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领先源于专注

Wear Resistant Material
Professional Manufacturer



Tianjin Wodon Wear Resistant Material Co., Ltd

About Wodon



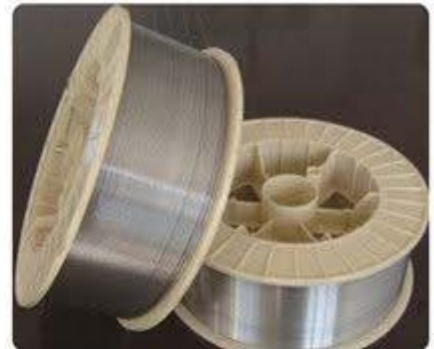
Tianjin Wodon Wear Resistant Material Co., Ltd (CHINA WODON), located in the northern international shipping center TIANJIN, which specialized in research, development, production and sales wear-resistant material, and have many years experience in this field. Now the company owns over 100 employees, has annual output 60,000 square meters of wear plate and 8,000 metric tons of welding consumables.

With solid technical strength and independent research & development capability, the company possesses many experienced senior engineers of surface engineering, invites numerous experts as the technical adviser for our company and provides professional solutions to industrial abrasion on the basis of solid technical strength and production capacity. Our products have been widely applied to electric power, cement, iron and steel, mining, petroleum, chemical industry, railway, valves, sugar industry, shipbuilding and other industries. In addition, our company can offer professional solution for the abrasion under different working conditions, lower the cost, largely prolong service life of the workpiece and extend overhaul cycle of the equipment, therefore, our company enjoys a good reputation among customers.

WODON PRODUCTS:

Wear plates、wear plate components、wear pipes and fittings、wear plate welding wires、vertical cement mill hardfacing wires、squeezing roller hardfacing wires、roller hardfacing wires、gas shielding hardfacing wires、coal conveying groove hardfacing wires、thermal spray welding wires、flux cored TIG wires、hardfacing rod.

Our Advantages



Wodon Composite Wear Plate:

Alloy layer of chromium is as high as 25%-40 %.

Microstructure of Cr₇C₃ carbide volume fraction is 50% or more.

High hardness and uniform distribution, hardness HRC58-65.

Uniform layer thickness, tolerance range 0--0.5mm only.

Board surface level off, flatness controls in $\pm 3\text{mm/m}$.

High abrasive resistance, by 5~6 times than heat treating wear steel.

Why Us:

Reduce the cost of maintenance.

Reduce downtime, improve equipment operation rate.

Reduce the decrease of productivity and power consumption caused by abrasion.

Greatly reduce environmental pollution caused by the wear blanking and increase the labor costs of clear material, etc.

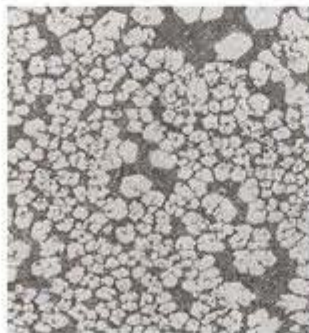


Testing Equipment



The company has many sets of testing equipments and professional testing personnels, factory products are through strict test.

Metallographic Photos



Our products in the microstructure Cr₇C₃ carbide volume fraction can be achieved more than 50%.

Wear-resistant Plate Introduction

Our company produces high wear-resistant composite plate is on the ordinary steel welding, to form a volume fraction of more than 50% Cr₇C₃ carbide-based alloy wear layer, with high abrasion resistance, impact resistance, easy processing characteristics, widely used in mining, cement, steel, electricity and other industries.

Technical Analysis

1、High wear resistance

The carbon composition of the wear layer is 3~5%, chromium is 25~40%. Carbide in microstructure of Cr₇C₃ is more than 50%, hardness is HRC58 ~ 65. The hardness of chromium carbide is HV1400 ~ 1800 which even higher than the hardness of quartz sand HV800 ~ 1200.

The capability of our wear resistance plate is 5-6 times than the heat-treated steel; 5 times than stainless steel; 5-6 times high manganese steel; 11 times than 16Mn (data from normal temperature abrasive wear test).

Carbide wears a direction perpendicular to the distribution, even compared with the same cast alloy composition and hardness, its wear resistance can be doubled, which is much higher than spray and thermal spray methods.

2、Good impact resistance

Wear-resistant composite substrate for low carbon steel or low alloy steel and other ductile materials, reflecting the superiority of double metal abrasion and wear resistant wear layer media. Substrate has good impact resistance; Material handling system can withstand impact and abrasion under high drop hopper mining conditions.

3、Convenient processing performance

Wear resistant composite plate can be cut, leveling, punching, bending, and curly, it can be made into tablets, arc plate, plate cone and cylinder. Composite board can weld into various engineering structures or components. Composite panels can be heated by mould pressing into complex shapes. Wear resistant composite steel plate can be fixed by bolts or welding on the device, very convenient to replace and maintain.

4、Cost-effective

Although the cost of wear-resistant plate increased, using life has been improved a lot, meantime reduces maintenance and downtime costs. The price is 2-4 times higher than ordinary materials. When equipments handle big amount materials, more serious wear it has, the more obvious economic effect can be seen when using our wear-resistant plates.



Wodon Wear Plate Bending Test



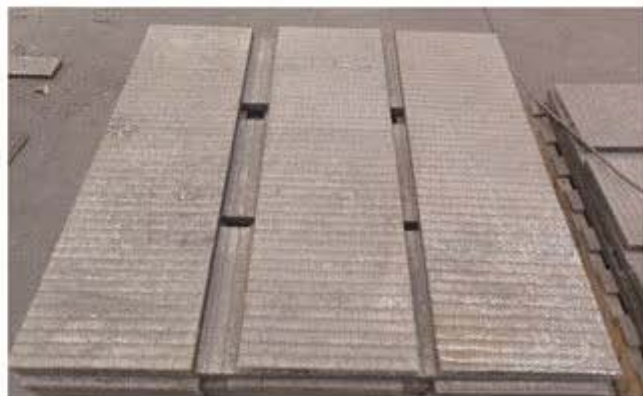
Wear-resistant Plate Components

We have several experienced engineers, large-scale processing equipments, plasma cutting equipments, multiple volumes tablet machines and presses, with strong processing capacity. We provide wear plate cutting, curling, bolt hole and welding work based on drawings from customers.

Service: produce by drawings.







Wear Plate Applications

Power Industry: Fan blade, combustor pipeline, chute feeder and hopper liner, crusher parts, coal mill parts, dust pipe, air handling system and conveyor.

Steel Industry: bin liner, Sliding slope, blast boiler inverted bucket, skip car, blast boiler reinforced plate, Sintering feed tube, ducting, feed plate, dump truck, hopper, etc.

Cement industry: powder concentrator blade, impingement plate, ducting, pump case, mill liner, crusher parts, slag trough, chassis, Vibration sieve plate, etc.

Glass Industry: fan impeller, fan blade, hub disk liner, fan inlet, quick-wearing spare parts, etc.

Mining industry: truck liners, hopper linings, chute liners, crusher parts, cover, wear bars and wear plates.

Coal industry: chute, hopper, crusher parts and liners, coal pipes, elbows, floor scraper conveyor, pump.

Wodon wear plate standard size: Submerged arc welding: 1400mm*3000mm、1400mm*3500mm、2100mm*3500mm Open arc welding: 1400mm*3400mm

The main thickness:

Submerged arc welding

4+4、5+5、6+5、6+6、8+5、8+6、8+8
10+5、10+6、10+7、10+8、10+10
12+5、12+6、12+7、12+8、12+10、12+11、12+12
14+6、14+8、14+10、16+6、16+8、16+10
18+6、18+8、18+10、20+6、20+8、20+10、30+10、40+10

Open arc welding

3+3、4+4、5+3、5+4、5+5
6+4、6+5、6+6、8+4、8+5、8+6、8+7、8+8
10+4、10+5、10+6、10+7、10+8、10+9、10+10
12+4、12+5、12+6、12+7、12+8、12+9、12+10、12+11、12+12
14+4、14+6、14+8、14+10、16+4、16+6、16+8、16+10
18+4、18+6、18+8、18+10、20+4、20+6、20+8

We can also customize different sizes according to customer requirements, special models wear plates in different sizes and thicknesses, and can be provided according to customer's drawings. Necessary parts are made from cutting, bending and curling the wear plates.

Wear Resistant Wire Introduction

We have three wear-resistant welding production lines. With strong R & D strength, good quality, and superior performance, we established a good reputation in this industry.

The company with annual output of 6000 tons of drum packing hardfacing wire, which including nearly 1500 tons sales volume of wear plate hardfacing wire.



Wear Plate Welding Wires

Our company research and develop the flux cored wire according the welding characteristics of composite wear-resistant plate. It has good performance on welding spatter-free, smooth and beautiful plate after welding, good welding efficient, and high transition coefficient which is 0.9 and above.

Our composite plate welding wire has annual sales of nearly 1500 tons, which makes us a higher domestic market share. With the stable quality and good service, our domestic sales and exports are increasing year by year.

Model	Spec. (mm)	Hardness (HRC)	Main Ingredient	Main Application and Characteristics
WD161	2.4、2.8、3.2	58-65	C:3.0-5.0 Cr:22-27	Used in wear-resisting plate single-layer hardfacing, hardness after welding up to HRC60.
WD261	2.4、2.8、3.2	57-63	C:3.0-5.0 Cr:22-27	Used in wear-resisting plate two-layer hardfacing, hardness after welding up to HRC60, good impact resistance and no easy to fall off.
WD361	2.4、2.8、3.2	57-63	C:3.0-5.0 Cr:24-30	Used in wear-resisting plate multi-layer hardfacing, hardness after welding up to HRC60, good impact resistance and no easy to fall off.
WD181	2.4、2.8、3.2	58-65	C:3.0-5.0 Cr:22-27	Used in thin sheet welding, hardness up to HRC60 after welding actual thickness less than 3.0mm, ensures good abrasion.
WD161H	2.4、2.8、3.2	58-65	C:3.0-5.0 Cr:25-32	Deposited metal has High chromium content after welding, good abrasion. Applies to single-layer hardfacing.



Vertical Cement Mill Hardfacing Wires

Our company specialized in manufacture WD series welding wires. Vertical cement mill hardfacing wires have features of excellent welding performance, beautiful weld forming, weld spatter-free.

Model	Spec. (mm)	Hardness (HRC)	Main Ingredient	Main Application and Characteristics
WD100	2.4、2.8、3.2	55-62	C:3.0-5.0 Cr:25-30 Mo:0.5-1.0	Used in coal mill grinding roller of thermal power plants repair.
WD100A	2.4、2.8、3.2	57-62	C:3.0-5.0 Cr:27-32 Mo:0.5-1.0	Can be used for roller mill of cement raw meal grinding, restoration of clinker slow roller mill.
WD350	2.4、2.8、3.2	55-62	C:3.0-5.0 Cr:22-28 Mo:0.3-1.0 Nb:3.0-4.5	Can be used for roller mill of cement raw meal grinding, restoration of clinker slow roller mill.
WD350A	2.4、2.8、3.2	57-63	C:3.0-5.0 Cr:22-28 Mo:0.3-1.0 Nb:3.0-4.5	Can be used for roller mill of cement raw meal grinding, restoration of clinker slow roller mill.
WD650	2.4、2.8、3.2	55-63	C:3.0-5.0 Cr:20-26 Mo:0.3-1.0 Nb:6.0-7.5	Can be used for roller mill of cement raw meal grinding, restoration of clinker slow roller mill.
WD650A	2.4、2.8、3.2	57-63	C:3.0-5.0 Cr:20-26 Mo:0.3-1.0 Nb:6.0-7.5	Can be used for roller mill of cement raw meal grinding, restoration of clinker slow roller mill.



Squeezing Roller Hardfacing Wires

Our company adopts special Squeezing roller hardfacing wires, and assure the hardness, abrasion resistance quality indicators after repair. The service life after repair is no less than 8000 hours.

Model	Spec. (mm)	Hardness (HRC)	Main Ingredient	Main Application and Characteristics
WD-ZYG1 00 (1#)	1.6、2.8、4.0	--	C:0.03-0.15 Mn:0.5-2.5	Used for squeezing roller backing welding.
WD-ZYG1 00A(1996)	1.6、2.8、4.0	--	C:0.05-0.15 Cr:18-22 Ni:8-11 Mn:4-7	Used for squeezing roller backing welding.
WD-ZYG2 00	1.6、2.8、4.0	20-35	C:3.5-4.6 Cr:4.0-6.0 Mo:0.3-1.0 Nb:0.3-1.0	Used for transition layer of extrusion roller.
WD-ZYG3 00	1.6、2.8、4.0	50-55	C:0.3-1 Cr:5-10 Mo:0.5-1.5 Nb:1-3	Used for transition layer of extrusion roller.
WD-ZYG5 00	1.6	55-60	C:0.5-2.5 Cr:5-10 Mo:0.5-1.5 Nb:3-6	Used for extrusion roller surface and pattern layer.



Gas Shielding Hardfacing Wires

Model	Spec. (mm)	Hardness (HRC)	Main Ingredient	Main Application and Characteristics
WD-D114	1.6	50-55	C:0.45-1 Cr:2-3 Mn:14-18	High manganese steel welding electrode, the surface has the characteristics of the strain hardening after violent shocks, suitable for welding such as impact hammer, hammer plate parts.
WD-D115	1.6	50-55	C:0.45-1 Cr:2-3 Mn:14-18	High manganese steel welding electrode, the surface has the characteristics of the strain hardening after violent shocks, suitable for welding such as impact hammer, hammer plate parts.
WD-D172	1.2、1.6	≥40	C:0.4-0.5 Cr:1.5-2.5 Mo:1.5-2.5	Used for surfacing welding gear, mining machinery, such as wear and tear parts.
WD-D165	1.6	60-65	C≤1.0 Cr:9-15	High hardness, wear resistance wire, suitable for abrasive wear parts of the overlaying welding repairing.
WD-D212	1.2、1.6	≥50	C:0.4-0.7 Cr:4.0-5.5 Mo:0.8-1.5	For surfacing welding, the surfaces of all wear parts, such as gears, bucket, mining machinery, etc.
WD-D213-G	1.6	45-55	C:0.3-0.6 Cr:1.5-2.5 Mo:1.0-2.0	For surfacing welding the wear of the surface of the part.
WD-D256	1.6	HB≥170	C:0.5-1.1 Mn:10-17	Suitable to all kinds crusher, high manganese steel rail, bulldozers and other easy wear welding parts.
WD-D258	1.6	55-60	C:0.3-0.6 Cr:4.5-6.5 Mo:1.0-1.8	
WD-D265	1.6	60-65	C:≤1 Cr:9-15 Mo:0.5-1 W:0.5-1.5 V:0.5-1.5 Ni:0.5-1.5	Used for surfacing wear parts.
WD-D313	1.6	45-50	C:0.2-0.3 Cr:11-14	Used for continuous casting roller surfacing.
WD-D322	1.6	55-63	C:0.3-0.5 W:7-10 Mo:0.5-2.5	Suitable for repairing a die and tough, and require a higher wear properties of mechanical parts.
WD-D405	1.6	53-60	C:0.25-0.55 Cr:5.5-7.5 Mo:0.8-1.5 W:1.0-2.0 V:0.5-1.0	Suitable for hot-rolled billet roller surfacing.
WD-D430	1.6	35-40	C:0.1-0.25 Cr:16-18	Corrosion-resistant components for general welding surface.
WD-D502 Mo	1.6	35-45	C:0.1-0.25 Cr:11-16 Mo:0.5-2.5	Suitable for valve surfacing.
WD-D507 MoA	1.2、1.6	35-45	C≤2.0 Cr:10-15 Mo:0.5-1.5	Suitable for valve surfacing.
WD-D518 (A)	1.6	40-50	C:0.08 Cr:13.1 Mo:1.15 Ni:3	Used for continuous casting roller surfacing.
WD-D688	1.2、1.6	50-58	C:2.5-5.0 Cr:22.5-27.5	Apply to a serious part of abrasive wear surfacing, multi-layer welding. Surfacing layer thickness can be up to 50 mm.

WD-D507 MoA	1.2、1.6	35-45	C≤2.0 Cr:10-15 Mo:0.5-1.5	Suitable for valve surfacing.
WD-D518 (A)	1.6	40-50	C:0.08 Cr:13.1 Mo:1.15 Ni:3	Used for continuous casting roller surfacing.
WD-D888	1.2、1.6	58-65	C:3.5-4.5 Cr:24-27.5	Apply to a serious part of abrasive wear surfacing welding, welding layer thickness control under 10 mm.
WD-D990	1.6	58-65	C:3.0-5.0 Cr:24-28 Mo:1.0-1.5 Nb:0.5-1.5 W:0.5-1.5 V:0.5-1.0	Wear parts for high temperature welding.
WD-D995	1.6	58-65	C:3.0-5.0 Cr:24-28 Mo:1.0-1.5 Nb:0.5-1.5 W:0.5-1.5 V:0.5-1.0	Wear parts for high temperature welding.
WD-DG7	1.6	52-60	C:1-3.5 Cr:6-10.5	Suitable for welding shield machine parts..
D688 Welding rod	4.0	50-58	C:2.5-5.0 Cr:22.5-27.5	Suitable for welding by severe abrasive wear parts, surfacing layer thickness control under 20mm.

Roller Hardfacing Wires

Model	Spec. (mm)	Hardness (HRC)	Main Ingredient	Main Application and Characteristics
WD-D430	2.4、3.2	35-40	C:0.1-0.25 Cr:16-18	Corrosion-resistant components for general welding surface.
WD-320H	3.2、4.0		C:0.1-0.25 Cr:12-14	Suitable for continuous casting roll surfacing.
WD-224	3.2、4.0	45-55	C:0.25-0.35 Cr:5.5-7.5 Mo:0.8-1.5 W:1.0-2.0 V:0.5-1.0	Suitable for hot-rolled billet roller surfacing.
WD-224B	3.2、4.0	53-60	C:0.25-0.55 Cr:5.5-7.5 Mo:0.8-1.5 W:1.0-2.0 V:0.5-1.0	Suitable for hot-rolled billet roller surfacing.
WD-414N	3.2、4.0	40-50	C:0.05-0.15 Cr:11.5-14.5 Mo:0.5-1.5	Suitable for continuous casting roll surfacing.
WD-414-0	3.2、4.0	40-50	C:0.05-0.15 Cr:11.5-14.5 Mo:0.5-1.5	Suitable for continuous casting roll surfacing.

Coal Conveying Groove Hardfacing Wires

Model	Spec. (mm)	Hardness (HRC)	Main Ingredient	Main Application and Characteristics
WD-ZBS 100 (D212)	1.2、1.6	≥50	C:0.4-0.7 Cr:4.0-5.5 Mo:0.8-1.5	Used in coal conveying groove middle and side plate wear repair.
WD-ZBS 200 (D688)	1.2、1.6	45-55	C:2.5-5.0 Cr:22.5-27.5	Used in coal conveying groove middle and side plate wear repair.
WD-ZBS 300 (D888)	1.2、1.6	58-65	C:3.5-4.5 Cr:24-27.5	Used in coal conveying groove middle and side plate wear repair.

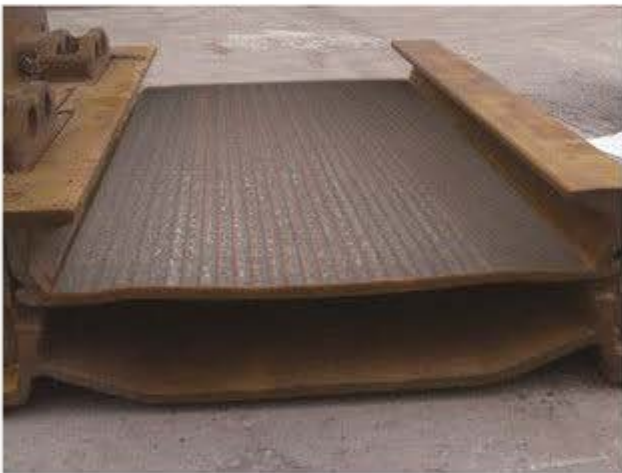
Thermal Spray Welding Wires

Model	Spec. (mm)	Hardness (HRC)	Main Ingredient	Main Application and Characteristics
WD-SAM	2.0	55-65	C:0.3-0.8 Cr:11-15	Stainless steel wire thermal spray coatings of amorphous.
WD-GY	2.0	55-60		High hardness and high wear-resistant thermal spray wire.

Flux Cored TIG Wires

Model	Spec. (mm)	Hardness (HRC)	Main Ingredient	Main Application and Characteristics
WD-R30 8LT1-5	2.0、2.5	--	C≤0.03 Cr:18-21 Ni:9-11	Suitable for 00Cr19Ni9 or 00Cr19Ni11 stainless steel pipe fittings root pass welding, can not protect the back of the inert gas, tungsten polar gas shielded arc welding method can only be used, must be cleared before each pass welding slag.
WD-R30 9LT1-5	2.0、2.5	--	C≤0.03 Cr:22-25 Ni:12-14	Suitable for carbon steel and austenitic stainless steel pipe fittings root pass welding, inert gases can not back protection, polarity gas tungsten arc welding method can only be used, must be cleared before each pass welding slag.
WD-R31 6LT1-5	2.0、2.5	--	C≤0.03 Cr:17-20 Ni:11-14	Suitable for 00Cr17Ni12Mo or 00Cr17Ni14Mo stainless steel pipe fittings root pass welding, inert gases can not back protection, only polar gas tungsten arc welding method is used, must be cleared before each pass welding slag.
WD-R34 7T1-5	2.0、2.5	--	C≤0.03 Cr:18-21 Ni:9-11	Suitable for 0Cr18Ni11Nb or 0Cr18Ni9Ti stainless steel pipe fittings root pass welding, inert gases can not back protection, only polar gas tungsten arc welding method is used, must be cleared before each pass welding slag.

Application of Hardfacing Wire

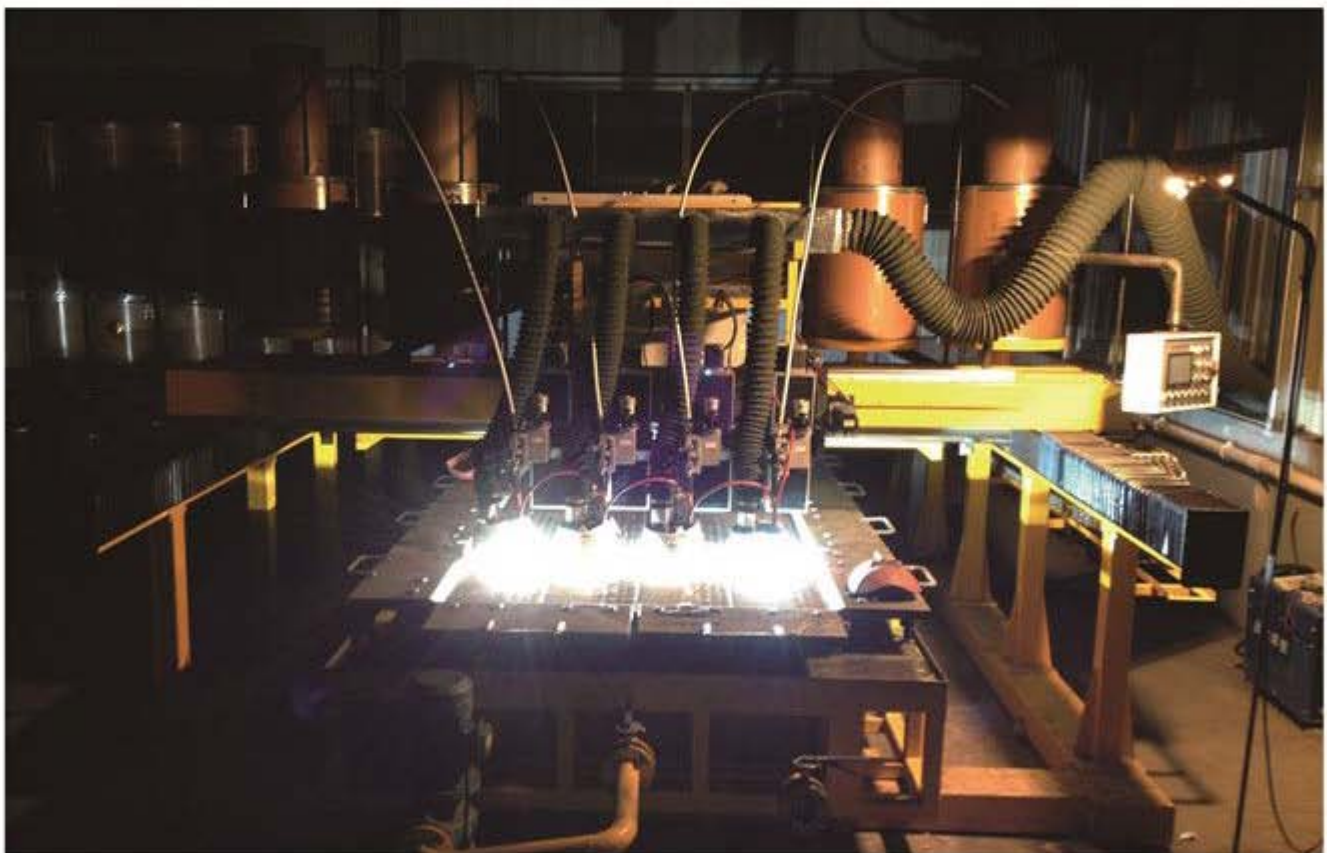




Automatic Four Guns Hardfacing Machine

Bimetallic composite wear-resistant plate welding machine is the Wodon's own research and development, design, manufacture equipment with the leading domestic level. The equipment implements the four-position welding torch simultaneously and work to overcome the low single gun welding productivity, flat bend big, surfacing layer shedding fundamental shortcomings. Meanwhile, the device has a high level of automation, can be single gun start and stop, single gun height adjustment, Resume welding and other functions. The equipment manufactured bimetallic composite wear-resistant plate with board formation, minor cracks and irregular, uniform surface hardness, etc., has received the customer high praise.

Bimetallic composite wear plate welding machine includes: gantry positioning rack, welding torch vertical adjustment of linear sliding table (4 sets/units), welding torch level adjustment linear sliding table (4 sets/units), circulating water gun cooling system, circulating water cooling machine, wire placement platform and self-rotation machine, exhaust pipes, adjustable speed wire feeding machine (4 sets/units), water-cooled welding-torch (4 sets/units), Integrated electrical cabinet and operation monitoring boxes.





Tianjin Wodon Wear Resistant Material Co., Ltd

Office:Room 1005, No.5,Beichen Building, Beichen Dist, Tianjin, CHINA.

Factory:No.2 Wuwei Rd, Hexiwu Industrial Zone, Wuqing Dist, Tianjin, CHINA.

Tel:+86 22 86897973

Fax:+86 22 86897978

Web:www.chinawodon.com

Email:cs@chinawodon.com