

Wuhan Jianheng Metal Technology is professional supplier of wear parts, and our products are widely used in mining, construction, chemicals, power, metallurgy, recycling and other industries. Main material including manganese steel, chromium iron, alloy steel and some composite materials by special process.

The single piece weight range of our present wear castings:

Manganese steel casting:  $\leq 10000\text{kg}$

Chrome iron:  $\leq 8000\text{kg}$

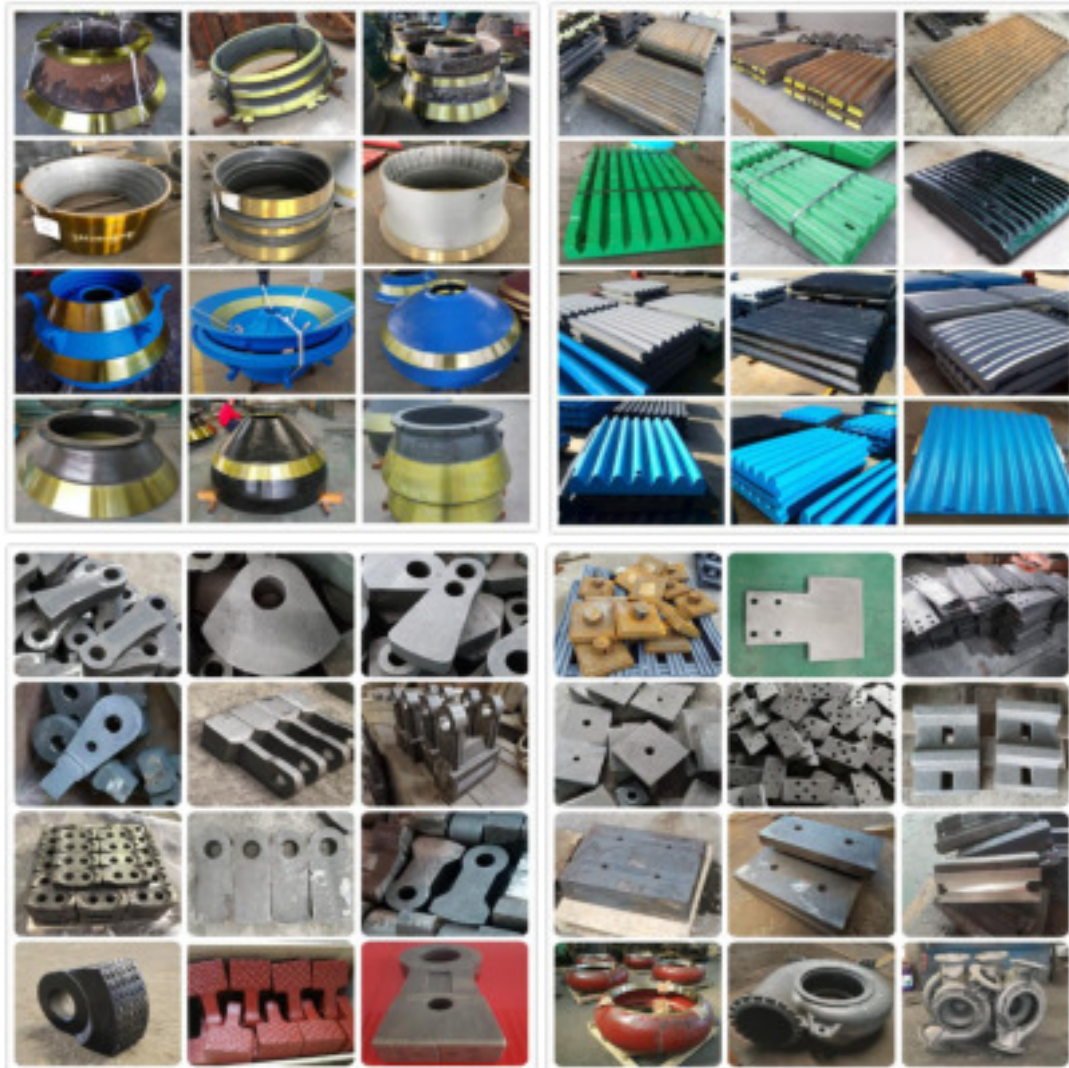
Alloy steel:  $\leq 6000\text{kg}$

Bi-metal material:  $\leq 200\text{kg}$

The material range of our present wear castings:

Manganese steel	Mn13Cr2, Mn18Cr2, Mn21Cr2, others;
Chrome iron	26%Cr, 20%Cr, others;
Alloy steel	CrMo serious, CrMoNi serious;
Bi-metal material	Carbon steel with chrome iron, alloy steel with chrome iron;

Typical products photo:





## 1. Production process for wear parts

### 1.1 Production process

(1) Sodium silica sand casting process: bigger size castings such as cone, jaw plate, blow bar, hammer and others; it is most common and mature production process for wear resistant castings.

(2) Lost foam process: smaller castings usually less than 50kg per piece; typical castings such as small hammer, wear plate; this process have nice casting surface quality with lower production cost.

(3) Vacuum process: jaw, blow bar, hammers, excellent casting surface finish with high dimensional accuracy;

(4) Shell molding process: for some small castings which have good quantity and high dimensional requirement or weight tolerance;

(5) Resin sand casting process: similar castings as sodium silica sand process, but have better casting finish;



## 2. Main production facilities

### 2.1 Melting

6-Ton induction melting furnace

4-Ton induction melting furnace

2-Ton induction melting furnace



### 2.2 Heat treatment furnace

Automatic trolley type heat treatment furnace;

3.4\*2.3\*1.8 meters heat treatment furnace;

2.2\*1.2\*1 meters heat treatment furnace;



### 3. Machining facilities

- 1.60m vertical lathe
- 2.00m vertical lathe
- 2.50m CNC vertical lathe
- 3.15m CNC vertical lathe
- 2.6m milling machine
- 2m\*6m plano miller



### 4. Inspection ability

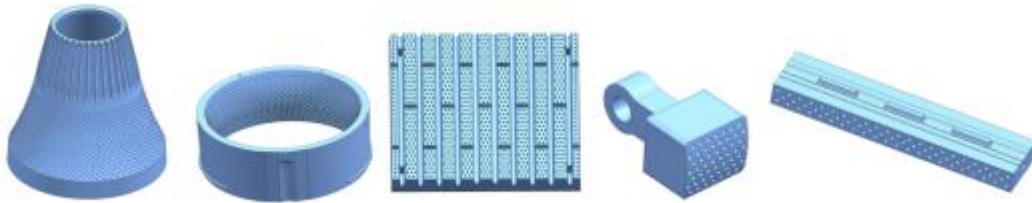
- 4.1 Chemical composition
- 4.2 Dimensional inspection
- 4.3 Mechanical properties
- 4.4 Metallographic test
- 4.5 UT/PT/MT/X-ray



## 5. New technology

### 5.1 Castings composite with TiC insert

TiC alloy insert have good performance and wear resistance. Through special process design and production technology, TiC alloy insert are applied as insert to the wear surface of high manganese steel castings and high chromium iron castings, such as cones, jaw plates, blow bars, hammers and other products. By this method, the insert can significantly enhance the plasticity and impact strength of the reinforced surface, effectively reduce the wear of the high manganese steel casting or high chromium casting matrix, and increase the service life of the wear-resistant parts to about 1.5 to 2 times.



### 5.2 Ceramic composite blow bar and roller

Ceramic composite products is another successful case for some products, especially for hammers, blow bars and vertical rollers. Now most of the base material for us is chrome iron, by special process we put ceramic insert into base material. When products working, the ceramic particle will work as main wear material to get very slow wear loss due to it's hardness. Thus the wear life of products also greatly improved.

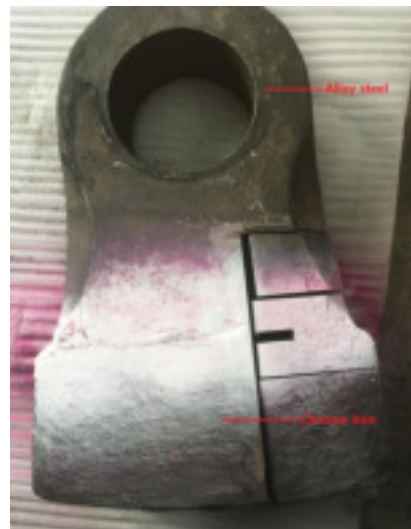


There have some very successful case in some of our cement customers. They use such hammers to break limestone, the most successful case have 1/4 wear rate than their normal hammers, that means for same quantity hammers, the out put is 4 time than normal products, which is great improvement.

### 5.3 Bi-metal hammer and wear plate

By composite different alloy materials together, we can make full use of the performance characteristics of different materials to meet the requirements of different properties of products. Till now, we have got successful on bi-metal hammer and bi-metal plates.

The hammer handle is made by carbon steel or alloy steel, which have lower hardness but have good tenacity. The head part is made by chrome iron material which have high hardness with good wear performance. By such design, we get both good



tenacity and good wear performance on one casting, and the wear life is also greatly improved. Now best success case have got twice working life than their manganese steel hammers.

Bi-metal wear plate have same design, and similar wear performance when customers use them. Now such plates already have good quantity orders.

#### **5.4 Alloy steel plate**

Alloy steel material is been widely used to replace manganese steel materials for many machines, such as ball mill, coal mill and some others. The principle is to use alloy steel replace manganese steel plate which don't have high impact situations. Due to good hardness and tenacity, such wear plate have much longer working life than normal manganese steel materials. Following are some successful products:



#### **5.5 Alloy steel concave & mantle**

Traditional concave and mantles are made by manganese steel which have obvious harden after impact. For some machines under low impact conditions, use some alloy steel to replace manganese concave and mantle will have better wear life. Till now, we have produced some CrMoV steel concave and mantles for our customers, getting good performance than manganese steel material. For more information please contact with our technique team, and we would like to work with you to explore better wear solutions.