

# 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

<b>工件 workpiece</b>	
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)
<b>切割速率 cutting rate</b>	
线速度 linear velocity	最大 max 20m/s (必须调整制程 must adjust manufacturing process)
快速移动 fast move	200mm/min
工作行程 working stroke	最大 MAX.385mm
<b>钢线 wire</b>	
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 (按钢线直径而定) max. 50N (according to diameter of wire)
<b>导轮 guide wheel</b>	
直径 diameter	Φ192mm
长度 length	620mm
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)	250mm
<b>钢线偏向滚轮 offset roller</b>	
直径 diameter	160mm
个数 number	2×3(0)
<b>卷绕线盘 winding coil</b>	
卷绕轴工作高度 working height of winding shaft	1350mm
卷绕线盘 winding coil	WSK063-2-31-01
卷绕线盘供应商 winding coil supplier	JAI
<b>切削液供应 cutting compound supply</b>	
切削液容量 capacity of cutting fluid	最大 MAX. 2000kg (可调整) max. 2000kg (adjustable)
切削液温度 constant of cutting fluid ±1°C	可调整 (预设温度 20-70°C) adjustable (preset temperature 20-70°C)
冷却液流量 flow rate of cooling water	最大 MAX. 2000kg/h (可调整) max. 2000kg/h (adjustable)
冷却液温度 inflow temperature of cooling water	15°C ±1°C
<b>冷却液系统 cooling system</b>	
空压 type	SP 系列 SP series
供货商 supplier	西子 (Siemens)
<b>外观尺寸及总重量 outline dimension and total weight</b>	
长度 length	4470mm
宽度 width	2170mm
高度 height	3500mm
总重量 total weight	约 13000kg

### 设备用途和特性

- 本机适用于半导体行业用于半导体晶圆切片，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(300/230)片，是半导体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，均采用伺服驱动，且可双向驱动。
  - 2、钢线张紧力的检测控制也通过伺服电机驱动（恒速）。
  - 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，与切片速度相匹配。
  - 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 1300/230 wafers at one time, being the optimized equipment for semiconductor manufacturers.
- features:
  - 1、two wire guide wheel drive, up & down, forward & backward, all of these apply servo drive, and must be synchronized.
  - 2、detection control of wire tension of wire is controlled by servo motor (constant).
  - 3、workpiece feed is driven by servo motor through ball screw. Feed rate is matched with guiding speed of wire.
  - 4、agitation and conveying of cutting fluid can reach precise constant temperature through heat exchanger, matching the slicing rate.
  - 5、this machine is an integrated high-tech product.