

# 陶瓷金属复合立磨辊套及碾底衬板技术介绍

## vertical mill roller & pan technology introduction

一般LM，ZGM，HP和CKP立磨的辊子及衬板，一般原设备制造商均采用高Cr合金铸造，其断裂的危险较大，耐磨寿命自然较低。针对这一情况，DJM选用高铬（或马氏体钢）陶瓷复合铸造工艺，即衬板的基体采用塑性马氏体钢或高铬铸铁，其有一定的弹性伸长，因而具有抗断裂的完全安全性，同时在基体上嵌铸具有高耐磨性的陶瓷加强筋，因而大大提高衬板的耐磨性。陶瓷复合材料衬板的寿命与一般高铬衬板相比，寿命可大幅提高。

DJM choose High Cr cast iron(or Martensite steel) base ceramic composite materials, which is the liner basement with High Cr cast iron(or Martensite steel), it has better elongation, thus has completely safety of resistance to fracture and embed high wear resistance of ceramic reinforcement into the basement, to get great improvement wear resistance. The life of the ceramic composite liner, compared with common High Cr liner, the product life has been greatly improved.

# 陶瓷金属复合立磨配件

Metal ceramic composite vertical mill spare parts



# 陶瓷金属复合立磨配件

Metal ceramic composite vertical mill spare parts



Roller

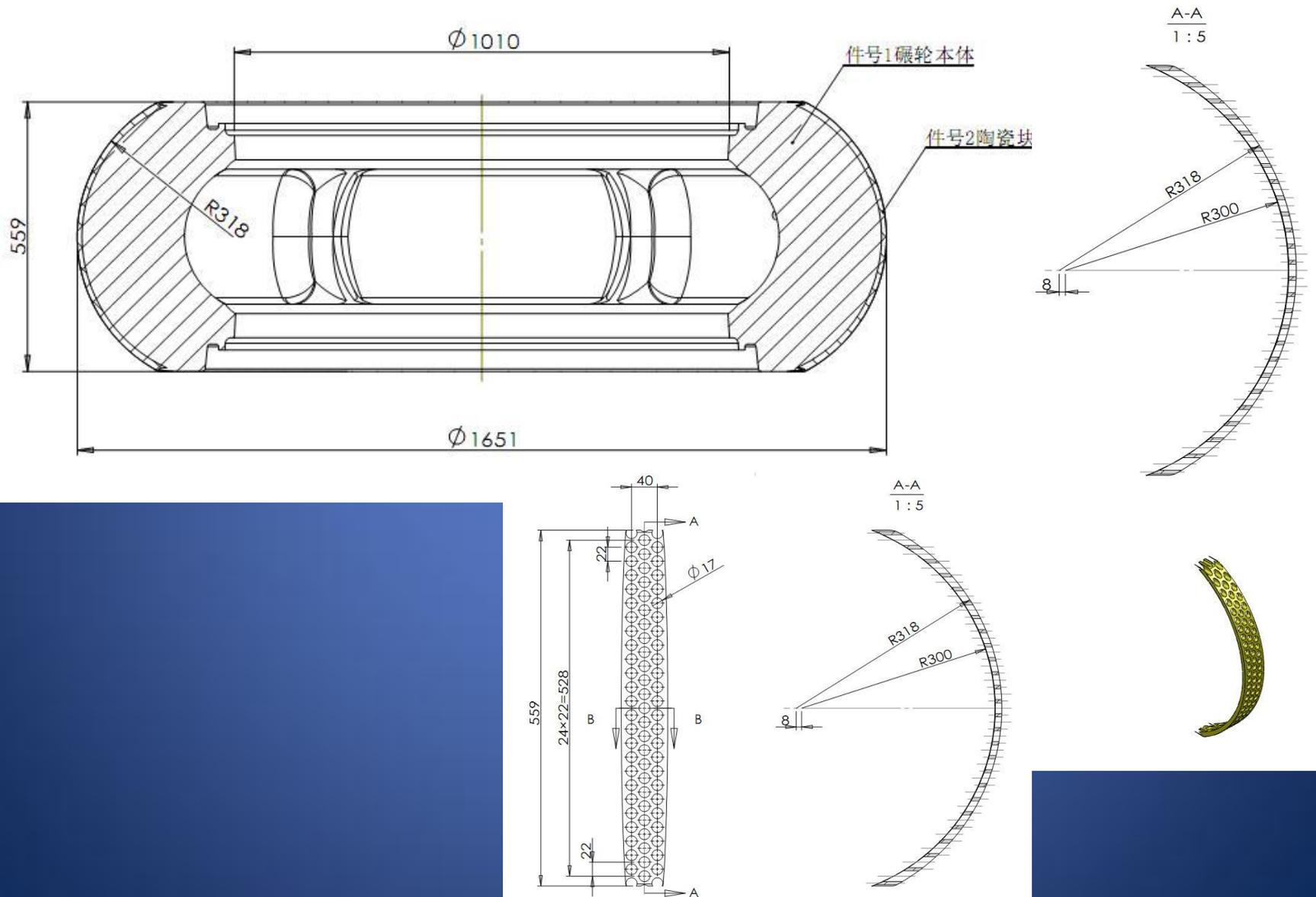


Mill Pan



# 辊套陶瓷结构图

## Structure drawing of Ceramic on roller



# 碾底衬板外观图

## Partial enlargement of appearance

附图-3-2 高铬陶瓷复合 ZGM 衬板外观图

Picture 3-2 Metal Ceramic Composite Liner (ZGM Liner of High Cr cast iron +ZTA ceramic)





# 陶瓷金属复合立磨导向板技术介绍

## vertical mill guide plate technology introduction

- DJM chooses high-chrome cast iron (or martensite steel) ceramic composite material to make the pulverizer guide plate: in the high chromium cast iron (or martensite steel) material embedded ceramic particles on the surface to form ceramic metal composite material layer, the wear resistance of the composite layer can be improved greatly than the high Cr material, and the thickness of the composite layer can be made 1/3 of the thickness of the original part and can be produced according to the original wear curve. The particles are cracked and confined to the particles themselves without extending to the substrate, resulting in high wear and impact resistance. The average wear and tear (wear depth) of the metal ceramic vertical grinding plate is 0.5-2mm per 1000 hours, and the ceramic guide plate is greatly improved than high chromium product.
- High Cr cast iron + ZTA ceramic particles
- Martensite steel + ZTA ceramic particles

# 陶瓷金属复合立磨导向板外观图

## Partial enlargement of appearance

附图-4-1 陶瓷复合导向板局部放大图

Picture 4-1 partial enlargement of Guide plate



附图-4-2 陶瓷复合导向板外观图

Picture 4-2 external view



# Vertical mill rotating ring& static ring technology introduction

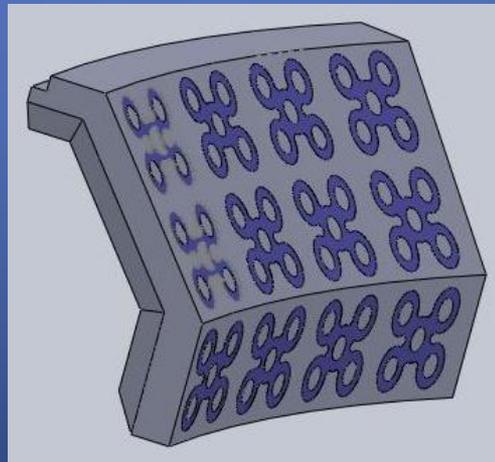
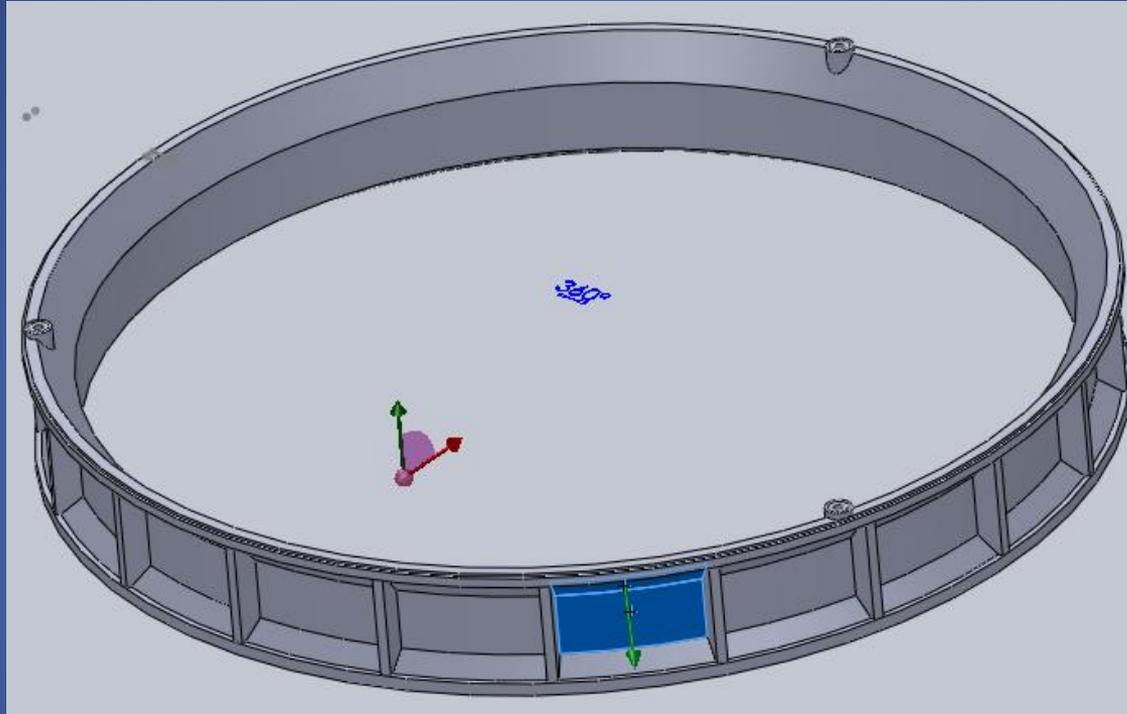
Pulverized coal rotating ring& static ring are more used 50Mn2 for casting production, high-speed rotation of the nozzle ring once the card or gangue block on the static ring with strong wipe, 280 °C high-speed hot air mixed the coal powder does not stop and produce a strong impact to the static and dynamic ring, sustained high temperature and strong scouring have a great influence on the static and dynamic ring.

- The program-1, DJM uses the martensite steel composite casting technology, according to the dynamic and static ring base material characteristics and wear curve to produce the track-like martensite steel composite wear plate, with the wear plate welded static and dynamic ring wear place, so that the dynamic and static ring upgrade to martensite steel, the dynamic and static ring life has been greatly improved than the original carbon steel products after the transformation.
- The program-2, DJM uses the martensite steel ceramic composite casting technology, according to the dynamic and static ring base material characteristics and wear curve, and put the ceramic particles into the wear position of the surface to form ceramic composite material layer, the wear resistance this layer is up to 3 to 4 times than the high Cr material, while the thickness of this composite layer can be made to 1/3 thickness of the original spare parts, and obtain high wear and impact resistance. The dynamic and static ring life life has been greatly improved than the original carbon steel products.



# 陶瓷金属复合立磨静环陶瓷外观图

## Ceramic structure in static ring



# 陶瓷金属复合立磨动环陶瓷外观图

Ceramic structure in rotating ring

