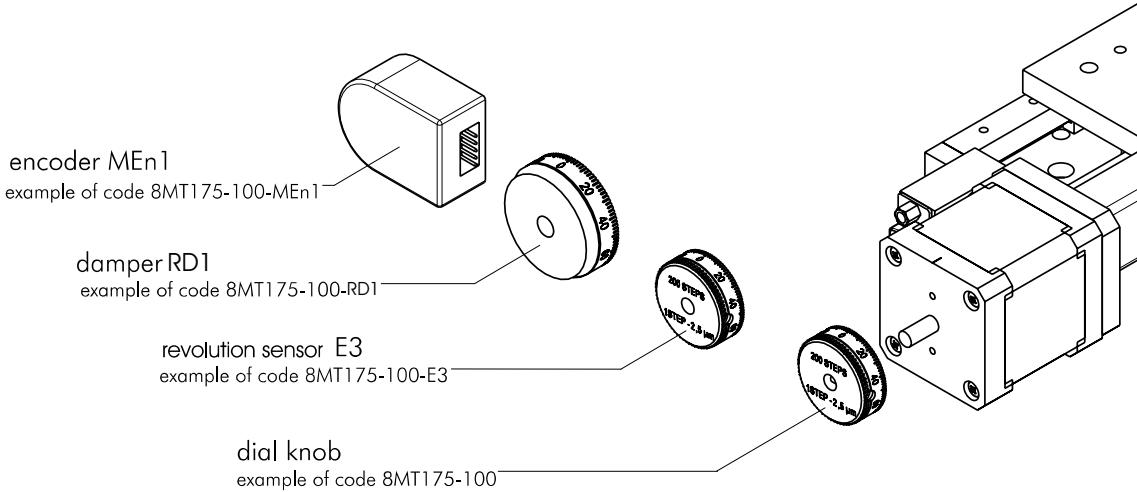




standa	1
Brackets & Rails	2
Optical Tables	1
Base Mounts & Accessories	3
Optical Mounts	4
Optical Positioners	5
Base Positioners	6
Translation & Rotation Stages	7
Motorised Positioners & Controllers	8
Fine Adjustment Screws	9
Opto-Mechanics & Sets	10
Light Test & Measurement Instruments	11

## ORDERING INFORMATION for Motorized Translation and Rotation stages



### DEFAULT CHOICE

Default choice for **ordering motorized translation or rotation stages** is with **dial knob**.

Example:

**8MT175-100** - translation stage **8MT175-100** with **dial knob**.

**8MR190-2-28** - rotation stage **8MR190-2-28** with **dial knob**.

### REVOLUTION SENSOR

**Revolution sensor** counts stepper motor axis revolutions. It consists of Codewheel with one mark and Optointerrupter. When motor is connected to Standa controller **8SMC1-USBhF**, signal from **revolution sensor** allows monitoring of motor axis revolutions, possible loss of steps and detecting motor stalling. It is not as accurate as encoder, which provides feedback for each step of motor. **Revolution sensor** determines whether there was any loss of steps within one revolution of motor axis. This information is reported to the controller and corrective actions can be taken.

**Revolution sensor** can also be used for precise home position setting.

For **ordering motorized stages with revolution sensor**, please **add symbols E3** to the code of motorized stages.

Example:

**8MT175-100-E3** - translation stage **8MT175-100** with **revolution sensor E3**.

**8MR190-2-28-E3** - rotation stage **8MR190-2-28** with **revolution sensor E3**.

### DAMPER

When **damper RD** is used, **vibrations and motor noise** is greatly **reduced**, **settling time is improved** and **system resonances are suppressed**.

For **ordering motorized stages with damper**, please **add symbols RD1** to the code of motorized stages.

Example:

**8MT175-100-RD1** - translation stage **8MT175-100** with **damper RD1**.

**8MR190-2-28-RD1** - rotation stage **8MR190-2-28** with **damper RD1**.

Continued on next page





## ORDERING INFORMATION: for Motorized Translation and Rotation stages

**ENCODER**

Our 2-channel encoder is compact and lightweight.

**Technical Characteristics of encoder**

Operating Voltage	DC 4,5 V to 5,5 V
max. Current Consumption	(at 5 V) 57 mA
Pulse Width	180 ±45 degree
Signal-Phase Shift	(Channel A vs. B) 90 ±15 degree
Signal-Rise-/Fall-Time	0,25 / 0,25 µS
Limit Frequency	up to 100 kHz
Output Signals	rectangular 2
Pulses per Revolution	1000
Operating Temperature	0 °C to +70 °C

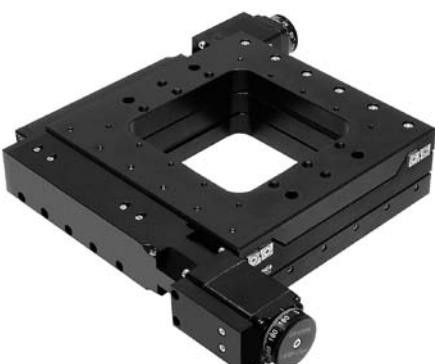
Encoder measures motor axis position change and direction and provides feedback to controller. Encoder type **HEDS-5540-B14** with **1000 pulses per revolution** is used by default. Standa controller **8SMC1-USBhF** can use signal from the encoder for motion monitoring. Result of the monitoring is high system reliability - controller can detect motor stall situation very quickly. Threshold level of motor stall detection is programmable using program SMCView included with controller **8SMC1-USBhF**. User specific software can get feedback from encoder through Standa controller **8SMC1-USBhF** and send motion correction commands back to it using provided software libraries. Unlike servo motors, stepper motors do not necessarily require encoders for operation. **Encoder provides monitoring option. 1000 pulses per revolution ensure precise step monitoring down to 1/4 microstep mode.**

For ordering motorized stages with encoder, please add symbols **MEn1** to the code of motorized stages.

Example:

**8MT175-100-MEn1** - translation stage **8MT175-100** with encoder **MEn1**.

**8MR190-2-28-MEn1** - rotation stage **8MR190-2-28** with encoder **MEn1**.



**8MTF-75LS05**

Motorized XY Scanning Stage **8MTF75LS05** with stepper motor **28** and with dial knob



**8MR151-1-MEn1**

Rotation stage **8MR151-1** with stepper motor **28** and with encoder **MEn1**



**8MR191-28-E3**

Rotation stage **8MR191** with stepper motor **28** and with revolution sensor **E3**



**8MR190-90-RD1**

Rotation stage **8MR190-90** with stepper motor **4247** and with damper **RD1**

Optical  
Tables

Brackets  
& Rails

Base  
Mounts &  
Accessories

Optical  
Mounts

Optical  
Positioners

Base  
Positioners

Translation &  
Rotation  
Stages

Motorised  
Positioners &  
Controllers

Fine  
Adjustment  
Screws

Opto-  
Mechanics &  
Sets

Light Test &  
Measurement  
Instruments

Instruments



http://www.standa.lt



e-mail: sales@standa.lt  
Phone: +370-5-2651483  
Fax: +370-5-2651474



**Standa**





Light Test & Measurement Instruments	Opto-Mechanics Sets	Fine Adjustment Screws	Motorised Positioners & Controllers	Base Positioners	Translation & Rotation Stages	Optical Positioners	Optical Mounts	Base Mounts & Accessories	Brackets & Rails	Optical Tables	1
11	10	9	8	7	6	5	4	3	2	1	

## STEPPER MOTORS

Model	Wiring scheme	Design Voltage, V	Phase Current, A	Holding Torque, Nm	Detent Torque, mNm	Phase Resistance, Ohm	Inductance, mH	Steps/Revolution
<b>20</b>	bipolar	4.3	0.8	0.03	1.5	5.4±15%	1.5±20%	200 (1.8°)
<b>28</b>	bipolar	4.56	0.67	0.106	3.75	6.8±15%	4.8±20%	200 (1.8°)
<b>28S</b>	bipolar	3.75	0.67	0.071	2.5	5.6±15%	4±20%	200 (1.8°)
<b>4233</b>	bipolar	12	0.4	0.25	8.5	30±10%	37±20%	200 (1.8°)
<b>4247</b>	bipolar	3.84	1.2	0.45	15.5	3.2±10%	6±20%	200 (1.8°)
<b>5618</b>	bipolar	4.82	2.01	1.84	39	2.4±15%	8.4±20%	200 (1.8°)
<b>5918</b>	bipolar	3	2.1	1.98	68	2±10%	8.8±20%	200 (1.8°)
<b>ZSS43</b>	bipolar	42	0.6	0.26	7	19	22.9	200 (1.8°)

## VACUUM 10<sup>-6</sup> Torr COMPATIBLE STEPPER MOTORS

Model	Wiring scheme	Design Voltage, V	Phase Current, A	Holding Torque, Nm	Detent Torque, mNm	Phase Resistance, Ohm	Inductance, mH	Steps/Revolution
<b>VSS42</b>	bipolar	42	0.6	0.13	5	6.4	200 (1.8°)	
<b>VSS43</b>	bipolar	42	0.6	0.235	7	10.4	200 (1.8°)	

## DC MOTORS

Model	Design Voltage, V	Continuous Current, A	Continuous Torque, Nm	Continuous Power, W	Resistance, Ohm	Inductance, mH	Max Speed, rpm	Gearbox	Encoder
<b>DCE369751</b>	3.6	0.587	0.3	2	3.5	0.114	120	67:1	16 CPT, 2 channels
<b>DCJ252445</b>	1.8	0.72	0.3	1.2	1.07	0.0216	7	1119:1	16 CPT, 2 channels
<b>DCE1524</b>	6	0.021	0.3	1.7	5.1	0.07	35	14:1	16 CPT, 2 channels
<b>DCE RE25</b>	24	1.37	0.5	20	1.53	0.186	1800	4:4:1	1000 CPT, 3 channels

## VACUUM 10<sup>-6</sup> Torr COMPATIBLE DC MOTORS

Model	Design Voltage, V	Continuous Current, A	Continuous Torque, Nm	Continuous Power, W	Resistance, Ohm	Inductance, mH	Max Speed, rpm	Gearbox	Encoder
<b>DCE1841</b>	6	0.021	0.3	1.7	5.1	0.07	37	134:1	16 CPT, 2 channels

**standa**





# Narrow Motorized Translation Stages

**8MT173**

**Motorized Translation Stages 8MT173** are created on the basis of 7T173 manual translation stages.

Mechanical parameters of the motorized stages are identical to the parameters of manual **7T173**.

Resolution, speed and load capacity all depend on parameters of the motor, translation stages, as well as on the controller and driving mode a user chooses to use.

For vertical (Z axis) mounting we offer angle bracket **2AB173-20** (page 2-6). Angle brackets of custom design can be manufactured on request.

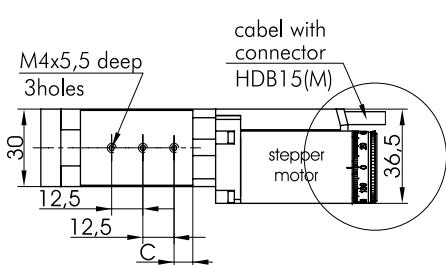
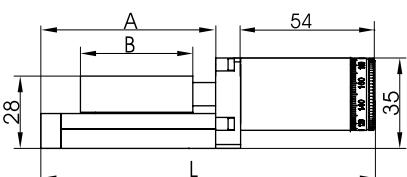
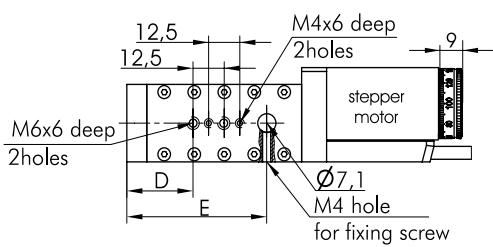
Two mechanical limit switches built into each translation stage used for emergency stop at ends of travel range or to establish a reference position with accuracy of several motor steps (use **E3** option for more accurate zero position setting, see page 8-1).

Motor position can be visually determined with accuracy of one step by reading a scale engraved on dial knob fitted on motor shaft (use **Encoder** for monitoring exact position using PC).

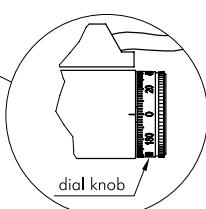
Body and platform of **8MT173** are made of black finished aluminum. Functional parts are made of steel.

- Narrow (30 mm)
- Compact design
- High guide way accuracy
- Lead screw pitch 0.25 mm
- Travel 10, 20, 25, 30 mm
- Optional travel 5, 6, 8 mm and other
- X-Y-Z configurations available

## Narrow Motorized Translation Stage with stepper motor

**8MT173**
*Motorized Stages  
of Higher Speed  
available on request*


Model	L, mm	A, mm	B, mm	C, mm	D, mm	E, mm
8MT173-10	124	60	45	7.5	21.5	49
8MT173-20	134	70	45	7.5	26.5	56
8MT173-25	138	74	49	11	30.5	60
8MT173-30	144	80	55	11.5	36.5	66



### SPECIFICATIONS

**8MT173-10    8MT173-20    8MT173-25    8MT173-30**

Travel range, mm	10	20	25	30
Lead screw pitch, mm		0.25		
Resolution in full step*, $\mu\text{m}$		1.25		
Max. speed*, mm/s		5		
Load capacity:				
Horizontal, kg		5		
Vertical, kg		2		
Cable	integrated, 1.6 m length			
Motor connector	HDB15(M)			
Stepper motor	28			
Weight, kg	0.43	0.46	0.47	0.48
Assemblies:				
X-Y	<b>2CP173-20</b>			
Z	<b>2AB173-20</b>			

\*Test condition:  
• STANDA controllers;  
• Power supply – 36V.

 Optical  
Tables

 Brackets  
& Rails

 Base  
Mounts &  
Accessories

 Optical  
Mounts

 Optical  
Positioners

 Base  
Positioners

 Translation &  
Rotation  
Stages

 Motorised  
Positioners &  
Controllers

 Fine  
Adjustment  
Screws

 Opto-  
Mechanics &  
Sets

 Light Test &  
Measurement  
Instruments



## Narrow Motorized Translation Stage

with Vacuum compatible stepper motor

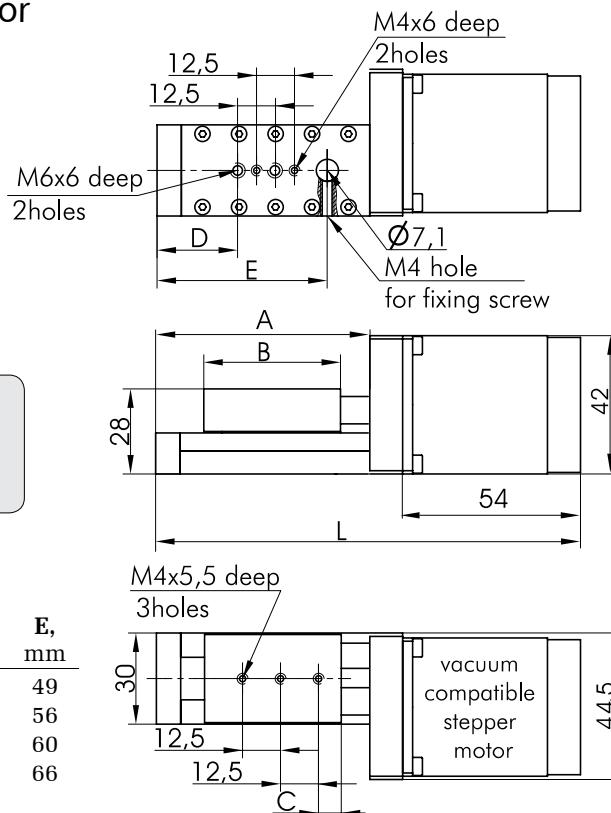
8MT173V



8MT173V-20-VSS42

Vacuum  
10<sup>-6</sup> Torr  
compatible

Model	L, mm	A, mm	B, mm	C, mm	D, mm	E, mm
8MT173V-10-VSS42	124	60	45	7.5	21.5	49
8MT173V-20-VSS42	134	70	45	7.5	26.5	56
8MT173V-25-VSS42	138	74	49	11	30.5	60
8MT173V-30-VSS42	144	80	55	11.5	36.5	66



Many applications require **vacuum compatible stages**. 8MT173V series stages are equipped with **10<sup>-6</sup> Torr** **vacuum compatible stepper motor**, all mechanical parts are **lubricated** with **High vacuum compatible grease**. Aluminum parts are not anodized. Stages are cleaned in vacuum chamber and packed before dispatch, so that it can be immediately placed in vacuum chamber after purchase without spoiling the vacuum. Cleaning and packing not included in price.

## SPECIFICATIONS

8MT173V-10-VSS42 8MT173V-20-VSS42 8MT173V-25-VSS42 8MT173V-30-VSS42

Travel range, mm	10	20	25	30
Lead screw pitch, mm			0.25	
Resolution in full step*, µm			1.25	
Max. speed*, mm/s			2.5	
Load capacity:				
Horizontal, kg			3	
Vertical, kg			1	
Fluoroplastic cable		integrated, 2 m length		
Motor connector		HDB15(M)		
Vacuum compatible stepper motor		VSS42		
Weight, kg	0.42	0.48	0.49	0.5
Assemblies:				
X-Y		2CP173V-20		
Z		2AB173V-20		

\*Test condition:  
• STANDA controllers;  
• Power supply – 36V.

## Recommended Controllers

more info on [www.standa.lt](http://www.standa.lt)Stepper Motor Controller  
with  
USB Interface

8SMC1-USBhf

Stepper Motor Controller  
with  
RS232 Interface

8SMC3-RS232

standa

e-mail: sales@standa.lt

<http://www.standa.lt>

Phone: +370-5-2651474

Fax: +370-5-2651483

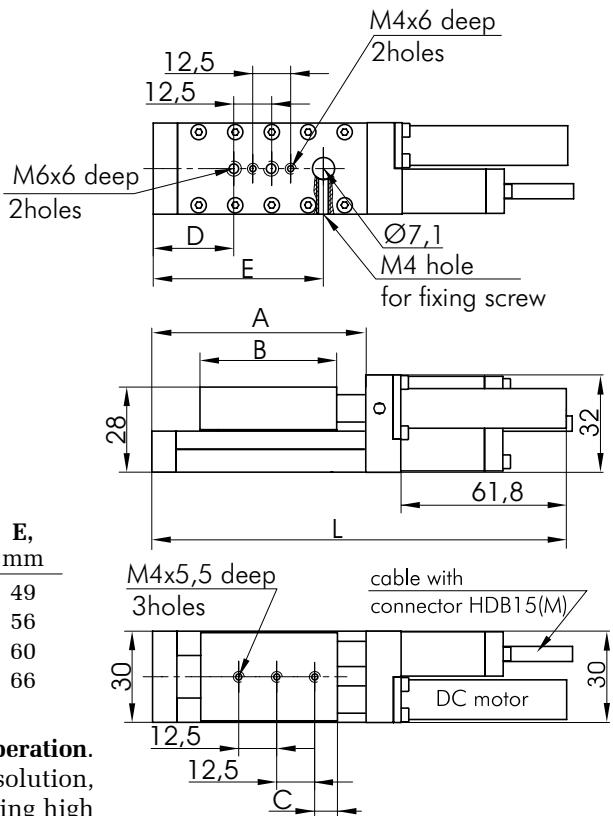


## Narrow Motorized Translation Stage

with DC motor



## 8MT173-DCE2



Model	L, mm	A, mm	B, mm	C, mm	D, mm	E, mm
8MT173-10DCE2	126	60	45	7.5	21.5	49
8MT173-20DCE2	136	70	45	7.5	26.5	56
8MT173-25DCE2	140	74	49	11	30.5	60
8MT173-30DCE2	146	80	55	11.5	36.5	66

**DC motor** provides **smoother motion** and **closed loop operation**. High number of motor reduction gear provides high resolution, but low speed in turn. Ideal for applications demanding high accuracy, but not sensitive to speed limitations.

## SPECIFICATIONS

	8MT173-10DCE2	8MT173-20DCE2	8MT173-25DCE2	8MT173-30DCE2
Travel range, mm	10	20	25	30
Lead screw pitch, mm		0.25		
Resolution, $\mu\text{m}$		0.058		
Minimal incremental motion, $\mu\text{m}$		0.1		
Bi-directional Repeatability, $\mu\text{m}$		0.4		
Max. speed, mm/s		0.5		
Load capacity:				
Horizontal, kg		5		
Vertical, kg		1		
Cable		integrated, 1.6 m length		
Motor connector		HDB15(M)		
DC motor		DCE369751		
Weight, kg	0.43	0.46	0.47	0.48
<b>Assemblies:</b>				
X-Y		2CP173-20		
Z		2AB173-20		

## Recommended Controllers

more info on [www.standa.lt](http://www.standa.lt)

8DCMC1-USB

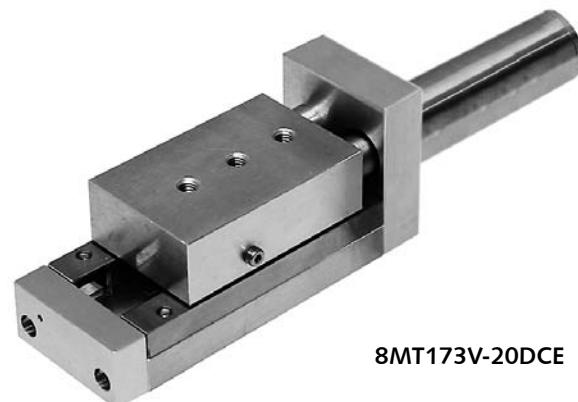


8JXY-02

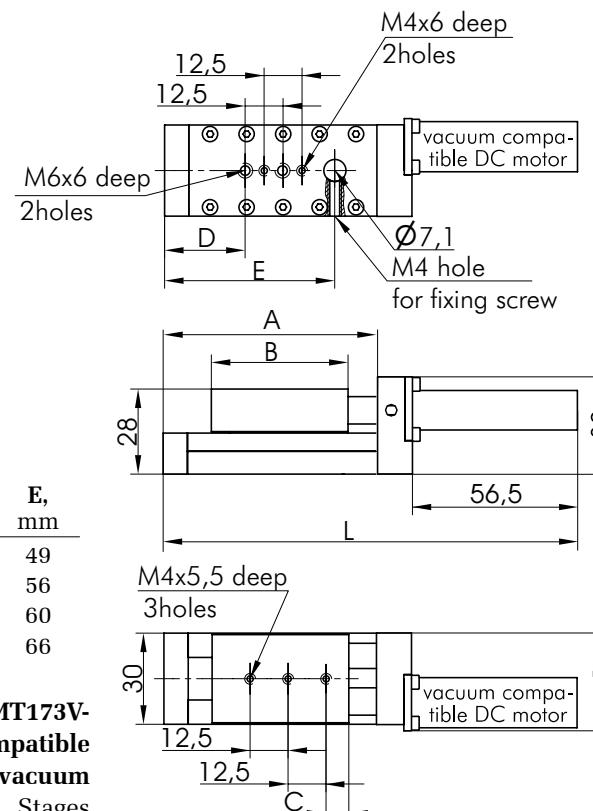
Optical Tables	1	Brackets & Rails	2	Base Mounts & Accessories	3	Optical Mounts	4	Optical Positioners	5	Base Positioners	6	Translation & Rotation Stages	7	Motorised Positioners & Controllers	8	Fine Adjustment Screws	9	Opto-Mechanics & Sets	10	Light Test & Measurement Instruments	11
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## Narrow Motorized Translation Stage

with Vacuum compatible DC motor



**8MT173V-20DCE**



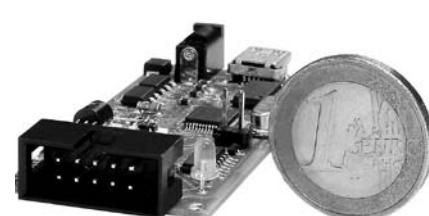
Many applications require **vacuum compatible stages**. **8MT173V-DCE** series stages are equipped with **10<sup>-6</sup> Torr vacuum compatible DC motor**, all mechanical parts are **lubricated with High vacuum compatible grease**. Aluminum parts are not anodized. Stages are cleaned in vacuum chamber and packed before dispatch, so that it can be immediately placed in vacuum chamber after purchase without spoiling the vacuum. Cleaning and packing not included in price.

### SPECIFICATIONS

	8MT173V-10DCE	8MT173V-20DCE	8MT173V-25DCE	8MT173V-30DCE
Travel range, mm	10	20	25	30
Lead screw pitch, mm		0.25		
Resolution, $\mu\text{m}$		0.029		
Minimal incremental motion, $\mu\text{m}$		0.1		
Bi-directional Repeatability, $\mu\text{m}$		0.4		
Max. speed, mm/s		0.16		
Load capacity:				
Horizontal, kg		5		
Vertical, kg		1		
Fluoroplastic cable		integrated, 2 m length		
Motor connector		HDB15(M)		
Vacuum compatible DC motor		DCE1841		
Weight, kg	0.43	0.46	0.47	0.48
Assemblies:				
X-Y		2CP173V-20		
Z		2AB173V-20		

### Recommended Controllers

more info on [www.standa.lt](http://www.standa.lt)



**Brushed DC Servo Motor Controller with USB Interface**

**8DCMC1-USB**



**Joystick for operating DC motor**

**8JXY-02**

**standa**



e-mail: sales@standa.lt

<http://www.standa.lt>

Phone: +370-5-2651474

Fax: +370-5-2651483





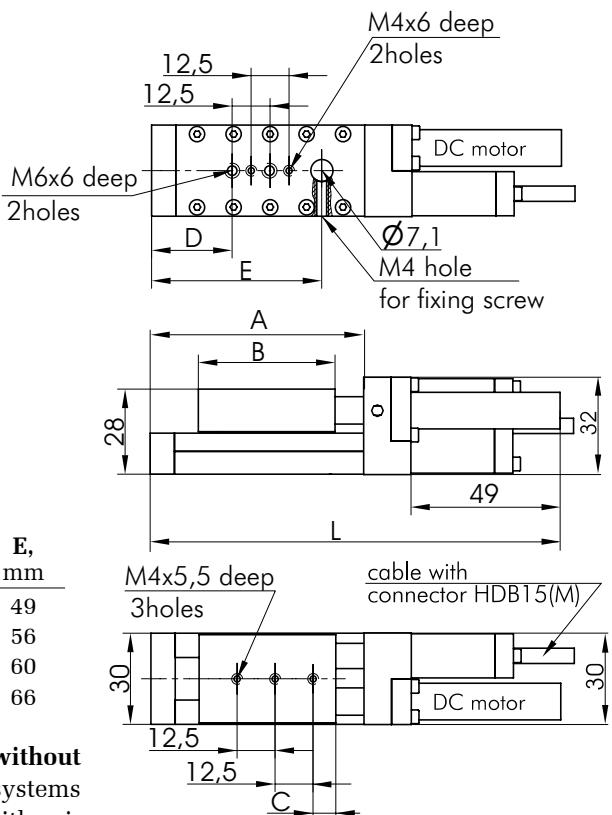
## Narrow Motorized Translation Stage

with DC motor



8MT173-20DCJ

## 8MT173-DCJ



Model	L, mm	A, mm	B, mm	C, mm	D, mm	E, mm
8MT173-10DCJ	125	60	45	7.5	21.5	49
8MT173-20DCJ	135	70	45	7.5	26.5	56
8MT173-25DCJ	139	74	49	11	30.5	60
8MT173-30DCJ	145	80	55	11.5	36.5	66

**8MT173-DCJ** series stages are equipped with **DC motor without encoder** and can **operated** with **joystick** only. Ideal for systems with own feedback, e.g. visual feedback when used with microscope.

## SPECIFICATIONS

	8MT173-10DCJ	8MT173-20DCJ	8MT173-25DCJ	8MT173-30DCJ
Travel range, mm	10	20	25	30
Lead screw pitch, mm		0.25		
Minimal incremental motion, $\mu\text{m}$		0.1		
Bi-directional Repeatability, $\mu\text{m}$		0.4		
Max. speed, mm/s		0.038		
Load capacity:				
Horizontal, kg		5		
Vertical, kg		1		
Cable		integrated, 1.6 m length		
Motor connector		DB9(M)		
DC motor without encoder		DCJ252445		
Weight, kg	0.43	0.46	0.47	0.48
Assemblies:				
X-Y		2CP173-20		
Z		2AB173-20		

## Recommended Joystick

more info on [www.standa.lt](http://www.standa.lt)

8JXY-02

Joysticks for operating  
8MT173-DCJ series stages

Model 8JX.01 – 1 axis control

Model 8JXY-02 – 2 axis control



8JX.01

Optical  
Tables

Brackets  
& Rails

Base  
Mounts &  
Accessories

Optical  
Mounts

Optical  
Positioners

Base  
Positioners

Translation &  
Rotation  
Stages

Motorised  
Positioners &  
Controllers

Fine  
Adjustment  
Screws

Opto-  
Mechanics &  
Sets

Light Test &  
Measurement  
Instruments

# Narrow Motorized Translation Stages

Motorized translation stage 8MT30-50 is a newly developed stage, which incorporates all the improvements and modifications implemented since its predecessor 8MT173-20-50 was launched. 8MT30-50 replaces older stage 8MT173-20-50.

It boasts possibility to operate in any orientation, which means that the stage can be hung upside-down or be operated vertically with motor facing upward or downward. Durability of stage was taken seriously into consideration and now you can apply grease directly to the screw without disassembling the stage. Vertical load capacity is increased to 3 kg. Stage is spring preloaded to eliminate backlash. Design of 8MT30-50 ensures more stable and precise motion over full translation range.

For vertical (Z axis) mounting we offer angle bracket **2AB173-20-50**. Angle brackets of custom design can be manufactured on request.

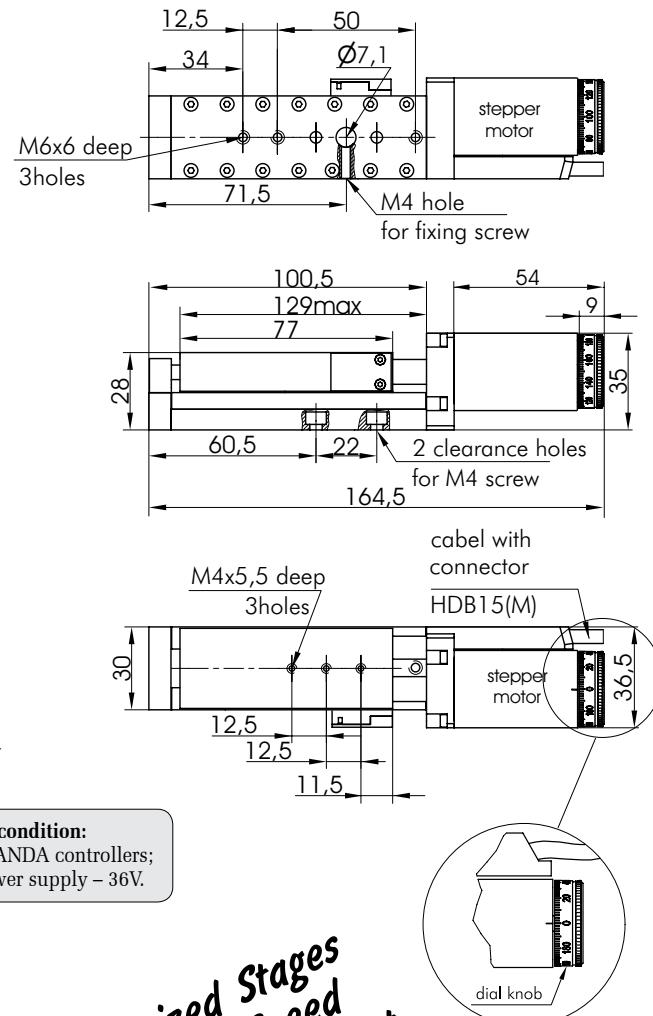
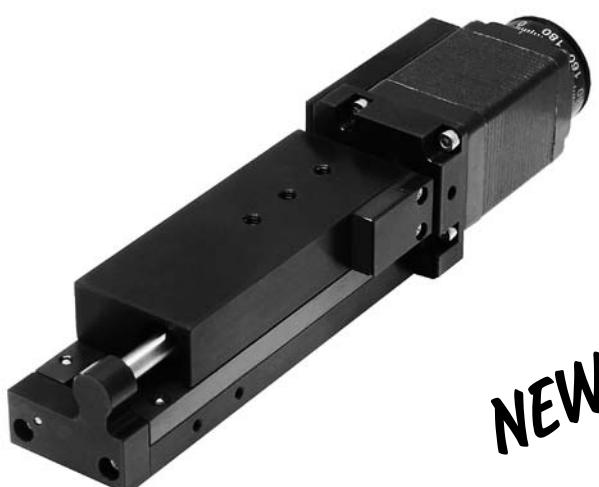
Two mechanical limit switches built into each translation stage used for emergency stop at ends of travel range or to establish a reference position with accuracy of several motor steps (use **E3** option for more accurate zero position setting, see [page 8-1](#)).

Motor position can be visually determined with accuracy of one step by reading a scale engraved on dial knob fitted on motor shaft (use **Encoder** for monitoring exact position using PC (see [page 8-2](#))).

Body and platform of **8MT30** are made of black finished aluminum. Functional parts are made of steel.

## Narrow Motorized Translation Stage with stepper motor

## 8MT30-50

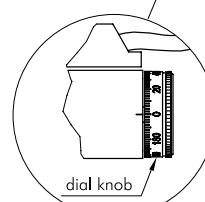


### SPECIFICATIONS

Travel range	50 mm
Lead screw pitch	0.25 mm
Resolution in full step*	1.25 µm
Max. speed*	5 mm/s
Load capacity	
Horizontal	5 kg
Vertical	3 kg
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28
Weight	0.5 kg
Assemblies:	
X-Y	2CP173-50-20
Z	2AB173-20-50

\*Test condition:  
• STANDA controllers;  
• Power supply – 36V.

*Motorized Stages  
of Higher Speed  
available on request*



**standa**



e-mail: sales@standa.lt

<http://www.standa.lt>

Phone: +370-5-2651474 Fax: +370-5-2651483





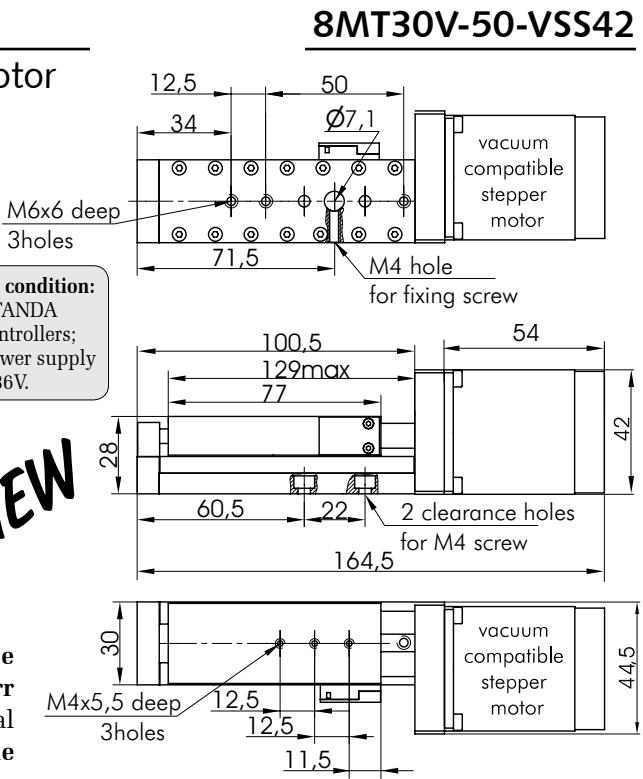
## Narrow Motorized Translation Stage with Vacuum compatible stepper motor

### SPECIFICATIONS

Travel range	50 mm
Lead screw pitch	0.25 mm
Resolution in full step*	1.25 µm
Max. speed*	2.5 mm/s
Load capacity	
Horizontal	3 kg
Vertical	1 kg
Fluoroplastic cable	integrated, 2 m length
Motor connector	HDB15(M)
Vacuum compatible stepper motor	VSS42
Weight	0.55 kg
Assemblies:	
X-Y	2CP173V-50-20
Z	2AB173V-20-50

Many applications require **vacuum compatible stages**. 8MT30V-50 stage is equipped with **10<sup>-6</sup> Torr vacuum compatible stepper motor**, all mechanical parts are **lubricated with High vacuum compatible grease**. Aluminum parts are not anodized. Stages are cleaned in vacuum chamber and packed before dispatch, so that it can be immediately placed in vacuum chamber after purchase without spoiling the vacuum. Cleaning and packing not included in price.

**NEW**



### for Stepper Motor

Stepper Motor  
Controller  
with  
USB Interface  
**8SMC1-USBhF**



### Recommended Controllers

### for DC Motor

Brushed DC Servo Motor  
Controller  
with  
USB Interface  
**8DCMC1-USB**

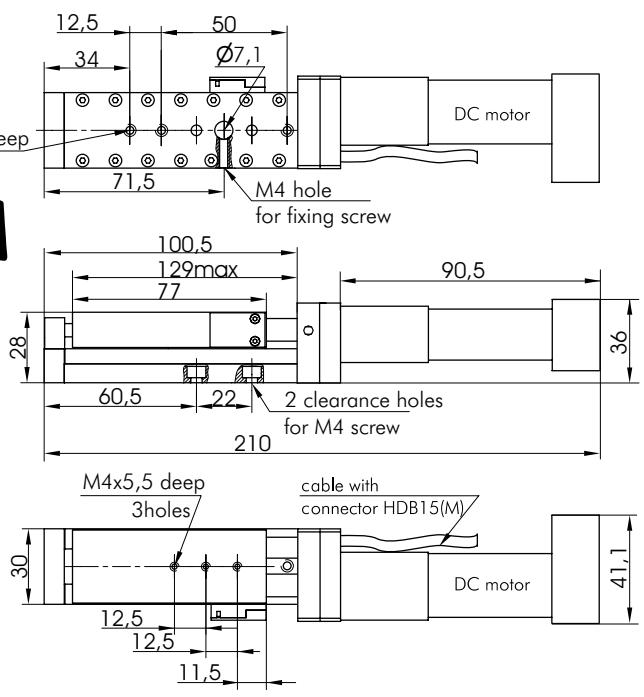
## Narrow Motorized Translation Stage with DC motor

### 8MT30-50DCE

### SPECIFICATIONS

Travel range	50 mm
Lead screw pitch	0.25 mm
Resolution	0.014 µm
Minimal incremental motion	0.1 µm
Bi-directional Repeatability	0.4 µm
Max. speed	7 mm/s
Load capacity	
Horizontal	5 kg
Vertical	1 kg
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
DC motor	DCE RE25
Weight	0.5 kg
Assemblies:	
X-Y	2CP173-50-20
Z	2AB173-20-50

**NEW**



**DC motor** provides **smoother motion** and **closed loop operation**. High number of motor reduction gear provides high resolution, but low speed in turn. Ideal for applications demanding high accuracy but not sensitive to speed limitations.



# Motorized Positioners & Controllers

## Narrow Motorized Translation Stage with Vacuum compatible DC motor

### SPECIFICATIONS

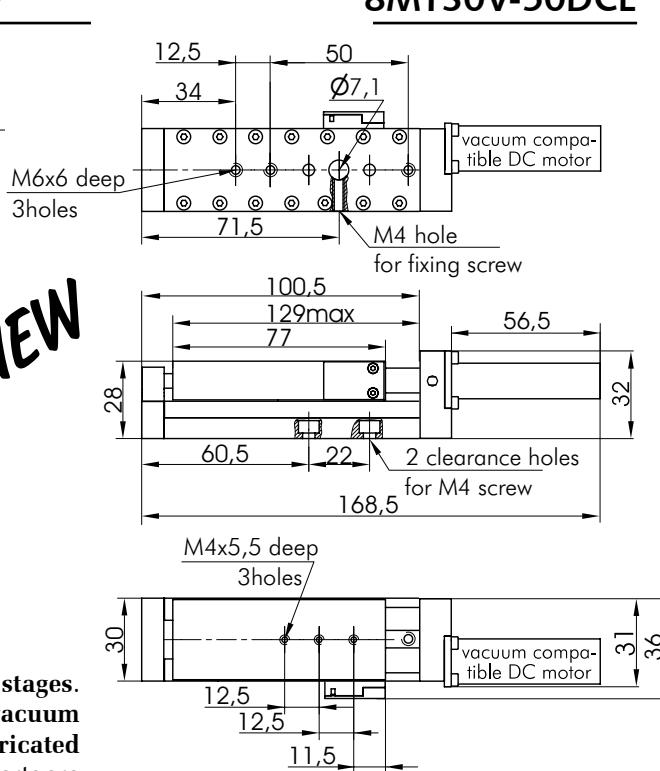
Travel range	50 mm
Lead screw pitch	0.25 mm
Resolution	0.029 $\mu\text{m}$
Minimal incremental motion	0.1 $\mu\text{m}$
Bi-directional Repeatability	0.4 $\mu\text{m}$
Max. speed	0.5 mm/s
Load capacity	
Horizontal	5 kg
Vertical	1 kg
Fluoroplastic cable	integrated, 2 m length
Motor connector	HDB15(M)
Vacuum compatible DC motor	DCE1841
Weight	0.5 kg

### Assemblies:

- X-Y                    2CP173V-50-20  
Z                        2AB173V-20-50

Many applications require **vacuum compatible stages**. 8MT30V-50DCE stage is equipped with **10<sup>-6</sup> Torr vacuum compatible DC motor**, all mechanical parts are **lubricated with High vacuum compatible grease**. Aluminum parts are not anodized. Stages are cleaned in vacuum chamber and packed before dispatch, so that it can be immediately placed in vacuum chamber after purchase without spoiling the vacuum. Cleaning and packing not included in price.

NEW



### Joystick for DC Motor



8JXY-02 – 2 axis control

### Recommended

### Controller for DC Motor



Brushed DC Servo Motor Controller with USB Interface  
**8DCMC1-USB**

## Narrow Motorized Translation Stage

### with DC motor

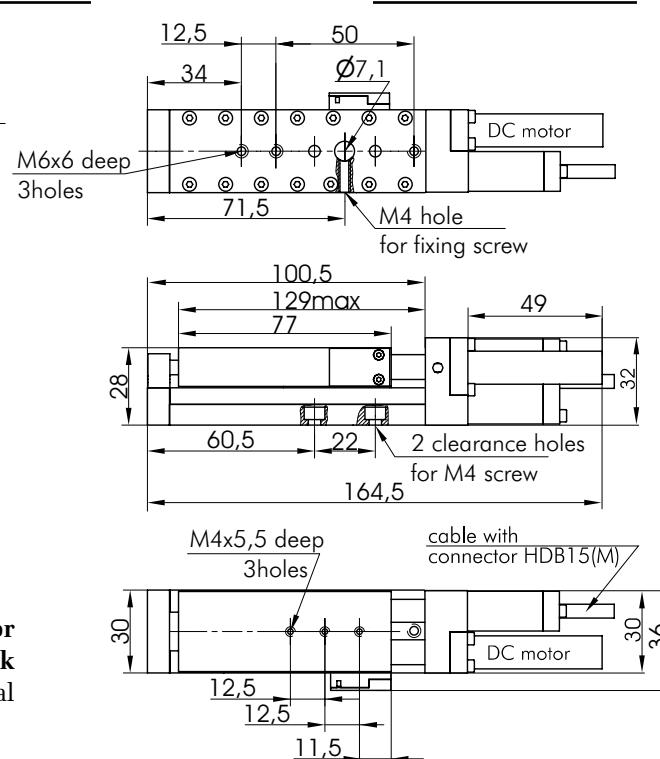
### SPECIFICATIONS

Travel range	50 mm
Lead screw pitch	0.25 mm
Minimal incremental motion	0.1 $\mu\text{m}$
Bi-directional Repeatability	0.4 $\mu\text{m}$
Max. speed	0.38 mm/s
Load capacity	
Horizontal	5 kg
Vertical	1 kg
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
DC motor without encoder	DCJ252445
Weight	0.5 kg

### Assemblies:

- X-Y                    2CP173-50-20  
Z                        2AB173-20-50

8MT30-50DCJ stage is equipped with **DC motor without encoder** and can **operated with joystick** only. Ideal for systems with own feedback, e.g. visual feedback when used with microscope.



e-mail: sales@standa.lt

<http://www.standa.lt>

Phone: +370-5-2651474

Fax: +370-5-2651483

standa

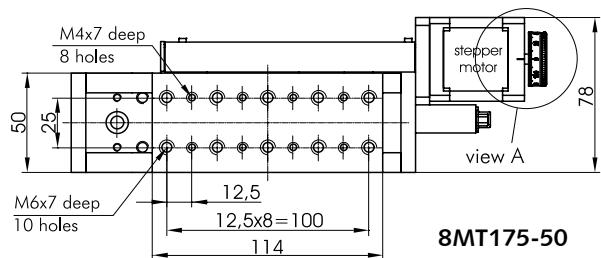
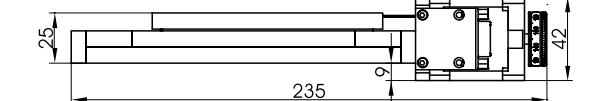
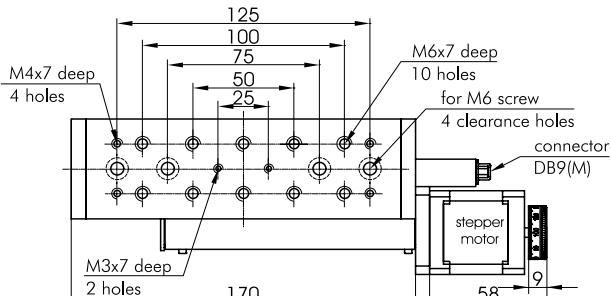
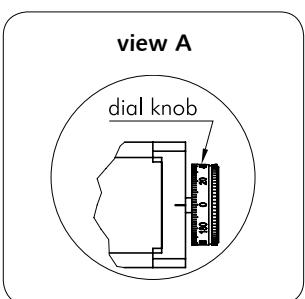


# Medium Width Motorized Translation Stages

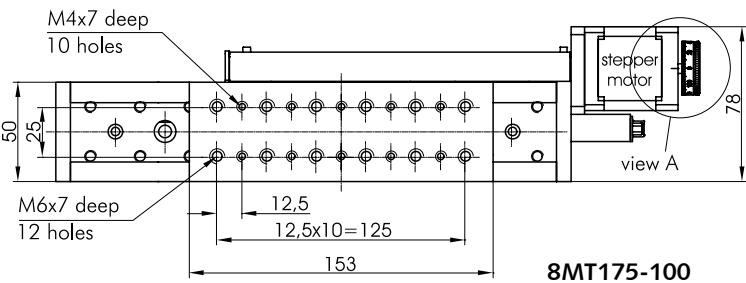
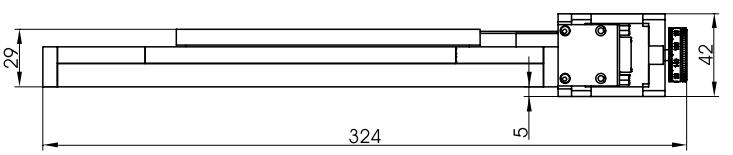
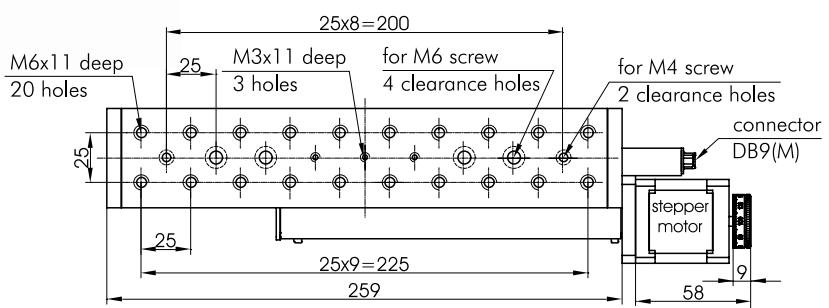
8MT175



- Narrow (50 mm)
- Compact design
- High guide way accuracy
- Resolution 0.31 µm (1/8 step)
- Travel 50, 100, 150, 200 mm
- X-Y-Z configurations available



8MT175-50



8MT175-100

## SPECIFICATIONS

	8MT175-50	8MT175-100	8MT175-150	8MT175-200
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Travel range, mm	50	100	150	200
Lead screw pitch, mm		0.5		
Resolution in full step*, µm		2.5		
Max. speed*, mm/s		10		
Load capacity				
Horizontal, kg				
Vertical, kg				
Motor connector				
Stepper motor				
Weight, kg	1	1.5	1.5	1.6
Assemblies:				
X-Y				
Z				
		directly 2AB175		

\*Test condition:  
• STANDA controllers;  
• Power supply – 36V.

Optical  
Tables

1 Brackets & Rails  
2

3 Base Mounts & Accessories  
Base Mounts & Accessories

4 Optical Mounts  
Optical Mounts

5 Optical Positioners  
Optical Positioners

6 Base Positioners  
Base Positioners

7 Translation & Rotation Stages  
Translation & Rotation Stages

8 Motorised Positioners & Controllers  
Motorised Positioners & Controllers

9 Fine Adjustment Screws  
Fine Adjustment Screws

10 Opto-Mechanics & Sets  
Opto-Mechanics & Sets

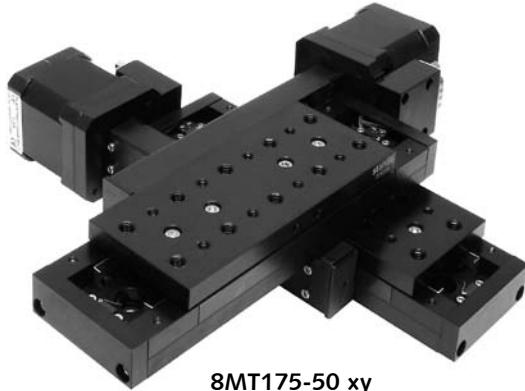
11 Light Test & Measurement Instruments  
Light Test & Measurement Instruments



# Motorized Positioners & Controllers



Light Test & Measurement Instruments	11
Opto-Mechanics & Sets	10
Fine Adjustment Screws	9
Motorised Positioners & Controllers	8
Translation & Rotation Stages	7
Base Positioners	6
Optical Positioners	5
Optical Mounts	4
Base Mounts & Accessories	3
Brackets & Rails	2
Optical Tables	1



8MT175-50 xy

In X-Y configuration medium width stages are stacked directly using M6 screws.



2AB175

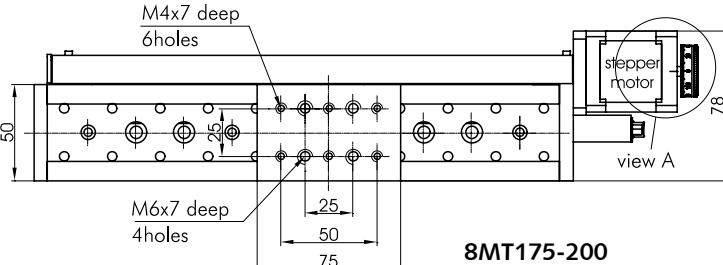
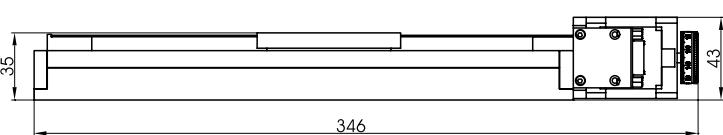
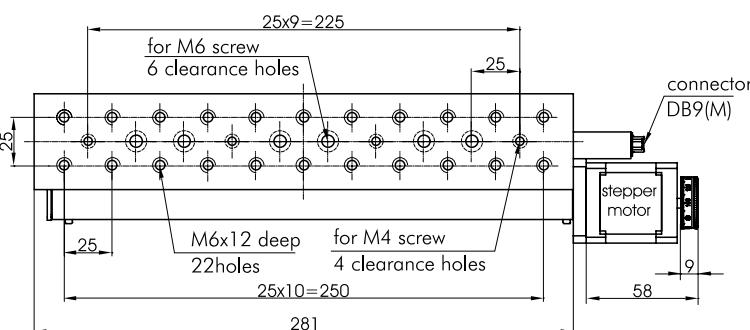
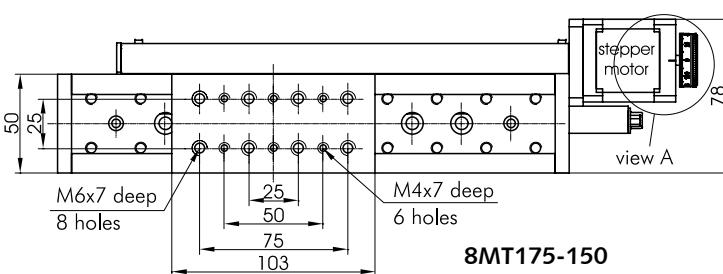
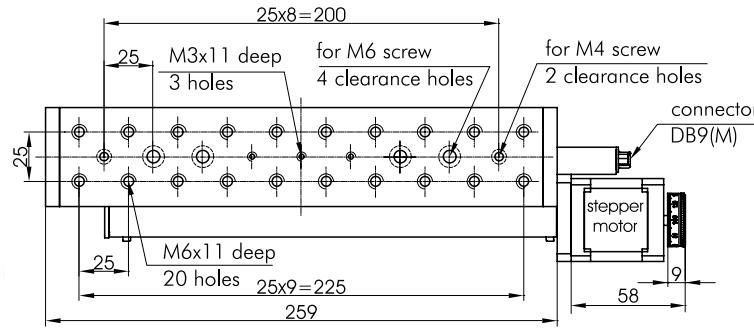
**Angle Bracket 2AB175** is used to transform "horizontal" translators into vertical ones.



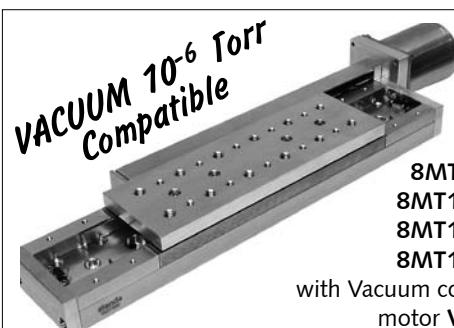
3BP175

**Base Plate 3BP175** is designed for attaching translation stages 7T173, 7T175 and motorized translation stages 8MT173, 8MT175, 8MT193-100 to STANDA optical tables or to other stages.

**Motorized medium width** stages have a motor protruding from the **bottom**. To place such stages on flat surfaces you need a base plate 3BP175 (see 3-7 page).



**Motorized Stages of Higher Speed  
available on request**



VACUUM  $10^{-6}$  Torr Compatible  
 8MT175V-50-VSS42  
 8MT175V-100-VSS42  
 8MT175V-150-VSS42  
 8MT175V-200-VSS42  
 with Vacuum compatible stepper motor VSS42 (page 8-3)

Available with  
VACUUM  $10^{-6}$  Torr  
Compatible DC motor  
 8MT175V-50-DCE  
 8MT175V-100-DCE  
 8MT175V-150-DCE  
 8MT175V-200-DCE

Available with  
DC motor  
 8MT175-50-DCE  
 8MT175-100-DCE  
 8MT175-150-DCE  
 8MT175-200-DCE

**standa**



e-mail: sales@standa.lt

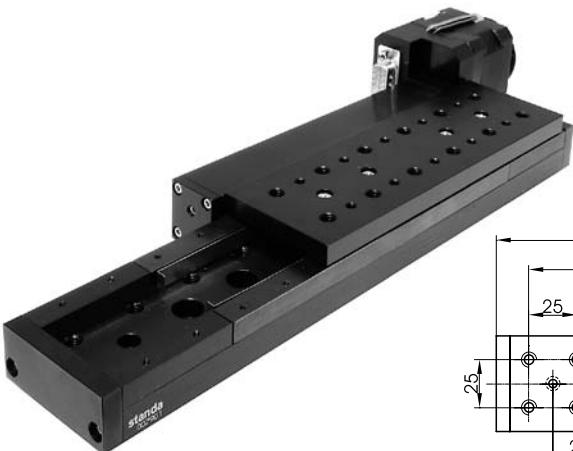
<http://www.standa.lt>

Phone: +370-5-2651474 Fax: +370-5-2651483

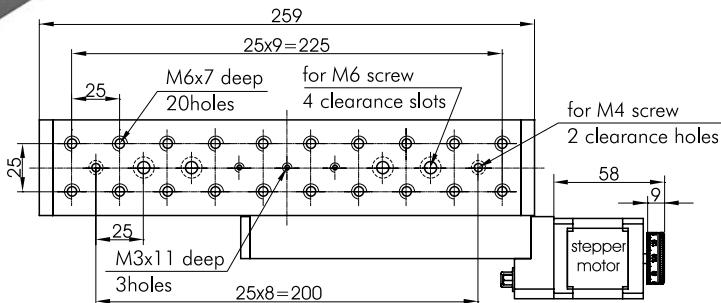


# Motorized Translation Stage

**8MT177-100**



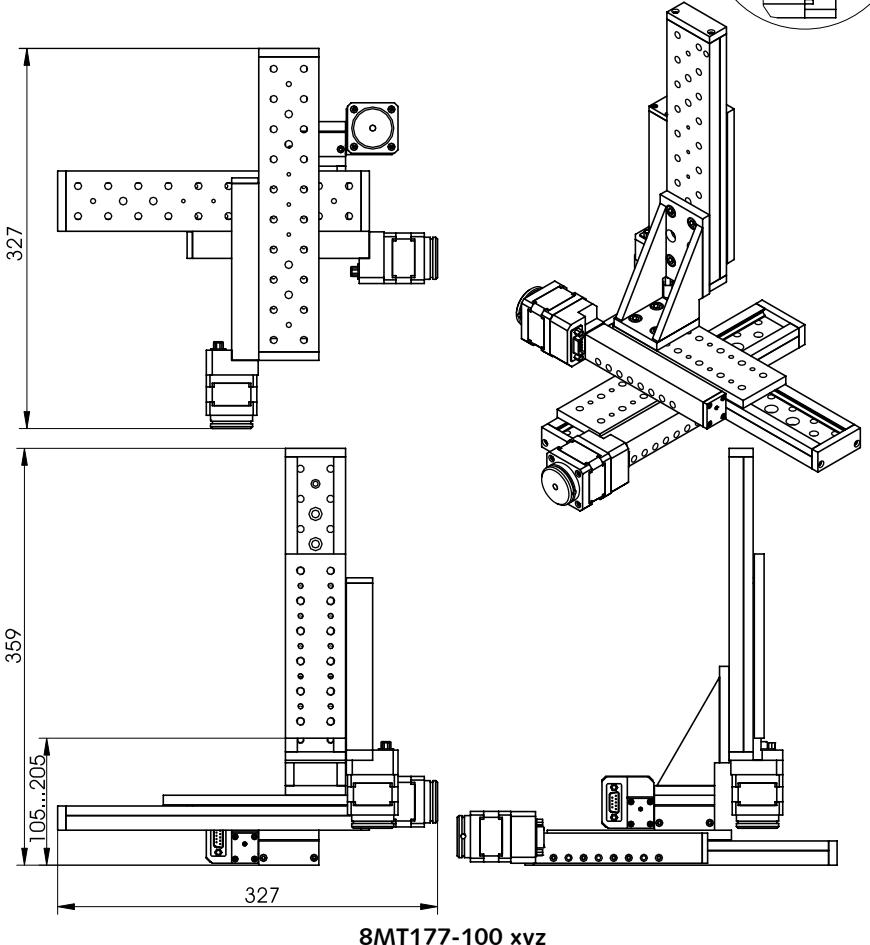
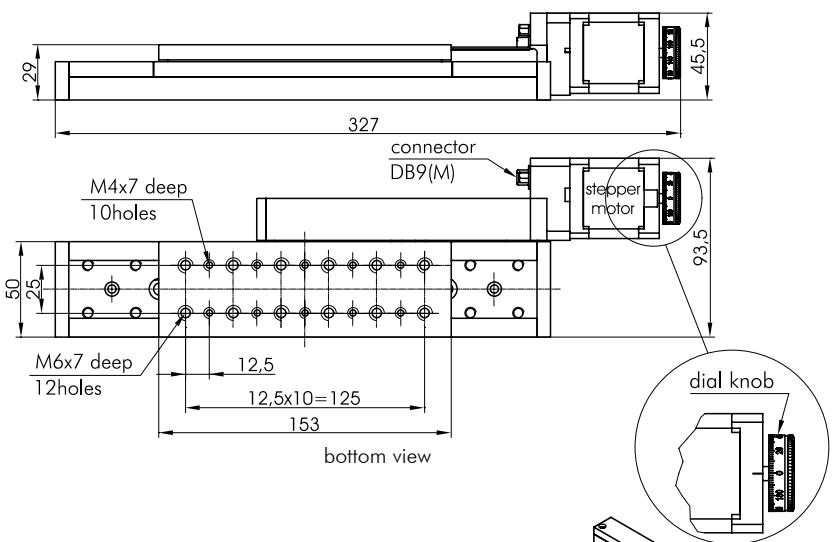
- Narrow
- Compact design
- Resolution 0.125 µm (1/8 step)
- X-Y-Z configurations available
- Motors of other types are available



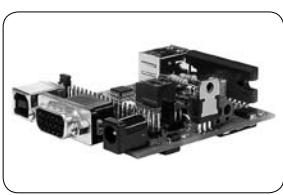
## SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution in full step*	1 µm
in 1/8 step*	0.125 µm
Reduction motor/screw	2.5:1
Max. speed*	5 mm/s
Load capacity	
Horizontal	8 kg
Vertical	3 kg
Motor connector	DB9(M)
Stepper motor	4247
Weight	1.5 kg
Assemblies:	
X-Y	directly
Z	2AB175

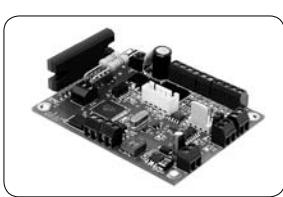
\*Test condition:  
• STANDA controllers;  
• Power supply – 36V.



## Related Controllers



8SMC1-USBhf



8SMC3-RS232

Optical  
Tables

1 Brackets & Rails

2 Base Mounts & Accessories

3 Optical Mounts

4 Optical Positioners

5 Base Positioners

6 Translation & Rotation Stages

7 Motorised Positioners & Controllers

8 Fine Adjustment Screws

9 Opto-Mechanics & Sets

10 Light Test & Measurement Instruments

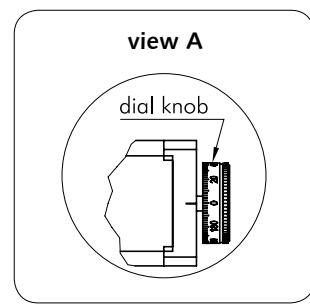
11

## Motorized Translation Stage

8MT50



- Narrow
- Compact design
- High speed
- Heavy load capacity
- X-Y-Z configurations available
- Motors of other types are available

**SPECIFICATIONS**

## Travel range

8MT50-100BS1 100 mm

8MT50-150BS1 150 mm

8MT50-200BS1 200 mm

## Lead screw pitch

1 mm

## Resolution in full step\*

5 µm

## Max. speed\*

20 mm/s

## Load capacity

Horizontal 30 kg

Vertical 8 kg

## Motor connector

DB9(M)

## Stepper motor

4247

## Weight

8MT50-100BS1 1.1 kg

8MT50-150BS1 1.4 kg

8MT50-200BS1 1.65 kg

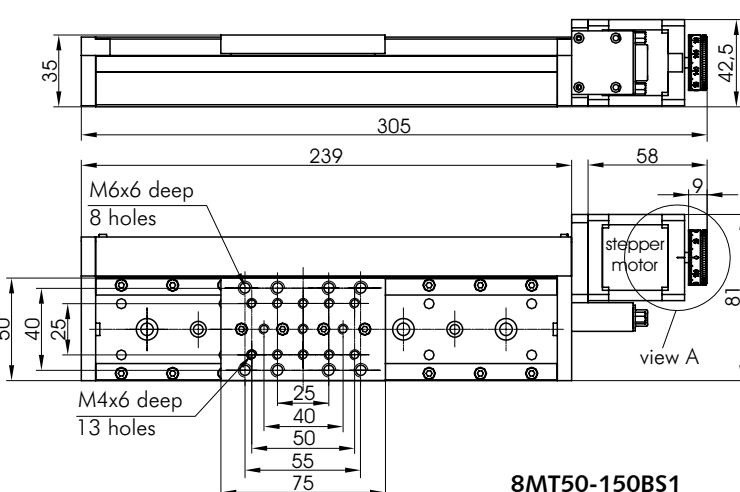
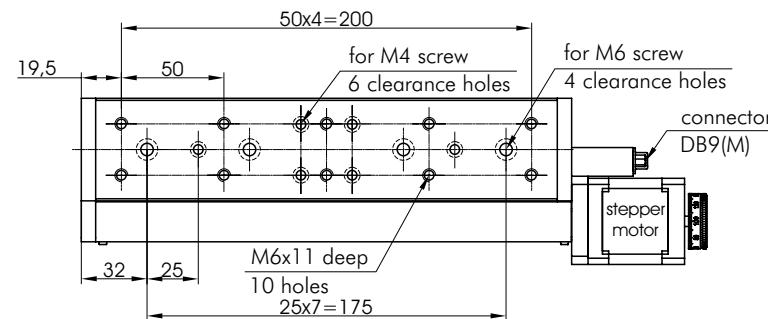
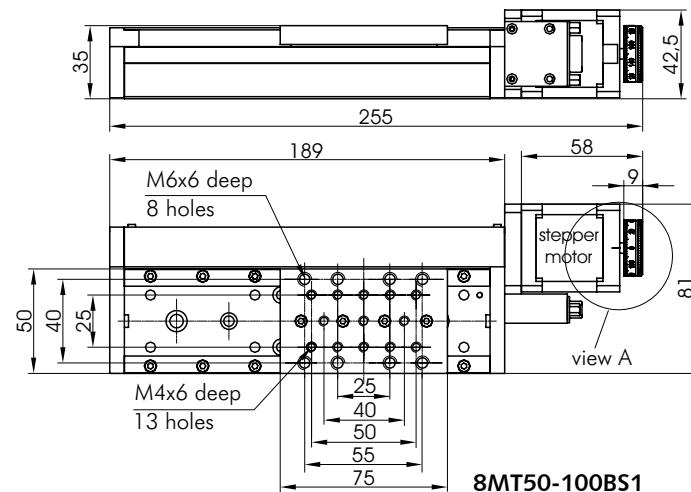
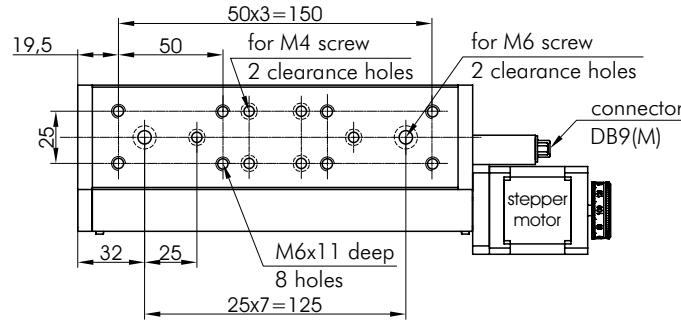
## Assemblies:

X-Y directly 2AB175

Z

**\*Test condition:**

- STANDA controllers;
- Power supply - 36V.





Optical  
Tables

1 Brackets & Rails

2 Base Mounts & Accessories

3 Optical Mounts

4 Optical Positioners

5 Base Positioners

6 Translation & Rotation Stages

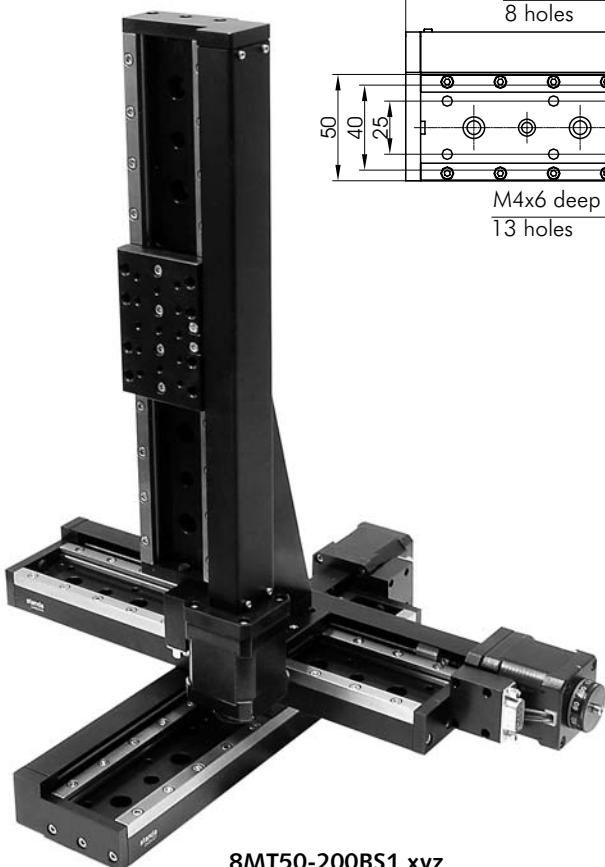
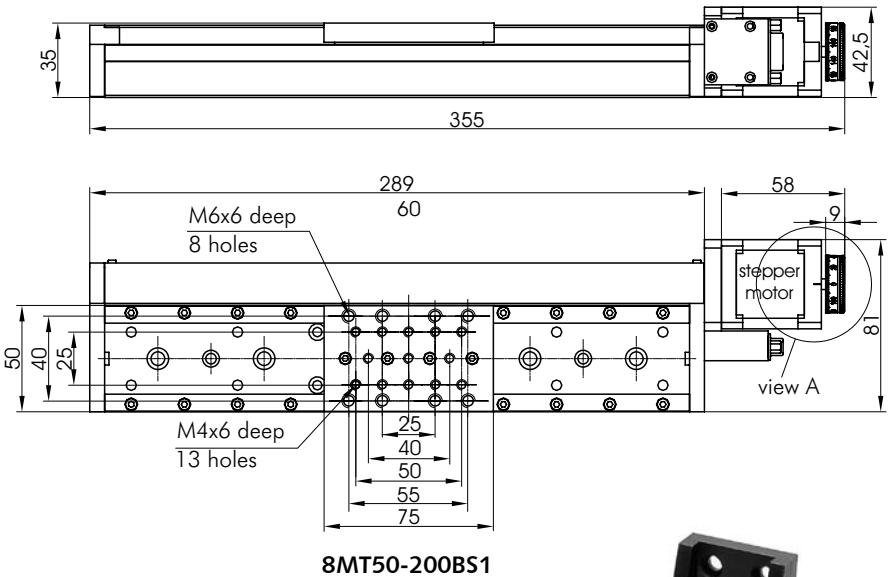
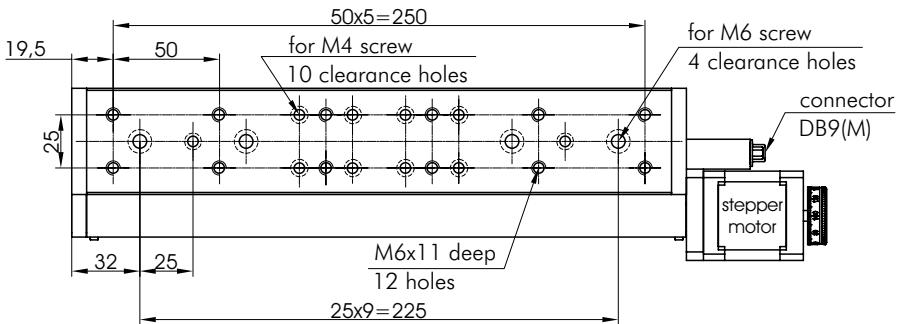
7 Motorised Positioners & Controllers

8 Fine Adjustment Screws

9 Opto-Mechanics & Sets

10 Light Test & Measurement Instruments

11



**Angle Bracket 2AB175** is used to transform "horizontal" translators into vertical ones.

## Recommended Controllers

more info on [www.standa.lt](http://www.standa.lt)

**Stepper Motor Controller with USB Interface**



**8SMC1-USBhF**

**Stepper Motor Controller with RS232 Interface**



**8SMC3-RS232**



<http://www.standa.lt>

e-mail: [sales@standa.lt](mailto:sales@standa.lt)

Phone: +370-5-2651483  
Fax: +370-5-2651474



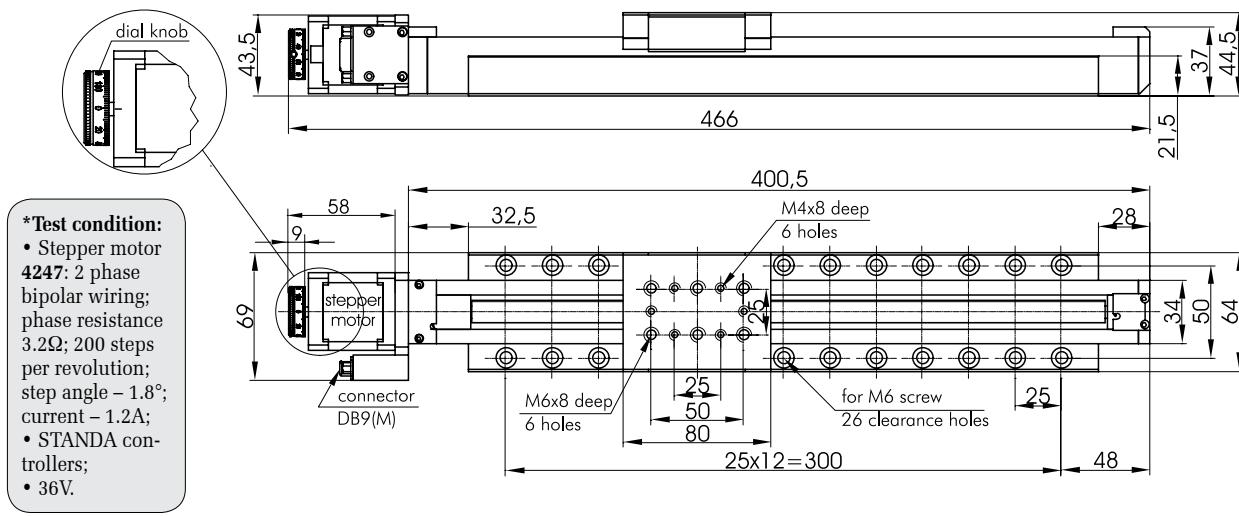
**Standa**





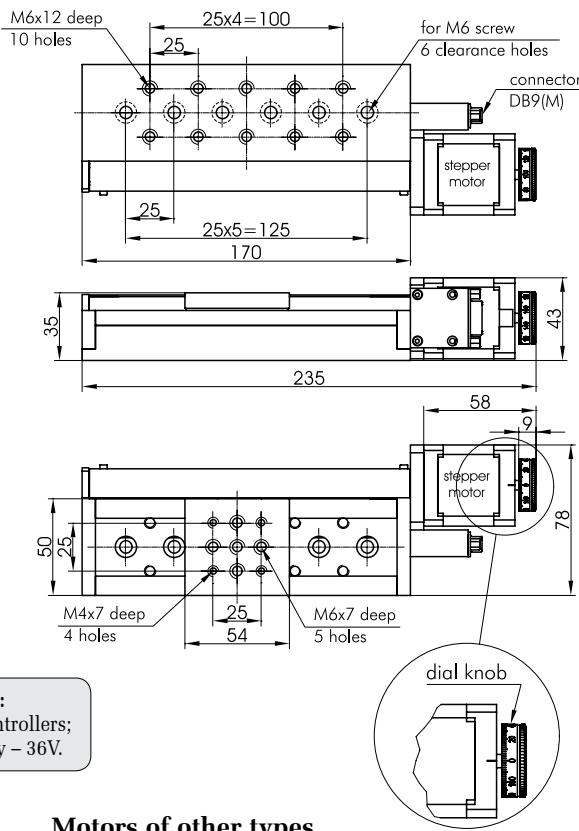
- Travel range 300 mm
  - Resolution in full step  $2.5 \mu\text{m}$  ( $0.31 \mu\text{m}$  (1/8 step))
  - Steel rail design. Stability and rigidity ensured
  - Recirculating ball modules are incorporated in the platform
  - Step motor with 200 steps per revolution
  - Lead screw pitch 0.5 mm
  - Max speed 8mm/s\*
  - Horizontal load capacity 10 kg
  - Vertical load capacity 3 kg
  - Supply voltage – 36V
  - Weight 4.28 kg

- STANDA controllers;
- Power supply – 36V.



# Motorized Translation Stage

8MT193-100



## SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution in full step*	2.5 $\mu\text{m}$
in 1/8 step*	0.31 $\mu\text{m}$
Max. speed*	10 mm/s
<i>on request we fit alternative motors</i>	
Load capacity	
Horizontal	8 kg
Vertical	3 kg
Motor connector	DB9(M)
Stepper motor	4247
Weight	1.3 kg

- STANDA controller
- Power supply – 36V

**Motors of other types  
are available.**

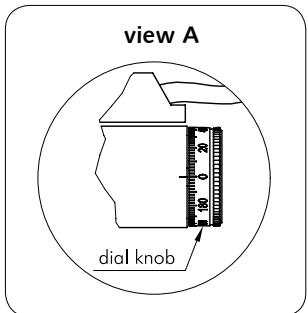
## Motorized Translation Stages



**8MT167-25BS1/8MT167-25LS**  
with insert platform **7T167-25.07-01**

**8MT167-25BS1**, unlike the **8MT167-25LS**, is designed for **high-speed movement**. Used ball bearing lead screw makes movement fast and smooth.

The positioner also can be used with microscope on XY axles. As shown in the pictures, the upper plate has a removable insert in the center, the size of which is 2 inches, the base plate is made with slot size of 51 x 76 mm, on the same vertical.



# Motorized Translation Stages

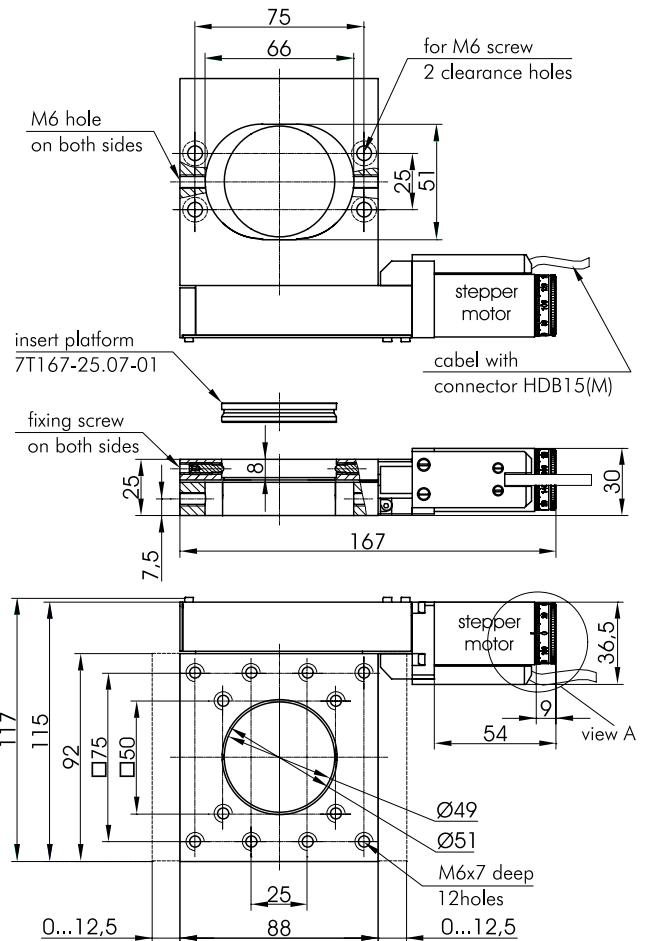


**8MT167M-25BS1/8MT167M-25LS**  
with insert platform **7T167-25.07-01**

"Mirror" version  
of  
8MT167-25BS1  
and  
8MT167-25LS

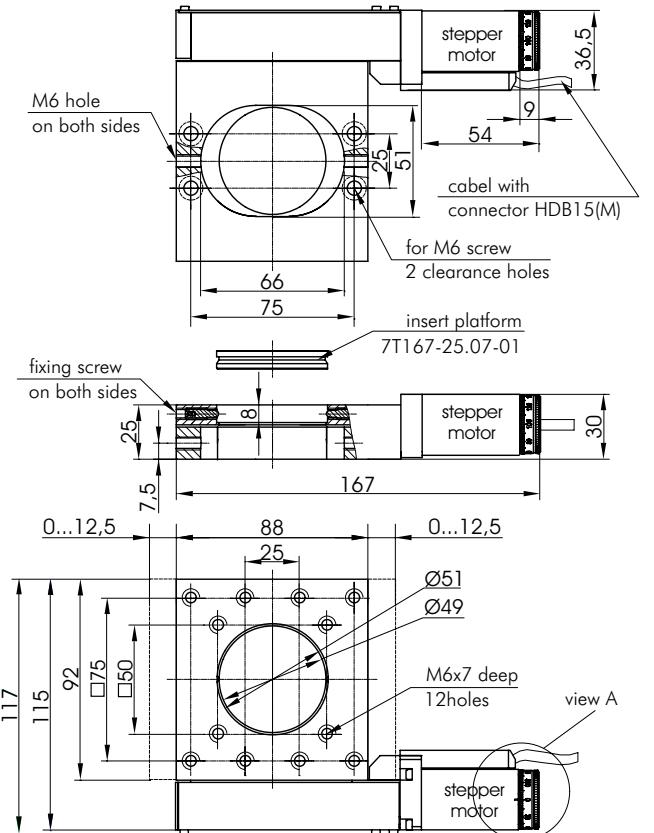
8MT167-25BS1

**8MT167-25LS**



8MT167M-25BS1

# 8MT167M-25LS

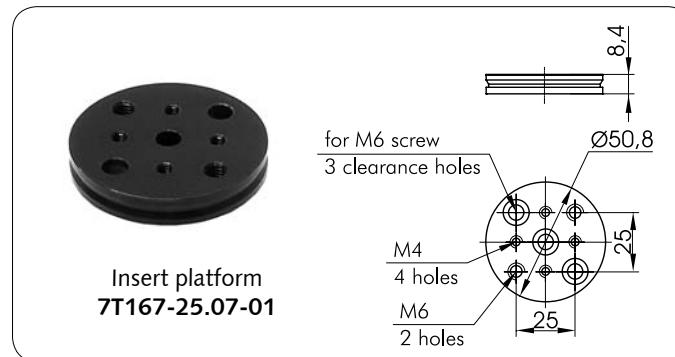


## Motorized Translation Stage

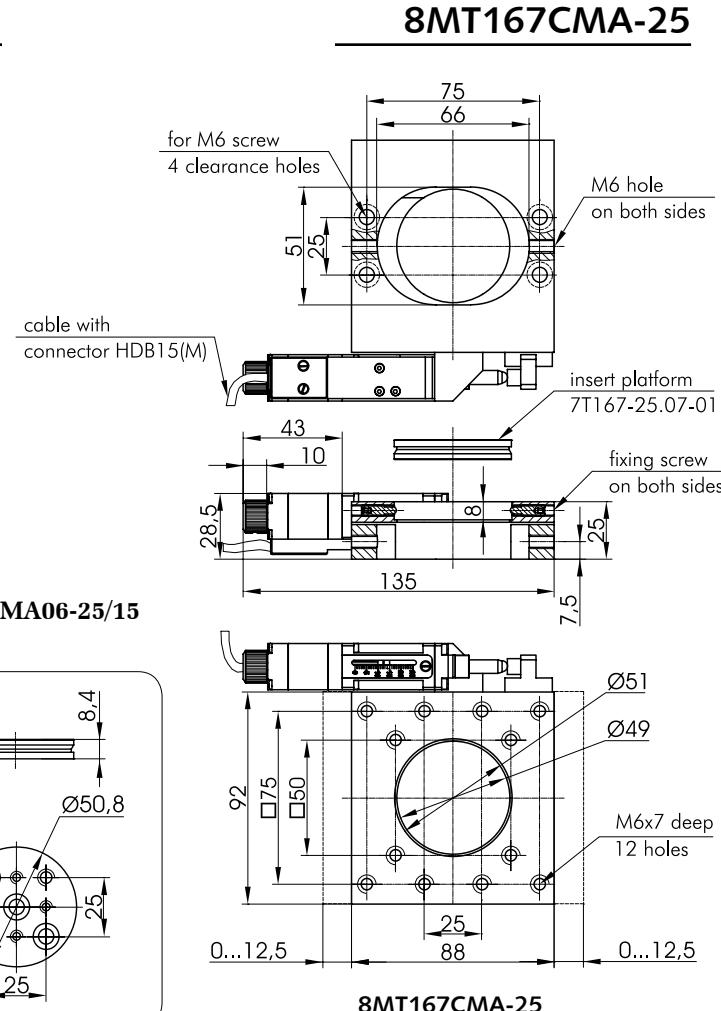


**8MT167CMA-25**

**8MT167CMA-25 - 7T167-25 with actuator 8CMA06-25/15**



Insert platform  
**7T167-25.07-01**



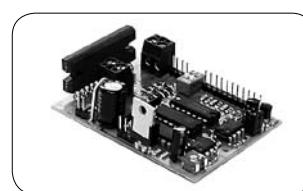
**8MT167CMA-25**

### SPECIFICATIONS

	<b>8MT167-25</b>	<b>8MT167-25BS1</b>	<b>8MT167-25LS</b>	<b>8MT167CMA-25</b>
Travel range, mm	25	25	25	25
Resolution in full step, $\mu\text{m}$ in 1/8 step, $\mu\text{m}$	1.25 0.156	5 0.625	1.25 0.156	1.25 0.156
Ball screw pitch, mm	—	1	—	—
Lead screw pitch, mm	0.25	—	0.25	0.25
Repeatability, $\mu\text{m}$	1	1.5	1	1
Maximum speed, mm/s	3	25	6	5
Horizontal load capacity, kg	7	30	30	6
Vertical load capacity, kg	2	7	7	0.5
Limit switches	—	2 pc mechanical	—	—
Type of actuator	—	—	—	8CMA06-25/15
Cable	—	1.6 m length	—	1.2m length
Motor connector	—	HDB15(M)	—	—
Stepper motor	—	28	—	—
Weight, kg	0.8	0.8	0.8	0.6

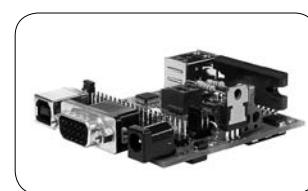
## Recommended Controllers

more info on [www.standa.lt](http://www.standa.lt)

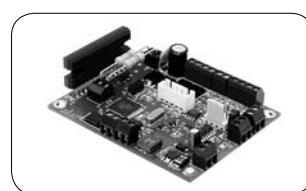


**8SMC2**

only with 12V voltage power supply



**8SMC1-USBF**



**8SMC3-RS232**

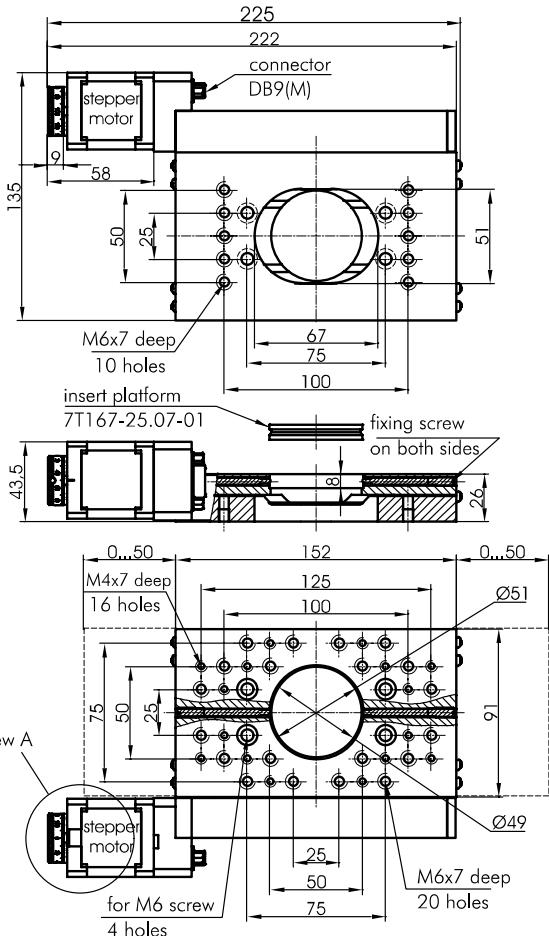


## Motorized Translation Stage

**8MT167-100**
**8MT167-100**with insert platform **7T167-25.07-01**

**Motorized Translation Stage 8MT167-100** is designed on the basis of **7T167-50** translator. The movement is produced by a step motor through the reducing gear and a lead-screw. There are 1000 steps per millimeter. Individual units are accompanied by indication of electrical parameters and connection schemes of the motors. The motors have 200 steps per revolution. To drive the motor, we offer a range of controllers. Controllers can drive the motor in 1, 1/2, 1/4, 1/8 step division mode. There are microstepping controllers, available from other manufacturers, which divide a step into 10 parts. Mechanics of 8MT167-100 translation stage can be easily attached to any type of stepping motor or servo motor of your choice. Motorized translation stage motor or controller is available upon request.

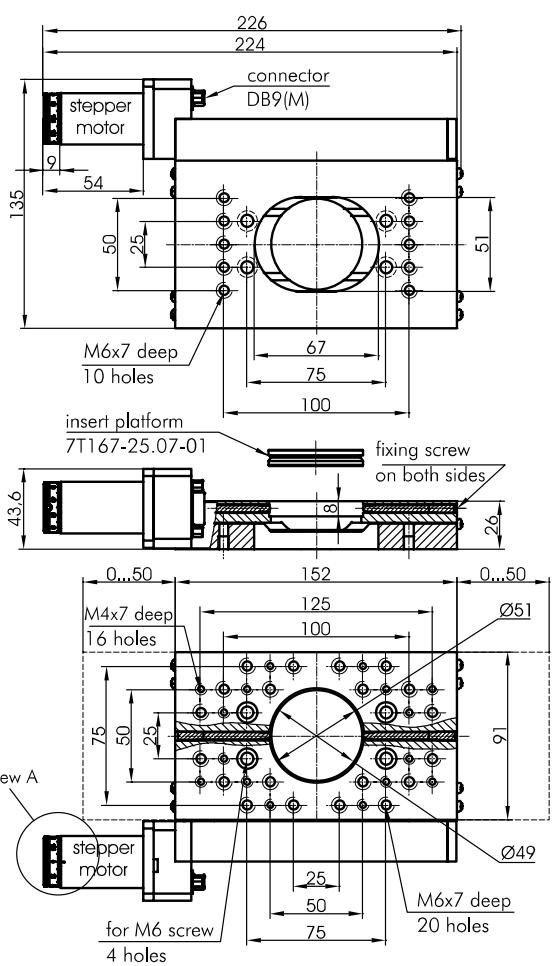
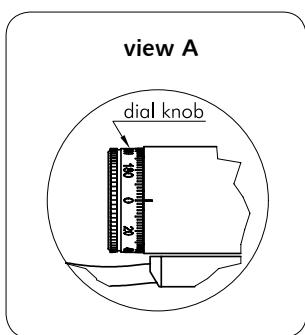
**Motorized Translation Stage 8MT167-100** with stepper motor **4247**.



## Motorized Translation Stage

**8MT167-100C28**
**8MT167-100C28**with insert platform **7T167-25.07-01**

**Motorized Translation Stage 8MT167-100C28** with stepper motor **28** with connector DB9(M) on motor itself.

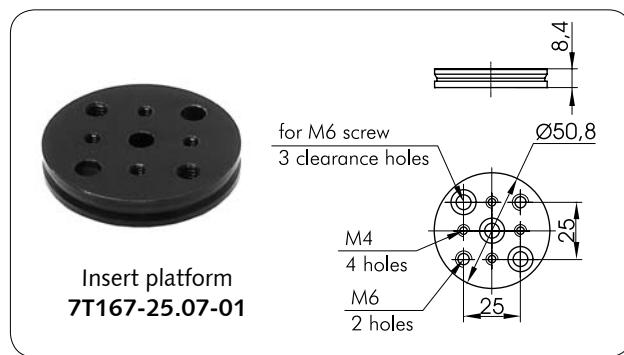


## Motorized Translation Stage



**8MT167-100-28**

**Motorized Translation Stage 8MT167-100-28** with stepper motor **28**.

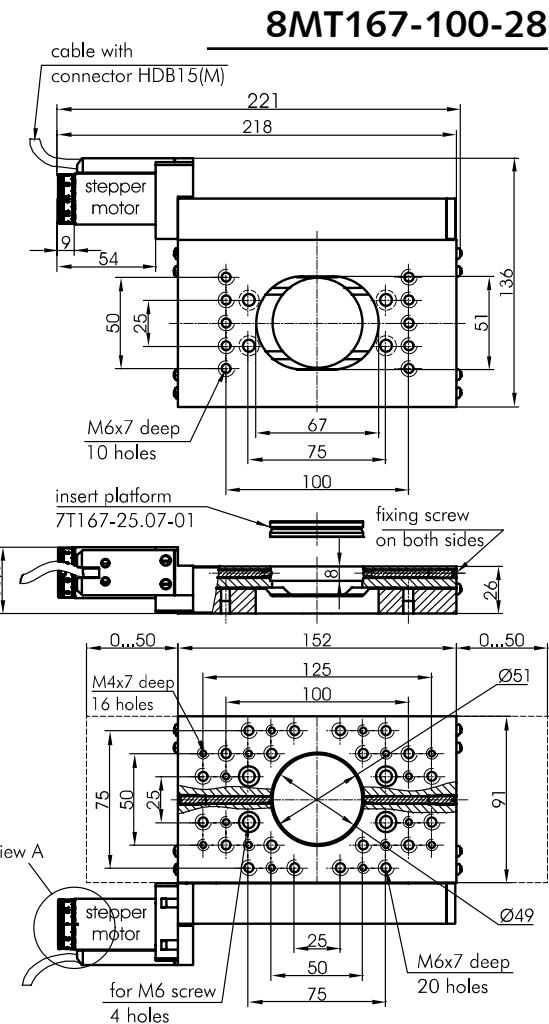


## Motorized Translation Stage (DC motor)

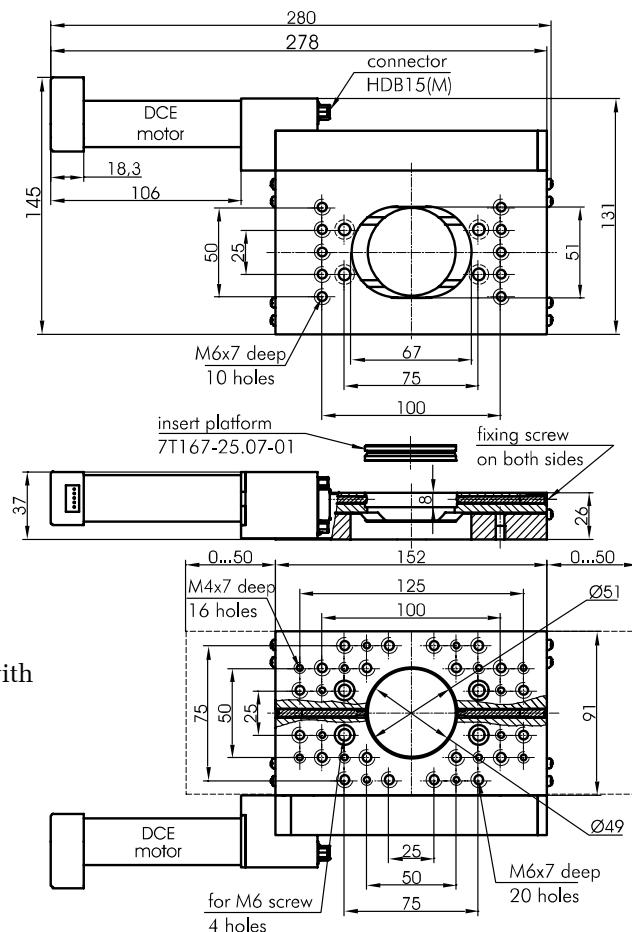


**8MT167-100DCE**  
with insert platform **7T167-25.07-01**

**Motorized Translation Stage 8MT167-100DCE** with DC motor **DCE RE25**.



**8MT167-100DCE**

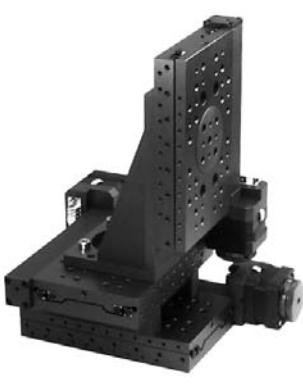




SPECIFICATIONS	8MT167-100	8MT167-100C28	8MT167-100-28	8MT167-100DCE
Travel range, mm	100	100	100	100
Resolution in full step, $\mu\text{m}$	1	1	1	-
in 1/8 step, $\mu\text{m}$	0.125	0.125	0.125	-
Lead screw pitch, mm	0.5	0.5	0.5	0.5
Reduction motor/screw	2.5:1	2.5:1	2.5:1	11:1
Bi-direction repeatability, $\mu\text{m}$	2	2	2	0.8
Minimal incremental motion, $\mu\text{m}$	-	-	-	0.2
Resolution (calculated), $\mu\text{m}$	-	-	-	0.023
Maximum speed, mm/s	5	5	5	5.5
Maximum load capacity				
Horizontal, kg	7	7	7	7
Vertical, kg	3	3	3	3
Limit switches		2 pc mechanical		
Cable		1.6 m length		
Motor connector	DB9(M)	DB9(M)	HDB15(M)	HDB15(M)
Stepper motor	4247	28	28	-
DC motor	-	-	-	DCE RE25
Weight, kg	1.4	1.4	1.4	1.5



8MT167-100 xyz



To stack the **8MT167** stages in X-Y-Z coordinates  
you need a connecting plate **2CP167-100**  
and an angle bracket **2AB167-50**.

*Motorized Stages  
of Higher Speed  
available on request*

*Motors of other types  
are available*

#### Related Controller for DC Motor

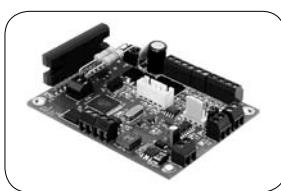


8DCMC1-USB-B1-1

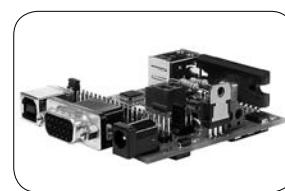


8MT167-100DCE

#### Related Controllers for Stepper Motor



8SMC3-RS232



8SMC1-USBhF



8MT167-100

more info on [www.standa.lt](http://www.standa.lt)

Optical Tables	1	Brackets & Rails	2
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Base Mounts & Accessories	3	Optical Mounts	4
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Optical Positioners	5	Base Positioners	6
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Translation & Rotation Stages	7
-------------------------------	---

Motorised Positioners & Controllers	8
-------------------------------------	---

Fine Adjustment Screws	9
------------------------	---

Opto-Mechanics & Sets	10
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Light Test & Measurement Instruments	11
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## Motorized Translation Stage

8MT200-100

Base	Mounts & Accessories	4
Optical Tables	2	1
Brackets & Rails	2	
Optical Mounts	2	
Optical Positioners	6	
Base Positioners	6	
Translation & Rotation Stages	7	
Motorised Positioners & Controllers	8	
Fine Adjustment Screws	9	
Opto-Mechanics & Sets	10	
Light Test & Measurement Instruments	11	

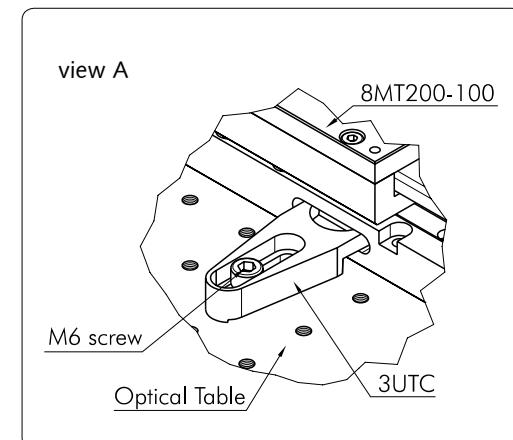
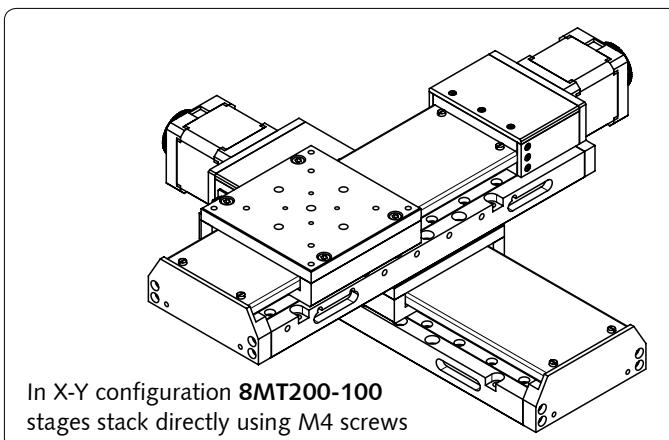
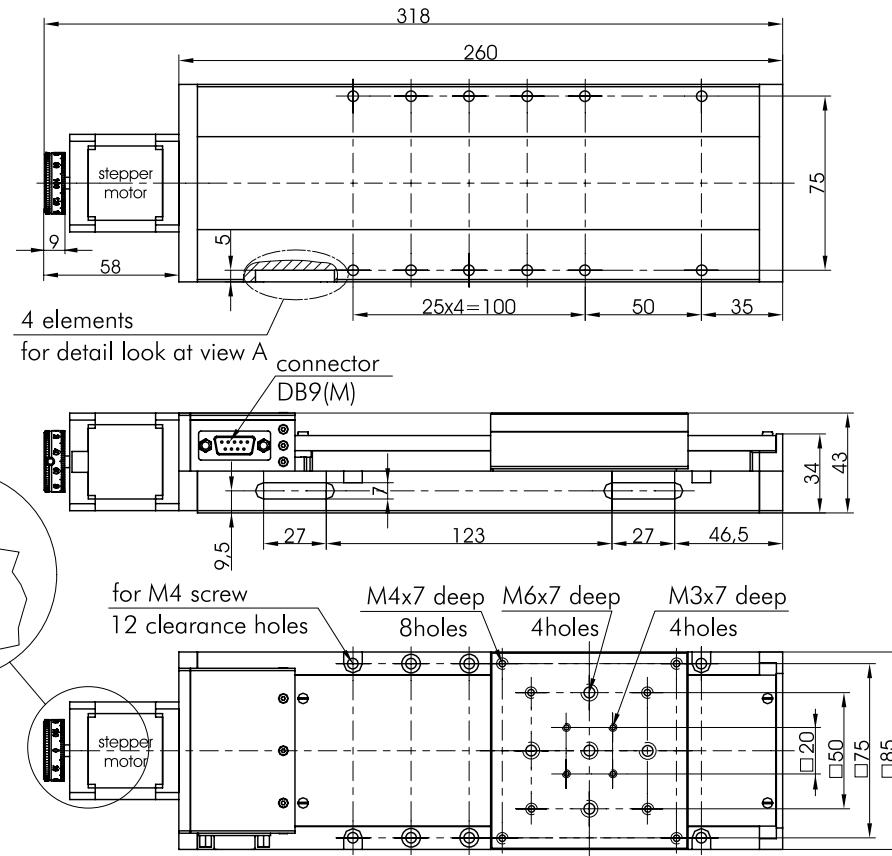


## SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution in full step*	2.5 $\mu\text{m}$
in 1/8 step*	0.31 $\mu\text{m}$
Max. speed*	10 mm/s
on request we fit alternative motors	
Load capacity	
Horizontal	40 kg
Vertical	6 kg
Motor connector	DB9(M)
Stepper motor	4247
Weight	2.2 kg

\*Test condition:

- STANDA controllers;
- Power supply – 36V.

Motors of other types  
are available

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## Motorized Translation Stage with SM system

**8MT200-100SM**



### SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Encoder resolution	4000 counts/rev
Minimal incremental motion	0.125 µm
Max. speed	25 mm/s
Load capacity	
Horizontal	40 kg
Vertical	6 kg
Cable*	2 m
Motor	SM
Weight	2.5 kg

The **SM system** is a complete, compact and user-friendly integrated control system that features a brushless DC servo motor, motion controller, encoder and amplifier.

It is a decentralized drive system. It is a fully integrated motor system that includes a Brushless D.C. Servo-Motor (BLDC), Motion Controller, Drive-Electronics, Position Feedback Encoder and Fully Programmable Points of I/O (Inputs/Outputs). All these components are placed inside one integral frame or housing.

Each decentralized drive system is fully programmable as a stand-alone system or as part of a network fieldbus - Profibus, DeviceNet or RS232, RS485.

The integration of motor, controller and drive reduces complexity in an application and significantly increases reliability. The command set and firmware enables the **SM system** to perform a wide range of motion controls, arithmetic and conditional logic functions. The unit is a highly capable, stand-alone, complete motion control system that is easy to implement and use.

The **SM system** has more features than most full-size controls:

- Brushless DC servo motor
- S-232 & RS-485
- Stand alone capability
- Torque to 2000+ oz. in. / 15 NM
- Network up to 100 Servida Motors
- 4kHz PID
- Speeds 0 - 10,000 RPM
- CE marked & UL registered
- Expandable and programmable I/O expandable to 800 inputs and 800 outputs
- On-the-fly parameter changes
- Position Mode
- Velocity Mode
- Torque Mode
- Infinite Ratio Gearing
- Electronic Gearing/ Following Mode
- Step & Direction Mode
- Limit switch inputs
- Closed loop on external encoder
- Single voltage input
- Standard NEMA mount
- 32k user EEPROM
- Software current limit
- Thermal protection
- Easy Windows Software
- Contouring mode from host PC

\*Cable supplied with **8MT200-100SM** consists of power cable and RS232 communication cable and includes connector to computer RS232 (DSUB9), connector to motor (DSUB 7W2) and power connector (SOCKET DC 2.1/5.5 mm for Cable).

**8MT200-100SM** consists of DC servo motor, motion controller, encoder and amplifier.



**Power supply PUP120-17-B1**  
36 V; 3.34 A  
167 x 65 x 37 mm  
640 g  
connector "2.1/5.5"

REQUIRES  
only  
POWER  
SUPPLY!!!

Optical  
Tables

Brackets  
& Rails

Base  
Mounts &  
Accessories

Optical  
Mounts

Optical  
Positioners

Base  
Positioners

Translation &  
Rotation  
Stages

Motorised  
Positioners &  
Controllers

Fine  
Adjustment  
Screws

Opto-  
Mechanics &  
Sets

Light Test &  
Measurement  
Instruments





## Motorized Translation Stage

with DC motor

**8MT200-100DCE**



Base Mounts & Accessories	4
Optical Mounts	5
Optical Positioners	6
Base Positioners	7
Translation & Rotation Stages	8
Motorised Positioners & Controllers	9
Fine Adjustment Screws	10
Opto- Mechanics & Sets	11
Light Test & Measurement Instruments	1

### SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution	0.028 µm
Minimal incremental motion	0.2 µm
Max. speed	13 mm/s
Load capacity	
Horizontal	30 kg
Vertical	5 kg
Motor connector	DB9(M)
DC motor	DCE RE25
Weight	2.2 kg

### ORDERING INFORMATION

**8MT200-100**

Motorized Translation Stage with stepper motor **4247**

**8MT200-100DCE**

Motorized Translation Stage with **DC motor DCE336548**

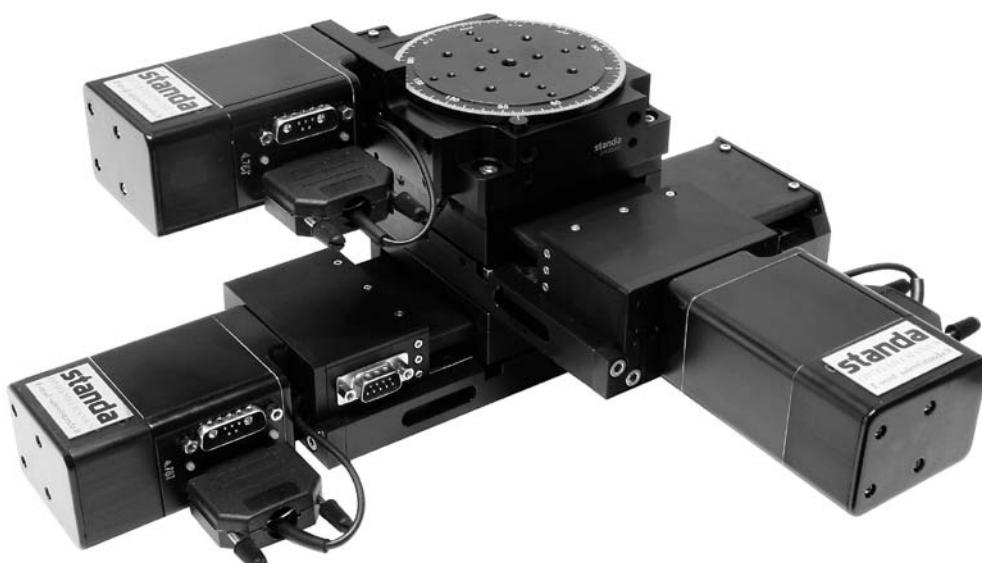
**8MT200-100SM**

Motorized Translation Stage with **SM system**

**8MT200-100SM-XY-8MR191-SM**  
3 Axis Motorized Translation-Rotation System

### SPECIFICATIONS

Translation xy	100x100 mm
	<b>8MT200-100SM xy</b>
Rotation z	360°
	<b>8MR191-SM</b>
Load capacity	5 kg on rotation stage



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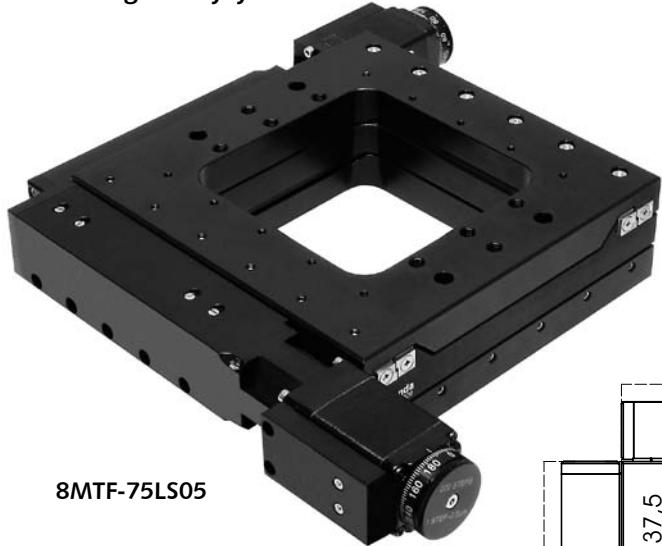
# Motorized XY Scanning Stage

**NEW**

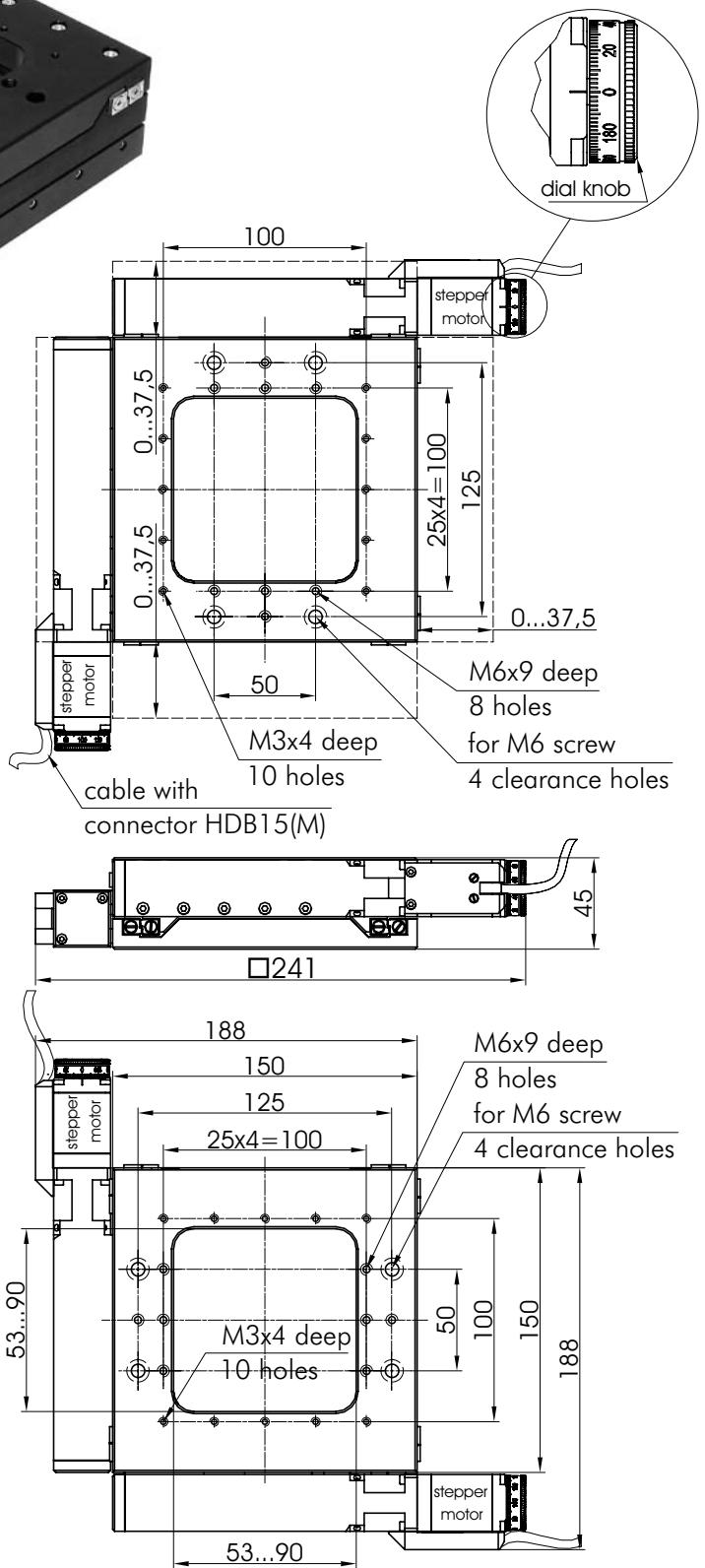
**8MTF**

- Travel range 75x75 mm (3") or 102x102 mm (4")
- Choice of High Precision lead screw
- Accepts linear encoders
- RS232 and USB control
- For image analysis

- Suitable for most major brand Microscopes and Macroviewers
- Custom support brackets available for various microscope types

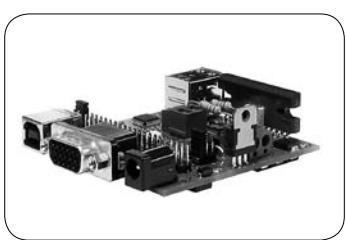


8MTF-75LS05

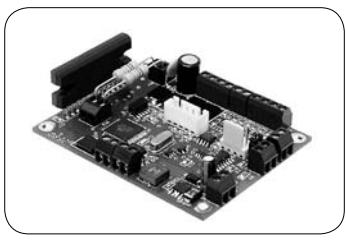


8MTF-75LS05

## Recommended Controllers



8SMC1-USBhf



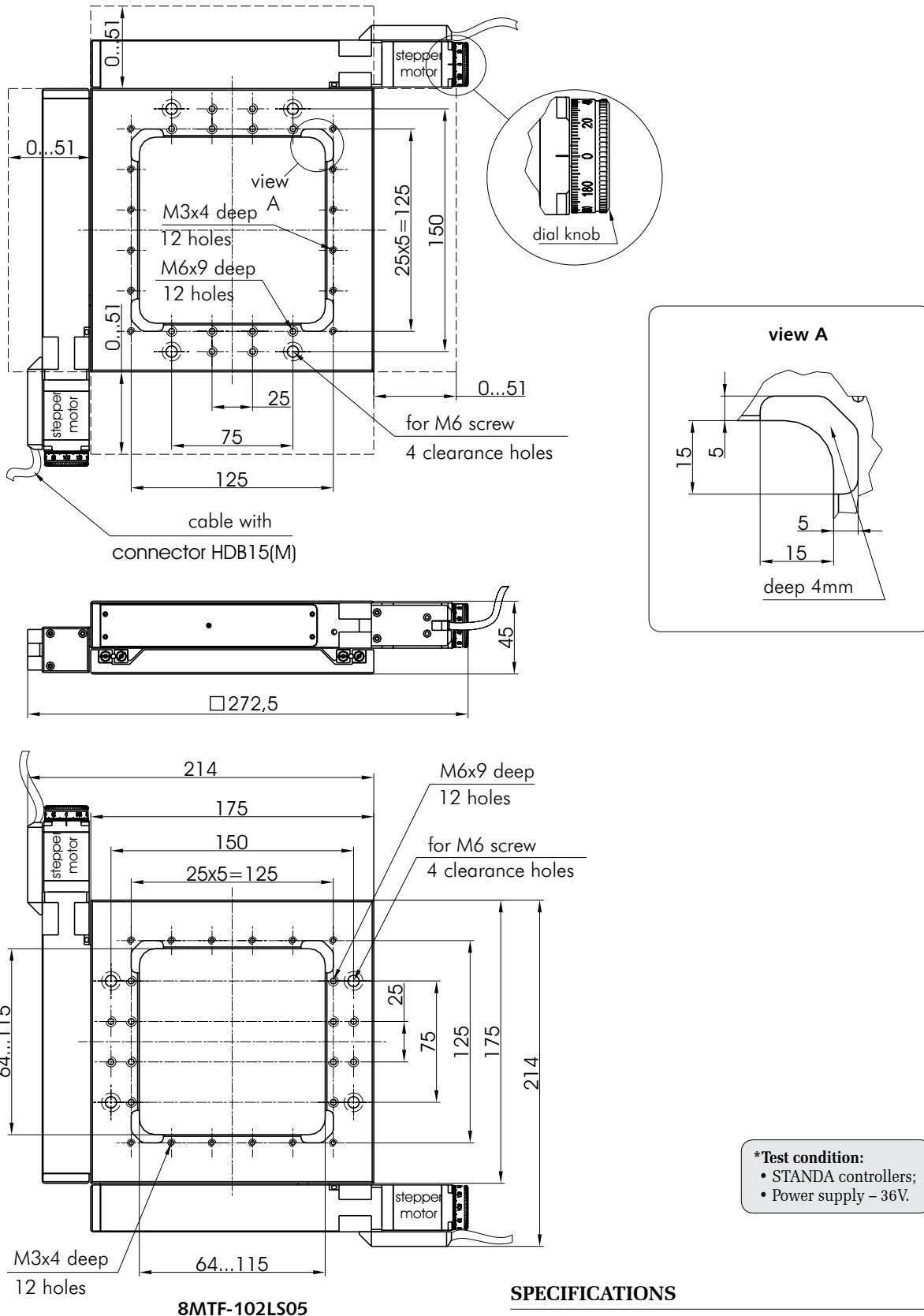
8SMC3-RS232

more info on  
[www.standa.lt](http://www.standa.lt)

Optical Tables	1	Brackets & Rails	2	Base Mounts & Accessories	3	Optical Mounts	4	Optical Positioners	5	Base Positioners	6	Translation & Rotation Stages	7	Motorised Positioners & Controllers	8	Fine Adjustment Screws	9	Opto-Mechanics & Sets	10	Light Test & Measurement Instruments	11
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Light Test & Measurement Instruments	11
Fine Adjustment Screws	9
Motorised Positioners & Controllers	8
Opto-Mechanics & Sets	10
Base Positioners	6
Optical Positioners	5
Optical Mounts	4
Base Mounts & Accessories	3
Brackets & Rails	2
Optical Tables	1



\*Test condition:  
• STANDA controllers;  
• Power supply – 36V.

## SPECIFICATIONS

Travel range	75x75 mm (3") 102x102 mm (4")
Lead screw pitch	0.5 mm
Resolution in full step* in 1/8 step*	2.5 µm 0.31 µm
Max. speed*	10 mm/s
Load capacity	
Horizontal	50 kg
Vertical	6 kg
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28

## ORDERING INFORMATION

- 8MTF-75LS05      Travel range 75x75 mm (3")  
 8MTF-102LS05      Travel range 102x102 mm (4")



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# Long-Travel Motorized Linear Stages

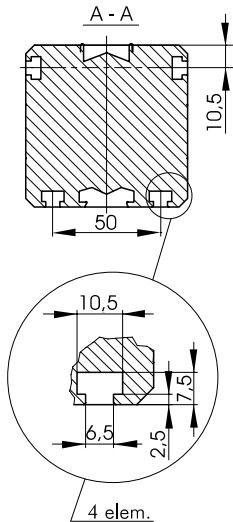
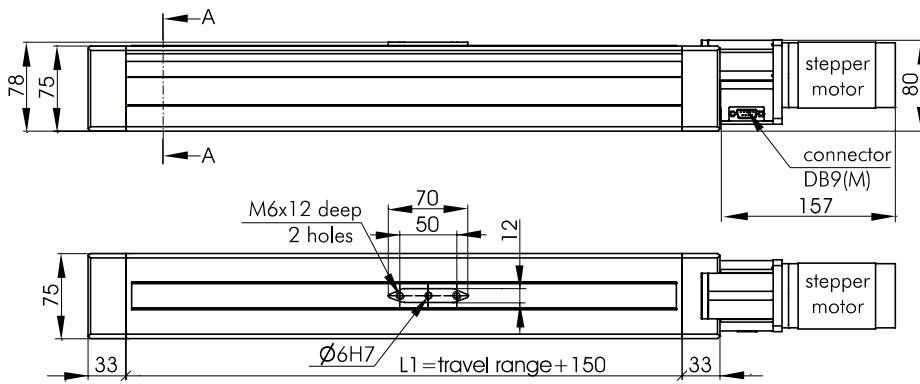
**8MT195 series**


8MT195-340-2.5

**8MT195** series stages are designed to provide **high-speed** movement. Standard motors allow moving loads up to 40 kg. Load capacity can be increased using more powerful motors. This stage provides moderate resolution and accuracy. **8MT195** series stages are supplied equipped with **3P195** platform, **3BP195** bases plates (2 pc) and appropriate amount of **3SN195** inserts.

**Resolution** and **speed** of **8MT195** series stages can be varied choosing appropriate ball screw pitch. Several standard options are available and should be specified upon ordering.

For applications requiring travel over 500 mm we suggest using **8MT295** series stages (X) paired with **8MT195** series stages (Y) to make **XY** assemblies.



## Ordering information for stages:

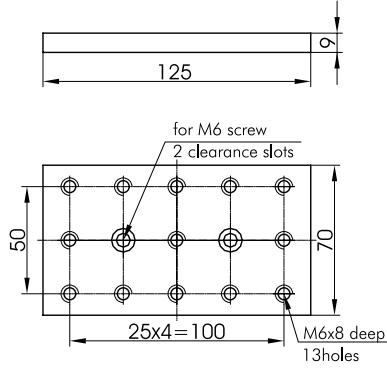
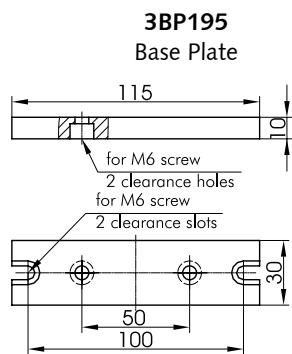
8MT195-XXX-X  
Travel range\* 340...1040 mm      Lead screw pitch 2.5/4/5/10 mm

Examples of codes	travel range*	lead screw pitch
8MT195-340-2.5	340 mm	2.5 mm
8MT195-540-4	540 mm	4 mm
8MT195-740-5	740 mm	5 mm
8MT195-840-10	840 mm	10 mm

\* - possibility to order standard travel range with 100 mm-grid space

## Ordering information for accessories\*\*

<b>3BP195</b>	Base Plate	** - included in standard package and to be ordered only as extra units
<b>3P195</b>	Platform	
<b>3SN195</b>	Slide Nut	

3SN195  
Slide Nut

Optical  
Tables

1 Brackets & Rails  
2

3 Base Mounts & Accessories  
4 Optical Mounts  
5

Optical  
Positioners  
6

Base  
Positioners  
7

Translation &  
Rotation  
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8

Motorised  
Positioners &  
Controllers  
9

Fine  
Adjustment  
Screws  
10

Opto-  
Mechanics &  
Sets  
11

Light Test &  
Measurement  
Instruments  
12

## Long-Travel Motorized Linear Stages

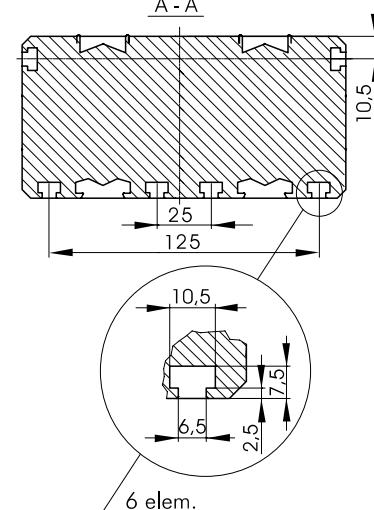
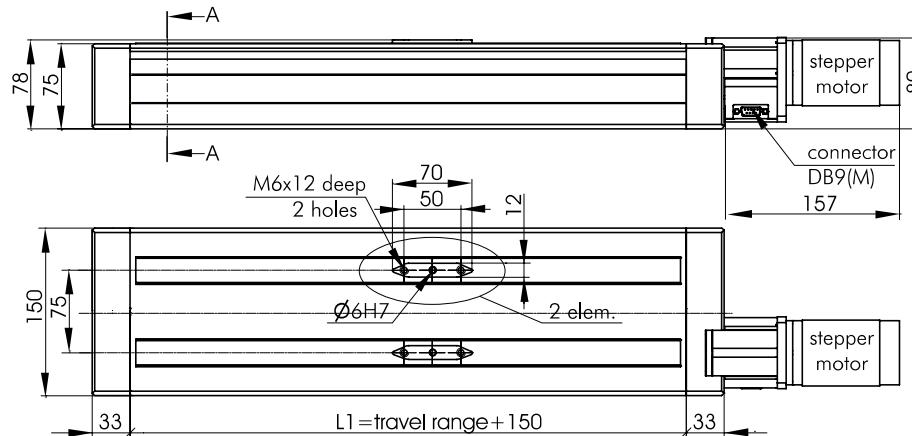
8MT295 series



8MT295-340-5

**8MT295** series stages are designed to provide **high-speed** movement. Standard motors allow moving loads up to 60 kg. Load capacity can be increased using more powerful motors. This stage provides moderate resolution and accuracy. **8MT295** series stages are supplied equipped with **3P295** platform, **3BP295** bases plates (2 pc) and appropriate amount of **3SN195** inserts.

**Resolution and speed** of **8MT295** series stages can be varied choosing appropriate ball screw pitch. Several standard options are available and should be specified upon ordering.



## Ordering information for stages:

8MT295-XXX-X  
Travel range\*  
340...1040 mm  
Lead screw pitch  
2.5/4/5/10 mm

Examples of codes	travel range*	lead screw pitch
8MT295-340-2.5	340 mm	2.5 mm
8MT295-540-4	540 mm	4 mm
8MT295-740-5	740 mm	5 mm
8MT295-840-10	840 mm	10 mm

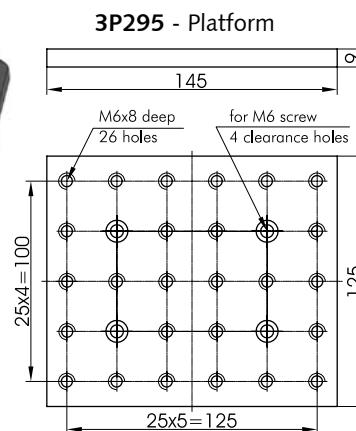
\* - possibility to order standard travel range with 100 mm-grid space

For applications requiring travel over 500 mm we suggest using **8MT295** series stages (X) paired with **8MT195** series stages (Y) to make XY assemblies.

## Ordering information for accessories\*\*

**3BP195** Base Plate  
**3P195** Platform  
**3SN195** Slide Nut

\*\* - included in standard package and to be ordered only as extra units



3BP295 - Base Plate

3SN195 - Slide Nut

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# Large Motorized Rotation Stages

8MR190-90

- Hardened steel with aluminium body
  - Large diameter ball bearings
  - Worm Gear Ratio is 1:120
  - Hall-effect reference limit switch
  - Stepper motor or DC motor with encoder
  - Motor can be optionally equipped with reduction gear
  - 1.8m long cable included
  - Vacuum compatible versions are available up to  $10^{-6}$  Torr using step motor
  - Very high load capacity

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1

## SPECIFICATIONS

Rotation range	360° continuous
Resolution	
in full step*	54 arcsec.
in 1/8 step*	6.75 arcsec.
Repeatability (bidirectional)	72 arcsec.
Backlash	40 arcsec. max.
Max.rotation speed*	10 turn/min
Wobble	40 $\mu$ Ra
Cable	1.6 m length
Motor connector	DB9(M)
Stepper motor	5918
Load capacity	
Horizontal	60 kg
Radial	25 kg
Weight	6.6 kg

\*Test condition:

- STANDA controllers;
  - Power supply – 36V.

## ORDERING INFORMATION

**8MR190-90-59**

## Rotation Stage with stepper motor **5918** (2.1 A, 200 steps)

8MR190-90-4247

---

Rotation Stage with  
stepper motor **4247**  
(see next page)  
(1.2 A, 200 steps)

This technical drawing illustrates a circular encoder assembly with various dimensions and component details:

- Outer Dimensions:** The outer diameter is 204 mm, and the total height is 205 mm.
- Encoder Disc:** The disc has an outer diameter of 150(6") mm and an inner hole diameter of Ø89 mm. It features a scale with markings from 0 to 360 degrees in increments of 10 degrees, with 60 degrees marked at the bottom.
- Mounting Holes:** There are 12 mounting holes arranged in three concentric circles around the central hole. The outermost circle has a diameter of 188 mm.
- Mounting Options:**
  - For M6 screws: 1/4-20 screw, 3 clearance slots.
  - M5x8 deep 6holes
- Connectors:** A DB9(M) connector is located on the right side.
- Stepper Motor:** The motor is mounted on the right side, with a width of 76 mm and a height of 56,4 mm.
- Base:** The base has a width of 272 mm and a depth of 150(6") mm.
- Mounting Brackets:** Brackets are shown on the left and right sides, each with a height of 95 mm and a width of 70 mm.
- Bottom Angle:** The bottom angle is labeled as 60°.

**Large Motorized Rotation Stage**

**NEW**

**8MR190-90-4247**



**SPECIFICATIONS**

Rotation range	360° continuous
Resolution in full step*	54 arcsec.
in 1/8 step*	6.75 arcsec.
Repeatability (bidirectional)	72 arcsec.
Backlash	40 arcsec. max.
Max. rotation speed*	6 turn/min
Wobble	40 µRa
Motor connector	DB9(M)
Stepper motor	4247
Load capacity Horizontal	60 kg
Radial	25 kg
Weight	5.7 kg

\*Test condition:

- STANDA controllers;
- Power supply – 36V.

**Vacuum  $10^{-6}$  Torr  
Compatible**

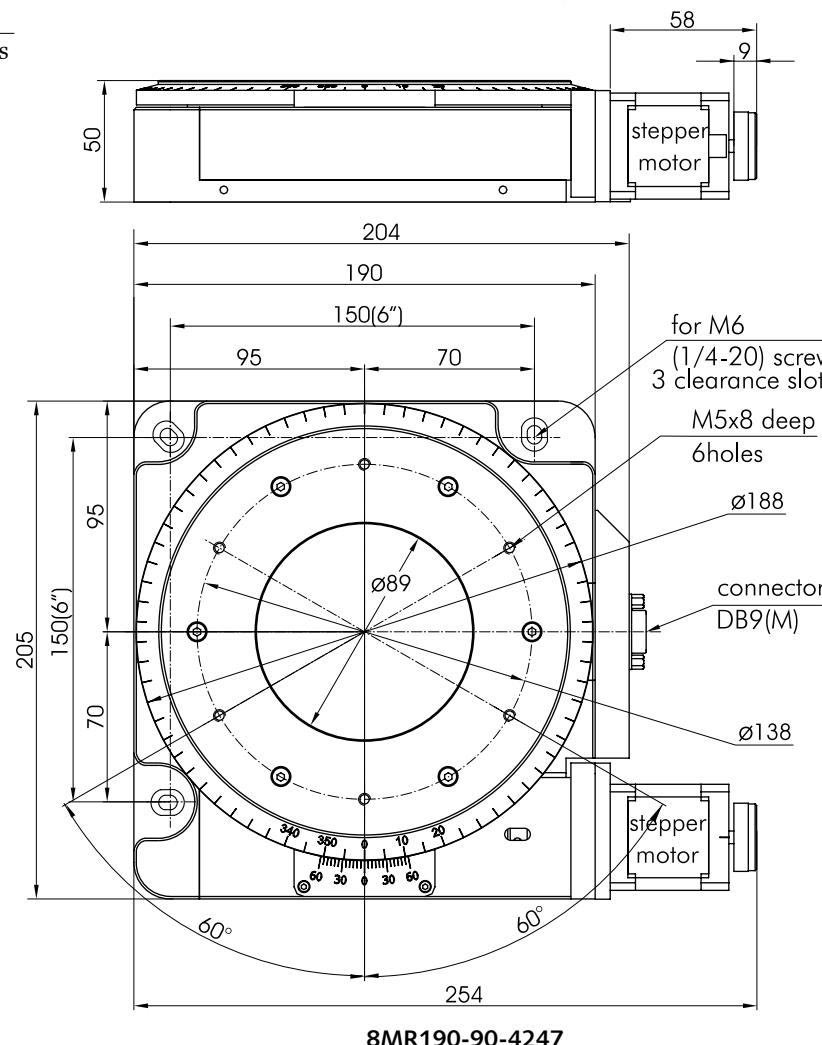
**ORDERING INFORMATION**

**8MR190V-90-VSS43**

Rotation Stage with stepper  
vacuum motor **VSS43**

**8MR190V-90-VSS42G6**

Rotation Stage with stepper  
vacuum motor **VSS42** and  
reduction gear



**SPECIFICATIONS for 8MR190V-90-VSS43**

Rotation range	360° continuous
Resolution in full step*	54 arcsec.
in 1/8 step*	6.75 arcsec.
Repeatability (bidirectional)	72 arcsec.
Backlash	40 arcsec. max.
Max. rotation speed*	4 turn/min
Wobble	40 µRa
Fluoroplastic cable	2 m length
Motor connector	HDB15(M)
Stepper motor	VSS43
Load capacity Horizontal	40 kg
Radial	20 kg
Weight	5.7 kg

\*Test condition:  
• STANDA controllers;  
• Power supply – 36V.



**8MR190V-90-VSS43**

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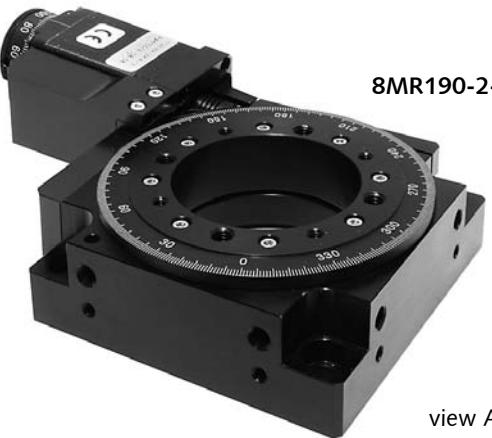


Light Test & Measurement Instruments	11
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Base Positioners	6
Optical Positioners	5
Optical Mounts	4
Brackets & Rails	3
Base Mounts & Accessories	2
Optical Tables	1

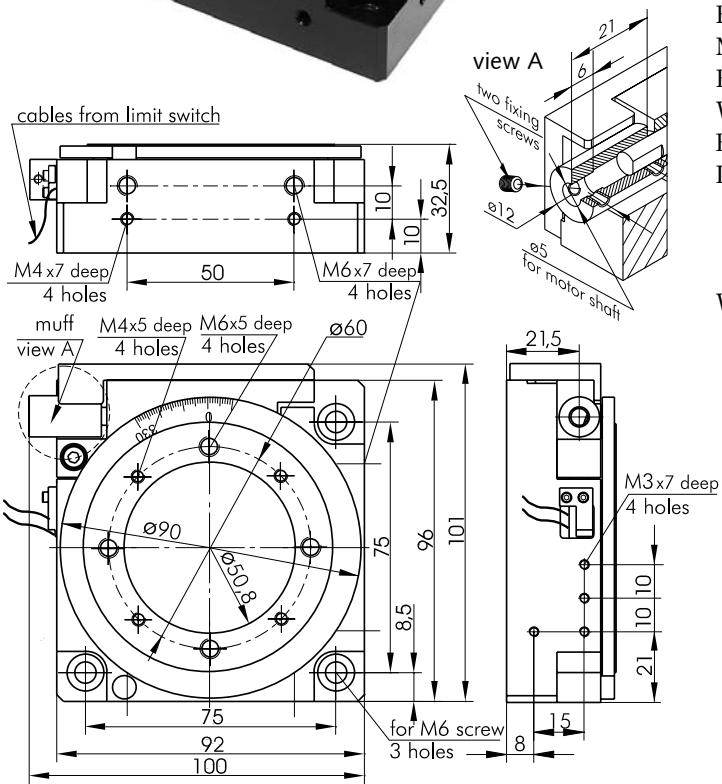


# Motorized Rotation Stages

**8MR190-2**



8MR190-2-28



- 360 degrees rotation graduated in 1°
- 50.8 mm (2 inch) aperture
- Resolution 4.5 arcsec in 1/8 step
- Zero backlash
- High stability
- Home/zero position limit switch
- Mounting modifications available on request

## SPECIFICATIONS

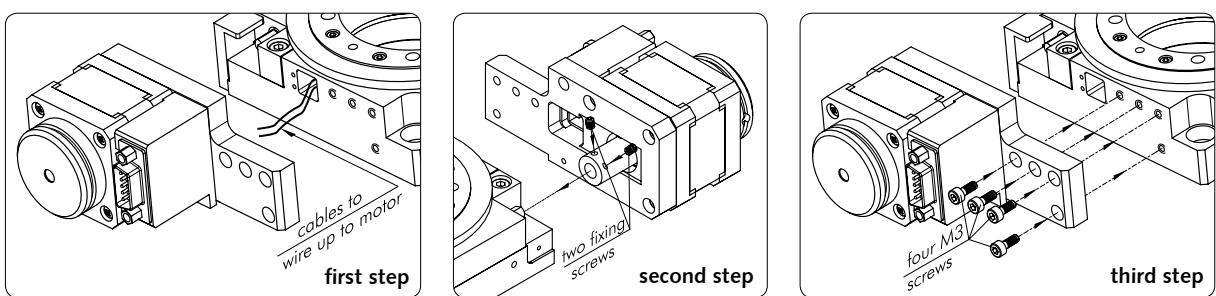
Rotation range	360°
Resolution in full step*	0.6 arcmin (0.01°)
Max.rotation speed*	8 turn/min
Backlash	0 µm
Wobble	0.5 arcmin
Eccentricity	10 µm
Load capacity	
Horizontal	10 kg
Radial	2 kg
Torque	1 Nm
Weight	0.65 kg

- \*Test condition:  
 • STANDA controllers;  
 • Power supply - 36V.

We are able to equip our stage with any  
your provided motors

Available  
INCH version  
**8MR190E-2**

## Three steps of connection motor to rotation stage



## ORDERING INFORMATION

- |                |  |
|----------------|--|
| 8MR190-2       | - Rotation stage <b>8MR190-2</b> without motor   |
| 8MR190-2-4247  | - Rotation stage <b>8MR190-2</b> with stepper motor <b>4247</b> (1.2A, 200 steps)      |
| 8MR190-2-4233  | - Rotation stage <b>8MR190-2</b> with stepper motor <b>4233</b> (0.4A, 200 steps)      |
| 8MR190-2-28    | - Rotation stage <b>8MR190-2</b> with stepper motor <b>28</b> (0.67A, 200 steps)       |
| 8MR190-2-ZSS43 | - Rotation stage <b>8MR190-2</b> with stepper motor <b>ZSS43</b> (0.6A, 200 steps)     |
| 8MR190-2-SM    | - Rotation stage <b>8MR190-2</b> with <b>SM system</b><br>(more info on the next page) |



8MR190-2

1	Brackets & Rails
2	Base Mounts & Accessories
3	Optical Mounts
4	Optical Positioners
5	Base Positioners
6	Translation & Rotation Stages
7	Motorised Positioners & Controllers
8	Fine Adjustment Screws
9	Opto-Mechanics & Sets
10	Light Test & Measurement Instruments
11	



## Motorized Rotation Stages with SM SYSTEM

	Optical Tables	1
	Brackets & Rails	2
	Base Mounts & Accessories	3
	Optical Mounts	4
	Optical Positioners	5
	Base Positioners	6
	Translation & Rotation Stages	7
	Motorised Positioners & Controllers	8
	Fine Adjustment Screws	9
	Opto- Mechanics & Sets	10
	Light Test & Measurement Instruments	11

**NEW**



8MR190-2-SM



8MR191-SM

8MR190-2-SM • 8MR191-SM

8MR191-1-SM • 8MR191-30-SM

### SPECIFICATIONS

Rotation range	360°
Encoder resolution	2000
Max. rotation speed	16 turn/min
Backlash	0 µm
Wobble	0.5 arcmin
Eccentricity	10 µm
Load capacity	
Horizontal	10 kg
Vertical	2 kg
Torque	1 Nm
Cable*	2 m
Motor	SM

\*Cable supplied with 8MR190-2-SM and with 8MR191-SM series consists of power cable and RS232 communication cable and includes connector to computer RS232 (DSUB9), connector to motor (DSUB 7W2) and power connector (SOCKET DC 2.1/5.5 mm for Cable).

The **SM system** is a complete, compact and user-friendly integrated control system that features a brushless DC servo motor, motion controller, encoder and amplifier.

It is a decentralized drive system. It is a fully integrated motor system that includes a Brushless D.C. Servo-Motor (BLDC), Motion Controller, Drive-Electronics, Position Feedback Encoder and Fully Programmable Points of I/O (Inputs/Outputs). All these components are placed inside one integral frame or housing.

Each decentralized drive system is fully programmable as a stand-alone system or as part of a network fieldbus - Profibus, DeviceNet or RS232, RS485.

The integration of motor, controller and drive reduces complexity in an application and significantly increases reliability. The command set and firmware enables the **SM system** to perform a wide range of motion controls, arithmetic and conditional logic functions. The unit is a highly capable, stand-alone, complete motion control system that is easy to implement and use.

The **SM system** has more features than most full-size controls:

- Brushless DC servo motor
- S-232 & RS-485
- Stand alone capability
- Torque to 2000+ oz. in. / 15 NM
- Network up to 100 Servida Motors
- 4kHz PID
- Speeds 0 - 10,000 RPM
- CE marked & UL registered
- Expandable and programmable I/O expandable to 800 inputs and 800 outputs
- On-the-fly parameter changes
- Position Mode
- Velocity Mode
- Torque Mode
- Infinite Ratio Gearing
- Electronic Gearing/ Following Mode
- Step & Direction Mode
- Limit switch inputs
- Closed loop on external encoder
- Single voltage input
- Standard NEMA mount
- 32k user EEPROM
- Software current limit
- Thermal protection
- Easy Windows Software
- Contouring mode from host PC

Available INCH version  
8MR190E-2-SM, 8MR191E-SM,  
8MR191E-1-SM, 8MR191E-30-SM

8MR190-2-SM and 8MR191-SM series consists of DC servo motor, motion controller, encoder and amplifier.



Power supply PUP120-17-B1  
36 V; 3.34 A  
167 x 65 x 37 mm  
640 g  
connector "2.1/5.5"

REQUIRES  
only  
POWER  
SUPPLY!!!

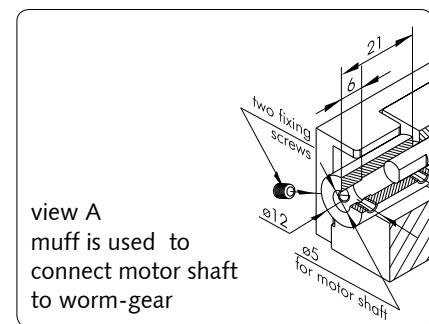


## Motorized Rotation Stages

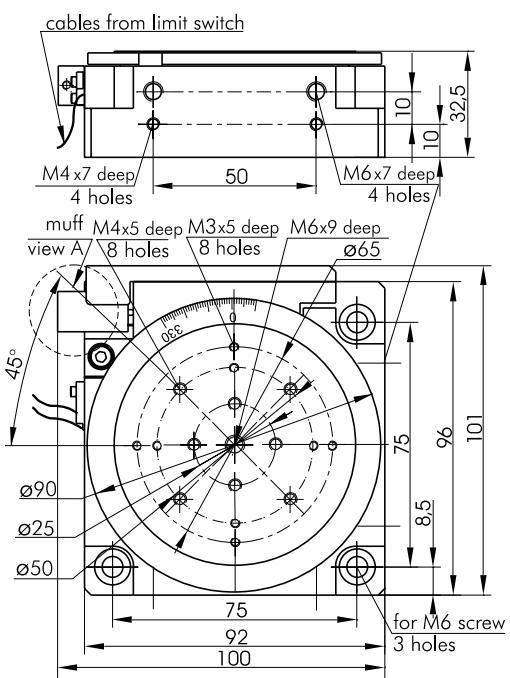
8MR191



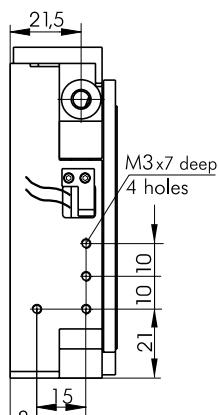
8MR191-28



view A  
muff is used to connect motor shaft to worm-gear

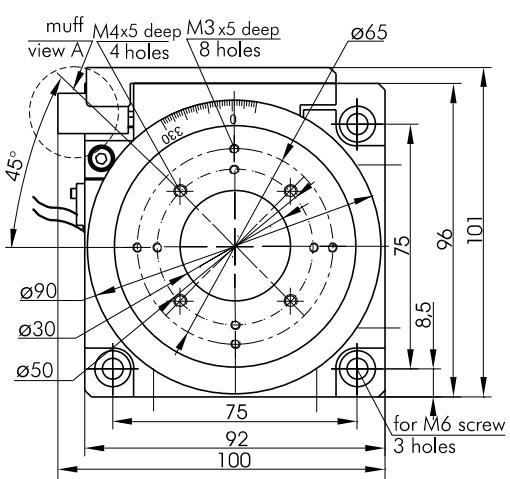


8MR191

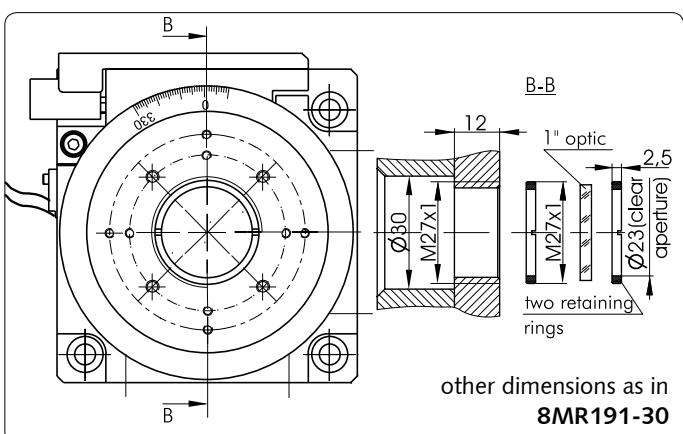


A technical drawing of a circular component. It features a central hole with a diameter of  $\Theta 20$ . Four mounting holes, each with a diameter of M4x8 deep, are arranged at 90-degree intervals around the outer edge of the circle. The entire assembly is centered on a horizontal axis.

bottom view



8MR191-30



8MR191-1

Optical Tables	1	Brackets & Rails	2	Base Mounts & Accessories	3	Optical Mounts	4	Optical Positioners	5	Base Positioners	6	Translation & Rotation Stages	7	Motorised Positioners & Controllers	8	Fine Adjustment Screws	9	Opto- Mechanics & Sets	10	Light Test & Measurement Instruments	11
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**Available  
INCH version**  
**8MR191E**  
**8MR191E-1**  
**8MR191E-30**

## ORDERING INFORMATION

Examples of codes for motorized rotation stages **8MR191**:

- 8MR191** – Rotation stage **8MR191** without motor
- 8MR191-1-4247** – Rotation stage **8MR191-1** with stepper motor **4247**  
(1.2A, 200 steps)
- 8MR191-30-4233** – Rotation stage **8MR191-30** with stepper motor **4233**  
(0.4A, 200 steps)
- 8MR191-28** – Rotation stage **8MR191** with stepper motor **28**  
(0.67A, 200 steps)
- 8MR191-1-ZSS43** – Rotation stage **8MR191-1** with stepper motor **ZSS43**  
(0.6A, 200 steps)
- 8MR191-30-SM** – Rotation stage **8MR191-30** with **SM system**

(more info on the **8-33** page)

We are able to equip our stages with motors of your choice



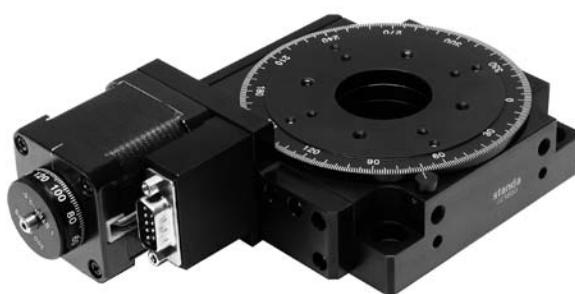
**8MR190-2-SM**

Rotation stage **8MR190-2** with **SM system**



**8MR191-28**

Rotation stage **8MR191** with stepper motor **28**



**8MR191-30-4247**

Rotation stage **8MR191-30** with stepper motor **4247**



**8MR191-1-4233**

Rotation stage **8MR191-1** with stepper motor **4233**

## Recommended Controllers

more info on [www.standa.lt](http://www.standa.lt)

**Stepper Motor Controller  
with  
USB Interface**



**8SMC1-USBhf**

**Stepper Motor Controller  
with  
RS232 Interface**



**8SMC3-RS232**

**standa**



<http://www.standa.lt>



Phone: +370-5-2651474

Fax: +370-5-2651483



standa	1
Base Mounts & Accessories	2
Optical Mounts	3
Optical Positioners	4
Base Positioners	5
Translation & Rotation Stages	6
Motorised Positioners & Controllers	7
Fine Adjustment Screws	8
Opto-Mechanics & Sets	9
Light Test & Measurement Instruments	10
	11



## Mini Motorized Rotation Stages

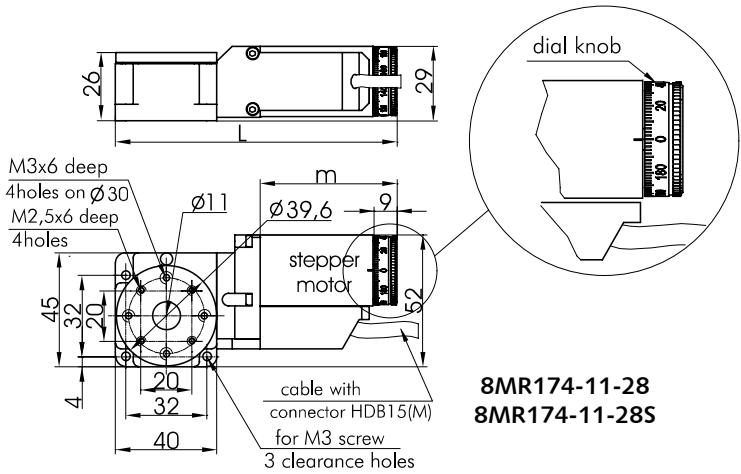
**8MR174-11**


8MR174-11-28S

### SPECIFICATIONS

Rotation Range	360°
Resolution in full step*	0.9 arcmin (0.015°)
Uni-directional Repeatability	0.4 arcmin
Bi-directional Repeatability	1.6 arcmin
Max. rotation speed*	75°/s (36V) 30°/s (12V)
Wobble	1 arcmin
Eccentricity	10 µm
Load capacity	
Horizontal	4 kg
Radial	1.5 kg
Torque	
8MR174-11-28	0.5 Nm
8MR174-11-28S	0.35 Nm
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Weight	
8MR174-11-28	0.4 kg
8MR174-11-28S	0.35 kg

\*Test condition:  
 • STANDA controllers;  
 • Power supply – 36V.


**8MR174-11-28**  
**8MR174-11-28S**

Model	L, mm	m, mm	motor
8MR174-11-28	111	54	28
8MR174-11-28S	98	41	28S


**8MR174-11-28,**  
**7T184-13 (2 pieces)**  
**and 7VT174-5 stacked**

## Mini Motorized Rotation Stage

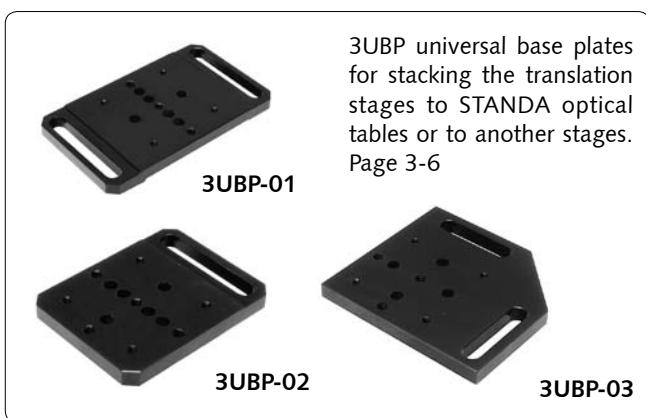
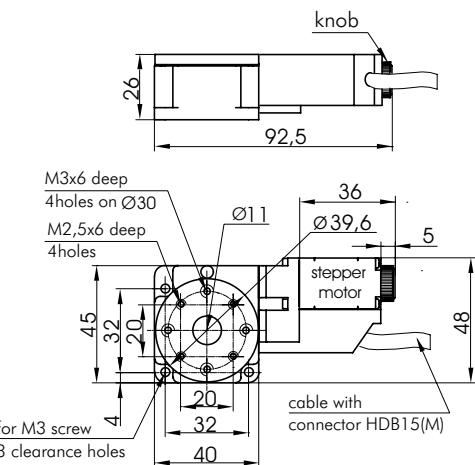
**8MR174-11-20**


Available  
INCH version  
**8MR174E-11-20**  
**8MR174E-11-28**  
**8MR174E-11-28S**

### SPECIFICATIONS

Rotation Range	360°
Resolution in full step*	0.9 arcmin (0.015°)
Uni-directional Repeatability	0.4 arcmin
Bi-directional Repeatability	1.6 arcmin
Max. rotation speed*	75°/s (36V) 30°/s (12V)
Wobble	1 arcmin
Eccentricity	10 µm
Load capacity	
Horizontal	3 kg
Radial	1.5 kg
Torque	0.15 Nm
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	20
Weight	0.3 kg

\*Test condition:  
 • STANDA controllers;  
 • Power supply – 36V.



3UBP universal base plates  
for stacking the translation  
stages to STANDA optical  
tables or to another stages.  
Page 3-6

3UBP-01

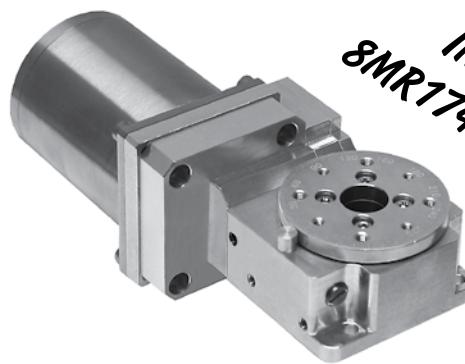
3UBP-02

3UBP-03

Optical Tables	1	Brackets & Rails	2	Base Mounts & Accessories	3	Optical Mounts	4	Optical Positioners	5	Base Positioners	6	Translation & Rotation Stages	7	Motorised Positioners & Controllers	8	Fine Adjustment Screws	9	Opto-Mechanics & Sets	10	Light Test & Measurement Instruments	11
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**Mini Motorized Rotation Stage**  
with Vacuum compatible stepper motor



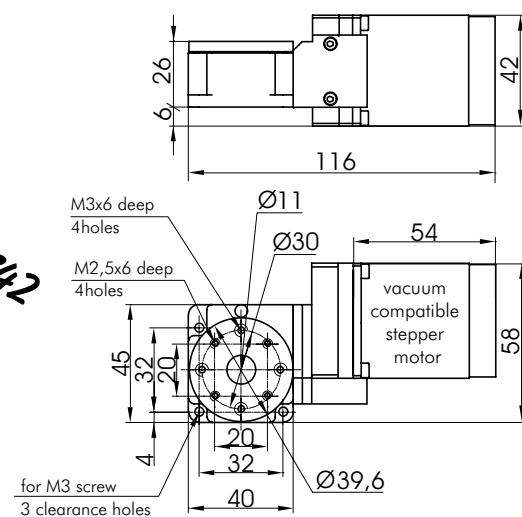
Available  
INCH version  
**8MR174EV-11-VSS42**

**SPECIFICATIONS**

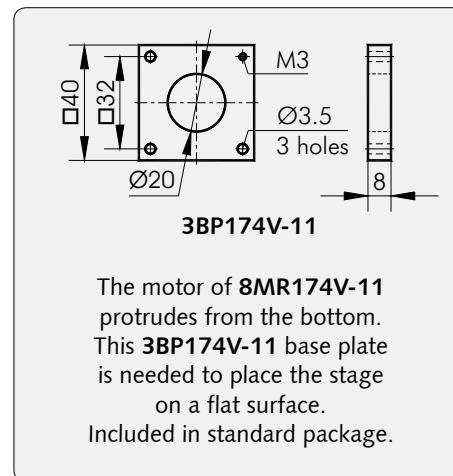
	Base Mounts & Accessories	Brackets & Rails	Optical Tables	1
Base Positioners	4	3	2	
Optical Mounts	5	6	7	
Rotation Range	360°			
Resolution in full step*	0.9 arcmin (0.015°)			
Uni-directional Repeatability	0.4 arcmin			
Bi-directional Repeatability	1.6 arcmin			
Max. rotation speed*	50°/s (36V) 20°/s (12V)			
Wobble	1 arcmin			
Eccentricity	10 µm			
Load capacity				
Horizontal	4 kg			
Radial	1.5 kg			
Torque	0.5 Nm			
Fluoroplastic cable	integrated, 1.6 m lengths			
Motor connector	HDB15(M)			
Vacuum compatible stepper motor	VSS42			
Weight	0.45 kg			

\*Test condition:  
• STANDA controllers;  
• Power supply - 36V.

**8MR174V-11-VSS42**



*Compatible with  
10<sup>-6</sup> Torr vacuum*



The motor of **8MR174V-11** protrudes from the bottom. This **3BP174V-11** base plate is needed to place the stage on a flat surface.  
Included in standard package.

**ORDERING INFORMATION**

**8MR174-11-20**

Motorized Rotation Stage with **stepper motor 20**

**8MR174-11-28**

Motorized Rotation Stage with **stepper motor 28**

**8MR174-11-28S**

Motorized Rotation Stage with **stepper motor 28S**

**8MR174V-11**

Motorized Rotation Stage with **Vacuum compatible stepper motor VSS42**

**Recommended Controllers**

**Stepper Motor Controller with USB Interface**



**8SMC1-USBhF-B1-1**  
1 axis Controller in box

**Stepper Motor Controller with RS232 Interface**



**8SMC3-RS232-B1-1**  
1 axis Controller in box

more info on [www.standa.lt](http://www.standa.lt)

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<http://www.standa.lt>

Phone: +370-5-2651474

Fax: +370-5-2651483



standa

Base Mounts & Accessories

Translation & Rotation Stages

Motorised Positioners & Controllers

Fine Adjustment Screws

Opto-Mechanics & Sets

Light Test & Measurement Instruments

8-37



# Motorized Rotation Stages

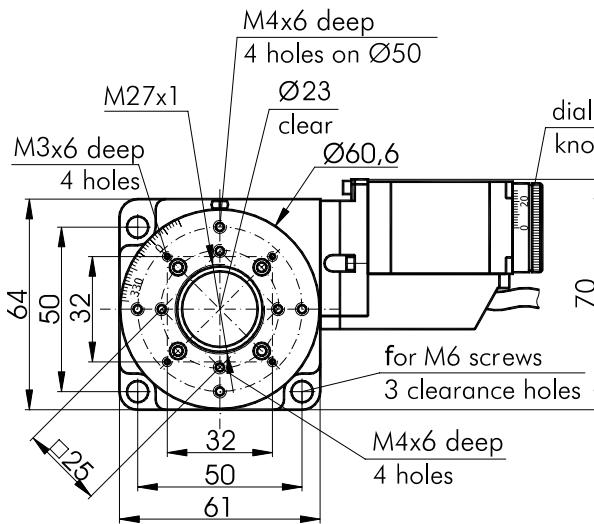
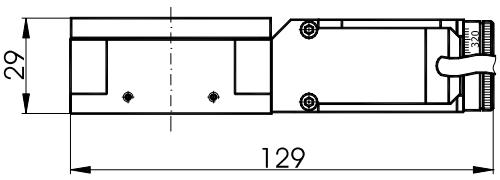
**8MR151**


8MR151-1

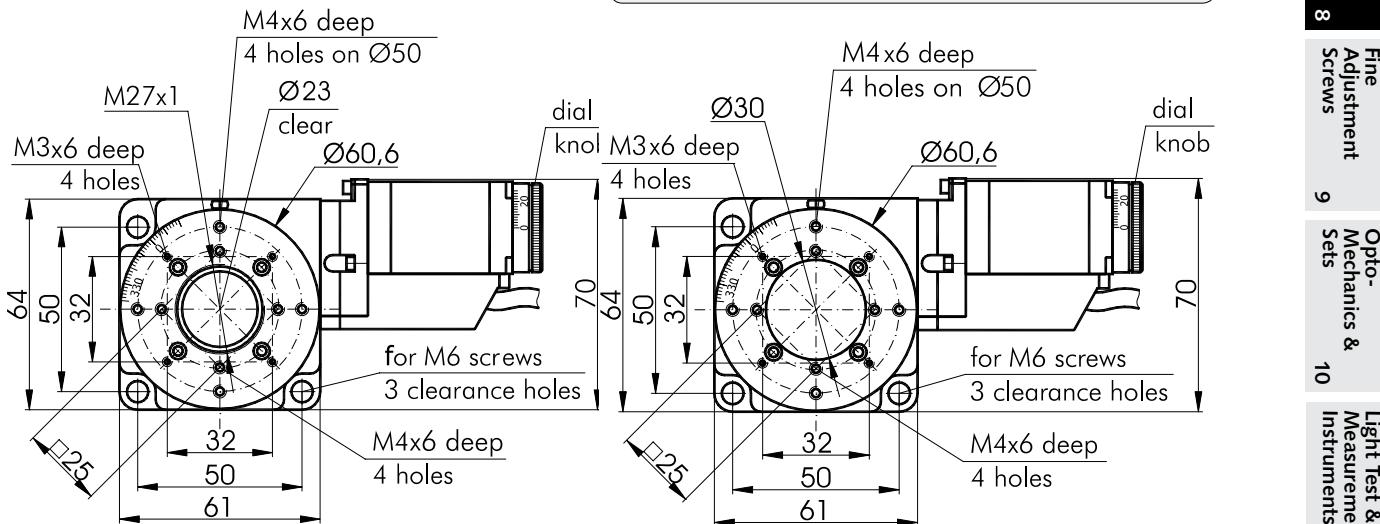


8MR151-30

Available  
INCH version  
**8MR151E**



8MR151-1



8MR151-30

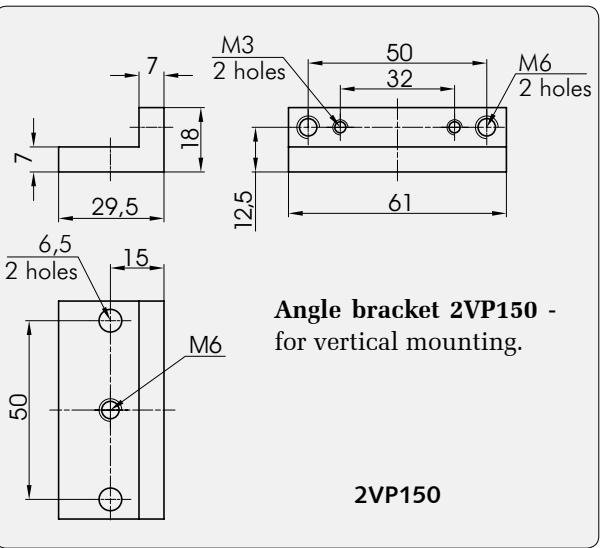
## SPECIFICATIONS

Rotation Range	360°
Resolution in full step*	0.6 arcmin
in 1/8 step*	4.5 arcsec
Max. rotation speed*	50°/s
Wobble	0.6 arcmin
Eccentricity	10 µm
Load capacity	
Horizontal	6 kg
Radial	1.7 kg
Torque	0.5 Nm
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28
Weight	0.56 kg

\*Test condition:  
 • STANDA controllers;  
 • Power supply – 36V.

## ORDERING INFORMATION

<b>8MR151-1</b>	M27×1 for 1" optics mounting (Ø23 mm clear aperture)
<b>8MR151-30</b>	Ø30 mm aperture
<b>2VP150</b>	vertical plate

Angle bracket 2VP150 -  
for vertical mounting.

2VP150

1	Brackets & Rails	Base Mounts & Accessories	Optical Mounts	Optical Positioners	Base Positioners	Translation & Rotation Stages	Motorised Positioners & Controllers	Fine Adjustment Screws	Opto-Mechanics & Sets	Light Test & Measurement Instruments
2										


<http://www.standa.lt>

[sales@standa.lt](mailto:sales@standa.lt)

 Phone: +370-5-2651474  
 Fax: +370-5-2651483


## Universal Motorized Rotation Stages

8MRU

NEW

**Universal motorized rotation stage 8MRU** is a **simple and durable low cost** solution for use as **optical element rotator, filter wheel or universal rotating platform**.

Centre opening has a threaded M27x1 aperture for mounting 1" optical elements. Retaining ring for fastening optics is included.

8MRU with various accessories can serve as several devices in one.

## SPECIFICATIONS

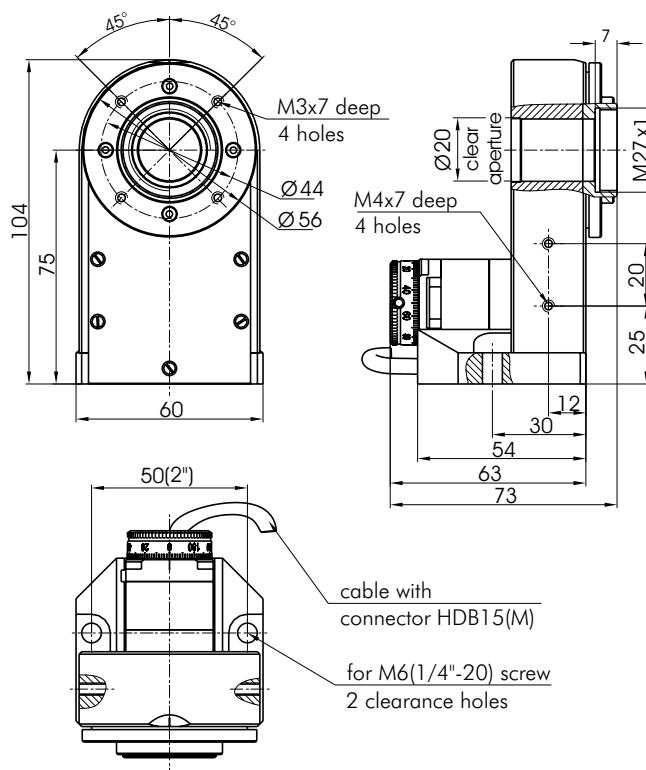
Rotation range	360°
Resolution in full step	0.6°
in 1/8 step	4.5 arcmin
Max. rotation speed*	3÷5 rps
Wobble	2 arcmin
Reduction gear	3:1
Limit switches	mechanical
Drive mechanism	belt
Load capacity	
Horizontal	5 kg
Radial	1.5 kg
Torque	4.5x10 <sup>-3</sup> Nm
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28S

\*Test condition:  
 • STANDA controllers;  
 • Power supply - 36V.

Custom accessories are  
manufactured on request!

## Universal Motorized Rotation Stage

8MRU-1



8MRU-1 is a basic rotation stage that can rotate 1" **optical elements**. Various accessories and custom parts can be mounted on provided **M3x7** mounting holes.

Variations of 8MRU-1 with accessories for various applications can be seen below.

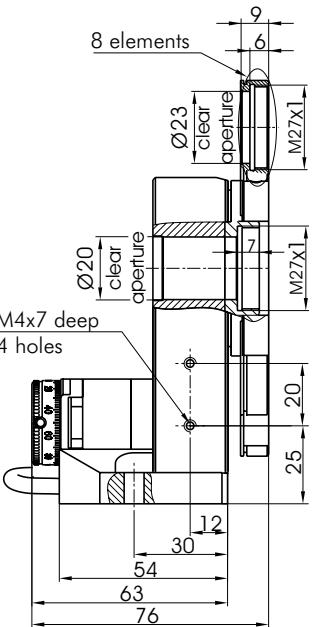
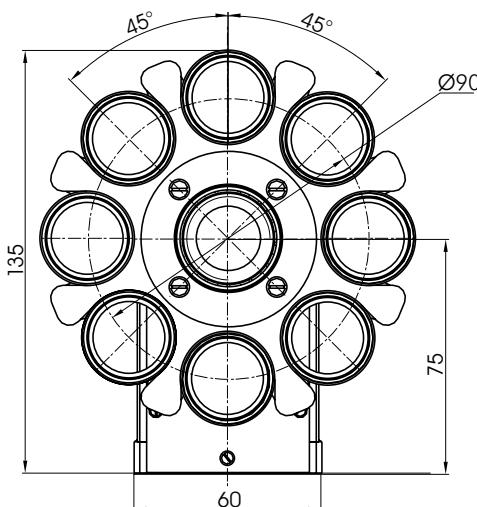
**Weight** 0.55 kg





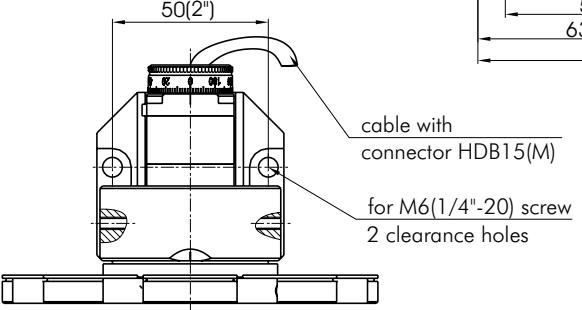
## Universal Motorized Rotation Stage

## 8MRU-1WA



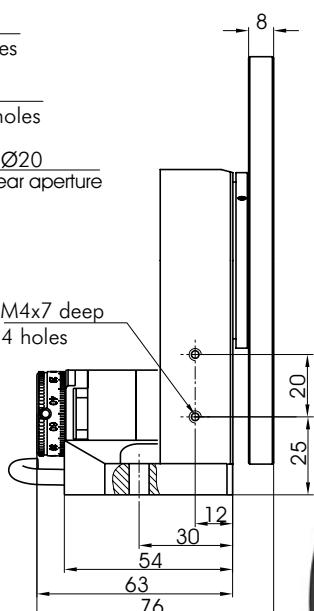
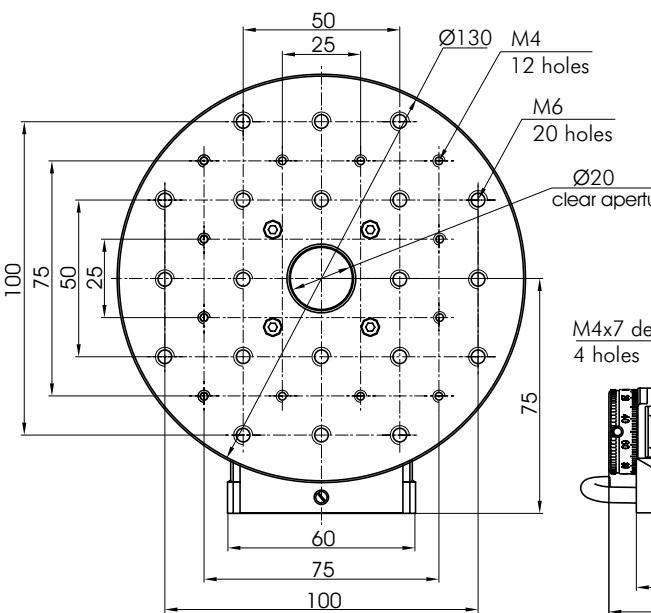
A **filter wheel** version of universal rotation stage **8MRU**. Accepts up to **eight 1"** filters.

**Weight** 0.65 kg



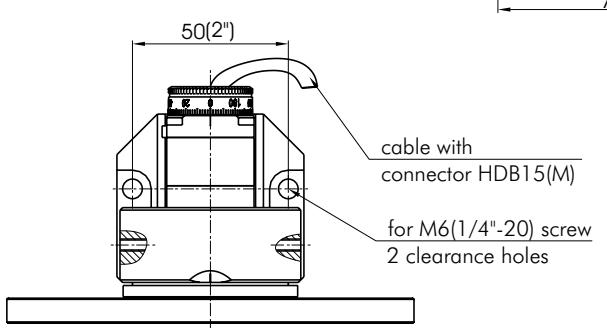
## Universal Motorized Rotation Stage

## 8MRU-1TP



A version of **8MRU** with a universal mounting platform with a **pattern of M6 and M4 tapped holes**.

**Weight** 0.7 kg



Optical  
Tables

1 Brackets & Rails  
2

3 Base Mounts & Accessories  
Optical Mounts

4 Optical Positioners  
Base Positioners

5 Translation & Rotation Stages

6 Motorised Positioners & Controllers  
Fine Adjustment Screws

7 Opto-Mechanics & Sets

Light Test & Measurement Instruments

8-40



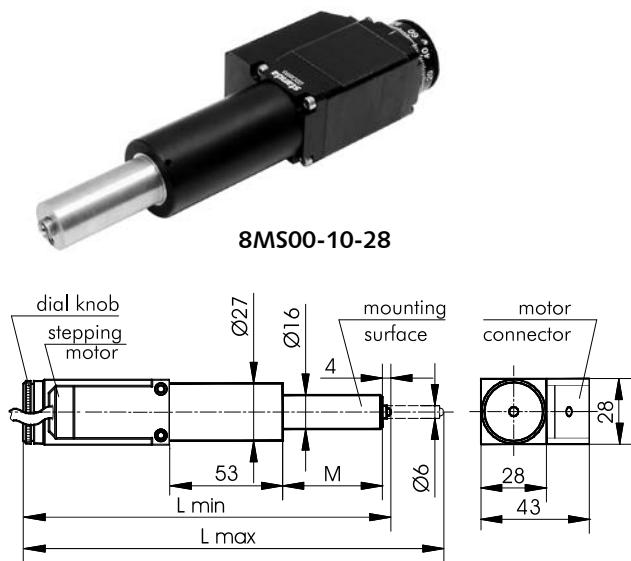
# Motorized Screws

8MS00

- Manual drive with a dial knob
- Resolution 0.156 µm (1/8 step)
- Scale on the dial knob allows reading accuracy to a step

- Two limit switches
- Optional power supplies for higher voltages/speeds are available

## Motorized Screws



8MS00-10-28

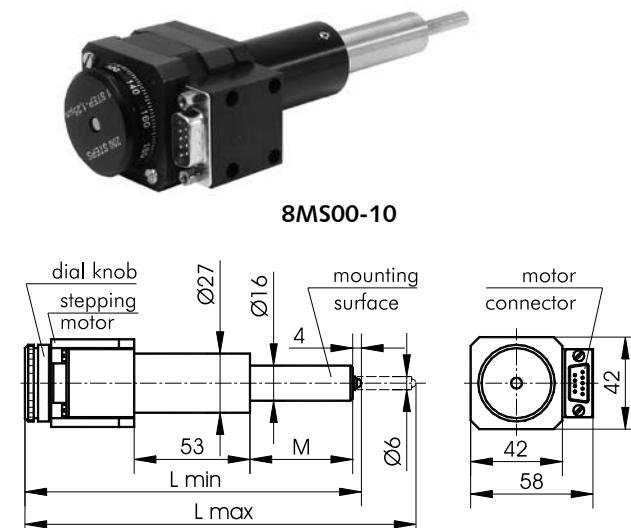
8MS00-25-28

### SPECIFICATIONS

Travel range	
8MS00-10-28	10 mm
8MS00-25-28	25 mm
Lead screw pitch	0.25 mm
Resolution in full step	1.25 µm
Nominal force	80 N
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28
Weight	
8MS00-10-28	0.45 kg
8MS00-25-28	0.5 kg

Model	M, mm	L min, mm	L max, mm
8MS00-10-28	37	157.5	167.5
8MS00-25-28	47	167.5	192.5

## Motorized Screws



8MS00-10

8MS00-25

### SPECIFICATIONS

Travel range	
8MS00-10	10 mm
8MS00-25	25 mm
Lead screw pitch	0.25 mm
Resolution in full step	1.25 µm
Nominal force	60 N
Motor connector	DB9(M)
Stepper motor	4233
Weight	
8MS00-10	0.5 kg
8MS00-25	0.55 kg

Model	M, mm	L min, mm	L max, mm
8MS00-10	37	143.5	153.5
8MS00-25	47	153.5	178.5

## Motorized Screws



8MS00V-10

8MS00V-25

### SPECIFICATIONS

Travel range	
8MS00V-10	10 mm
8MS00V-25	25 mm
Lead screw pitch	0.25 mm
Resolution in full step	1.25 µm
Nominal force	30 N
Fluoroplastic cable	integrated, 2 m length
Motor connector	HDB15(M)
Stepper motor	VSS43
Weight	
8MS00V-10	0.55 kg
8MS00V-25	0.6 kg

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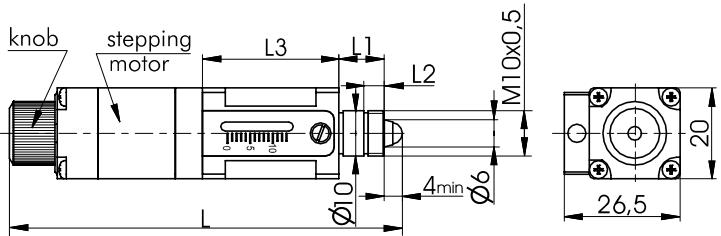




# Motorized Actuators

**8CMA06**


8CMA06-13/15



Model	L, mm	L1, mm	L2, mm	L3, mm
8CMA06-13/15	92...105	15	7	30
8CMA06-25/15	101...126	15	7	40
8CMA06-13/10*	87...100	10	4.5	30

\* by request

- Compact
- Manual drive with a knob
- Limit switch: optoelectronic couple
- Step motor controllers (USB, RS232, Manual) are offered separately
- Optional power supplies for higher voltages/speeds are available

**SPECIFICATIONS**

Travel range	
8CMA06-13/15	13 mm
8CMA06-25/15	25 mm
Resolution	1.25 $\mu$ m
Lead screw pitch	0.25 mm
Nominal force	30 N
Cable	integrated, 1.2 m length
Motor connector	HDB15(M)
Stepper motor	20
Weight	8CMA06-13/15      0.12 kg 8CMA06-25/15      0.15 kg

nut 3N10X05 (M10x0.5) by request (look lower down the page)

**Available Travel Range of 13 mm and 25 mm Motorized Actuators with DC MOTOR (see on the next page)**

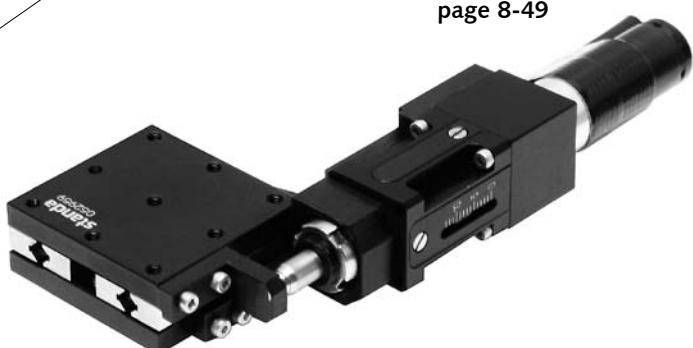


8MT184-13

Translation stage 7T184-13  
with motorized actuator  
8CMA06-13/15 with  
stepper motor  
Resolution 1.25  $\mu$ m

page 8-48

*Modified Manual Stages with Motorized Actuators  
are available*



8MT184-13DC

Translation stage 7T184-13  
with motorized actuator  
8CMA06DC-13/15 with DC motor  
Minimum Incremental Motion  
0.028  $\mu$ m

page 8-49



http://www.standa.lt



E-mail: sales@standa.lt

**Standa**
 Optical  
Tables

 1      Brackets  
& Rails

 Base  
Mounts &  
Accessories

 3      Optical  
Mounts

 4      Optical  
Positioners

 5      Base  
Positioners

 6      Translation &  
Rotation  
Stages

 7      Motorised  
Positioners &  
Controllers

 8      Fine  
Adjustment  
Screws

 9      Opto-  
Mechanics &  
Sets

 10     Light Test &  
Measurement  
Instruments

# Ultra-High Resolution Compact Motorized Actuator with DC motor

**8CMA16DC**



**8CMA16DC-13/15**

Recommended controller for DC Motor

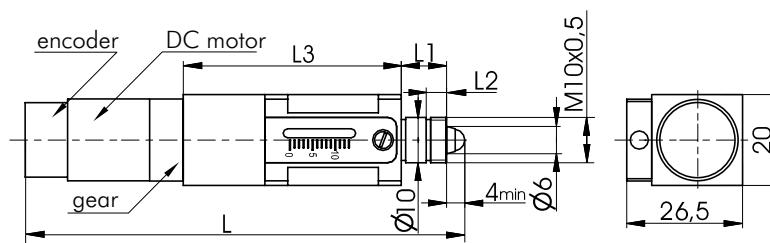


**Brushed DC Servo Motor Controller with USB Interface**

**8DCMC1-USB**

## SPECIFICATIONS

Travel range	
8CMA16DC-13/15	13 mm
8CMA16DC-25/15	25 mm
Resolution	0.1 μm
Minimal incremental motion	0.028 μm
Lead screw pitch	0.25 mm
Max.speed	0.15 mm/s
Nominal force	30 N
Cable	integrated, 1.2 m length
Motor connector	HDB15(M)
DC motor	DCE1524
Weight	
8CMA16DC-13/15	0.12 kg
8CMA16DC-25/15	0.15 kg



Model	L, mm	L1, mm	L2, mm	L3, mm
8CMA16DC-13/15	109.5...122.5	15	7	50
8CMA16DC-25/15	119.5...144.5	15	7	60

# Ultra-High Resolution Compact Motorized

Actuator with Vacuum compatible DC motor

**8CMA16DCV**

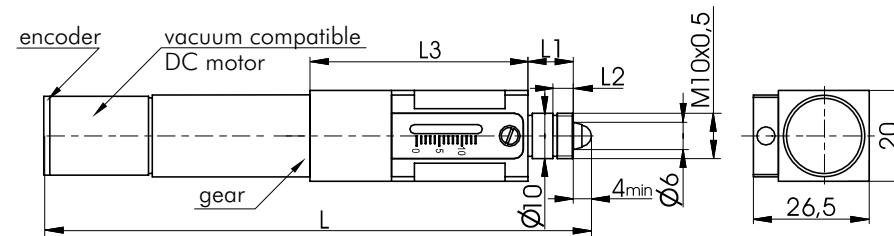


**8CMA16DC-25/15**

*Compatible with  
10<sup>-6</sup> Torr vacuum*

## SPECIFICATIONS

Travel range	
8CMA16DCV-13/15	13 mm
8CMA16DCV-25/15	25 mm
Resolution	0.1 μm
Minimal incremental motion	0.028 μm
Lead screw pitch	0.25 mm
Max.speed	0.15 mm/s
Nominal force	30 N
Cable	integrated, 2 m length
Motor connector	HDB15(M)
Vacuum compatible DC motor	DCE1841
Weight	
8CMA16DCV-13/15	0.12 kg
8CMA16DCV-25/15	0.15 kg



Model	L, mm	L1, mm	L2, mm	L3, mm
8CMA16DCV-13/15	125...138	15	7	50
8CMA16DCV-25/15	135...160	15	7	60



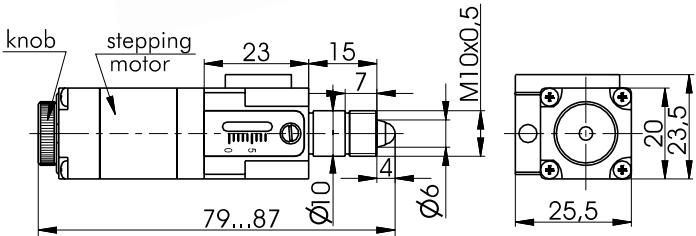
## Compact Motorized Actuator

8CMA20-8/15



8CMA20-8/15

- Reduced size
- Manual drive with a knob
- Limit switch: optoelectronic couple
- Step motor controllers (USB, RS232, Manual) are offered separately
- Optional power supplies for higher voltages/speeds are available

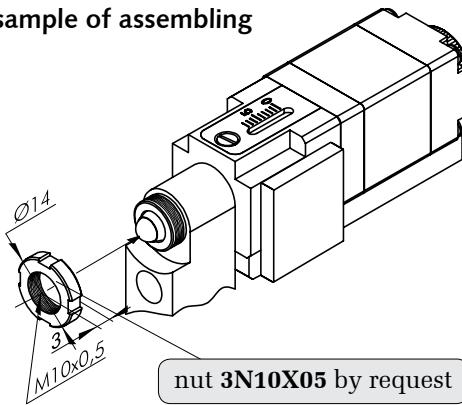


modified kinematic mirror/beamsplitter  
mount 5MBM24-1-2 with motorized actuator  
8CMA20-8/15 installed page 8-50

## SPECIFICATIONS

Travel range	8 mm
Resolution	1.25 µm
Lead screw pitch	0.25 mm
Nominal force	30 N
Cable	integrated, 1.2 m length
Motor connector	HDB15(M)
Stepper motor	20
Weight	0.10 kg

## sample of assembling



8MGM25T-1  
(gimbal mount 5GM25T-1  
with motorized actuator  
8CMA20-8/15)  
page 8-51



8MKVDOM-1  
(vertical drive optical  
mount 5KVDOM-1  
with motorized actuator  
8CMA20-8/15)  
page 8-52

Available Motorized Actuator  
with  $10^{-6}$  Torr VACUUM  
compatible DC MOTOR  
**8CMA20DCV-8/15**

Available Motorized  
Actuator with DC MOTOR  
**8CMA20DC-8/15**

Optical  
Tables

Brackets  
& Rails

Base  
Mounts &  
Accessories

Optical  
Mounts

Optical  
Positioners

Base  
Positioners

Translation &  
Rotation  
Stages

Motorised  
Positioners &  
Controllers

Fine  
Adjustment  
Screws

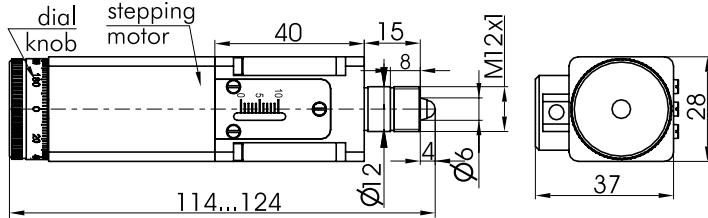
Opto-  
Mechanics &  
Sets

Light Test &  
Measurement  
Instruments



## Motorized Actuator

8CMA28-10



- Compact
- Manual drive with a knob
- Two limit switches
- Step motor controllers (USB, RS232, Manual) are offered separately
- Optional power supplies for higher voltages/speeds are available

## SPECIFICATIONS

Travel range	10 mm
Resolution	1.25 $\mu$ m
Lead screw pitch	0.25 mm
Nominal force	70 N
Cable	integrated, 1.2 m length
Motor connector	HDB15(M)
Stepper motor	28
Weight	0.15 kg

## Related Controllers



8SMC1-USBhF



8SMMC2



8SMC3-RS232

more info on [www.standa.lt](http://www.standa.lt)

8MBM57-6  
(mirror/beamsplitter mount 5BM57-6  
with motorized actuator  
8CMA28-10)



8MR128  
(micro rotation stage 7R128  
with motorized actuator  
8CMA06-13/10)

Modified  
Manual Stages with  
Motorized Actuator  
are available



8MR170-190  
(rotation stage 7R170-190  
with motorized actuator  
8CMA28-10)

standa



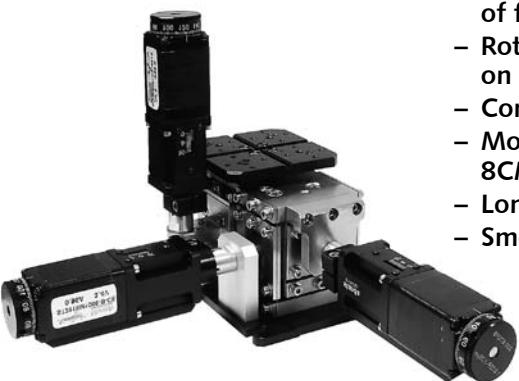
e-mail: sales@standa.lt  
<http://www.standa.lt>

Phone: +370-5-2651474  
<http://www.standa.lt>

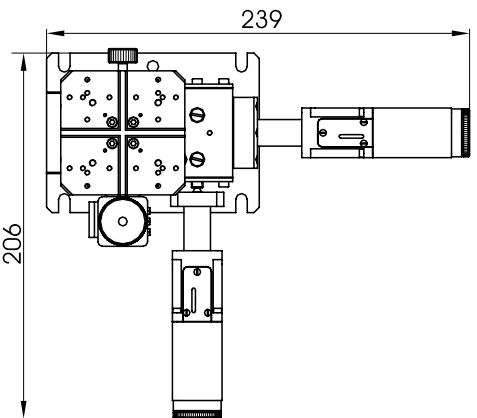
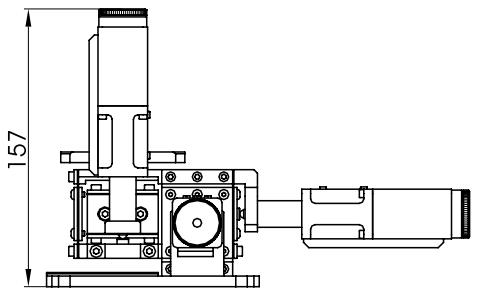
Fax: +370-5-2651483  
<http://www.standa.lt>



# Motorized Fiber Coupling Stage

**8MTF2**


- Fiber coupling stage of flexure design
- Rotating platform on the top
- Compact block design
- Motorized Actuator 8CMA28-10
- Long-term stability
- Smooth motion



## SPECIFICATIONS

Travel range in each XYZ direction	2 mm
Resolution	0.2 $\mu$ m
Cross-Talk	20 $\mu$ m/mm
Mechanical stability	flexure design with Stainless Steel Spring
Load capacity	1.5 kg
Type of actuator	8CMA28-10
Cable	1.2 m length cable included
Motor connector	DB15(M)
Weight	1.6 kg

**8SMC1-USBhF programming toolkit  
for Microsoft Windows Mobile 5.0 is now available!**

Other dimensions  
such as **7TF2**  
(page 7-25)

## Accessories for Fiber Coupling Stage

page 7-26



7FA1



7FA2



7FA3



7FA4



7FA5



7FA4



7FA1



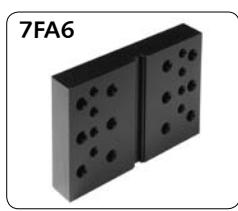
7FA2



7FA3



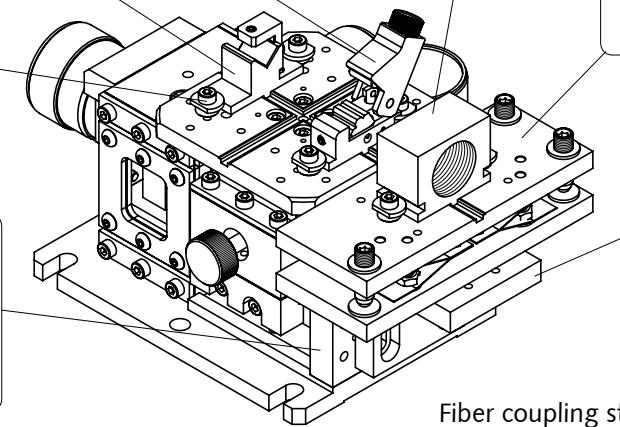
3WFA-01



7FA6



7FA7


 Fiber coupling stage **7TF2** with accessories

 standa  
Optical  
Tables

 1 Brackets  
& Rails  
2

 Base  
Mounts &  
Accessories  
3

 Optical  
Mounts  
4

 Optical  
Positioners  
5

 Base  
Positioners  
6

 Translation &  
Rotation  
Stages  
7

 Motorised  
Positioners &  
Controllers  
8

 Fine  
Adjustment  
Screws  
9

 Opto-  
Mechanics &  
Sets  
10

 Light Test &  
Measurement  
Instruments  
11

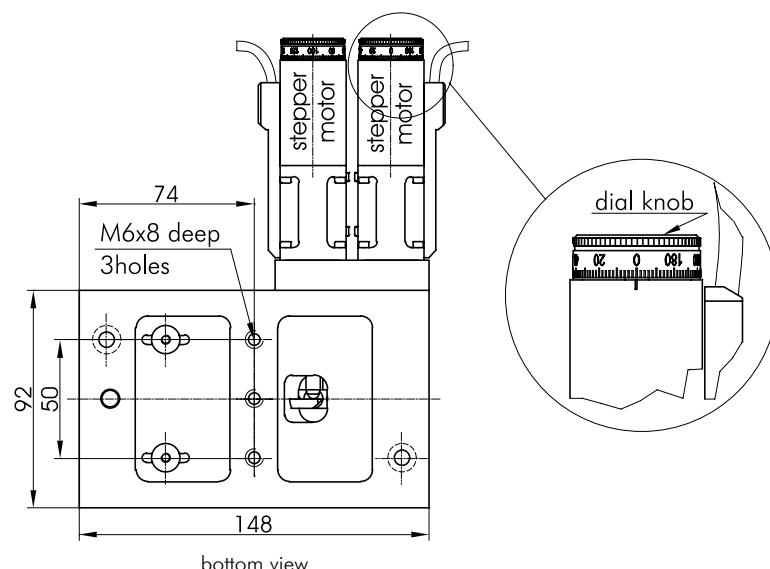
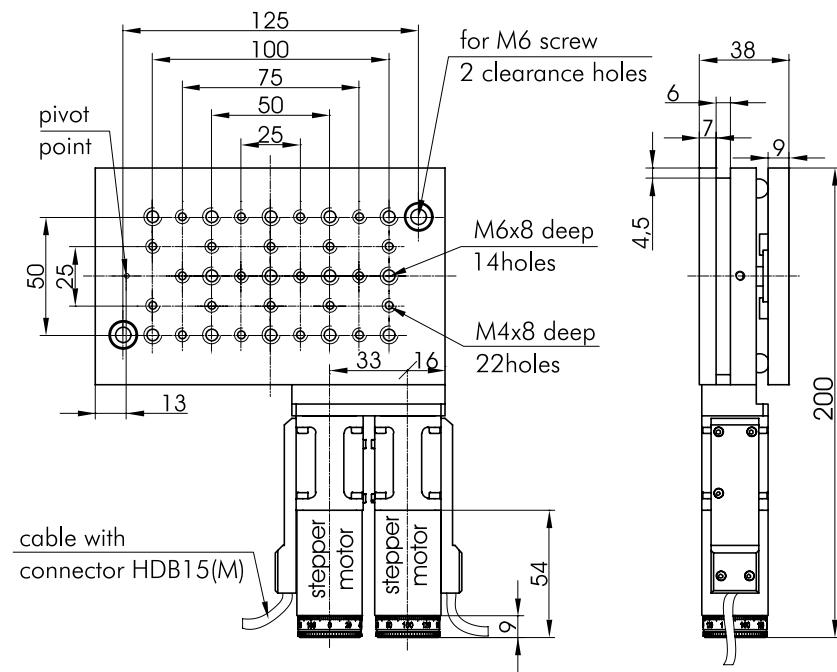
# Motorized YZ Translation Stage

8MTP116



## SPECIFICATIONS

Tilt y	$\pm 2^\circ$
Rotation z	$\pm 2,5^\circ$
Resolution	
in full step	1,25 $\mu\text{m}$
in 1/8 step	0,156 $\mu\text{m}$
Lead screw pitch	0.25 mm
Repeatability	1 $\mu\text{m}$
Maximum load capacity	10 kg
Type of actuator	8CMA28-10
Cable	1.2 m length cable included
Motor connector	DB15(M)
Weight	1,3 kg



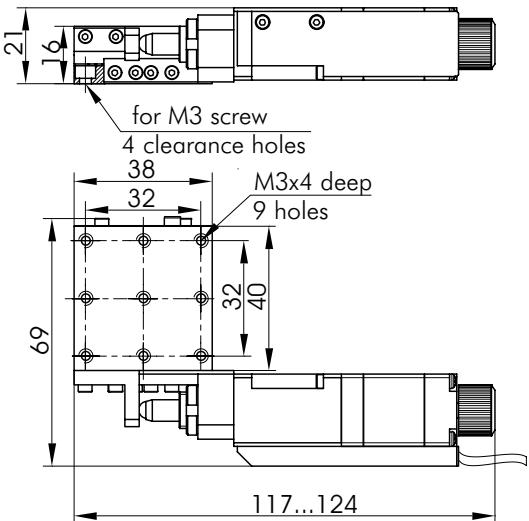
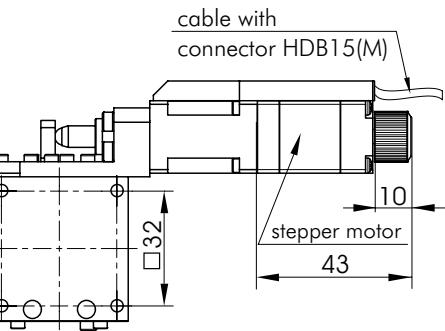


## Motorized Translation Stage

8MT184-13



- Compact design
  - Precise movement
  - 13 mm travel range
  - X-Y-Z direct stacking
  - Stacks directly with stages of 174 series
  - Motorized Actuator 8CMA06-13/15
  - Lockable
  - Black anodized aluminium
  - Angle bracket 2AB174 for vertical mounting



**3UBP-01**  
Universal base plate  
for stacking the translation  
stages to STANDA optical  
tables or to another stages



8MT184-13 xy



8MT184-13 xyz

## Recommended Controllers



1 axis stepper motor  
controller for USB interface  
**— 8SMC1-USbH-F-B1-1 —**



2 axis stepper motor  
controller for USB interface  
**8SMC1-USBhF-B2-2**



3 axis stepper motor  
controller for USB interface  
**8SMC1-USBhF-B2-3**

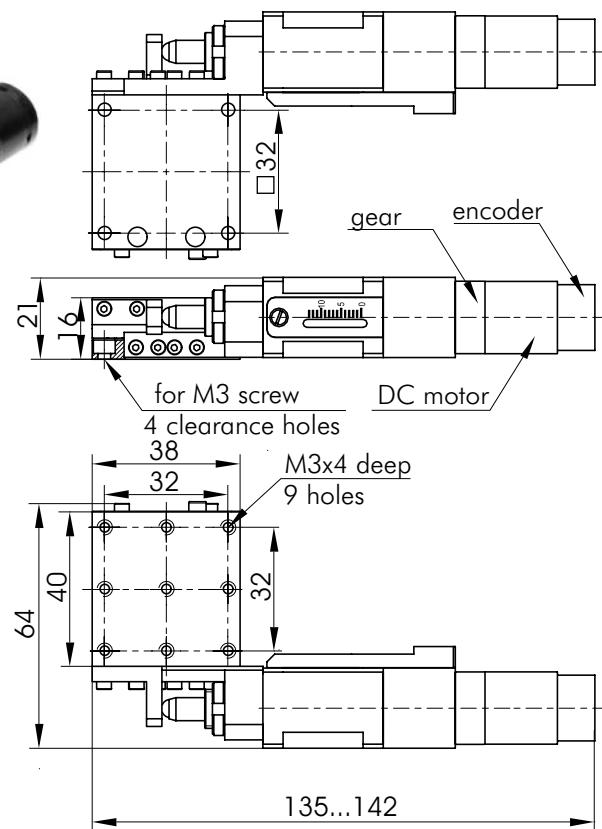
Optical Tables	1	Brackets & Rails	2	Base Mounts & Accessories	3	Optical Mounts	4	Optical Positioners	5	Base Positioners	6	Translation & Rotation Stages	7	Motorised Positioners & Controllers	8	Fine Adjustment Screws	9	Opto- Mechanics & Sets	10	Light Test & Measurement Instruments	1
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## Motorized Translation Stage

8MT184-13DC

**NEW**

- Compact design
- Precise movement
- 13 mm travel range
- X-Y-Z direct stacking
- Stacks directly with stages of 174 series
- Motorized Actuator 8CMA16DC-13/15
- Lockable
- Black anodized aluminium
- Angle bracket 2AB174 for vertical mounting



*Available Motorized Translation Stage  
with VACUUM  $10^{-6}$  Torr Compatible DC motor*  
**8MT184V-13DC**

*Recommended  
controller for DC Motor*



Brushed  
DC Servo Motor  
Controller with  
USB Interface

**8DCMC1-USB**

*Compatible  
with  $10^{-6}$  Torr vacuum*



Ultra-High  
Resolution Compact  
Motorized Actuator with Vacuum  
compatible DC motor

**8CMA16DCV-13/15**

Manual version of 8MT184 series – 7T184-13 (page 7-19)



**7T184-13**



**7T184-13 xy**



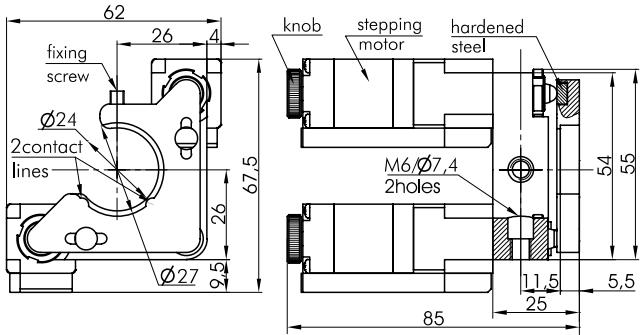
**7T184-13 xy**



## Motorized Kinematic Mirror/Beamsplitter Mounts

**8MBM24**


8MBM24-1-2



- 1" optics mounts
- Tilt range 9° (about two axes)
- Travel range 4 mm
- Mounting on either of 2 sides
- Two models – round and square aperture
- Kinematic
- Clear edge design
- A motorized actuator 8CMA20-8/15 pushes via seat of hardened stainless steel
- Black anodized aluminium
- 2", 3" models available 8MBM24-2, 8MBM24-3



Modified Optical  
Positioners with  
Motorized  
Actuator  
**8CMA20-8/15**  
are available

more info on  
[www.standa.lt](http://www.standa.lt)

## Motorized Two Axis Translation Optical Mount

**8MTOM2-1**

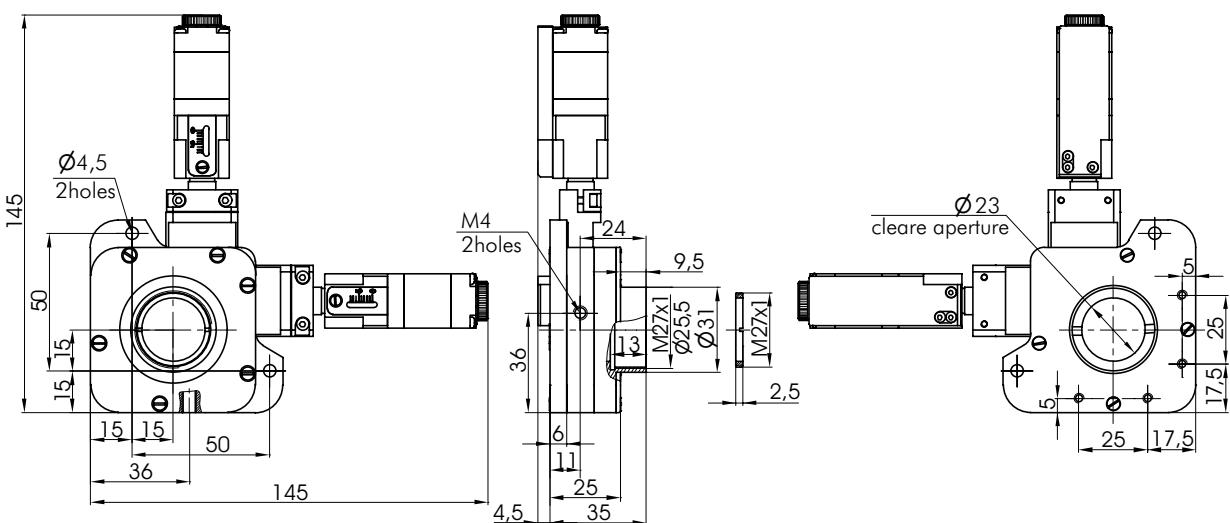

*DESIGNED TO USE  
WITH MICROSCOPE*

- 1" optics mounts
- Limit switch: optoelectronic couple
- Black anodized aluminium

The **8MTOM2-1** is made of **5TOM2-1** XY Translation Mount and **8CMA20-8/15** Compact Motorized Actuators.

### SPECIFICATIONS

Resolution in full step in 1/8 step	1.25 µm 0.156 µm
XY translation range	±2 mm
Lead screw pitch	0.25 mm
Weight	0.8 kg


**Standa**
*DC motor base actuators are available on request*

Optical Tables	1	Brackets & Rails
Base Mounts & Accessories	2	Optical Mounts
Optical Positioners	3	Optical Mounts
Base Positioners	4	Optical Positioners
Translation & Rotation Stages	5	Base Positioners
Translation & Rotation Stages	6	Translation & Rotation Stages
Motorised Positioners & Controllers	7	Motorised Positioners & Controllers
Fine Adjustment Screws	8	Fine Adjustment Screws
Opto- Mechanics & Sets	9	Opto- Mechanics & Sets
Light Test & Measurement Instruments	10	Light Test & Measurement Instruments
	11	

## Motorized Gimbal Mount

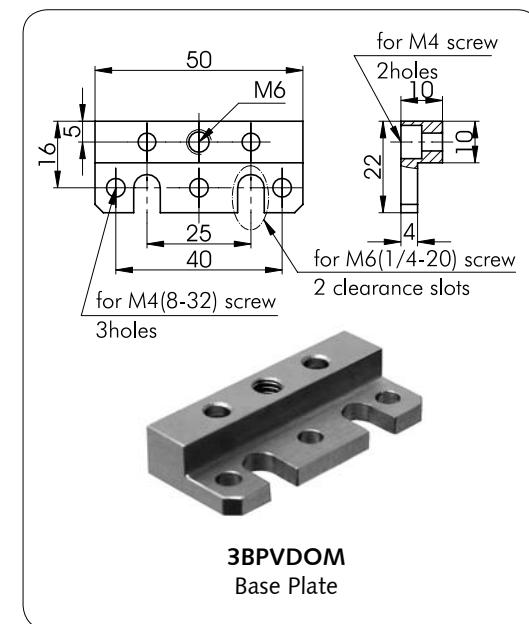
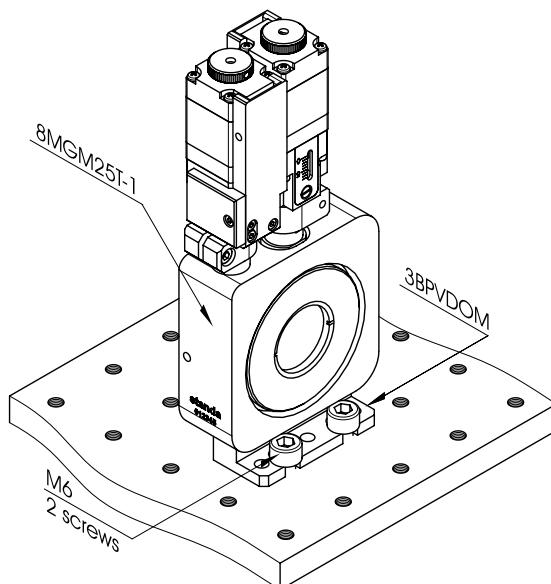
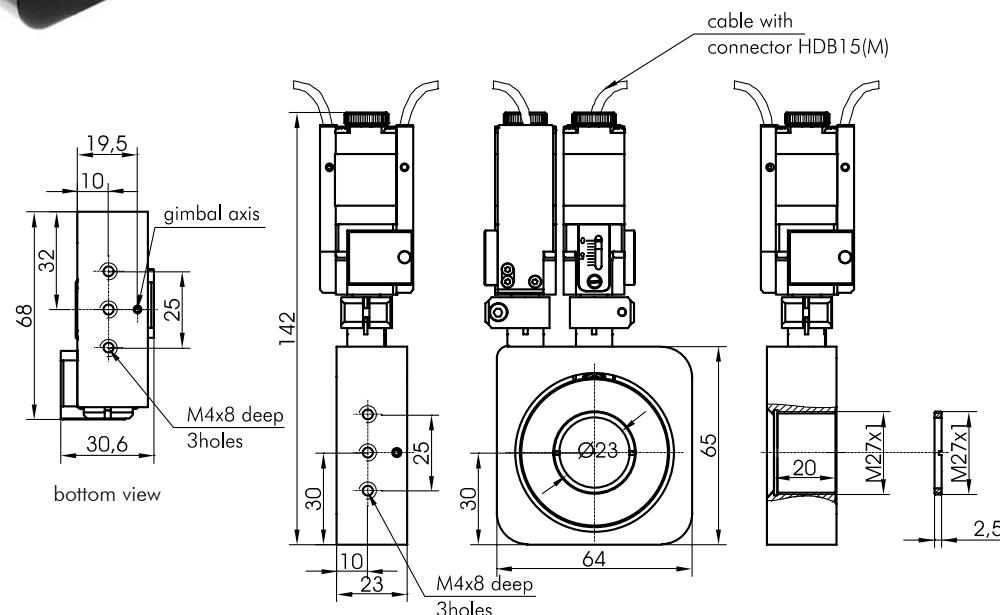
8MGM25T-1



## SPECIFICATIONS

Optics diameter	25,4 mm
Clear aperture	23 mm
Angular range	$\pm 2,5^\circ$
Type of actuator	8CMA20-8/15
Resolution*	
in full step	1,25 $\mu\text{m}$
in 1/8 step	0,156 $\mu\text{m}$
Lead screw pitch	0,25 mm
Repeatability	1 $\mu\text{m}$
Maximum speed	4 mm/s
Cable	1.2 m length cable included
Motor connector	HDB15(M)
Weight	0.7 kg

\*Actuator's movement dependance of horizontal position is not linear.



3BPVDOM  
Base Plate

**DC motor base Actuators are available on request**

e-mail: sales@standa.lt

<http://www.standa.lt>

Phone: +370-5-2651474 Fax: +370-5-2651483

**standa**

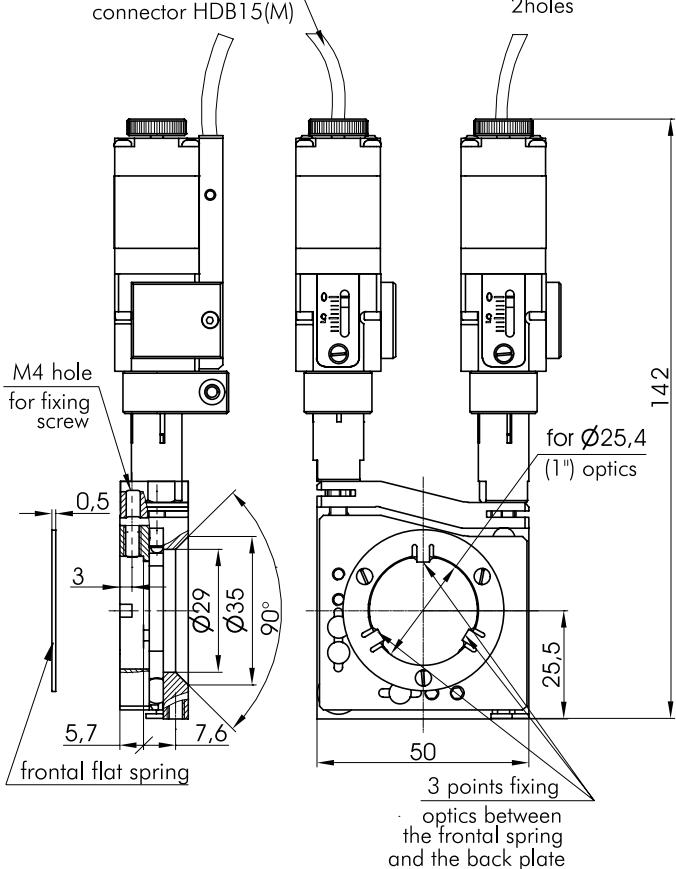
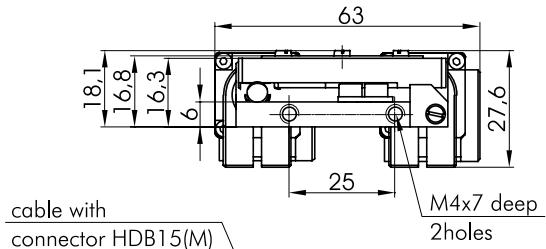




# Motorized Vertical Drive Optical Mount

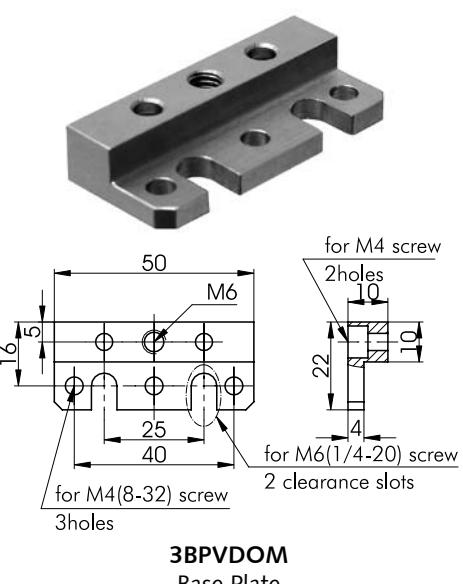
**8MKVDOM-1**


- Material of Optical Mount - Stainless steel
- Compact design
- Used actuator 8CMA20-8/15



## SPECIFICATIONS

Optics diameter	25.4 mm
Clear aperture	23 mm
Tilt/tip range	$\pm 2,5^\circ$
Sensitivity	
by horizontal	3.8 arcsec. in full step of actuator
by vertical	3.9 arcsec. in full step of actuator in the middle tilt of platform
Type of actuator	8CMA20-8/15
Travel range of actuator	6 mm
Resolution	
in full step	1.25 $\mu$ m
in 1/8 step	0.156 $\mu$ m
Lead screw pitch	0.25 mm
Repeatability	1 $\mu$ m
Cable	1.2 m length cable included
Motor connector	HDB15(M)
Weight	0.5 kg



**Motorized** Vertical drive optical mount **8MKVDOM-1** with **2 axis** step motor  
**Manual Controller** in box **8SMMC2-B2-2**



*DC motor base Actuators are available on request*

 standad  
Optical  
Tables

 1 Brackets  
& Rails  
2

 Base  
Mounts &  
Accessories  
3 Optical  
Mounts  
4 Optical  
Positioners  
5 Base  
Positioners  
6 Translation &  
Rotation  
Stages  
7

 Motorised  
Positioners &  
Controllers  
8 Fine  
Adjustment  
Screws  
9 Opto-  
Mechanics &  
Sets  
10 Light Test &  
Measurement  
Instruments  
11

## Motorized Vertical Translation Stage

8MVT188-20



- Pantograph design
- 16 ball bearings
- Stepping motor drive
- Precision lead screw
- 95 mm vertical travel
- Height: min 89 mm  
max 184 mm
- Top and bottom plates parallel to 1 mm
- Load capacity 8 kg (depending on motor and controller)
- Supply voltage - 36 V
- Weight: 4.3 kg

**Motorized Vertical Translation Stage 8MVT188-**

**20** boasts our unique design. Being very compact, it provides smooth and stable adjustment of height. It has a large travel range, and it supports large loads. While moving the platform stays parallel to the base.

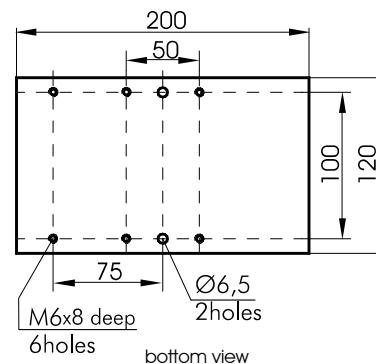
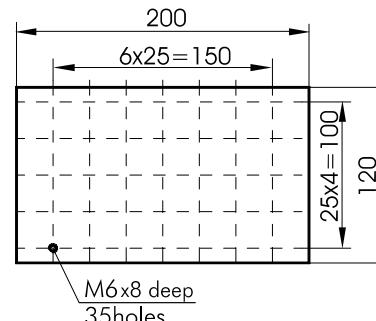
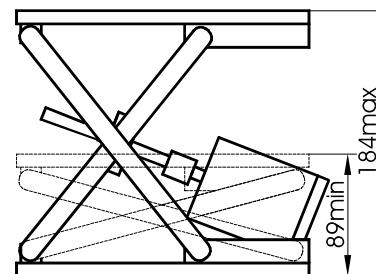
Examples of use: making up for height differences during the set up; automation of technological processes, like laser welding.

A stepper motor type – **5618**, 200 steps. Customer can specify any other types of motors to install. Load capacity and speed all greatly depend on the motor. We can test and select an appropriate motor for your requirements.

The lead screw acts at a varying angle, so the resolution of the stage varies with position.

The platform has an array of **M6** holes spaced by **25 mm**. The base has **six M6** and **two Ø6.5** holes.

Material: black anodized aluminum.



## Motorized Mirror Mount

8MMA60



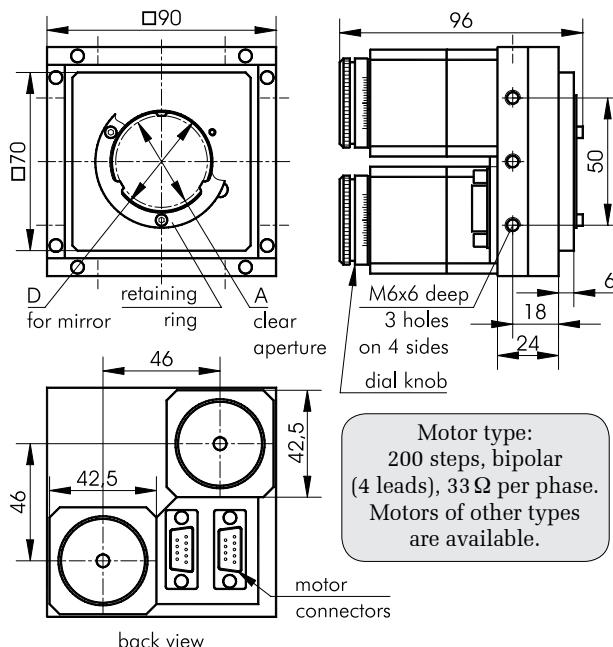
**Motorized Mirror Mounts 8MMA60** are designed for precise angular alignment of optical elements. Platform is **tilted about two axes**. A **retaining ring** keeps optics in a non-through mounting opening of the platform.

The ring is fixed by 3 screws. It has **3 dents** with which it **clamps** optics against similar **3 rests** in the platform.

The **dents** are exactly opposite to the **rests** – this **minimizes deformation**.

**SPECIFICATIONS**

Tilt range	5° both axes
Visual reading	dial knobs graduated in 200 steps per revolution
Resolution	0.0016° (0'00"06") per step
Optics accepted (see the drawing)	
diameter (D), and clear aperture (A):	
8MMA60-1	Ø25.4 mm (1"), A=21.4 mm
8MMA60-40	Ø40 mm, A=36 mm
8MMA60-2	Ø50.8 (2"), A=46.8 mm
custom sizes available	
Optics thickness	10 mm (retaining rings for custom thickness available)
Material	black anodized aluminium
Weight	1.08 kg



Base Mounts & Accessories	1
Brackets & Rails	2
Optical Tables	2
Optical Mounts	3
Optical Positioners	4
Base Positioners	5
Translation & Rotation Stages	6
Motorised Positioners & Controllers	7
Fine Adjustment Screws	8
Opto-Mechanics & Sets	9
Light Test & Measurement Instruments	10
	11





# Motorized Vertical Translation Stage

**8MVT40-13**

**NEW**

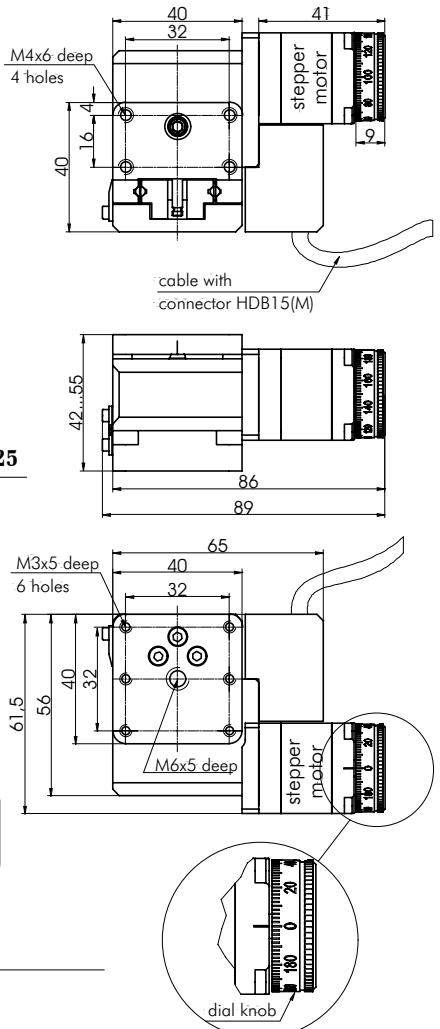
- Travel range 13 mm
- Stacks directly with stages of 174 and 184 series

**SPECIFICATIONS**

	8MVT40-13-1	8MVT40-13-05	8MVT40-13-025
Travel range, mm		13	
Lead screw pitch, mm	1	0.5	0.25
Resolution in full step*, $\mu\text{m}$	0.083	0.042	0.021
Max speed*, mm/s	0.416	0.208	0.104
Load capacity, kg		6	
Cable	integrated, 1.6 m length		
Motor connector	HDB15(M)		
Stepper motor	28S		
Weight, kg	0.45		

**8MVT40-13-1** provided as standard stage.

\*Test condition:  
 • STANDA controllers;  
 • Power supply – 36V.


**8MVT40-13** stacks directly with stages of **174** and **184** series

**8MT184-13**

**7R174-11, 7T184-13 (2 pieces),  
and 7VT174 or 7VT40 stacked**

**8MR174-11-28S**
**Recommended Controllers**

more info on [www.standa.lt](http://www.standa.lt)
**Stepper Motor Controller  
with  
USB Interface**

**8SMC1-USBhf**
**Stepper Motor Controller  
with  
RS232 Interface**

**8SMC3-RS232**
**Stepper Motor Controller  
with  
Manual Control**

**8SMMC2**

only with 12V voltage power supply

Optical  
Tables

1 Brackets & Rails  
2

Base Mounts & Accessories  
3

Optical Mounts  
4

Optical Positioners  
5

Base Positioners  
6

Translation & Rotation Stages  
7

Motorised Positioners & Controllers  
8

Fine Adjustment Screws  
9

Opto-Mechanics & Sets  
10

Light Test & Measurement Instruments  
11


## Motorized Goniometers



8MG99-50

Goniometers rotate an object about an axis in space located **outside** the body of the unit (usually – above the platform), so the axis is not obscured by the unit itself.

Goniometers have small travel range and greater stability, compared to rotation stages.

Goniometers have to have different **heights of points of rotation**, so that, when you **stack** goniometers one on top of the other, they rotate an object about a common point in space.

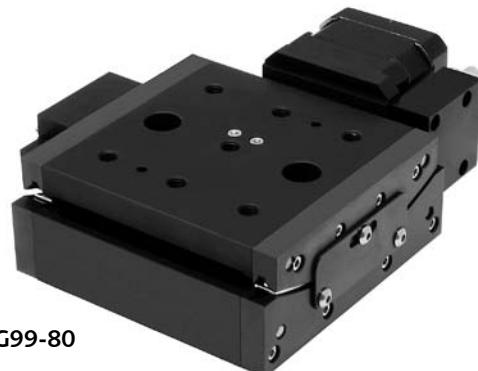
The mechanism rolls smoothly on ball bearings.

The **position** is read within one revolution on the **scale** engraved on the **dial knob** sitting on the axle of the motor. Position can be read to each step. Overall position accounting is up-to your computer.

Goniometers have two **limit switches** to signal an “out of limits” error situation. The switches may also be used to **roughly** establish a zero reference.

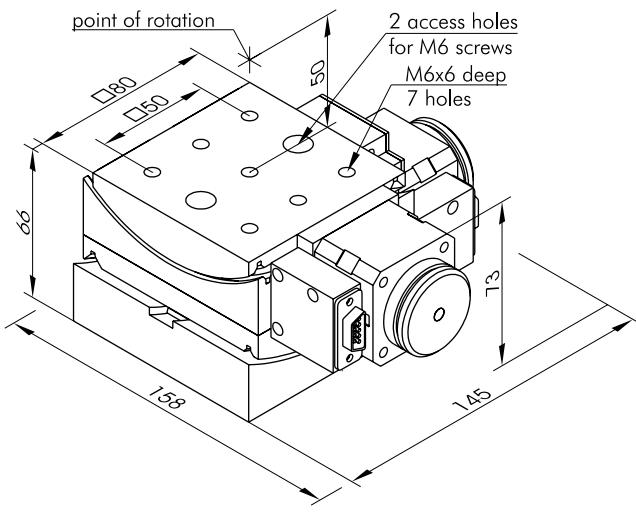
The stage is driven by a **stepping motor**. A **dial knob** on its axle allows **manual drive**. As standard, we use stepping motors of these parameters: 200 steps, bipolar (4 leads),  $33\Omega$  per phase. A customer can order motors of other types. We offer our Stepper Motor Controllers to control the motorized stages.

SPECIFICATIONS	8MG99	8MG00
Travel range	$\pm 2.5^\circ$	$0.5^\circ$
Resolution		
8MGXX-50	16.12"	20.6"
8MGXX-80	10.96"	16.5"
Height of center of rotation		
8MGXX-50	50 mm	50 mm
8MGXX-80	80 mm	80 mm
Load capacity	2 kg	2 kg
Lifetime	–	20 million full steps
Weight	1.2 kg	1.2 kg

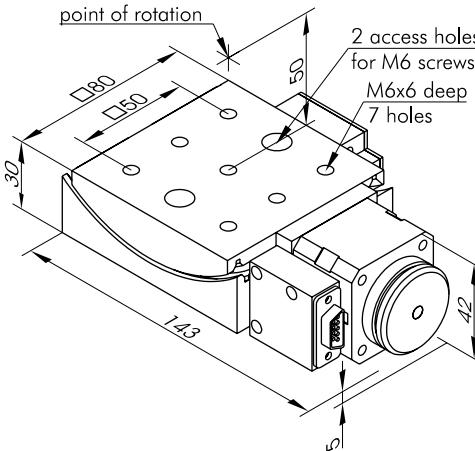


8MG99-80

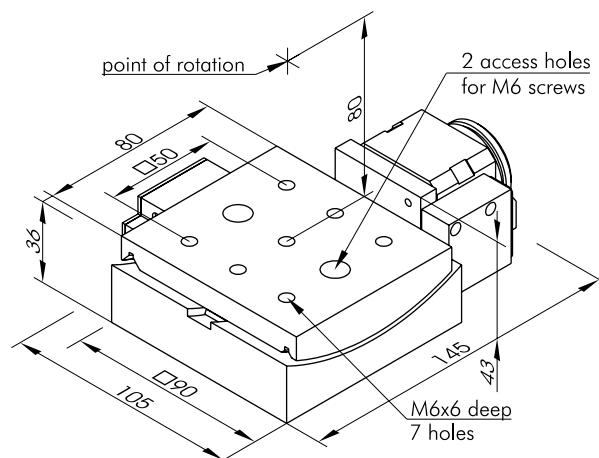
- Rotates an object without obscuring the optical path
- Smooth operation with ball bearings
- 1 or 2 axes of rotation (stackable)
- Superb stability
- Compact square body



8MG00; 8MG99 stacked



8MG00-50; 8MG99-50

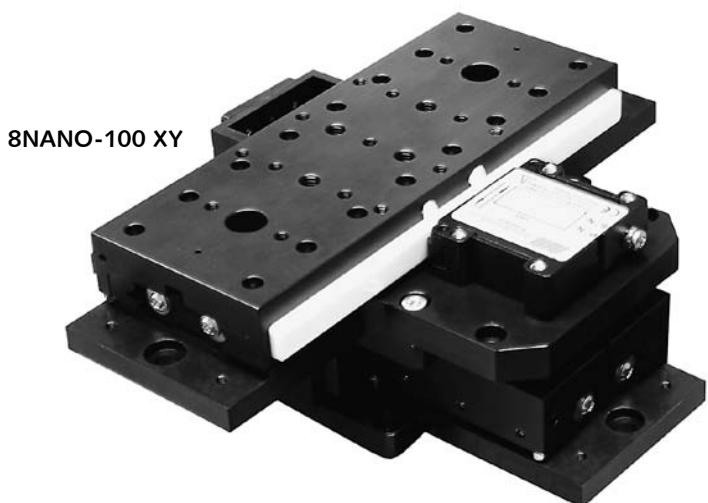


8MG00-80; 8MG99-80

## Nano Positioners

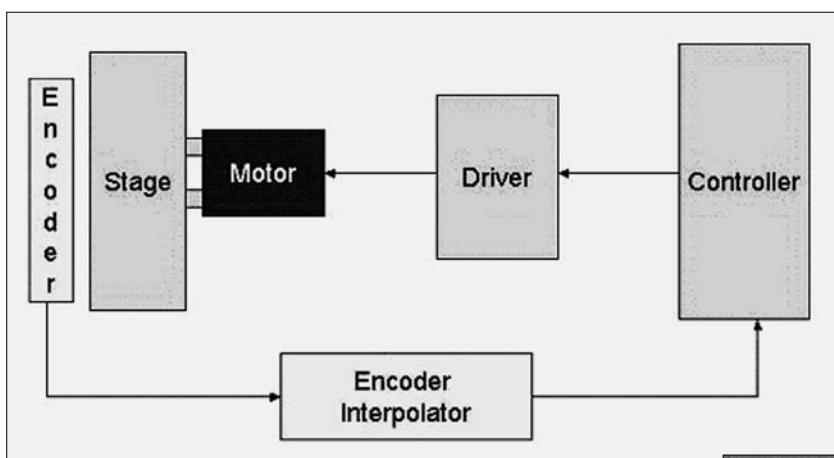
8NANO-100

NEW

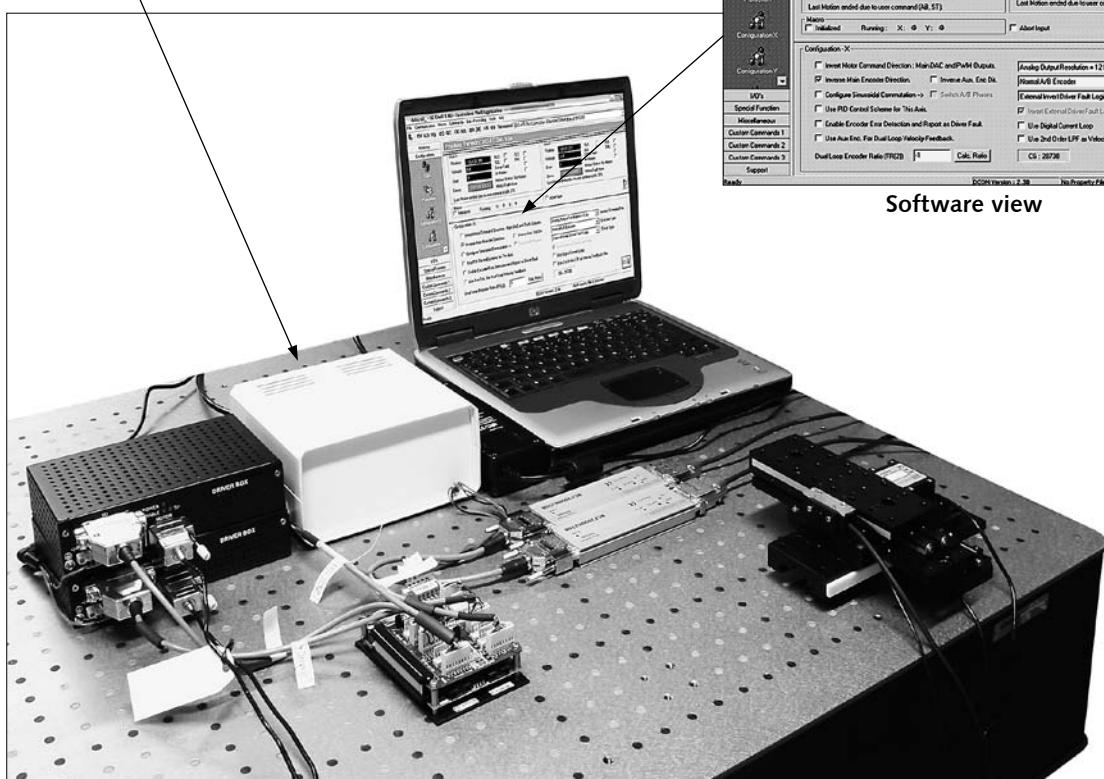


## SPECIFICATIONS

Travel range	100 mm
Low frictional force	
Straightness	5 $\mu$
Backlash	0
Stiffness	100 N/ $\mu$
Resolution	50 nm
Speed	0.001-150 mm/s
Repeatability	0.1 $\mu$
Precision	0.5 $\mu$
Load capacity	3 kg
Weight	1.3 kg



Block diagram of Nano Positioners

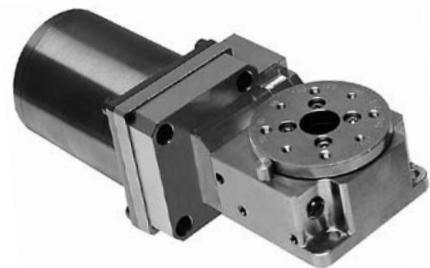


Software view

Optical  
Tables1 Brackets & Rails  
2Base Mounts & Accessories  
3Optical Mounts  
4Optical Positioners  
5Base Positioners  
6Translation & Rotation Stages  
7Motorised Positioners & Controllers  
8Fine Adjustment Screws  
9Opto-Mechanics & Sets  
10Light Test & Measurement Instruments  
11



Light Test & Measurement Instruments	11	Fine Adjustment Screws	10	Opto-Mechanics & Sets	9	Motorised Positioners & Controllers	8	Translation & Rotation Stages	7	Base Positioners	6	Optical Positioners	5	Optical Mounts	4	Base Mounts & Accessories	3	Brackets & Rails	2	Optical Tables	1
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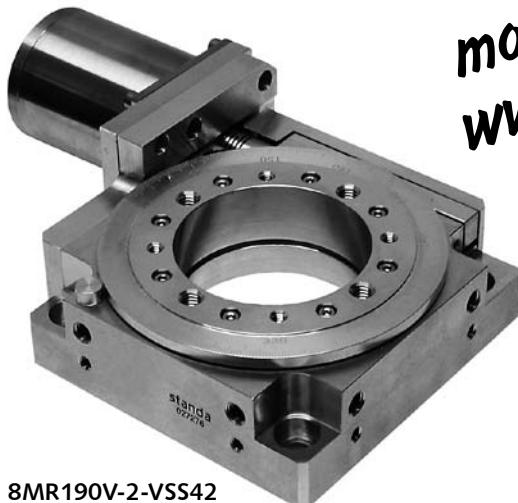


8MR174V-11-VSS42

Available for  
vacuum!



8CMA16DCV-25/15



8MR190V-2-VSS42



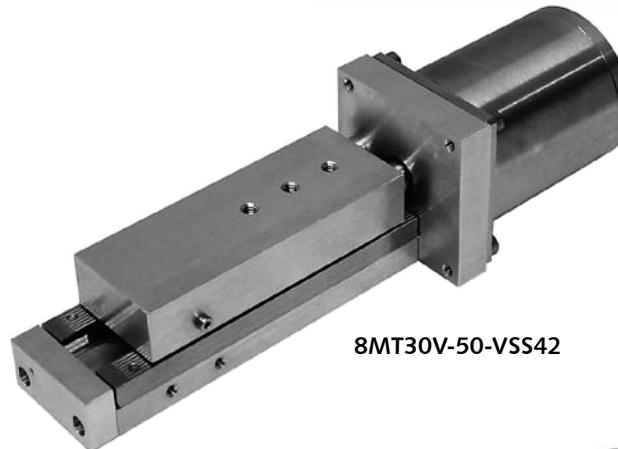
8MS00V-10-VSS42



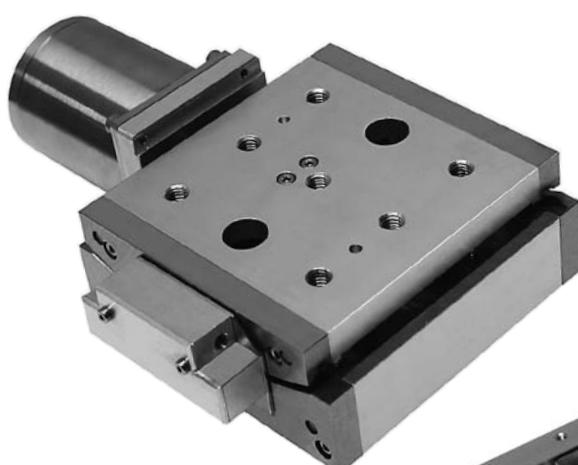
8MR191V-VSS42



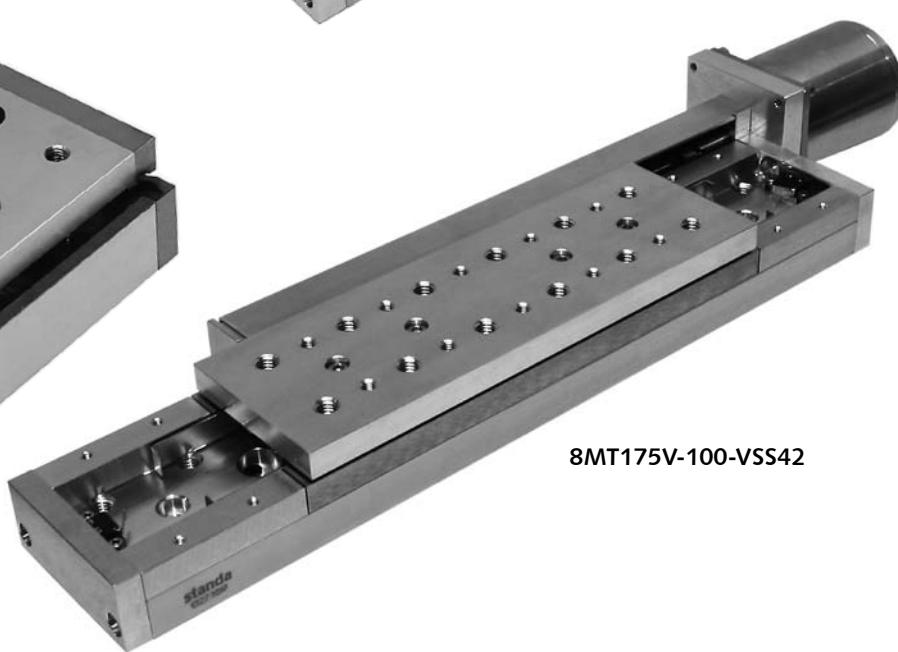
8MT173V-20-VSS42



8MT30V-50-VSS42



8MG99V-80-VSS42



8MT175V-100-VSS42

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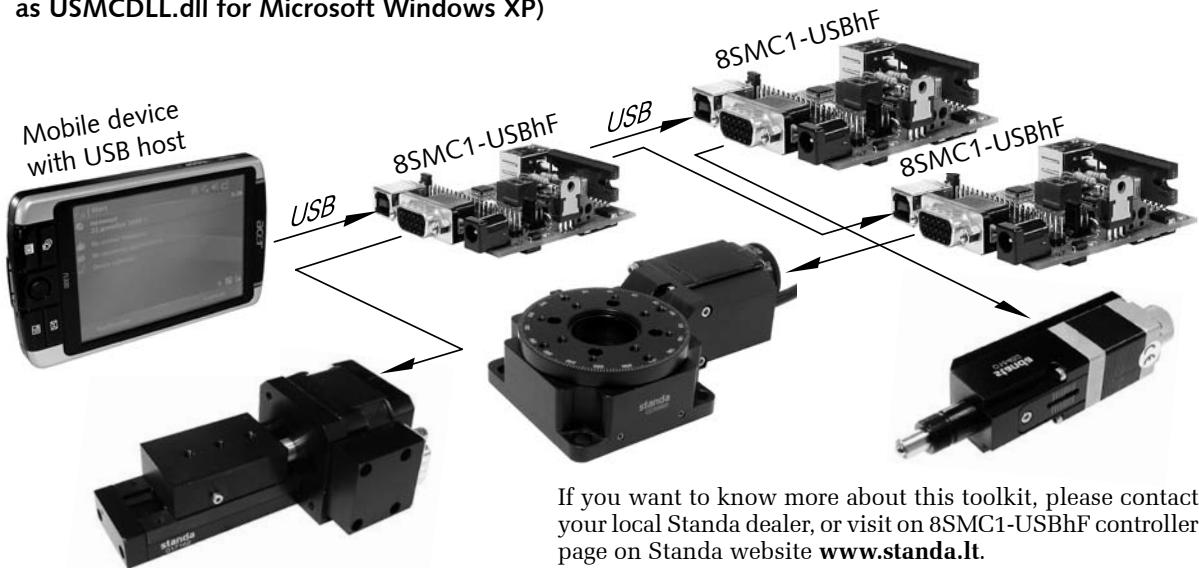
*Standa is happy to introduce all new:*

## 8SMC1-USBhF programming toolkit for Microsoft Windows Mobile 5.0!

- Do you want to control your experimental setup but don't have enough space for personal computer?
- Do you want to build custom cost effective graphical user interface with touch screen and make it user friendly?
- Do you want to use only common and well known developing tools for new platform?
- Do you want to use matchless possibilities of mobile devices wireless connections?

### With new programming toolkit you can:

- Turn your handheld computer to a mobile control center
- Enjoy the advantages of the touch screen display
- Build your application with USMCDLL.dll for Microsoft Windows Mobile 5.0 (which have the same functionality as USMCDLL.dll for Microsoft Windows XP)
- Incorporate your hardware into local network using wireless Ethernet



If you want to know more about this toolkit, please contact your local Standa dealer, or visit on 8SMC1-USBhF controller page on Standa website [www.standa.lt](http://www.standa.lt).

### Custom Software Development Program

Ether a scientific experiment, a simple inspection or a manufacturing process – everything should be automated nowadays. It's not even an option – it's necessity. Automation helps to reduce costs and speed up the output. It really helps in hazardous or, on the contrary, clean environments where human presence is not welcome. But the most important it helps when reliability and repeatability is a must.

Any automated system consists of three basic parts: hardware (motors, stages, controllers), software (collecting/analysing data, controlling hardware) and human operator (preferably sitting in the office and receiving e-reports from the software). For the process to be success all three parts should interact as one entity. There should be no gaps between any two. And exactly the software plays the central role in the automation. Even the best hardware will not function without control and even the most experienced operator will not be able to effectively control the hardware without proper interface. So it's exactly the software that makes things work. It can take care of the hardware while giving the operator all the tools

to perform the required task without demanding from him the detailed knowledge of that very hardware (timing, signalling, triggering...).

Good software should posses at least three qualities 1) be reliable, 2) be able to solve one particular problem, 3) be user friendly. Here, at Standa, we understand how important all three are for you. That's why all applications we build are stable, help to solve exactly your problem and they have intuitive and user-friendly interface.

How we achieve it? Relatively simply. We just have the top-notch software and hardware engineers working hand to hand. We just have enormous amount of experience in development of software and hardware for automation purposes. And we just test, test and test our products to ensure 100% reliability.

So if you are a system integrator or end-user, if you require a small software tool or a full-scale multi-level application, if you need it to be cheap but reliable and you need it fast then Custom Software Development program is just for you.

Optical  
Tables

Brackets  
& Rails

Base  
Mounts &  
Accessories

Optical  
Mounts

Optical  
Positioners

Base  
Positioners

Translation &  
Rotation  
Stages

Motorised  
Positioners &  
Controllers

Fine  
Adjustment  
Screws

Opto-  
Mechanics &  
Sets

Light Test &  
Measurement  
Instruments



# Stepper Motor Controllers with USB Interface

## 8SMC1-USBhF series



- PWM chopper type current control (up to 1.5 A per phase)
- Resolution: full step, 1/2, 1/4, 1/8
- Speed: up to 5000 steps/s
- Full featured control software with graphical user interface for Windows 2000/XP/Vista/7 included
- Set of virtual instruments for NI LabView included
- RoHS compliant



8SMC1-USBhF-B1-1



8SMC1-USBhF-B2-2



8SMC1-USBhF-B2-3



8SMC1-USBhF-B2-4

### SPECIFICATIONS

#### Electrical

- Targeted for bipolar, two phase stepper motors with current ratings of 0.25A to 1.5 A. The current limit value is set by the manufacturer
- Power supply voltage ranges from 12V to 36V
- Overcurrent, overvoltage and temperature protection
- Synchronization Input and Output
- Encoder Inputs for stall detection (shared with Synchronization Input)
- Revolutions counter input (shared with Synchronization Input)

#### USB Expansion

- Each 8SMC1-USBhf controller card comes with an integrated USB hub to allow easy system expansion of additional single- or multi-axis controller cards
- Additional controllers can be connected directly to the computer in use or via any other controller card in the system. In either case the software will appropriately recognize the added controller card(s) and treat all connected controllers as a system
- Two USB expansion ports can be found on each controller card. Note when ordering encased cards that only the single-axis controller has access to the USB expansion outputs on the rear panel of the unit

#### Motion

- Resolution: full step, 1/2, 1/4, 1/8
- Speed: 2-5000 steps/s
- Programmable speed and trip points
- Programmable acceleration and deceleration ramps
- Soft start/stop mode

#### Control

- PC control via USB interface
- Optional handheld remote offers manual two button directional control
- Additional features include two programmable limit switches, an emergency limit switch, encoder, and revolution sensor for stall detection and input/output for synchronization

#### Programming

- Graphical user interface SMCView for Windows 2000/XP/Vista/7
- Drivers and dynamic link library for Windows 2000/XP/Vista/7/Mobile host programming
- Set of virtual instruments for National Instruments LabView
- Drivers for Linux

#### Mechanical

- Operating temperature range: 0 to 70°C
- Box size for 1-axis controller : 90 x 120 x 70 mm (B1)
- Box size for 2 and more axis controller : 180 x 120 x 90 mm (B2)

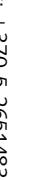
e-mail: sales@standa.lt

<http://www.standa.lt>

Phone: +370-5-2651474

Fax: +370-5-2651483

**standa**





## Manual control on 8SMC1-USBhF series

The **8SMC1-USBhF-B1-1MC** offers a handheld manual control option that allows for two button directional control of the unit in addition to the USB communication, the buttons are labeled “Forward” and “Backward”. The “Forward” button is intended for moving the positioner “Forward”. The “Backward” button is intended for moving the positioner “Backward”. Two LED’s indicate direction of movement. The LED of interest will flash to indicate rapid movement and will remain constantly illuminated upon reaching the limit switch.

The handheld remote is usually used for precise manual positioning of the stage during such processes as calibration. Another common application of is for the control of stepper motors when a computer is not easily accessible.



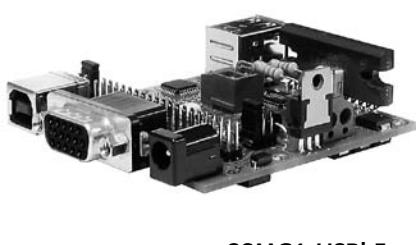
**8SMC1-USBhF-B1-1MC**



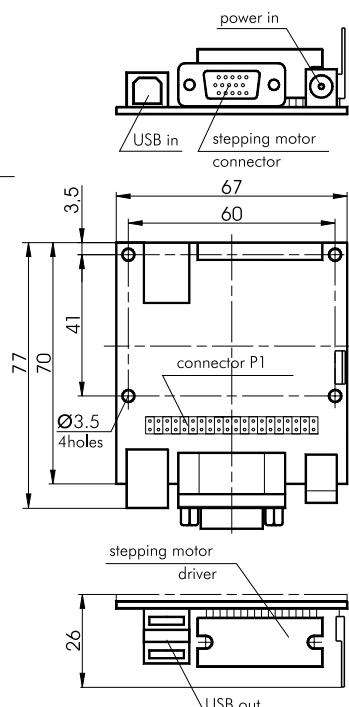
**8SMC1-USBhF-B1-1MC**

## Ordering of 8SMC1-USBhF series circuit card assemblies (CCA)

For added flexibility Standa offers the **8SMC1-USBhF** series controller in CCA form for ease of integration into custom systems. When ordering the CCA version of the controller the current limit values will still be set by the manufacturer before leaving the factory, but this limit can be changed by the user in the field. The CCA product will also include the USB hub IC and a heatsink for the motor driver IC. Warranty and support options may vary for the CCA version of controller.



**8SMC1-USBhF**



## Software Options for 8SMC1-USBhF controller

The **8SMC1-USBhF** comes with a suite of advanced software tools that can be utilized to control and adjust your stepping motors. All software tools operate on Windows 2000/XP/Vista/7.

**SMCView** is a friendly, graphical user interface for controlling, monitoring and adjustment of your stepping motors. It can also be used for easy setup to save and load of all parameters for each stepping motor. This interface supports up to 30 drivers simultaneously.

**SMC.dll** is a dynamic link library for host programming in **C/C++**, **Visual Basic** and **other languages**. It includes all basic commands for stepping motor control. Some examples of these functions are also enclosed.

**SMC.llb** is a set of virtual instruments (VI) for National Instruments LabView programming language. Some examples of these VI's are also included.

### Note

User's Guide and the full package of software at the:

[http://www.standa.lt/files/usb/8SMC1-USB\(h\)%20Soft.zip](http://www.standa.lt/files/usb/8SMC1-USB(h)%20Soft.zip)  
(for windows 2000/XP/Vista)

[http://www.standa.lt/files/usb/8SMC1-USB\(h\)%20soft%20Win7.zip](http://www.standa.lt/files/usb/8SMC1-USB(h)%20soft%20Win7.zip)  
(for windows 7)

**8SMC1-USBhF** is a modified version of previous controller board **8SMC1-USBh** with replaced motor connector from **DB15(M)** to **DB15(F)**.

Optical Tables	1	Brackets & Rails
2	2	Base Mounts & Accessories
3	3	Optical Mounts
4	4	Optical Positioners
5	5	Base Positioners
6	6	Translation & Rotation Stages
7	7	Motorised Positioners & Controllers
8	8	Fine Adjustment Screws
9	9	Opto-Mechanics & Sets
10	10	Light Test & Measurement Instruments
11	11	





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## Applications of 8SMC1-USBhF

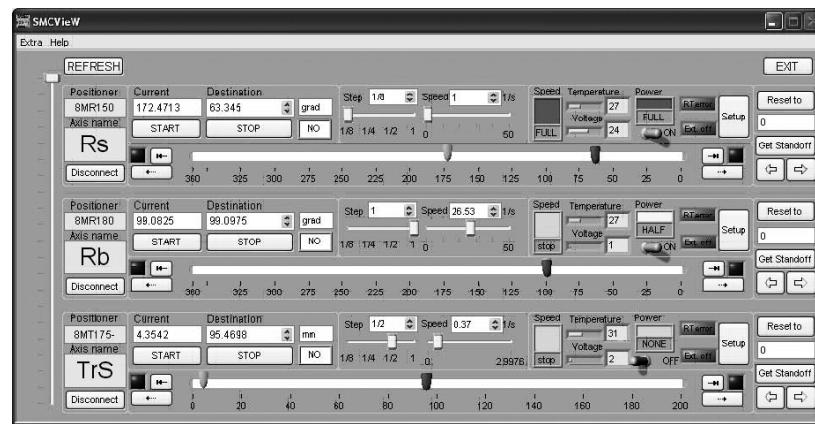
Users can connect to 8SMC1-USBhF various stepper motors using “bipolar, two phase” connection. Standa offers many motorized stages that can be driven by 8SMC1-USBhF: actuators, rotators, translators, variable wheel attenuators. These stages also can be mechanically fixed to various systems: XYZ translators, translators + rotator and others.

There are several possibilities to initiate movement actions for mentioned stages connected to 8SMC1-USBhF: by manual push buttons or by software. Using of software allows automated motion actions required for various scientific experiments or for industrial complex multidimensional movement shape execution.

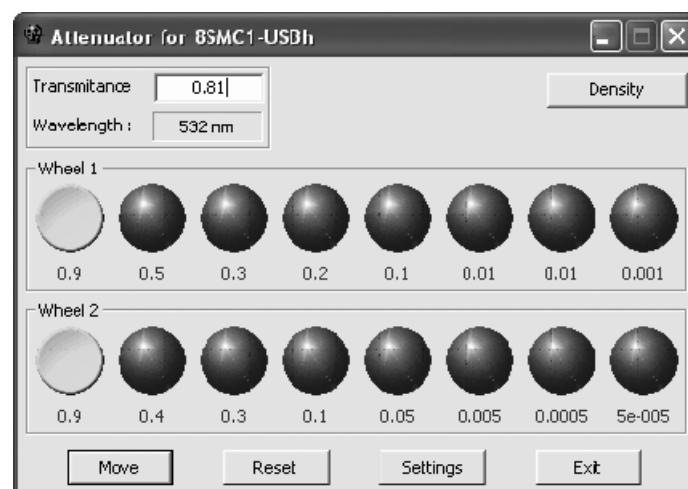
The 8SMC1-USBhF comes with a suite of advanced software tools that can be utilized to control and adjust your stepping motors. All software tools operate on Windows 2000/XP/Vista/7:

- **SMC.dll** is a dynamic link library for host programming in C/C++, Visual Basic and other languages. It includes all basic commands for stepping motor control. Some examples of these functions are also enclosed.
- **SMC.llb** is a set of virtual instruments (VI) for National Instruments LabView programming language. Some examples of these VI's are also included.
- **USMCDLL.dll** for Microsoft Windows Mobile 5.0 (which have just the same functionality as SMC.dll for Microsoft Windows XP).
- **SMCViewW** is a friendly graphical user interface for control, monitoring and tuning your stepping motors. It can also be used for easy setup and save/load of all parameters for each stepping motor. Interface supports up to 30 drivers simultaneously.

**SMCView main screen example.**  
Three 8SMC1-USBhF drives found.



- **Cyclic Motion** program - allows motion “from limit switch to limit switch” or “from point to point”. Included in SMCview inside “Extras” menu.
- **2D Motion** - allows driving two 8SMC1-USBhF controllers connected in schematic “XY translator”. Included in SMCview inside “Extras” menu, may require separate license.
- **ENGRAVING add-on** - allows driving three 8SMC1-USBhF controllers connected in schematic “XYZ translator + laser beam shutter”. Included in SMCview inside “Extras” menu, may require separate license.
- **3D Motion** - allows driving three 8SMC1-USBhF controllers connected in schematic “XYZ translator”. Included in SMCview inside “Extras” menu, may require separate license.
- **ATTENUATOR** program – this separate program allows driving Standa Motorized Variable Wheel Attenuator (10MWA168, 10MCWA168). By default shipping only with Standa motorized attenuator. May require separate license.



**ATTENUATOR** program main screen example



Power supply  
PUP120-17-B1

A 12V – 36V, 1.5A – 3.34 A power supply is required to operate the controller. You can use your own power supply or purchase the following STANDA power supplies:

- model "PSA18U-120" (12V; 1.5A)
- model "PSC30U-120" (12V; 2.5A)
- model "EA1050D-240" (24V; 2.08A)
- model "PUP120-17-B1" (36V; 3.34A).

**Specifications of power supplies see in page 8-68**

## Ordering information

Examples of codes for **8SMC1-USBhF** series controllers:

**8SMC1-USBhF**

**8SMC1-USBhF-B1-1**

**8SMC1-USBhF-B1-1MC**

**8SMC1-USBhF-B2-2**

**8SMC1-USBhF-B2-2MC**

**8SMC1-USBhF-B2-3**

**8SMC1-USBhF-B2-4**

**USB Cable**

**8CA9(F) - 15(M)**

– Controller Board

– 1 axis Controller

– 1 axis Controller with external wired remote control

– 2 axis Controller

– 2 axis Controller with knobs for manual control on box front panel

– 3 axis Controller

– 4 axis Controller

– Cable to Computer

– Cable from Controller to Standa

actuator - standard length is 1.5 m, other lengths by request

**Wirring diagram of 8CMA9(F)-15(M) at the [www.standa.lt](http://www.standa.lt)**

## IMPORTANT INFORMATION

**Warning:** The Power driver IC fin (rear) is electrically connected to the rear of the chip. When current flows to the fin, the Power driver IC malfunctions. If there is any possibility of a voltage being generated between the ground of the 8SMC1-USBhF and the fin, either ground the fin or insulate it.

**Warning:** There are appreciable power dissipation on Power driver (up to 6 W depending on input voltage and rated current of stepper motor). Appropriate heatsink must be used to maintain temperature range. Heating the Power driver over 85 °C is forbidden!

**Warning:** Current sense resistors must be chosen for every stepper motor according to its rated current and connection diagram. For more details see 4.2.1. of User Manual. Wrong current sense resistors can cause the malfunction of 8SMC1-USBhF or damage stepper motor.

**Warning:** There is some power dissipation on Voltage regulator (up to 0.5 W depending on input voltage). Appropriate heatsink may be required. Heating the Voltage regulator over 85 °C is forbidden!

**Warning:** 8SMC1-USBhF power supply must never exceed 36 V. Power driver can be damaged if such exceeding happened.

**Warning:** If a single power supply mode is used, make sure that input voltage is not exceeding 12 V. Otherwise the overheating of the Voltage regulator may happen. Heating the Voltage regulator over 85 °C is forbidden!

**Warning:** Make sure that there are no contact between stepping motor phase windings and 8SMC1-USBhF ground. Power driver will be damaged obligatory if such grounding present.

**Warning:** You must never connect to, or disconnect from the 8SMC1-USBhF any stepping motors while the controller keeps currents in the motor windings. Power driver can be damaged if such reconnection happened.

Optical  
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& Rails

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Positioners

Base  
Positioners

Translation &  
Rotation  
Stages

Motorised  
Positioners &  
Controllers

Fine  
Adjustment  
Screws

Opto-  
Mechanics &  
Sets

Light Test &  
Measurement  
Instruments

8-62



# Stepper Motor Controllers with RS232 Interface

- PWM chopper type current control (up to 1.5 A per phase)
- Resolution: full step, 1/2, 1/4, 1/8
- Speed: up to 5000 steps/s
- Examples of control programs included
- Set of virtual instruments for National Instruments LabView included
- RoHS compliant

## SPECIFICATIONS

### Electrical

- Targeted for bipolar, two phase stepper motors with a current rating of 0.25A to 1.5 A. The current limit value is set by the manufacturer
- Power supply voltage ranges from 12V to 36V
- Synchronization Input and Output
- Galvanic isolation of Synchronization Input and Output

### System Expansion

- Available only for circuit card assembly (CCA) version – refer to “Ordering of 8SMC3-RS232 series controllers PCB board” for additional information

### Motion

- Resolution: full step, 1/2, 1/4, 1/8
- Speed: 2-5000 steps/s
- Programmable speed and trip points
- Programmable acceleration and deceleration ramps
- Soft start/stop mode

### Control

- Control via RS232 interface
- 3 button “front panel” control. For more information refer to “Manual control of 8SMC3-RS232 series”
- Capable of connecting two programmable limit switches for every axis

### Programming

- Serial communications command system for Windows, Linux and most other operating systems. Host is “master” and controllers are addressable “slaves”. Programming examples included
- Drivers and dynamic link library for Windows host programming
- Set of virtual instruments for National Instruments LabView

### Mechanical

- Operating temperature range: 0 to 70°C
- Box size for 1-axis controller : 90 x 140 x 70 mm (B1)
- Box size for 2 and more axis controller : 180 x 185 x 90 mm (B2)

Useful possibility is to send commands to 8SMC3-RS232 using **Programmable Logic Controller (PLC)**.



8SMC3-RS232-B1-1



8SMC3-RS232-B2-2



8SMC3-RS232-B2-3



8SMC3-RS232-B2-4





## Manual control on 8SMC3-RS232 series

The **8SMC3-RS232-B1-1MC** comes with a 3-button manual control panel. The three buttons are located on the top panel and are labeled “Step Forward”, “Step Backward”. Two LED indicators show direction of movement. The LED’s will also indicate when a limit switch has been tripped.

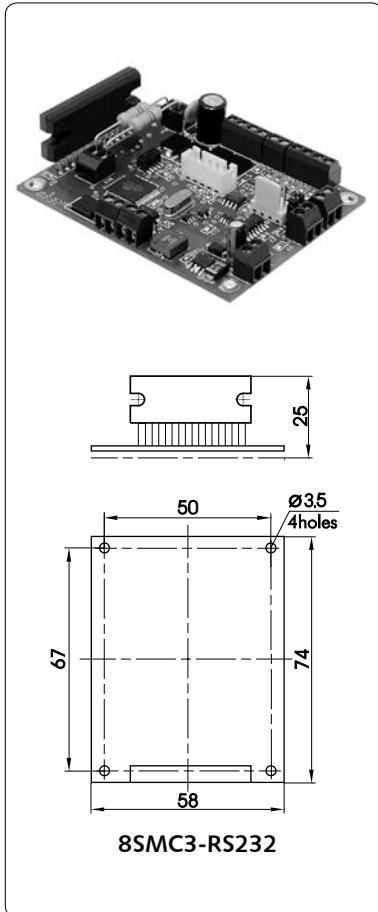
This manual control option is often used for calibration and stepper motor control when a computer is not easily accessed.



**8SMC3-RS232-B1-1MC**

## Ordering of 8SMC3-RS232 series circuit card assemblies (CCA)

STANDA offers multiple configurations of the **8SMC3-RS232** circuit card assemblies for flexibility in building custom systems. Note that the current limit values are set by the manufacturer before the controller leaves the factory, but are user adjustable. Multiple CCA controllers can be serially connected to a single RS232 COM port for multi-axis systems. Each board will also come with a heatsink for the motor driver IC.



## Ordering information

Examples of codes for **8SMC3-RS232** series controllers:

**8SMC3-RS232**

– Controller Board

**8SMC3-RS232-B1-1**

– 1 axis Controller

**8SMC3-RS232-B1-1MC**

– 1 axis Controller

with manual control option

– 2 axis Controller

– 3 axis Controller

– 4 axis Controller

– Cable to Computer

– Cable from Controller to Standa actuator - standard length is 1.5 m, other lengths by request

**8SMC3-RS232-B2-2**

**8SMC3-RS232-B2-3**

**8SMC3-RS232-B2-4**

**RS232 Cable**

**8CA9(F) - 15(M)**

**Wirring diagram of 8CMA9(F)-15(M) at the [www.standa.Lt](http://www.standa.Lt)**



**Power supply EA1050D-240**

A 12V – 36V, 1.5A – 3.34 A power supply is required to operate the controller. You can use your own power supply or purchase the following STANDA power supplies:

model “PSA18U-120” (12V; 1.5A)

model “PSC30U-120” (12V; 2.5A)

model “EA1050D-240” (24V; 2.08A)

model “PUP120-17-B1” (36V; 3.34A).

**Specifications of power supply see in page 8-68**

Optical  
Tables

Brackets  
& Rails

Base  
Mounts &  
Accessories

Optical  
Mounts

Optical  
Positioners

Base  
Positioners

Translation &  
Rotation  
Stages

Motorised  
Positioners &  
Controllers

Fine  
Adjustment  
Screws

Opto-  
Mechanics &  
Sets

Light Test &  
Measurement  
Instruments



# Stepper Motor Controllers with manual control

- PWM chopper type current control (up to 0.25 A per phase)
- Resolution: full step, 1/2, 1/4, 1/8 – selectable by DIP switches
- Version with speed from 300 to 600 steps/s – tunable by trimmer
- LED indicators of status
- RoHS compliant

## SPECIFICATIONS

### Electrical

- Targeted for bipolar, two phase stepper motors with current ratings of 0.25A. Current limit value setting is done during controller manufacturing
- Power supply voltage 12V (nominal)

### System Expansion

- Available for CCA version – refer to “Ordering of 8SMMC2 series circuit card assemblies (CCA)” for additional information

### Motion

- Resolution: full step, 1/2, 1/4, 1/8
- Speed: 300-600 steps/s

### Control

- “Front panel” manual controls
- Capable of connecting two limit switches for every axis

### Mechanical

- Operating temperature range: 0 to 70°C
- Box size for 1-axis controller : 80 x 130 x 65 mm (B1)
- Box size for 2 axis controller : 90 x 200 x 60 mm (B2)



8SMMC2-B1-1



8SMMC2-B2-2

## Ordering of 8SMMC2 series circuit card assemblies (CCA)

It is possible to order circuit card assemblies of the **8SMMC2** series controllers building custom systems. The current limit values are initially set by the manufacturer, but can be user adjustable. Warranty and support options for CCA version may vary.

## Ordering information

Examples of codes for **8SMMC2** series controllers:

- |                    |   |
|--------------------|---|
| <b>8SMMC2</b>      | - Circuit card assembly (CCA)                         |
| <b>8SMMC2-B1-1</b> | - 1 axis Controller - 0.25A max motor current setting |
| <b>8SMMC2-B2-2</b> | - 2 axis Controller - 0.25A max motor current setting |

## Power Supplies

A 12V, 1.5A power supply is required to operate the controller. You can use your own power supply or purchase the following STANDA power supplies:

- model “PSA18U-120” (12V; 1.5A)
- model “PSC30U-120” (12V; 2.5A).

Specifications of power supply see in page 8-68



Power supply PSA18U-120



## Motorized Vertical Drive Optical Mount 8MKVDOM-1



8MBM24-1-2

**Motorized Kinematic Mirror/Beamsplitter Mount**

8MBM21-1-2

**Motorized Kinematic Mirror/Beamsplitter Mount**

2 axis step motor Manual Controller in box 8SMMC2-B2-2

## Brushed DC Servo Motor Controller with USB Interface

**NEW****8DCMC3-USB  
series**

- Full featured Windows software included
- Virtual serial port communication using FTDI drivers for Windows and for other OS

**8DCMC3-USB** is a high end controller for brushed DC servo motors. This controller is a great solution for almost all DC brushed motors up to 100W that are equipped with encoder or potentiometer feedback. Multiple units can be connected to a single PC via standard external USB hub for multi-axis motion control applications. The **8DCMC3-USB** utilizes well known FTDI virtual COM-port technology and supports Windows Vista, Windows XP, Windows Server 2003, Windows 2000, Windows ME, Windows 98, Linux, Mac OS X, Mac OS 9, Mac OS 8, Windows CE.NET etc. Included control software provides a fully featured suite of tools for Windows that allows immediate and easy out-of-the-box configuration and use of the **8DCMC3-USB**. Using the software interface, you are able to select which controller in your system you want to control and then monitor the critical parameters.

**SPECIFICATIONS**

Input Power	external 12V...36V DC up to 3A
Motor Output Power	up to 36V/3A, 100W
Operating Modes	position, velocity, tune-up, loft compensation
Control Algorithm	PID
Velocity Profile	trapezoidal
Position Count	32 Bit
Feedback	incremental encoder, potentiometer and limit switches
Feedback Bandwidth	200 kHz
Number of multiple axis	128



# Brushed DC Servo Motor Controllers with USB Interface

## 8DCMC1-USB series

- USB powered
- Compact
- Full featured Windows software included
- Virtual serial port communication using FTDI drivers for Windows and for other OS
- RoHS compliant

### SPECIFICATIONS

Input Power	USB, external 12V DC up to 500mA
Motor Output Power	up to 12V/500mA, 6W
Operating Modes	position, velocity, tune-up, loft compensation
Control Algorithm	PID
Velocity Profile	trapezoidal
Position Count	32 Bit
Feedback	incremental encoder, potentiometer and limit switches
Feedback Bandwidth	200 kHz
Size of 1-axis box	35 x 80 x 20 mm
Number of multiple axis	128

**8DCMC1-USB** is a compact, low cost USB powered controller for brushed DC servo motors. This controller is a great solution for almost all compact DC brushed motors up to 6W that are equipped with encoder or potentiometer feedback. Multiple units can be connected to a single PC via standard external USB hub for multi-axis motion control applications.

**8DCMC1-USB** utilizes well known FTDI virtual COM-port technology and supports Windows Vista, Windows XP, Windows Server 2003, Windows 2000, Windows ME, Windows 98, Linux, Mac OS X, Mac OS 9, Mac OS 8, Windows CE.NET etc. Included control software provides a fully featured suite of tools for Windows that allows immediate and easy out-of-the-box configuration and use of the **8DCMC1-USB**. Using the software interface, you are able to select which controller in your system you want to control and then monitor the critical parameters.



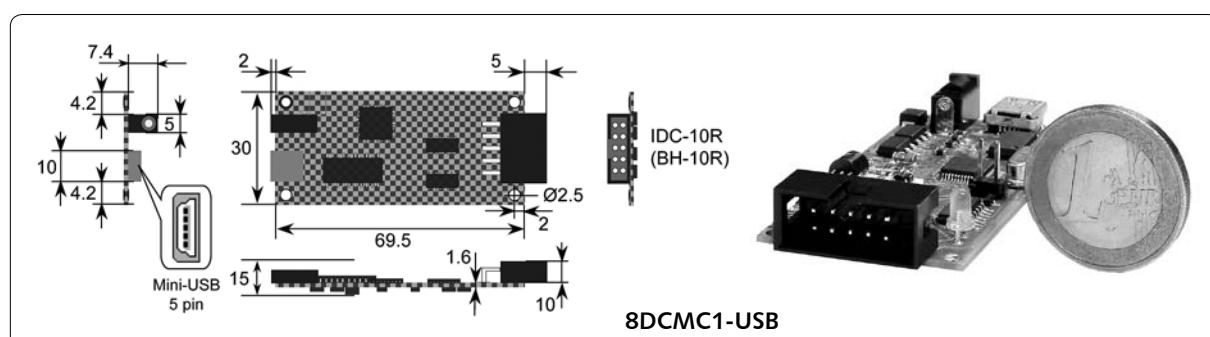
**8DCMC1-USB-B1-4**  
4 axis controller



### Ordering information

- 8DCMC1-USB**      - Controller board  
**8DCMC1-USB-B1-1**    - 1 axis Controller

up to  
128 axis!!!



standa	Optical Tables	1
	Brackets & Rails	2
	Base Mounts & Accessories	3
	Optical Mounts	4
	Base Positioners	5
	Optical Positioners	6
	Translation & Rotation Stages	7
	Motorised Positioners & Controllers	8
	Fine Adjustment Screws	9
	Opto-Mechanics Sets	10
	Light Test & Measurement Instruments	11

## Power Supplies for Standa Controllers

**Power supply PSA18U-120**

12 V; 1.5 A  
98.5 x 55 x 31.5 mm  
200 g  
connector "2.1/5.5"

**Power supply EA1050D-240**

24 V; 2.08 A  
120 x 60 x 35 mm  
500 g  
connector "2.1/5.5"

**Power supply PSC30U-120**

12 V; 2.5 A  
98.5 x 55 x 31.5 mm  
250 g  
connector "2.1/5.5"

**Power supply GS60A24-P1J**

24 V; 2.5 A  
125 x 50 x 31.5 mm  
310 g  
connector "2.1/5.5"

**Power supply PUP120-17-B1**

36 V; 3.34 A  
167 x 65 x 37 mm  
500 g  
connector "2.1/5.5"

Standa stepper motors and DC motor controllers require properly matched power supplies for operation.

### Current requirements for stepper motor controller power supplies:

During operation, current consumption will vary depending upon how the controller is being used. Before shipment, our controllers are calibrated to the rated current of the motors they are to be used with. If you do not specify a motor, the controllers will be calibrated to a factory default value. Due to Pulse Width Modulation (PWM) our controllers usually consume less current than the rated current of mo-

tors. However, to avoid problems during worst case scenarios, we recommend selecting a power supply with a max current not less than the rated current of motors that will be connected to the controller. In case of multi-axis controllers you will need to sum the current of all controllers connected to the power supply.

### Requirements for stepper motor controllers power supply voltage:

Our stepper motor controllers are a "chopper drive" type. This means that in the initial phase of the motor step our controller will apply significantly higher voltage to motor winding than will occur in other drive types. This method allows stepper motors to be driven with higher torque at higher speeds. It

should also be noted that stepper motor parasitic resonant effect behavior ("bad" frequencies position, for example) depends on supply voltage. Minimal allowable DC voltage of our stepper motor controllers is 12V and maximum is 36V, both of which we keep in stock.