

Nanjing Qiming Machinery Co.;Ltd

Crusher Blow Bars

Qiming is an ISO9001:2015 certified foundry specialized in manufacturing manganese, manganese with TIC, martensitic, martensitic with ceramic, chrome and chrome with ceramic blow bars for quarry, mining, cement, construction, aggregates, recycling and other industry where longer service life wear parts are desperately needed to reduce downtime.

Address: 2th, Taixi Road, Pukou Area, Nanjing City, China Email: tomas@qimingmachinery.com
Website: <https://www.qimingcasting.com/>



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How To Make A Good Blow Bars

Qiming Casting knows how to make a good blow bars.


- Raw material control and design
- Pattern making and design
- Heat treatment control
- Machining control
- Inspection control

Chemicals

Blow bars are normally made of manganese steel , martensitic steel, chrome white iron and their ceramic composites, with Chemical as below respectively:

Material	Main Chemicals									
	Fe	C	Si	Cr	Mn	/	/	S	P	Others
Manganese steel	Fe	C	Si	Cr	Mn	/	/	S	P	Others
Martensitic steel	Fe	C	Si	Cr	Mn	Mo	Ni	S	P	Others
Chrome white iron	Fe	C	Si	Cr	Mn	Mo	Ni	S	P	Others

- The correctness of chemical content is decisive to the natures of the material.
- Sulfur(S) and Phosphorus(P) must be controlled as little as possible in Martensitic steel and chrome white iron because they area negative to the impact-resistant ability of blow bars whereas Moly and Nickel are positive.
- Phosphorus(P) is destructive in manganese steel so it must be controlled under the limit.



Pattern design and Preparation

Pattern design and Preparation is very important for a casting of blow bar.

A good design will do best to avoid the internal and also surface defects including porosity, impurity, inclusions, cold laps and etc.



Heat treatment

Heat treatment is vital to achieve the good quality and performance of blow bars.

- Manganese blow bars usually are water toughened only.
- Chrome white iron blow bars are quenched and tempered.
- Martensitic steel blow bars are annealed, quenched and tempered.

Heat treatment temperature and procedures must be carefully and precisely set in order to achieve expected hardness, toughness, microstructure, and also avoid cracking and deflecting on blow bars.



Machining

Machining is necessary for some blow bars to achieve good flatness, straightness and roughness on the mounting areas. Especially for longstrip high chrome white iron blow bars, machining on mounting areas is always compulsory.



Inspection

Inspection is the only way to ensure the blow bar is qualified for being used on crushers.

A comprehensive inspection should include:

- Chemical testing
- Ultrasonic testing on inner defects;
- Penetration or Magnetic testing on cracks;
- Hardness testing (Rockwell or Brinell)
- Dimensional inspections and gauged;
- Weight balance;
- Toughness testing (on material basis)
- Microstructure testing (on material basis)
- Yield and Tensile strength (on material basis)



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Ceramic Blow Bars Series and Selection

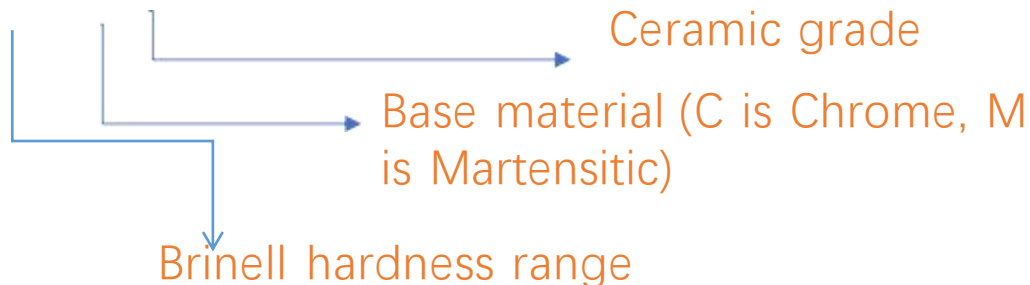
Based on different working conditions, Qiming Casting supplies different material to suit. Which include:

- S200
- S200T
- 550
- 550MC
- 550MY
- 650C
- 650CC
- 700CX

Ceramic Blow Bars Series

Code	Description	Wear performance	Status
650 CC	Chrome+Ceramic		Available for market
700 CX	Chrome+Ceramic	40-50% better than CC	Available for market
550 MC	Martensitic+Ceramic		Available for market
550 MY	Martensitic+Ceramic	50-60% better than MC	Available for market

650 C C



Crushing conditions			Material suggested	
Feed size	Crushibility	Hardness	Base material	Ceramic inserts
Small	High	Medium to high	Chrome	CC
Small	Low	High to very high	Chrome	CX
Large	High	Medium to high	Martensitic	MC
Large	Low	Medium to high	Martensitic	MY

High Crushibility = Easy to be break



BLOW BAR SELECTION

Code	Material	Basis Hardness	Wear Resistance	Applications
S200	Manganese steel	200-250HB	Relatively low	Large feed size low-abrasiveness stones e.g. limestones.
S200T	Manganese+Tic	200-250HB	Up to 100% increased on S200	Same as above but where longer wear life required.
550	Martensitic Steel	500-550HB	Medium	Medium feed size of low to medium abrasiveness, such as Limestones, Asphalt, Concretes, Building rubbles with steel rebars or a small quantity of unbreakable objects.
550MC	Martensitic Steel + Ceramic	500-550HB	Up to 100% increased on S550	Same as above but where longer wear life required.
650C	High Chrome	600-650HB	High	Small feed size of medium to high abrasiveness but low strength, such as Limestones, Asphalt, Concretes, Building rubbles without steel rebars or unbreakable objects.
650CC	High Chrome + Ceramic	600-650HB	Up to 100% increased on C650	Same as above but where longer wear life required.
700CX	High Chrome + Ceramic	600-650HB	150% increased on C650	Small feed size of high abrasiveness and high strength materials, such as gravels, granites without unbreakable objects

Qiming Casting supply blow bars to suit following and more brands:

- Metso
- Terex
- Powerscreen
- Finlay
- Evoquip
- Rubblemaster
- Hazemag
- Tesab
- McCloskey
- Eagle
- KPI-JCI
- Sandvik
- Hartl
- Striker
- Keestrack
- Portafill
- Lippmann
- Rockster
- Mesda
- Kreat

* All brands mentioned above are for reference purpose only.



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Compare with MAG MMC blow bars

We know MAG is the biggest ceramic blow bars manufacturer in the world. As a follower, we are proud to develop products of the same quality or even exceeding their quality.

Comparison with MAG

- Martensitic + Ceramic Blow Bars



550 MC

Recyx

Qiming Casting	MAG	Application	Comparison
550 MC	Recyx	<ul style="list-style-type: none"> ● Primary or secondary crusher ● Feed size <800mm dia. ● Medium to high abrasiveness: limestones, rubbles, recycling concrete ● Unbreakable or rebars allowed 	<p>Based on customer feedback:</p> <ul style="list-style-type: none"> • Our 550 MC blow bars span life can be 95%-115% of MAG Recyx blow bars • Our new design 550MY can increase 50% to 60% than Recyx
550 MY	/	Same as the above	

Comparison with MAG

- Chrome + Ceramic Blow Bars



650 MC

MAG Xwin +Chrome

Qiming Casting	MAG	Application	Comparison
650CC	Xwin + Chrome	<ul style="list-style-type: none"> ● Secondary or tertiary crusher ● Feed size <300mm dia. ● Medium to high abrasiveness but high crushability e.g. limestones, rubbles ● No unbreakable objects contained 	<p>Based on customer feedback:</p> <ul style="list-style-type: none"> ● Our 650CC blow bars span life can be 100%-115% of MAG <p>Xwin+Chrome blow bars</p>

Comparison with MAG

- Chrome + Ceramic Blow Bars



700 CX

MAG NeoX +Chrome

Qiming Casting	MAG	Application	Comparison
700CX	NeoX +Chrome	<ul style="list-style-type: none"> ● Secondary or tertiary crusher ● Feed size <300mm dia. ● High abrasiveness and low crushability, e.g. limestones with high silicon content, asphalts, granite, river gravels. ● No unbreakable objects contained 	<p>Based on customer feedback:</p> <ul style="list-style-type: none"> • Our 700CX blow bars span life can be 100%-115% of MAG Xwin+Chrome blow bars



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Experimental results under real working conditions

With the assistance of our German agent, we have found a user of high chrome ceramic blow bars in the German market who has tested our 650CC and 700CX blow bars.

Tests 700 CX vs 650 CC



650 CC Blow Bars After Use

Application	Crushing hard rocks, high hardness but low crushibility
Blow bars	Chrome + CC
Results	Ceramics scratched down, wear performance was not much improved

Tests 700 CX vs 650 CC



700 CX Blow Bars After Use

Application	Crushing hard rocks, high hardness but low crushability
Blow bars	Chrome + CX
Results	Ceramics stand out, wear performance was much better

Tests 700 CX vs 650 CC

CX Tested on site



	Crushed material	Feed size	Blow bar grade	by a set bars	Increase of wear life
# 1	Cubic shape High Silicon Limestones	Dia. 100-300mm	High chrome	80,000 tons	
# 1	Cubic shape High Silicon Limestones	Dia. 100-300mm	Chrome+CX	210,000 tons	162%
# 2	Cubic shape High Silicon Limestones	Dia. 300mm	High chrome	128 hrs	
# 2	Cubic shape High Silicon Limestones	Dia. 300mm	Chrome+CX	368 hrs	187%



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Side Liners and Impact Plates

Except for blow bars, Qiming Casting also develops new design for impact crusher side liners and impact plates to improve the working life and short downtime.

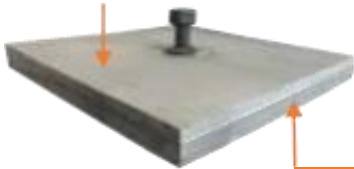
Bimetallic (Chromium Brazed Steel) Liner

An innovative solution of wear liner.

Wear life is 300% to 400% as long as the alloy steel liners.

Easier assembly with bolts pre-welded on.

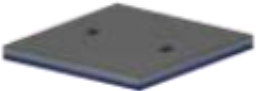

Mild Steel Backup



A whole piece of High Chrom

Hardness: HB700+

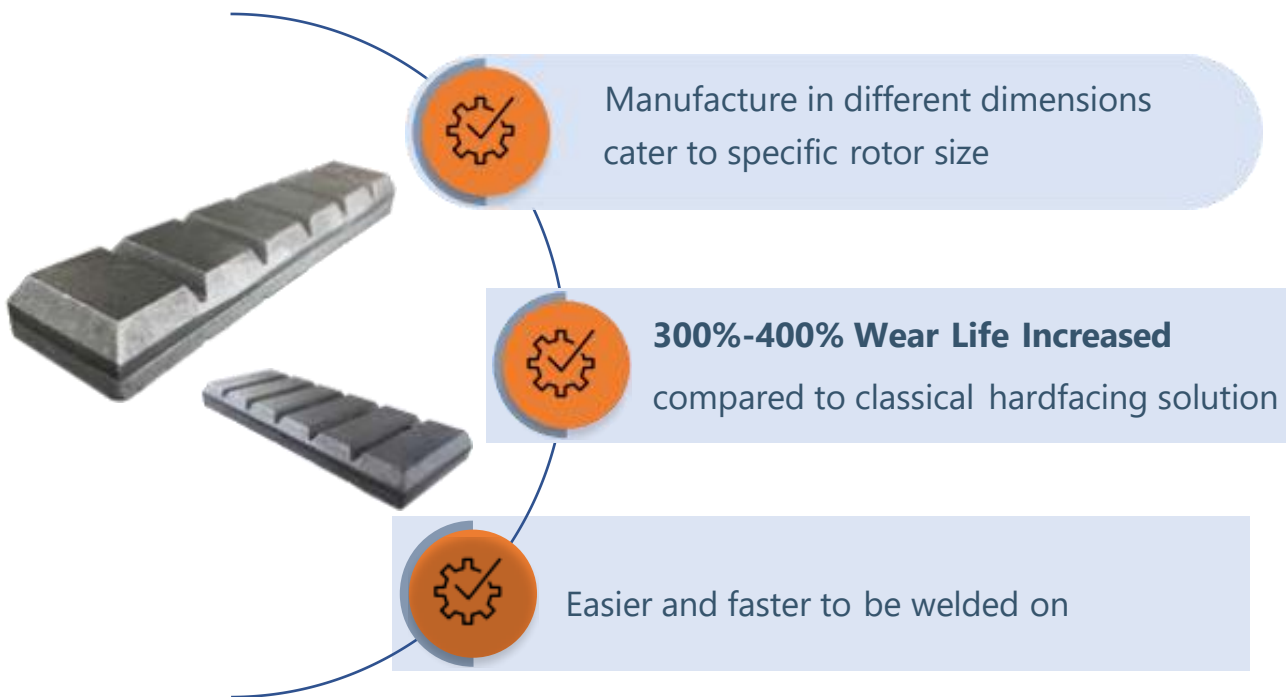


Parts	Code	Material	Hardness	Applications
 SIDE LINER	R50	Bimetallic	>700HB	High abrasiveness applications, Particularly at the rotor areas where the most abrasion happens.
 IMPACT PLATE	S200	Manganese steel	200-250HB	Large feed size low abrasiveness stones
	S550	Martensitic steel	500-550HB	Large to medium feed size low abrasiveness
	S550C	Martensitic +Ceramic	500-550HB	Small to medium feed size high abrasiveness
	C650	High chrome	600-650HB	Small feed size high abrasiveness without unbreakable objects



ROTOR PROTECTION LINER

Bimetallic (Chromium Brazed Steel) Chocky Bars



WEDGE & ACCESSORIES

Qiming Casting is able to provide the customized wedges and other accessories for impact crushers.





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- Address: No.2 Taixi Road, Jiangbei New Area, Nanjing City, Jiangsu Province, China
- Email: tomas@qimingmachinery.com
- Website: www.qimingcasting.com
- Whatsapp: +86 15251744209

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