Qiming Machinery VSI Crushers

Wear Parts Application Guide

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Vertical Shaft Impactor (VSI) Crusher Wear Parts

Qiming Machinery offers Vertical Shaft Impactor (VSI) wear parts, including shoes and anvils, for most makes and models. Our VSI parts are made with typical alloys as well as specialty alloys. CWP parts ensure long wear life and consistent quality. This means lower operating costs, less down time for machine maintenance, and a more predictable wear life.

Maximize your VSI crusher's efficiency, availability and longevity

Qiming Machinery's vertical impact crusher wear parts are produced and manufactured with strict standards to meet the needs of the client in the mining and aggregates industry. Our VSI crusher wear parts are weighted and balanced before every delivery to the client.

Qiming Machinery Offers following VSI crusher wear parts :

- Liner plates
- Tip sets
- Distributor plates
- Wear plates
- Anvils
- Rotor Tips

Benefits

Qiming Machinery wear parts increase VSI crusher availability through:

- Increased wear life
- Reduced on-going wear part maintenance
- Minimize downtime and withstand the harshest wear environments

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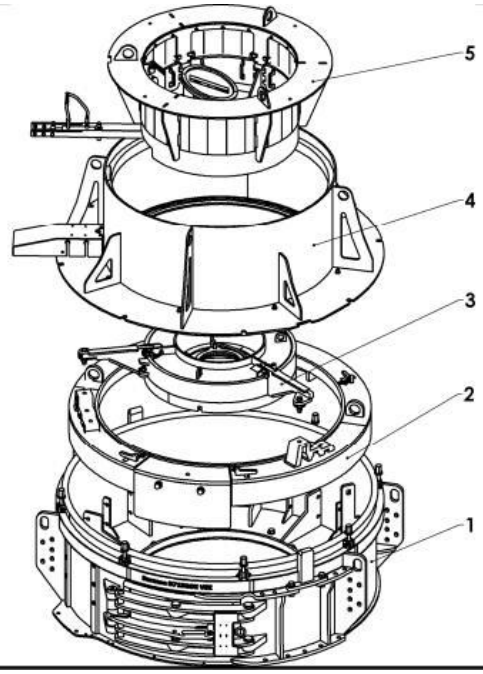
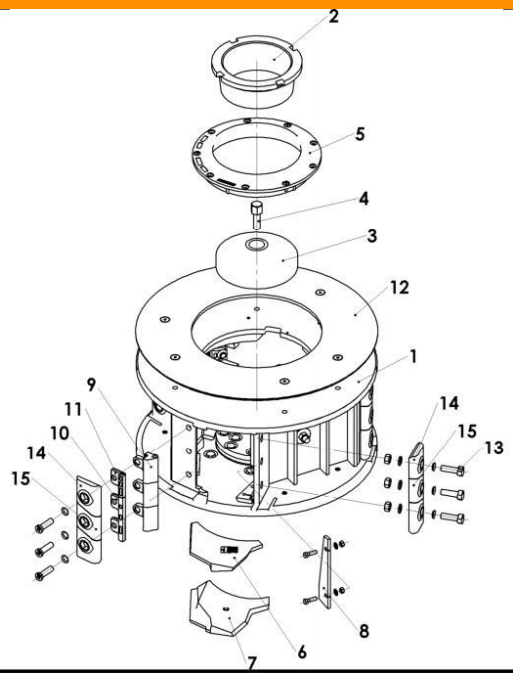
Vertical Shaft Impactor Crusher Structure



1. Crusher Element
2. Cavity Ring Assembly
3. Spider Assembly
4. Roof
5. Hopper Assembly

Vertical Shaft Impactor Crusher Rotor Assembly



1. Rotor
2. Feed Tube
3. Distributor
4. Screw, Hexagonal
5. Feed Ring
6. Wear Plates
7. Wear Plates
8. Trail Plates
9. Tip
10. Backup Tip Set
11. Backup Tip Set
12. Wear Plates
13. Bolt Set
14. Wear Plates
15. Wear Plates

The wear parts for VSI crusher are contained both within and on the outer surfaces of the rotor. Different parts have material technology to resist either impact or abrasive wear. Selection of the correct wear parts for the application required is fundamental to ensure the desired performance. Parts must be chosen according to the feed material characteristics of abrasiveness and crushability, Feed size and Rotor speed to suit the product requirements. In using rock-on-rock VSI equipment it is essential that wear

parts allow stone beds to form to prevent wear on steelwork and exposed edges of the rotor. It is important to choose material that under normal operating conditions offers the best performance.

Rotor Tips

Rotor tips are the mainly replacement wear parts in vsi crusher. Qiming Machinery offers hard tungsten rotor tips for our customers. We have different sizes tungsten rotor tips to suit different customer inquiries.

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
103	13	23	Strip	1*45°	447	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
160	13	13	Strip	1*45°	700	
80	13	13	Strip	1*45°	350	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
198	15	23	Strip	1*45°	1000	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
220	15	23	Bottom Strip	1*45°	980	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
189	15	23	Bottom Strip	1*45°	840	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
145	13	23	Bottom Strip	1*45°	630	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
195	13	27	ARC	1*45°	840	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
189	13	23	Bottom Strip	1*45°	720	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
183	15	23	Bottom Strip	1*45°	794	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
108	13	23	Strip	1*45°	480	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
190	18	25	Strip	1*45°	1290	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
105	13	23	Strip	1*45°	455	

VSI Crusher Rotor Tips Tungsten Bars Size(mm)						
Long	Wide	High	Shape S	Chamfer	Weight (g)	
95	13	23	Strip	1*45°	415	

Back-up Tip

The back-up tip is designed to protect the rotor if and when a rotor tip gets broken or worn out. When this happens the Tungsten insert in the rotor tip has split and is now letting feed material run against the Tungsten insert of the back-up tip. The back-up tip has a small Tungsten insert in it that will last for about 8 -10 hours of wear in normal operation. If this backup is broken again, or it wears out then the feed material can seriously damage the rotor due to abrasion. The back-up tip is positioned behind the Rotor Tip and the Tip Cavity Wear plate on the outside edge of the rotor.

- Some competitors do not offer this wear part, so if their rotor tips break, they have no protection for their rotor against serious damage
- There is one back-up tip for every tip on a dressed rotor (one line per port)
- There are no options for different wear materials for this wear part

Tip / Cavity Wear Plates

Tip / Cavity Wear plates are designed to protect the outside edges of the rotor against excited particles in the crushing chamber. As the rotor spins, it impacts against particles that have rebounded from the chamber build-up after their initial exit from the rotor. As the TCWP are the furthest wear part from the centre, and on the leading faces of the rotor, then they are most susceptible to this type of wear.

These parts are positioned in two places on the rotor, firstly they are put on top of the Rotor tips to protect the vulnerable areas of the parts, and secondly on the other side of the rotor port to protect this leading edge from wearing away and compromising the rotors efficiency.

Upper and lower Wear Plates

These wear plates are designed to protect the upper and lower faces of the inside of the rotor from the feed material as it passes through the rotor (the material build-up protects the sides).

Wear plates are kept in place using the centrifugal force of the rotor as it is spinning, there are no nuts and bolts, only some clips for the plates to slide under. This makes them easy to change and remove.

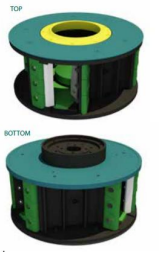
The lower wear plates generally wear more than the upper wear plates due to under utilisation of the rotors maximum throughput and the use of an incorrectly shaped trail plate.

Distributor plate

The Distributor plate is designed to protect the plate that joins the Rotor, Rotor Boss and Shaft together from feed material falling into the rotor from the hopper.

This part is subject to wear from both the feed material falling onto it (impact) and it also being “distributed” to the three ports in the rotor (abrasive).
It is attached to the rotor using one bolt that screws into the top of the shaft.
(HELPFUL TIP) - This bolthole must be protected by stuffing a cloth in the hole and either letting stone build up on top of the cloth to protect it, or filling the gap with silicone. This must be done, or it can be very difficult to remove the bolt when needed.
The distributor is the wear part that receives the most impact wear, and will normally wear out the fastest in standard applications. There is only 1 distributor plate in each dressed rotor.

Top and bottom wear plates



The Top and Bottom wear plate are designed to protect the top and bottom outside surfaces of the rotor.
The top surface can get worn when the feed tube and feed eye ring are worn letting material though the gap created in the rotor feed opening.
The bottom surface can get worn when material build-up in the crusher base becomes excessive and starts pushing upwards against the rotor.

Feed Tube

The Feed tube and Feed eye ring are designed to guide the feed material into the rotor after it has been through the hopper.

The Feed tube is subject to high abrasive wear as all of the feed material going through the rotor will pass through it.
The Feed tube is secured into the Spider assembly of the crusher using a clamp plate and spring handle. This does not spin.
In some rotors there are different feed tubes for high and low through puts, the low throughput option has a smaller opening into the Rotor.

When To Change VSI Crusher Wear Parts

ROTOR TIPS

Rotor tips must be checked to determine the amount of wear on the inserts. Tips need to be replaced once 95% of the insert has been removed at the centre of the wear. **T**he back- up tip assembly will protect the rotor body from damage**,** therefore a tip in this condition could be run for another shift. Experience will help the operator understand the wear performance of the tip.

Ensure that the rotor tips are tightly held and not broken, cracked or badly chipped.

TIP/CAVITY WEAR PLATES

Initially, the tip/cavity wear plates may wear quickly until they reach a certain profile governed by the application. This is quite normal and should not cause concern.

Tip/cavity wear plates must be inspected for wear and be replaced when there is doubt they will last another shift, or as soon as wear appears on the top of the bolt head. Replace tip/cavity wear plates which have cracked. Check that tip/cavity wear plates are not loose.

BACK-UP TIPS

In normal operation the back-up tip should be unused and in many cases is not visible (depending on rotor tip and tip/cavity wear plate style used).

UPPER AND LOWER WEAR PLATES

Replace upper and lower wear plates when it is obvious that they will not last another shift. Replace once there is less than 3-5 mm. of plate remaining at the centre of the wear path at the discharge edge or inside edge.

DISTRIBUTOR PLATE

The distributor plate wears in three places, opposite each rotor port.

Turn the distributor plate 1/6th of a turn when partly worn to ensure maximum usage.

Replace distributor plate once the bolt head starts to wear or once there is only 3-5mm of casting left at the thinnest point.

FEED EYE RING

Wear on the feed eye ring is largely determined by the material flow from the feed tube. Thus as the feed tube wears the feed eye ring will be exposed to more wear.
To minimise the wear of the feed eye ring it is essential to maintain the feed tube in the correct position.

FEED TUBE

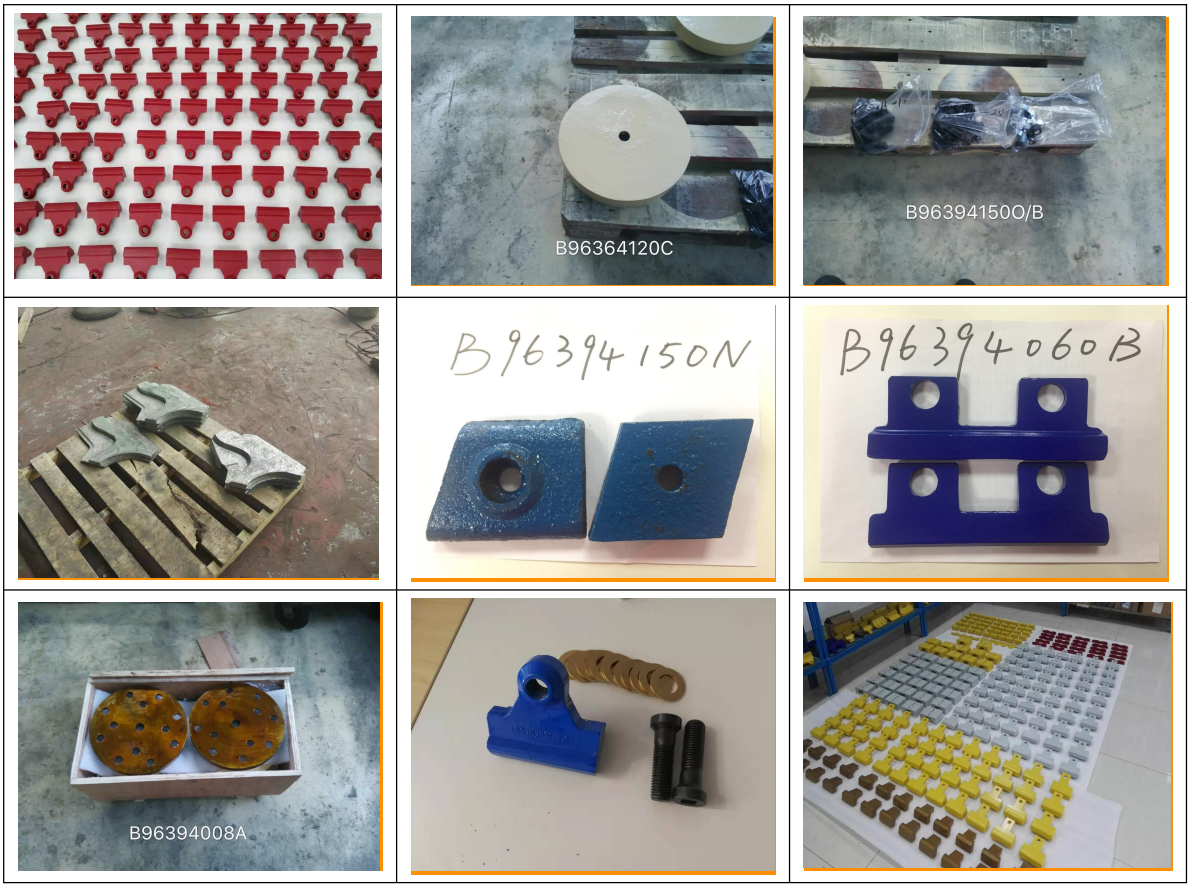
Replace feed tube just before the bottom lip is exposed above the feed eye ring. The feed tube should wear evenly up the casting.

TRAIL PLATES

Check trail plates for wear. Replace if badly worn or rotor build-up needs adjusting.
In some applications, trail plates are changed at the same time as the rotor tips – just to keep the stone bed profile constant. Regular change of trail plates maximises rotor tip life and is often very cost effective.

Feature Products & Contact Info

Feature Products



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