

WSK063

半导体晶圆切片机

WSK063 SiC slicing machine (slurry cutting)



设备用途和特性

- 本机适用于半导体行业用半导体晶圆切片，是半导体行业硅片加工的主要配套设备。硅锭横断面最大为Φ330mm，切片厚度最小为0.2mm，必须调整制程，一次装夹最大可切片达1300(2230)片，是半导体行业硅片生产厂家的优选设备。
- 本机特点：
 - 1、两个钢线导轮驱动，收（放）线驱动，及收（放）线的排线驱动，均采用伺服驱动，且同步同步。
 - 2、钢线涨紧力的检测控制也通过伺服电机实现（恒定）。
 - 3、工件进给由伺服电机通过滚珠丝杆拖动，进给量的大小与钢线的引导速度相匹配。
 - 4、切削液的搅拌与输送。切削液管道通过热交换器达到恒温，及计量器计量，与切片速度同步。
 - 5、本机床为高新技术集中的产品。

Applications and structural features

- the machine is used for cutting SiC semiconductor which is a matched processing equipment. The max dimension of cross section Φ330mm, the minimum thickness of section 0.2mm, adjust processing procedure, it may cut 1300-2230 pieces at one clamping. the optimized equipment for Semi-conductor manufacturers.
- features:
 - two wire guide wheel drive, spool drive, and release drive. these apply servo drive, and must be synchronized.
 - detection control of wire tension, and be controlled by servo motor (constancy).
 - workpiece feed is uniform, and workpiece rotation and screw feed rate is matched with guiding speed of wire.
 - agitation and conveying of cutting fluid. cutting fluid pipe can reach up constant temperature through heat exchanger matching the slicing rate.
- this machine is an integrated high-tech product.

技术规格参数 Specifications and Technical Parameters

工件 workpiece	
横断面 cross section	≤Φ330mm
长度 length	2×300mm; 1×600mm
厚度 thickness	>0.200mm (必须调整制程 must adjust manufacturing process)
切割速率 cutting rate	
线速度 linear velocity	最大 max 20m/min, 速率 rate 可调 set
快速移动 fast move	200mm/min
工作行程 working stroke	最大 MAX.385mm
钢线 wire	
芯线径 diameter of core wire (external diameter)	0.055-0.400mm
钢线长度 length of wire	按线轮而定 according to wire wheel
钢线方向 direction of wire	前进或后退切割 forward or backward/double directional cutting
预张力 pre-tension	最大 50N (端部线径而定) max 50N (according to diameter of wire)
导轮 guide wheel	
直径 diameter	Φ192mm
长度 length	662mm
个数 number	3
主电机功率 main motor power	最大 max 3×30KW
轴距 (左右) wheelbase (left & right)	540mm
轴距 (上下) wheelbase (up & down)	450mm
钢线偏向滚轮 offset roller	
直径 diameter	160mm
个数 number	2×3(0)
卷绕线盘 winding coil	
卷绕轴工作高度 working height of winding shaft	1355mm
卷绕线盘 winding coil	WSK035-2, 3, 4
供应卷绕线盘 winding coil supplier	上海 (Shanghai)
切削液供应 cutting compound supply	
切削液流量 cutting compound flow	最大 max 1000L/min, 可调 adjustable
切削液温度 cutting compound temperature	可选 optional preset temperature 20-70℃
冷却液流量冷却液温度 cooling liquid flow temperature	最大 max 1000L/min, 可调 adjustable, measure with flow meter and display
冷却液温度 cooling liquid temperature	15℃±1℃
控制系统 controlling system	
安全 type	SPS 控制 SPS control, S7 series with integrated PC
供货商 supplier	西门子 (Siemens)
操作操作面板 operation panel	15" 触摸屏 touch screen
外观尺寸及总重量 outline dimension and total weight	
长度 length	4470mm
宽度 width	2170mm
高度 height	3500mm
总重量 total weight	约 13000kg