SUNWILL
CAST WITH VALUE

BLOW BARS
FOR HORIZONTAL SHAFT IMPACT-HSI CRUSHER

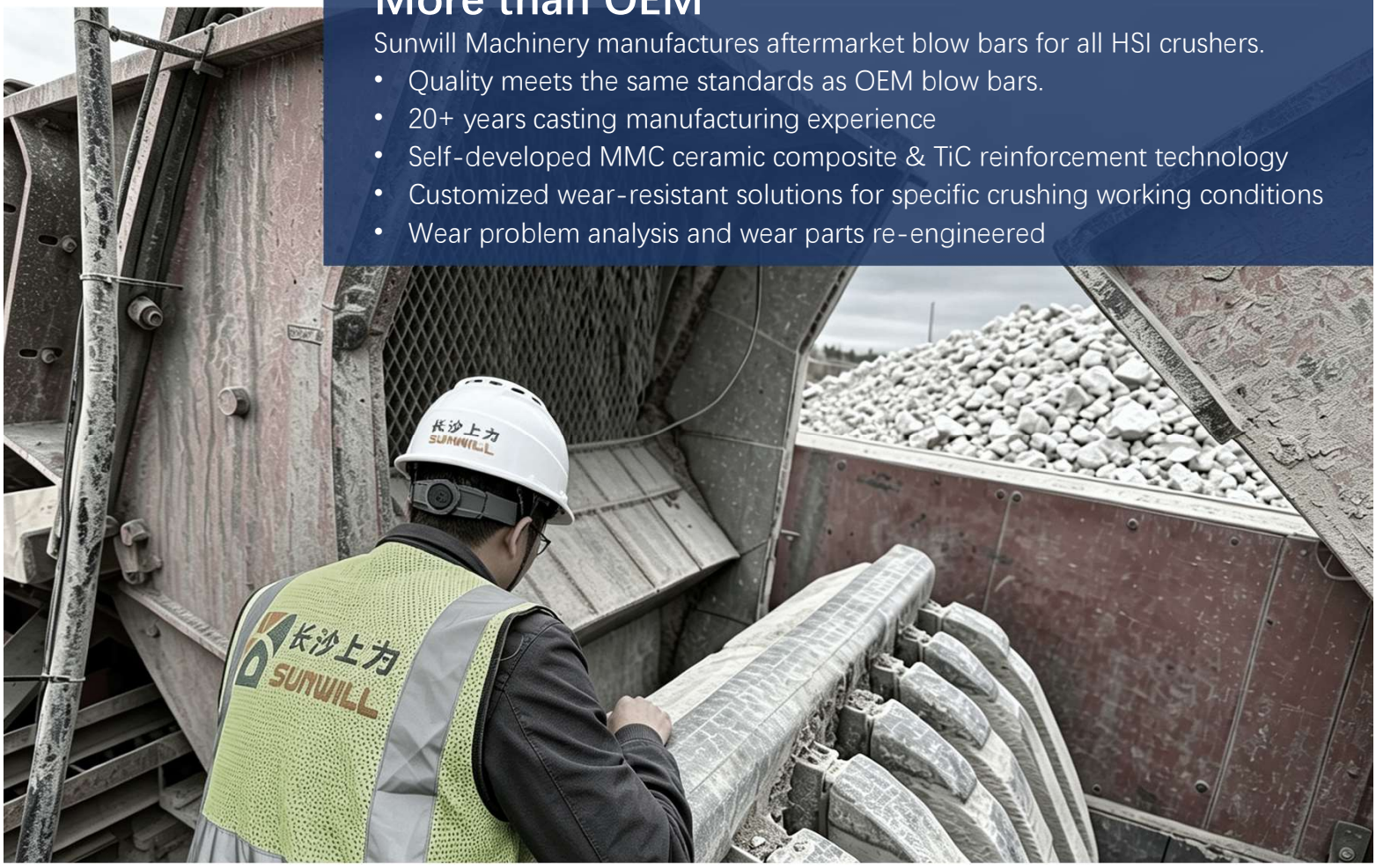
SUNWILL MACHINERY | Professional Aftermarket Wear Parts Manufacturer

www.sunwillmachinery.com

More than OEM

Sunwill Machinery manufactures aftermarket blow bars for all HSI crushers.

- Quality meets the same standards as OEM blow bars.
- 20+ years casting manufacturing experience
- Self-developed MMC ceramic composite & TiC reinforcement technology
- Customized wear-resistant solutions for specific crushing working conditions
- Wear problem analysis and wear parts re-engineered



MMC (Metal Matrix Composite) Blow Bar

MMC blow bars are manufactured using MMC casting technology, with ZTA (Zirconia Toughened Alumina) ceramics embedded in the wear areas of blow bar. They are also known as ceramic blow bar. Ceramic particles are processed into a honeycomb structure and embedded in the wear areas of blow bar. Each ceramic particle is impregnated with metal matrix. The ultra-hard ceramic significantly improves the wear resistance of blow bar, thus extending its service life. Typically, the service life of MMC blow bars can be up to twice that of ordinary blow bars and even longer in some applications.

High Chrome-Hard but brittle

High chrome is an alloy steel with a chromium content over 20% and a carbon content of approximately 3%. It possesses excellent wear resistance but poor impact resistance. Blow bars made of high-chrome are typically used in secondary or tertiary crushers for processing materials with small sizes. The more abrasive and smaller the size of feed, the better wear performance of the high chrome blow bars

High Chrome+Ceramic (MMC)

This is an upgraded wear-resistant solution based on high chrome blow bar. The ceramic significantly improves wear resistance in the wear areas and substantially extends service life. Under normal operating conditions, the service life of a High chrome+Ceramic blow bar is 2-3 times that of a standard High chrome blow bar.

Martensitic steel – Balanced Mechanical Properties.

Martensitic steel is an alloy steel with a martensitic microstructure, containing approximately 5% chromium and 4% carbon. It is also known as low-chrome steel. It is characterized by moderate wear resistance and impact resistance. Martensitic steel blow bars are commonly used in mobile crushers for crushing concrete, asphalt, or high chrome or high chrome/ceramic blow bars that cannot handle.

Martensitic+Ceramic.

This is an upgraded wear-resistant solution based on martensitic steel blow bar. Honeycomb shaped ceramics are embedded at the wear areas of martensitic steel blow bar. Wear life could be doubled or longer.

Manganese steel – The toughest but soft

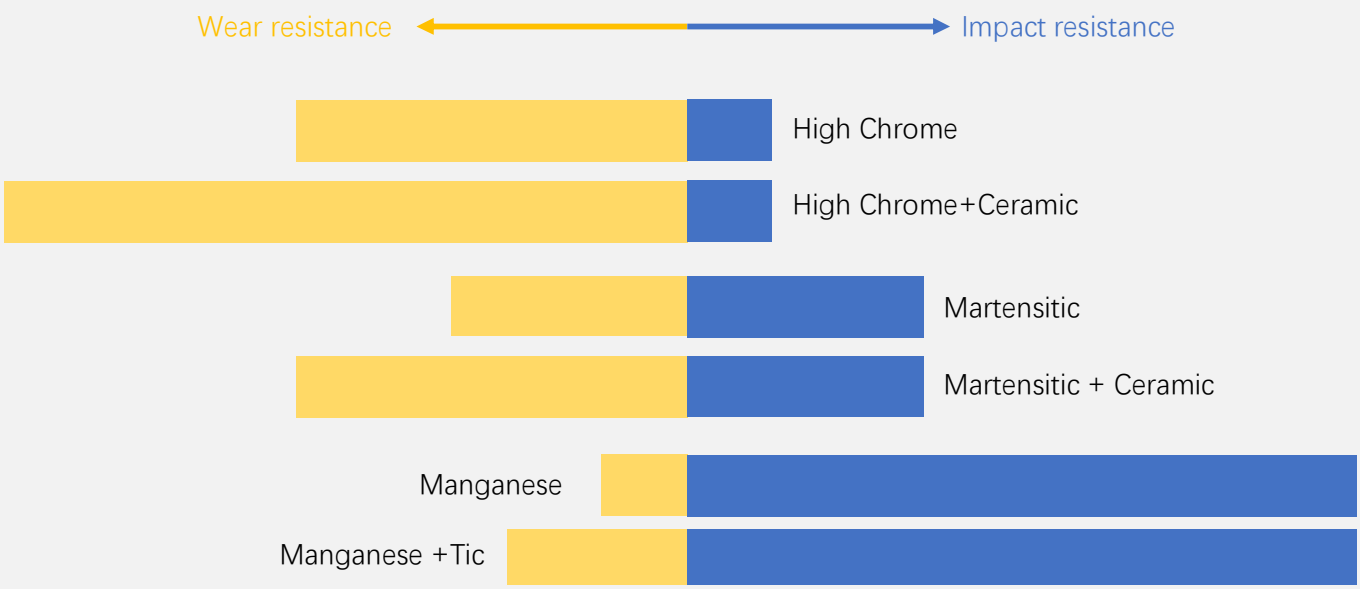
Manganese steel is an austenitic alloy steel with a manganese content over 13% and a carbon content of approximately 1%. Manganese steel is characterized by excellent impact resistance, but its wear resistance is inferior to that of chromium steel or martensitic steel. Manganese blow bars are commonly used in primary crushers for handling large materials. The most typical application is in crushing blasted limestones in cement plants and quarries.

Manganese +Tic (Titanium Carbide)

This is an upgraded wear-resistant solution based on manganese blow bar. Tic rods are inserted into the wear area of the manganese steel blow bar. The Tic rod is made of extremely hard titanium carbide. The Tic rods significantly improve the wear resistance of the manganese steel blow bar in the wear area. The service life of a manganese steel blow bar with Tic rods can be up to twice that of a regular manganese steel blow bar.

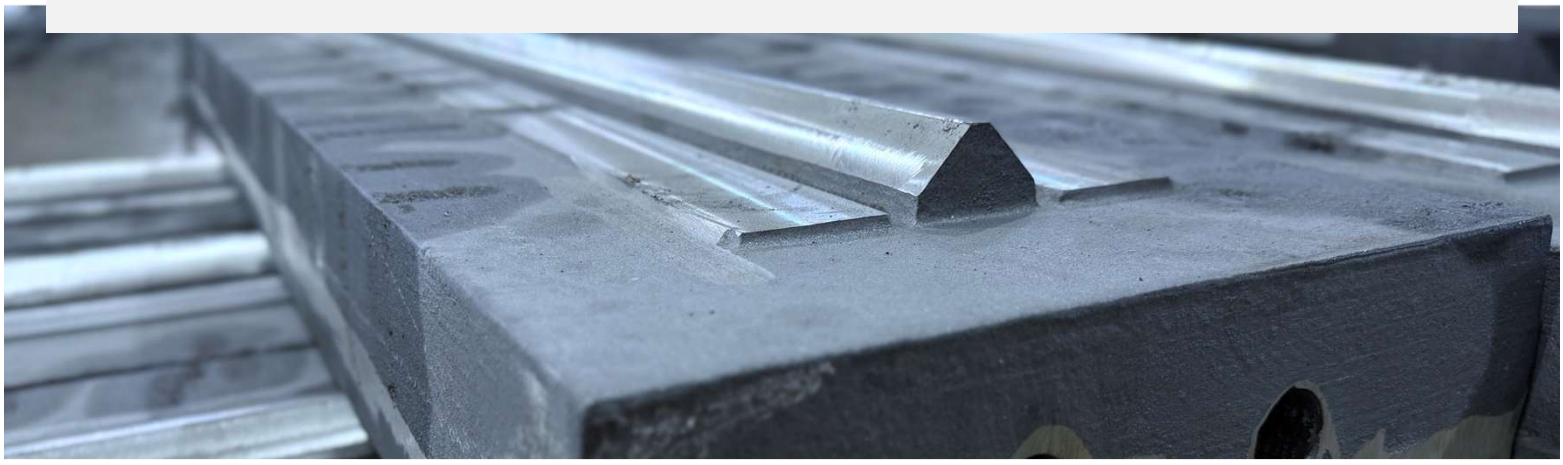
Material Technical Specifications

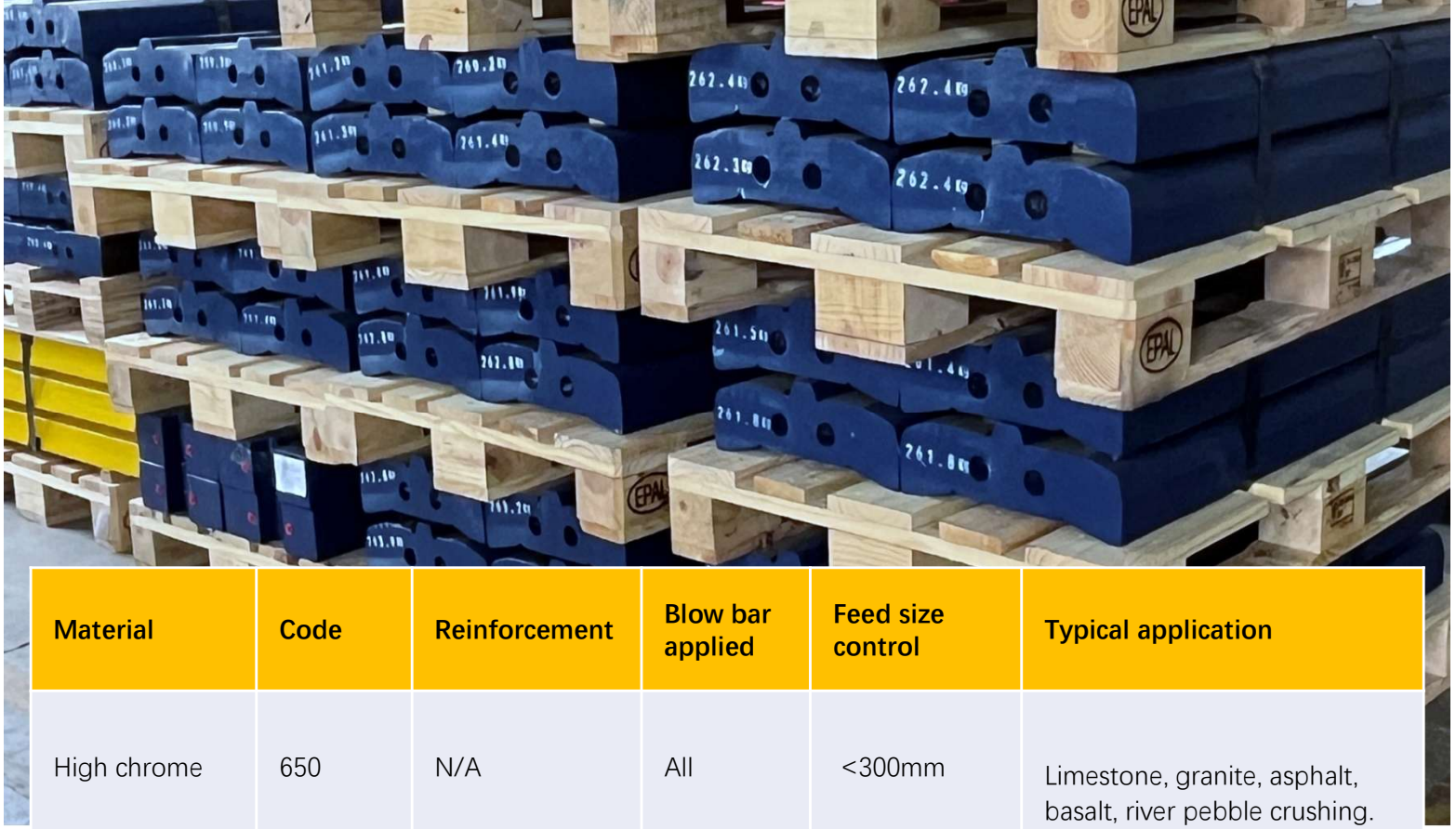
Blow bar Material	Main Composition	Hardness
High Chrome	Cr >20%, C >2.8%, Mo/Ni alloy	Matrix >60 HRC
High Chrome+Ceramic	Chrome base + ZTA ceramic honeycomb	Matrix >60 HRC / Ceramic >1400 HV
Martensitic	Cr >4%, C >3.5%, Mo/Ni alloy	Matrix >53 HRC
Martensitic+Ceramic	Martensitic base + ZTA ceramic honeycomb	Matrix >53 HRC / Ceramic >1400 HV
Manganese	Mn >13%, C >1%	>250 HB
Manganese+TiC	Manganese base + TiC carbide rods	Matrix >250 HB / TiC >63 HRC



Note:

- Ceramic (MMC) or Tic rod doesn't make a difference on impact resistance of base matrix but significantly increase the wear resistance performance (wear life) of blow bar.
- No single material is suitable for all applications. The ideal material should be resistant to breakage and wear as slowly as possible.
- While ceramic (MMC) or Tic blow bars are more expensive, their slower wear rate contributes to lower operation cost per ton and less downtime for replacements.





Material	Code	Reinforcement	Blow bar applied	Feed size control	Typical application
High chrome	650	N/A	All	<300mm	Limestone, granite, asphalt, basalt, river pebble crushing. Please keep us advised when crush river pebbles to adjust for better performance.
High chrome+ Ceramic	650C	C-type ceramic	Height >60mm	<300mm	
High chrome+ Ceramic	700CX	X-type ceramic	Height >60mm	<300mm	Extremely abrasive stones eg. high silicon rocks
Martensitic	550	N/A	All	<600mm	Concrete recycling, limestone crushing quarry.
Martensitic+ Ceramic	550MC	C-type ceramic	Height >60mm	<600mm	
Martensitic+ Ceramic	550MC+	C-type ceramic	Height >100mm	<400mm	
Manganese	200MN	N/A	All	Not limited	Blasted limestone crushing in quarry
Manganese + Tic	200MNTI	Tic carbide rod	Height >60mm	Not limited	

In addition to the options above, Sunwill also offers customized solutions, which can be tailored to meet customers' needs for optimal wear resistance in specific crushing applications by adjusting the specifications of the matrix material or specially designed ceramic structures..

HOW TO SELECT THE RIGHT BLOW BAR MATERIAL?

An appropriate material for the blow bar must first ensure that it will not break under working conditions. This also means the blow bar material must be tough enough to withstand crushing conditions.
The risk of breakage should always be considered before considering wear life, and then a material with better wear performance should be selected.
For example, chrome blow bars are generally not suitable for primary crushers because they are brittle and prone to breakage even with excellent wear performance.

The following are factors to consider when selecting a suitable blow bar material.

- Feed material type (limestone, granite, concrete, river pebble etc.)
- Maximum feed size
- Risk of tramp iron/unbreakable objects
- Current failure problem (premature wear/frequent breakage)

If you are unsure which material to choose, please send us these 4 info for professional recommendation

WHAT ARE COMMON FAILURES OF BLOW BARS & WHAT ARE THE CAUSES?

■ **Failure: Breakage & Possible causes:**

- Mismatched blow bar material for excessive impact from feed material
- Oversized feed will impose excessive impact on blow bar, may cause to break at the edges or even shatter.
- Unbreakable feed like excavator teeth, impact plates or liners can break the blow bars.
- Poorly designed blow bar with very thin wear face may occasionally break, or blow bar with thin waist may also break when approaches end of lifespan.
- Inferior-quality blow bar with original defects like crack or substandard toughness is more prone to break.

■ **Failed fitment & Possible causes:**

- Rotor is severely worn out.
- Incorrect or unprecise blow bar installation dimensions.

■ **Premature wear life & Possible causes:**

- Mismatched blow bar material for abrasiveness of feed material.
- Inferior casting with internal defects & weak ceramic bonding.
- Improper rotor speed and apron gap adjustment may lead to excessive wear on blow bars
- High water content of raw material accelerates abrasion
- Uneven feeding leads to unilateral heavy wear

Technical Support & Custom Solution

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