V22 Version

COREMORROW
Piezo Nano Motion

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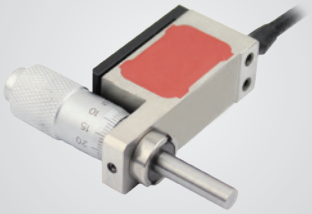
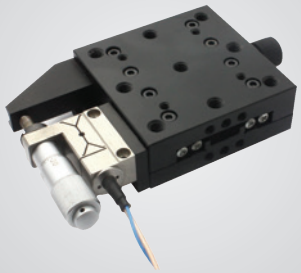
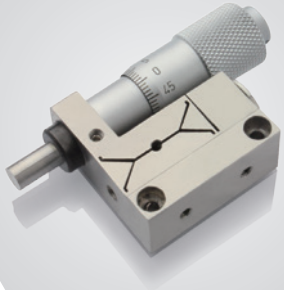
- Piezo Micrometers -

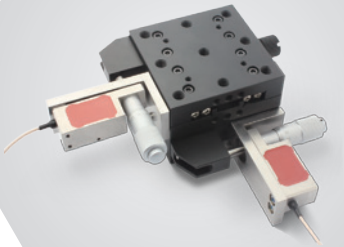
Harbin Core Tomorrow Science & Technology Co.,Ltd.

Piezo Micrometers



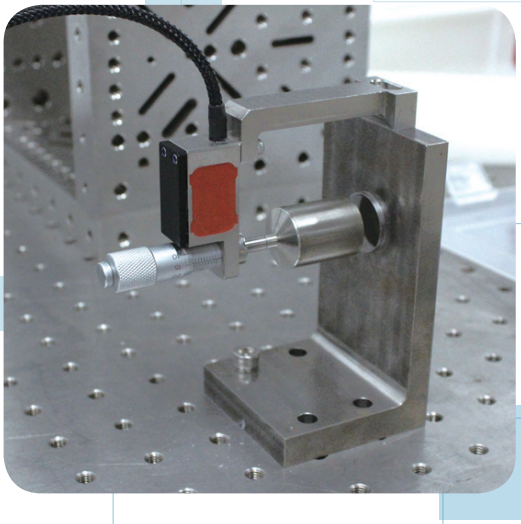




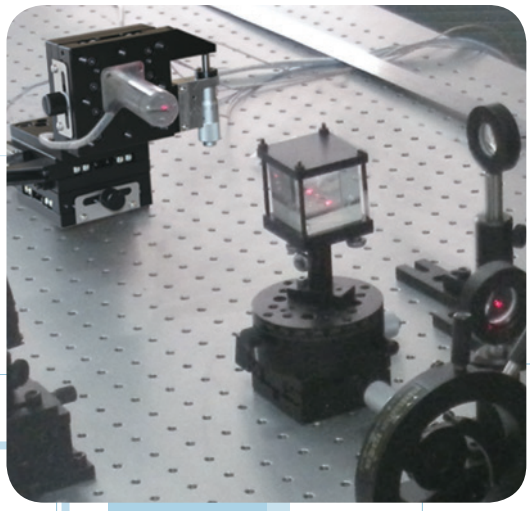


Piezo micrometer combines piezo micro-motion stage with a micrometer, which could be coarsely adjusted by micrometer, and finely adjusted by piezo stage, a loading platform is available.

Applications



Oil Film Thickness Measurement



Optical Alignment

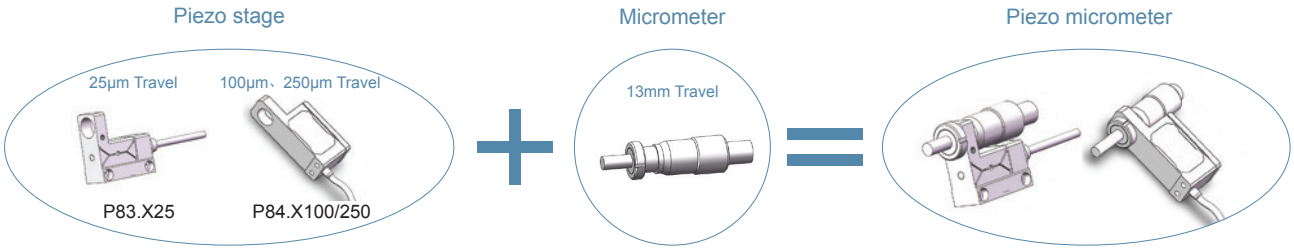
Product List

Type	Mechanism	Active Axes	Manual travel[mm]	Piezo travel[µm]	Moving platform	Page
P83.X25S/K	Amplifying structure	X	13	25	No	2
X65P83S/K		X	13	25	Yes	2
XY65P83S/K		X, Y	13/axis	25/axis	Yes	2
XZ65P83S/K		X, Z	13/axis	25/axis	Yes	2
XYZ65P83S/K		X, Y, Z	13/axis	25/axis	Yes	2
P84.X100S/K		X	13	100	No	2
P84.X250S/K		X	13	250	No	2
X65P84S/K		X	13	100	Yes	2
XY65P84S/K		X, Y	13/axis	100/axis	Yes	2
XZ65P84S/K		X, Z	13/axis	100/axis	Yes	2
XYZ65P84S/K		X, Y, Z	13/axis	100/axis	Yes	2

Piezo Micrometers

Piezo micrometer refers to integrating piezo stage on manual micrometer. The manual micrometer has 13mm displacement. The piezo stage features 25μm or 100μm displacement. The accuracy of micrometer is within the adjustment range of piezo stage, thus ensuring the accuracy and convenience of the adjustment.

Composition



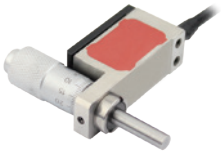
Characteristics

- X axis, 1~3 axes are available
- Selectable sensor
- Manual micrometer displacement to 13mm, resolution to 10μm
- Piezo displacement up to 25μm, 100μm or 250μm, reslution to 0.5nm

Two Types

There are 2 types of piezo micrometers, P83's displacement is 25μm and P84's is 100μm or 250μm.

P83



P84

Optional Loading Platform

Technical data:

Flatness: <3μm/13mm Slide way: Cross roller

Dimensions: 65mm×65mm

1~3 Axes

After the piezo micrometer is equipped with a movable table, you can choose free combination of 1~3 dimensions.

X65P83S/K

Load: 1.5kg

Mass: 400g

XY65P83S/K

Load: 1.2kg

Mass: 800g

XYZ65P83S/K

Load: 0.5kg

Mass: 1400g

X65P84S/K

Load: 1.3kg

Mass: 400g

XY65P84S/K

Load: 1kg

Mass: 800g

XYZ65P84S/K

Load: 0.3kg

Mass: 1400g

Technical Data

Type	S-Closed loop K-Open loop	P83.X25S P83.X25K	P84.X100S P84.X100K	P84.X250S P84.X250K	Units
Active axes		X	X	X	
Travel range		13mm+25μm	13mm+100μm	13mm+250μm	
Material		Steel	Steel, Aluminum	Steel, Aluminum	
Manual Adjustment - Micrometer					
Travel range		13	13	13	mm
Resolution		10	10	10	μm
Driving mode		Screw thread pair	Screw thread pair	Screw thread pair	
Sensitivity		<2	<2	<2	μm
Least count		10	10	10	μm/div
Screw pitch		0.5	0.5	0.5	mm/rev.
Piezo Adjustment - Piezo					
Travel range	0~120 V	20	80	200	μm±20%
	0~150 V	25	100	250	μm±20%
Sensor		SGS/-	SGS/-	SGS/-	
Min step (resolution)		1.5/0.5	7/2.5	11/5	nm, typ.
Closed-loop linearity		0.2/-	0.1/-	0.1/-	%F.S.
Repeatability		0.1/-	0.05/-	0.05/-	%F.S.
Push force capacity		20	16	8	N
Stiffness		2	1	0.03	N/μm±20%
Unloaded resonant frequency		-	380	210	Hz±20%
Load (Z axis)		500	500	200	g
Operating temperature		-20~80	-20~80	-20~80	°C
Electrical capacitance		1.8	1.8	14.4	μF±20%
Cable		1.5	1.5	1.5	m±10mm
Connector		LEMO	LEMO	LEMO	

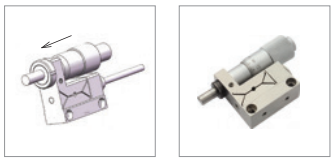
Note: Max driving voltage could be -20V~150V, recommended voltage 0~120V for long-term and high-reliable operation to extend lifetime. Technical data is measured by CoreMorrow E00/E01 series piezo controller.

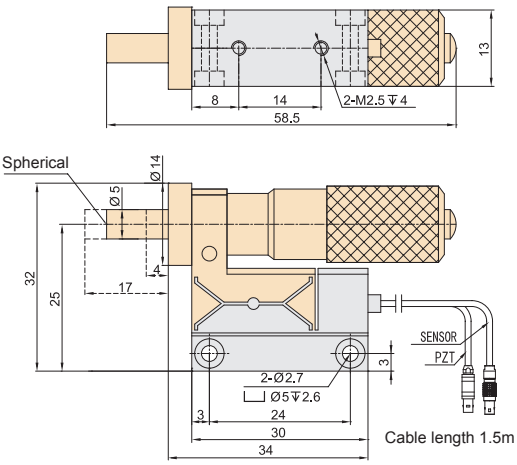
Applications

• Optical alignment • Cell manipulation • Precision positioning of CCD camera focus lens • Micromachining/precision control

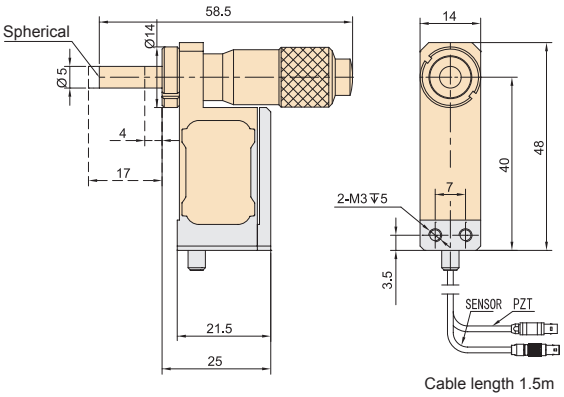
▸ Drawings

P83.X25 (X axis, no loading platform)

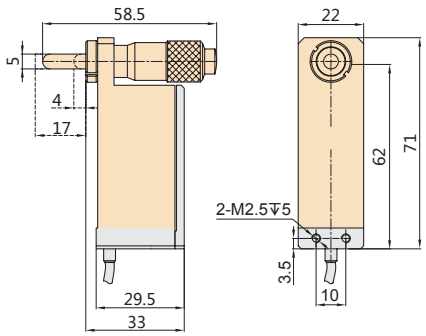




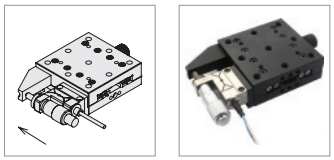
P84.X100 (X axis, no loading platform)

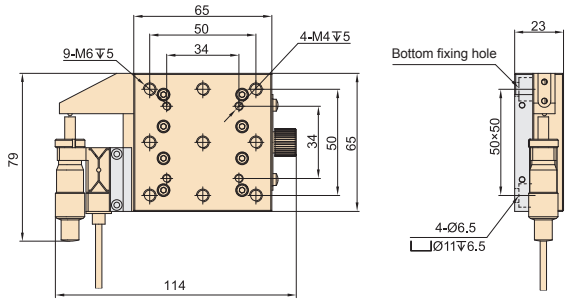


P84.X250

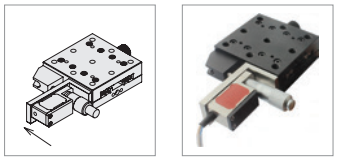


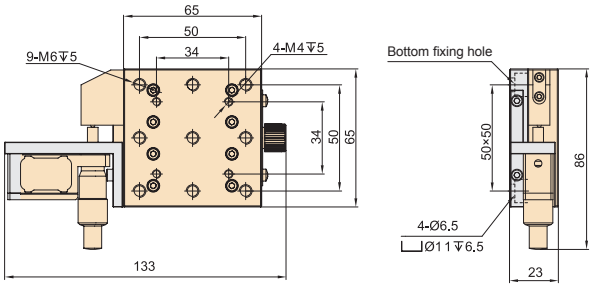
X65P83S/K (X axis, with moving stage)



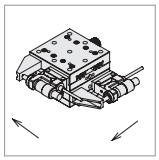


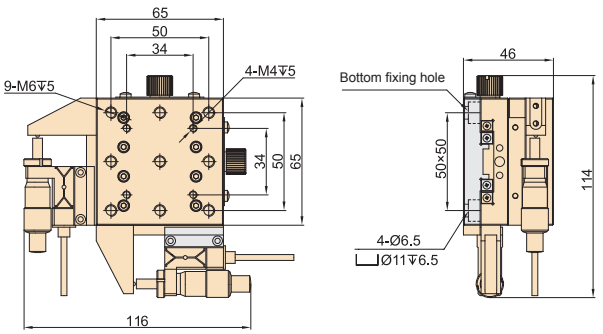
X65P84S/K (X axis, with moving stage)



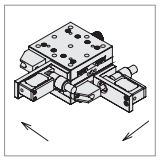


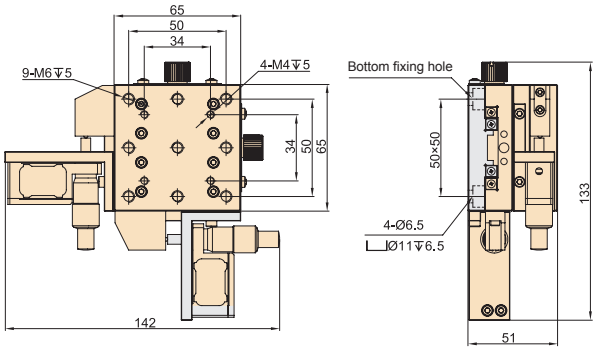
XY65P83S/K(XY axes, with loading platform)



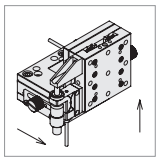



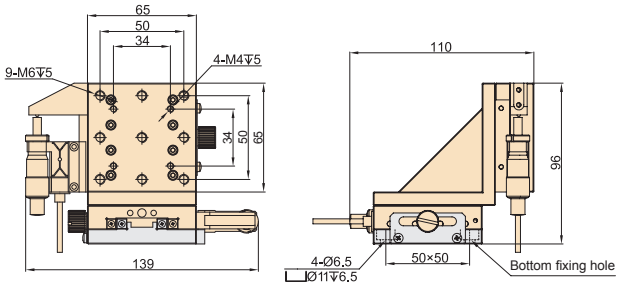
XY65P84S/K(XY axes, with loading platform)



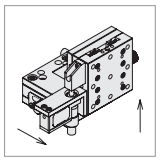



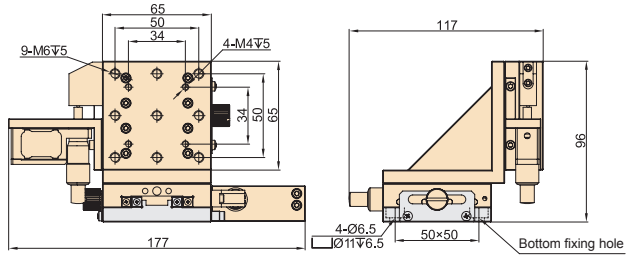
XZ65P83S/K(XZ axes, with loading platform)



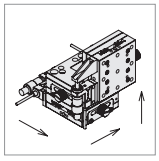



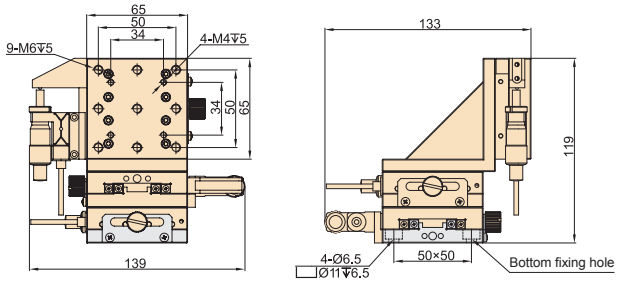
XZ65P84S/K(XZ axes, with loading platform)



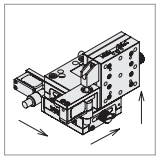



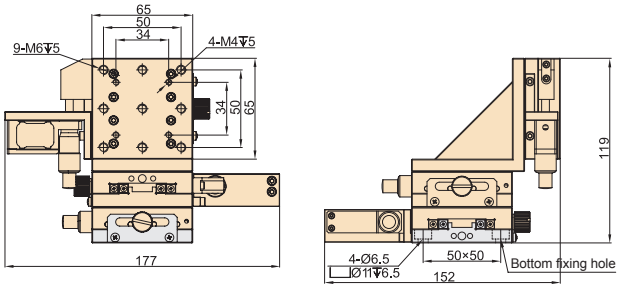
XYZ65P83S/K(XYZ axes, with loading platform)



XYZ65P84S/K(XYZ axes, with loading platform)



Challenge the Limits of Nano Motion and Control Technology...

Harbin Core Tomorrow Science & Technology Co., Ltd.
Tel：+86-451-86268790 +86-18944636468
Fax：0451-86267847
Postcode：150086
Email：info@coremorrow.com
Web：www.coremorrow.com
Address：Building I2, No.191 Xuefu Road, Nangang District, Harbin

Wechat CTO