Nano/Micro Rotation Stage

UP-200R Series

The Nano/Micro Rotation Stage UP-200R Series are small rotation stages developed for applications that require microscopic rotation and position detection in atmospheric and high-vacuum conditions.

Features

- Compact design allows incorporation into a variety of scanning electron microscopes (SEMs) and focused ion beam (FIB) systems. (Contact us for details)

- Models are also available with optional rotational angle detection.

- Installing the Unisoku XYZ Three-axis Nano-manipulator/Prober's Z-stage enables applications that require a XYZ+R (rotation) four-axis stage.

- Simple operation from a PC running Windows.

Primary Applications

- Rotational operation and angle detection under SEM, FIB, and optical microscopy

- Nano/Micro-manipulation and probing combining XYZ operation and rotational operation.

Lineup

• Rotation Stage (R)

Consists of stage unit, controller, and control software (PC optional).
Selectable rotational angle detection function.
Model No.
 UP-200R··· No rotational angle detection function
 UP-200RE··· With rotational angle detection function

• XYZ Three-axis + Rotation (R) Stage

Consists of stage unit, controller, and control software (PC optional).
Selectable rotational angle detection function.
Model No.
UP-200UR··· No rotational angle detection function
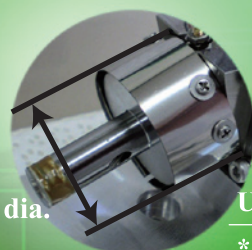UP-200URE··· With rotational angle detection function

XYZ Three-axis + R (Rotation)
Four-axis Stage UP-200URE
(With rotational angle detection function)

22mm dia.

17mm dia.

18mm dia.

30mm dia.

XYZ Three-axis
Stage Part
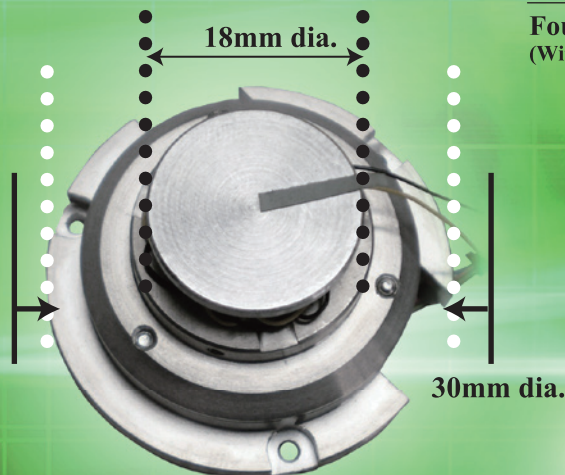
Rotation Stage
UP-200R, UP-200RE
* Rotor shape can be modified

22mm dia.
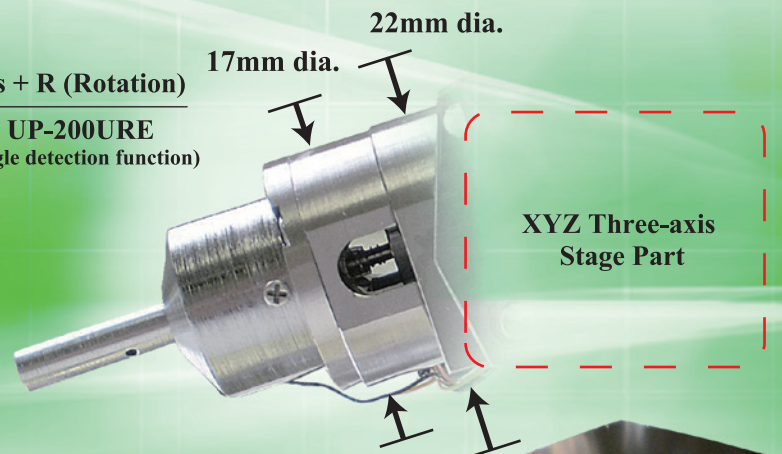
UP-200UR Rotor
*Shape of rotor at tip can be modified
(No rotational angle detection function)

Controller

Nano/Micro Rotation Stage

UP-200R Series

Specifications

	Model No.	UP-200R	UP-200RE	UP-200UR	UP-200URE
	Stage Type	Rotation Stage		XYZ+R (Rotation) Four-axis Stage	
	Angle Detection Function	No Angle Detection Function	With Angle Detection Function	No Angle Detection Function	With Angle Detection Function
Unit (Stage)	**Max. Range of Motion** — XYZ Coarse (Pulse) Mode	—	—	XY-axis: >5 mm, Z-axis: >3 mm (*Modification possible by special order)	
	XYZ Fine (DC) Mode	—	—	XYZ-axis: >1 μm (*Modification (i.e., changes to piezo element) possible by special order)	
	Rotation (Pulse) Mode	>360°			
	Min. Resolution — XYZ Coarse (Pulse) Mode	—	—	<150 nm (*Modification (changes to piezo element) possible by special order—values may vary)	
	XYZ Fine (DC) Mode	—	—	Variable resolution: Max. Range of Motion in DC Mode/20,000 Guaranteed resolution: Max. Range of Motion in DC Mode/2,000	
	Rotation (Pulse) Mode	<0.05°			
	Rotation Speed	Approximately 30 s – 120 s/1 rotation (variable) *Varies with size/shape of rotor			
	Detection Angle Reading Resolution	—	<0.25° (*Higher resolution possible by special order.)	—	<0.25° (*Higher resolution possible by special order.)
	Rotary Shaft Eccentricity	>100 μm (± Stand)			
	Input — Voltage	±150V			
	Extraction Line	2 (Twisted pair wire)			
	Connector	For D-sub terminal			
	Dimensions, Weight — Rotation Stage Dimensions (mm)	Rotor OD: 18 mm dia. Stator OD: 30 mm dia.		Rotor OD: 22 mm dia. Stator OD: 22 mm dia.	Rotor OD: 17 mm dia. Stator OD: 22 mm dia.
	Weight	<100 g (Not including mounting base plate)	<120 g (Not including mounting base plate)	<180 g (Not including mounting base plate)	<200 g (Not including mounting base plate)
	Operating Environment — Vacuum	In air & 10^{-2}-10^{-6} Pa	In air & 10^{-2}-10^{-4} Pa	In air & 10^{-2}-10^{-6} Pa	In air & 10^{-2}-10^{-4} Pa
	Service Temperature Range	4℃—40℃			
	Service Humidity Range	15%-80% *Cannot be used under condensation conditions due to sudden changes in the service environment			
Controller	**Input Voltage**	AC100 VAC (50/60 Hz) *(If requested prior to shipping, this can be modified to AC110, 115, 120, 220, or 240 V)			
	Power Consumption	Less than 100 VA			
	Controller Output	±150 V max.			
	Output Terminal	D-sub 9-pin female			
	Input Terminal	USB terminal			
	Dimensions, Weight — Dimensions	213(W)×370(D)×100(H) mm			
	Weight	Approx. 6 kg			
	Operating Environment — Service Temperature Range	5℃—40℃			
	Service Humidity Range	15%～80% *Cannot be used under condensation conditions due to sudden changes in the service environment			
Accessories	**Standard Control Software CD-ROM**	Windows XP/Vista (32-bit) Single-user license : 1			
	Special Connection Cable (USB)	PC – Controller (3 m) : 1			
	Special Connection Cable (One-side Dsub 15)	1.5 m : 1			
Optional Requested specifications for Notebook PC for Operation (Supplied or purchased separately by customer)	**OS (32-bit version)**	WindowsXP or Vista			
	USB Port	At least one			
	CD-ROM Drive	Required			
	Memory	At least 512 MB *To allow for optimal OS operation.			
	HDD	At least 10 MB available space			

Specifications and appearances are subject to change without notice.

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