

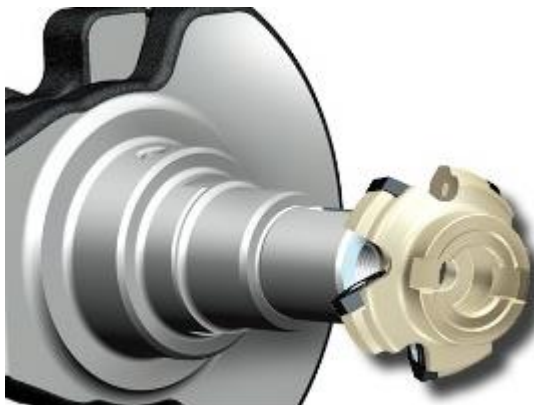
曲轴 Crankshaft



曲轴主要由碳素结构钢或球墨铸铁等材料制成，是发动机的主要旋转件，装上连杆后，可将活塞的直线往复运动变成旋转运动。目前，我们常见的汽油发动机最高转速达 6000r/min 以上，这就对曲轴的加工工艺包括位置度、圆度、各档曲轴孔中心的直线度及表面粗糙度等提出了更为严格的要求。

Crankshaft is made of carbon structural steel or nodular cast iron; it is the critical rotating part of engine. When mounted with connecting rod, piston converts linear reciprocating motion into rotating motion. At present, the maximum revolving speed of automotive engine we are familiar with can reach 6000r/min above, which places more strict requirements on process technique including location consistency, circularity, and straightness of hole-center of different crankshaft, surface roughness, etc.

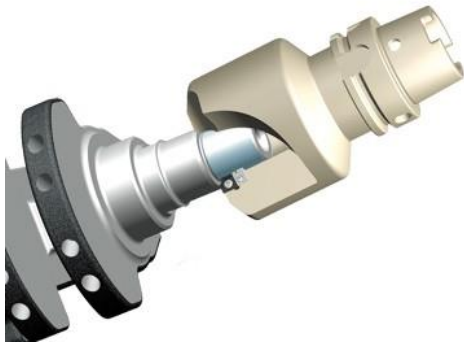
端面加工 End-face machining



FMA07 系列面铣刀，八边形刀片，16 个切削刃，配合性能优异的“黑金刚”牌号，拥有超高经济性和加工效率。

FMA07 series face milling cutter, octagon insert with 16 cutting edges, combined with excellent “black diamond” grade, can achieve super-high economical efficiency and working efficiency.

外圆加工 External turning



套车刀具，刀片刃口呈阶梯形，外圆和台阶加工一步完成，大幅缩短车削时间，提高加工效率。

Insert edges has stepped appearance, external turning and step machining can be performed in one operation, greatly decrease the turning time and improve working efficiency.

曲轴外铣 Crankshaft external milling

径向、切向双向布齿结构，实现三面加工，参与切削加工的有效齿数更多，大大提高了加工稳定性和高效性。

Teeth distribution in radial and axial direction, can realize three side machining, more teeth involved in cutting, greatly improving the working stability and high efficiency.

斜油孔加工 Inclined oil hole machining



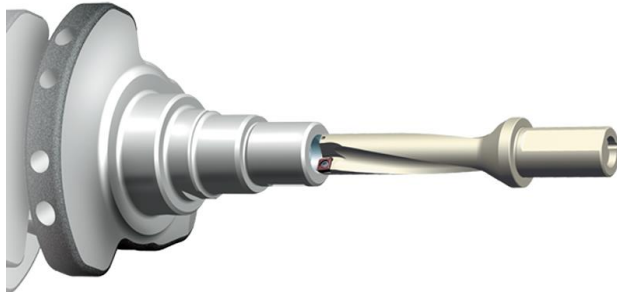
凸面铣削：整体**硬质合金**四刃平头铣刀，高稳定性刃口处理和高刚性结构设计，可实现多种加工功能。

Convex milling: Solid carbide four flutes flattened endmill with straight shank, high stability edge treatment and high-rigidity structure design can realize multiple-functions of machining.

钻斜油孔：优化的结构设计，配合专用的涂层牌号，实现深孔的高效钻削加工。

Inclined oil hole-making: combined with special coating grade, optimized structure design can achieve high-efficiency drilling machining.

中心沉孔加工 Center countersink machining



ZTD 系列浅孔钻，良好的刀片安装角度、优化的内冷结构、坚固的钻体，实现高稳定加工的同时可承受更大的进给。

ZTD series U drill, good mounting angle, optimized internal structure and firm drill body, can achieve high stable machining while bearing higher feed rate.

法兰孔加工 Flange hole-machining



钻孔：整体硬质合金阶梯钻，适合各种高精度的钻孔加工，同时可根据客户要求制作各种非标钻头。

Drilling: Solid carbide step drill, suitable for different high-precision drilling, can provide tailor-made drills as per customer requirements.

攻丝：新型整体硬质合金切削丝锥及挤压丝锥，针对不同材质的加工特点而特别设计，满足不同的加工工况及加工要求。

Tapping: Newly solid carbide taps and forming taps, according to different materials features, we design the products to meet different working conditions and machining requirements.