

ECK2320

数控活塞异形外圆车床
CNC For Piston Contour

功能简介 | Brief Introduction of Functions

- 配置三刀直线伺服刀架（一派数控专利产品），该机床可加工中凸变椭圆或其它复杂形状的活塞外圆，三个刀具采用不同的材质或形状，分别车削活塞裙部、头部（镶圈）和油槽；
- 活塞曲面数据由“一派活塞曲面数据处理软件”（一派数控软件著作权产品）生成，该软件能编辑活塞所要求的各种异形外圆，包括标准椭圆、椭圆叠加偏心圆、偏心椭圆、旋转椭圆或离散数据拟合等；
- X1轴采用高精度进口直线光栅尺构成全闭环系统；
- 采用研华一体化工作站、进口交流伺服系统（Z、X1轴）和运动控制卡；（ECK2320A适用）
- 配置自主开发的直线伺服板，采用“一派活塞数控加工控制软件”（一派数控软件著作权产品）控制加工，实现自由编程，提高加工精度和抗干扰能力；（ECK2320A适用）
- 配置自主开发的直线伺服控制板，通过OEM软件嵌入到810D控制系统，实现自由编程，提高加工精度和加工稳定性；（ECK2320D适用）
- X2轴（副刀架）用于加工活塞顶面；（ECK2320D适用）
- 采用西门子810D控制系统和西门子交流伺服系统（Z、X1、X2轴）。（ECK2320D适用）
- Equipped with three cutter spacings linear servo cutter saddle (patent product of EPOCH NC), the lathe can process the convex irregular ellipse or other special shaped piston excircle, As the saddle has three cutters which are made of different materials or shapes, it can turn the piston skirt, piston head (with Ni-Fe ring), and oil groove;
- The piston curved surface data are produced by "Epoch Piston Curved Surface Data Processing Software" (copyright product of EPOCH NC), which can edit all kinds of special excircles required by the piston including standard ellipse, ellipse overlapped eccentric circle, eccentric ellipse, and rotary ellipse, or the discrete data fitting and so on;
- X1 axis adopt full close-loop servo system with high accuracy import linear raster rule;
- Advantech all-in-one industrial computing, import AC servo system (Z and X1 axis) and motion control card; (ECK2320A applicable)
- Equipped with the linear servo control panel developed completely by EPOCH NC, and the "EPOCH Piston NC Processing Control Software" (copyright product of EPOCH NC) is adopted to control processing, achieving free programming and improving the working accuracy and antijamming capability; (ECK2320A applicable)
- Equipped with the linear servo control panel developed completely by EPOCH NC, embedded to 810D NC system by OEM software, achieving free programming and improving the working accuracy and stability; (ECK2320D applicable)
- X2 axis (the second tool saddle) used to process the top of the piston; (ECK2320D applicable)
- Equipped with SIEMENS 810D NC system and SIEMENS AC servo system (Z, X1 and X2 axis). (ECK2320D applicable)

主要技术指标 | Main Technical Indexes

活塞直径 Piston Diameter (mm)	Φ80~Φ200
活塞长度 Piston Length (mm)	100~300
活塞最大椭圆量 Maximum ellipticity of piston (mm)	3.0
Z轴行程 Z axis stroke (mm)	400
X1轴行程 X1 axis stroke (mm)	120
X2轴行程 X2 axis stroke (mm)	120
主轴精度 Spindle Precision Accuracy (mm)	0.003
主轴速度 Spindle Speed (rpm)	50~2000
直线伺服电机重复定位精度	
Repeated positioning accuracy of linear motor (mm)	0.001
工序能力指数CPK Process Capability	
(直径公差 Diameter tolerance $\Phi D \pm 0.008\text{mm}$)	≥ 1.33
粗糙度 Surface Roughness (μm)	Ra0.8
仿形轮廓度 Profile Accuracy (标准椭圆 Standard Ellipse) (mm)	± 0.005
主机外形尺寸 Machine Dimensions (长×宽×高 L × W × H) (mm)	2950×1600×1750

