WSK025

LED蓝宝石数控外圆平面磨床

WSK025 CNC cylindrical plain grinding machine for LED sapphire

机床用途与性能特征

- 本机床是为LED蓝宝石行业精心设计的数控外圆平面磨床，适用于LED蓝宝石晶棒的外圆及OF的磨削，机床上配置A向定向仪，故晶棒在一次装夹后可顶磨外圆，定向OF面的磨削，提高了产品的生产率，保证了产品的质量。
- 本机床数控系统为西门子802DSL系统，四个直线轴，一个回转轴。
- 机床配置外圆砂轮架用于磨削晶棒的外圆柱面，同时还设计有立式磨头，用于定向后磨削晶棒的OF面。
- 机床带有A向定向仪，晶棒外圆磨好后可直接定向，定向仪及立式磨头分别装于立柱的两侧，晶棒定向后，可直接磨削OF面消除了晶棒回转的误差。
- 工作台、横进砂轮架、立式磨头拖板及定向仪拖板均有伺服电机滚珠丝杆拖动，头架为伺服电机直拖。

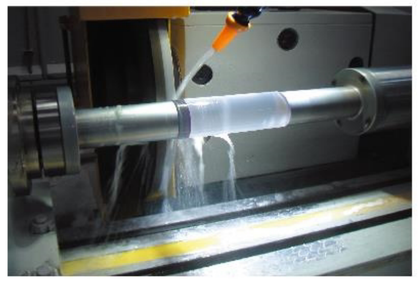
Aplications ans structural features

- The machine is a kind of CNC Plane Grinding Machine specially designed for LED Sapphire Industry, which is suitable for grinding outer circle and OF surface of LED sapphire crystal bar. Furthermore, machine is matched with A-direction orientation device, so crystal bar can be external grinded on top and OF surface after clamped. Therefore, output and quality of production is definitely proved.
- This machine adopts SIEMENS 802DSL CNC system, four linear axis, one rotor.
- External cylindrical grinding wheel rack is equipped for grinding outer cylindrical surface of crystal bar. Moreover, vertical grinding head is to grind OF surface after fixing direction.
  The machine owns A-direction orientation device, crystal bar can be oriented directly after grinding excircle. Orientation device and vertical grinding head separately mounted at two sides of column.
- After orientation, OF surface of crystal bar can be grinded directly to eliminate tolerance of bar rotation.
- Worktable, horizontal feeding wheel frame, vertical grinding head carriage and orientation device carriage are all driven by servo motor ball screw; headstock is driven by servo motor directly.

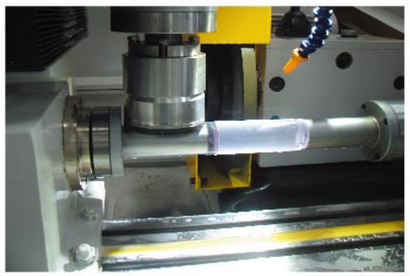
技术规格参数 Specifications and Technical Parameters

磨削直径Grindingdiameter	Φ2"~6"
最大磨削长度Max. grindinglength	400mm
中心高Centerheight	125mm
最大工件重量Max. weightof ingot	50kg
工作台最小进给量Min. feeding of work table	0.005mm
砂轮线速度Wheel linear velocity	35m/s
外圆砂轮尺寸External grinding wheel size	400×22×203mm
平面砂轮尺寸Plane grinding wheel size	Φ100×50×Φ50
头架主机转速Turning speed of headstock main motor	0~100r/min(无级) (stepless)
头架主轴内锥孔Taper bore of head stock spindle	4号莫氏锥度(Morse'staperNO.4)
磨架滑板最大进给量Max. feeding of mill frameslide	150mm
磨架滑板最小进给量Min. feedingof millframe slide	0.001mm
磨架快速移动速度Fast moving speed of mill frame	5m/min
冷却水泵流量Flow of cooling pump	50L/min
机床外形（长×宽×高）Overall dimensions(L×W×H)	300×1620×2865mm

磨削精度Grinding accuracy	
圆度Roundness	≤0.003mm
表面粗糙度Surface roughness	≤0.2μm

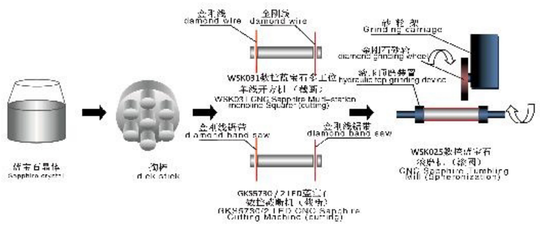


滚圆 rolling



磨OF面 grindOF surface

衬底加工流程图 Substrate Processing Flow Chart



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