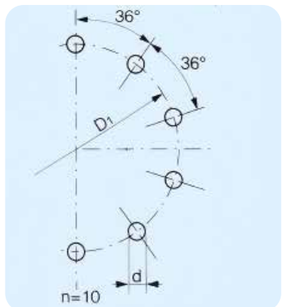


Table 4 SWCZ 系列万向轴的技术数据与尺寸
Data and Sizes of SWCD Series Universal Joint Shafts

数据 Data / 设计 Design / 项目 Item	SWCD 215	SWCD 250	SWCD 285	SWCD 315	SWCD 350
L	415	495	545	600	688
Lv	40	40	40	40	40
m (kg)	60	98	120	169	256
Tn (kN ·m)	25	35.5	40	63	90
Tf (kN ·m)	12.5	18	20	31.5	45
β()	5	5	5	5	5
D	215	225	250	285	315
Df	275	305	348	360	405
D1	248	275	315	328	370
D2 (H9)	140	140	175	175	220
D3	114	140	152	168	194
Lm	68	80	90	100	108
k	15	15	18	18	22
t	4.2	5.2	6.2	6.2	6.8
n	10	10	10	10	10
d	15	17	19	19	21

1. 符号说明
L —— 标准长度，或（带长度补偿设计的）压缩后长度
Lv —— 长度补偿量
m —— 重量
Tn —— 公称扭矩（屈服扭矩为 Tn 的 1.5 倍，即 50% 以上）
Tt —— 疲劳扭矩，即根据交变载荷下的疲劳强度所确定的许用扭矩
β —— 最大偏转角
2. 除特别注明外，均以毫米（mm）为计量单位；
3. 有关长度、长度补偿及法兰连接（DIN 或 SAE 等）的定制需求，请咨询我方。

1. Notations
L=Standard length,or compressed length for designs with length compensation;
Lv=Length compensation;
m=Weight;
Tn=Nominal torque(Yield torque 50%over Tn);
Tt=Fatigue torque,i.e.permissible torque as determined according to the fatigue strength under reversing loads;
β=Maximum deflection angle.
2. Millimeters are used as measurement units except where noted;
3. Please consult us for customizations regarding length,length compensation and flange connections. (DIN or SAE etc.)

示例 Example

SWCD 250 A 495

- 495 — 最小长度 Minimum Length (mm)
- A — 产品类型 Product Type
- 250 — 回转直径 Rotating Diameter (mm)
- SWCD — 设计编号 Design No.

COUPLING
联轴器

产品概览 Engineering Data

5、KSWC 系列·隧道用万向轴 KSWC Series-Tunnel universal joint shaft

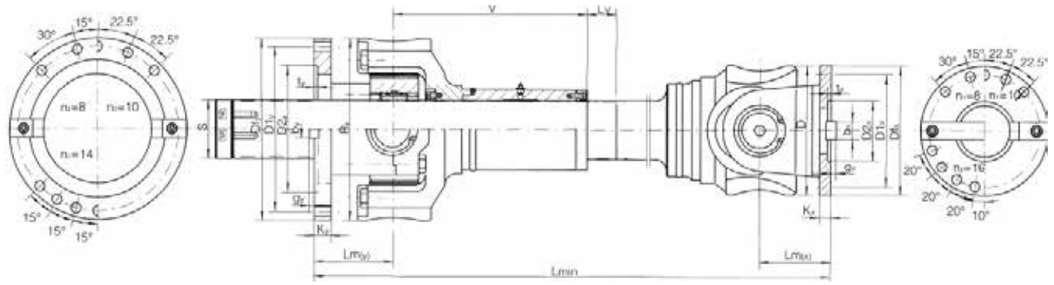


Table 5 KSWC 前置式隧道万向轴数据表
KSWC FRont Mounted Tunnel Shaft Data Sheet

类型 Type	回转直径 Dfx/Dfy Rotating Diameter Dfx/Dfy	公称扭矩 Tn (kN·m) Nomiant Torque Tn (kN.m)	疲劳转矩 Tf (kN·m) Fatigue Torque Tf (kN.m)	偏摆角 β (°) Deflection angle β (°)	长度补偿量 Lv (mm) Length Compensation Lv (mm)	规格 Size (mm)										
						Lmin	Dfx	D1x	D2x	bx	tx	gx	Kx	Lm (x)	Dfy	Ly
KSWC225	225/315	56	28		650	920	225	196	105	32	5	9	20	125	315	190
KSWC250	250/330	80	40		700	1020	250	218	115	40	5	12.5	25	140	330	200
KSWC285	285/390	120	58		750	1140	285	245	135	40	7	15	27	160	390	230
KSWC315	315/435	160	80		750	1300	315	280	150	40	7	15	32	180	435	250
KSWC350	350/480	225	110	5° /15	800	1445	350	310	165	50	8	16	35	195	480	290
KSWC390	390/520	320	160		800	1605	390	345	185	70	8	18	40	215	520	320
KSWC440	440/600	500	250		900	1760	435	385	200	80	10	20	42	260	600	390
KSWC490	490/650	700	350		900	1955	480	425	225	90	12	22.5	47	290	650	410

Table 6

类型 Type	规格 Size (mm)													重量 Weight (kg)	
	D1y	D2y	by	ty	gy	Ky	Lm (y)	n1-d1	n2-d2	S	D3	V	Ry	Lmin	Increase 100mm
KSWC225	285	220	32	5	9	28	140	8-Φ17	8-Φ17	102.18	146	395	315	215	6.4
KSWC250	315	240	40	7	12.5	30	150	8-Φ19	8-Φ19	117.72	159	435	330	283	8.5
KSWC285	355	270	40	8	15	40	170	8-Φ21	8-Φ21	127.7	180	480	390	400	10
KSWC315	390	300	40	8	15	42	190	10-Φ23	10-Φ23	137.5	203	565	435	533	11.6
KSWC350	435	335	40	10	16	47	210	10-Φ23	10-Φ23	165.2	219	630	480	721	16.8
KSWC390	480	385	70	10	18	50	230	10-Φ25	10-Φ25	177.24	245	695	520	1013	19.4
KSWC440	550	420	80	12	20	60	280	16-Φ28	16-Φ28	201.25	273	735	009	1410	25
KSWC490	595	450	90	15	22.5	60	290	16-Φ31	16-Φ31	225.25	325	810	099	2040	31.3

1. Lmin 为允许的最小长度，可定制。
2. Lv 为补偿长度，可根据需求定制。
3.上表数据仅供参考。

1. The Lmin is the allowed minimum length which can be customized
2. Lv is the compensation length which can be customized
3. The above data sheet is only for reference

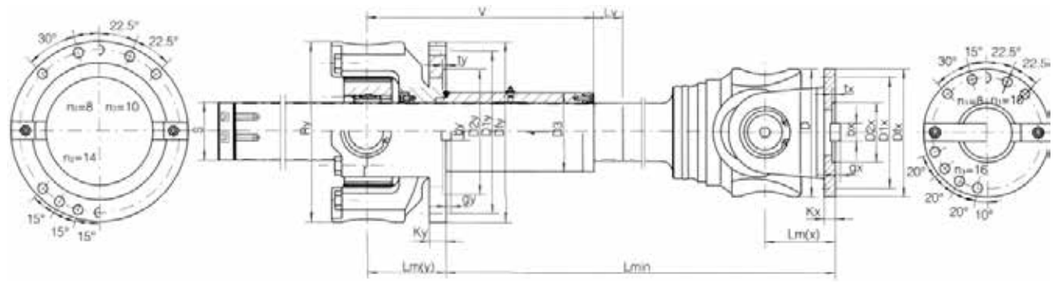


Table 7 KSWC 后置安装隧道万向轴参数表
KSWC Reverse Mounted Tunnel Shaft Data Sheet

类型 Type	回转直径 Dfx/Dfy Rotating Diameter Dfx/Dfy	公称扭矩 Tn (kN·m) Nomiant Torque Tn (kN.m)	疲劳转矩 Tf (kN·m) Fatigue Torque Tf (kN.m)	偏摆角 β (°) Deflection angle β (°)	长度补偿量 Lv (mm) Length Compensation Lv (mm)	规格 Size (mm)										
						Lmin	Dfx	D1x	D2x	bx	tx	gx	Kx	Lm (x)	Dfy	Ly
KSWC225	225/315	56	28		650	920	225	196	105	32	5	9	20	125	315	190
KSWC250	250/330	80	40		700	1020	250	218	115	40	5	12.5	25	140	330	200
KSWC285	285/390	120	58		750	1140	285	245	135	40	7	15	27	160	390	230
KSWC315	315/435	160	80		750	1300	315	280	150	40	7	15	32	180	435	250
KSWC350	350/480	225	110	5° /15	800	1445	350	310	165	50	8	16	35	195	480	290
KSWC390	390/520	320	160		800	1605	390	345	185	70	8	18	40	215	520	320
KSWC440	440/600	500	250		900	1760	435	385	200	80	10	20	42	260	600	390
KSWC490	490/650	700	350		900	1955	480	425	225	90	12	22.5	47	290	650	410

Table 8

类型 Type	规格 Size (mm)													重量 Weight (kg)	
	D1y	D2y	by	ty	gy	Ky	Lm (y)	n1-d1	n2-d2	S	D3	V	Ry	Lmin	Increase 100mm
KSWC225	285	220	32	5	9	28	140	8-Φ17	8-Φ17	102.18	146	395	315	215	6.4
KSWC250	315	240	40	7	12.5	30	150	8-Φ19	8-Φ19	117.72	159	435	330	283	8.5
KSWC285	355	270	40	8	15	40	170	8-Φ21	8-Φ21	127.7	180	480	390	400	10
KSWC315	390	300	40	8	15	42	190	10-Φ23	10-Φ23	137.5	203	565	435	533	11.6
KSWC350	435	335	40	10	16	47	210	10-Φ23	10-Φ23	165.2	219	630	480	721	16.8
KSWC390	480	385	70	10	18	50	230	10-Φ25	10-Φ25	177.24	245	695	520	1013	19.4
KSWC440	550	420	80	12	20	60	280	16-Φ28	16-Φ28	201.25	273	735	009	1410	25
KSWC490	595	450	90	15	22.5	60	290	16-Φ31	16-Φ131	225.25	325	810	099	2040	31.3

1. Lmin 为允许定制的最小长度。
2. Lv 为可定制的补偿长度。
3. 以上数据表仅供参考。

1. The Lmin is the allowed minimum length which can be customized
2. Lv is the compensation length which can be customized
3. The above data sheet is only for reference

COUPLING
联轴器

产品概览 Engineering Data

向轴通常通过两端的叉头（外叉）进行连接。
叉头的法兰与相配的法兰套法兰相连接。
叉头法兰有以下四种结构形式，如下图所示：
· 螺栓孔连接法兰
· 端面键连接法兰
· 叉齿（爪形）连接法兰
· Hirth（赫氏）端齿连接法兰

Universal joint shafts are usually connected through the outer forks at bothends. The flange of the fork is connected to the flange of the matching flange sleeve. The flange of the fork has four structural types as shown in the figure below: Bolt hole connection flange, Face key connection flange, Jaw and toothed connection flange and Hirth serration connection flange.



螺栓孔连接
Bolt Hole Connection



端面键连接
Face Key Connection



叉爪齿式连接
Jaw And Toothed Connection



赫氏端齿连接
Hirth Serration Connection

下单时请注明您所需的法兰连接形式。
Please specify your choice of flange connections when making orders.

BLADE
刀片

圆盘式刀片 Disc Type Blades

分类 Classification	技术规格 Specification	材料 Material	应用 Application	适用切割材料 Applicable Cutting Materials
圆盘刀片 Disc Blades	Φ100~Φ1300	5~6CrW2Si 4-5Cr5MoSiV1 (H13) 4-5Cr5WMoSiV (H12) MZ40 Cr12Mo1V1 (D2 SKD11) KG5 W6Mo5Cr4V2(M2)	High Precision CTL、STL 高精度开平线 分切线刀片	Cold strip、Stainless strip、Silicon steel (oriented / non-oriented)、 High Strength Strip、Middle&Heavy Plate 冷轧带钢、不锈钢带、硅钢（取向 / 无取向） 高强钢带、中厚板
隔套 Spacers	Φ80~Φ800	42CrMo 40Cr C45		
隔离片 Separators	Φ120~Φ350	42CrMo 40Cr C45 Cr-plated		







BLADE
刀片

异形刀片刀座 Shaped Blade Knife Seat

分类 Classification	材料 Material
废料剪 / 宽幅开槽剪/V 型剪等 Scrap Cutter/ Width Notcher/ V-Type Shear etc	5-6CrW2Si　X45NiCrMo4　4-5CrMoSiV1　Cr12Mo1V1
刀座 Knife Seat	42CrMo 40Cr C45



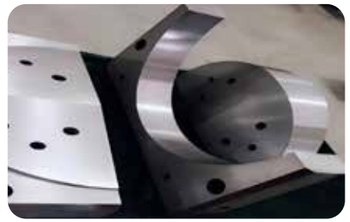


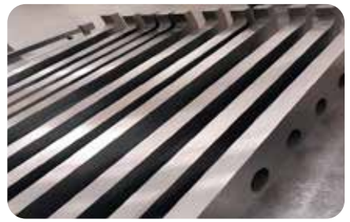


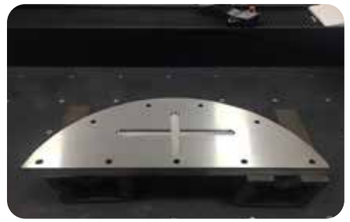


异形刀片 Shaped Blade

材料 Materia
4-5CrMoSiV1　Cr12Mo1V1







热剪/冷剪刀片 Hot/Cold Shear Blade

分类 Classification	技术规格 Specification	应用 Application
飞剪刀片 Flying Shear	L400-L2500	CTL CGL CPL CAL etc; Hot Strip Line Medium Plate Mill Finishing Line 开平线、热镀锌线、酸洗线、退火线等; 热轧带钢线、中厚板轧机、精整线
Double Side Trimment Dividing Shear / Slitting Shear 双边修边剪刀片 分断剪刀片/纵剪分切刀片	L1500-L5200	







GUIDE ACCESSORIES
导卫配件

JG-M系列

两辊滚动进口导卫 2 Roller Entry Guide

导卫类型 Type of Guide	JG-M45AS/2	JG-M75AS/2	JG-M115AS/2	JG-M150AS/2	JG-M180AS/2
最大椭圆 Maxmum Oval	45*21	75*28	115*62	150*80	180*120



四辊滚动进口导卫 4 Roller Entry Guide

导卫类型 Type of Guide	JG-M45/4	JG-M75/4
最大椭圆 Maxmum Oval	45*21	75*28



两辊滚动进口导卫 2 Roller Entry Guide

导卫类型 Type of Guide	JG-M20	JG-M35
最大椭圆 Maxmum Oval	23*13	34*22



两辊滚动进口导卫 2 Roller Entry Guide

导卫类型 Type of Guide	JG-M20USX	JG-M35USX
最大椭圆 Maxmum Oval	23*13	34*22



JG-D9系列

两辊滚动进口导卫 2 Roller Entry Guide

导卫类型 Type of Guide	JG-D9-30	JG-D9-40	JG-D9-60	JG-D9-80	JG-D9-105	JG-D9-120
最大椭圆 Maxmum Oval	40*20	60*30	85*45	116*73	130*90	155*100



四辊滚动进口导卫 4 Roller Entry Guide

导卫类型 Type of Guide	JG-D9-30B	JG-D9-30C	JG-D9-30D
最大椭圆 Maxmum Oval	40*30	60*30	80*30



GUIDE ACCESSORIES
导卫配件

JG-D10系列

FR型滚动进口导卫
Roller Entry Guide Type FR



SRW型两辊滚动进口导卫
2 Roller Entry Guide Type SRW



DRW型四辊滚动进口导卫
4 Roller Entry Guide Type DRW



SR型两辊滚动进口导卫 2 Roller Entry Guide Type SR

导卫类型 Type of Guide	SRl	SR2	SR4	SR6	SR7	SR9	SR12
完工尺寸 Finishing Size	Φ6-12	Φ8-23	Φ22-45	Φ35-60	Φ40-75	Φ65-90	Φ80-120
最大椭圆 Maxmum Oval	26*14	42*18	66*40	90*55	115*67	162*85	190*110

DR型四辊滚动进口导卫 4 Roller Entry Guide Type DR

导卫类型 Type of Guide	JG-DRl	JG-DR2	JG-DR4	JG-DR6	JG-DR7	JG-DR9
完工尺寸 Finishing Size	Φ6-12	Φ8-23	Φ22-45	Φ35-60	Φ40-75	Φ65-90
最大椭圆 Maxmum Oval	21*10	42*18	66*40	90*55	115*67	162*85



DR-B型四辊进口导卫 4 Roller Entry Guide Type DR-B

导卫类型 Type of Guide	JG-DR2BP	JG-DR4BP
适用轧制规格 Max Recommended Size	≤Φ14*2	两切分>Φ14及其他规格三切、四切、五切 >Φl4*2, 3Sliting 4Sliting 5Sliting



JG-A系列

REF型两辊滚动进口导卫 2 Roller Entry Guide Type REF

导卫类型 Type of Guide	RE2F	RE3F	RE4F	RE5F	RE7F	RE10F	RE13F	REl4F	RE15F
最大椭圆 Maxmum Oval	25*16	35*25	60*38	80*54	120*74	120*74	160*105	190*115	220*140



4ED型四辊滚动进口导卫 4 Roller Entry Guide Type 4ED

导卫类型 Type of Guide	4E2D	4E3D	4E4D	4E5D	4E4DJ	4E4DJN	4E5DJ
推荐使用最大料形 MAX Recommended Size	28*16	38*18	58*34	80*50	35*24	35*24	58*40



EI型两辊滚动进口导卫 2 Roller Entry Guide Type EL

导卫类型 Type of Guide	2E7L	2E10L	2E13L	2E15L	2E17L
最大椭圆 Maxmum Oval	120*74	140*85	160*105	200*130	300*180



ERG型两辊滚动进口导卫
2 Roller Entry Guide Type ERG



两辊滚动进口导卫 2 Roller Entry Guide Type RE

导卫类型 Type of Guide	RE2	RE2K	RE3	RE+4
最大椭圆 Maxmum Oval	28*16	32*20	38*24	52*38



GUIDE ACCESSORIES
导卫配件

JG-H系列

RE型两辊滚动进口导卫 2 Roller Entry Guide Type RE

导卫类型 Type of Guide	RE25SP	RE35SP	RE55SP	RE75AB	RE90B	RE110AB	RE140B	RE170B	RE200B
最大椭圆 Maxmum Oval	25*14	35*22	55*30	75*41	90*48	110*56	140*75	170*100	200*110



WBF型六辊滚动进口导卫 6 Roller Entry Guide Type WBF

导卫类型 Type of Guide	RE55WBF
≤ Φ18*2、≤ Φ14*3	



JG-RTO系列

RTO型出口扭转滚动导卫 Twist Roller Guide Type RTO

导卫类型 Type of Guide	RTO-OB	RTO-1B	RTO-1.5B	RTO-2B
最大椭圆 Maxmum Oval	30*13	55*24	70*34	84*32



JG-SM系列

四辊滚动进口导卫
4 Roller Entry Guide



JG-QF系列

3SL型三切分导卫
3 Stit Rolling Guide Type 3SL



4SLE型四切分导卫 4 Stit Rolling Guide Type 4SLE

导卫类型 Type of Guide	4SLE
≤ Φ10*4 Φ12*4 ≤ Φ14*4	



4QF型四切分导卫 4 Slit Rolling Guide Type 4SL

导卫类型 Type of Guide	4SL
≤ Φ10*4 Φ12*4 ≤ Φ14*4	



CTD型切分导 Slit Rolling Guide Type CTD

导卫类型 Type of Guide	CTD
12*2Φ 22 *23 Slit Rolling	



GUIDE ACCESSORIES
导卫配件

JG-QF-HT系列

HT型切分导卫　Slit Rolling Guide Type H

导卫类型 Type of Guide	RT-CS
≤ Φ18*2 ≤ Φ14*3	



JG-CTR系列

CTR型出口扭转滚动导卫　Twist Roller Guide Type CTR

导卫类型 Type of Guide	CTR	CTRO2
最大椭圆 Maxmum Oval	30*13	60*28



JG-DU系列

DU型出口扭转滚动导卫　Twist Roller Guide Type DU

导卫类型 Type of Guide	DUA45	DUA65	DUA80	DUA100
最大椭圆 Maxmum Oval	30*13	52*33	66*30	84*42



JG-RS系列

RSC型出口扭转滚动导卫　Twist Roller Guide Type RSC

导卫类型 Type of Guide	RS6C	RS9C	RS12C	RS16C
最大椭圆 Maxmum Oval	64*32	130*54	150*74	220*130



JG-RTC系列

RTC型出口扭转滚动导卫　Twist Roller Guide Type RTG

导卫类型 Type of Guide	RTC1	RTC3	RTC5	RTC7	RTC10	RTC12	RTC15	RTC18
最大椭圆 Maxmum Oval	10-25	25-35	35-50	45-70	60-100	85-100	110-160	125-200



JG-PRG系列

PRG型滚动导卫　Roller Guide Type PRG

导卫类型 Type of Guide	等边角钢 Eq. Angle	等边角钢 Uneq. Angle	槽钢 Channel
PRG06	25-60	30-60	30-60
PRG09	45-90	50-90	50-90
PRG 12	75-120	80-120	80-120



JG-REA系列

REA型滚动导卫
Roller Guide Type REA



GUIDE ACCESSORIES
导卫配件

JG-型钢系列

JG型钢导卫
Jg Profiles Guideserles



JG-AUT-H / JG-AUT-V系列

AUT-H-V型滑动加托辊导卫
Jg Profiles Guideserles



JG-特殊导卫

减定径导卫
Reducing/Sizing Guide



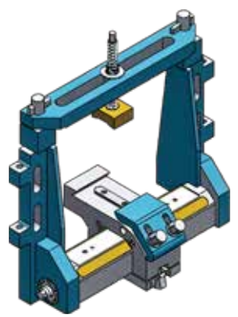
夹送辊滚动出口导卫
Rolling Exit Guide For Pinch Roll



精轧滚动出口导卫
Rolling Exit Guide For Finishing Rol



JG-导卫梁
Rest Bar



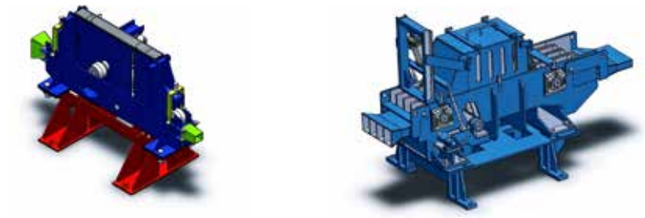
JG-导辊、 导板类
Roller & Guide Plate



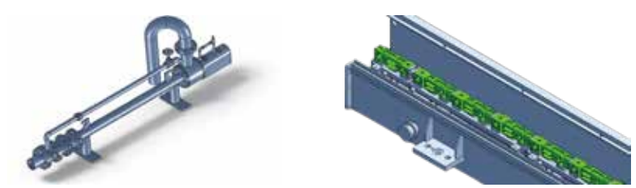
JG-鼻锥类
Nose



JG-活套
Looper



JG-水冷系统
Water Cooling Systems



05
Electric Furnace

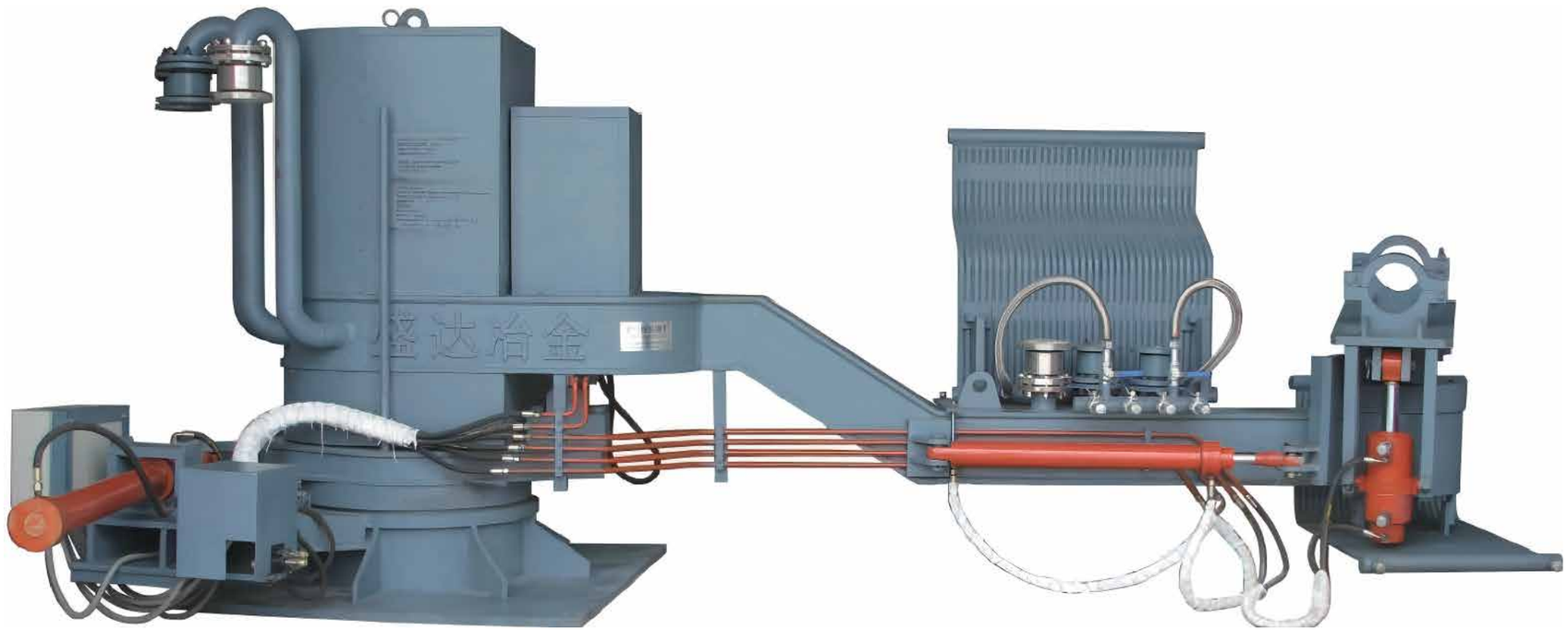
电炉备件

ELECTRIC FURNACE | Oxygen Lance Manipulator
电炉备件丨水冷式炉门氧枪机械手

机械手由底座、碳氧枪俯仰机构、摆动机构、旋臂升降机构、旋臂旋转机构组成，由液压系统或气动马达驱动。

The Manipulator has the base, pitching agencie slanceoxygen lance swing mechanism, arm rotationg bodies, it is driven by the hydraulic system, It can complete eight actions.

俯仰角度 Pitch Angle	5° ~ -30°
左右摆动角度 Swing Angle	左Lef 10°，右Right 8°
机械横臂旋转速度 Rotation Speed of The Arm	6°~20°/s (可调 Adjustable)
横臂旋转范围 Rotation Range of The Arm	0°~100°
悬臂可整体升降 Lift Range of The Arm	0~800mm



一键进枪 One-Button Lance Insertion

此种类型机械手在一般水冷式炉门氧枪机械手基础上增设连杆机构，实现一键送枪功能，适用于各型号电炉。

Based on the standard water-cooled furnace-door oxygen lance manipulator, this manipulator incorporates an additional linkage mechanism for one-touch lance feeding and is suitable for various electric furnace models.



液压站 Hydraulic Station

液压站做为液压系统的动力源，为氧枪机械手完成各动作提供动力。考虑到系统和设备的安全性和可靠性，液压介质为水-乙二醇。

It is the hydraulic power source of the hydiraulic syslem. It supply pawer to the oxygen lance manipuletorto complete the movement. The hydraulic meclium is waler=glycol.



炉门氧枪 Oxygen Lance

炉门氧枪安装于电炉炉门前平台，由氧枪机械手操控，向电炉内喷吹氧气、碳粉等。炉门氧枪一般设计为水冷式，以增加使用寿命。

The oxygen lance installat the EAF door, it is clamped by the oxygen lance manipulator, it is used to injection the oxygen and carbon into the EAF, Generally, The Lanceis designed withwater-cooled, to increase theservice life.

分体式水冷碳氧枪
Seperated Water-cooling Oxygen Lance

分体式水冷碳氧枪用于由电炉炉门向炉内喷吹氧气及碳粉，此种氧枪优点在于喷吹氧气、碳粉、石灰粉等都有各自的通道，对各种介质进行了隔离，使得使用更安全。

The lance is equipped with separated pipes for oxygen, carbon power and lime power, which are installed on one body. The lance is driven by hydraulic system, and can move up and down, left and right.





新异型炉门碳氧枪
Shapedcompound Oxygenlance Nozzle

新异型炉门碳氧枪用于由电炉炉门向炉内喷吹氧气及碳粉，此种氧枪优点在于氧气和碳粉通道在氧枪内部进行了隔离，增加使用的安全性。

The lance is used to injection oxygen and carbon.The oxygen and carbon was insulate in the same bodies.

炉门氧枪喷头 Lance Nozzle

炉门氧枪喷头是向电炉内喷吹氧气的直接实现载体，根据用户炼钢工艺进行枪体及氧枪喷头设计，使得氧气喷吹效率达到最适合用户的需求。氧枪喷头采用精密铸造，组织致密，铜纯度高，导热性好，喷头内部冷却水道设计合理、水流阻力小，冷却效果好，使用寿命长。铜钢焊接处采用可靠的焊接技术，焊缝探伤标准符合JB4730-941-II级。

We can optimize the lance nozzle by your steel-making practice. This would be suitable for your high-efficient oxygen blast demand and shorten the time of blowing, then you will get a better steel-making efficient. The nozzle produced by the technology of vacuum casting has high-density organization with high copper purity, good thermal conductivity and long service life. With reliable welding technology of copper and steel, the product sadapt to high temperature and high strength working conditions.



单孔氧枪喷头 The One-hole Lance Tip

结构简单，在30-100吨电炉上使用，喷头外形及喷孔尺寸根据电炉实际情况设计。规格有Φ108, Φ114, Φ127, Φ133, Φ140, Φ152, Φ159, Φ168, Φ172等多种。

which has simple structure,it has been used on 30-100t EAF. The Tip shape and size of nozzle designed according to the actual situation of theFurnace.



双孔氧枪喷头 Thetwo-holeslancenozzle

喷头设双喷孔，喷头外形及喷孔尺寸根据电炉实际情况设计，冲击面积大，反应速度快。规格有Φ140, Φ152, Φ159, Φ168, Φ172, Φ180, Φ194, Φ203, Φ219等。

The Nozzleshape andsizeof nozzledesigned according tothe actual situation of the Funace.



复合式碳氧枪喷头 Compound Oxygenlance Nozzle

喷头增加碳粉喷口，可以同时喷吹碳粉和氧气，喷孔尺寸根据电炉实际情况设计，产品规格有Φ140, Φ152, Φ159, Φ168, Φ172, Φ180, Φ194, Φ203, Φ219,适用于大型电炉。

Increase thetonerjetin the nozzle,It can injection carbonand oxygen,nozzlesizebased onthe actual situation ofFurnace.



异型复合式碳氧枪喷头 Shapedcompound Oxygenlance Nozzle

形式独特的电炉氧一碳喷头，外形为长圆形，以容纳氧气和碳粉管，并对两者进行隔离，在大型电炉有所应用，产品规格有216-127,262-152等。

Unique form offurnaceoxygen-carbonnozzle,oblongshapeasto accommodatetubesof oxygen andcarbon powder.

ELECTRIC FURNACE | Consumable Type Oxygen Lance Manipulator
电炉备件丨自耗式炉门氧枪机械手

机械手包括：旋转基座，旋转横臂，横臂升降机构，氧碳管俯仰机构，氧碳管摆动机构，氧碳管给管装置，机械手水冷保护装置，氧气防回火安全阀、氧气卷筒等部件，由液压系统和气动马达驱动，每套送管机构独立运动。

The Manipulator has rotating base, rotating arm,arm lit agencies, oxygen pipe pitch institutions, oxygen pipe swing mechanism, oxygen pipe deliverydevice, water protection, oxygen reel, oxygen safety vavle.Base, pitching agencies lance, oxygen lance swing mechanism, arm rotationg bodies, it is driven by the hydraulic system, It can complete six actions.

俯仰角度 Pitch Angle	5° ~ -30°
左右摆动角度 Swing Angle	左 Lef 10°，右 Right 8°
机械横臂旋转速度 Rotation Speed of The Arm	6°~20°/s (可调Adjustable)
横臂旋转范围 Rotation Range of The Arm	0°~100°
悬臂可整体升降 Lift Range of The Arm	0~800mm









无线遥控
Wireless Remote Control



氧气软管卷筒 Oxygen Hose Reel

盛达公司专利产品。采用气缸驱动，缠绕力恒定，自动伸缩，避免输送氧气的软管拖地凌乱，软管使用寿命延长，更易于操作 ，也更安全。

Oxygen hose reel is HEPENG 's proprietary product.
It is drive by cylinder, It can hold the hose, avoid messy, it is operation easy and safety.





防回火安全阀 Oxygen Safety Vavle

盛达公司专利产品。此产品安装于氧管管道尾部，为双向安全阀，顶端设熔断顶针在温度高于正常值时会自行熔断，顶针熔断后，双向安全阀两端关闭，防止回火；此时阀站仪表能够检测出氧气管路只有压力没有流量，保证氧气管道及阀站的安全。

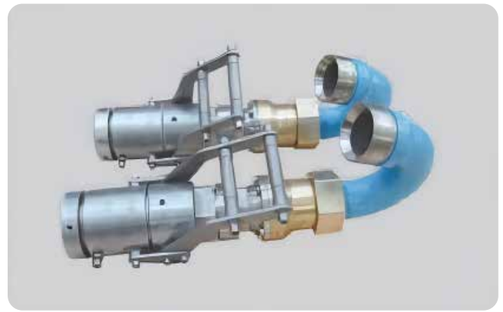
The oxygen safety vavle is HEPENG's proprietary produc. It is Two-way valve,installed in the rear oxygen piping. the top set fuse thimble, when the temperature higer than nomal, it wil melt, then the vavle closed at both ends to prevent tempering.




快速换管卡座 Quick Replacement Pipe Device

盛达公司专利产品，为在炼钢过程中，快速更换氧管或碳管而设计。快速换管装置一端为接头，可与输送碳粉或氧气的管道连接，另一端为卡管装置，只需将硬管推入，将把手提起即可将钢管牢牢卡住；密封设计使得气体或碳粉无泄漏。快速换管装置使用简单，操作便捷，解决了传统换管时间长，容易漏气或漏粉等不足。

Quick replacement pipe device Quick replacement pipe device is HEPENG's proprietary product.One side is connector, can connect with the pipe which transport oxygen or carbon. the other side stuck the pipe. Insert the pipe, lift the handle, then the pipe can be clamped.






快速接管工具 Quick Connect Pipe or Hose Tool

盛达公司专为快速连接硬管，软管而设计。

It is designed to connect the pipe and pipe,or hose and hose quickly.

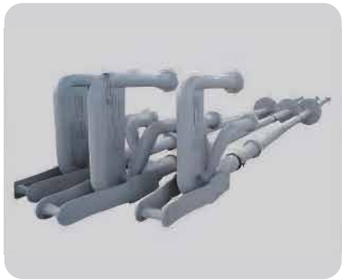
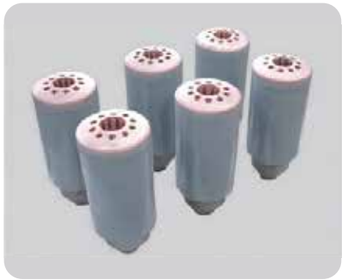
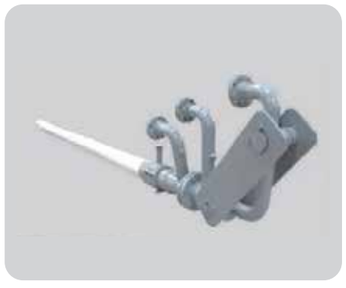






ELECTRIC FURNACE | Oxygen Lance Nozzle
电炉备件丨氧枪喷头

精炼炉氧枪及喷头 Refining Furnace Oxygen Lance and Nozzle



转炉氧枪 Converter Oxygen Lance





ELECTRIC FURNACE | Oxygen Lance
电炉备件丨炉壁氧枪

炉壁氧枪安装于电炉炉壁，用于向电炉内喷吹氧气、燃气、碳粉、石灰粉等介质，有普通炉壁氧枪、多功能炉壁氧枪等。

The oxygen lance install at the EAF wal. It s used to injection oxygen, natural gas, carbon, lime and so on. It is divided into general oxygen lance and burner lance.



普通炉壁氧枪 General Oxygen Lance

普通炉壁氧枪安装于电炉炉壁水冷板上，向电炉内喷吹氧气。
炉壁氧枪设置为水冷式，冷却水可由电炉水冷炉壁提供。

General oxygen lance is installed at the water-cooledplate wallof the electricfurnace, and injection oxygento thefurnace.Lanceis designed withwater-cooled, the cooling water is providedbyelectricwater-cooledfurmace wall.



多功能炉壁氧枪 Oxygen Burner Lance

盛达公司专利产品。安装于电炉炉壁，向电炉内喷吹氧气、燃气等，可设置主氧喷孔，环氧喷孔，燃气喷孔等，一般由水冷保护套和铜水箱保护。对于电炉炼钢，沿炉壁圆周方向可以布置多个多功能炉壁氧枪，以使化学能在炉内均匀分布，除了吹氧外，每个烧嘴还能用作炉壁烧嘴，以熔化废钢，缩短冶炼时间；还可用作二次燃烧的氧气来源，以充分利用炉气中的化学潜能，增加炉内输入的化学能。这些功能都可以明显的提高电炉的生产率和降低电能消耗。



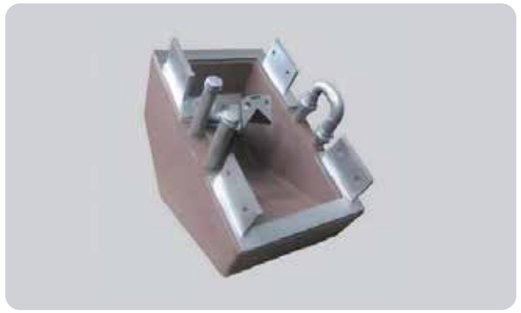
It is HEPENG 's proprietary product. The injection lance can beset with the main oxygen nozzle, epoxy nozzle, gas nozzle, It isinstalled at the EAF wall, and inject oxygen and gas into theFurnace. Generally, the lance is protected by the water coolingtype chamber and burner box. For EAF, layout severial burnerlance along the Funace wall to injection gas and oxygen intothe Fumace to distribution the energy uniform. It can be used as wall burner to shorten the refining time, it alsocan be used as the source of oxygen to the combustion toincrease the chemical energy.

ELECTRIC FURNACE | Water Cooling Type
电炉备件丨铜水箱

铜水箱一铸造 Water Cooling Type Burner Box-Casting Type

铜水箱的具体尺寸根据炉壳的实际情况优化设计，用于对氧枪或碳枪固定和保护，通过安装孔及螺栓将其固定在炉壁或EBT位置。水冷铜箱冷却水利用现有的水冷板冷却水并联得到。
铸造铜水箱产品采用真空熔铸工艺制造，铜纯度高，导热性能好，无气孔、砂眼、疏松等铸造缺陷；采用安全可靠的铜钢焊接工艺，焊缝满足高温高强度要求；内部采用螺旋式水冷通道，水流阻力更小，冷却效果好铜水箱一铸造。

It is designed according to the water cooling plate size of the Furnace, and used to protect the oxygenlance or carbon lance. It is bolted on the Furnace wall. The cooling water is offered by the watercooling plate of the Furnace.





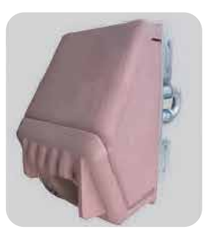



铜水箱一锻造 Converter Oxygen Lance

锻造铜水箱产品采用锻压铜板经钻孔，折弯，切割等一系列工序后焊接制成。采用安全可靠的铜钢焊接工艺，焊缝满足高温高强度要求；铜纯度更高，致密度更好，导热性能更好铜水箱一锻造。

It is designed according to the water cooling plate size of the Furnace, and used to protect the oxygenlance or carbon lance. It isbolted on the Furnace wall. The cooling water is offered by the watercooling plate of the Furnace.







铜水箱模块 Water Cooling Type Module






水冷保护套 Water Cooling Type Chamber

水冷保护套是多功能氧枪的安装载体，对多功能炉壁氧枪起保护作用。多功能炉壁氧枪放置于水冷保护套，水冷保护套装在铜水箱内并通过螺栓固定，这样设计的优点是可以简单迅速地拆卸多功能炉壁氧枪和水冷保护套，减少氧枪的维护时间和工作量。由于水冷保护套安装在铜水箱上，而不是安装在炉内，这样就避免了水冷保护套由于意外出现漏水而影响电炉的正常生产，提高了氧枪的安全性。 水冷保护套采用无氧铜整体浇铸，导热能力强；内部采用合理的水冷通道，冷却效果好水冷保护套。

It is designed according to the water cooling plate size of the Furnace, and used to protect the oxygenlance or carbon lance. It isbolted on the Furnace wall. The cooling water is offered by the watercooling plate of the Furnace.






ELECTRIC FURNACE | Carbon Injection System
电炉备件 | 喷粉系统

喷粉系统主要是用来向电炉炉内喷吹碳粉以造泡沫渣。
喷粉系统由储粉料仓、喷粉压力罐、称重系统、气体管路控制阀站、现场控制箱、安装平台和支架以及便于爬梯等组成。
为了保证碳粉系统的正常工作，应满足以下工艺条件：

It is used to inject carbon into the Furnace.
It has Hopper, Carbon Tank,sulfuration device, pneumatic control systems,weighing systems,electronic controlbox, the install platform support and so on. In order to ensure the normal operation of the tonersystem the conditions must meet the following:

碳粉的颗粒 Toner Particles	0-3mm之间 Between 0-3mm
碳粉的输送空气压力 Toner Conveying Air Pressure	5bar以上 Should Be Above 5bar
碳纯度 Carbon Purity	大于80% Should Be More Than 80 Percentage
含水量 Moisture Content	不大于0.02kg/Nm3 Must Be Not More Than 0.02kg/Nm^3



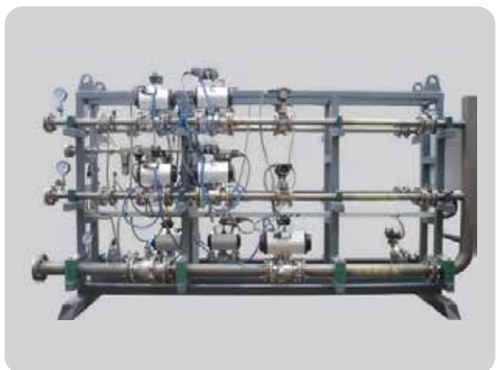


ELECTRIC FURNACE | Oxygen Valve Station
电炉备件丨氧气阀站

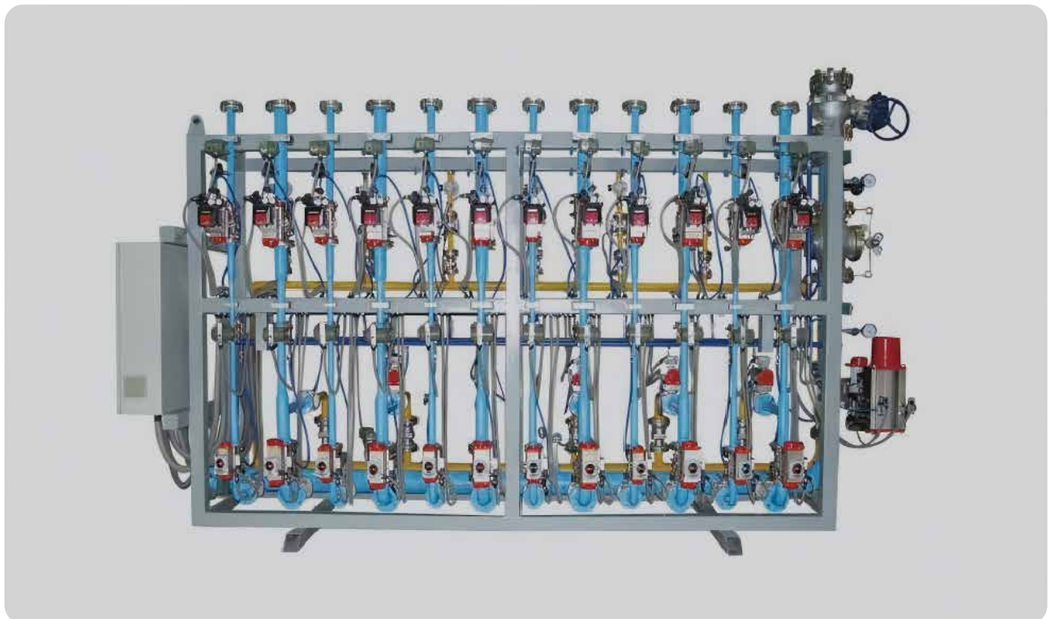
氧气阀站用来向炉门氧枪和炉壁氧枪提供喷吹用的氧气。
氧气阀站包含阀门架及阀门管路，同时向炉门及炉壁氧枪提供主氧环氧喷吹用氧气，并包含各管路吹扫管线。由减压阀、安全阀、不锈钢球阀、气体流量计、V 型调节阀、切断阀、压力变送器、不锈钢止回阀、阻燃器、气体报警器等组成，阀站管路为不锈钢管。
阀站管路每路 (供氧、吹扫) 单独控制，供氧和吹扫管路都置于阀门架上，阀门架固定于地面上。为方便维修，氧气管路都可以手动关闭。
所有调节和控制设备都可以独立的被卸下。
阀站系统设有设有测量管网气体压力的测压装置和测量气体流量的流量变送器，可以检测现场的压力、流量参数并把数据传送到控制系统。

Oxygen vavle station is used to provide oxygen to the burner lance. It has 121ines to provide oxygen t06 burnerlance. It has pressure reducing valve, safety valve, stainless steel ball valve, gas meter, V-control valve, shut-offvalve, pressure transmitter, stainless steel check valves, fire control, Gas alarm and other components, the pipe ofthe valve station is stainless steel.

Each line is control separate, To facilitate maintenance, the pipeline can be manually closed. All regulation andcontrol equipment can be unloaded independent.











ELECTRIC FURNACE | Oxygen Valve Station
电炉备件丨燃气阀站

燃气阀站用来向炉壁氧枪提供喷吹用的燃气。
阀站包含阀门架及阀门管路，由减压阀、安全阀、不锈钢球阀、气体流量计、V　型调节阀、切断阀、压力变送器、不锈钢止回阀、阻燃器、气体报警器等组成，阀站管路为不锈钢管。
阀站管路每路单独控制置于阀门架上，阀门架固定于地面上。
为方便维修，管路都可以手动关闭。所有调节和控制设备都可以独立的被卸下。
阀站系统设有设有测量管网气体压力的测压装置和测量气体流量的流量变送器，可以检测现场的压力、流量参数并把数据传送到控制系统。

Gas Valve station system used toprovide gas to the burner lance. Valve station includes valves and valvepipe frame, it has pressure reducingvalve, safety valve, stainless steel ballvalve, gas meter, V-control valve, shut-off valve, pressure transmitter, stainless steel check valves, fire control,Gas alarm and other components, thepipe of the valve station is stainlesssteel. Each line is control separate, To facilitatemaintenance, the pipeline can bemanuallyclosed. All regulation andcontrol equipment can be unloadedindependent.





ELECTRIC FURNACE | Electrical Control System
电炉备件丨电气控制系统

电气控制系统主要有操作台、控制柜、工控机等部分，作为PLC 等操作系统以及现场操作数据显示的载体，用来对炉门氧枪机械手、喷粉系统、阀站系统、液压系统进行控制。根据产品的实际需要进行程序设计，实现最合理的控制。

The main electrical control system contains console, control cabinet, industrialmachine parts, such as PLC operating system and on-site operations datacarrier, it is used to control the lance manipulator, carbon injection system, valvestation system, hydraulicsystem. It is designed depending on the product'sactual need, to achieve the most reasonable control.

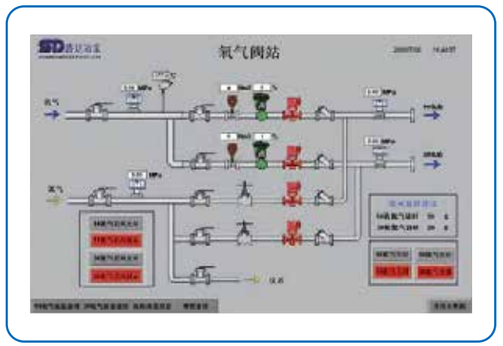




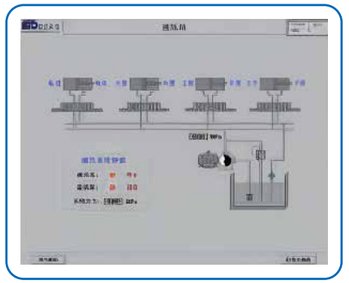


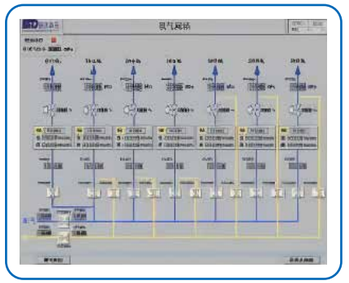




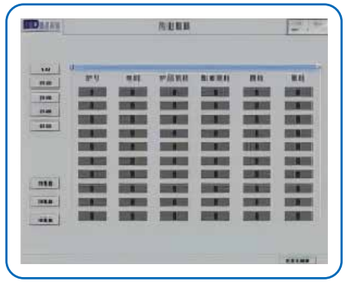


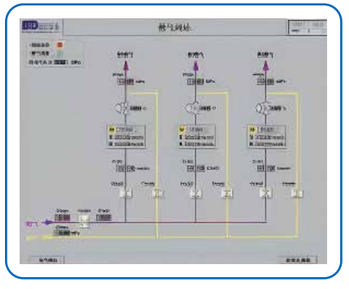












ELECTRIC FURNACE | Electrode Holder
电炉备件丨电极夹头

电极夹头-铸造 Electrode Holder-Casting Type

采用真空熔铸，热处理，产品组织致密，晶粒细小，无组织缺陷。
采用紫铜材质，具有较高的机械性能和抗热抗疲劳性能。
表面处理精度高，具有较好的导电性能电极夹头-铸造。

It is casting type, It has high mechanical properties and thermal fatigueresistance.
The surfac has high precision surface, and it hasgoodconductivity.

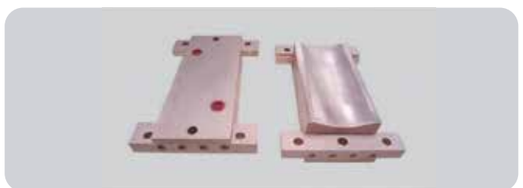




电极夹头一锻造 Electrode Holder-Forging Type

锻造电极夹头产品采用锻压铜板经钻孔，折弯，切割等一系列工序后加工制成。铜纯度更高，致密度更好，导热性能更好。

It is forging type, It has high mechanical properties and thermal fatigueresistance.
The surfac has high precision surface, and it has goodconductivity Electrode holder-Forging type.











水冷件 Water Cooling Type Part













ELECTRIC FURNACE | Converter Bottom-Blowing System
电炉备件丨转炉底吹系统





ELECTRIC FURNACE | Blast Furnace Copper Castings
电炉备件丨高炉铜铸件









