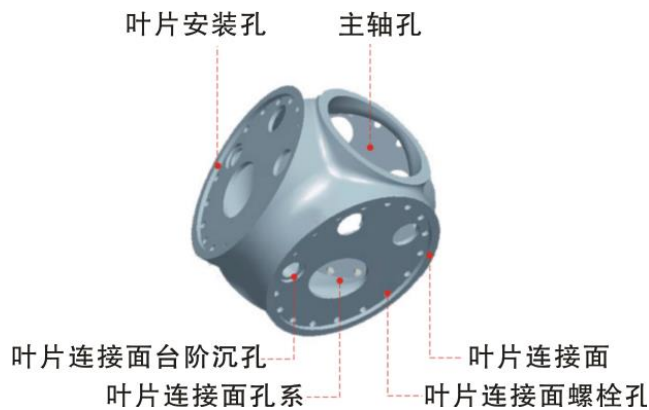


风电轮毂 Wheel Hub of Wind power

轮毂是风电机组重要的零部件之一，其结构和受力变形复杂，它将直接影响到风力发电机组的正常运行和使用寿命。因此它具有强度高、可靠性好、疲劳寿命长、吸振性强等特性，以满足-40~-20℃的使用工况。常见的材质为铸态低温高冲击韧性球铁。轮毂的主要机加工类型为铣削、镗削和钻削。

Wheel hub is one of the important parts of wind turbines, with complex structure and stress deformation. It directly affects the operation and service life of the wind turbine, so it requires high strength, good reliability, long fatigue life and strong vibration absorption so as to meet the working condition from -40 to -20 °C. It is often made of as-cast ductile iron with low temperature and high impact toughness. The major types of wheel hub machining are milling, boring and drilling.



叶片安装孔: mounting hole of blade

主轴孔: main shaft hole

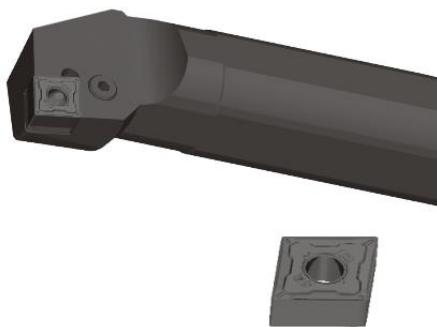
叶片连接面台阶沉孔 step counter hole on joint surface of blade

叶片连见面孔系 holes on joint surface of blade

叶片连见面 joint surface of blade

叶片连见面螺栓孔 bolt holes on joint surface of blade

车削主轴孔-----内孔车刀 Turning main shaft hole—internal turning tool



在立车上使用杠杆式内孔车刀加工主轴孔可大大提高加工效率；
新一代铸铁加工刀片材质----YBD 系列，提高了球墨铸铁的切削效率，刀片寿命高且更加安全可靠。修光刃刀片在不牺牲表面质量的情况下大大提高精车的效率。

The use of internal hole turning tool on the vertical lathe for main shaft hole can greatly improve machining efficiency. A new generation of cast iron insert material -- -- YBD series, improve the cutting efficiency of nodular cast iron, with long service life of inserts and improved safety and reliability. Inserts with wiper can greatly improve finish turning without sacrificing surface quality.

粗铣叶片连接面-----FMP03 面铣刀

Rough milling blade joint surface -- -- -- -- -- FMP03 face milling cutter



刀片前刀面特殊的曲面设计，有效降低切削力，可采用大进给，加工效率高；
刀片立装，适应大切深重载加工，能快速去除工件毛坯余量，提高粗加工效率；
主偏角为 90 度，可进行方肩铣削。

Special design of curved rake face effectively reduces cutting force and can be applied at high feed, with high machining efficiency;
Vertically mounted inserts, suitable for large cutting depth and heavy duty machining, can quickly remove the excess material of workpiece blank, improve the efficiency of rough machining;
Entering angle is 90 degrees, suitable for square shoulder milling.

精铣叶片连接面-----FMP02 面铣刀

Finish milling blade joint surface -- -- -- -- -- FMP02 face milling cutter



主偏角为 90 度，可进行方肩铣削，加工精度高。

Entering angle is 90 degrees. This cutter can be applied for square shoulder milling with high precision.

铣削叶片安装孔-----HMP01 螺旋立铣刀

Milling blade mounting hole - HMP01 helical end mill



刃口安全性和锋利性平衡的设计理念，在大切深工况下，切削力平稳，刀具安全性高；

The design concept of balancing edge security and sharpness ensures smooth cutting force is smooth and high safety under large cutting depth.

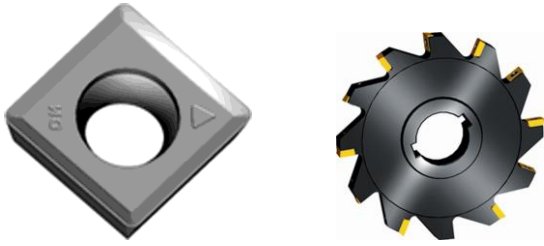
镗削叶片连接面孔系 Boring blade joint face system

全新镗刀系统，包括模块式镗刀、模块式数显精镗刀、大直径镗刀等，镗孔范围广，适用于多种材质的各种粗镗、精镗加工。

New boring cutter system includes modular boring cutter, modular digital display boring cutter, large diameter boring cutter, with wide boring range, suitable for all sorts of rough and fine boring in a variety of materials.

插补反铣叶片连接面台阶沉孔-----三面刃铣刀

Interpolation reverse milling blade joint face step counterboring ---
face and side milling cutter



既可加工内槽，还能背面反铣；

Can be applied for internal grooving as well as reverse milling.

钻叶片连接面螺栓孔-----ZTD 系列浅孔钻

Drill blade joint face bolt hole --- ZTD series U drill



双螺旋内孔设计，冷却更充分；刀体设计有超大的容屑空间，排屑顺畅。

Designed with double helical internal hole for fuller cooling and extra large chip pocket for smooth chip evacuation.

<http://www.zccct.com>