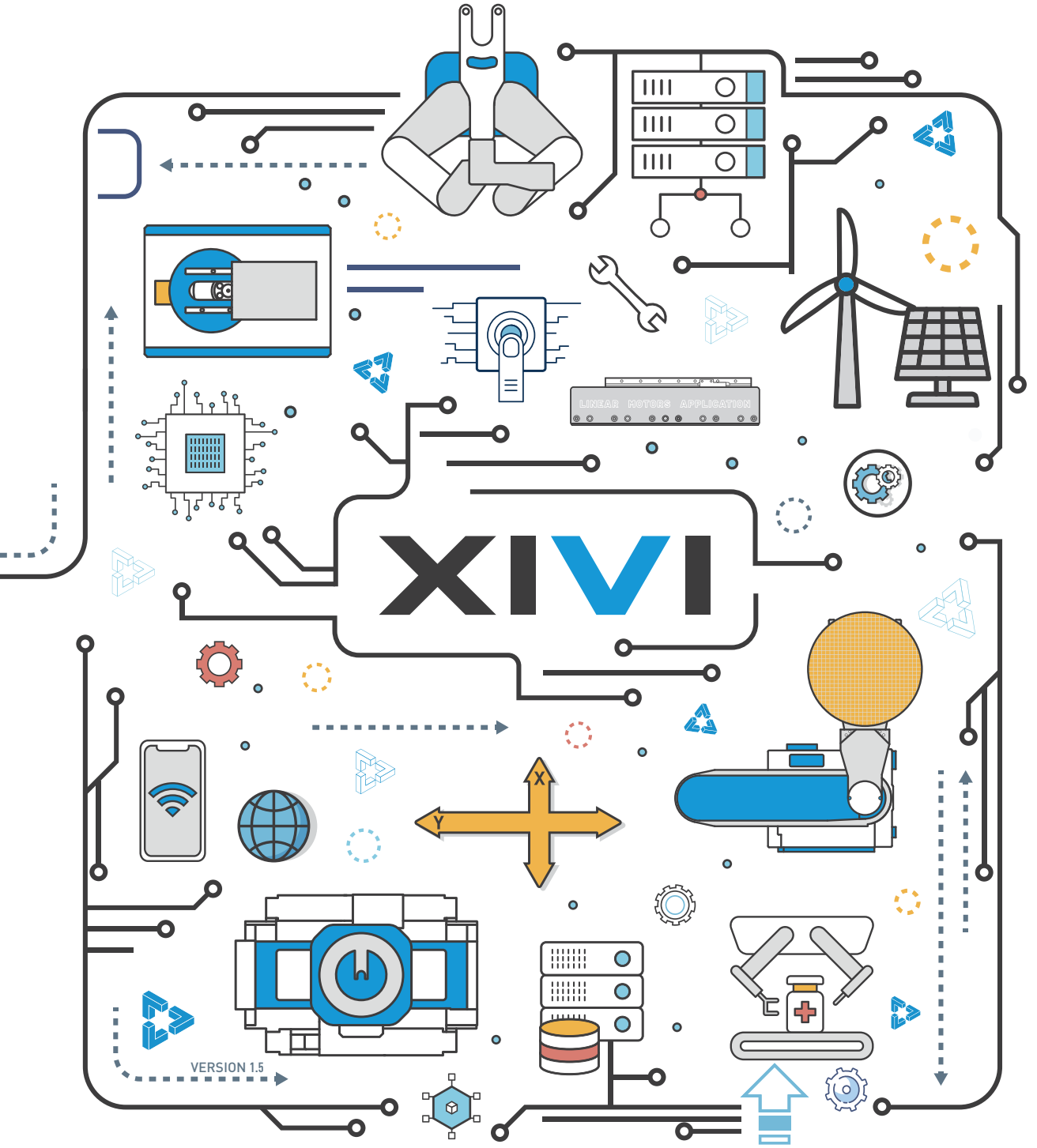
XIVI



晶圆传输与定位解决方案

星微产品型录 1.5

CONTENTS 01
THINKER IN MOTION

这本目录刊登的规格书，由于产品性能的改进，如有更改，恕不另行通知。
在考虑购买时，请联系我们的销售部门以获取最新信息。

The specifications listed in this catalog are subject to change without notice due to product performance improvements.
Please contact our sales department for the latest information when considering a purchase.

THINKER IN MOTION

我们
在运动中思考
在创新中进步

以品质驱动客户
以认同驱动团队
以研发驱动产品
以责任驱动企业
以信念驱动品牌

Quality drives the customers. Identity drives the team. Innovation drives the products.
Responsibility drives the enterprise. Belief drives the brand.

关于星微

星微科技有限公司（XIVI）成立于 2015 年，专注于半导体设备、核心部件及子系统的研发、生产、销售及服务。我们的产品广泛应用于集成电路制造、先进封装、微纳制造等领域。

多年来，XIVI 始终保持创新，不断发展，成功研制出应用于前道 IC 制造、先进封装、MEMS 和 LED 等领域的核心部件——高精密运动平台及晶圆传输系统，以及覆盖集成电路生产各制程的晶圆自动化传输系统、分选与检测设备。

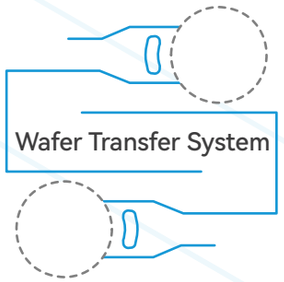
依托于微米与纳米级的精密运动控制技术、强大的精密制造能力及卓越的生产管理，通过不断打破技术壁垒、实现创新价值，我们致力于为半导体市场提供创新的工业产品。持续创造更具价值的精密运动与控制产品，推动中国半导体行业的进步是我们不变的追求。

展望未来，XIVI 也将拓展业务边界，从最前沿的半导体生产线延伸至每个家庭与办公室，让精密科技触手可及。

产品应用领域

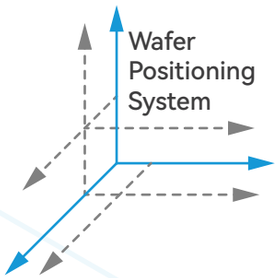
- 半导体装备
- 超精密制造
- 光学制造业
- 3C制造业
- 光电通信业
- 医疗制造业
- ...

XIVI PRODUCT SYSTEMS AT A GLANCE



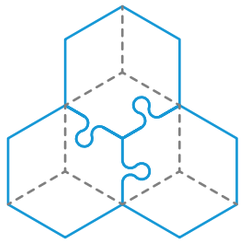
晶圆传输系统

- EFEM
- Load Port
- Sorter
- SMIF
- Aligner
- Open Cassette
- Handling Robot



晶圆定位系统

- 单/多轴气浮运动平台
- 单/多轴机械运动平台
- 气浮运动转台/微调台



运动控制零部件

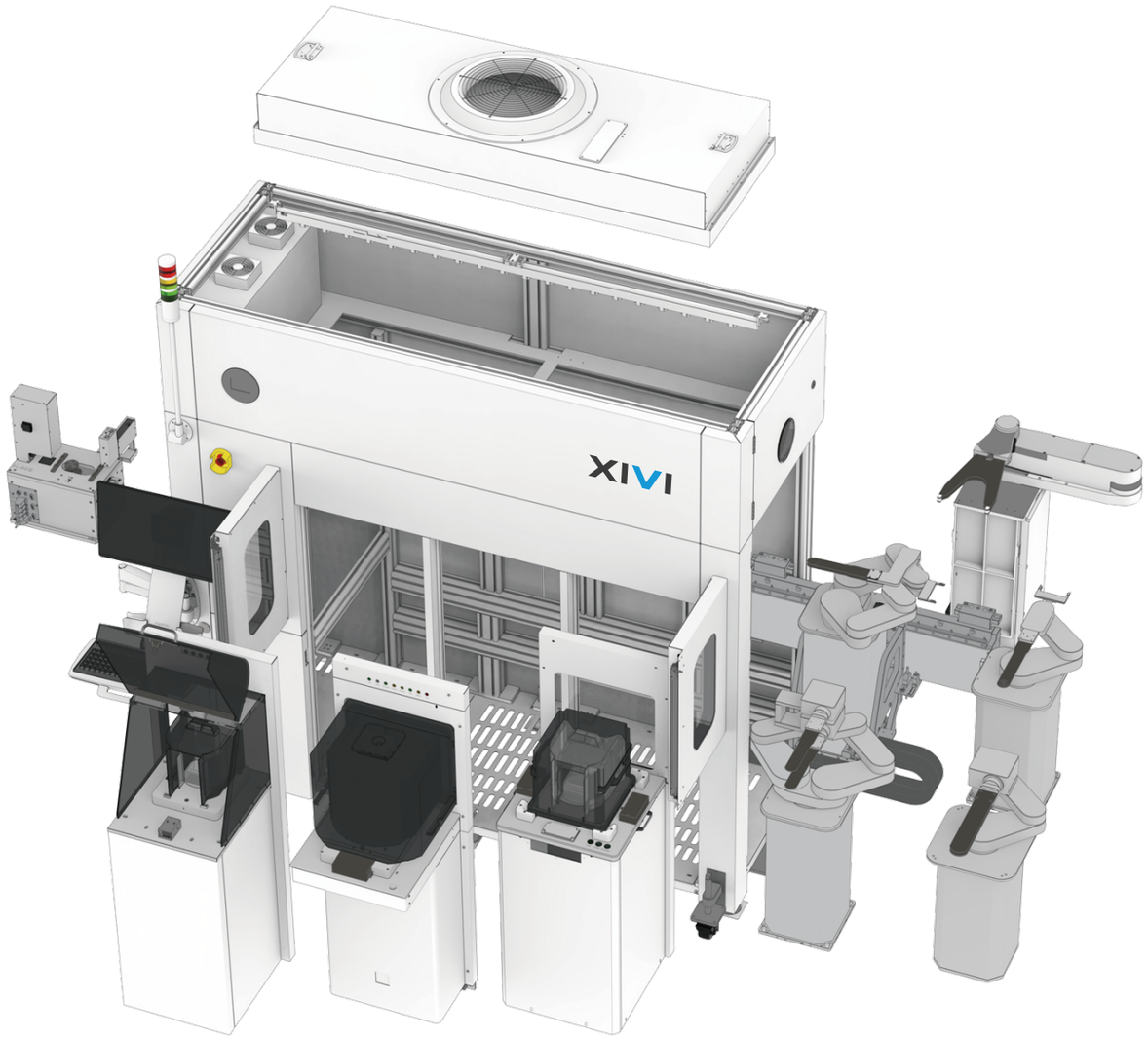
- 主动隔振
- 驱控系统
- 气浮轴
- 电机组

Wafer Transfer System

晶 圆 传 输 系 统

定制化的解决方案

- 定制化的服务
- 技术持续迭代
- 核心制造能力
- 快速交付能力



VTR 机械手系列

大气晶圆传输机械手（下文简称“机械手”）适用于大气洁净室环境，由本体、手臂以及片叉（选配）构成，通过吸附、夹持等方式，以及各关节的循环运动实现晶圆的传输功能。机械手的运动分为升降运动（Z 轴）、旋转运动（T 轴）、手臂伸缩运动（R/W 轴）。

规格参数

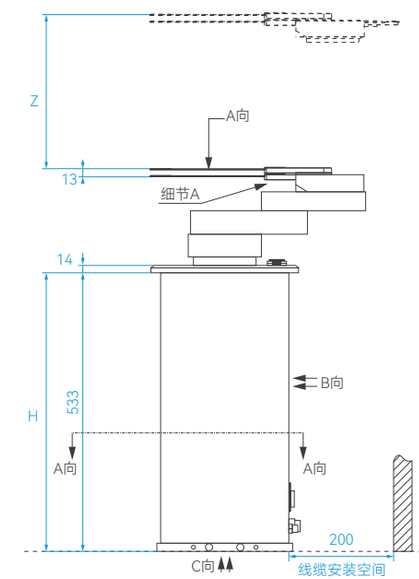
VTR		单臂	双臂
		143mm / 176mm	
额定负载		0.5 kg	
R/W轴	速度	430mm/s	
T轴	运动范围	0°~340°	
	角速度	250°/s	
Z轴	行程	250/300/350/400/450mm	
	速度	250mm/s	
本体重量		约45kg	
洁净度		Class1	
重复精度		± 0.1 mm	
运行条件		单相 AC 200V 20A	

额定负载为所传输产品重量。

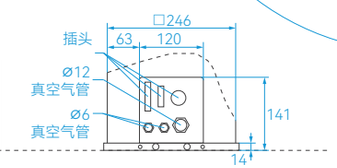
规格型号

VTR	-	00	-	00	-	00	-	250	-	143	-	00	-	00	-	001
产品系列		手臂数量		翻转机构		扫片		行程		手臂长度		末端形式		固定方式		流水号
VTR		00-单臂 01-双臂		00-上臂翻转 01-下臂翻转 02-双臂翻转 03-无翻转 ……		00-有扫片 01-无扫片		250mm 300mm 350mm 400mm 450mm ……		143mm 176mm ……		00-真空吸附 01-夹持方式 02-伯努利 99-其他		00-底板安装 01-上板安装 99-其他		001 002 003 ……

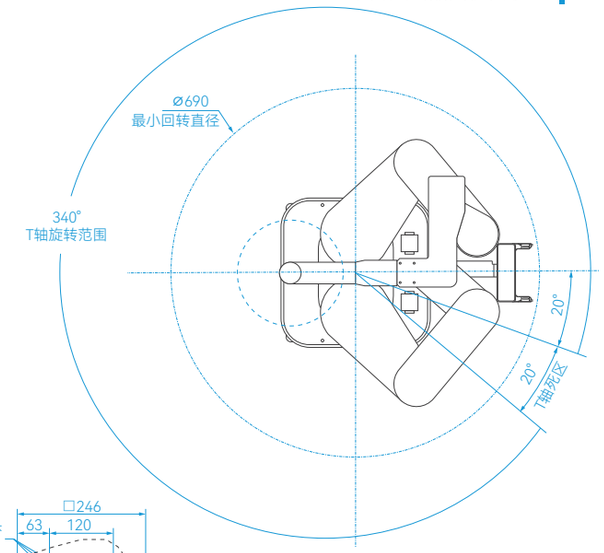
VTR 双臂运动范围示意图



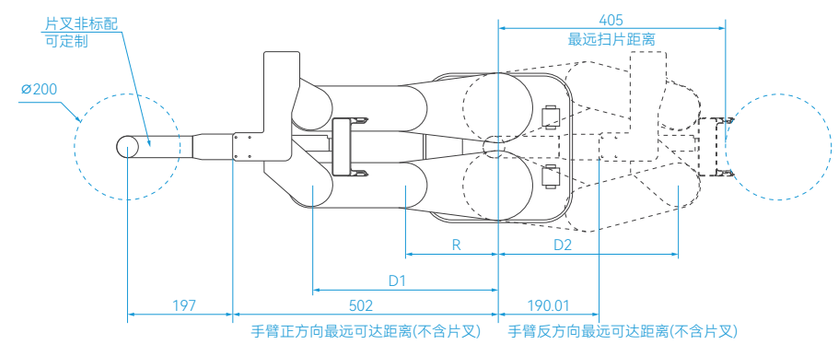
手臂升降范围



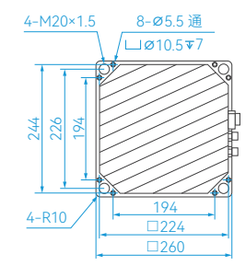
B 向视角：插孔位



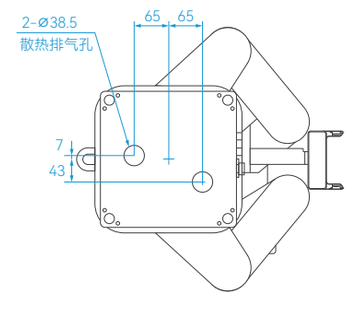
A 向视角：旋转范围



A 向视角：手臂伸缩范围



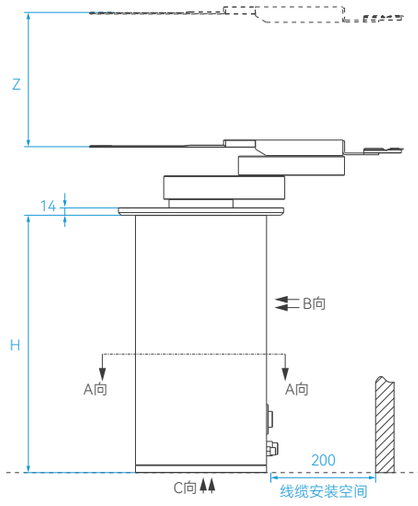
A 向视角：截面



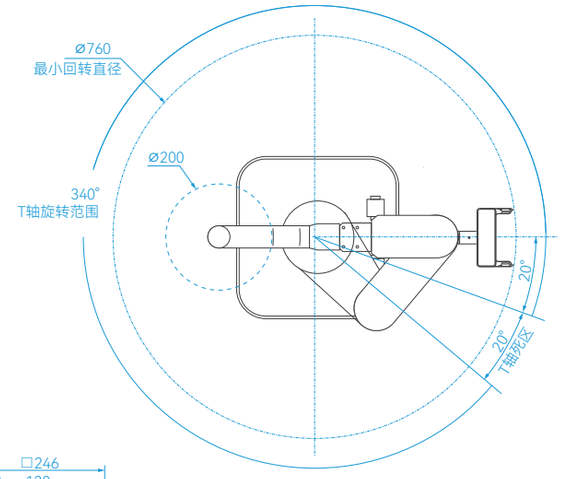
C 向视角：安装尺寸

型号	R	D1	D2	H	Z
VTR-01-03-00 手臂长度143	143	287	277	483/533/583	250/300/350
VTR-01-03-00 手臂长度176	176	352	340	483/533/583	250/300/350

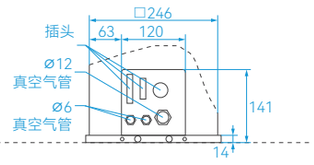
VTR 单臂运动范围示意图



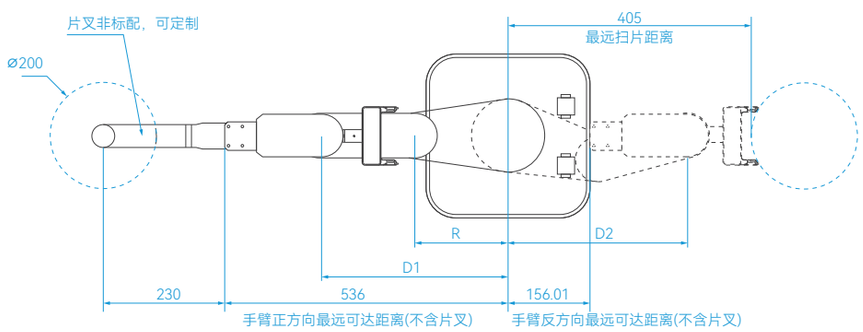
手臂升降范围



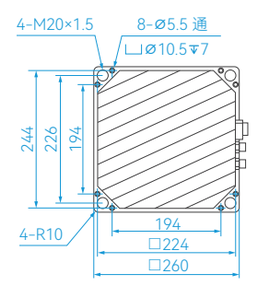
A 向视角：旋转范围



B 向视角：插孔位

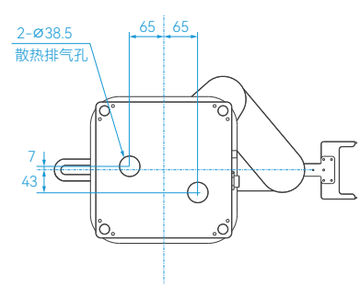


A 向视角：手臂伸缩范围



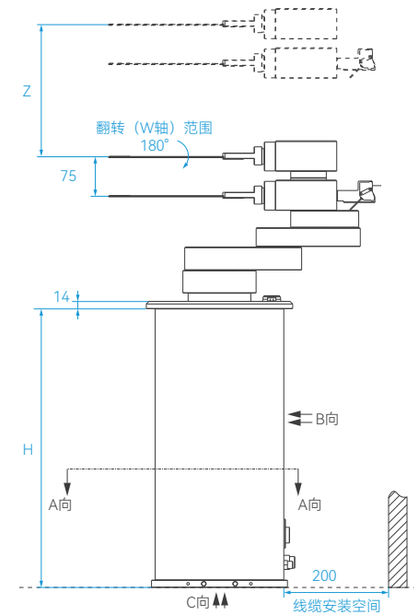
A 向视角：截面

型号	R	D1	D2	H	Z
VTR-00-03-00 手臂长度143	143	287	277	483/533/583	250/300/350
VTR-00-03-00 手臂长度176	176	352	340	483/533/583	250/300/350

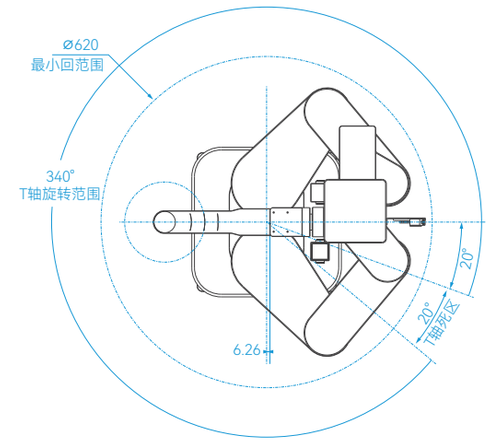


C 向视角：安装尺寸

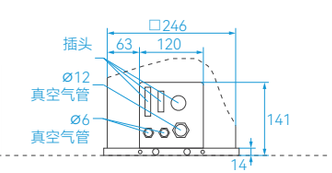
VTR 双臂翻转运动范围示意图



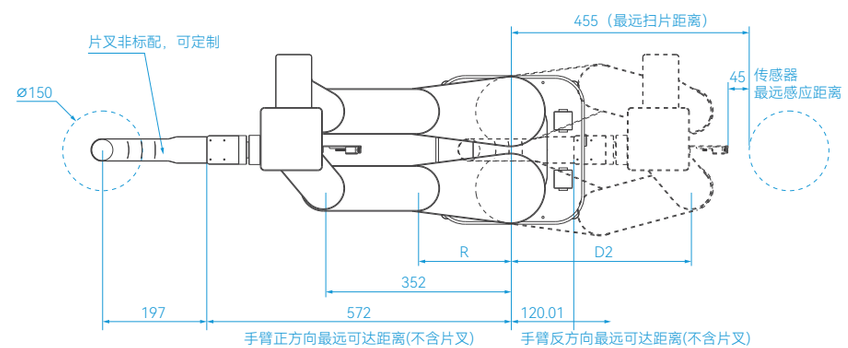
手臂升降范围



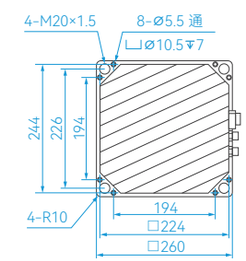
A 向视角：旋转范围



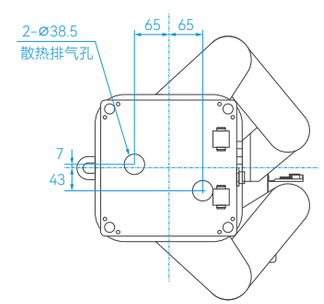
B 向视角：插孔位



A 向视角：手臂伸缩范围



A 向视角：截面

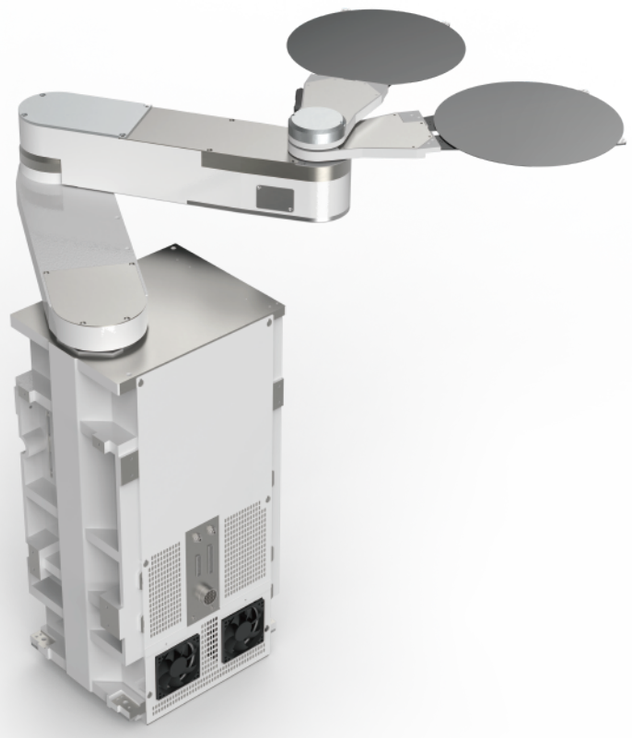


C 向视角：安装尺寸

型号	R	D1	D2	H	Z
VTR-01-02-00 手臂长度143	143	287	277	483/533/583	250/300/350
VTR-01-02-00 手臂长度176	176	352	340	483/533/583	250/300/350

STR 机械手系列

五轴半导体晶圆搬运机器人，具有独立可控的2个旋转手臂。可支持2 FOUP到3 FOUP的EFEM的取片工作。该机器人具有高精度，高刚性。



规格参数

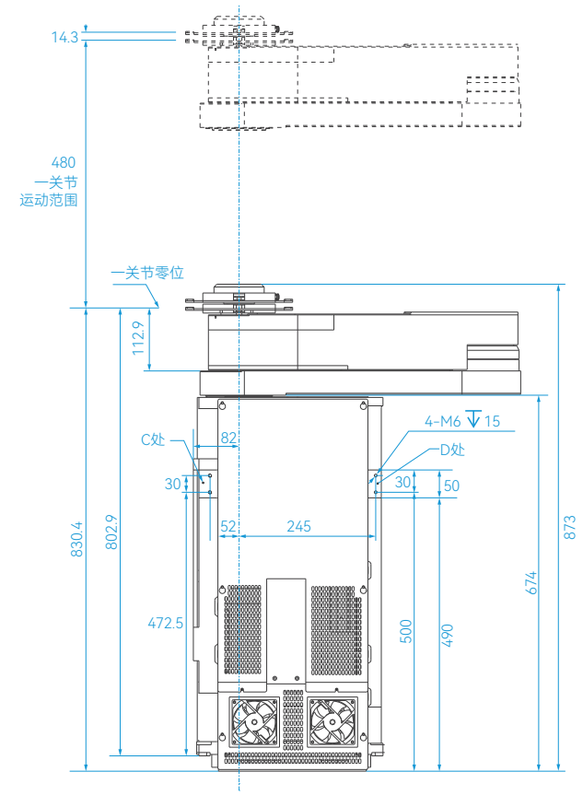
STR		单臂
		440mm
额定负载		0.5 kg
R轴	速度	350°/s
	运动范围	± 310°~130°
θ轴	速度	330°/s
	运动范围	± 165°
Z轴	行程	480mm
	速度	550mm/s
本体重量		45-50kg
洁净度		Class 1
重复精度		± 0.1mm
运行条件		单相 AC 200V 20A

额定负载为所传输产品重量。

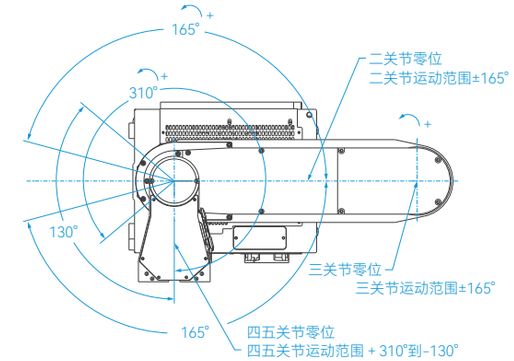
规格型号

STR	-	00	-	03	-	00	-	480	-	440	-	00	-	00	-	001
产品系列		手臂数量		翻转机构		扫片		行程		手臂长度		末端形式		固定方式		流水号
STR		00-单臂 01-双臂		03-无翻转		00-有扫片 01-无扫片		480		440mm		00-真空吸附 01-夹持方式 02-伯努利 99-其他		00-底板安装 01-上板安装 99-其他		001 002 003 ……

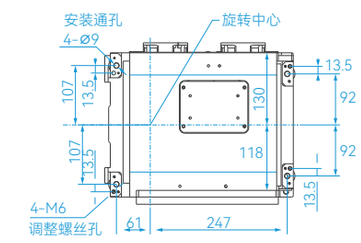
STR 运动范围示意图



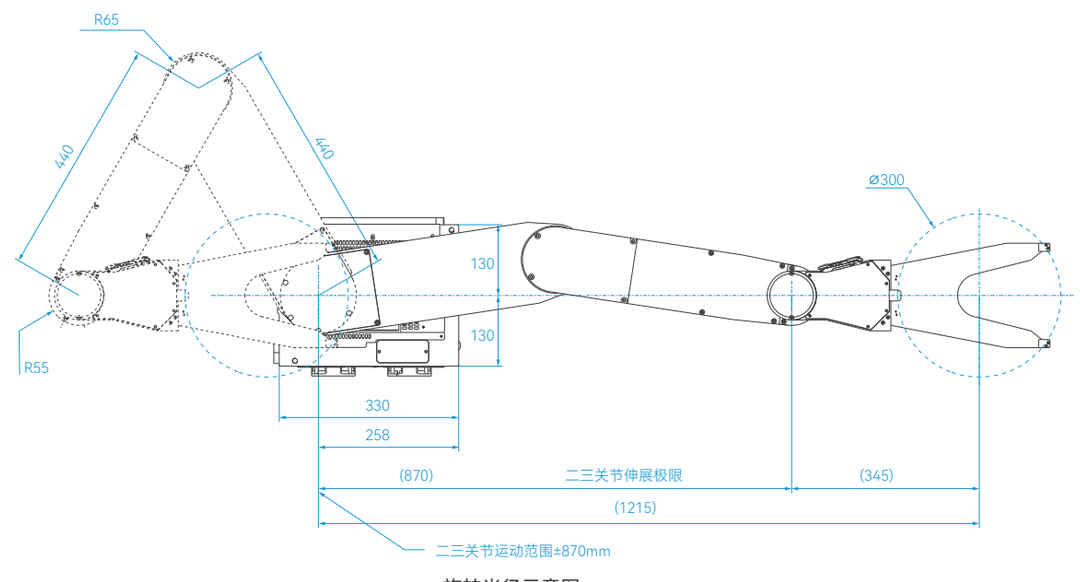
一关节运动范围图



二三四五关节运动范围



孔位安装示意图



旋转半径示意图

Load Port 产品概述

VLP100 系列

特征

- 可对应标准FOUP 和 Auto Door FOSB
- 独创的开门系统和精密的动作控制，实现高洁净度性能

选配

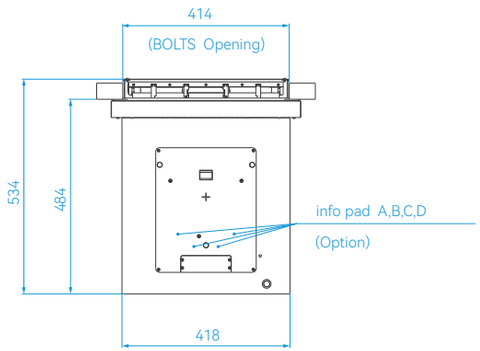
- E84
- Info pad pin 和 Lockout pin
- 外部I/O对应
- 采用TCP/IP通信
- 指示灯可定制
- 8" / 12" 晶圆
- 可对应Barcode Reader、 RF-ID Reader

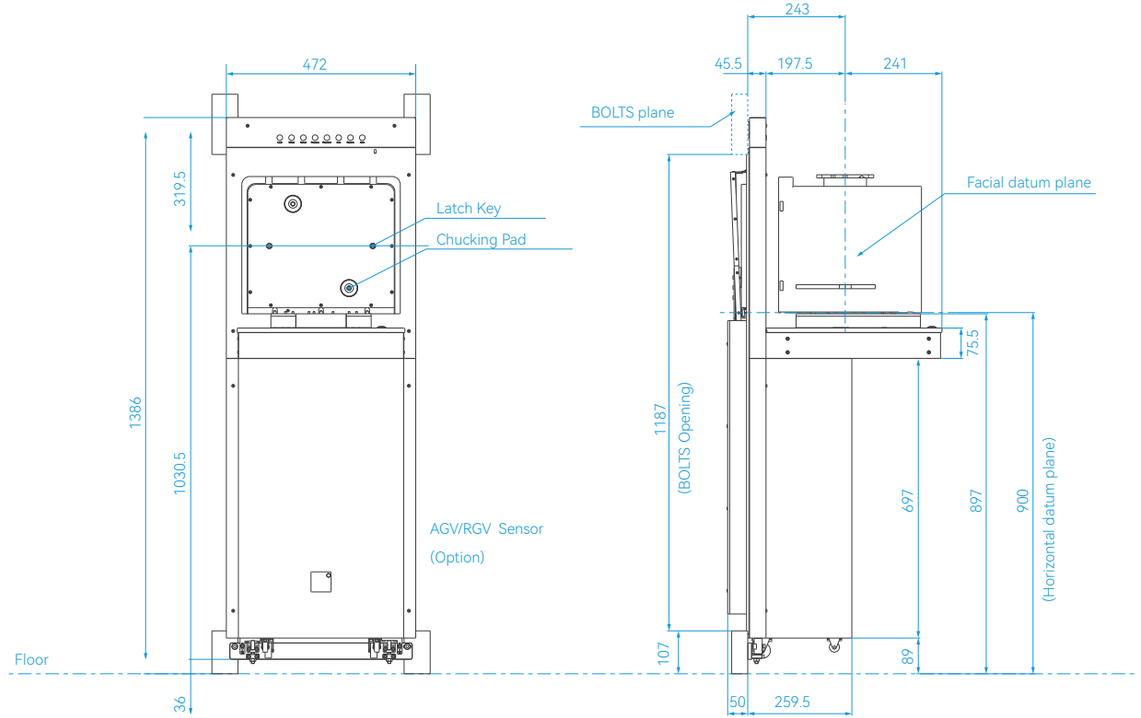
主要规格

型号	特殊规格	供电	压缩空气	真空空气	N2
VLP101-0	–	DC 24V±10%　6A	0.5 ~ 0.6MPa 流量10L/min以上	-60 ~ -80kPa 流量10L/min以上	–
VLP101-C	OC				–
VLP101-G	G				–
VLP101-T	S/T				–
VLP101-N	P/T	DC 24V±10%　9A			○

OC: Open Cassette;　G: 玻璃片对应;　S: 连接Stocker对应;　P: Purge对应;　T : Turn

外观图





SMIF 产品概述

VLP101 系列

特征

- 符合 SEMI 标准
- 晶片映射（有无、叠片、斜片）检测
- 晶片突片检测
- SMIF POD 存在检测和放置检测
- 搬运系统切换灵活

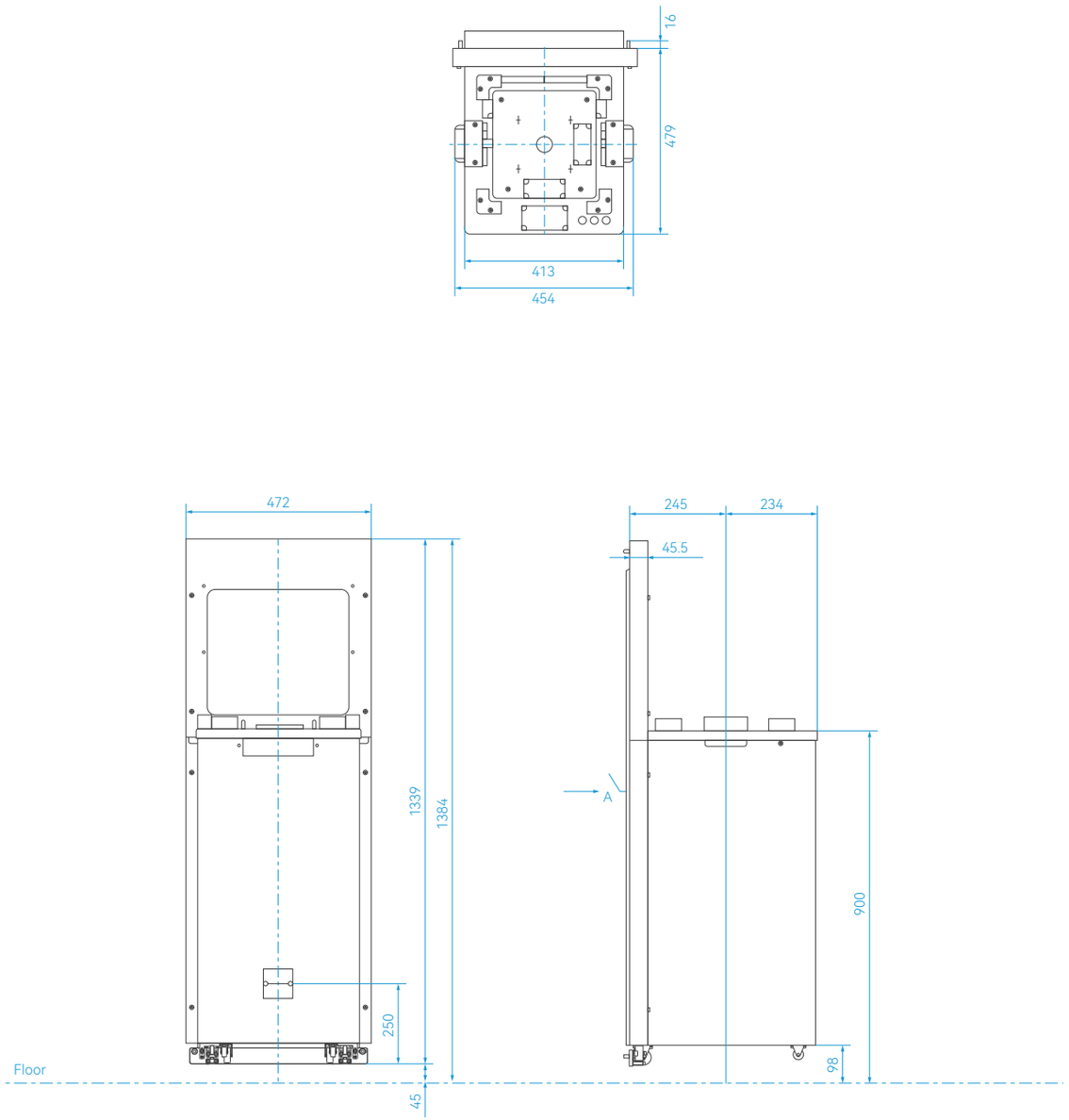
选配

- E84
- 外部I/O对应
- 采用TCP/IP通信
- 6" / 8" 晶圆
- 可对应smart tag reader、 RF-ID Reader

规格参数

支持的SMIF POD		符合SEMI E19.4 接口
基本尺寸		1384(H) x 472(W) x 479(D)mm
重量		50 kg
电源		DC 24V / AC 220V±10%, 50 Hz±5%, 5 A
通信接口		EtherCAT
精度	行程	263mm
	重复精度	±0.05mm
	对接精度	中心偏差 < 15mm
工作环境	温度	5 - 40℃
	湿度	30 - 80%

外观图



Aligner 选型介绍

规格

类型	WAFER SIZE							型号	真空空气	N2
	2	3	4	5	6	8	12			
VAC	–	–	●	●	●	●	–	ALH100-48V	○	-60 ~ -80kPa 流量10L/min以上
	–	–	–	–	–	●	●	ALH100-812V	○	

ALH100 系列

此款是在θ轴上具有 L 轴和 Z 轴，并具有晶片位置校正的高精度 ALIGNER。

特征

- 提高生产力
- 对应透明玻璃片及键合片

WAFER SIZE	定位精度		定位时间
	NOTCH角度精度	中心精度	
⌀100 ~ ⌀300	±0.05° ~ ±0.1°	±0.1mm	2秒~6秒

- NOTCH 角度精度、中心精度、定位精度是根据 SENSOR 的种类以及 Wafer Size 的不同而不同。
- 定位时间是指标准精度时的处理时间，根据 wafer 尺寸的不同，Alignment 时间也不同。

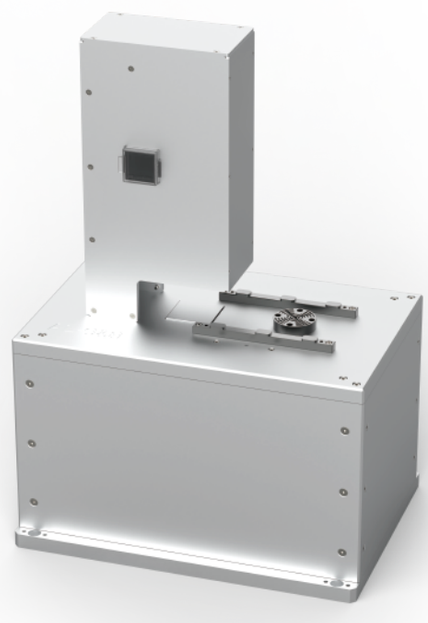
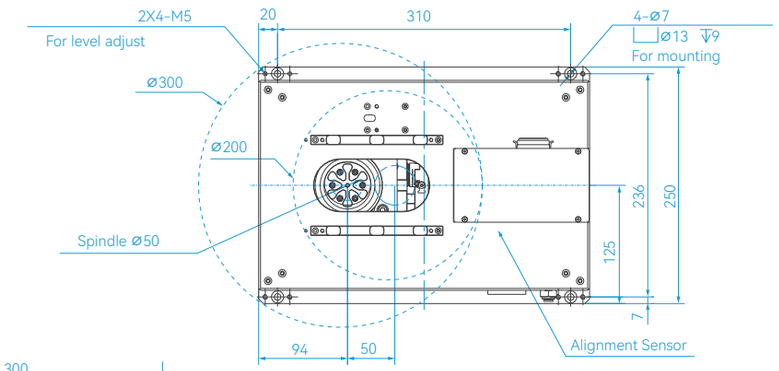
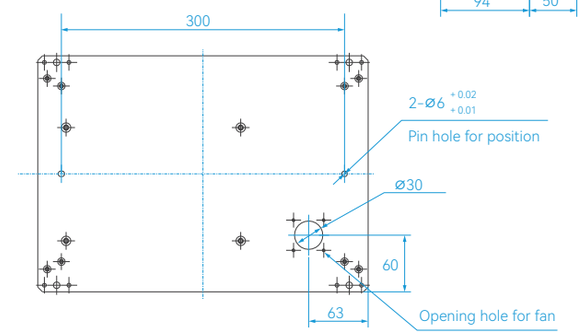
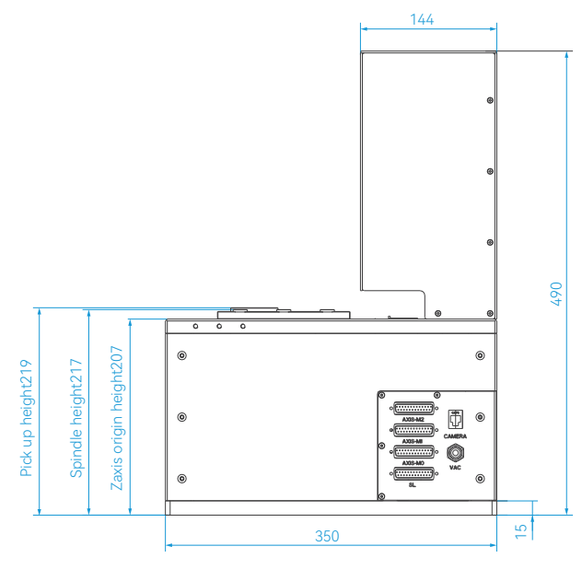


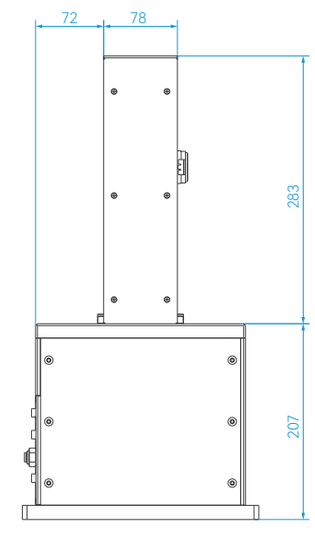
Photo : ALH100-48V

ALH100-812V









设备前端模块

12 寸 EFEM

特征

- 通过选配2台Aligner可以达到高Throughput
- 真空吸附式取放片和边缘夹持式取放片（可选）
- 可兼容200/300mm （可选）
- OHT、Stocker可对应

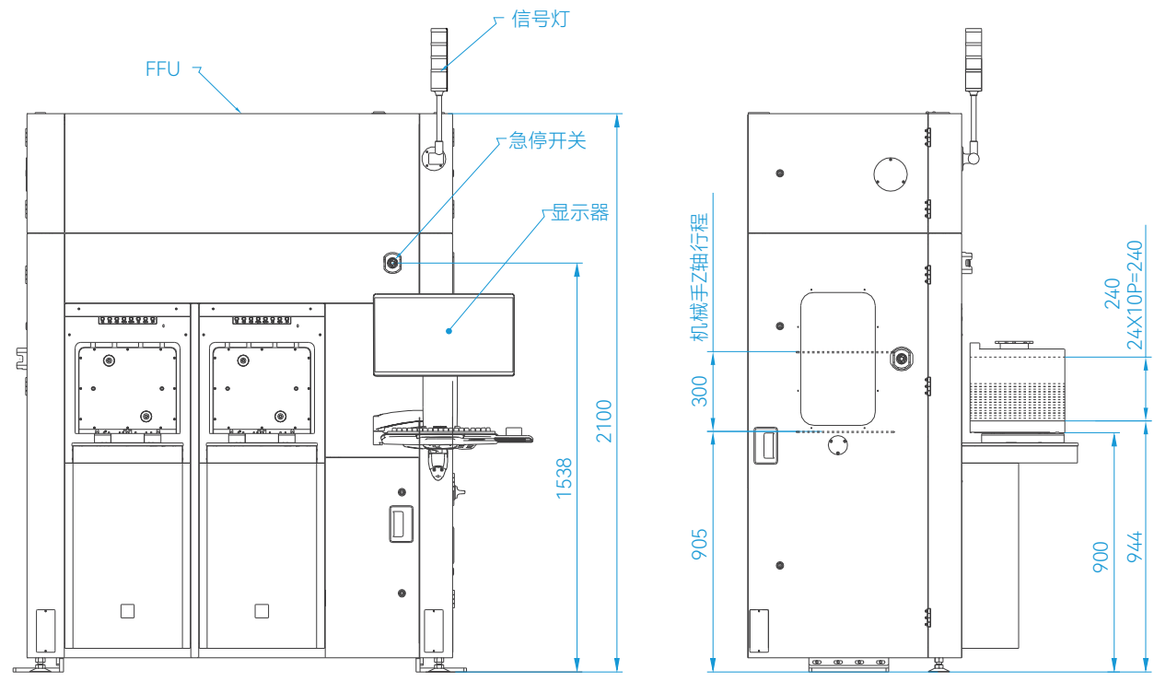
选配

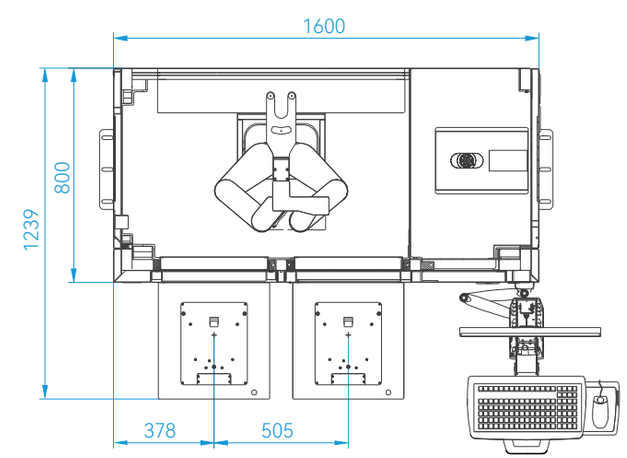
- E84
- Ionizer
- Teaching pendant
- OCR
- Autoteaching
- Chemical Filter
- 可对应Barcode Reader、 RF-ID Reader

主要规格

型 号	VEM2200	VEM2300	VEM2400
Port数量	2	3	4
传送对象	300mm Wafer ⌀300±0.2mm		
载体	300mm FOUP 25 段（SEMI E47.1）		
	300mm FOSB 25 段（SEMI E31）		
电源电源	单相 AC200V ~ AC220V±10% 50/60Hz±5%		
电流	4kVA(20A/200VAC) 包含FFU		
真空（压力）	-80kPa ~ -90kPa		
真空（流量）	40L/min	50L/min	60L/min
正压（压力）	0.6MPa ~ 0.7MPa		
正压（流量）	20L/min	30L/min	40L/min

12 寸 EFEM 外观图(2 Loadports)





6/8 寸 EFEM

搭载直驱伺服电机的洁净机械手、Aligner、直线导轨，实现高 Throughtput。适应于 150mm 和 200mm Wafer。

特征

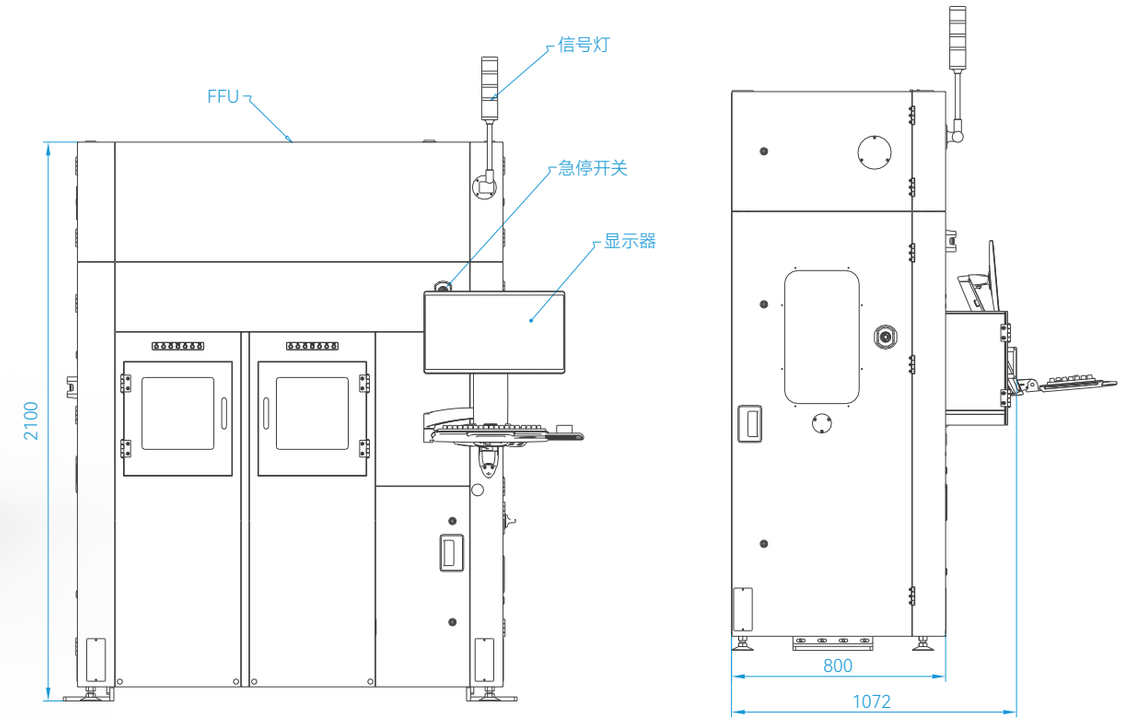
- 适用于150mm/200mm Wafer
- 真空吸附式取放片和边缘夹持式取放片

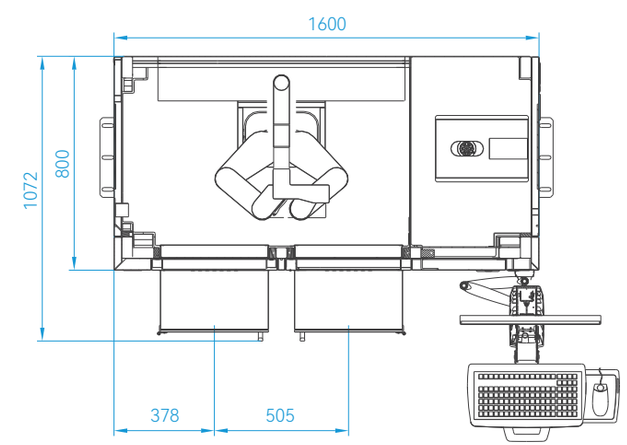
选配

- OCR
- Ionizer
- Chemical Filter
- Teaching pendant
- 可对应Barcode Reader、 RF-ID Reader

型号	VEM1200	VEM1300	VEM1400
Port数量	2	3	4
传送对象	150/200mm Wafer		
载体	200 mm CASSETTE25段		
	150 mm CASSETTE25段		
电源电源	单相AC200V~AC220V±10%50/60Hz±5%		
电流	4KVA(20A/200VAC)包含FFU		
真空（压力）	-80kPa ~-90kPa		
真空（流量）	40l/min	50L/min	60L/min
正压（压力）	0.6MPa ~ 0.7MPa		
正压（流量）	20L/min	30L/min	40L/min

6/8 寸 EFEM 外观图(2 Loadports)





晶圆分选机

采用直驱伺服电机的洁净机械手、Aligner，实现高 Throughput。Loadport 可在 Frame 的前后和两侧增加各种 Unit。可以和 OHT 和 Stocker 直接对接。

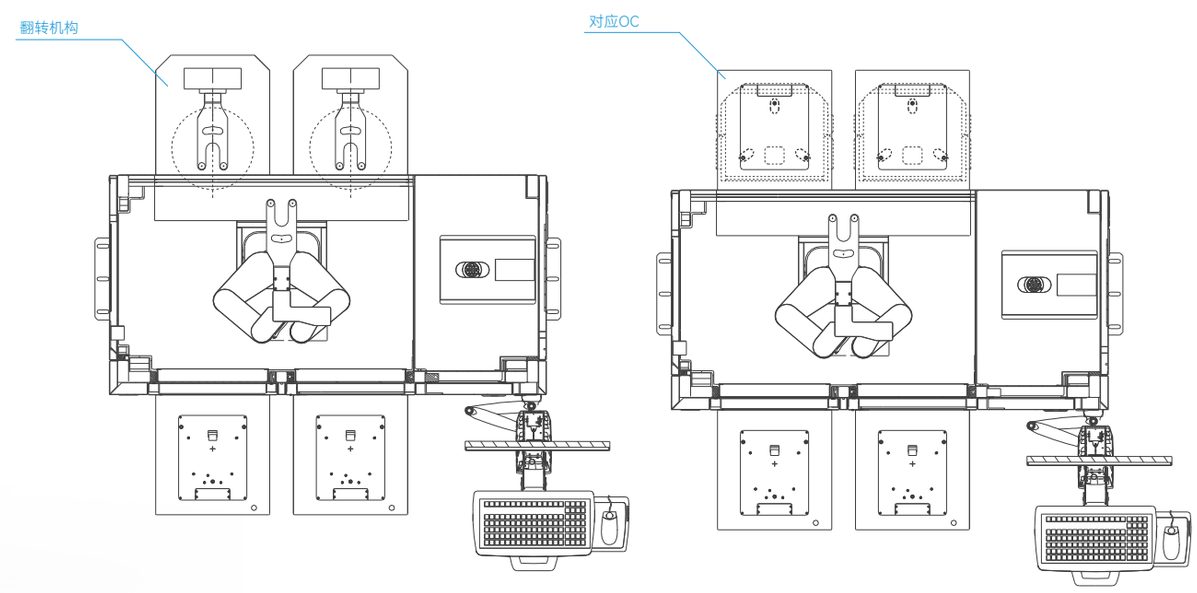
特征

- 兼容200mm/300mm Wafer
- 多种取放片方式可选
- 可读取Wafer上、下面ID
- OHT、Stocker可对应
- 可选配边缘检测功能

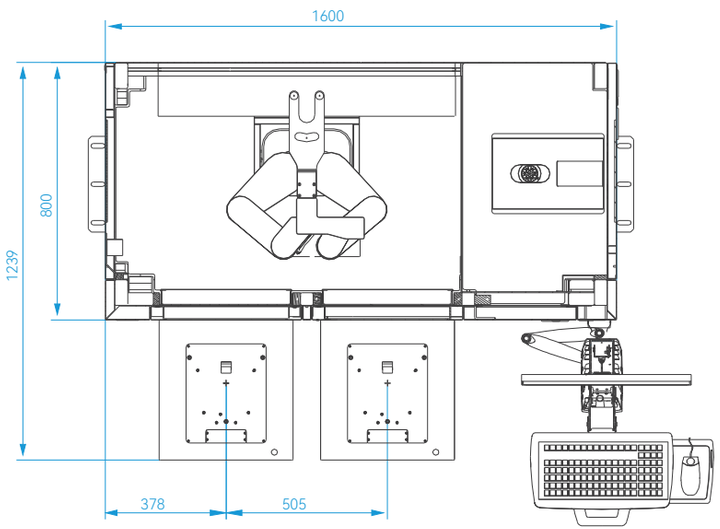
参数规格

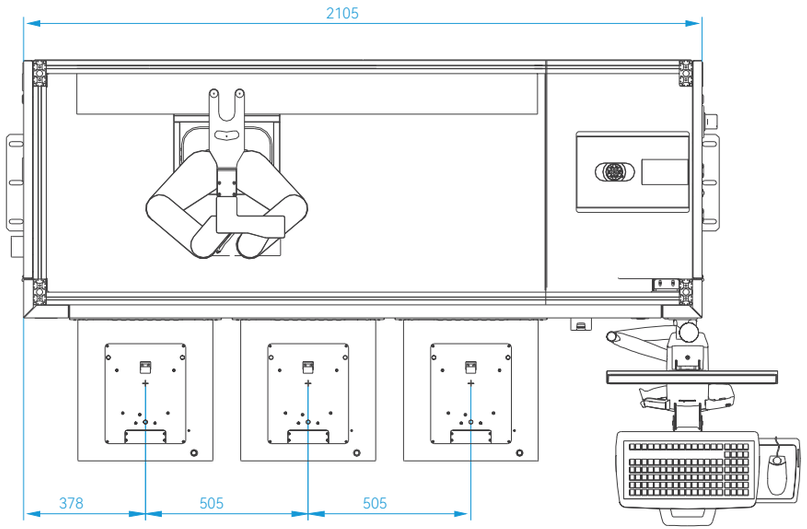
型号	SW2200	SW2300	SW2400
Port数量	2	3	4
传送对象	300 mm Wafer ⌀300±0.2mm		
载体	300mm FOUP 25(SEMI E47.1)		
	300mm FOSB 25(SEMI M31)		
电源电源	单相AC200V~AC220V±10%50/60Hz±5%		
电流	4kVA(20A/200VAC)包含FFU		
真空（压力）	-80kPa ~ -90kPa		
真空（流量）	40l/min	50L/min	60L/min
正压（压力）	0.6MPa ~ 0.7MPa		
正压（流量）	20L/min	30L/min	40L/min

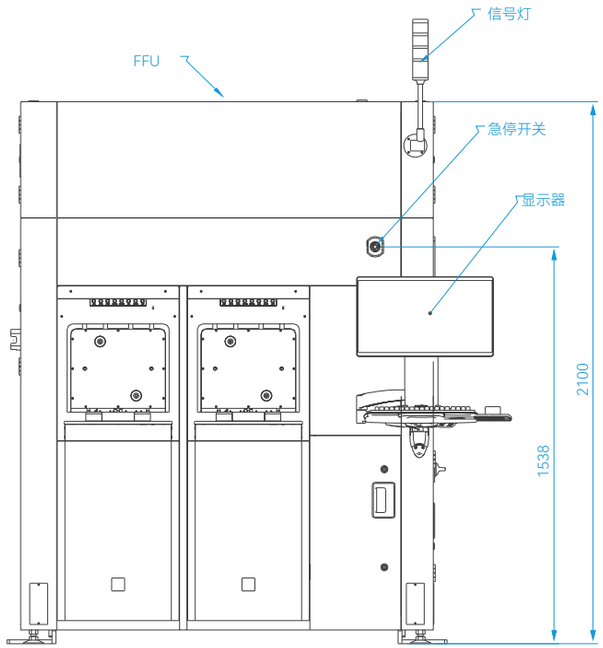
外观图(2 Loadports / 3 Loadports)

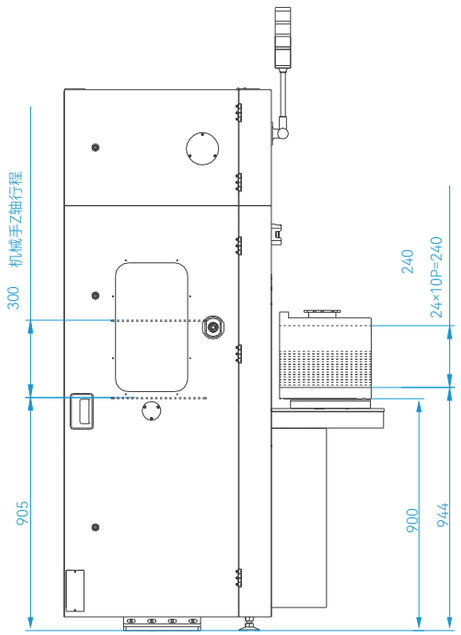


外观图(2 Loadports / 3 Loadports)

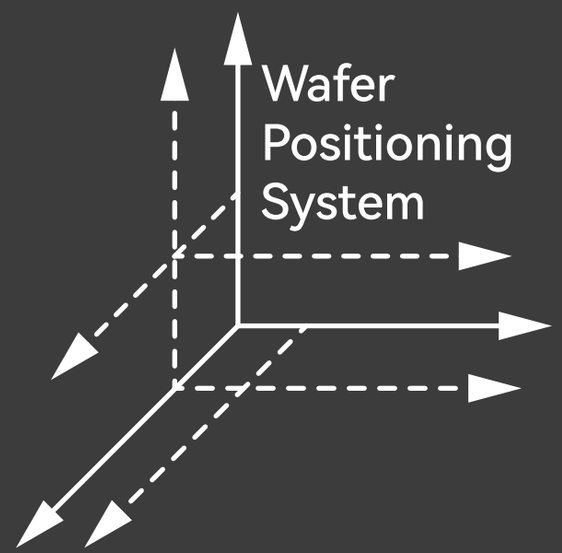








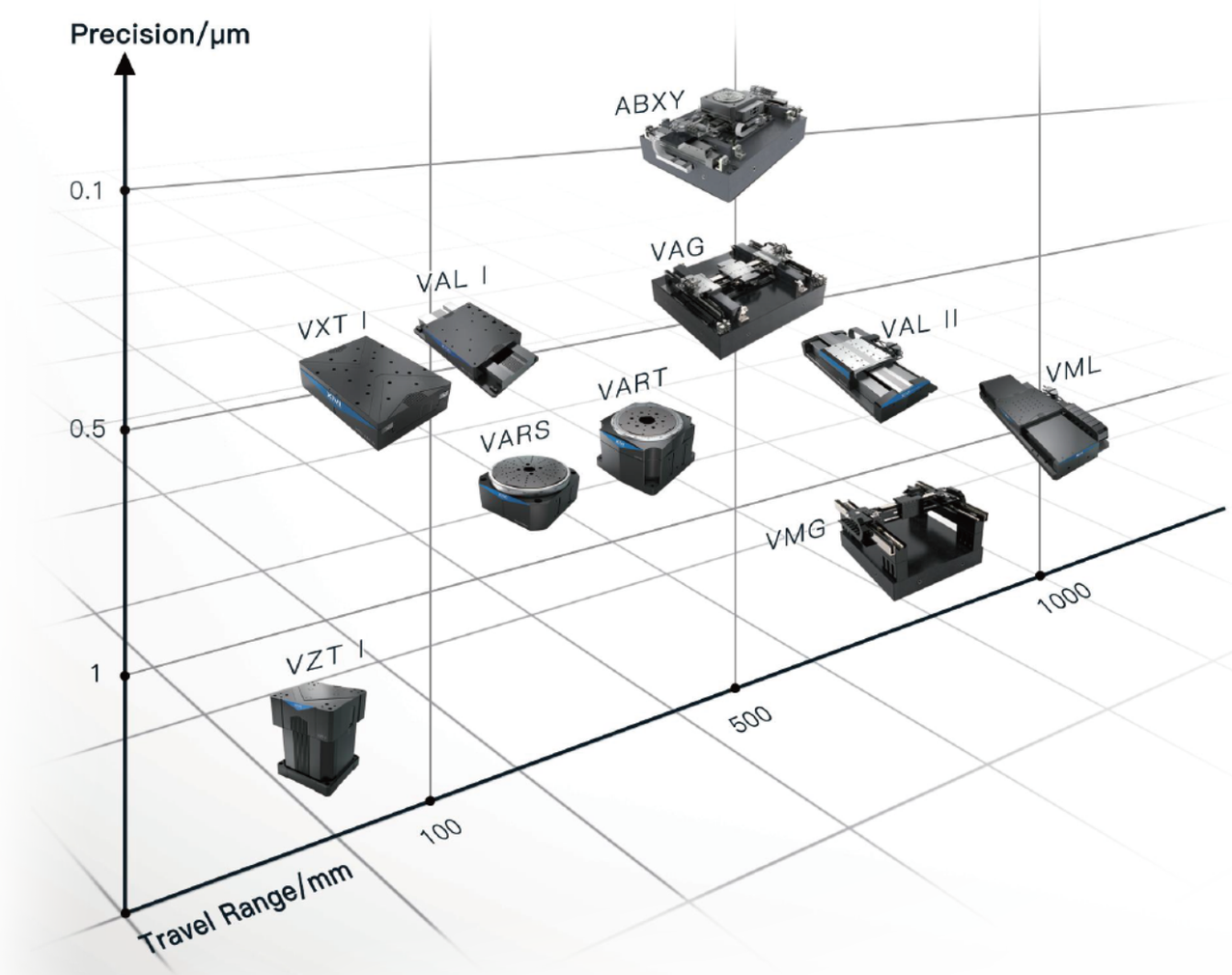
SW SORTER
晶圆分选机 10



晶 圆 定 位 系 统

高精度运动控制解决方案

- 定制化的服务
- 技术持续迭代
- 核心制造能力
- 快速交付能力



VXT系列产品概述

VXT 系列平台由直线交叉滚子轴承、直线电机和一个非接触式线性编码器组成。这个系列平台采用了中心驱动的无铁心运动，它能产生零齿槽效应，以确保平稳地控制速度并进一步提高运行效率。该系列的平台高速性能优良和准确。

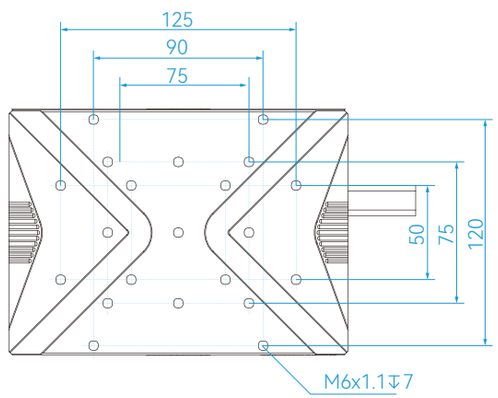
Photo : VTXI-XY-110-110 + VTXI-110-N
三轴运动平台

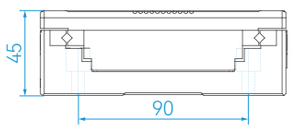
VXT I-L SERIES

特征

- 高分辨率（1nm），高重复定位精度(75nm)和高定位精度(250nm)
- 具有纳米级性能并且行程较长
- 运动误差小、稳定精度高
- 具有抗蠕变特性
- 高动态特性

Mechanical Specifications		VXTI-060-N	VXTI-060-P	VXTI-110-N	VXTI-110-P	VXTI-160-N	VXTI-160-P
Travel		60 mm	60 mm	110 mm	110 mm	160 mm	160 mm
Accuracy		±2 μm	±250 nm	±3 μm	±300 nm	±4 μm	±300 nm
Resolution		1 nm	1 nm	1 nm	1 nm	1 nm	1 nm
Repeatability(Bi-Directional)		±100 nm	±75 nm	±100 nm	±75 nm	±100 nm	±75 nm
Straightness &Flatness		±0.75 μm	±0.75 μm	±0.75 μm	±0.75 μm	±1 μm	±1 μm
Pitch		10 arc sec	10 arc sec	10 arc sec	10 arc sec	10 arc sec	10 arc sec
Yaw		5 arc sec	5 arc sec	5 arc sec	5 arc sec	5 arc sec	5 arc sec
Maximum Speed		300 mm/s	300 mm/s	300 mm/s	300 mm/s	300 mm/s	300 mm/s
Maximum Acceleration(No Load)		10 m/s^2	10 m/s^2	10 m/s^2	10 m/s^2	10 m/s^2	10 m/s^2
In-Position Stability		<1 nm	<1 nm	<1 nm	<1 nm	<1 nm	<1 nm
Maximum Force(Continuous)		22 N					
Load Capacity	Horizontal	10 kg					
	Side	10 kg					
Moving Mass		1.5 kg	1.5 kg	2.0 kg	2.0 kg	2.5 kg	2.5 kg
Stage Mass		2.8 kg	2.8 kg	3.5 kg	3.5 kg	4.0 kg	4.0 kg
Material		Aluminum					
MTBF		20,000hrs					



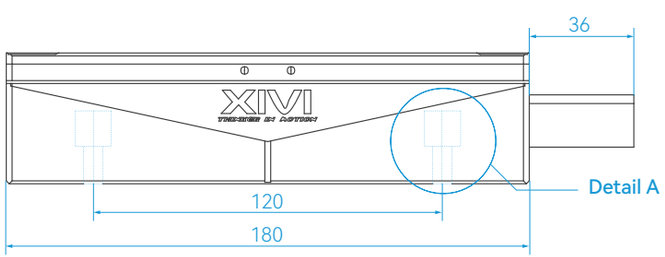


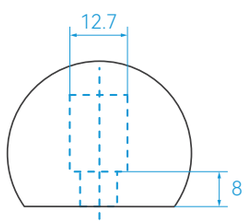
VXT I-XY SERIES 主要规格

特征

- 高分辨率(1nm)，高重复定位精度(75nm)和高定位精度(250nm)
- 具有高度集成化的XY直线电机纳米平台
- 具有纳米级性能并且行程较长
- 运动误差小，稳定精度高
- 具有抗蠕变特性
- 直接驱动技术的高动态性能

Mechanical Specifications		VXTI-060-XY-N	VXTI-060-XY-P	VXTI-110-XY-N	VXTI-110-XY-P	VXTI-160-XY-N	VXTI-160-XY-P
Travel		60 mm	60 mm	110 mm	110 mm	160 mm	160 mm
Accuracy		±2.5 μm	±250 nm	±4 μm	±300 nm	±5 μm	±300 nm
Resolution		1 nm	1 nm	1 nm	1 nm	1 nm	1 nm
Repeatability(Bi-Directional)		±100 nm	±75 nm	±100 nm	±75 nm	±100 nm	±75 nm
Repeatability(Uni-Directional)		±25 nm	±25 nm	±25 nm	±25 nm	±25 nm	+25 nm
Straightness &Flatness		±1 μm	±1 μm	±1.5 μm	±1.5 μm	±2 μm	±2 um
Pitch		10 arc sec	10 arc sec	12 arc sec	12 arc sec	15 arc sec	15 arc sec
Yaw		5 arc sec	5 arc sec	6 arc sec	6 arc sec	8 arc sec	8 arc sec
Orthogonality		10 arc sec	3 arc sec	10 arc sec	3 arc sec	10 arc sec	3 arc sec
Maximum Speed		350 mm/s	350 mm/s	350 mm/s	350 mm/s	350 mm/s	350 mm/s
Maximum Acceleration (No Load)		10 m/s^2	10 m/s^2	10 m/s^2	10 m/s^2	10 m/s^2	10 m/s^2
In-Position Stability		<1 nm	<1 nm	<1 nm	<1 nm	<1 nm	<1 nm
Maximum Force(Continuous)		22 N					
Load Capacity	Horizontaly	10 kg					
Moving Mass	Upper	1.6 kg	1.6 kg	2.2 kg	2.2 kg	2.5 kg	2.5 kg
	Lower	4.3 kg	4.3 kg	5.8 kg	5.8 kg	7.0 kg	7.0 kg
Stage Mass		5.6 kg	5.6 kg	7.8 kg	7.8 kg	9.0 kg	9.0 kg
Material		Aluminum					
MTBF		20,000hrs					





Detail A
Scale 2:5
Mounting holes TYP.

VML系列产品概述

VML 系列运动平台是 XIVI 推出的极具性价比的精密运动平台。通过研发团队不断优化材料及加工工艺使平台的平面度、直线度等方面达到最优，多系列化的平台设计完全可以满足广泛的市场需求。

特征

- 无铁芯直线电机驱动
- 低成本高性能
- 稳定可靠的高质量机械导轨
- 多规格多行程选择
- 侧面密封
- 各系列可组合多轴系统

Photo : VML 225 SERIES

VML 165

Mechanical Specifications		165-100	165-150	165-200	165-250	165-300	165-400	165-500	165-600
Travel		100mm	150mm	200 mm	250 mm	300 mm	400 mm	500 mm	600 mm
Accuracy		±1 μm	±1 μm	±1.5 μm	±1.5 μm	±1.5 μm	±1.5 μm	±2 μm	±2 μm
Resolution		1nm-10nm	1nm-10nm	1nm-10nm	1nm-10nm	1nm-10nm	1nm-10nm	1nm-10nm	1nm -10nm
Repeatability (Bi-Directional)		±0.5 μm	±0.5 μm	±0.5 μm	±0.5 μm	±0.5 μm	±0.5 μm	±0.5 μm	±0.5 μm
Straightness Flatness		±2.5 um	±3 μm	±4.5 μm	±5 μm	±6 μm	±8 μm	±9 μm	±10 μm
Pitch & Yaw		6 arc sec	7 arc sec	9 arc sec	10 arc sec	12 arc sec	15 arc sec	17 arc sec	19 arc sec
Maximum Speed		2 m/s							
Maximum Acceleration		30 m/s^2							
Maximum Force (Continuous)		70 N							
Load Capacity	Horizontal	45 kg							
	Side	45 kg							
Moving Mass		2.5 kg							
Stage Mass		10 kg	11 kg	12 kg	13 kg	14 kg	16 kg	18 kg	20 kg
Material		Aluminum							
MTBF		20,000hrs							

Photo : VML225-400

VML 190

Mechanical Specifications		190-100	190-150	190-200	190-250	190-300
Travel		100 mm	150 mm	200 mm	250 mm	1300 mm
Calibrated Accuracy		±1um	±1 μm	±1 μm	±1 μm	±1 um
Resolution		1nm -10nm	1nm -10nm	1nm -10nm	1nm -10nm	1nm - 10nm
Repeatability(Bi-Directional)		±0.4 μm	±0.4 μm	±0.4 μm	±0.4 um	±0.5 μm
Straightness &Flatness		±1.5 μm	±2 um	±2.5 μm	±3um	±4 μm
Pitch &Yaw		6 arc sec	7 arc sec	8.5 arc sec	9.5 arc sec	11 arc sec
Maximum Speed		2 m/s				
Maximum Acceleration		30 m/s				
Maximum Force(Continuous)		100 N				
Load Capacity	Horizontal	60 kg				
	Side	60 kg				
Moving Mass		4.5 kg				
Stage Mass		14.5 kg	16 kg	17 kg	18 kg	20 kg
Material		Aluminum				
MTBF		20,000hrs				

Mechanical Specifications		190-400	190-500	190-600	190-800	190-1000
Travel		400 mm	500 mm	600 mm	800 mm	1000 mm
Calibrated Accuracy		±1 μm	±1 μm	±1 μm	±1.5 μm	±1.5 μm
Resolution		1nm -10nm	1nm -10nm	1nm -10nm	1nm -10nm	1nm -10nm
Repeatability(Bi-Directional)		±0.5 μm	±0.5 μm	±0.5 μm	±0.5 μm	±0.5 μm
Straightness &Flatness		±5 μm	±6 μm	±6.5 μm	±8 μm	±10 μm
Pitch & Yaw		12.5 arc sec	15 arc sec	17 arc sec	19 arc sec	22.5 arc sec
Maximum Speed		2 m/s				
Maximum Acceleration		30 m/s^2				
Maximum Force(Continuous)		100 N				
Load Capacity	Horizontal	60 kg				
	Side	60 kg				
Moving Mass		4.5 kg				
Stage Mass		22 kg	25 kg	27 kg	32 kg	36 kg
Material		Aluminum				
MTBF		20,000hrs				

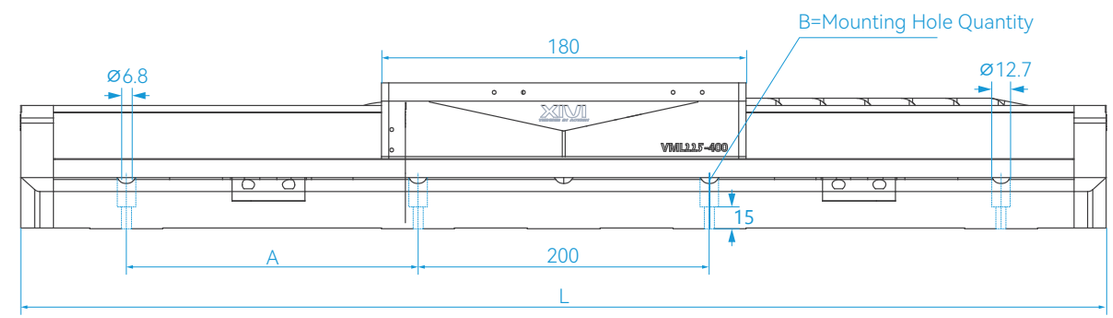
VML 225

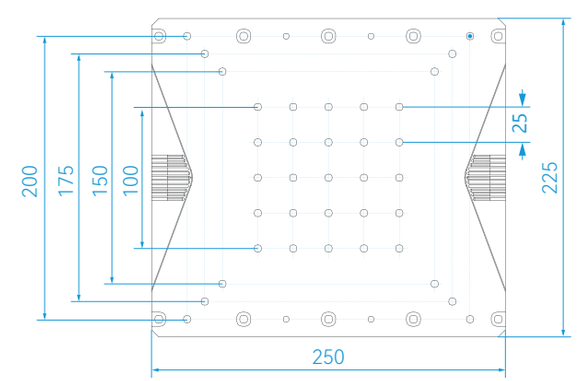
Mechanical Specifications		190-100	190-150	190-200	190-250	190-300
Travel		100 mm	150 mm	200 mm	250 mm	1300 mm
Calibrated Accuracy		±1um	±1 µm	±1 µm	±1 µm	±1 um
Resolution		1nm -10nm	1nm -10nm	1nm -10nm	1nm -10nm	1nm - 10nm
Repeatability(Bi-Directional)		±0.4 µm	±0.4 µm	±0.4 µm	±0.4 um	±0.5 µm
Straightness &Flatness		±1.5 µm	±2 um	±2.5 µm	±3um	±4 µm
Pitch &Yaw		6 arc sec	7 arc sec	8.5 arc sec	9.5 arc sec	11 arc sec
Maximum Speed				2 m/s		
Maximum Acceleration				30 m/s		
Maximum Force(Continuous)				100 N		
Load Capacity	Horizontal			60 kg		
	Side			60 kg		
Moving Mass				4.5 kg		
Stage Mass		14.5 kg	16 kg	17 kg	18 kg	20 kg
Material				Aluminum		
MTBF				20,000hrs		

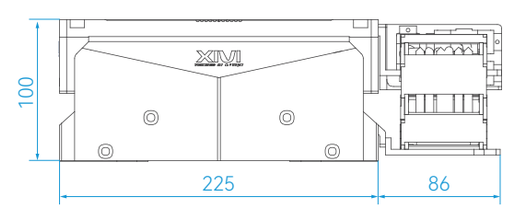
Mechanical Specifications		190-400	190-500	190-600	190-800	190-1000
Travel		400 mm	500 mm	600 mm	800 mm	1000 mm
Calibrated Accuracy		±1 µm	±1 µm	±1 µm	±1.5 µm	±1.5 µm
Resolution		1nm -10nm	1nm -10nm	1nm -10nm	1nm -10nm	1nm -10nm
Repeatability(Bi-Directional)		±0.5 µm	±0.5 µm	±0.5 µm	±0.5 µm	±0.5 µm
Straightness &Flatness		±5 µm	±6 µm	±6.5 µm	±8 µm	±10 µm
Pitch & Yaw		12.5 arc sec	15 arc sec	17 arc sec	19 arc sec	22.5 arc sec
Maximum Speed				2 m/s		
Maximum Acceleration				30 m/s^2		
Maximum Force(Continuous)				100 N		
Load Capacity	Horizontal			60 kg		
	Side			60 kg		
Moving Mass				4.5 kg		
Stage Mass		22 kg	25 kg	27 kg	32 kg	36 kg
Material				Aluminum		
MTBF				20,000hrs		

VML 225

Basic Model	Nominal Travel	Eleclimit Travel	Mechlimit Travel	A	B	L
VML225-100	100	102	110	50	8	442
VML225-150	150	152	160	75	8	492
VML225-200	200	202	210	100	8	542
VML225-250	250	252	260	125	8	592
VML225-300	300	302	310	150	8	642
VML225-400	400	402	410	200	8	742
VML225-500	500	502	510	200	8	842
VML225-600	600	602	610	200	8	942
VML225-800	800	802	810	200	12	142
VML225-1000	1000	1002	1010	200	12	1342







VML 280

Mechanical Specifications		280-300	280-400	280-500	280-600	280-800
Travel		300 mm	400mm	500mm	600mm	800mm
Calibrated Accuracy		±1um	±1um	±1μm	±1μm	±1.5um
Resolution				1 nm -10 nm		
Repeatability(Bi-Directional)				±0.5μm		
Straightness &Flatness		±3 μm	±4 um	±5μm	±6μm	±8μm
Pitch &Yaw		10 arc sec	12.5 arc sec	15 arc sec	16.5 arc sec	19 arc sec
Maximum Speed				2m/s		
Maximum Acceleration				30m/s		
Maximum Force(Continuous)				260N		
Load Capacity	Horizontal			150kg		
	Side			150kg		
Moving Mass				13kg		
Stage Mass		50 kg	55 kg	60 kg	65 kg	75 kg
Material				Aluminum		
MTBF				20,000hrs		

Mechanical Specifications		560-300	560-400	560-500	560-600	560-800
Travel		300 mm	400mm	500mm	600mm	800mm
Calibrated Accuracy		±1um	±1um	±1um	±1μm	±1.5um
Resolution				1 nm -10 nm		
Repeatability(Bi-Directional)				±0.5um		
Straightness &Flatness		±3 μm	±4 um	±5μm	±6μm	±8μm
Pitch &Yaw		10 arc sec	13 arc sec	15 arc sec	16.5 arc sec	19 arc sec
Maximum Speed				2m/s		
Maximum Acceleration				30m/s		
Maximum Force(Continuous)				500N		
Load Capacity	Horizontal			150kg		
	Side			150kg		
Moving Mass				25 kg		
Stage Mass		90 kg	100 kg	110kg	120 kg	140 kg
Material				Aluminum		
MTBF				20,000hrs		

VAL系列产品概述

VAL 系列运动平台是 XiviTech 一款面向高精度、高端应用市场的气浮直线平台。凭借研发团队在材料、设计、分析方面的专业技术对平台整体进行不断设计优化，采用非接触的气浮轴承与磁预载的结构，实现无摩擦的平滑运动，使 VAL 系列运动平台达到亚微米至纳米级的定位精度及重复定位精度。

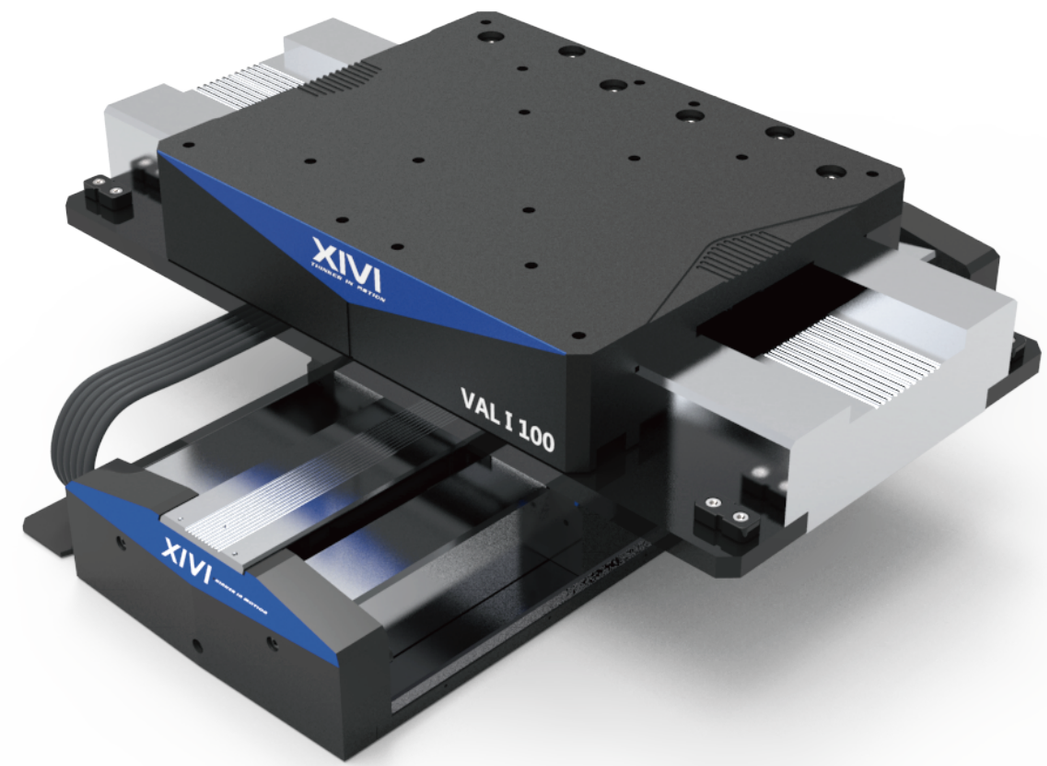
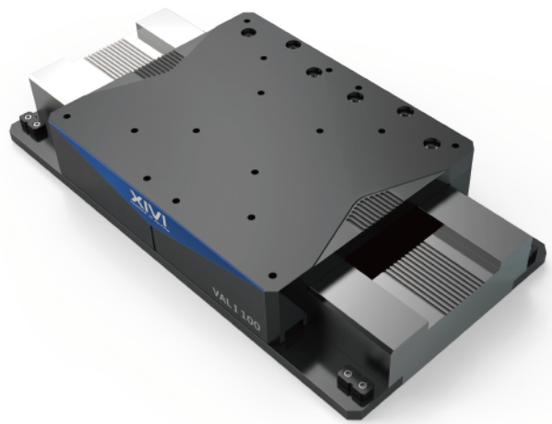


Photo : VAL I 100 + VAL II 200

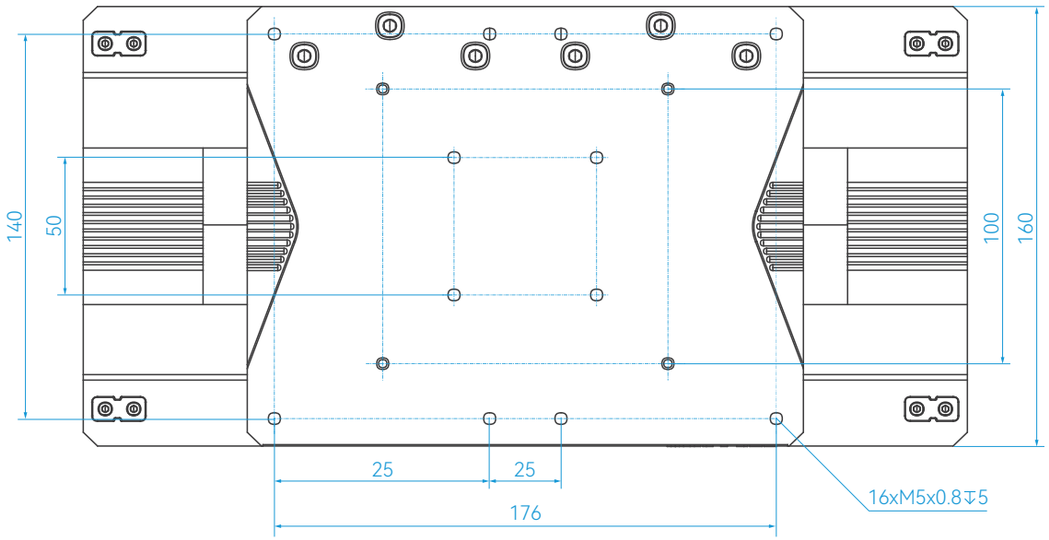
VAL I SERIES 主要规格

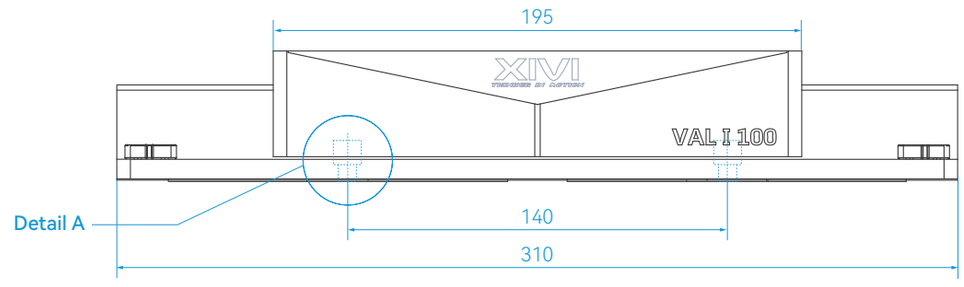
特征

- 专为小型、高性能检测应用设计
- 全空气预载气浮导轨
- 分辨率可达0.1nm的直线编码器反馈
- 低噪音无摩擦
- 闭环分辨率可达0.5nm
- 高动态特性

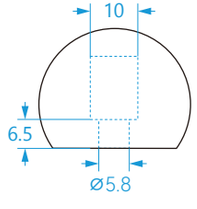


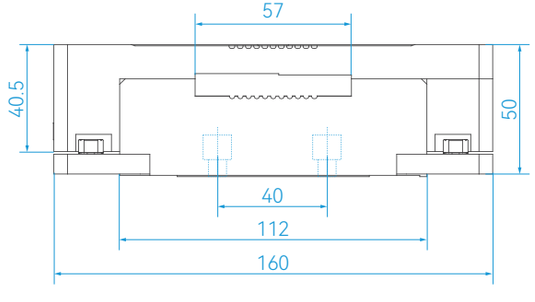
Basic Model	VAL I 025	VAL I 050	VAL I 100	VAL I 150
Total Travel	25 mm	50 mm	100 mm	50 mm
Motor Type	Brushless Linear Sevomotor			
Feedback	Noncontact Linear Encoder	0.5nm-10nm		
Maximum Speed	300 mm/s			
Maximum Acceleration (no-load)	10m/s2			
Maximum Load	15 kg			
Accuracy(with error compensation,temperature stabilized within 0.2℃)	±0.2μm	±0.2μm	±0.3μm	±0.5μm
Repeatability	±50 nm			
Straightness &Flatness	±0.25 μm		±0.4 μm	
Pitch/Yaw	±0.25 arc sec	±0.5 arc sec	±1.0 arc sec	±1.25 arc sec
Minimum incremental motion Capacity	-Standard 10nm , -Optional:1nm			
Nominal Stage Mass	5kg	6kg	7kg	13kg
Moving Mass	2kg			4.5kg
Operating Pressure	0.5MPa±0.05MPa			
Air Consumption	0.8 SCFM			
Material	Alum inum			
MTBF	20,000hrs			





Detail A
Scale 2:5
Mounting holes TYP.





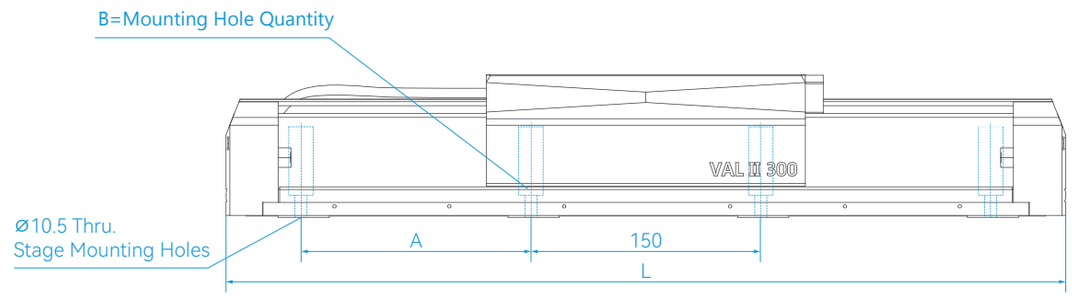
VAL II SERIES 主要规格

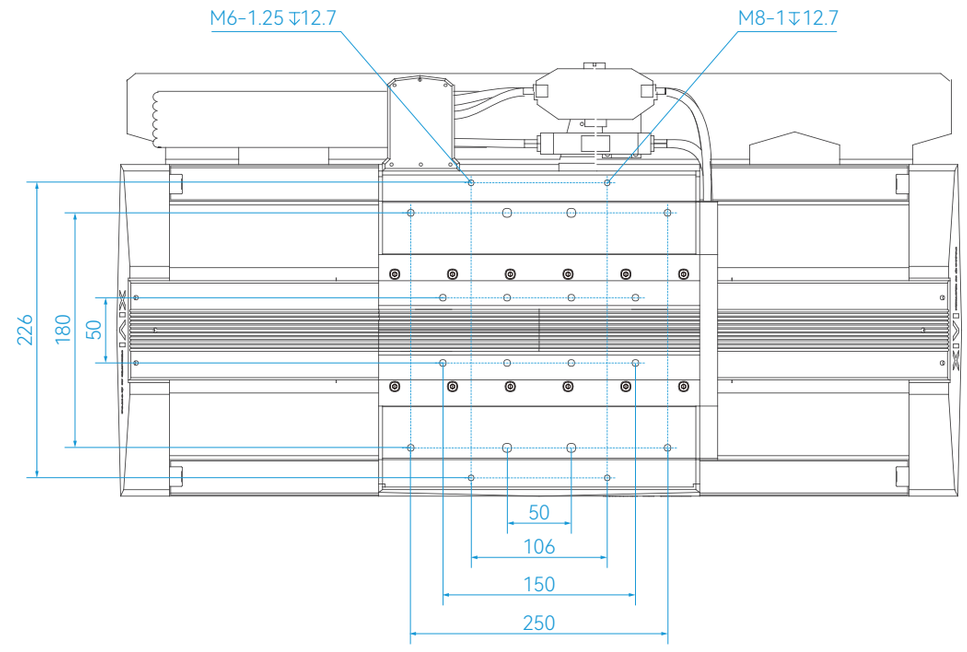
特征

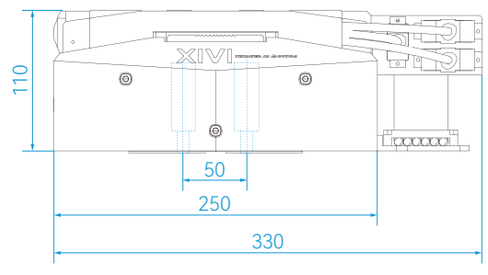
- 磁预载气浮轴承
- 直线编码器反馈
- 高速度稳定性
- 低噪音无摩擦
- 行程可达1m
- 高动态特性

Basic Model		VALII100	VALII200	VALII300	VALII400	VALII500	VALII600	VALII800	VALII1000
Total Travel		100 mm	200 mm	300 mm	400 mm	500 mm	600 mm	800 mm	1000 mm
Motor Type		Brushless Linear Sevomotor							
Feedback		Noncontact Linear Encoder or Laser Interferometer							
Encoder	Noncontact Linear Encoder	0.001μm-0.1μm							
	Laser Interferometer	0.39nm-79nm							
Maximum Velocity (no-load)		2m/s							
Peak Acceleration (no-load)		20m/s²							
Maximum Load Capacity		50 kg							
Accuracy	Noncontact Linear Encoder (with error compensation , temperature stabilized within 0.2℃)	±0.3μm		±0.4μm		±0.6μm		±1μm	
Repeatability		±0.2μm			±0.3μm		±0.4μm		
Straightness Flatness		±0.25μm	±0.4μm	±0.75μm	±1.5μm	±2.0μm	±3.0μm	±4.0μm	±5.0μm
Pitch/Yaw		1 arc sec	2 arc sec	3 arc sec	4 arc sec	5 arc sec	6 arc sec	8 arc sec	10 arc sec
Velocity ripple		0.1% @ 500mm/s							
Minimum incremental motion		10 nm							
Nominal Stage Mass		30kg	35kg	40kg	45kg	50kg	55kg	65kg	75kg
Moving Mass		8.5kg							
Operating Pressure		0.5MPa±0.05MPa							
Air Consumption		0.8 SCFM							
Material		Aluminum							
MTBF		20,000hrs							

Model	Total trave	Dimensions-Millimeters		
		A	B	L
VALII100	100	75	8	450
VALII200	200	100	8	550
VALII300	300	150	8	650
VALII400	400	200	8	750
VALII500	500	250	8	850
VALII600	600	150	12	950
VALII800	800	200	12	1150







VAR系列产品概述

VAR 系列气浮转台具有超高转动精度、匀速稳定性、极小的轴向和径向跳动误差以及高刚性等特点。VAR 系列气浮转台是凭借研发团队的材料、结构、仿真分析等专业技术，对转台整体进行不断优化的结果。非接触的气浮轴承结构，实现无摩擦的转动，使 VAR 系列转台达到 ±2 arc sec 的转角精度。

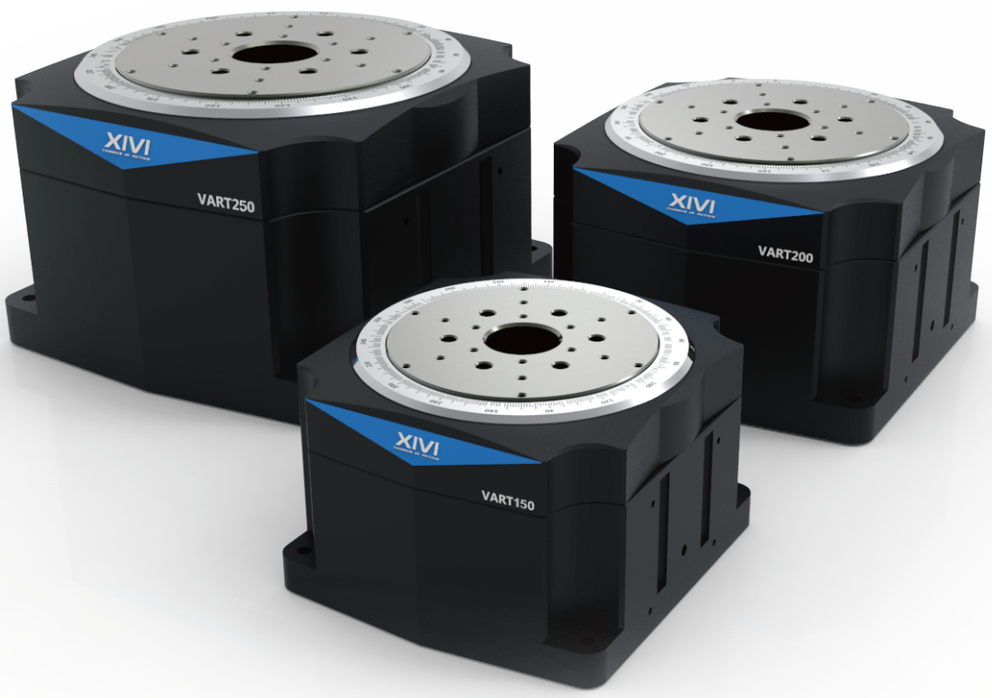


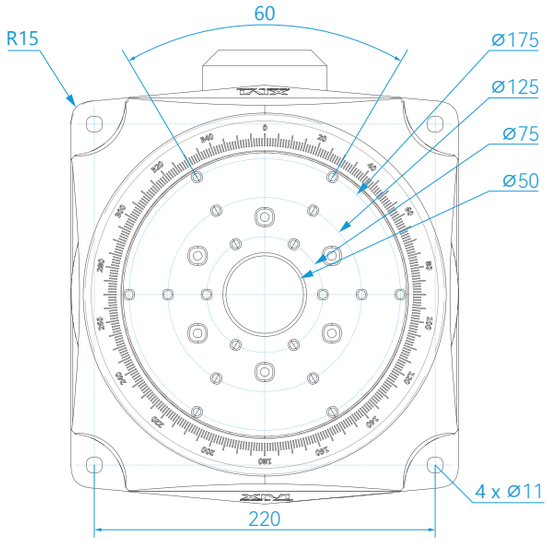
Photo : VART 150
VART 200
VART 250

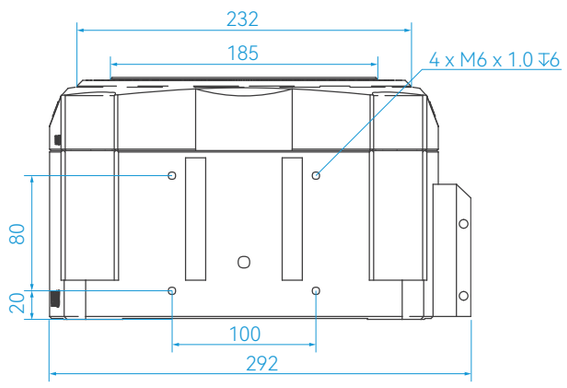
VART SERIES 主要规格

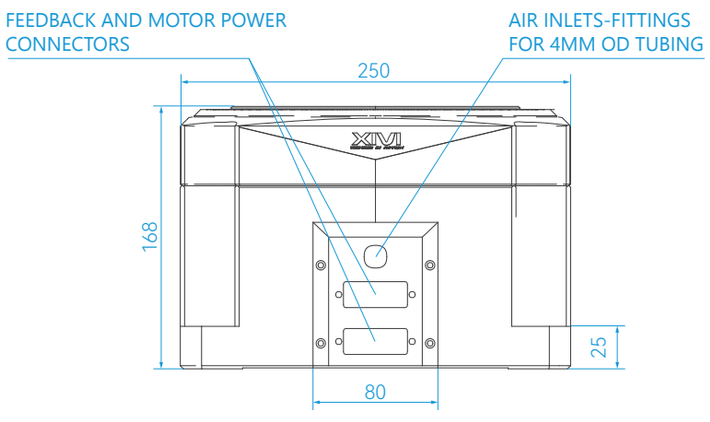
特征

- 气浮转台
- 突出的速度稳定性
- 高精度旋转编码器
- 无机械接触
- 无刷无槽伺服电机直接驱动，高扭矩输出
- 卓越的运动性能，运动误差小，稳定精度高
- 大通光孔径

VART Series		VART 150	VART 200	VART 260
Width		150mm	200mm	260mm
Tabletop Diameter		100mm	145mm	200mm
Height		135mm	165mm	185mm
Aperture		20 mm	30 mm	50 mm
Total Travel			360° Continuous	
Bus Voltage			UP to 320VDC	
Fundamental Encoder Resolution		11840 lines/rev	18000 lines/rev	23600 lines/rev
Max Speed		1200 rpm	800 rpm	600 rpm
Accuracy			±2 arc sec	
Repeatability(Bi-Directional)			<1 arc sec	
Max Load	Axial	20 kg	40 kg	70 kg
	Radial	3 kg	6kg	10 kg
	Tilt	3.5N-m	8 N-m	18N-m
Axial Error Motion①			<100m	
Radial Error Motion②			<150m	
Tilt Error Motion①			<5.0 arc sec	
Axial Error Motion②			<20nm	
Radial Error Motion②			<20nm	
Tilt Error Motion②			<0.04 arc-sec	
Operating Pressure			0.5MPa±0.05MPa	
Air Consumption			<2 SCFM	
Inertia	Unloaded	2200kg-mm²	13600kg-mm²	46000kg-mm²
Total Mass		6.5kg	14.5kg	27 kg
Material			Black Aluminum Body	





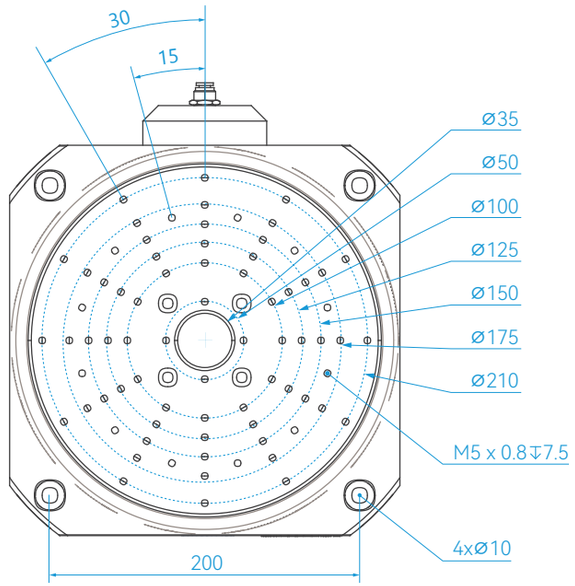


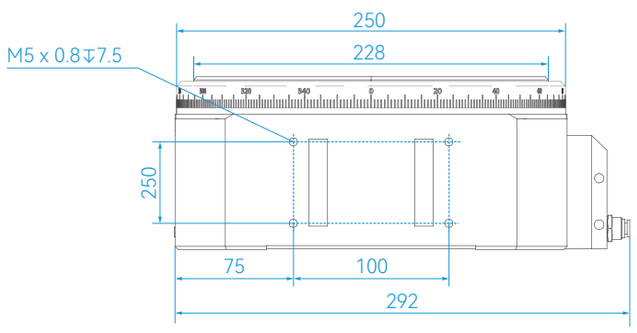
VARS SERIES 主要规格

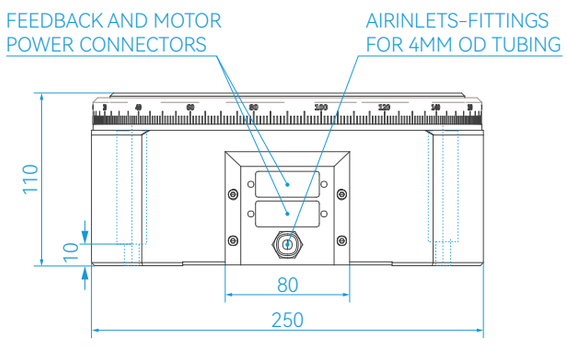
特征

- 气浮转台
- 零齿槽效应电机使其速度稳定性高
- 高精度旋转编码器
- 无机械接触
- 直驱无刷无槽伺服电机
- 运动误差小，稳定精度高
- 扁平设计结构紧凑

VARS Series		VARS 150	VARS 200	VARS 250	VARS 300
Width		150mm	200mm	250mm	300mm
Tabletop Diameter		128mm	178mm	228mm	278mm
Height		80 mm	90 mm	100mm	110mm
Aperture		8mm	20 mm	35 mm	75 mm
Total Travel		360°Continuous			
Bus Voltage		300 VDC			
Fundamental Encoder Resolution		3600 lines/rev	8192 lines/rev	11840 lines/rev	18000 lines/rev
Max Speed		300 rpm	300 rpm	500 rpm	500 rpm
Accuracy		±3 arc sec	±2 arc sec		
Repeatability(Bi-Directional)		<2 arc sec	<1 arc sec		
Max Load	Axial	8 kg	30 kg	65 kg	100kg
	Radial	4 kg	15 kg	30 kg	50 kg
	Tilt	3 N-m	10N-m	28N-m	45N-m
Axial Error Motion②		<175nm	<100nm		
Radial Error Motion①		<450nm	<250nm		
Tilt Error Motion①		<2.0 arc sec	<0.7 arc sec	<0.5 arc sec	<0.5 arc sec
Axial Error Motion②		<20nm			
Radial Error Motion②		<20nm			
Tilt Error Motion②		<0.08 arc sec	<0.06 arc sec	<0.04 arc sec	<0.04 arc sec
Operating Pressure		0.5MPa±0.05MPa			1
Air Consumption		<2 SCFM			
Inertia	Unloaded	3800kg-mm²	13850kg-mm²	39000kg-mm²	03000kg-mm²
Total Mass		4.6kg	9.0kg	15.5kg	24.3kg
Material		Black Aluminum Body			







VZT系列产品概述

VZT 系列垂直平移台可实现微米精度的垂直运动，为轻型或重型负载应用提供理想的解决方案。该平台精确、快速的定位能力可应用于半导体制造、激光加工、生物医疗等行业。

特征

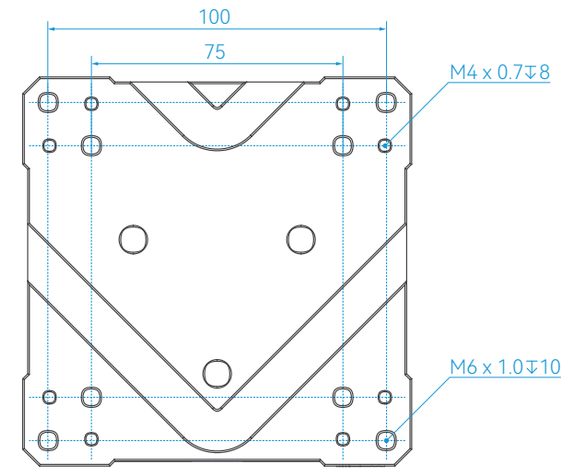
- 在紧凑型设备中，具有30mm的垂直行程
- 垂直抗蠕动交叉滚子轴承，可实现无波纹运动以及卓越的轨迹精度
- 集成高精度线性编码器可实现较高重复性和高精度定位

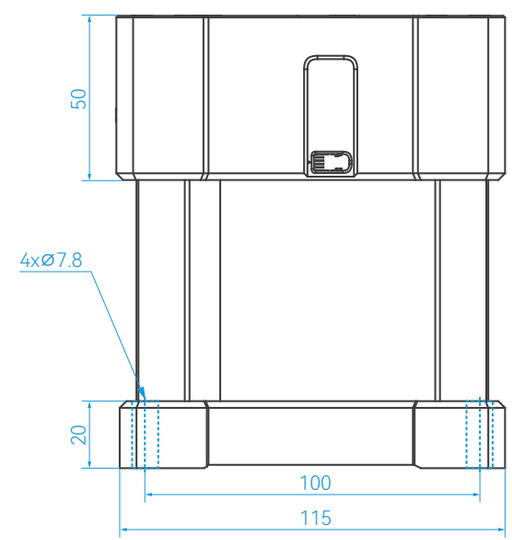
Photo : VZT - I

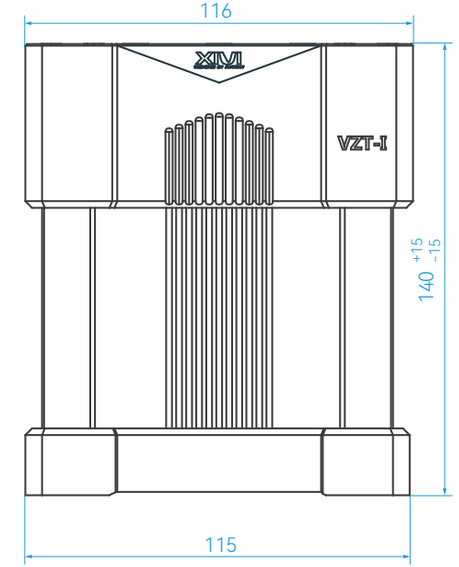
VZT SERIES

Mechanical Specifcations	VZT-I-5	VZT-I-10	VZT-I-20	VZT-I-30
Travel	5 mm	10mm	20 mm	30 mm
Accuracy	±0.75μm	±0.75μm	±1μm	±1μm
Repeatability (Bi-Directional)	±0.1μm	±0.1μm	±0.15μm	±0.2μm
Resolution(Minimum Incremental Motion)	0.1μm	0.1μm	0.1μm	0.1μm
Straightness Flatness	±1μm	±1μm	±2μm	±2μm
Pitch	10 arc sec	10 arc sec	15 arc sec	20 arc sec
Yaw	10 arc sec	10 arc sec	15 arc sec	20 arc sec
Maximum Speed	10 mm/s	10 mm/s	10 mm/s	10 mm/s
Maximum Acceleration (No Load)	5m/s²	5m/s²	5m/s²	5m/s²
In-Position Stability	<2 nm	<2 nm	<2 nm	<2 nm
Maximum Force (Continuous)	80N			
Center Load Capacity	4 kg			
Stage Mass	2.5kg	2.7kg	3.0kg	
Material	Black Aluminum Body			3.3kg
MTBF(Mean Time Between Failure)	20,000 hours			

Photo : VML225 + VML225 + VZT-I





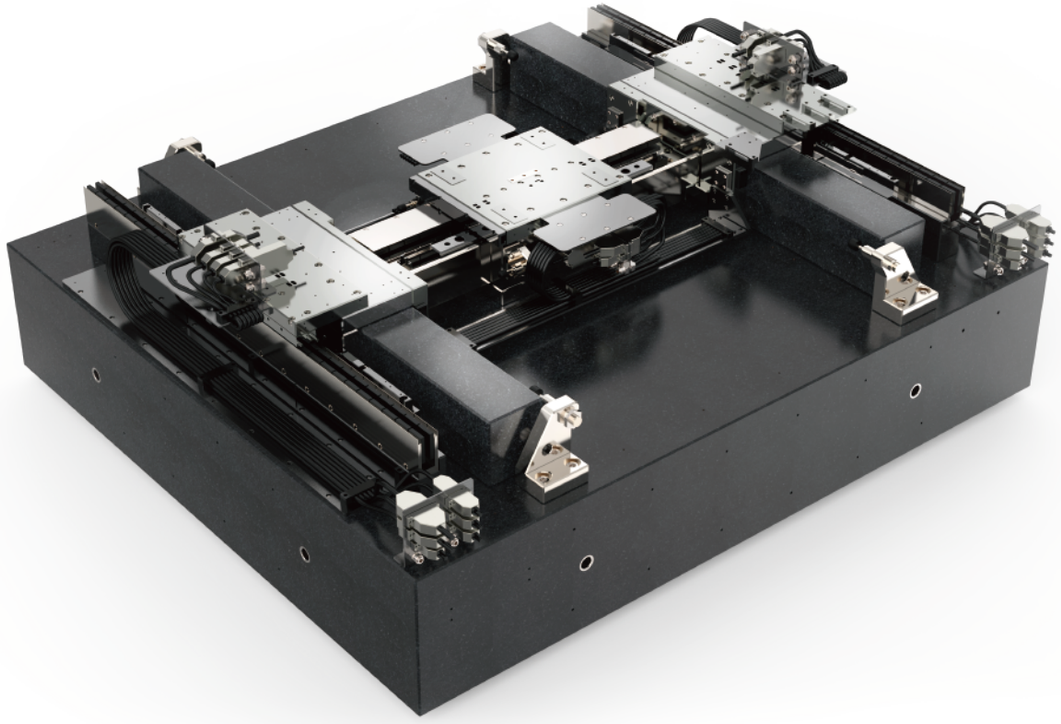


VAG系列产品概述

VAG 系列运动平台是 XiviTech 持续多年在高级材料、特有加工技术、精密结构分析与设计领域不断投入后，专门为帮助当今半导体工业设备制造业实现高精度、高产出率目标而研发的系列平台。高自主知识产权及精英的研发团队，能确保我们的企业在迎接未来挑战时，始终保持领先的技术能力。VAG 系列运动平台，非常能满足在电子及半导体加工、检测行业极具挑战的严苛要求。

特征

- 扫描速度快
- 线性编码器反馈
- 整定时间小
- 全气浮及真空预载



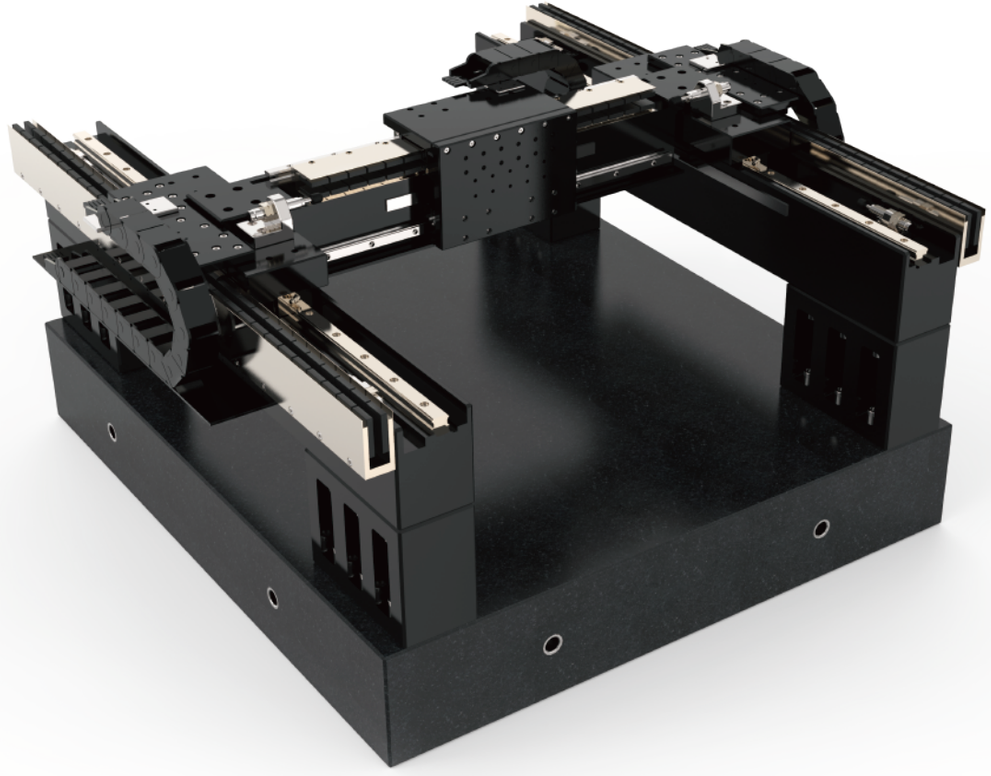
VAG		
Travel	Scan Axis	350mm,500mm,
	Step Axis	350mm,500mm
Drive System		Linear Brushless Motor
Resolution		0.25nm
Accuracy		±300nm
Repeatability (choose linear driver)		±100nm(±50nm)
XYZ Position Stability (Alr On)		20 nm
Granite Bass Thickness		250mm
Rated Payload (Maintaining Dynamic Specifications)		5kg
Maximum Payload		25 kg
Maximum Velocity with Rated Payload	Scan & Step Axis	1000mm/s
Peak Acceleration with Rated Payload	Scan & Step Axis	2G(20m/s²)
RMS Acceleration with Rated Load	Scan & Step Axis	1G(10m/s²)
Stiffness,First Natural Frequency with Rated Payload		>100Hz
Pitch		2 arc sec
Roll		2 arc sec
Yaw		2 arc sec
XY straightness		1 um
XY Flatness		1.2um
XY Orthogonality		<2 arc sec
Velocity ripple (sampled at 400mm/s)		0.1%
MTBF		40,000 hours

VMG系列产品概述

VMG 系列龙门系统专为超精密，高动态加工而设计，为大范围自动化应用平台提供杰出的性能和多种功能。该系列系统的平面设计使工作空间里的动态倾斜误差最小化。可应用领域包括：精密微加工、磨具切割、燃料电池加工、定位焊接、印刷电子、高速拾取、自动化装配、可视检查、药物分配和高精度检查等。

特征

- 占地面积小
- 可定制的Z和theta轴用于灵活配置
- 大功率无刷直线伺服电机，平稳运动
- 非接触式线性编码器
- 速度为2m/s,加速度为5g
- 可配置的电缆管理系统可将光纤激光器、摄像机、空气管路等集成到多种应用中
- 行程长达500mmX500mm



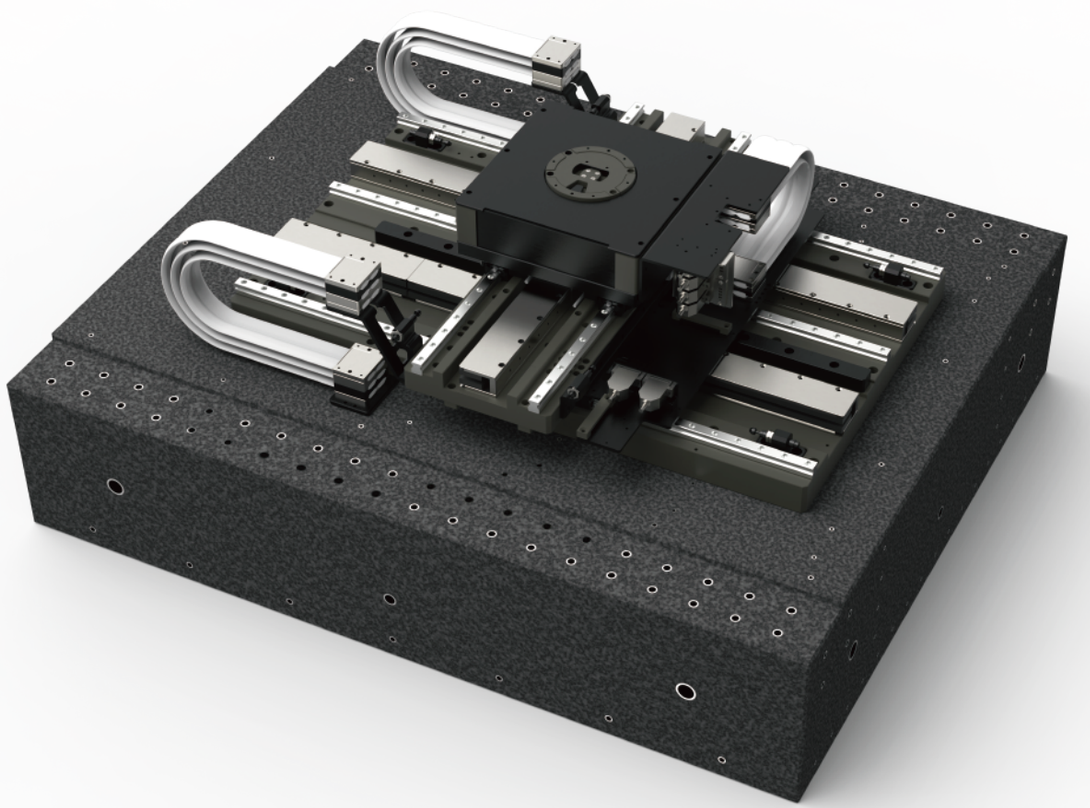
VMG			
Travel	500 mm X 500 mm	750 mm X 750 mm	1000mmX1000mm
Drive System	Linear Brushless Motor		
Resolution	0.1 um -1 nm		
Accuracy	±1.5μm	±2μm	±2.5μm
Repeatability(choose linear driver)	±0.5μm	±0.75μm	±1.0μm
Granite Bass Thickness	250mm		
Rated Payload(Maintaining Dynamic Specifications)	5kg		
Maximum Payload	40 kg		
Maximum Velocity with Rated Payload	2m/s		
Peak Acceleration with Rated Payload	5G(50m/s²)		
XY Orthogonality	5 arc sec		
Material	Aluminum		
MTBF	40,000 hours		

VMZT系列产品概述

VMZT 系列平台是一款具有四自由度的机械运动平台。专为后道曝光机及晶圆检测相关的要求严格的半导体工业设计而设计。

特征

- X、Y采用高刚性，高精度导轨，微米级运行平面度与直线度
- ZT轴 一体化轻薄设计，支持360°旋转
- Z轴可以保持原样



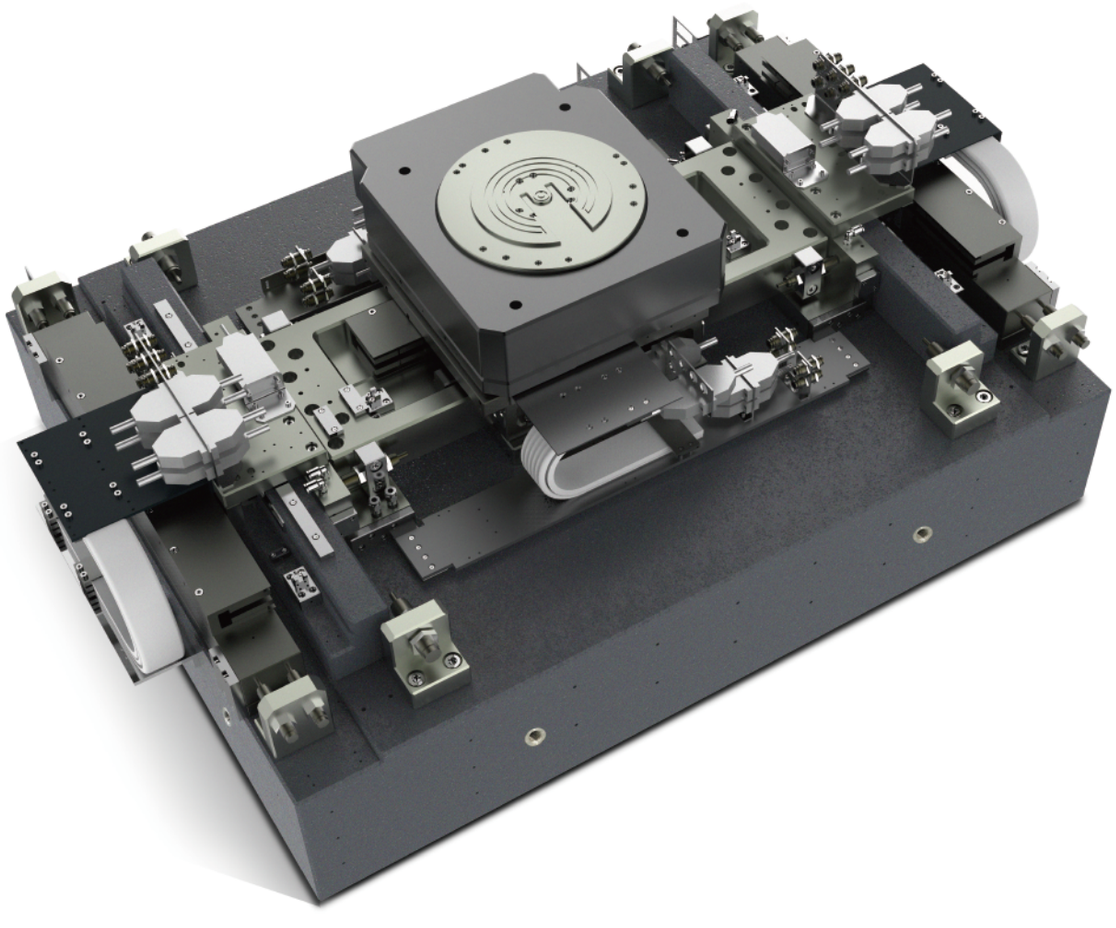
SPECIFICATIONS		
Travel	Scan Axis	400mm,550mm
	Step Axis	400mm,500mm
	Z Axis	4mm
	Rz	±10°
Drive System		Linear Brushless Motor
Resolution		1nm
Accuracy		< ±2μm
Repeatability		< ±0.5μm
XYZ Position Stability		±0.1μm
Granite Bass Thickness		250mm
Rated Payload(Maintaining Dynamic Specifications)		5kg
Maximum Velocity with Rated Payload	Scan Step Axis	700 mm/s
Peak Acceleration with Rated Payload	Scan Step Axis	0.7G
Stiffness,First Natural Frequency with Rated Payload		>100Hz
Pitch / Yaw	X Axis	< ±3 arc sec
	Y Axis	< ±4 arc sec
Straightness / Flatness	X Axis	< ±2μm
	Y Axis	< ±2μm
	Z Axis	< ±1.5μm
XY Orthogonality		<2μm
Velocity ripple(sampled at 100mm/s)		0.25%
Work Surface - Mounting Surface Parallelism		< 5μm
MTBF		40,000 hours

ABXY系列产品概述

ABXY-ZT4 系列平台是一款具有六自由度的气浮、机械运动平台。专为后道曝光机及晶圆检测、切片、退火等要求严格的半导体工业设计而设计。

特征

- X、Y采用气浮轴承，运行平稳
- T轴：任意微转动，用于调平
- 双驱步进轴具有被动减震模块
- Z轴：快速、精准的对焦运动



SPECIFICATIONS		
Travel	Scan Axis	350mm,500mm,
	Step Axis	350mm,500mm
	Z Axis	5mm
	Tip/Tilt Axis	±2mrad
	Rz	±3°
Drive System		Linear Brushless Motor
Resolution		<1 nm
Accuracy		±200nm
Repeatability (choose linear driver)		±100nm（±50 nm Optional)
XYZ Position Stability (Air On)		20 nm
Granite Bass Thickness		250mm
Rated Payload(Maintaining Dynamic Specifications)		5kg
Maximum Payload		10 kg
Maximum Velocity with Rated Payload	Scan Step Axis	400 mm/s
Peak Acceleration with Rated Payload	Scan Step Axis	1G(10m/s)
RMS Acceleration with Rated Load	Scan Step Axis	0.5G(5m/s)
Stiffness,First Natural Frequency with Rated Payload		>100Hz
Pitch		2 arc sec
Roll		2 arc sec
Yaw		2 arc sec
XY straightness		1um
XY Flatness		1.2um
XY Orthogonality		<2 arc sec
Velocity ripple(sampled at 400mm/s)		0.1%
MTBF		20,000 hours

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THINKER IN MOTION

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