



自贡硬质合金有限责任公司
Zigong Cemented Carbide Corp., Ltd.

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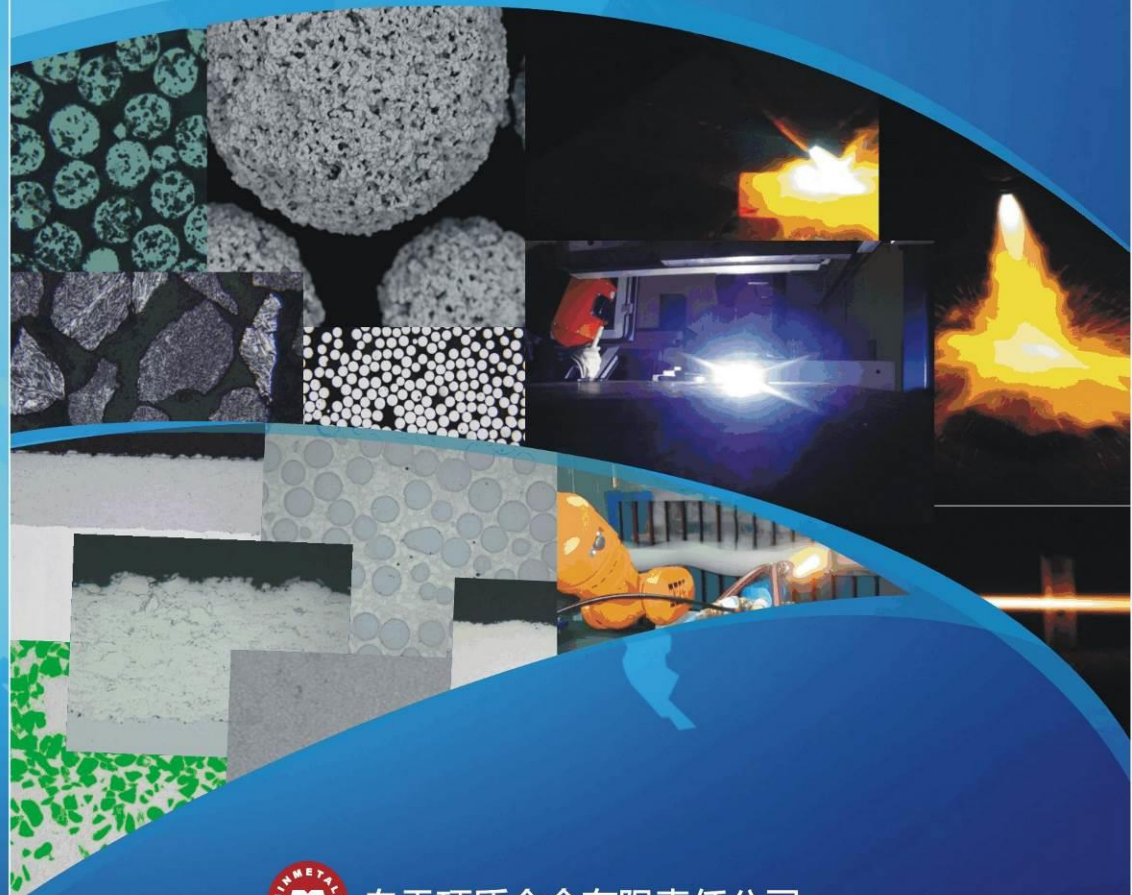
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ZGCC

热喷涂和堆焊

Thermal Spray and Welding



自贡硬质合金有限责任公司
Zigong Cemented Carbide Corp., Ltd.



品质成就未来

QUALITY ACCOMPLISHES THE FUTURE

自贡硬质合金有限责任公司

- 世界500强企业中国五矿集团的核心成员
- 中国第一家自主设计建设的大型硬质合金企业
- 国内领先的硬质合金及配套工具制造商
- 世界先进水平的硬面材料及其应用服务提供者
- 国内领先的钨钼制品制造商

ZIGONG CEMENTED CARBIDE CO., LTD.

- Zigong Cemented Carbide Co., Ltd (ZGCC) is a core member of China Minmetals Group which is one of the world 500 top companies.
- ZGCC is the first home-designed and built large scale cemented carbide manufacturing enterprise in China.
- It is one of the leading manufacturers of cemented carbides and related tools at home.
- It is a reliable supplier of the hard-facing materials with advanced world levels and their application services.
- It holds the leadership position in the tungsten and molybdenum product manufacture in China.

板仓公司 简介

Brief Company History

● 1965年，自贡硬质合金有限责任公司(ZGCC)成立，主营产品硬质合金(刀具、耐磨零件、矿用工具等)、钨钼制品(粉末、钨丝等)和硬面材料(材料和应用加工)。

Zigong cemented carbide Co., Ltd(ZGCC) was founded in the year of 1965. Three majored products include cemented carbide, tungsten and molybdenum products and hard-facing materials are available in ZGCC.

● 2001年，ZGCC与美国亚西泰克国际公司合作成立自贡亚西泰克高新技术有限公司，专业从事热喷涂、堆焊等应用技术研发和加工；

Zigong Asia Tec International Inc. was founded in the year of 2001. This company is a joint venture company between ZGCC and Asia Tec International Inc. The products of this company are thermal spraying and welding services.

● 2009年，ZGCC成为中国五矿成员单位；

In the year of 2009, ZGCC is China minmetals corporation member units.

● 2010年，ZGCC与瑞士HF公司合作专业开展硬面材料生产和研发；

In the year of 2009, ZGCC engaged in Hardfacing materials R&D and application service cooperate with HF Technologies AG in Switzerland.

● 2012年，ZGCC收购美国亚西泰克国际公司股份，增加投资8000万成立**自贡硬质合金有限责任公司板仓分公司**；占地面积108.9亩，厂房建筑面积17.43亩，主要从事热喷涂、堆焊等应用服务和成套耐磨耐腐蚀零部件加工。

In the year of 2012, ZGCC acquired the stake of Asia Tec International Inc. Then Bancang branch of ZGCC was founded by ZGCC additional investment about RMB 80 million. The major products of this company are thermal spraying service, welding service and wear resistance, corrosion resistance parts process according to the drawings.

● 现在ZGCC 形成了集热喷涂材料堆焊材料到热喷涂、堆焊等应用服务加工的完整产业链。

Now ZGCC expand the production line from the hardfacing materials produce to the hardfacing application technology.

● 体系认证：ISO9001:2008, ISO14001, OHSAS18001, CNAL, ISO10012



硬面技术(热喷涂和PTA堆焊)简介

Brief Introduce of thermal spraying and Plasma transferred arc welding (PTA)

热喷涂

热喷涂是利用热源将金属、金属陶瓷等材料加热到熔融或半熔融状态，然后通过高速气流将其雾化并以高速撞击基材，从而形成致密的覆盖层。



HVOF Gun

Thermal spraying

Thermal spray means to use a heat source to heat a metallic or non-metallic material to molten or semi-molten state, then to use high speed gas flow to blow the molten or semi-molten into tiny particles, and those tiny particles are injected onto the treated work piece surface to form a solid coating.

堆焊

堆焊就是采用气体保护焊、等离子转移弧、电焊等方法在金属材料或零件表面熔焊一层具有耐磨、耐腐蚀等特殊性能的金属。



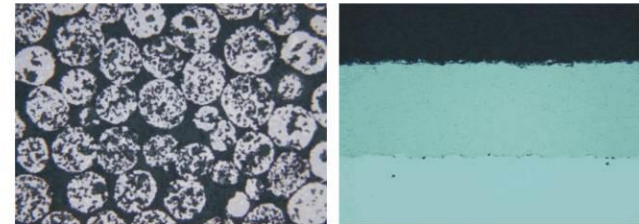
PTA welding

Deposit welding

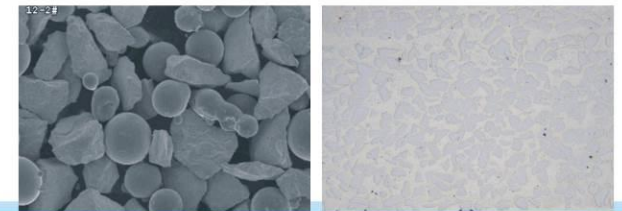
Deposit welding is to use gas welding, plasma transferred arc welding or electric welding processes to weld metal with wear and corrosion resistance or other special properties onto the surface of metal materials or parts.

技术优势 Superiority

热喷涂主要优势		PTA 主要优势	
1	低成本：表面耐磨耐腐蚀涂层能修复或延长工件寿命； Low cost: Repair the parts and increase the life time of the parts by deposited coatings with wear and corrosion resistance.	1	基体处理简单，提高工件的耐磨、抗冲击性能等； Increase the part wear resistance, impact resistance etc.
2	绿色：热喷涂无污染产生，能替代电镀硬铬； No pollution, can replace hard chrome plating;	2	等离子弧温度高(10000-30000s℃)，几乎可熔化所有材料； Materials can molten by the high temperature of plasma(10000-30000s℃).
3	应用范围广：几乎所有材料都可以喷涂；喷涂工艺涵盖电弧、超音速火焰(HVOF)、等离子喷涂(Plasma spray)等； Thermal sprayed coatings can be used in many industrial field.	3	焊层稀释率低(<5%)，结合强度高； Low dilution rate(<5%), high bonding strength.
4	低热量输入：可不考虑工件的受热影响； Low heat input so has no heat effect on substrate.	4	焊接材料为粉末，选择范围广； Many kinds of powder can use for PTA.
5	涂层厚度可达2mm，机械手全自动喷涂。 Coating deposited by robot.	5	效率高，机械手全自动堆焊。 High efficiency, cladding with robot.



Carbide based thermal spray powder and coating



Carbide based PTA welding powder and coating

热喷涂和堆焊等硬面技术应用领域

Applications of Thermal Spray Coatings and Deposit welding.

电力系统 Power system	发电厂 Power plant	汽轮机缸盖 Cylinder lid of steam turbine
		吸、排风机叶轮 Impeller of exhauster
		磨煤机系统 Coal pulverizing syse
		锅炉四管 Boiler tubes
	水电站 Hydropower station	中小电站水轮机叶轮 Impeller of hydraulic turbine for small or medium hydropower station
冶金 Metallurgical	风力发电 Wind power station	底座 Foundation
	柴油发动机零部件 Diesel engine components	
	高炉渣口、风口 Slag outlet, blast hole of blast furnace	
	轧辊 Roll	连铸机轧辊 Roll of continuous casting machine
	炉底辊 Roll of furnace bottom	热轧工具 Thermal-rolling tools

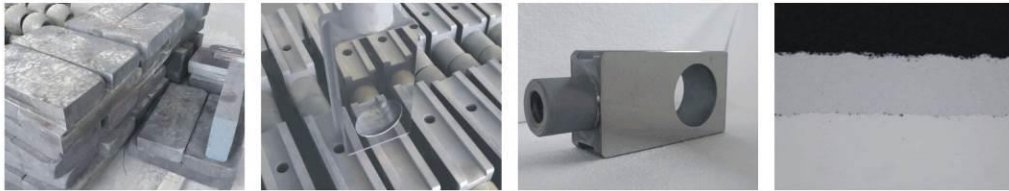
纺织 Textile	各种类型倍捻机锭环、加捻器 Spindle-ring of all kinds of multiple twisting machine
	摩擦盘、导丝器、卷绕槽筒 twister, friction tray, thread guider of bobbin
铁路 Railway	钢轨 Rail
	内燃机车零件 Parts of diesel locomotive
钢铁结构件长效防腐 Long effective corrosion resistance of steel structure parts	
	桥梁 bridge
	水闸门 sluice gate
	铁塔 iron tower
	通讯装置 communication installation
	公路设施 road facilities
	发电厂配电装置（升降压塔） power distribution installation (pressure uprising and dropping tower)
	地下电缆支架 support of under ground cable
	航标浮鼓 floating drum of navigation mark

航天 航空 国防 Aviation spaceflight national defense	航空发动机 Aero-engines
	运载火箭 Carrier rocket
	坦克 Tank
	武器装备 Weapon equipment
机械 Machinery	阀门 Valves
	各种轴类、电机转子 axes and shafts, rotor of motor
造纸 Papermaking	造纸烘缸 Dryer for papermaking
	瓦楞辊 roll
	泵 pump
制糖 Sugar refine	压榨辊 Pressing roll
	底梳 bottom comb
	面梳 surface comb
	煮糖罐 sugar boiling tank

有色 Nonferrous metallurgy	轧辊 Roll
	水压机油压机柱塞 plug of hydraulic or oil press
煤炭 Coal cutting	井筒 Pit shaft
	柱塞 plug
	刮板机中部槽 mid groove of scraper
石油 Oil field	柱塞、套筒、泵、轴 Plug, sleeve, pump, shaft,
	钻杆接头、阀门 joint of drill rod, valves
	贮罐及大口径管道 storage tank and large bore pipe
化工 Chemical industry	柱塞 Tunk Piston

主要产品 Major Products 闸板及闸座 Gate valve and valve seat

基体Substrate	1Cr13, 2Cr13, 410, 4130, 35CrMo, Inconel 718;
尺寸Size	2" - 7" ;
涂层制备工艺 Coating process	超音速喷涂HVOF、喷焊Flame spray;
涂层材质 Coating materials	碳化钨(Tungsten carbide based coating)、镍基(Ni based coating)等;
涂层性能 Coating properties	耐磨、耐腐蚀、耐热; Wear, heat and corrosion resistance;
依据标准 According Standard	API, ANSI, DIN, GB;
应用领域 Application	用于石油、天然气的开采井口装置, 即采油树和采气树的主要启闭装置; Service in oil and natural gas industries.
加工形式 Order	来料加工和按图加工。 Sprayed according to the drawings or deposited the coating on the substrate provide by customer.



Gate valves process

球阀及闸座 Ball valve and valve seat

基体Substrate	Al105, 35CrMo, 12CrMo, 1Cr13, 410, 4130, 4140, F304, 316;
尺寸Size	1/2" -40" ;
涂层制备工艺 Coating process	超音速喷涂HVOF、电镀硬铬Chrome plating、化学镀镍ENP;
涂层材质 Coating materials	碳化钨(Tungsten carbide based coating)、碳化铬(Cr3C2 based coating)、司太立合金(Stellite)、因科镍(Inconel)、蒙乃尔(Monel)等;
涂层性能 Coating properties	耐磨、耐高温、耐腐蚀; Wear, heat and corrosion resistance;
依据标准 According Standard	API, ANSI, DIN, GB;
应用领域 Application	电力、煤炭、石化领域用于液态流体管道输送的主要启闭装置。 Service in power, coal mining, and petrochemical industries.
加工形式 Order	来料加工和按图加工。 Sprayed according to the drawings or deposited the coating on the substrate provide by customer.

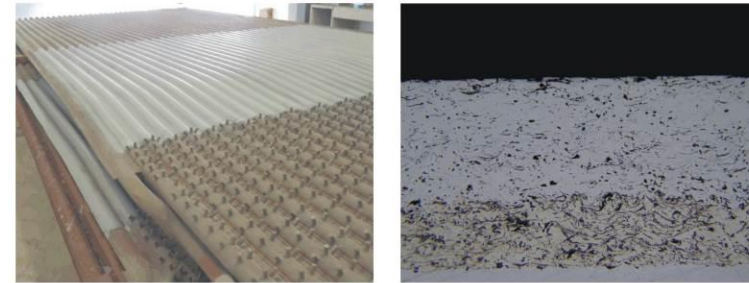


Ball valves process

主要产品 Major Products

● 工程服务其它产品(含PTA堆焊产品)

Spraying on site and other products include some PTA welding products.
煤粉、余热、生物质等发电锅炉关键部分(水冷壁和过热器)的涂层防护。
Coating or cladding for water wall or superheat in power plant.



电弧喷涂锅炉水冷壁涂层

Arc sprayed coatings for waterwall or superheater in power plant

● 其他产品: 轴套、密封环、沉没辊、塔轮、转子、水轮机组配件等 Other products: sleeve, sink roll, etc.



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加工能力 Shop Capacity

涂层制备设备 Coating equipment

1	超音速火焰喷系统HVOF spraying	3套sets	美国 德国Made in U.S. and Germany
2	火焰喷涂Flame spraying	2套sets	中国Made in China
3	超音速电弧喷涂Arc spraying	3套sets	中国Made in China
4	等离子转移弧堆焊PTA	1套set	德国Made in Germany
5	等离子喷涂设备Plasma spraying	1套set	德国Made in Germany
6	气体保护焊MIG	1套set	中国Made in China

机械加工设备 Mechanical equipment (60 sets)

1	车间面积约130,000平方英尺 Plant Area about 130,000sq.ft
2	行车(10吨) Crane(10 tons)
3	数控车床CNC Lathe
4	球面车床Spherical Lather
5	球面磨床Spherical Grinding
6	外圆磨床Cylindrical Grinding
7	平面磨床 Surface Grinding
8	机械手Robot
9	热处理炉Heat treatment furnace

主要分析检测设备 Major test equipment

序号	设备名称	型号
1	扫描电子显微镜SEM	Zeiss
2	金相分析系统METALLOGRAPHY	Olympus Stream
3	金相制样 Sample prepared	Struers
4	维氏硬度仪 Micro-hardness tester	FM-700
5	三坐标 Three coordinate	Heaxgon Metrology
6	高温摩擦磨损设High temperature wear test equipment	CSM

加工能力 Shop Capacity



进口喷涂房及喷砂房
Spray and blasting room



行车
Crane



- ① 球面加工车床
Spheric lathe
- ② 高精度数控球面磨床
CNC Spheric grinding machine
- ③ 平面磨床
Surface grinding machine
- ④ 数显卧式镗铣床
Boring and milling machine
- ⑤ 车床
Turning lathe

质量保证体系 Certification



先进的试验分析检测设备
Advanced test and inspection equipments

体系认证 Certification



GB/T 19001-2008(ISO9001:2008)
质量管理体系认证



GB/T 28001-2001(OHSAS18001:1999)
职业健康安全管理体系认证



GB/T 24001-2004(ISO14001:2004)
环境管理体系认证

企业荣誉 Honors

