

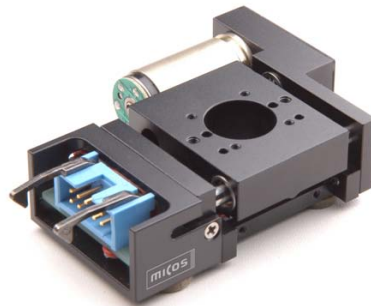
# Micro Stage MTS



Micro Stage MTS-65



Micro Stage MTS-70



Micro Stage MT-55

## 4.108 Micro Stage MTS-70



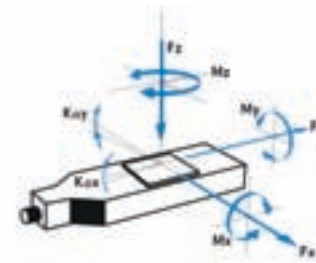
### FACTS

Load characteristics	$F_x(N)$	$F_y(N)$	$F_z(N)$	$M_x(Nm)$	$M_y(Nm)$	$M_z(Nm)$	$k^{+x}(\mu rad/Nm)$	$k^{+y}(\mu rad/Nm)$
2Phase-020	10	3	10	0.4	0.6	0.4	80	30



### KEY FEATURES

- Travel range 10 mm
- Uni-directional repeatability down to 0.1  $\mu m$
- Maximum speed 8 mm/sec
- Load capacity up to 1 kg
- Integrated mechanical limit switches
- Option: linear scale



The MTS-70 micro stage was developed for precision industrial applications with limited space conditions. The stage is driven by a 2-phase gearless stepper motor. The MTS-70 micro stages series is provided with cross-roller bearings and a ground re-circulating ball screw guaranteeing maximum stiffness, accuracy and smoothness of motion. The MTS-70 stages are equipped with two limit switches. For high positioning accuracy and repeatability, the MTS-70 micro stages are offered with a linear scale. The stages are offered as a single axis or as an integrated XY system.

### TECHNICAL DATA

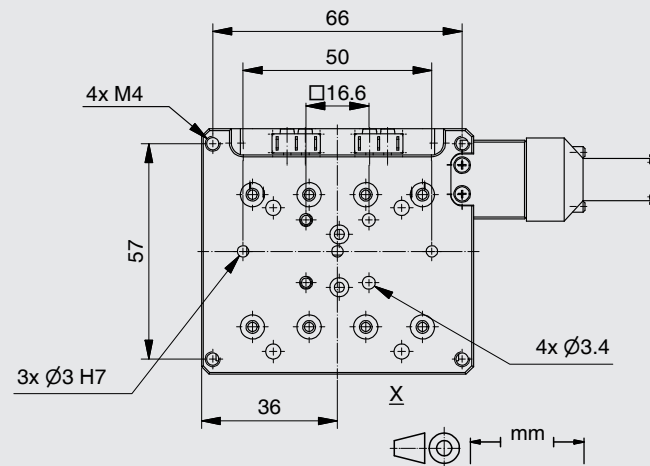
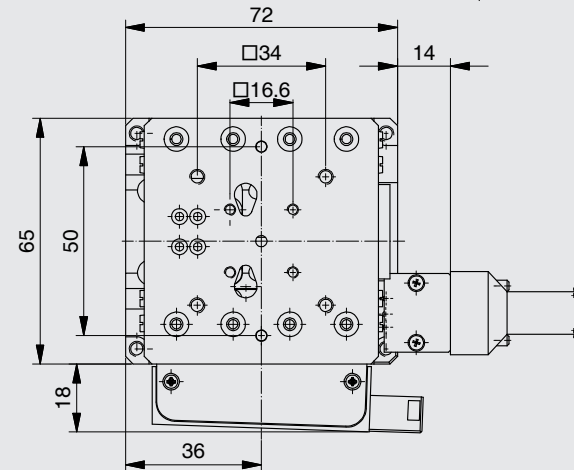
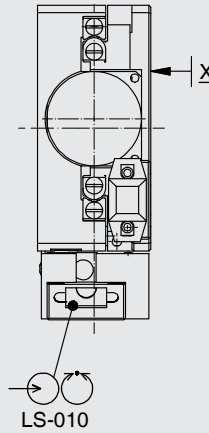
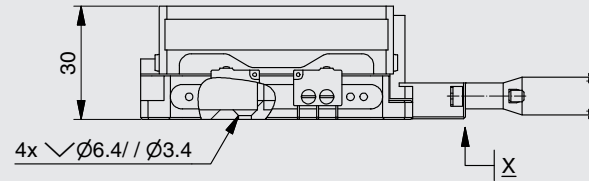
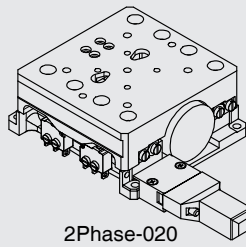
Travel range (mm)	10	
Straightness / Flatness ( $\mu m$ )	$\pm 1$	
Pitch ( $\mu rad$ )	$\pm 50$	
Yaw ( $\mu m$ )	$\pm 50$	
Weight (kg)	0.4	
Motor (Pitch 1 mm)	2Phase-020	
Linear scale		LS-010
Speed max. (mm/sec)	8	
Resolution calculated ( $\mu m$ )	5 (FS)	0.05
Resolution typical ( $\mu m$ )	0.1	0.05
Bi-directional Repeatability ( $\mu m$ )	$\pm 5$	$\pm 0.2$
Uni-directional Repeatability ( $\mu m$ )	0.2	0.1
Nominal Current (A)	1.2	
Accuracy	on request	
Velocity range (mm/sec)	0.001 ... 8	
Material	Aluminum, black anodized	

Note: FS = full step, RE = rotary encoder  
More info: Detailed information concerning motors and encoders, see appendix.

Error and technical modifications are subject to change

- APPLICATIONS
- CONTROLLERS
- ROBOTICS
- LINEAR STAGES**
- ROTATION STAGES
- PIEZO STAGES
- MANUAL STAGES
- ACCESSORIES
- APPENDIX

- UPS-150
- UPM-160
- HPS-170
- LS-270
- LMS-230
- LMS-180
- LS-180
- LS-120
- LS-110
- LM5-80
- LM5-60
- PLS-85
- LS-65
- MTS-65
- MTS-70**
- VT-75
- VT-80
- LS-40
- VT-21 S
- CS-430
- MS-8
- MS-4
- KT-120
- MS-bio
- NPE-200
- UPL-120
- ES-100
- ES-82
- ES-70
- ES-50
- MA-35
- MP-20
- MP-20 B
- MP-15
- ASS 5E



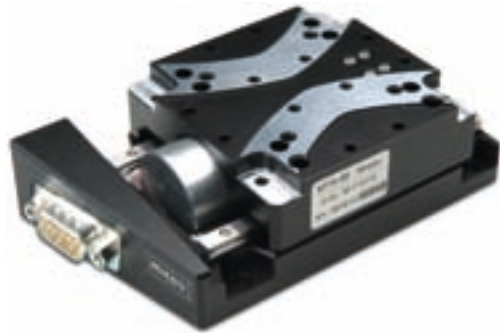
Order No.	6218-9-			
2Phase-020		2		
x axis		1		
xy axes (setup by PI miCos)		2		
10 mm		0		
without LS-010		0		
LS-010, Linear steel scale		3		

## 4.106 Micro Stage MTS-65



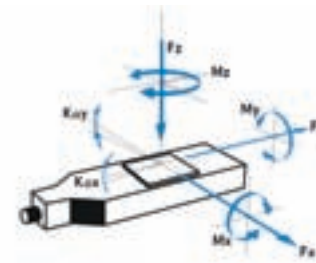
### FACTS

Load characteristics	$F_x(N)$	$F_y(N)$	$F_z(N)$	$M_x(Nm)$	$M_y(Nm)$	$M_z(Nm)$	$k^{+x}(\mu rad/Nm)$	$k^{+y}(\mu rad/Nm)$
2Phase-020	10	3	10	0.4	0.6	0.4	80	30



### KEY FEATURES

- Travel range up to 52 mm (2")
- Uni-directional repeatability down to 0.1  $\mu m$
- Maximum speed 10 mm/sec
- Load capacity up to 1 kg
- Integrated hall / optical limit switches
- Option: linear scale



space conditions and is typically used for the positioning of laser diodes and optical components. Driven by a 2-phase stepper motor using high resolution microstepping, the gearless stage utilizes recirculating ball bearings and a ground recirculating ball screw. As a result, a high stiffness, accuracy and smoothness of motion is achieved. The micro stage is equipped with two optical or hall limit switches. For higher positioning accuracy and repeatability of 0.1  $\mu m$ , the MTS-65 micro stage is offered with a linear scale. Using a special mounting kit, the MTS-65 stages can be assembled as XY or XYZ-modules.

The MTS-65 micro stage was developed for industrial application with limited

### TECHNICAL DATA

Travel range (mm)	13	26	52
Straightness / Flatness ( $\mu m$ )	$\pm 1$	$\pm 2$	$\pm 3$
Pitch ( $\mu rad$ )	$\pm 40$	$\pm 60$	$\pm 80$
Yaw ( $\mu m$ )	$\pm 40$	$\pm 40$	$\pm 40$
Weight (kg)	0.4	0.6	0.8

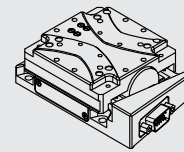
Motor (Pitch 1 mm)	2Phase-020	
Linear scale		LS-050
Speed max. (mm/sec)	8	
Resolution calculated ( $\mu m$ )	5 (FS)	0.05
Resolution typical ( $\mu m$ )	0.1	0.05
Bi-directional Repeatability ( $\mu m$ )	$\pm 5$	$\pm 0.2$
Uni-directional Repeatability ( $\mu m$ )	0.2	0.1
Nominal Current (A)	1.2	

Accuracy	on request
Velocity range (mm/sec)	0.001 ... 10
Material	Aluminum, black anodized

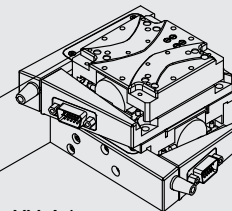
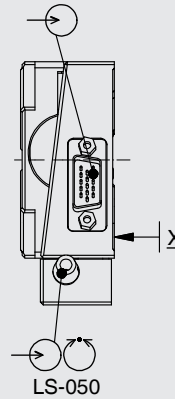
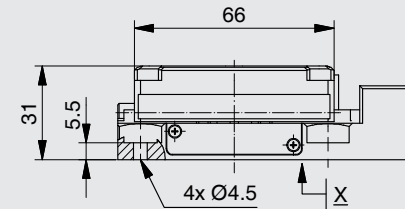
Note: FS = full step, RE = rotary encoder  
More info: Detailed information concerning motors and encoders, see appendix.

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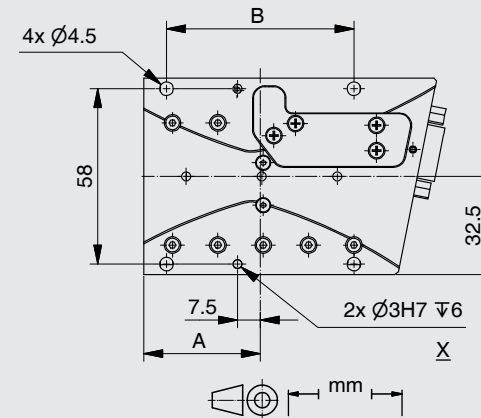
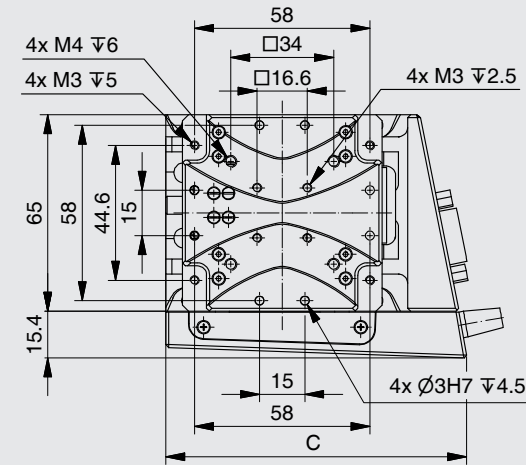
Travel (mm)	13	26	52
A	38.5	45	62
B	62	75	105
C	99.5	112.5	147.5



2Phase-020



XY-Adapter:  
 6217-9-0001 Var. 1"  
 6217-9-0002 Var. 1/2"  
 6217-9-0003 Var. 2"



Order No.	6217-9-			
2Phase-020		2		
13 mm (1/2")		1		
26 mm (1")		2		
52 mm (2")		3		
without LS-050		0		
LS-050, Linear steel scale		1		
HLS-010, Hall limit switches		1		
OLS-010, Optical limit switches		3		

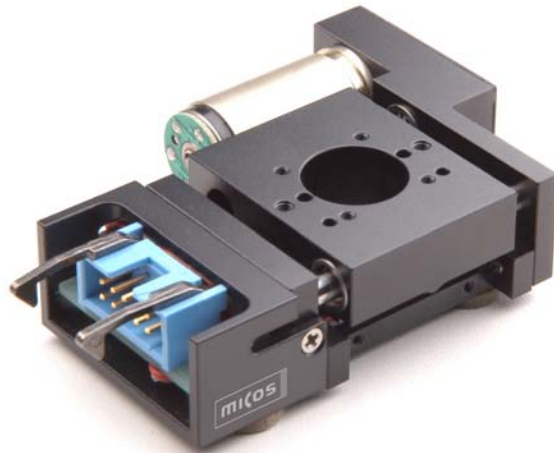
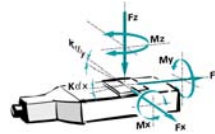
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- ES-82
- ES-70
- ES-50
- MA-35
- MP-20
- MP-20 B
- MP-15
- ASS 5E

## 4.250 Micro Stage MT-55

### FACTS

Load characteristics	$F_{x(N)}$	$F_{y(N)}$	$F_{z(N)}$	$M_{x(Nm)}$	$M_{y(Nm)}$	$M_{z(Nm)}$	$k_{\alpha X}(\mu\text{rad/Nm})$	$k_{\alpha Y}(\mu\text{rad/Nm})$
DC-B-010	5	5	8	0.3	0.5	0.3	300	160
2Phase-010	5	5	8	0.3	0.5	0.3	300	160



### Key features

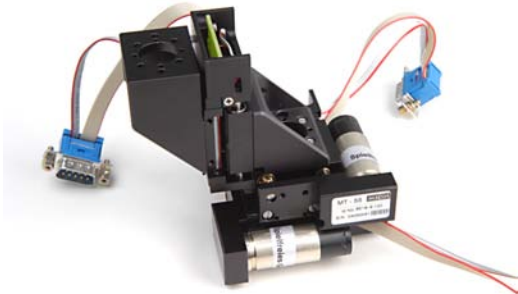
- Travel range 5 mm
- Uni-directional repeatability down to 0.2  $\mu\text{m}$
- Maximum speed 1 mm/sec
- Load capacity up to 0.8 kg
- Integrated limit switches
- Center hole 15 mm
- High Resolution

Micro stages **MT-55** are especially suited for integration in limited space environments. The **MT-55** can be used for precision high-resolution positioning of small components such as fibers, optical components and laser diodes. The **MT-55** is equipped with zero-backlash ball bearings and a precision lead screw with 0.25 mm pitch. The **MT-55** micro stage is driven by a low-backlash belt drive using a DC or 2-phase stepper motor with zero-backlash gear. The travel range is 5 mm. The **MT-55** is provided with a clear aperture of 15 mm diameter, so it is well suited for all tasks in microscopy. Two limit switches prevent damage from accidental over-travel. XY-assembly is possible at the factory and must be indicated when ordering.

TECHNICAL DATA	<b>Travel range (mm)</b>	<b>5</b>	
	<b>Straightness / Flatness (<math>\mu\text{m}</math>)</b>	+/- 1	
	<b>Pitch (<math>\mu\text{rad}</math>)</b>	+/- 30	
	<b>Yaw (<math>\mu\text{rad}</math>)</b>	+/- 15	
	<b>Weight (kg)</b>	0.18	
	<b>Motor (Pitch 0.25 mm)</b>	<b>DC-B-010</b>	<b>2Phase-010</b>
	<b>Speed max. (mm/sec)</b>	1	0.25
	<b>Resolution calculated (<math>\mu\text{m}</math>)</b>	0.0055402 (RE)	0.1372561 (FS)
	<b>Resolution typical (<math>\mu\text{m}</math>)</b>	0.2	0.2
	<b>Bi-directional Repeatability (<math>\mu\text{m}</math>)</b>	+/- 4	+/- 4
<b>Uni-directional Repeatability (<math>\mu\text{m}</math>)</b>	0.2	0.2	
<b>Nominal Current (A)</b>	0.32	0.25	
<b>Voltage Range (V)</b>	12		
<b>Accuracy</b>	on request		
<b>Velocity Range (mm/sec)</b>	0.001 ... 1		
<b>Material</b>	Aluminum, black anodized		

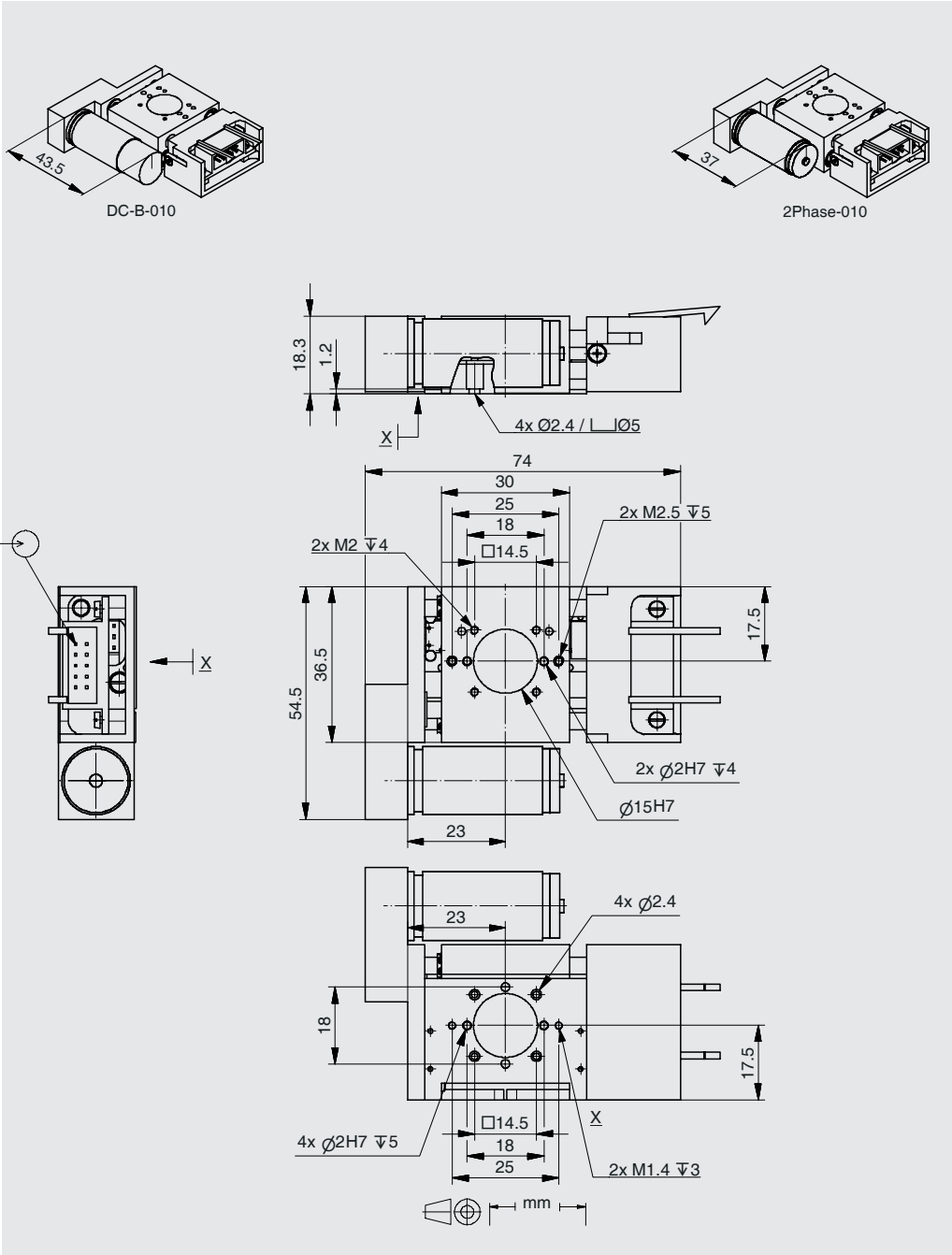
Note: FS = full step, RE = rotary encoder

More info: Detailed information concerning motors and encoders, see appendix.



xyz setup

Order No.	<b>6219-9-</b>			
DC-B-010 .....	1			
2Phase-010 .....	2			
x axis .....	1			
xy axes (setup by MICOS) .....	2			
5 mm .....	0			



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