

WSK063

半导体晶圆切片机

WSK063 SiC slicing machine (slurry cutting)



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. 30m/s 速率 rate 可以设定 can 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
预先张力 pre-tension	最大 50N (端部绳径直径而定) max. 50N (according to diameter of wire)
导轮 guide wheel	
直径 diameter	Φ192mm
长度 length	366mm
个数 number	3
主机功率 main motor power	最大 max. 3×30KW
轴距 (左右) wheelbase (left & right)	540mm
轴距 (上下) wheelbase (up & down)	1560mm
钢线偏向滚轮 offset roller	
直径 diameter	160mm
个数 number	2×3(σ)
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	WSK027S3-21-301
卷绕线盘供应商 winding coil of supplier	JA1100
切削液供应 cutting compound supply	
切削液容量 capacity of cutting fluid tank	300L
切削液温度 constant of cutting fluid	±1.0℃ (可控制切削液温度 fluid temperature 20±0.5℃)
泵浦流量 pumping rate	最大 MAX. 1200L/h 可调, 使用流量计测量并显示 adjustable measure with flow meter and display
冷却液温度 inflow temperature of cooling water	15℃±1℃
控制控制 control system	
安全 type	安全控制, CFC 控制, PC 控制, SP 控制 SF series with integrated PLC
供货商 supplier	西门子 (Siemens)
外观尺寸及总重量 outline dimension and total weight	
长度 length	4470mm
宽度 width	≤1700mm
高度 height	3500mm
总重量 total weight	约 13000kg

设备用途和特性

- 本机床适用于半导体行业用于半导体晶圆的切片，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1300-2200片，是半导体行业硅片生产厂家的优选设备。
- 本机床特点：
 - 1、两个钢线导轮驱动，收（放）线驱动，及收（放）线的排线驱动，均由伺服驱动，且必须同步。
 - 2、钢线张紧力的检测控制也通过伺服电机驱动（恒张力）。
 - 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，与切片速度相适应。
 - 5、本机床为高新技术集中的产品。

Applications and structural features

- the machine is used for cutting semiconductor bar, which is main matched processing equipment. The max dimension of cross section Φ330mm, the minimum thickness of section 0.2mm, adjust processing procedure, it may cut 1300-2200 wafers at one diameter, the optimized equipment for semiconductor manufacturers.
- features:
 - two wire guide wheel drive, up/down drive, cable drive and these apply servomotor and must be synchronized.
 - detection control of wire tension of wire by servomotor drive (constant tension).
 - workpiece feed is driven by servo motor through ball screw, feed rate is matched with guiding speed of wire.
 - agitator 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.

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