

Magnetic Levitation Integrated ZT Platform



Main Feature

- High precision rotation movement
- High rigidity precision guide
- Unique large stroke
- Lowest Z-axis jitter & stability
- Fully closed-loop servo design
- Vertical stroke up to 30mm
- Maximum speed 150RPM
- For 12', .8', .6' wafer handling

Performance Instruction

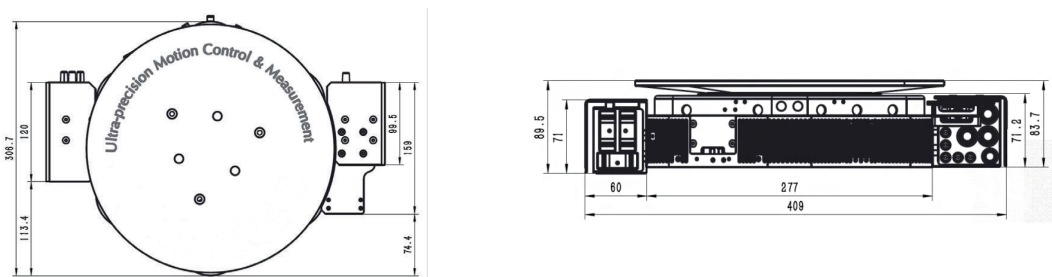
The magnetic levitation integrated ZT stage adopts an innovative dual-axis coupling design concept has a very compact and flat size, and can achieve high-precision and stiffness motion. The rotating axis can rotate without restriction, and the vertical direction uses a unique large stroke magnetic levitation gravity compensation technology, which reduces the load on the vertical motor and greatly improves the vertical motion performance and lifetime.

The magnetic levitation integrated ZT stage can also be integrated on the XY stage

Main Application

- Wafer process control such as optical inspection and metrology
- Wafer scribing, cleaning and dicing
- Wafer laser heat treatment
- Photolithography backend

Mechanical Dimensional Drawing



* Interface size data comes from MZT90-10 Stage, and is in the middle position vertically

Specifications

	MZT90-10		MZT90-20		MZT90-25	
Axes Name	Z	T	Z	T	Z	T
Travel	10 mm	360°, Infinite	20 mm	360°, Infinite	25 mm	360°, Infinite
Maximum Speed	100 mm/s	900°/s	100 mm/s	900°/s	100 mm/s	900°/s
Maximum Acceleration	2 m/s ²	6280°/s ²	2 m/s ²	6280°/s ²	2 m/s ²	6280°/s ²
Position accuracy full stroke	±0.6 μm/1mm	±3 arcsec	±0.6 μm/1mm	±3 arcsec	±0.6 μm/1mm	±3 arcsec
Bidirectional repetition accuracy	±0.3 μm/1mm	±2 arcsec	±0.3 μm/1mm	±2 arcsec	±0.3 μm/1mm	±2 arcsec
Position stability (3σ)	±15 nm*	±0.2 arcsec	±15 nm*	±0.2 arcsec	±15 nm*	±0.2 arcsec
Straightness	2 μm	NA	2 μm	NA	2 μm	NA
Axial Error Motion	NA	±2 μm	NA	±2 μm	NA	±2 μm
Radial Error Motion	NA	±2 μm	NA	±2 μm	NA	±2 μm
Mechanical Specifications						
Moving Mass (without payload)	8.2 Kg					
Inertia (No load)	0.00336 Kg*m ²					
Max Load Capacity	9.1Kg	2 Kg (Can be customized)		12.3 Kg		
Stage Mass	12.3 Kg					
Dimension	409mmX306.7mmX73.5mm (without load)					
Material	(Aviation aluminum)					

*Test data comes from tests using an 8μm pitch grating ruler, and the motion table is in as active vibration isolation environment.

Customized Information

Magnetic levitation integrated ZT stage options : In the MZT90 series product series, options are configured that can be selected according to the user's actual application. Optical content includes options such as encoders.

Table 1 Encoder options

-S1	Standard version, Renishaw encoder
-S2	High-end version, Heidenhain encoder