

microscopel objective / lens positioning system

MIPOS 500

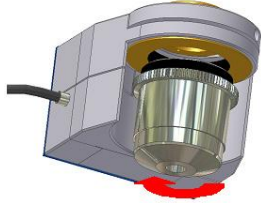

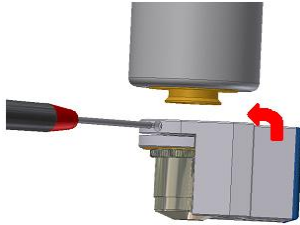

- 500µm focusing range
- compact design
- high resonant frequency
- easy to attach on microscopes
- flexible use by Flex-Adapter
- optionally integrated measurement system

applications:

- surface scanning and analysis
- AFM microscopy
- biotechnology (e.g. cell scanning)
- beam focusing for printing processes
- semiconductor test equipment



fig.: MIPOS 500

Concept	Specials	Mounting/Installation
<p>The systems in the MIPOS 500 series offer a nano positioning and scanning range up to 500µm in open loop operation, as well as 400µm in closed loop. They can be assembled with objectives that have up to a 40mm diameter.</p> <p>The successful parallelogram design of piezosystem jena guarantees high parallel motion without influencing the optical path.</p> <p>The precise positioning repeatability of the series MIPOS 500 can be guaranteed by an optionally integrated measurement system.</p> <p>The design with integrated pre-load of the actuator offers the following advantages:</p> <ul style="list-style-type: none"> • high resonant frequency • highly parallel motion • upside-down version for inverted microscopes <p>Based on these features, fast scanning applications can be accurately realized with the shortest settling times.</p>	<p>Adapter thread rings for the nose piece are available separately. They allow for fast mounting and exchanging of the MIPOS system on the microscope. Other objectives no longer need to be removed.</p> <p>These Flex-Adapters are available for all standard microscopes, and allow the MIPOS series to be universally applicable.</p> <p>Parfocal tube extensions for each threading type are available as an accessory.</p>	<p>1. Screw the objective into the MIPOS</p>  <p>2. Screw the Flex-Adapter into the microscope</p>  <p>3. Clamp the MIPOS on the Flex-Adapter using the attachment screw</p>  <p>Spacer rings to compensate the extended optical path are available and flex adapters for all common threads.</p> 

technical data:

series MIPOS		unit	MIPOS 500	MIPOS 500 UD	MIPOS 500 SG	MIPOS 500 SG UD
part no. for thread ...	M25x0.75	-	O-350-00	O-360-00	O-350-01	O-360-01
	W0.8x1/36" (RMS)	-	O-354-00	O-364-00	O-354-01	O-364-01
	M26x0.75	-	O-355-00	O-365-00	O-355-01	O-365-01
	M27x0.75	-	O-356-00	O-366-00	O-356-01	O-366-01
	M32x0.75	-	O-357-00	O-367-00	O-357-01	O-367-01
axis		-	Z			
motion open loop (±10%)*		µm	500			
motion closed loop (±0,2%)*		µm	-		400	
capacitance (±20%)**		µF	21.0			
integrated measurement system		-	-	-	strain gage	
resolution open loop***		nm	0.9			
resolution closed loop***		nm	-	-	12	
typ. repeatability		nm	-	-	17	12
resonant frequency		Hz	230			
additional load = 80g		Hz	180			
additional load = 105g		Hz	170			
additional load = 300g		Hz	110			
stiffness		N/µm	0.27			
rotational error (full motion)		µrad	<20			
voltage range		V	-20 ... +130			
connector****	voltage	-	LEMO 0S.302			
	sensor	-	-	-	LEMO 0S.304	
cable length		m	1.0	1.0	1.2	
min. bend radius of cable		mm	>15			
material		-	stainless steel			
dimensions (l x w x h)		mm	60.5x50x36.4	60.2 x 50 x 35.5	60.5 x 50 x 40.1	62 x 50 x 41.5
weight		g	370			
max. lens diameter		mm	40			
max. lens weight		g	500			
option for standard microscopes		-	yes	no	yes	no
option for inverse microscopes		-	no	yes	no	yes

* typical value measured with NV 40/3 CLE amplifier

** typical value for small electrical field strength

*** The resolution is only limited by the noise of the power amplifier and metrology.

**** in combination with a digital controller unit the system comes with a Sub-D 15 connector.

The part number is extended by the suffix "D".

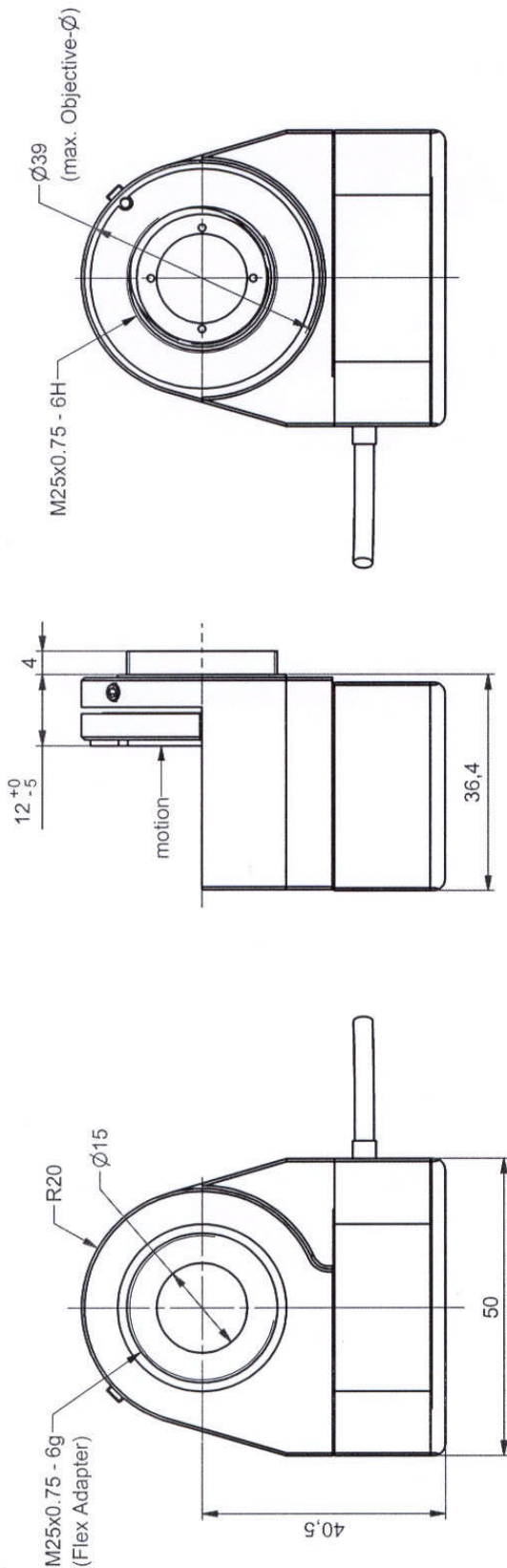
recommended configurations:

actuator	MIPOS 500 SG	O-35X-01E
amplifier/controller	NV 40/1 CLE	E-101-73

The series of micro lens and objective positioning systems MIPOS offers a travel range from 20 μm up to 500 μm in z-axis. Available for standard and inverted microscopes
More details under „z-axis-lens-positioning“ www.piezोजना.com .

Additional microscopy stages for XY axes available under “series-PXY-AP” www.piezोजना.com

Rights reserved to change specifications as progress occurs without notice!

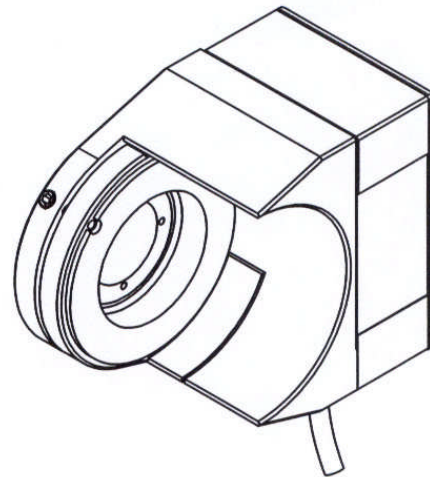


Cable length 1m

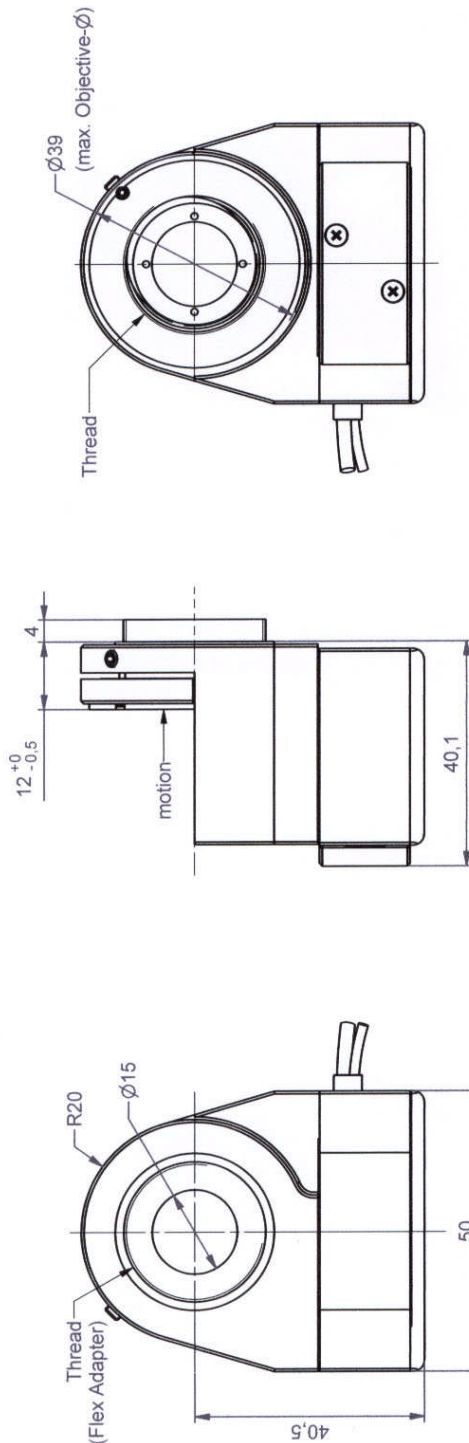
Sorts of threads:
RMS (W0.8x1/36")
M25x0.75
M26x0.75
M26x0.706 (1/36")
M27x0.75
M32x0.75

ORIGINAL

part-no.	O-350-00	part-name	Mipos 500 M25
file name	PO35000	OK date/sign.	22 JUNI 2005
		scale	1:1
		customers drawing	piezosystem jena



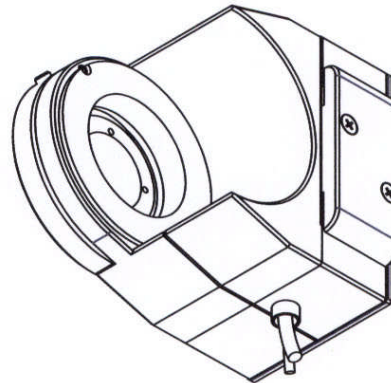
ORIGINAL



- Version "standard"
> cable 1.2m; connectors LEMO
- Version "extern"
> external sensor-pre-amplifier
> cable 2m; connectors LEMO/ODU
- Version "digital"
> external sensor-pre-amplifier
> cable 2m; connector D-Sub

part.-no. sorts of threads

O-350-xxY	M25x0.75
O-354-xxY	RMS
O-355-xxY	M26x0.75
O-356-xxY	M27x0.75
O-357-xxY	M32x0.75
O-358-xxY	M26x1/36"



part.-no.	O-35x-xxY	part.-name	Mipos 500 SG
file name	PO35001	OK date/sign.	19. FEB. 2007
		scale	1.1
		customers drawing	piezosystem jena

accessories series MIPOS

quick objective-lens changing by FLEX-adapter

*Screw the Flex-adapter into the microscope nosepiece.
Put up the MIPOS onto the Flex-adapter and by fastening
the screw the MIPOS is easy fixed.*

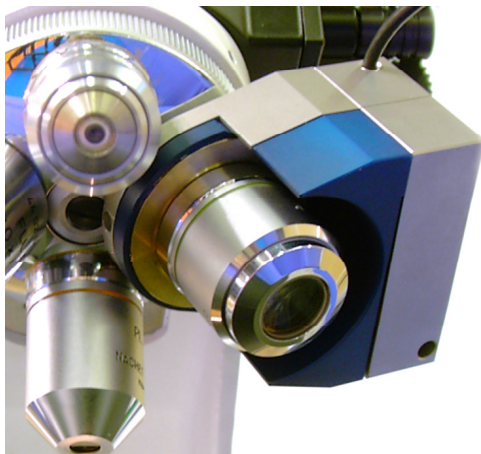
Mounting this system on the microscope is very easy.
You screw the Flex-Adapter thread-ring into the microscope and mount the MIPOS on this ring with a clamping-screw.

Due to the small size, none of the other threads beside the MIPOS are blocked. The necessary screw driver and the handling instructions are included in the shipment.

Please note, the Flex-Adapter for the thread type of the MIPOS you ordered will be included in the shipment.



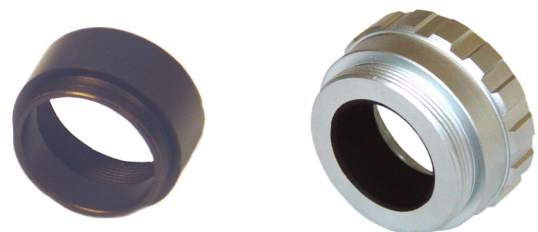
pic.: flex-adapter Art.Nr. O-30x-11
(x= thread type dependents)



pic.: MIPOS 5 mounted on a microscope

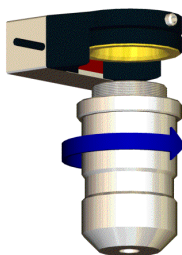
spacer ring

To eliminate the additional length by the different micro lenses caused by the MIPOS, piezosystem jena offers a wide range of spacer rings. By using the spacer ring all micro lenses working on the same level. No focus adjustment will be needed by turning the nosepiece. Spacer rings available in different threads sizes.

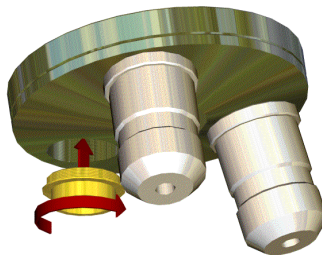


pic.: Spacer rings for micro lens
part.no. O-30x-21
(x= thread type dependents)

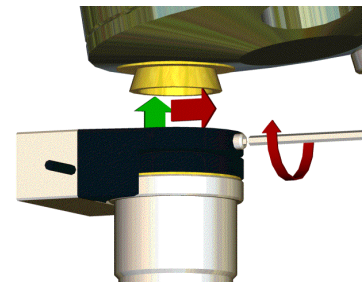
mounting instruction



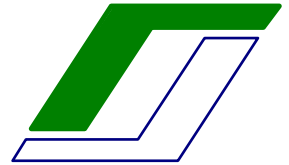
1.) Screw your objective –
lens into the MIPOS



2.) Screw the Flex-Adapter in the
nosepiece of your microscope



3.) Set up the MIPOS on
the Flex-Adapter and
fasten the screw



Notes for mounting and using of stack type actuators

Actuators are normally fastened with screws or clamps to the bottom plate. If the top plate has a torque nut, it should be used when securing screws in order to avoid damage to the actuator. Please avoid tensile forces greater than the given pre-load! Please note, for standard actuators; and actuators equipped with strain gauge sensors, the tolerance of the open loop motion is -10% to +40%. The tolerance of the capacitance is +/- 20%. The closed loop travel is 80% of the open loop travel. The resolution is only limited by the noise of the amplifier, and all given resolution values are based on measurements with the E-103-18 amplifier. Standard calibration will be done without any load on the actuator. On customer request, defined loads (up to the max. load) can be calibrated during manufacturing once to optimize a system. Additional calibration has to be paid by the customer.

The standard cable length is 1m. The vacuum and cryogenic version cable length at the actuator is 0.6m. The extension cable length outside the vacuum chamber is 1.2m.

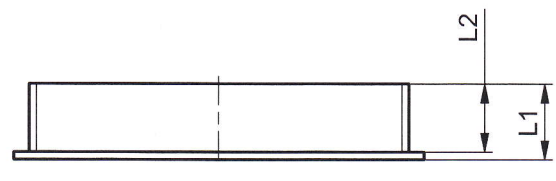
Actuators equipped with feed back sensors have a total cable length of 2m. A signal pre-amplifier box is in line with the cable 0.3m behind the actuator. The size of the cable box is (BxHxL=12x16x45mm).

For further question please ask us!


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L



all options listed

part.-no. <input type="text"/>	O-30X-YZ	part.-name <input type="text"/>	adapter thread rings MIPOS
file name <input type="text"/>	PO30XYZ	OK: date/sign <input type="text"/>	18. AUG. 2011
	scale	customers drawing <i>piezosystem jena</i>	
	1:1		