

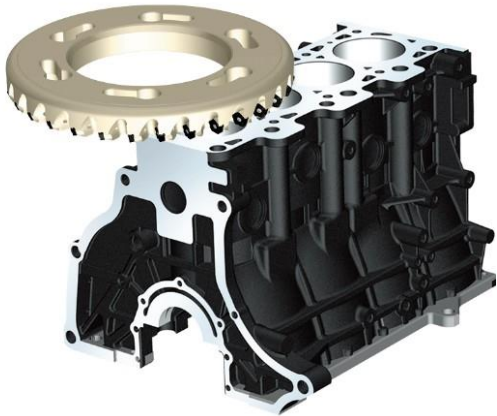
缸体 Cylinder



发动机是汽车的心脏，缸体是发动机的关键基础件之一，缸体的制造精度、包括尺寸精度、形位公差、表面光洁度等对发动机的性能至关重要。缸体的铣削加工逐渐采用数控高速加工中心替代传统的专机生产线，这就对刀具的专用性提出了越来越严格的要求。株洲钻石研制出的一系列专业刀具，为缸体加工提供了全套解决方案。

Engine is the heart of automobile, cylinder block is the key parts of engine, the manufacturing precision, including dimension precision, geometric tolerance, surface quality are critical to the performance of engine. For milling of cylinder block, we adopt CNC high-speed machining center to substitute traditional production line. This places more and more strict requirements on dedicated use of cutting tools. ZCCCT offers entire solutions for cylinder block.

顶面、底面及两侧面加工 Top surface, bottom surface and side surface machining



FMD02 系列面铣刀，五边形刀片，10 个切削刃；开放式槽型，大前角设计，切削轻快，加工表面质量好，是铸铁类零件加工的首选。

FMD02 series face milling cutter, pentagon insert with 10 cutting edges; open geometry, large rake angle design and soft cutting action, good surface quality, it is the first choice for cast iron components machining.

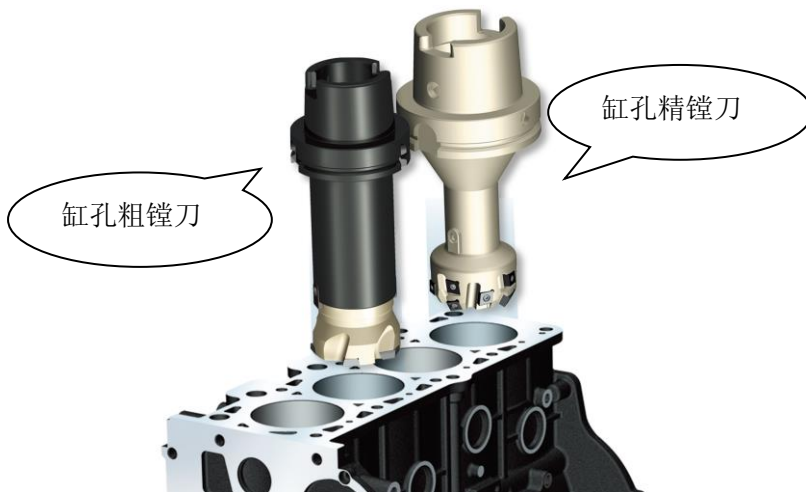
后侧小面铣削 Back side milling



FMP02 系列面铣刀，螺钉压紧，转位方便；容屑空间大，排屑顺畅；可进行平面、直角台阶面、槽等多种形式的切削加工。

FMP02 series face milling cutter, screw clamping system, easy insert indexing, large chip evacuation space, smooth chip removal; can apply in various kinds of machining, including surface, step surface with right-angle, slots and grooves, ect.

缸孔加工 Cylinder hole-making



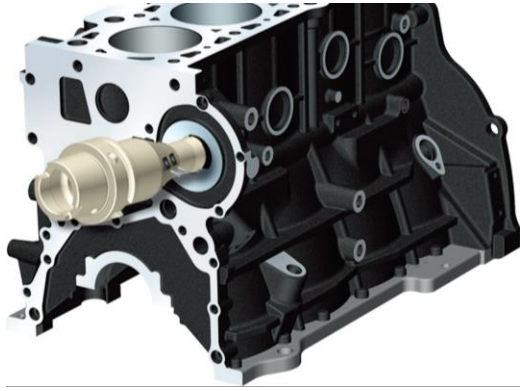
缸孔粗镗刀 Rough boring tools for cylinder holes

缸孔精镗刀 Finish boring tools for cylinder holes

缸孔粗镗专用**刀具**，刀片横向装置，径向切深大，大的容屑空间，使排屑顺畅，加工效率高。
Cylinder holes rough boring special tool, with horizontally installed insert, large depth of cutting, large chips evacuation space facilitate smooth chip removal with high efficiency.

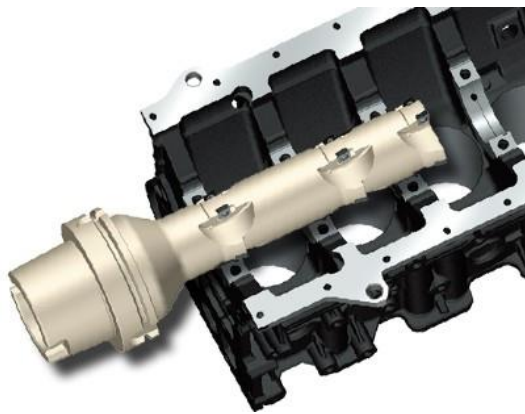
缸孔精镗专用**刀具**，刀片立装，合理分布，加工精度高，衍磨清根及倒角一步完成。
Special tool for cylinder holes finish-boring, with vertically mounted and properly distributed inserts, high precision of machining, one operation can finish both back chipping and chamfering.

水泵孔加工 Hole-making of water pump



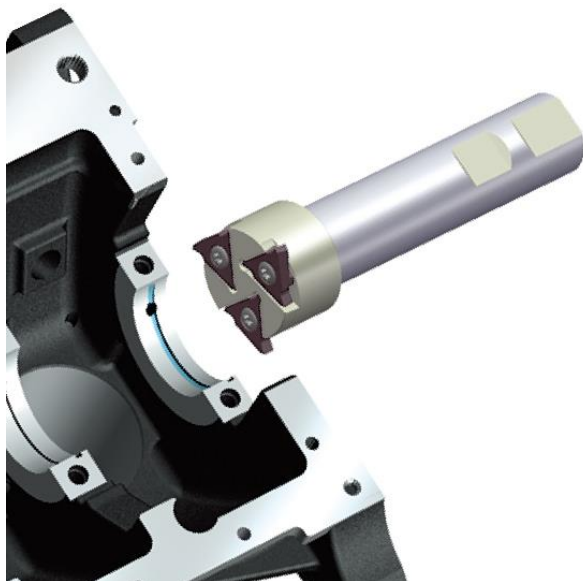
水泵孔镗削专用刀具，镗孔及凹面成型加工一步完成，大大提升加工效率。
Special tool for water pump hole-boring, shaping process and hole-boring can be machined in only one pass, improve production efficiency.

曲轴半圆孔加工 Semicircle hole-making of crankshaft



曲轴半圆孔镗削专用刀具，最优化的刀具设计，最大限度的减小振动，确保加工精度和质量，五个加工位置分两次加工完成。
Special tool for semicircle hole-making of crankshaft, optimized tool design can minimize vibration and ensure machining precision and quality, two passes for five location machining.

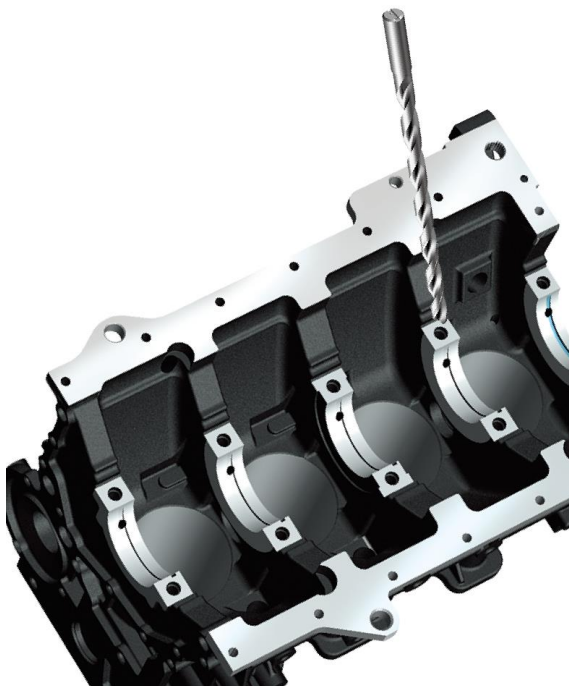
瓦油槽加工 Oil groove machining



SMP05 三面刃铣刀，三刃刀片，立装结构，安装精度和加工精度高，可做成非标刀具，五个位置同步加工完成。

SMP05 series Face and side milling tool, with three vertically mounted cutting edges, high mounting and machining precision, can make to non-standard tool, five machining locations can be operated in synchronous processing.

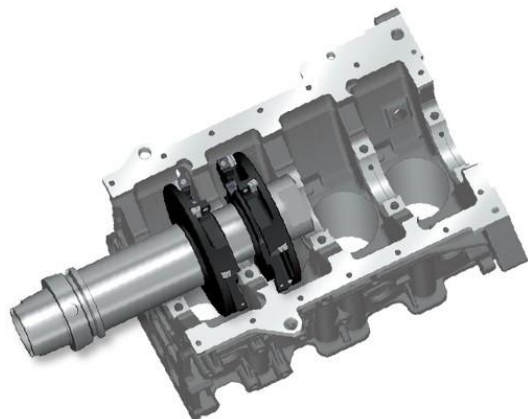
曲轴接合孔加工 Intersurface hole-making



1588SL 深孔麻花**钻头**，双导向刃带，导向更可靠，加工更稳定，有 12 倍径、20 倍径、30 倍径供选择，良好的满足深孔及有干涉等情况下的钻削加工。

1588SL series deep hole twist drills, with double guiding edge-line, more reliable and stable, l/d ratio of 12, 20 and 30 for selection, can well meet the demands of deep-hole drilling with collision.

止推面加工 Thrust surface machining



一种刀片同时应用于左旋和右旋刀盘，方便管理并降低成本；左旋和右旋刀盘同时加工，效率高；亦可制作成五处同时加工的专用刀具。

Only one type of insert can apply in both left and right side cutter body, convenient for management with lower cost; simultaneously machining left and right side cutter body with high efficiency, and can turn into the special tool for 5 parts machining.

凸台加工 Boss machining



EMP11 多功能凸台铣削刀具，螺钉压紧，转位方便；容屑空间大，排屑顺畅；可进行平面、直角台阶面、槽等多种形式的切削加工。

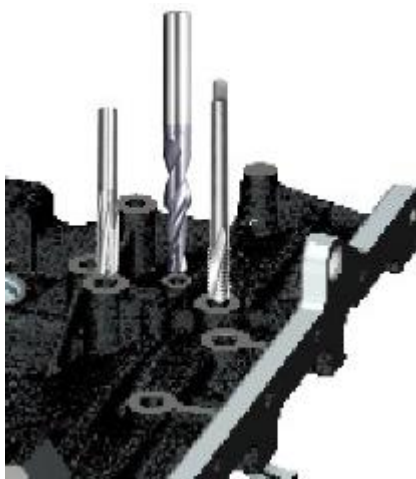
EMP11 multifunction boss milling tool, with screw clamping, easy insert indexing, large chip evacuation space, can machine surface, step face with right angle, slots and grooves, etc.

塞孔加工 Plug-hole machining



塞孔镗削专用刀具，螺钉压紧，刀具调整和转位方便，阶梯镗削，一步完成。
Screw clamping, easy for tool adjusting and insert indexing, stepped boring can be done in one operation.

钻孔、铰孔、螺纹加工 Drilling, Reaming and screwing



多款高精度的整体硬质合金钻头、铰刀、[丝锥](#)、螺纹铣刀等，满足各类孔加工。

Multiple different types of solid carbide drills, reamers, taps, thread milling cutters and other products with high-precision, can meet different requirements of hole-making

<http://www.zccct.com>