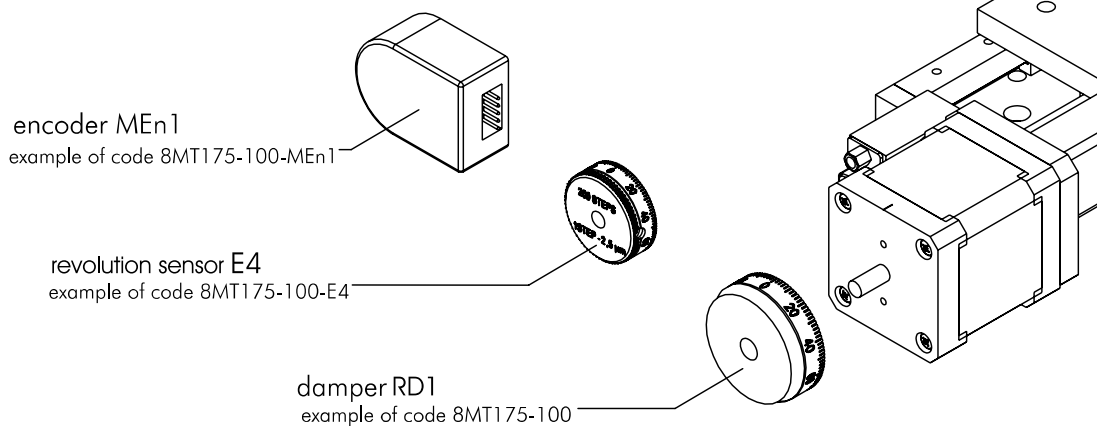


## ORDERING INFORMATION for Motorized Translation and Rotation stages



### DEFAULT CHOICE

Default choice for **ordering motorized translation** or **rotation** stages is with **damper RD1**. When **damper RD** is used, **vibrations** and **motor noise** is greatly **reduced**, **settling time** is **improved** and **system resonances** are **suppressed**.

Example:

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

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



### 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 E4** to the code of motorized stages.



Example:

**8MT175-100-E4** - translation stage **8MT175-100** with **revolution sensor E4**.

**8MR190-2-28-E4** - rotation stage **8MR190-2-28** with **revolution sensor E4**.

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 **8SMC4-USBh** 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 **8SMC4-USBh**. User specific software can get feedback from encoder through Standa controller **8SMC4-USBh** 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**.



**8MR151-1-MEN1**

Rotation stage **8MR151-1** with stepper motor **28** and with **encoder MEN1**



**8MR191-28-E4**

Rotation stage **8MR191** with stepper motor **28** and with **revolution sensor E4**



**8MR190-90**

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



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**INFORMATION**  
about **STANDA** Motors

**STEPPER MOTORS**

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

**STEPPER MOTORS WITH BRAKE**

Model	Wiring scheme	Design Voltage, V	Phase Current, A	Holding Torque, Nm	Detent Torque, mNm	Phase Resistance, Ohm	Inductance, mH	Steps/Revolution	Braking Power
5918-B	bipolar	2.4	2.82	1.05	40	0.85±10%	3.6±20%	200 (1.8°)	0.4 Nm; 24 V; 10 W

**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
VSS42	bipolar	42	1.2	0.13	5	1.7	200 (1.8°)	
VSS43	bipolar	42	1.2	0.235	7	2.6	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
DCE369751	3.6	0.587	0.3	2	3.5	0.114	120	67:1	16 CPT, 2 channels
DCJ252445	1.8	0.72	0.3	1.2	1.07	0.0216	7	1119:1	-
DCE1524	6	0.021	0.3	1.7	5.1	0.07	35	141:1	256 CPT, 2 channels
DCE RE25	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
DCE1841	6	0.021	0.3	1.7	5.1	0.07	37	134:1	16 CPT, 2 channels



# 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 2-7). 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 **E4** 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

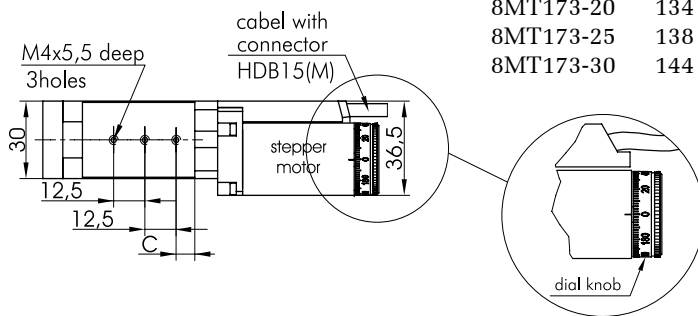
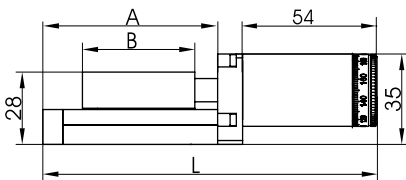
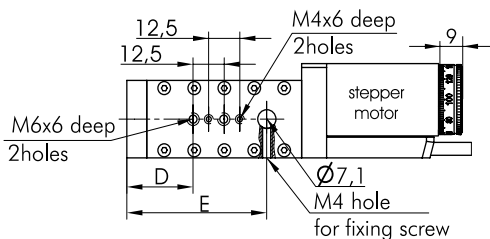
## Narrow Motorized Translation Stage with stepper motor

## 8MT173

*Motorized Stages of Higher Speed available on request*



8MT173-20



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
<b>Assemblies:</b>				
<b>X-Y</b>		<b>2CP173-20</b>		
<b>Z</b>		<b>2AB173-20</b>		

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



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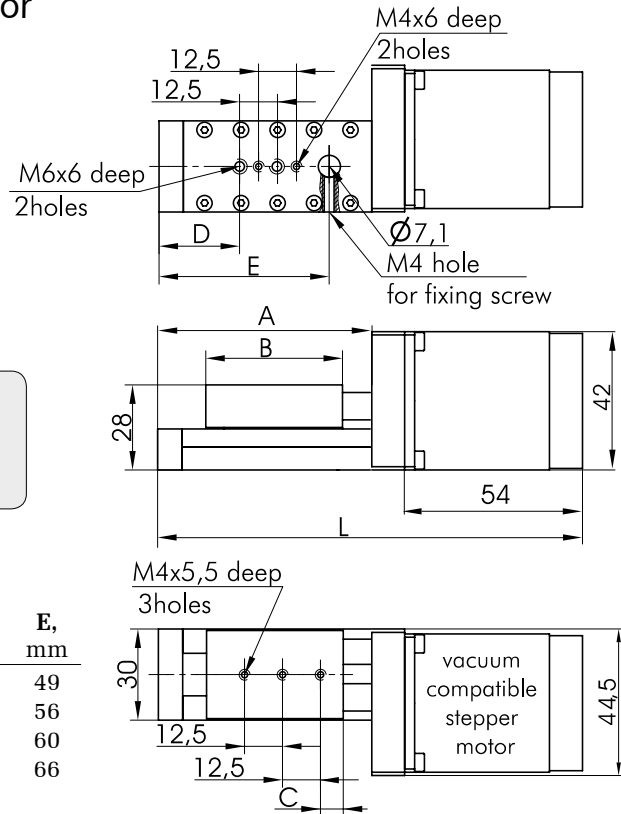
## Narrow Motorized Translation Stage with Vacuum compatible stepper motor

### 8MT173V



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

8MT173V-20-VSS42



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*, $\mu\text{m}$			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
<b>Assemblies:</b>				
X-Y			<b>2CP173V-20</b>	
Z			<b>2AB173V-20</b>	

**\*Test condition:**

- STANDA controllers;
- Power supply - 36V.

## Recommended Controllers

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



**8SMC4-USB-B8-1**  
1 axis Controller in box



**8SMC4-USB-B9-2**  
2 axis Controller in box





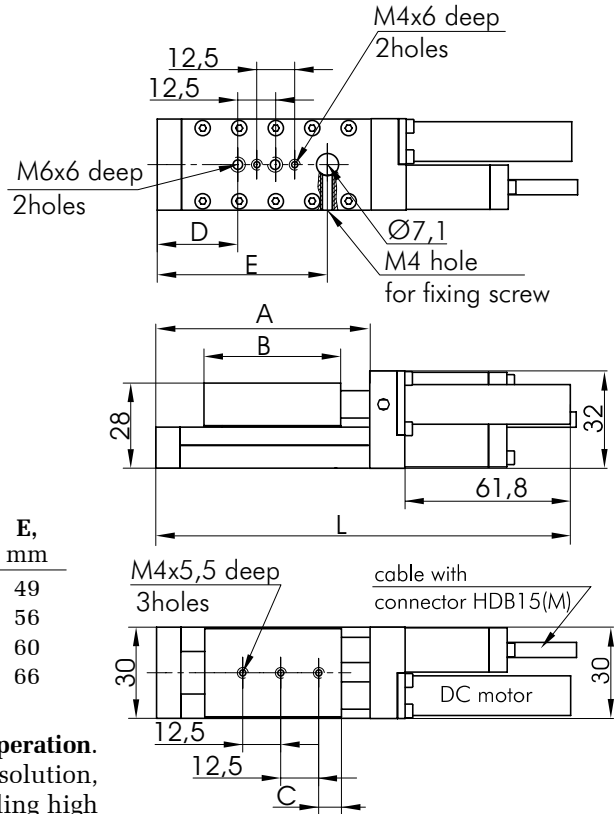
Narrow Motorized Translation Stage

8MT173-DCE2

with DC motor



8MT173-20DCE2



Model	L, mm	A, mm	B, mm	C, mm	D, mm	E, mm
8MT173-10DCE2	133.5	60	45	7.5	21.5	49
8MT173-20DCE2	143.5	70	45	7.5	26.5	56
8MT173-25DCE2	147.5	74	49	11	30.5	60
8MT173-30DCE2	153.5	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.it](http://www.standa.it)

Three Axis Stepper, BLDC and DC Motor  
Controller 8SMC4-USB-B8-B9  
with  
Power Supply



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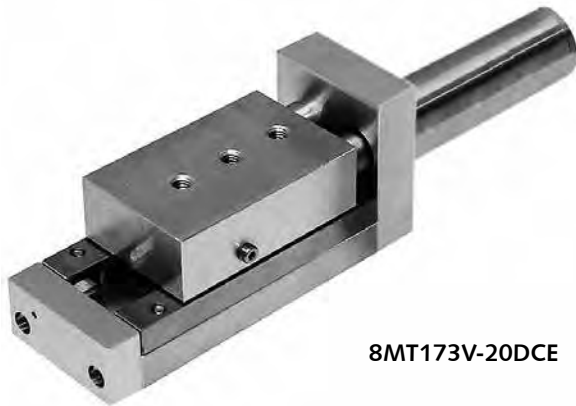
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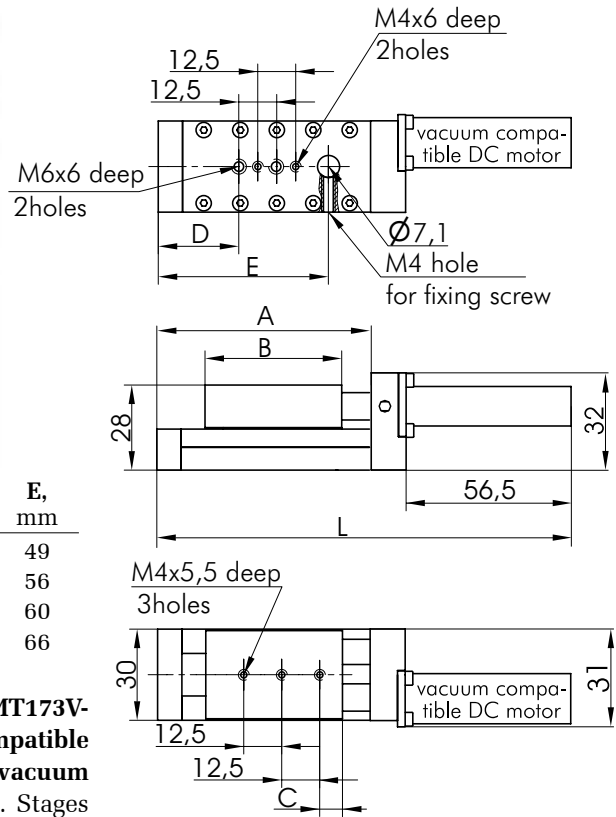
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## Narrow Motorized Translation Stage with Vacuum compatible DC motor

## 8MT173V-DCE



8MT173V-20DCE



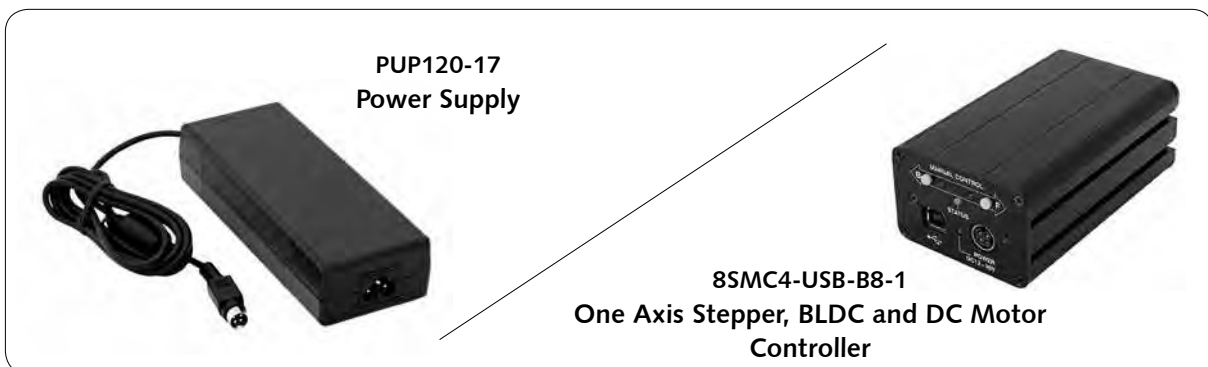
Model	L, mm	A, mm	B, mm	C, mm	D, mm	E, mm
8MT173V-10DCE	128	60	45	7.5	21.5	49
8MT173V-20DCE	138	70	45	7.5	26.5	56
8MT173V-25DCE	142	74	49	11	30.5	60
8MT173V-30DCE	148	80	55	11.5	36.5	66

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
<b>Assemblies:</b>				
X-Y			2CP173V-20	
Z			2AB173V-20	

## Recommended Power Supply and Controller

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



PUP120-17  
Power Supply

8SMC4-USB-B8-1  
One Axis Stepper, BLDC and DC Motor  
Controller





## Narrow Motorized Translation Stage with Vacuum compatible stepper motor

### 8MT30V-50-VSS42

#### SPECIFICATIONS

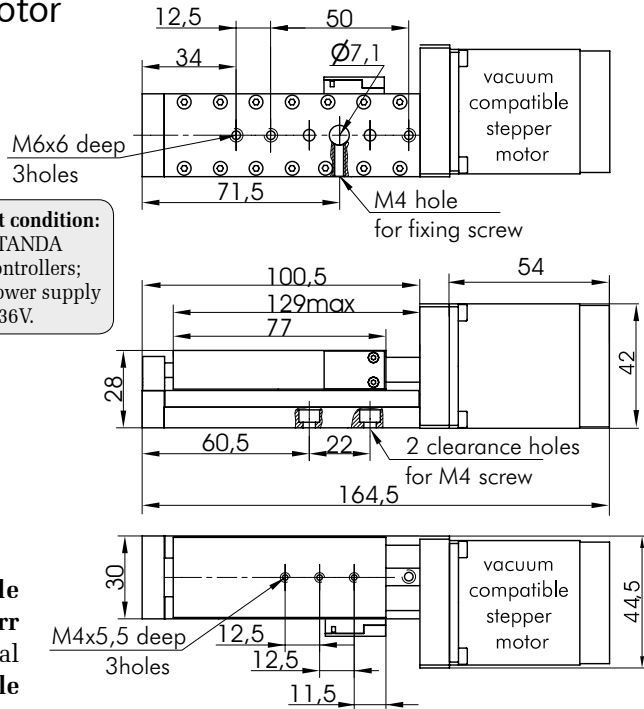
Travel range	50 mm
Lead screw pitch	0.25 mm
Resolution in full step*	1.25 $\mu$ m
Max. speed*	2.5 mm/s
Load capacity	
Horizontal	3 kg
Vertical	1 kg
Fluoroplastic cable	integrated, 2 m length
Motor connector	HDB15(M)
Vacuum compatible stepper motor	VSS42
Weight	0.55 kg

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

#### Assemblies:

<b>XY</b>	<b>2CP173V-50-20</b>
<b>Z</b>	<b>2AB173V-20-50</b>

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.



### Stepper, BLDC and DC Motor Controller

## Narrow Motorized Translation Stage with DC motor

### 8MT30-50DCE

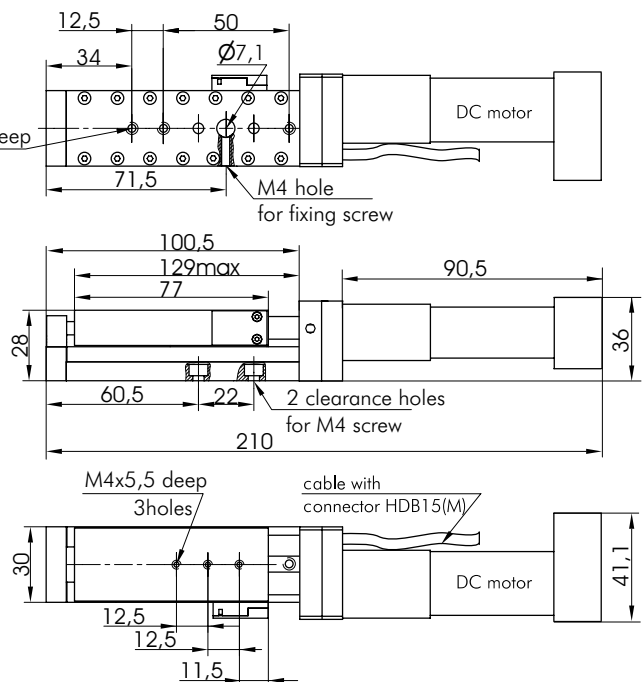
#### SPECIFICATIONS

Travel range	50 mm
Lead screw pitch	0.25 mm
Resolution	0.014 $\mu$ m
Minimal incremental motion	0.1 $\mu$ m
Bi-directional Repeatability	0.4 $\mu$ m
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:

<b>XY</b>	<b>2CP173-50-20</b>
<b>Z</b>	<b>2AB173-20-50</b>

**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.



## Narrow Motorized Translation Stage with Vacuum compatible DC motor

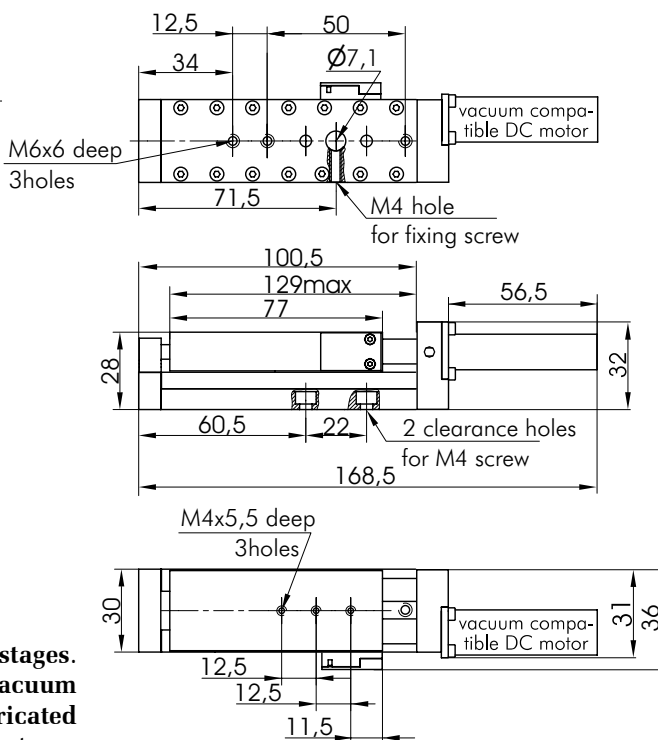
### 8MT30V-50DCE

#### 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.

#### Recommended Controllers

more info on [page 8-79](#)

#### Stepper, BLDC and DC Motor Controller



Close relation between our customers influenced **Standa** to modify its **8SMC1**. Tens of thousands of **8SMC1 stepper motor controllers** take part in the market.

**NEW**

With respect to our users, **Standa** has developed the new controller - **8SMC4** with a **modern design** and **increased functionalities** for **photonics and industrial applications**.



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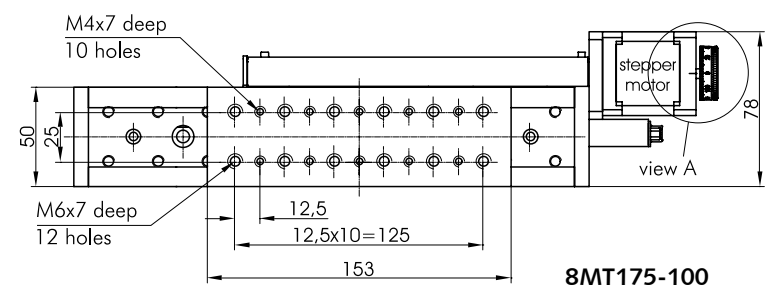
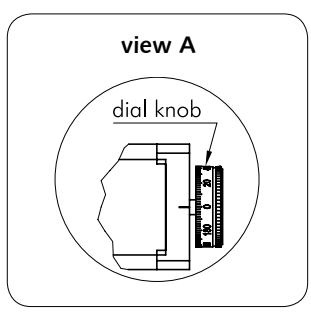
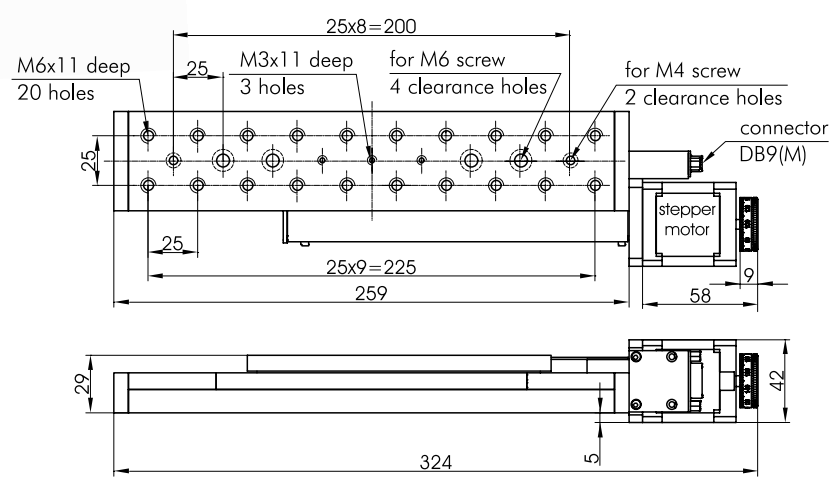
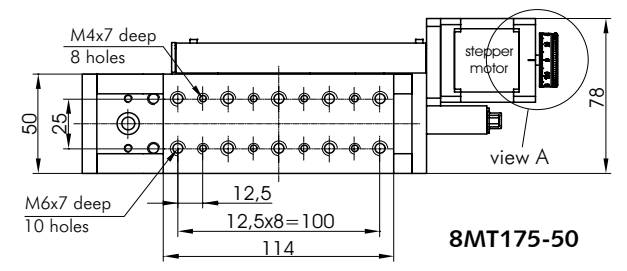
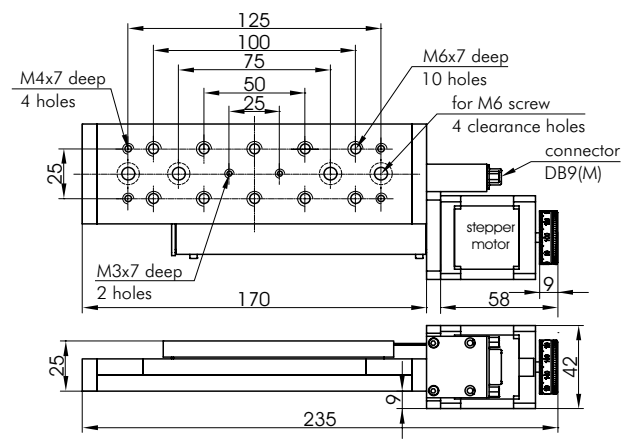
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# Medium Width Motorized Translation Stages

## 8MT175

- 1 Optical Tables
- 2 Brackets & Rails
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- 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
- 12 Lasers & Laser Accessories



- 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

SPECIFICATIONS	8MT175-50	8MT175-100	8MT175-150	8MT175-200
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			8	
Vertical, kg			3	
Motor connector			DB9(M)	
Stepper motor			4247	
Weight, kg	1	1.5	1.5	1.6
<b>Assemblies:</b>				
X-Y			<b>directly</b>	
Z			<b>2AB175</b>	

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

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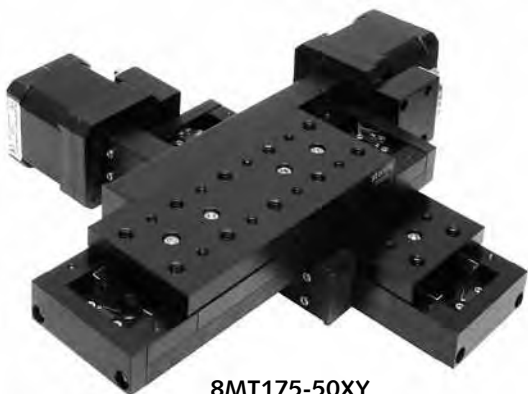


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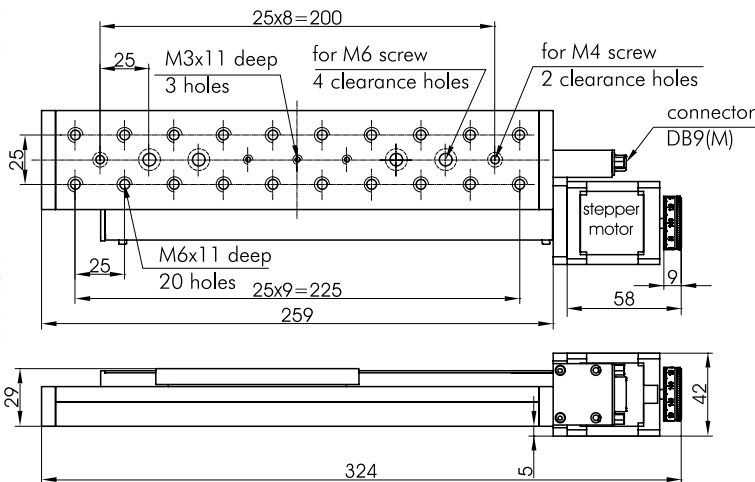


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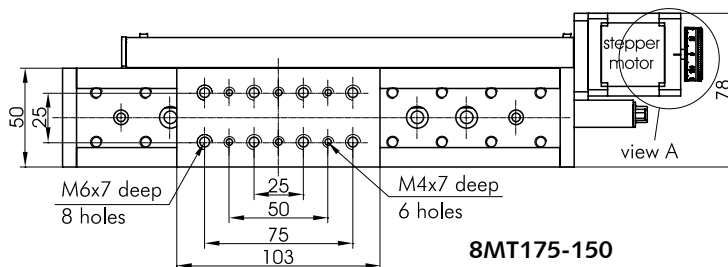
**8MT175-50XY**

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.



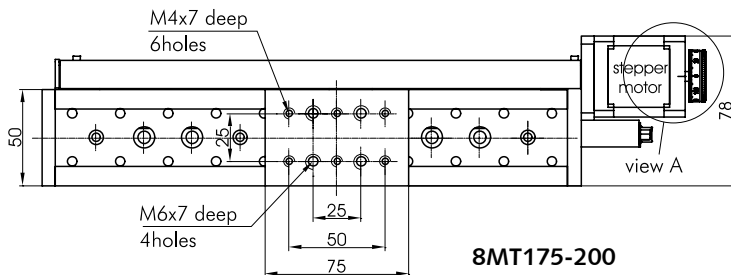
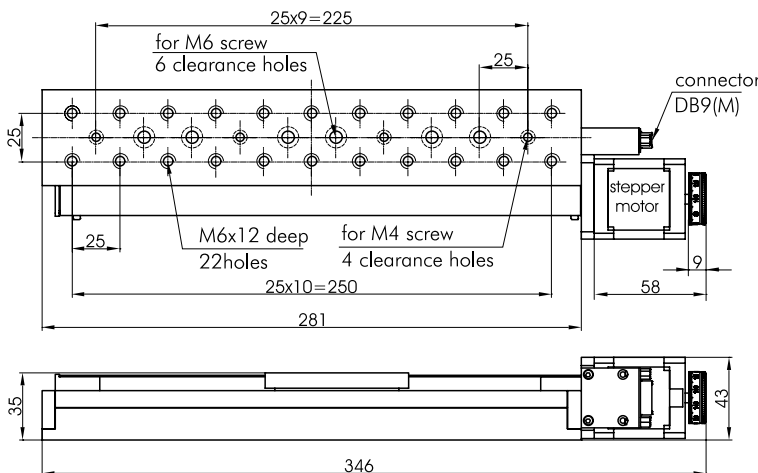
**8MT175-150**



**3UBP175**

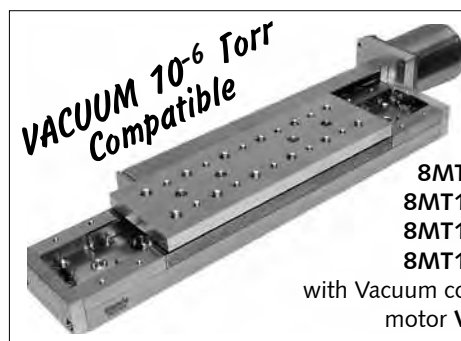
Base Plate 3UBP175 is designed to fix listed translators 8MT175 series to optical tables and other flat surfaces. Fits metric and imperial hole patterns.

Motorized medium width stages have a motor protruding from the bottom. To place such stages on flat surfaces you need a base plate 3UBP175 (see 3-8 page).



**8MT175-200**

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



**VACUUM 10<sup>-6</sup> 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<sup>-6</sup> Torr Compatible DC motor**

- 8MT175V-50-DCE
- 8MT175V-100-DCE
- 8MT175V-150-DCE
- 8MT175V-200-DCE

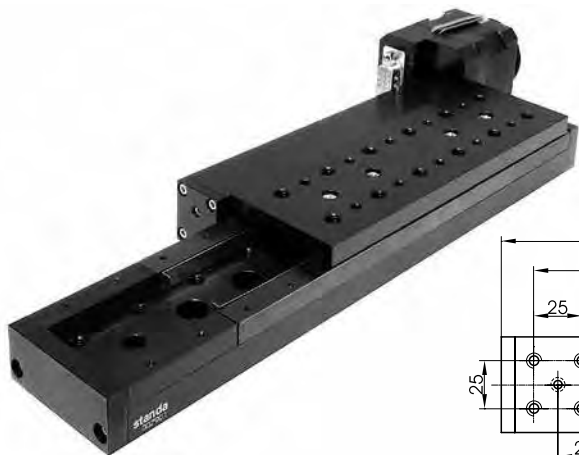
**Available with DC motor**

- 8MT175-50-DCE
- 8MT175-100-DCE
- 8MT175-150-DCE
- 8MT175-200-DCE

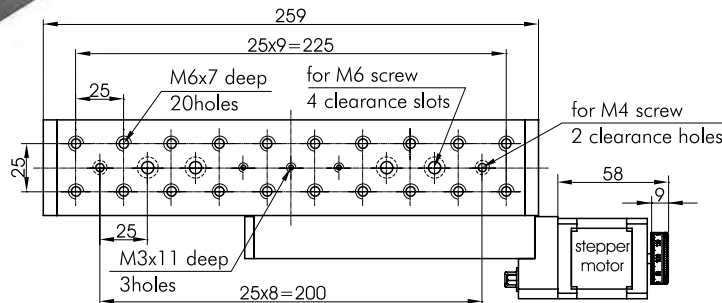


# Motorized Translation Stage

## 8MT177-100

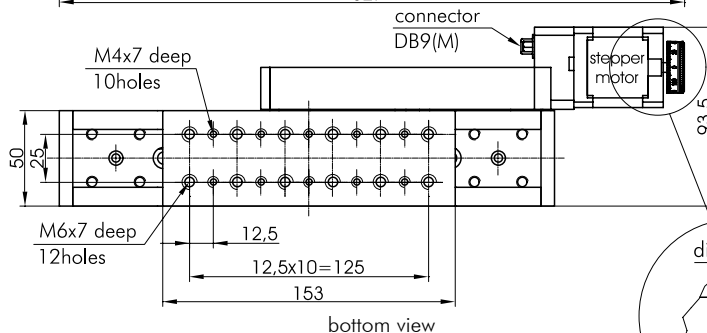
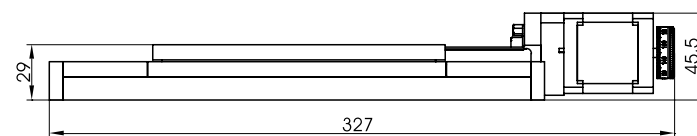


- Narrow
- Compact design
- Resolution 0.125  $\mu\text{m}$  (1/8 step)
- X-Y-Z configurations available
- Motors of other types are available



### SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution in full step*	1 $\mu\text{m}$
in 1/8 step*	0.125 $\mu\text{m}$
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:

<b>X-Y</b>	<b>directly</b>
<b>Z</b>	<b>2AB175</b>

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

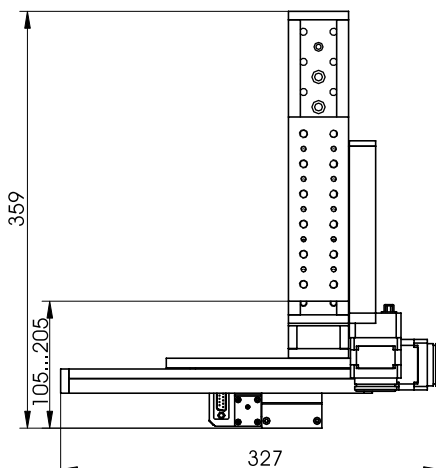
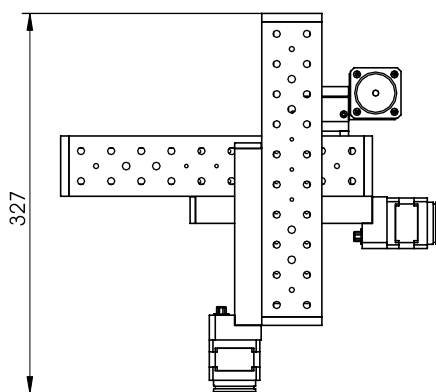


**8SMC4-USB-B8-1**  
 1 axis Controller in box

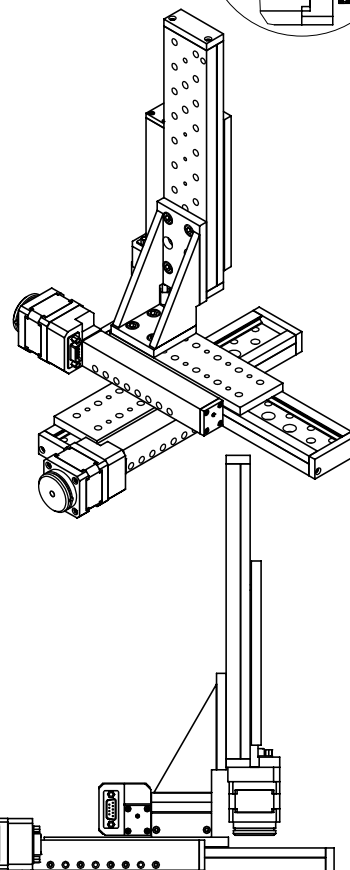
Joystick developed for manual control of one or two-axis all Stepper motor equipped motorizes stages



**8JXY-03**  
 Joystick for 8SMC4-USB controller



**8MT177-100XYZ**





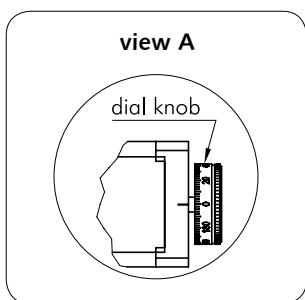
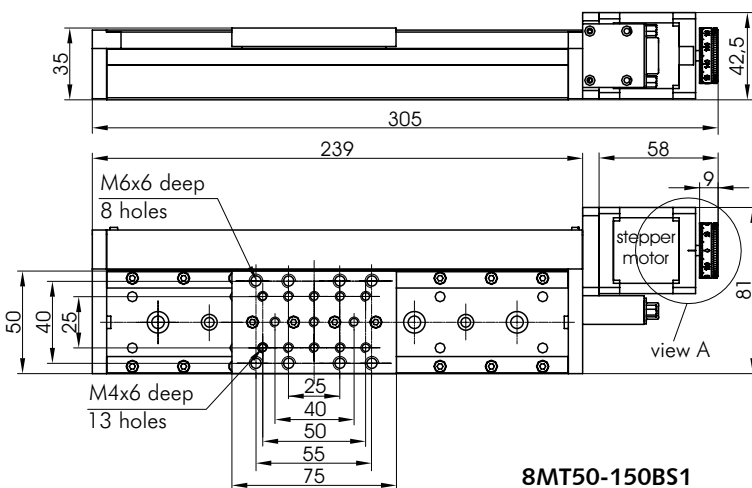
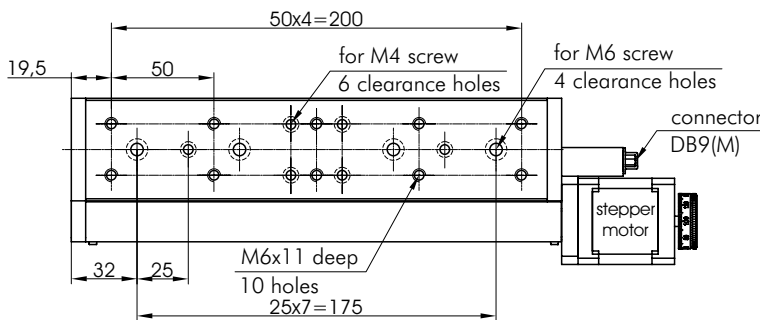
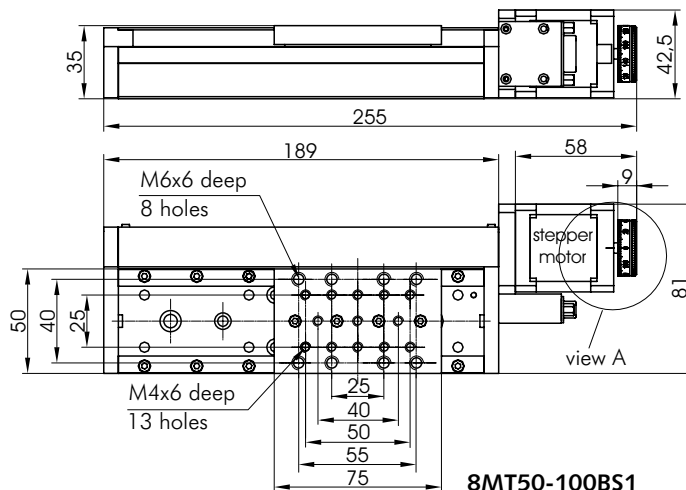
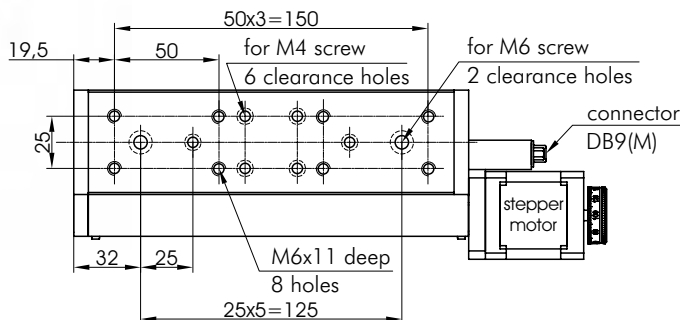
# Motorized Translation Stage

## 8MT50

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



8MT50-200BS1



### SPECIFICATIONS

Travel range

8MT50-100BS1	100 mm
8MT50-150BS1	150 mm
8MT50-200BS1	200 mm

Ball 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
Z	2AB175

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

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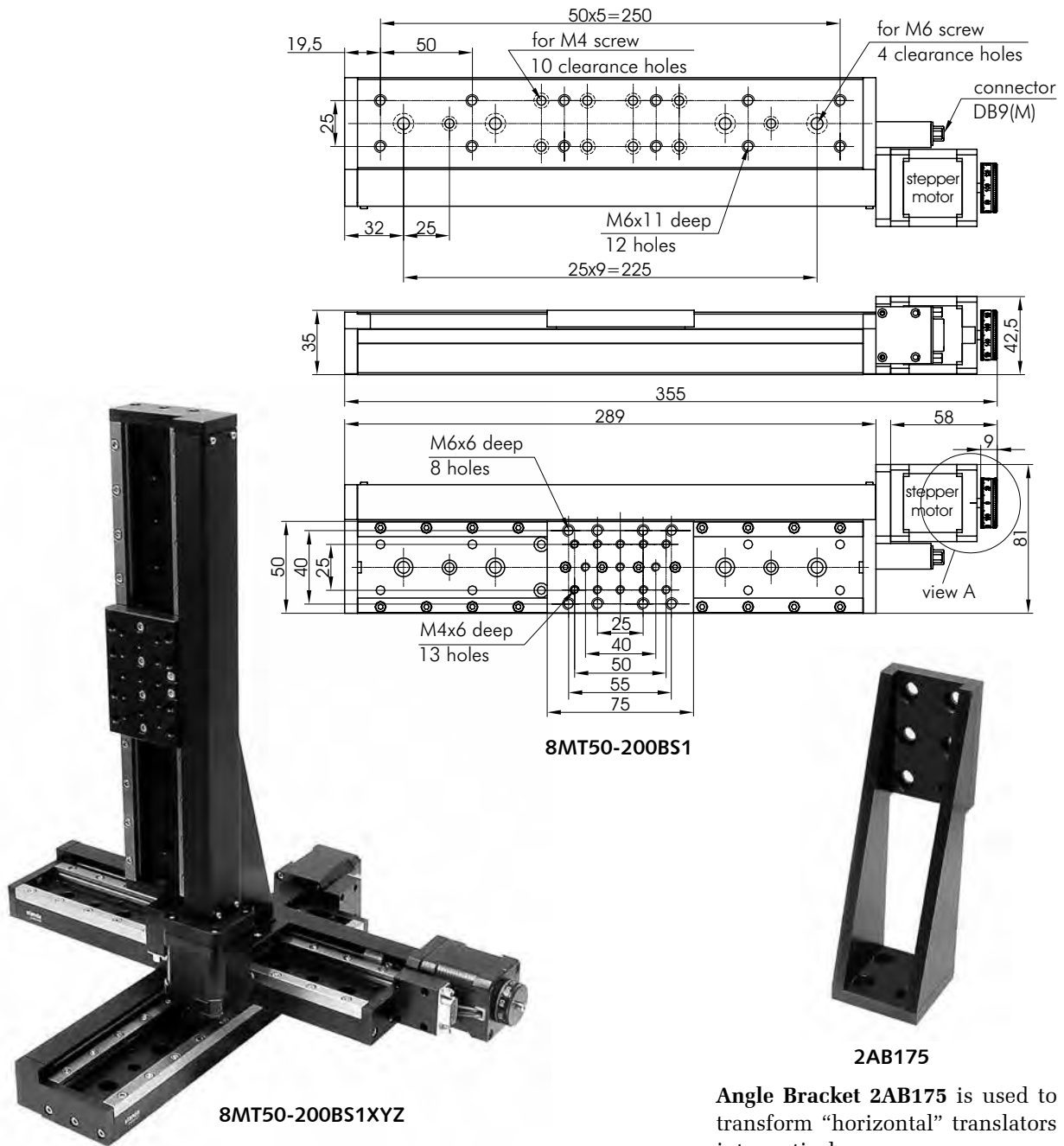
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Opto-Mechanics & Sets	10
Light Test & Measurement Instruments	11
Lasers & Accessories	12



## Recommended Controllers

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

### 8SMC4-36 Universal motion controller/driver

**Universal motion controller/driver 8SMC4-36** is designed especially to control up to 36 mechatronic systems based on standard **DC, Servo, Stepper** or **BLDC technologies**. The housing of **8SMC4-36** has 7U height and can be mounted in standard 19 inch industrial cabinets. Up to six **8SMC4-36** systems can be installed in a standard 42U 19 inch cabinet. This allows to have 216 axes per cabinet which saves space and lets avoid cable clutter.



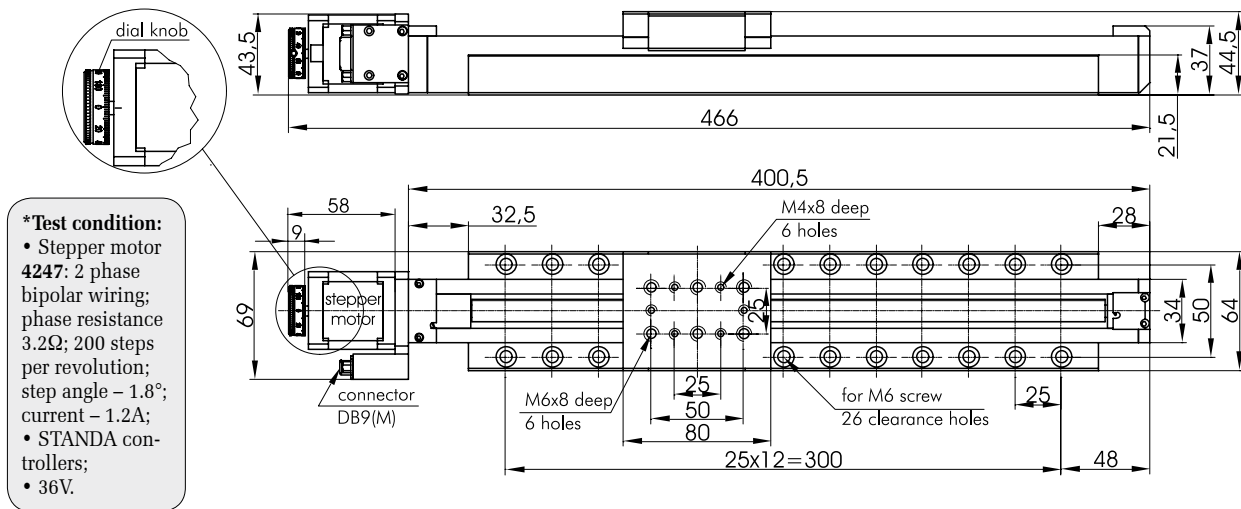
# Motorized Delay Line

**8MT160-300**



- Travel range 300 mm
- Resolution in full step 2.5 μm (0.31 μm (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

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



# Motorized Translation Stage

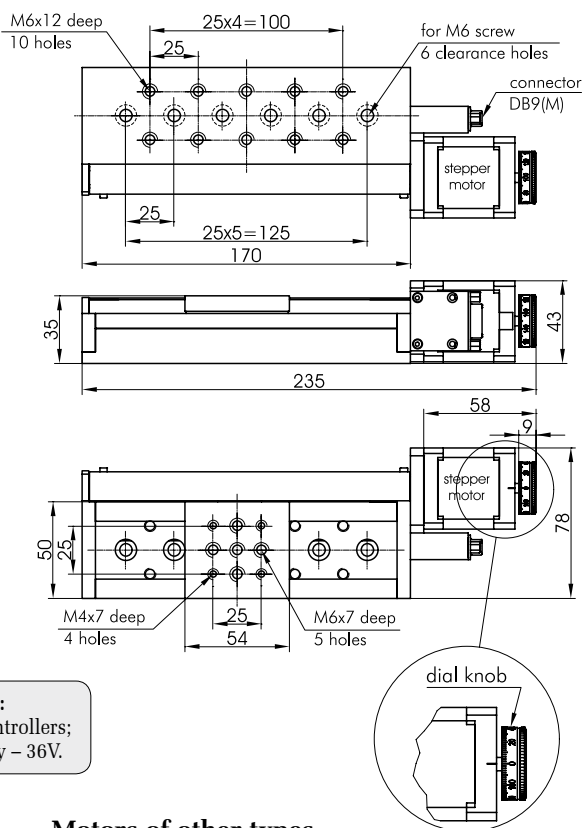
**8MT193-100**



**SPECIFICATIONS**

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution in full step*	2.5 μm
in 1/8 step*	0.31 μm
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

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



**Motors of other types are available.**

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- Optical Tables 1
- Brackets & Rails 2
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- Base Positioners 6
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- Motorised Positioners & Controllers 8
- Fine Adjustment Screws 9
- Opto-Mechanics & Sets 10
- Light Test & Measurement Instruments 11
- Lasers & Laser Accessories 12

# Motorized Translation Stages

**8MT167-25BS1**

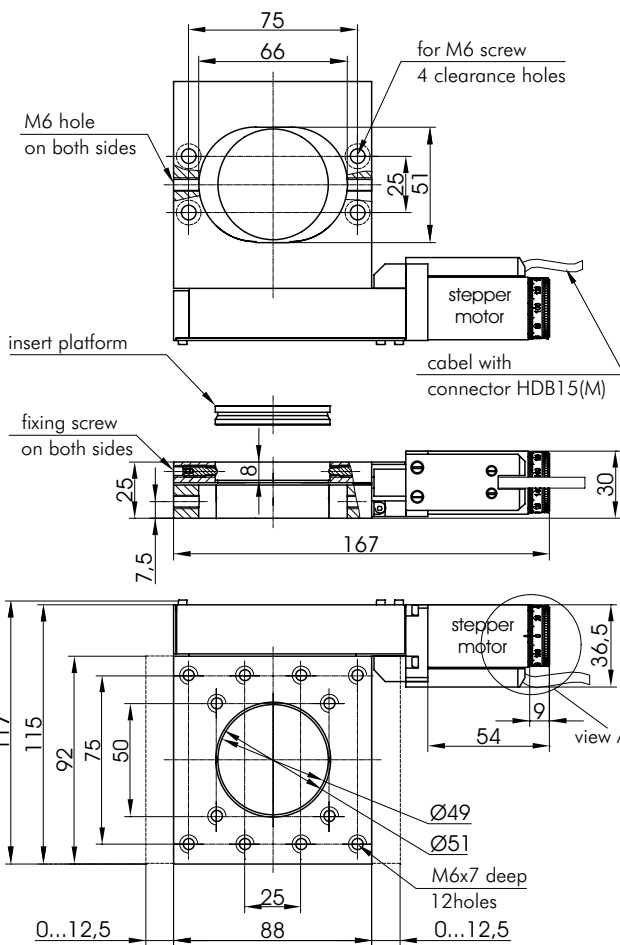
**8MT167-25LS**



8MT167-25BS1/8MT167-25LS

**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 axes. 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

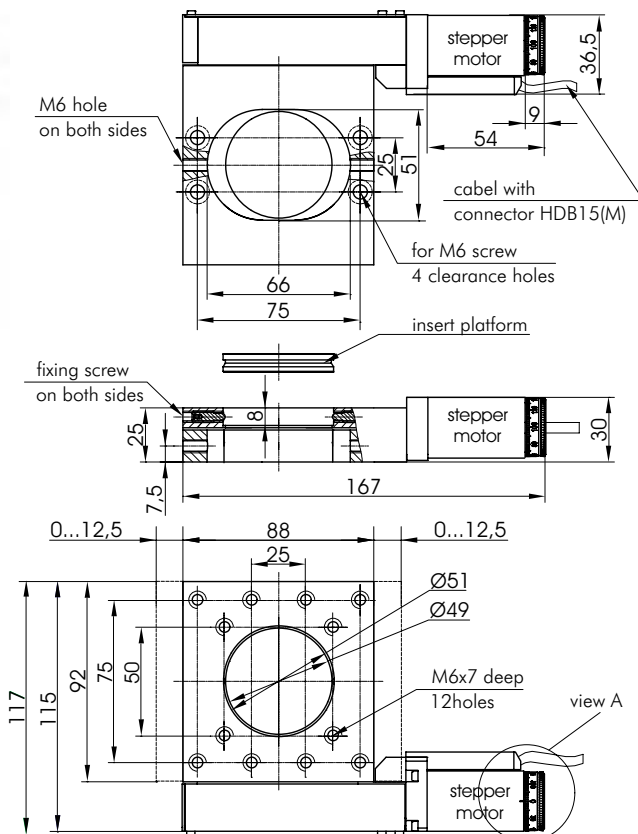
**8MT167M-25BS1**

**8MT167M-25LS**



8MT167M-25BS1/8MT167M-25LS

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



- 1 Optical Tables
- 2 Brackets & Rails
- 3 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
- 12 Lasers & Laser Accessories

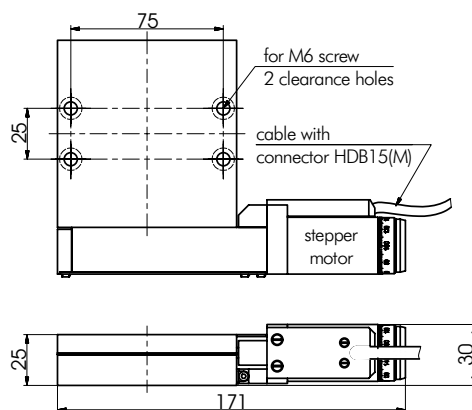


# Motorized Translation Stages

**8MT167S-25BS1**  
**8MT167S-25LS**

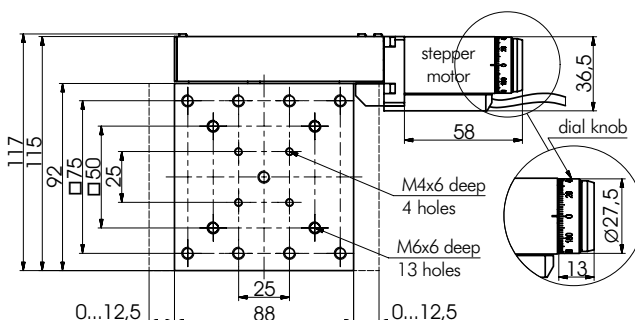


**NEW**



8MT167S-25BS1/8MT167S-25LS

8MT167S-25 models are made with solid platform. 8MT167S-25BS1, unlike the 8MT167S-25LS, is designed for **high-speed movement**. Used ball bearing lead screw makes movement fast and smooth.

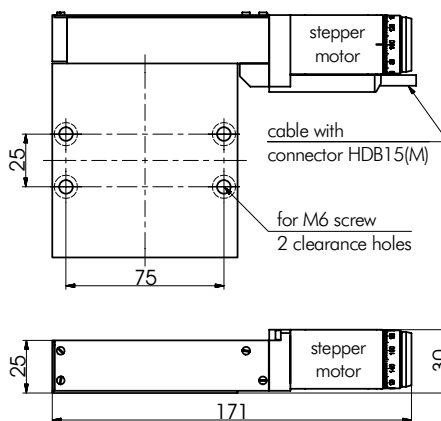


# Motorized Translation Stages

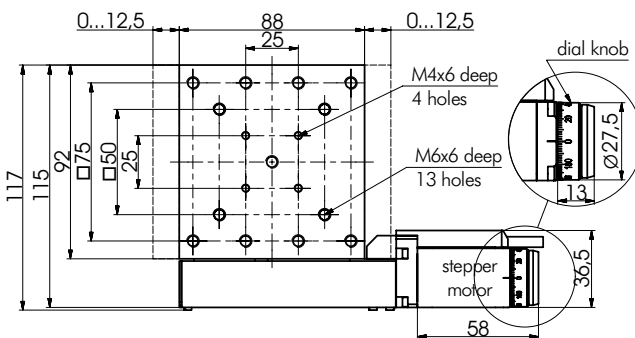
**8MT167MS-25BS1**  
**8MT167MS-25LS**



**NEW**



8MT167MS-25BS1/8MT167MS-25LS



**"Mirror" version of 8MT167S-25BS1 and 8MT167S-25LS**



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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

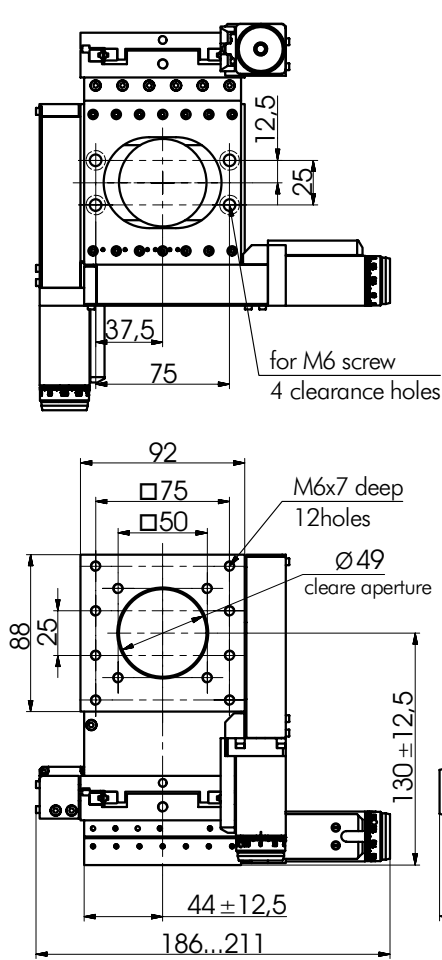
Light Test & Measurement Instruments

11

Lasers & Accessories

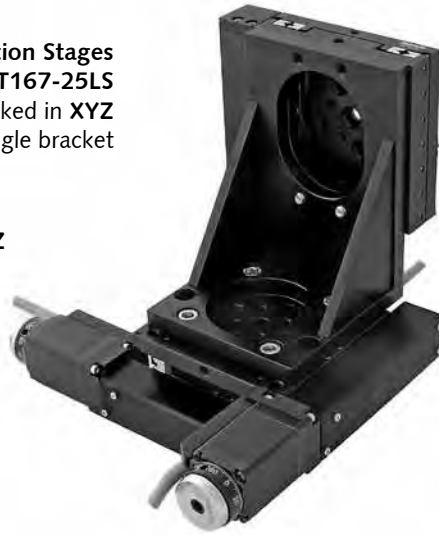
12





**Motorized Translation Stages**  
8MT167-25BS1 or 8MT167-25LS  
stacked in XYZ  
using 2AB167-25 angle bracket

8MT167-25BS1XYZ  
8MT167-25LSXYZ



**Angle Bracket**  
2AB167-25

## SPECIFICATIONS

	8MT167-25BS1 8MT167S-25BS1	8MT167-25LS 8MT167S-25LS
Travel range, mm	25	25
Resolution in full step, $\mu\text{m}$	5	1.25
in 1/8 step, $\mu\text{m}$	0.625	0.156
Ball screw pitch, mm	1	–
Lead screw pitch, mm	–	0.25
Repeatability, $\mu\text{m}$	1.5	1
Maximum speed, mm/s	25	6
Maximum load capacity		
Horizontal, kg	30	30
Vertical, kg	7	7
Limit switches	2 pc mechanical	
Type of actuator	–	
Cable	1.6 m length	1.6 m length
Motor connector	HDB15(M)	HDB15(M)
Stepper motor	28	28
Weight, kg	0.8	0.8

## Recommended Power Supply and Controller

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

**Stepper, BLDC and DC Motor Controller with USB Interface**

2 axis Controller in box  
8SMC4-USB-B9-2

Assembly kit  
5AK-B9-B9

Assembly kit to fix two  
or more controller boxes together

# Motorized Translation Stages

## 8MT167-100

Motorized translation stages series **8MT167-100** and **8MT167S-100** is designed to have a low profile large platform with high stability. The large platform also provides more space for mounting optical elements and other equipment.

**8MT167S-100** models are made with solid platform.

Movement is produced by stepper or DC motor through reduction gear and lead screw. Reduction gear provides better resolution compared to direct drive stages.

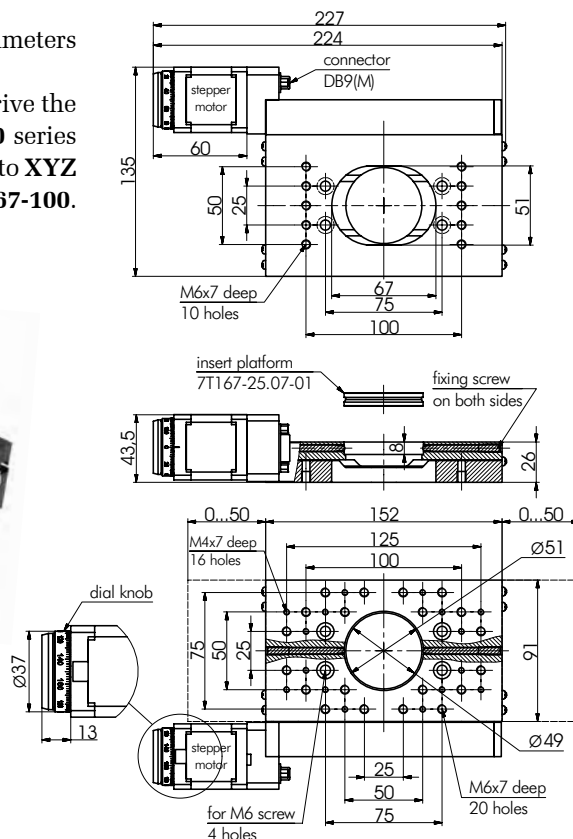
Each unit is supplied with specification of electrical parameters and connection diagram of the motor.

We offer a range of stepper and DC motor controllers to drive the stages, see page 8-23. To assemble stages of **8MT167-100** series into **XY** use connecting plate **2CP167-100**. To assemble into **XYZ** use connecting plate **2CP167-100** and angle bracket **2AB167-100**.



8MT167-100

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



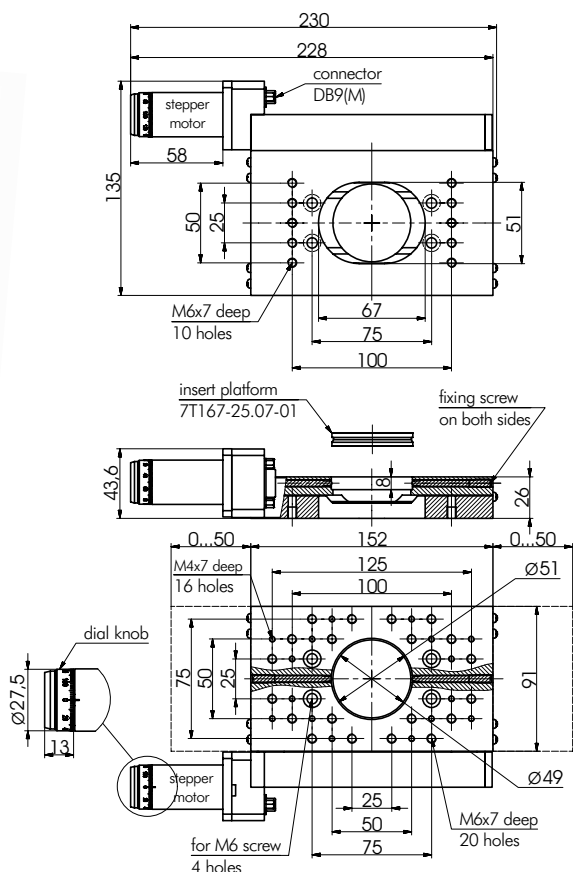
## 8MT167-100C28

### Motorized Translation Stage



8MT167-100C28

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



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Optical  
Tables

1

Brackets  
& Rails

2

Base  
Mounts &  
Accessories

3

Optical  
Mounts

4

Optical  
Positioners

5

Base  
Positioners

6

Translation &  
Rotation  
Stages

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Controllers

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Fine  
Adjustment  
Screws

9

Opto-  
Mechanics &  
Sets

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Light Test &  
Measurements  
Instruments

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Lasers &  
Accessories

12

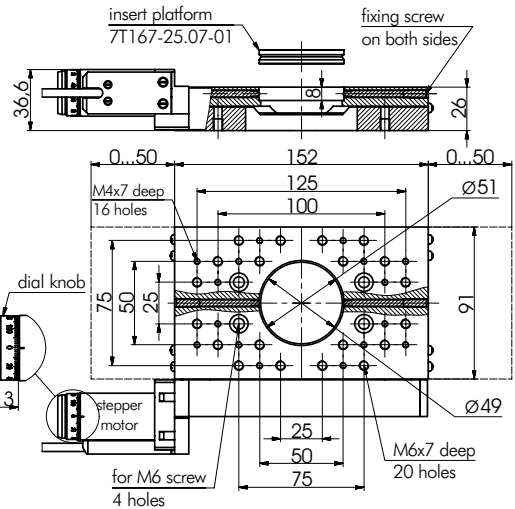
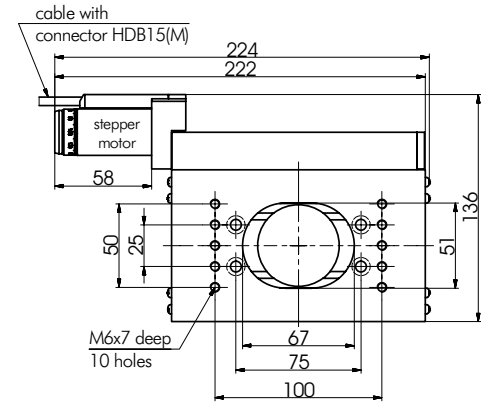
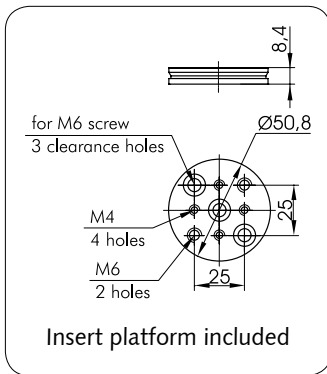
## Motorized Translation Stage

### 8MT167-100-28



8MT167-100-28

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



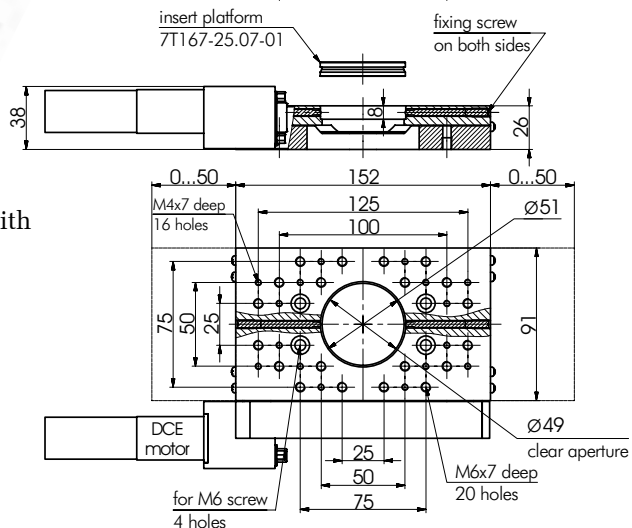
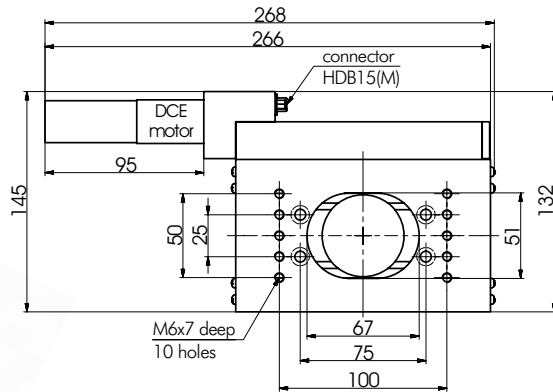
## Motorized Translation Stage (DC motor)

### 8MT167-100DCE2



8MT167-100DCE2

Motorized Translation Stage 8MT167-100DCE2 with DC motor DCE RE25.

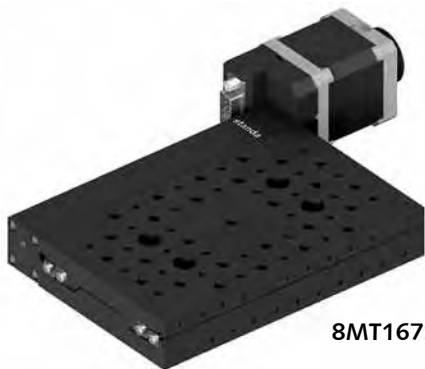


# Motorized Translation Stages

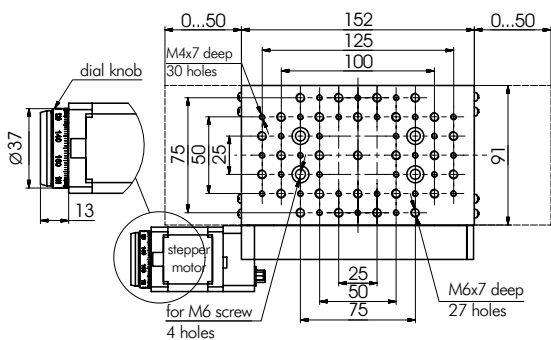
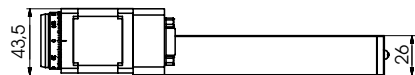
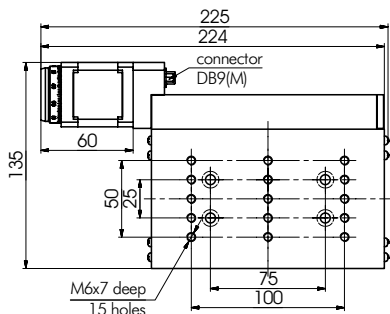
## 8MT167S-100

*8MT167S-100 models are made with solid platform*

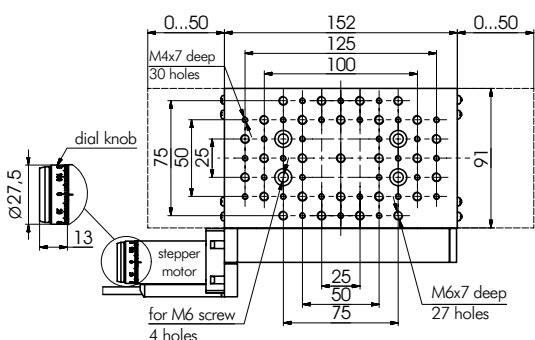
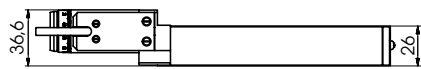
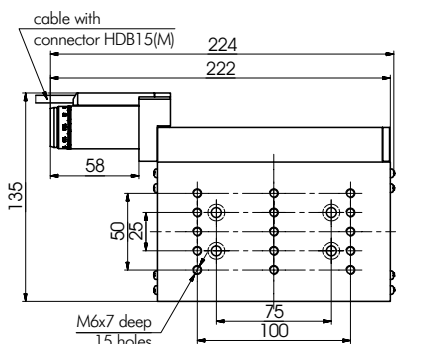
**NEW**



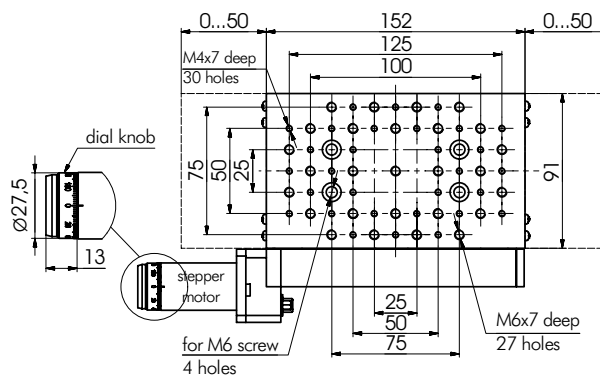
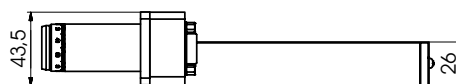
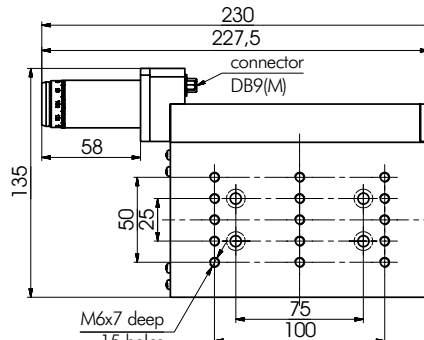
8MT167S-100



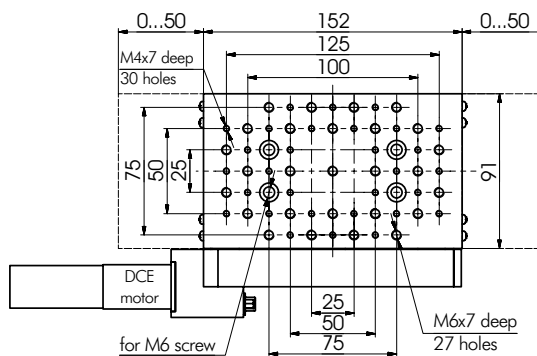
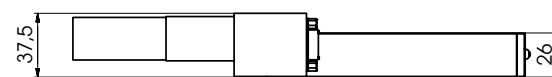
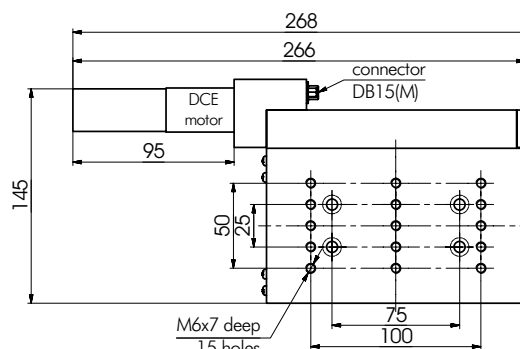
8MT167S-100



8MT167-100-28



8MT167-100C28



8MT167-100DCE

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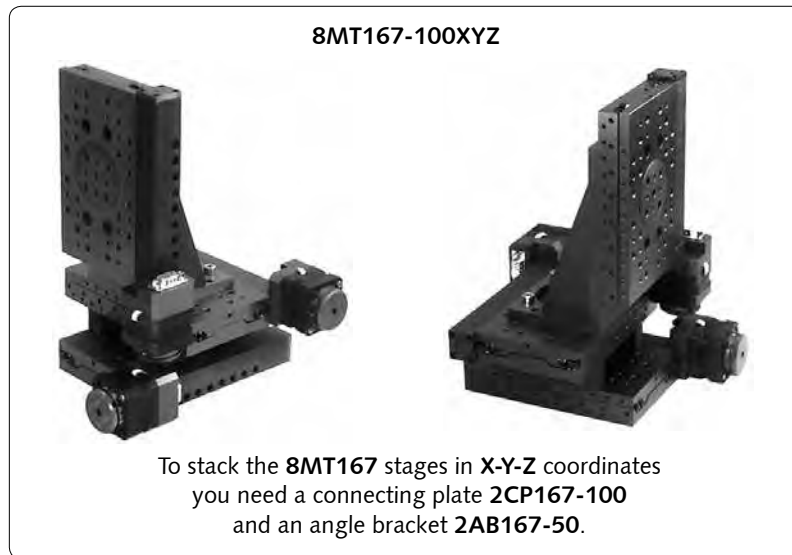
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SPECIFICATIONS	8MT167-100 8MT167S-100	8MT167-100C28 8MT167S-100C28	8MT167-100-28 8MT167S-100-28	8MT167-100DCE2 8MT167S-100DCE2
Travel range, mm	100	100	100	100
Resolution in full step, $\mu\text{m}$	1	1	1	-
in 1/8 step, $\mu\text{m}$	0.125	0.125	0.125	-
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



*Motorized Stages of Higher Speed available on request*

*Motors of other types are available*



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



# Motorized Translation Stage

## 8MT200-100

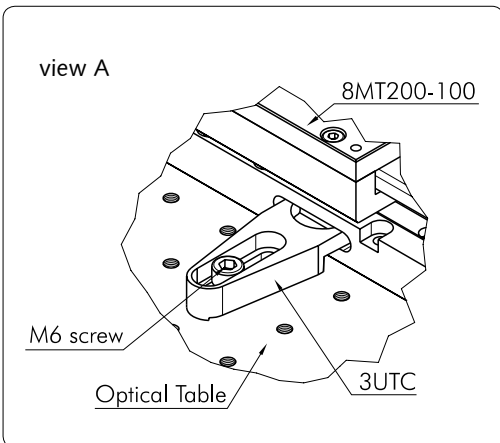
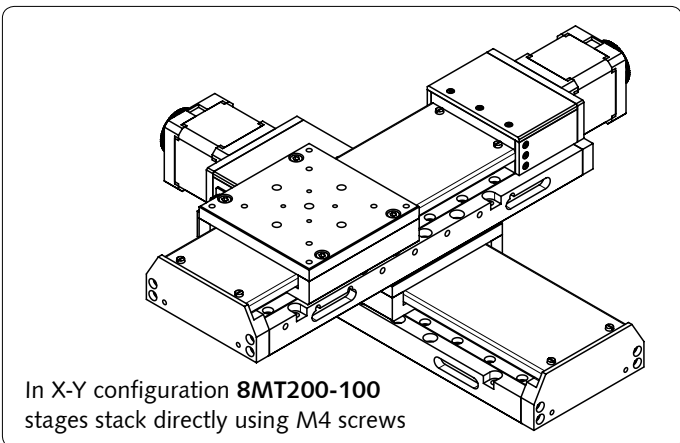
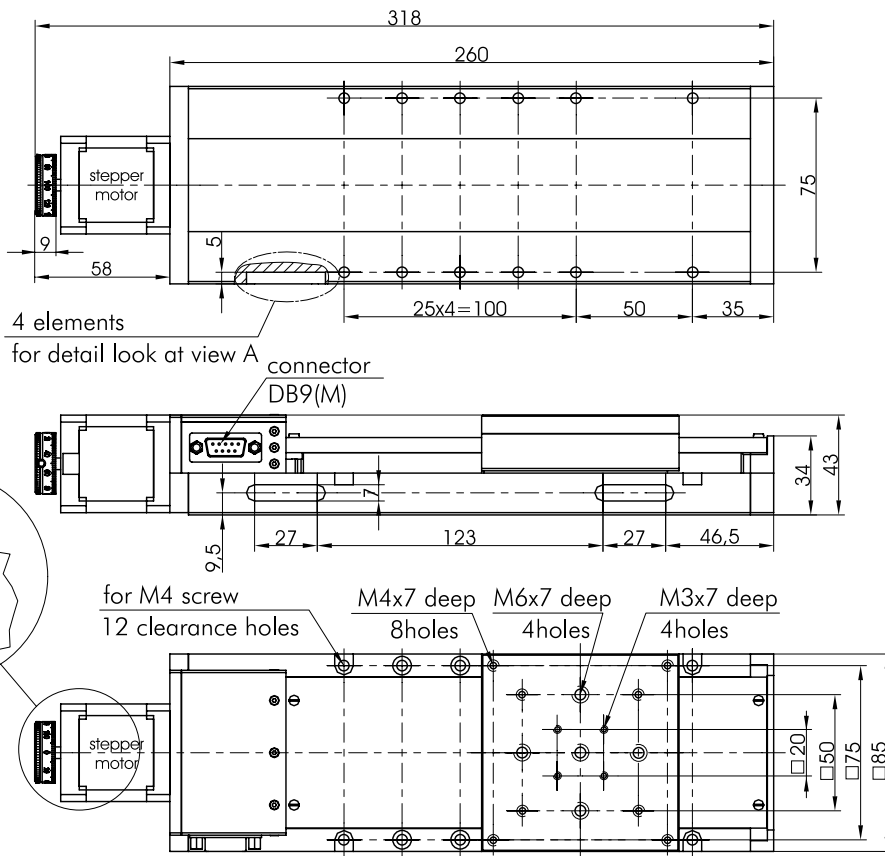


### SPECIFICATIONS

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution in full step*	2.5 $\mu$ m
in 1/8 step*	0.31 $\mu$ m
Max. speed*	10 mm/s
<i>on request we fit alternative motors</i>	
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 $\mu$ m
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**

36 V; 3.34 A  
167 x 65 x 37 mm  
640 g

Mini-DIN male 4-pin power connector

**REQUIRES  
only  
POWER  
SUPPLY!!!**

Motorized Translation Stage  
with DC motor

**8MT200-100DCE**



**SPECIFICATIONS**

Travel range	100 mm
Lead screw pitch	0.5 mm
Resolution	0.028 $\mu$ m
Minimal incremental motion	0.2 $\mu$ m
Max. speed	13 mm/s
Load capacity	
Horizontal	30 kg
Vertical	5 kg
Motor connector	HDB15(M)
DC motor	DCE RE25
Weight	2.2 kg

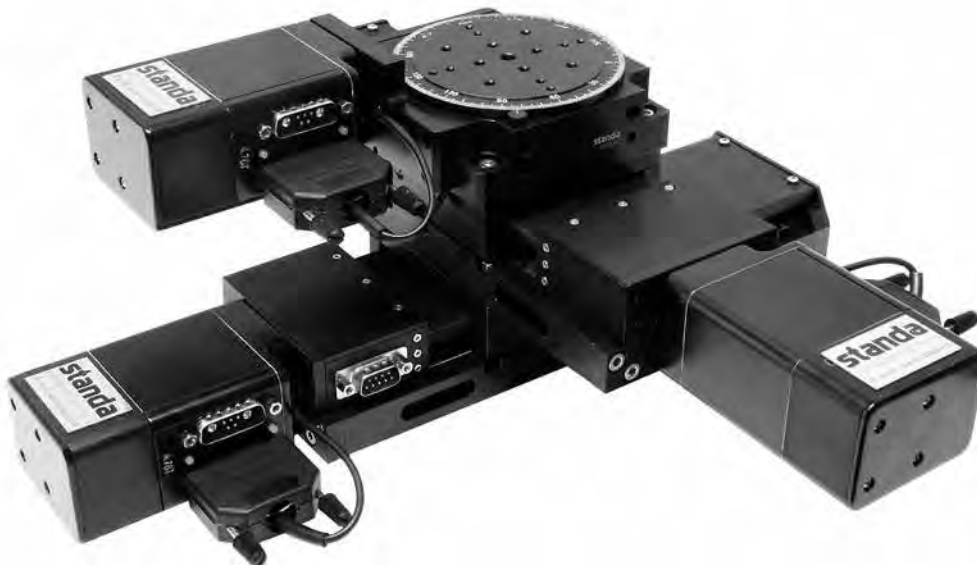
ORDERING INFORMATION

<b>8MT200-100</b>	Motorized Translation Stage with stepper motor <b>4247</b>
<b>8MT200-100DCE</b>	Motorized Translation Stage with <b>DC motor DCE336548</b>
<b>8MT200-100SM</b>	Motorized Translation Stage with <b>SM system</b>

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

**SPECIFICATIONS**

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



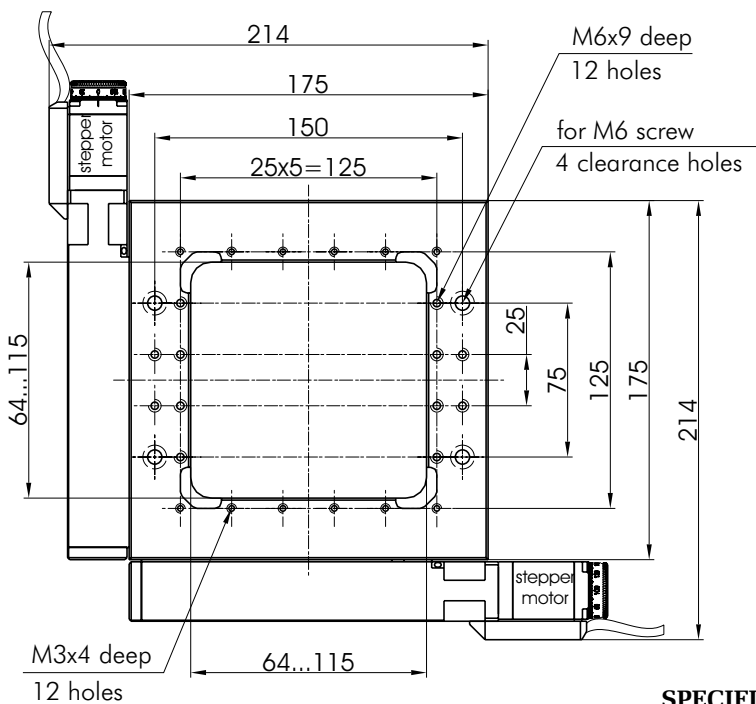
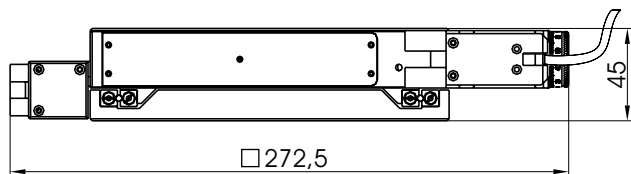
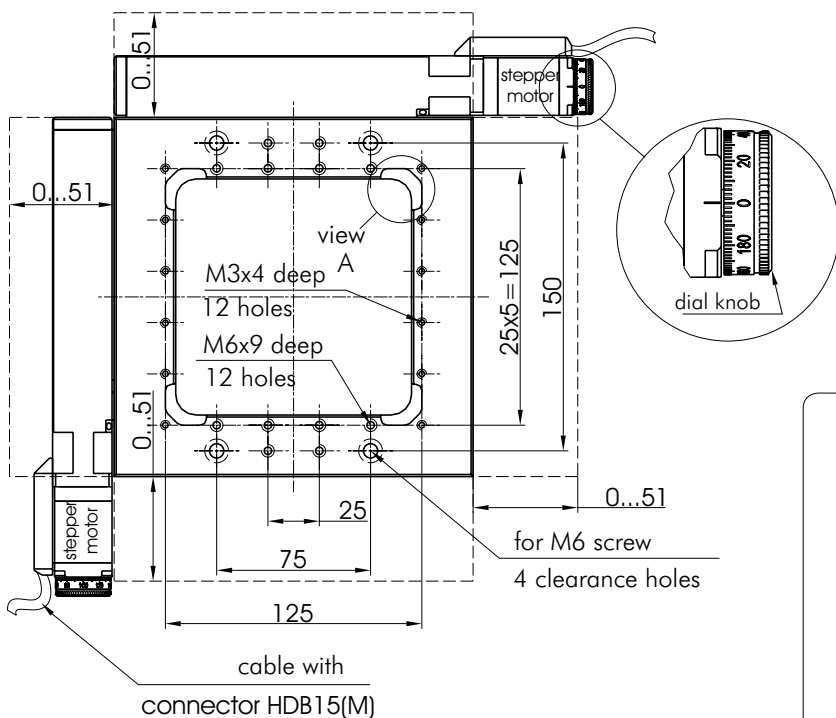
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e-mail: sales@standa.it

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Fax: +370-5-2651483

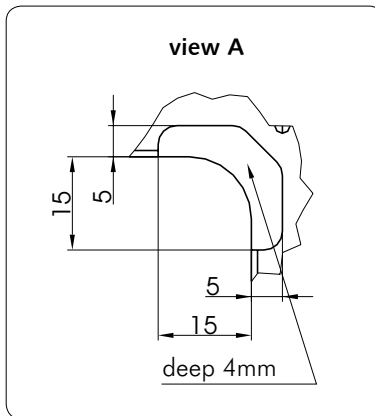
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**8MTF-102LS05**



**\*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*	2.5 μm
in 1/8 step*	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**

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

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## Long-Travel Motorized Linear Stages

## 8MT195 series



8MT195X-340-2.5

### SPECIFICATIONS

Travel range	340..2840 mm
Ball screw pitch	2.5/4/5/10 mm
Resolution in full step*	12.5 $\mu$ m
in 1/8 step*	1.57 $\mu$ m
Max. speed*	40 mm/s
<i>on request we fit alternative motors</i>	
Load capacity	
Horizontal	40 kg
Vertical	10 kg
Motor connector	DB9(M)
Stepper motor	
8MT195X	5918
8MT195Z	5918-B

**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.

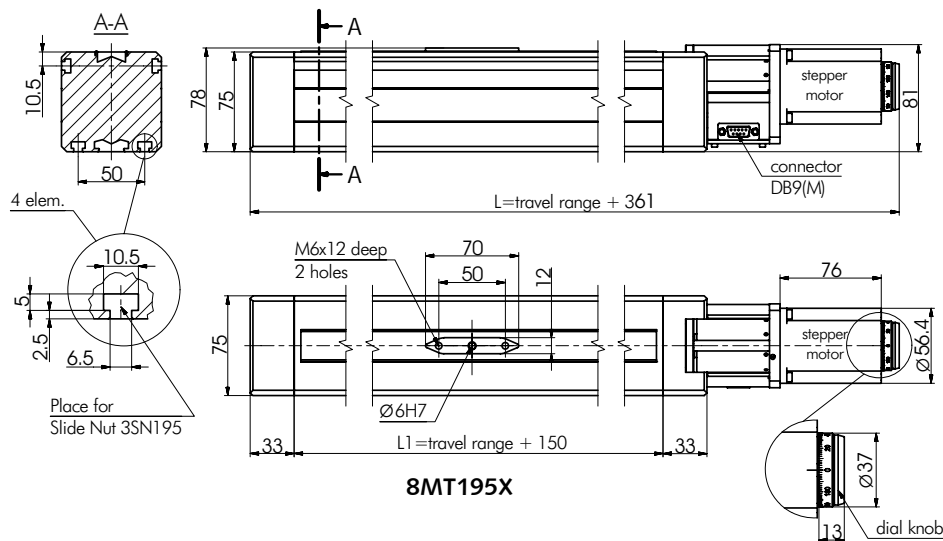
#### \*Test condition:

- Ball screw pitch - 2.5 mm
- Stepper motor: 2 phase bipolar wiring; phase resistance 2.4  $\Omega$ ; 200 steps per revolution; step angle - 1.8°; current - 1.5 A;
- STANDA controllers;
- 36 V.

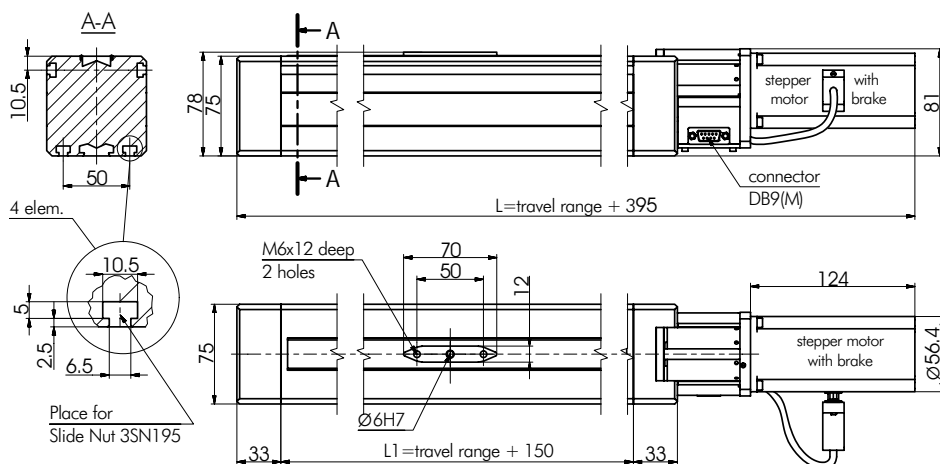
**Resolution and speed** of **8MT195** series stages can be varied choosing appropriate ball screw pitch. Several standard options are available and should be specified upon ordering.

For applications requiring travel over 500 mm we suggest using **8MT295X** series stages (**X**) paired with **8MT195X** series stages (**Y**) to make **XY** assemblies.

For applications requiring vertical **Z** axis movement, we suggest using stages with brake mounted on motor, to prevent carrier sliding down when motor current is turned off. Ordering code of **Z** stages is **8MT195Z**, see ordering information on the **8-31** page.



8MT195X



8MT195Z



# Long-Travel Motorized Linear Stages

## 8MT295 series



8MT295X-340-5

### SPECIFICATIONS

Travel range	340..2840 mm
Ball screw pitch	2.5/4/5/10 mm
Resolution in full step*	12.5 μm
in 1/8 step*	1.57 μm
Max. speed*	40 mm/s
<i>on request we fit alternative motors</i>	
Load capacity	
Horizontal	60 kg
Vertical	10 kg
Motor connector	DB9(M)
Stepper motor	
8MT295X	5918
8MT295Z	5918-B

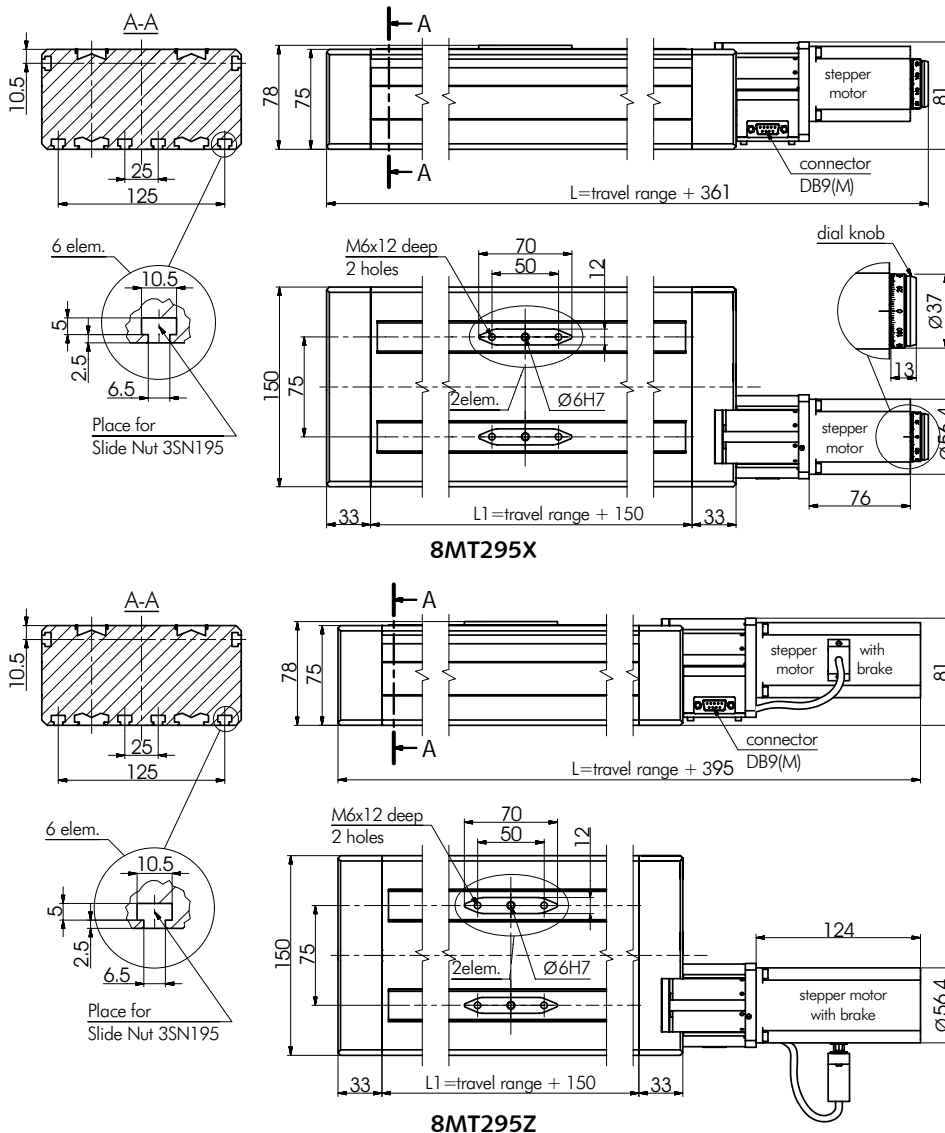
**\*Test condition:**

- Ball screw pitch - 2.5 mm
- Stepper motor: 2 phase bipolar wiring; phase resistance 2.4 Ω; 200 steps per revolution; step angle - 1.8°; current - 1.5 A;
- STANDA controllers;
- 36 V.

**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.

For applications requiring vertical **Z** axis movement, we suggest using stages with brake mounted on motor, to prevent carrier sliding down when motor current is turned off. Ordering code of **Z** stages is **8MT295Z**, see ordering information on the **8-31** page.



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## ORDERING INFORMATION

**8MTN95A-TTT-P**

<p><b>Series of Motorized linear stage</b></p> <p>8MT195 8MT295</p> <p><b>Stage for Horizontal or Vertical movement</b></p> <p>X – stage for horizontal movement in X or Y axes Z – stage for vertical movement in Z axis</p>	<p><b>Ball screw pitch</b></p> <p>2.5/4/5/10 mm</p> <p><b>Travel range*</b></p> <p>340..2840 mm</p>
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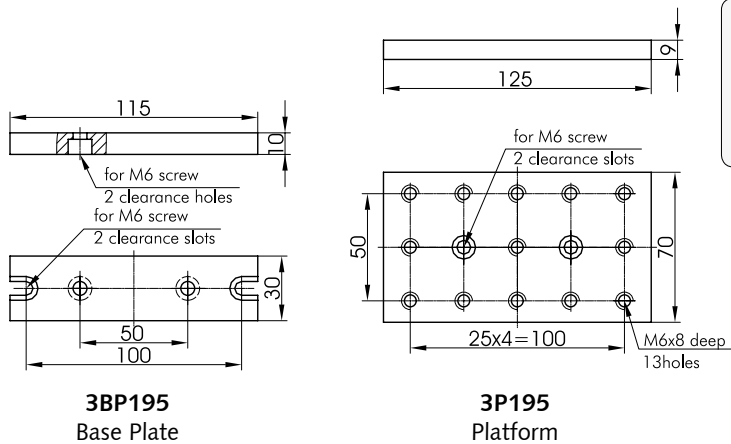
Examples of codes	travel range*	ball screw pitch
8MT195X-340-2.5	340 mm	2.5 mm
8MT195Z-540-4	540 mm	4 mm
8MT195X-740-5	740 mm	5 mm
8MT195Z-840-10	840 mm	10 mm
8MT295X-340-2.5	340 mm	2.5 mm
8MT295Z-540-4	540 mm	4 mm
8MT295X-740-5	740 mm	5 mm
8MT295Z-840-10	840 mm	10 mm

\* - standart travel range with 100 mm-grid space available on request

For applications requiring travel over 500 mm we suggest using **8MT295X** series stages (X) paired with **8MT195X** series stages (Y) to make XY assemblies.

For applications requiring vertical Z axis movement, we suggest using stages with brake mounted on motor, to prevent carrier sliding down when motor current is turned off. Ordering code of Z stages is **8MT195Z**.

## ACCESSORIES for 8MT195 series stages



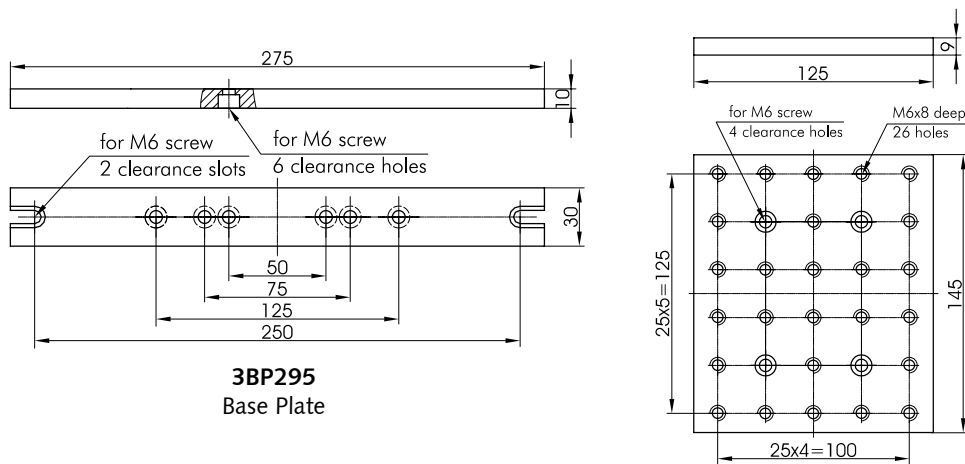
Ordering information for accessories\*\*

<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

## ACCESSORIES for 8MT295 series stages



Ordering information for accessories\*\*

<b>3BP295</b>	Base Plate	** - included in standard package and to be ordered only as extra units
<b>3P295</b>	Platform	
<b>3SN195</b>	Slide Nut	

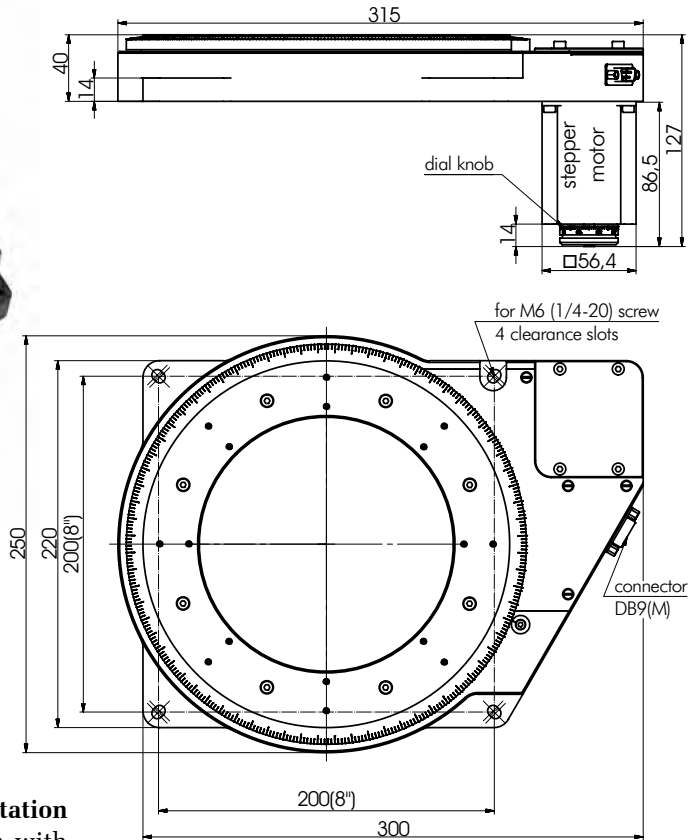
**3BP295**  
Platform



**3SN195**  
Slide Nut

# Large Motorized Rotation Stage

## 8MRB240-152-59



**8MRB240-152-59D**  
(other dimensions as in  
8MRB240-152-59 drawing)

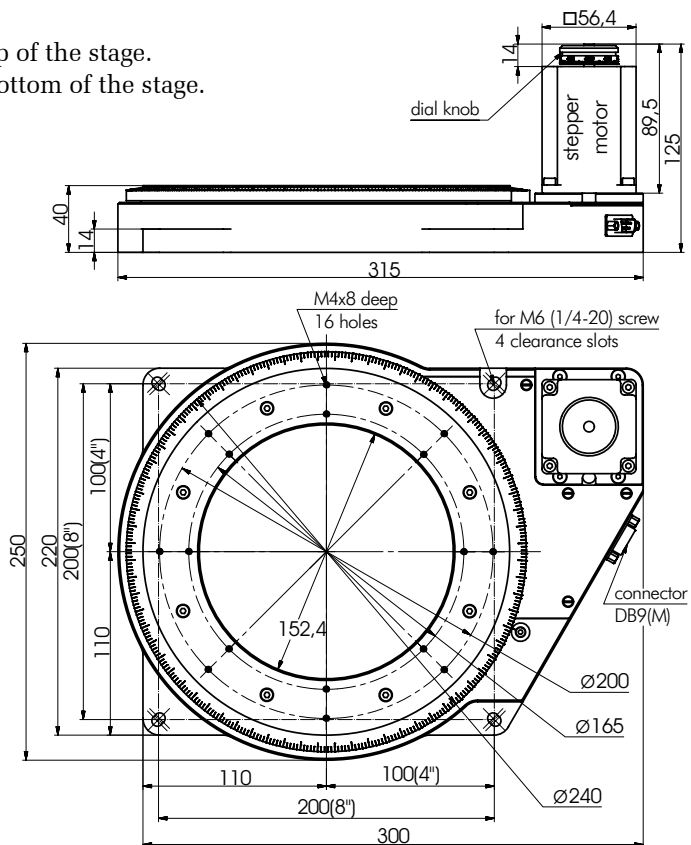
- Clear aperture 152.4 mm (6")
- Exceptionally high load capacity
- Compact design
- High speed
- Motor mounted on top or below by request

**8MRB240-152-59** is a **high load capacity rotation stage**, capable of rotating at up to **120 rpm** with **resolution of 10.8'**. Objects can be mounted on the platform through M4 screw pattern, the stage itself is fixed to working surface through M6(1/4-20) holes.

Two modifications are available:

**8MRB250-152-59** – motor is mounted on top of the stage.

**8MRB250-152-59D** – motor is fixed to the bottom of the stage.



**8MRB240-152-59**

### SPECIFICATIONS

Belt drive	1:10
Clear aperture	152.4 mm (6")
Rotation range	360° continuous
Resolution	
in full step	10.8'
in 1/8 step	81"
Repeatability	
uni-directional	6'
bi-directional	15'
Accuracy	15'
Maximum speed	120 turn/min
Load capacity	
axial	500 kg
radial	200 kg
torque	175 Nm
Limit switch (home)	optoelectronic
Motor connector	DB9(M)
Stepper motor	5918
Recommended controllers	8SMC4-USBh
Weight	5.1 kg
Optocoupler home reference switch	1
Switch polarity	pushed is closed



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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

## Large Motorized Rotation Stage

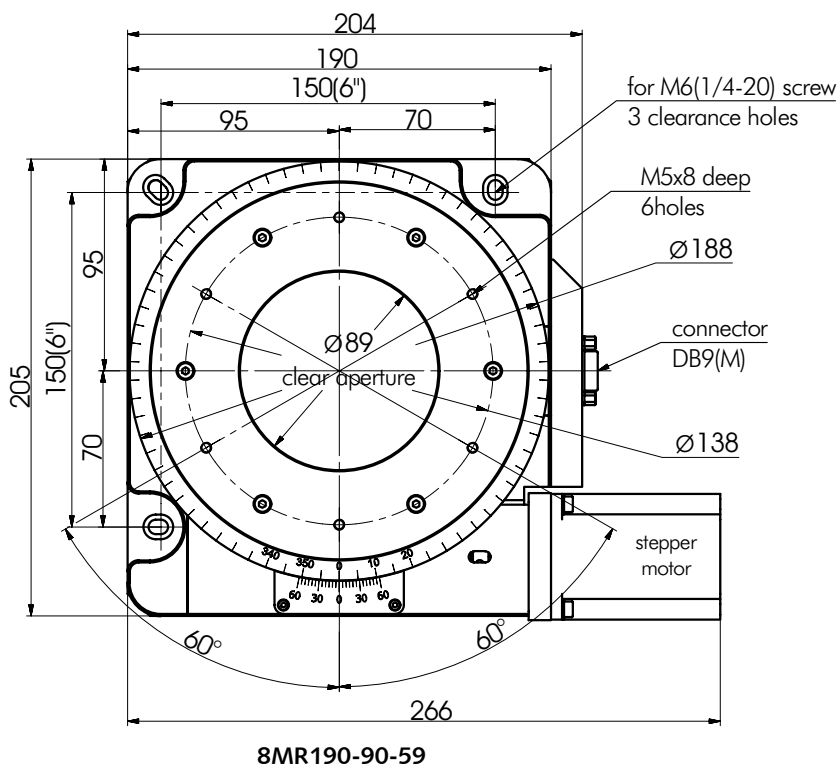
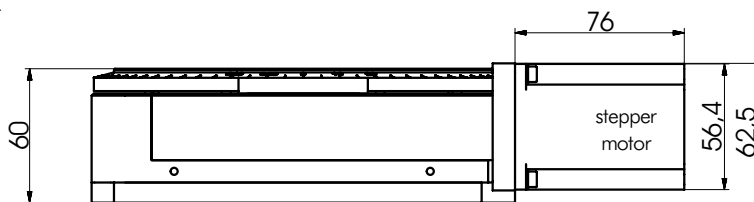
**8MR190-90-59**



### 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)



Large Motorized Rotation Stage

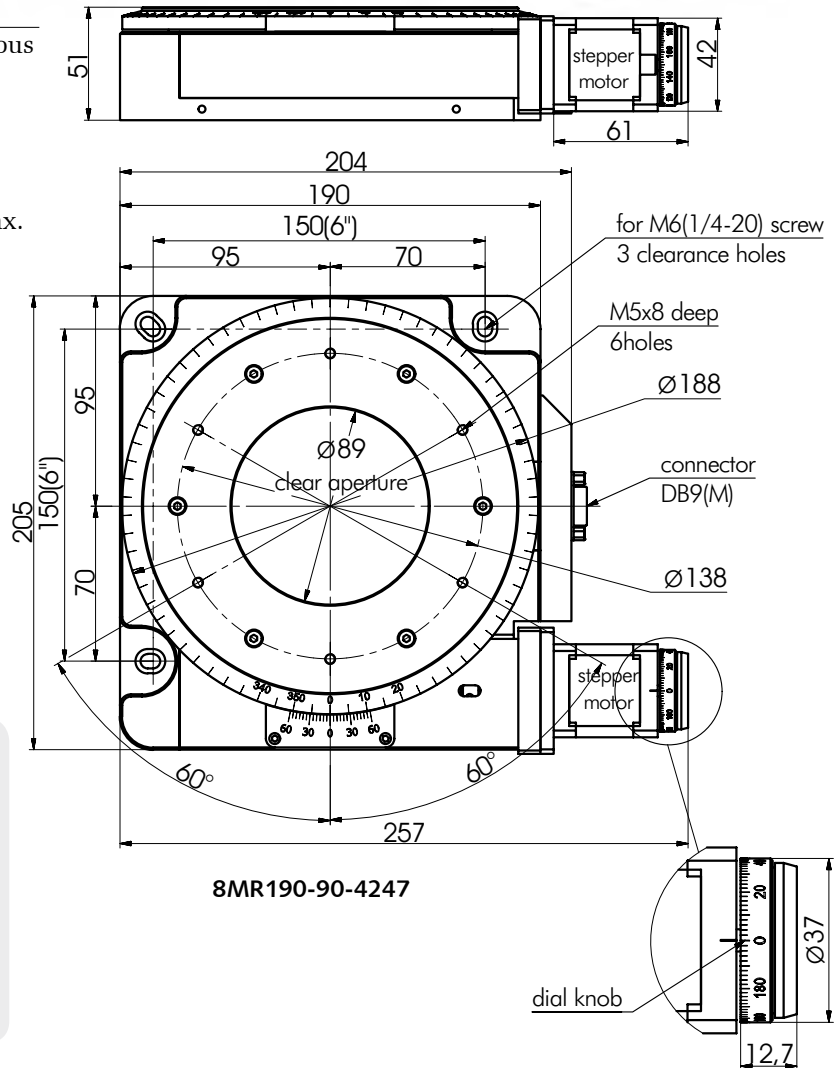
8MR190-90-4247



**SPECIFICATIONS**

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

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



8MR190-90-4247

**Vacuum 10<sup>-6</sup> 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	54 arcsec.
in full step*	6.75 arcsec.
in 1/8 step*	72 arcsec.
Repeatability (bidirectional)	40 arcsec. max.
Backlash	4 turn/min
Max. rotation speed*	40 μRa
Wobble	2 m length
Fluoroplastic cable	HDB15(M)
Motor connector	VSS43
Stepper motor	
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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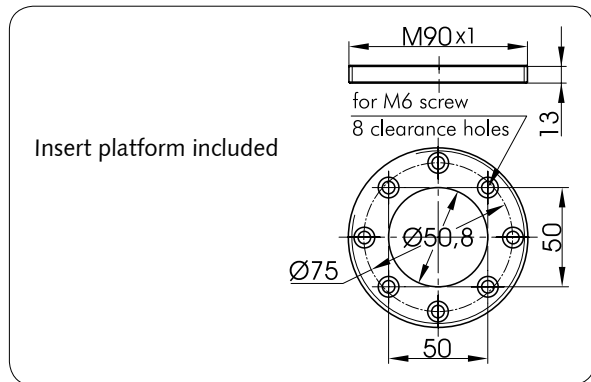
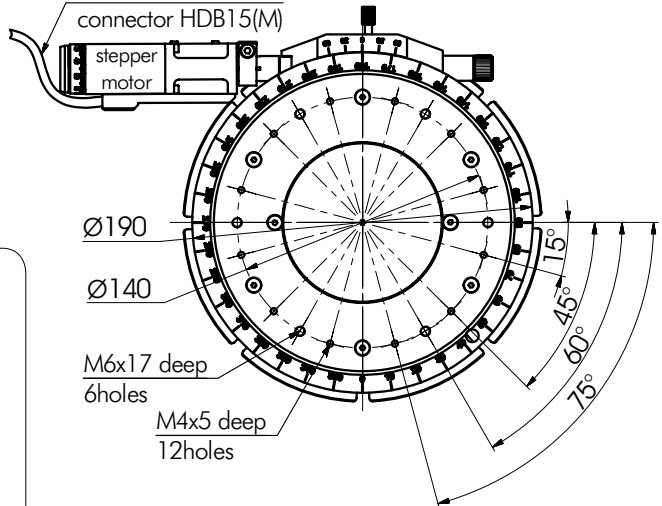
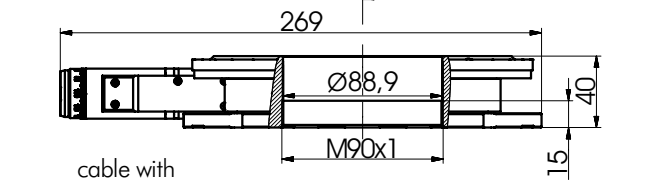
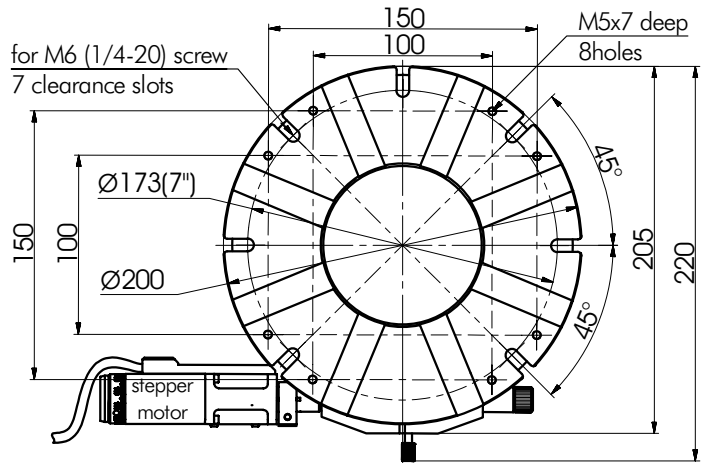
# Motorized Rotary Stage

**8MR170-190**



- Ø190 mm platform
- Ø89 mm clear aperture
- 6° fine actuator driven adjustment range
- 360° manual rotation range

Motorized actuator drives rotary stage 8MR170-190 to finely rotate large optical and other components in a range of 6° with resolution of 3 arcsec. The stage can be rotated 360° with accuracy of 1° manually. The stage has 88.9 mm clear aperture. Top platform of the stage has a pattern of M6 and M4 mounting holes for mounting various components. Clearance slots for M6(1/4-20) screws available on the bottom for fastening to optical table.



## SPECIFICATIONS

Rotation range:	
fine	6°
manually	360°
Installed actuator	8CMA28-10
Resolution in full step	3 arcsec
Repeatability	4 arcsec
Wobble	1 arcmin
Backlash	0
Eccentricity	20 µm
Load capacity:	
horizontal	60 kg
Body material	Aluminium
Finish	Black anodized
Weight	3.2 kg
Recommended controllers	8SMC4-USBh
Optocoupler end limit switches	2
Switch polarity	pushed is open

## Recommended Controllers

Stepper, BLDC and DC Motor Controller with USB Interface

**8SMC4-USB-B8-1**  
1 axis Controller in box



Joystick developed for manual control of one or two-axis all Stepper motor equipped motorizes stages

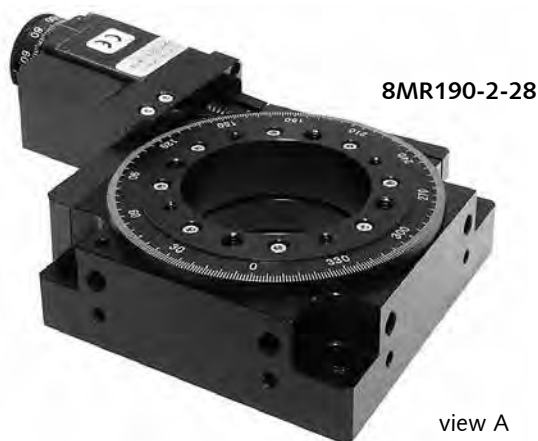


**8JXY-03**  
Joystick for 8SMC4-USB controller

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

# Motorized Rotation Stages

## 8MR190-2



- 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

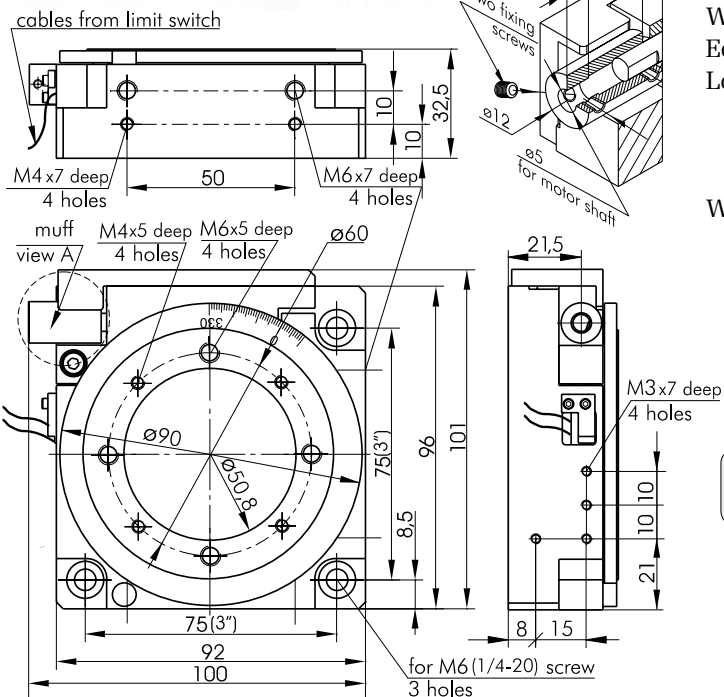
### SPECIFICATIONS

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	
8MR190-2	0.65 kg

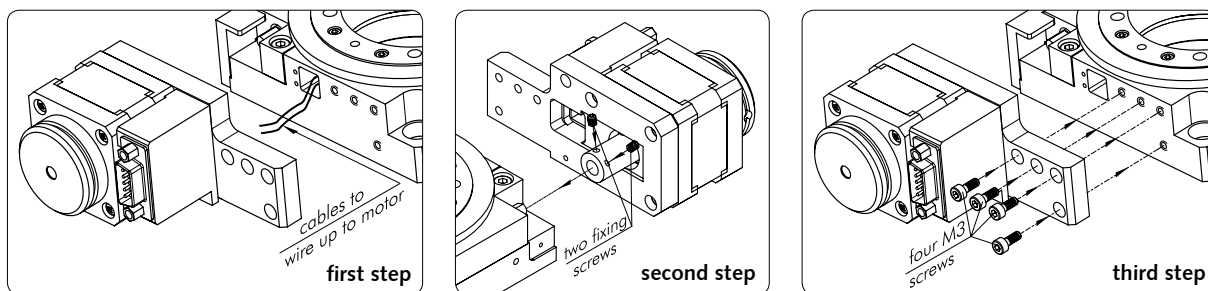
\*Test condition:  
 • STANDA controllers;  
 • Power supply - 36V.

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

8MR190-2



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# Motorized Rotation Stages with SM SYSTEM

**8MR190-2-SM • 8MR191-SM**
**8MR191-1-SM • 8MR191-30-SM**

**8MR190-2-SM**

**8MR191-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**  
36 V; 3.34 A  
167 x 65 x 37 mm  
640 g  
Mini-DIN male 4-pin power connector

**REQUIRES  
only  
POWER  
SUPPLY!!!**

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11	Light Test & Measurement Instruments
12	Lasers & Laser Accessories





*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 **8-37** 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.it](http://www.standa.it)

**Stepper, BLDC and DC Motor Controller with USB Interface**



**8SMC4-USB-B8-1**  
1 axis Controller in box

**Joystick developed for manual control of one or two-axis all Stepper motor equipped motorizes stages**



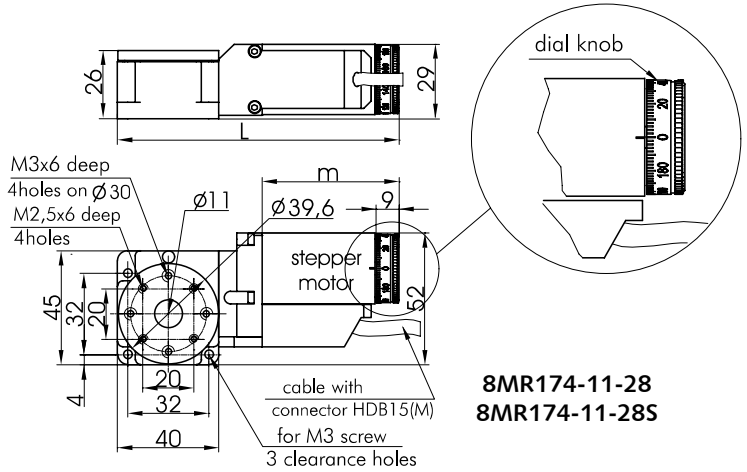
**8JXY-03**  
Joystick for **8SMC4-USB** controller

# Mini Motorized Rotation Stages

## 8MR174-11



8MR174-11-28S



8MR174-11-28  
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 $\mu$ m
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.

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

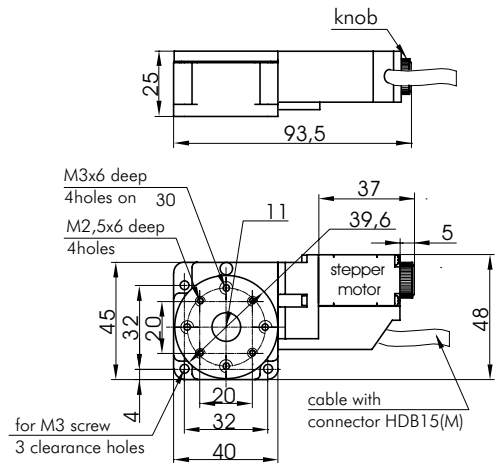


8MR174-11-28,  
7T184-13 (2 pieces)  
and 7VT174-5 stacked

### Mini Motorized Rotation Stage



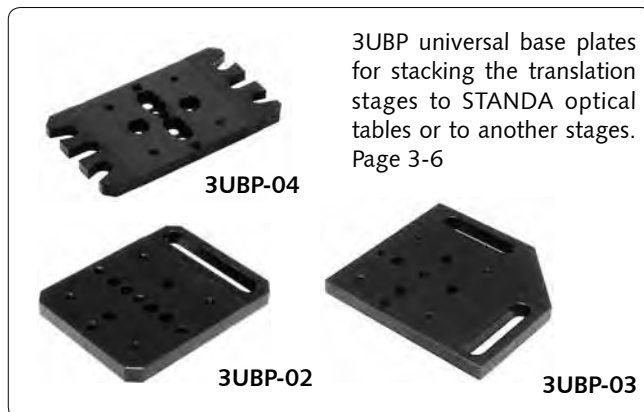
Available  
INCH version  
8MR174E-11-20  
8MR174E-11-28  
8MR174E-11-28S



### 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 $\mu$ m
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-04

3UBP-02

3UBP-03



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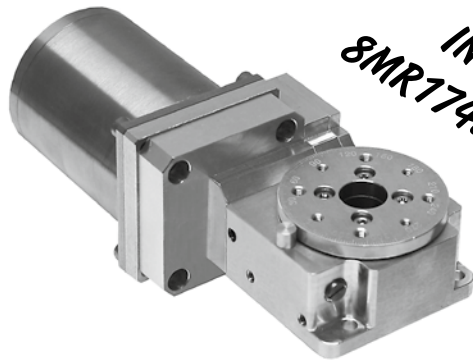
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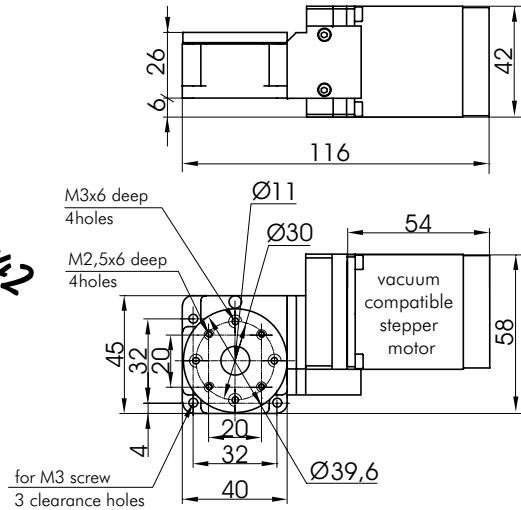
Lasers & Accessories 12

## Mini Motorized Rotation Stage with Vacuum compatible stepper motor

### 8MR174V-11-VSS42



*Available  
INCH version  
8MR174EV-11-VSS42*



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

**3BP174V-11**

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.

### 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*	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.

### ORDERING INFORMATION

<b>8MR174-11-20</b>	Motorized Rotation Stage with <b>stepper motor 20</b>
<b>8MR174-11-28</b>	Motorized Rotation Stage with <b>stepper motor 28</b>
<b>8MR174-11-28S</b>	Motorized Rotation Stage with <b>stepper motor 28S</b>
<b>8MR174V-11</b>	Motorized Rotation Stage with <b>Vacuum compatible stepper motor VSS42</b>

### Recommended Controllers

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

**Stepper, BLDC and DC Motor Controller with USB Interface**



**8SMC4-USB-B8-1**  
1 axis Controller in box



Assembly kit to fix two or more controller boxes together

**5AK-B9-B9**  
Assembly kit

# Motorized Rotation Stages

## 8MR151

### 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

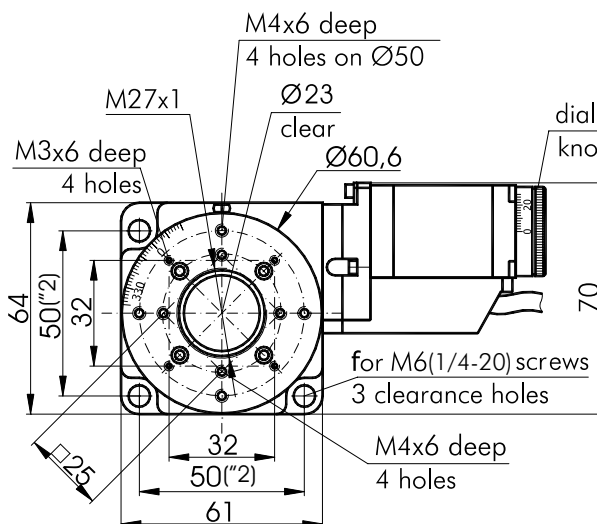
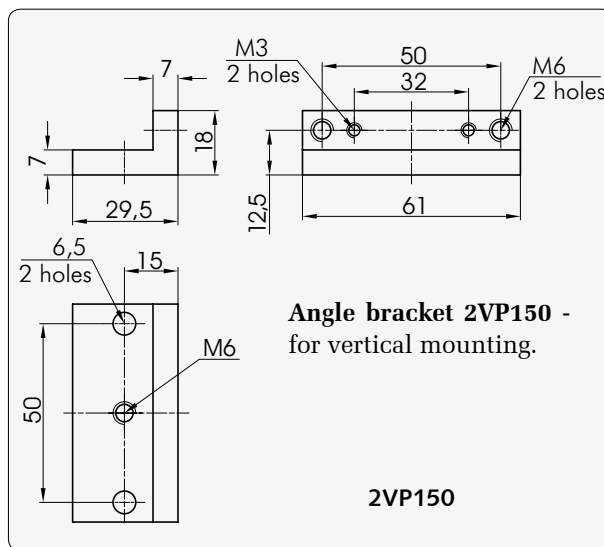
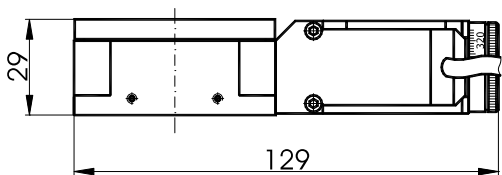


8MR151-1

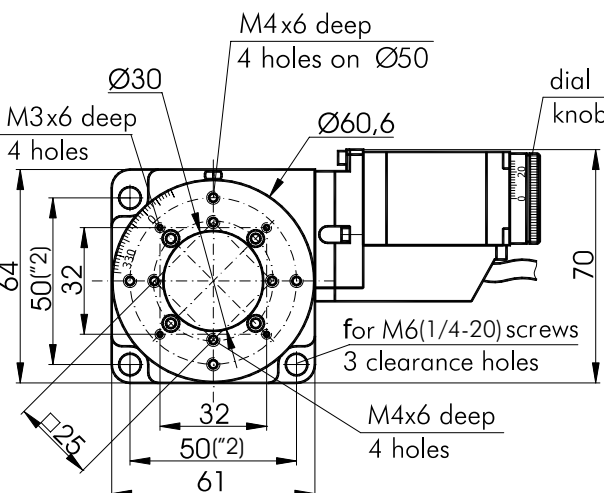


8MR151-30

**Available INCH version 8MR151E**



8MR151-1



8MR151-30



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# Universal Motorized Rotation Stages

**8MRU**

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.

## Universal Motorized Rotation Stage

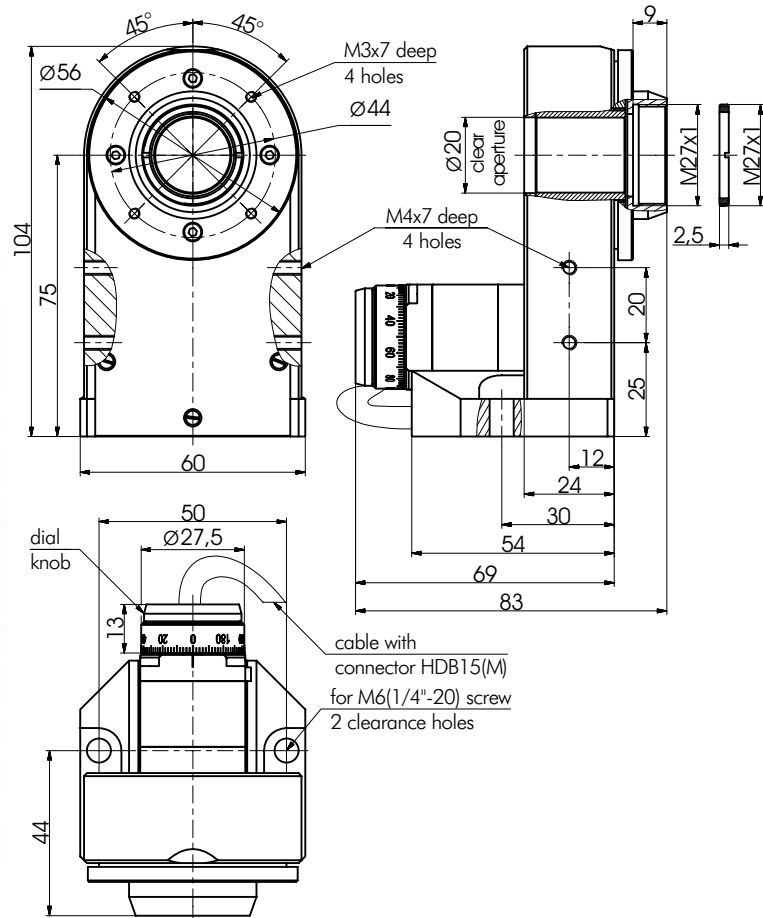
**8MRU-1**

### 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

*Custom accessories are manufactured on request!*

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



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.

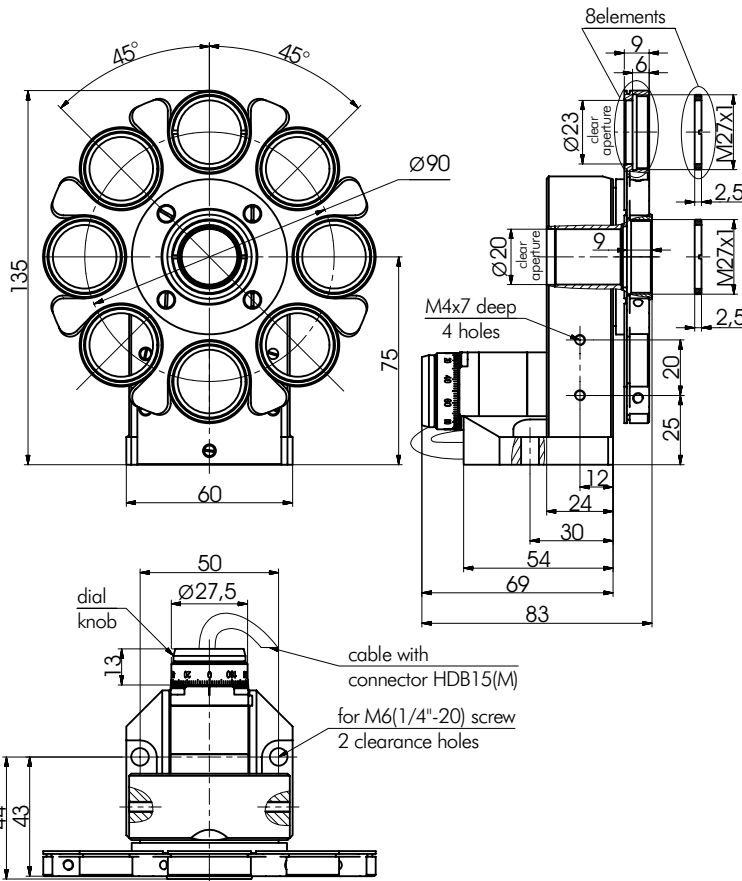
Variations of 8MRU-1 with accessories for various applications can be seen below.

Weight 0.55 kg



Universal Motorized Rotation Stage

8MRU-1WA



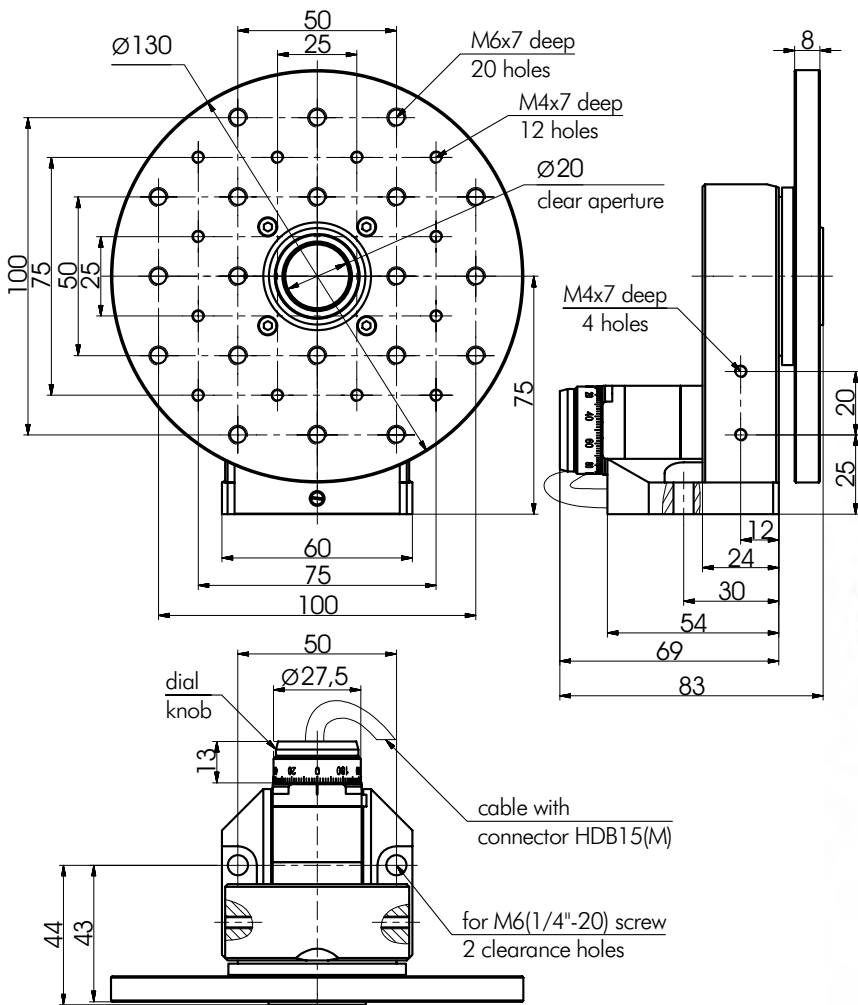
A filter wheel version of universal rotation stage 8MRU. Accepts up to **eight 1" filters**.

Software **XiLab** used with controller **8SMC4-USB** has integrated filter wheel control functionality.

**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



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# Motorized Screws

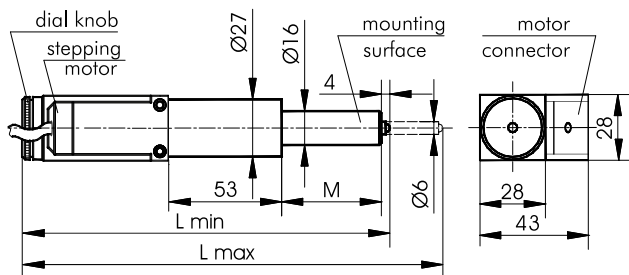
**8MS00**

- Manual drive with a dial knob
- Resolution 0.156  $\mu\text{m}$  (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**

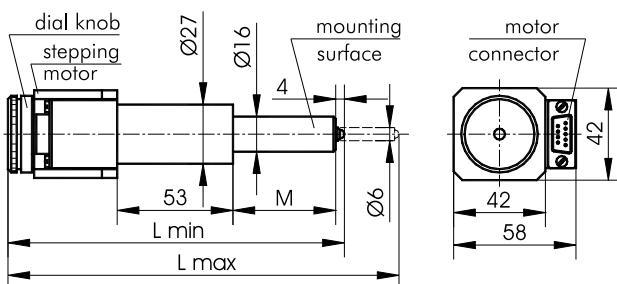
**8MS00-10-28**

**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 $\mu\text{m}$
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**

**8MS00-10**

**SPECIFICATIONS**

Travel range	8MS00-10	10 mm
	8MS00-25	25 mm
Lead screw pitch		0.25 mm
Resolution in full step		1.25 $\mu\text{m}$
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**

**8MS00V-10**
**SPECIFICATIONS**

Travel range	8MS00V-10	10 mm
	8MS00V-25	25 mm
Lead screw pitch		0.25 mm
Resolution in full step		1.25 $\mu\text{m}$
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

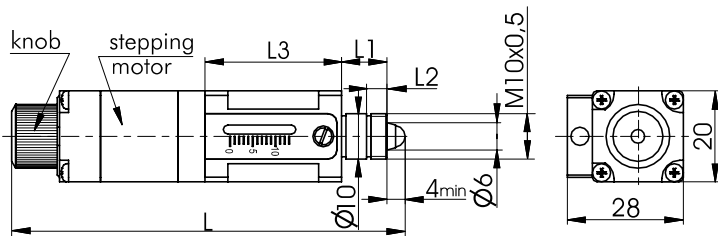
# Motorized Actuators

## 8CMA06



8CMA06-13/15

- Compact
- Manual drive with a knob
- Limit switch: optoelectronic couple
- Step motor controllers 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

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

nut 3N10X05 (M10x0.5) by request (see page 8-48)

**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 8-52

**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 8-53



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# Ultra-High Resolution Compact Motorized Actuator with DC motor

## 8CMA16DC



8CMA16DC-13/15

### SPECIFICATIONS

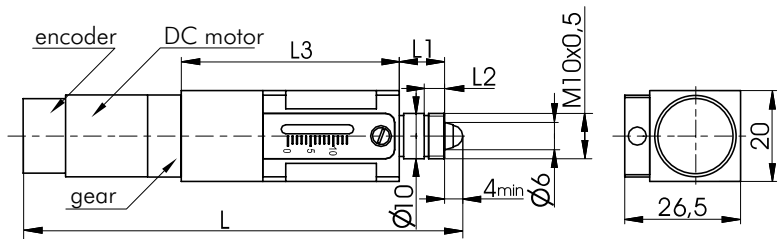
Travel range	8CMA16DC-13/15	13 mm
	8CMA16DC-25/15	25 mm
Resolution		0.1 μm
Minimal incremental motion		0.028 μm
Lead screw pitch		0.25 mm
Max.speed		0.15 mm/s
Nominal force		30 N
Cable		integrated, 1.2 m length
Motor connector		IDC-10F
DC motor		DCE1524
Weight	8CMA16DC-13/15	0.12 kg
	8CMA16DC-25/15	0.15 kg

Recommended controller for DC Motor

Stepper, BLDC and DC Motor Controller with USB Interface



8SMC4-USB-B8-1  
1 axis Controller in box



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

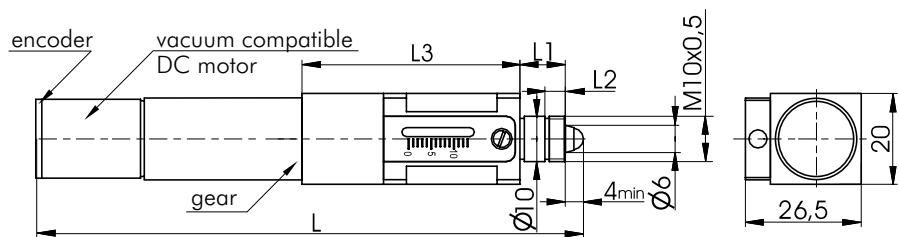


8CMA16DCV-25/15

### 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		IDC-10F
Vacuum compatible DC motor		DCE1841
Weight	8CMA16DCV-13/15	0.12 kg
	8CMA16DCV-25/15	0.15 kg

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



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



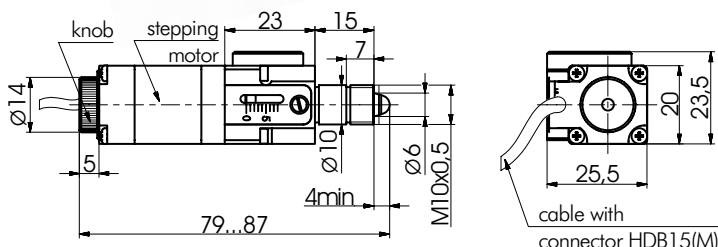
# Compact Motorized Actuator

## 8CMA20-8/15



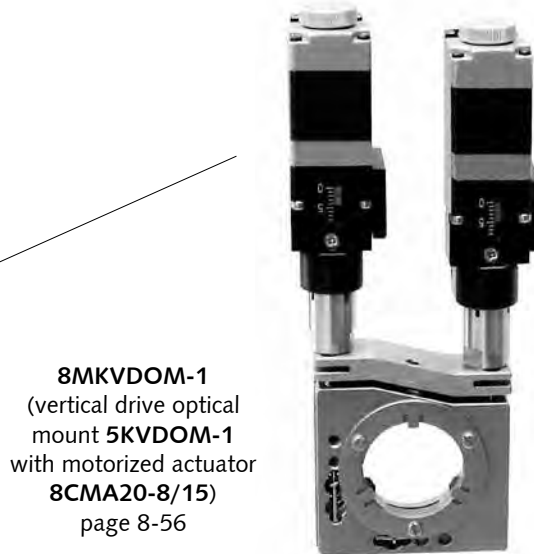
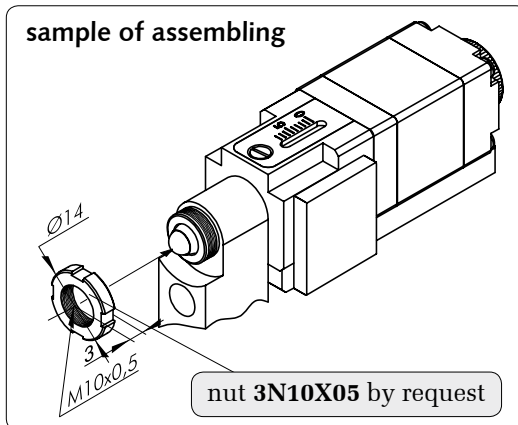
8CMA20-8/15

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



### SPECIFICATIONS

Travel range	8 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	0.10 kg



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

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



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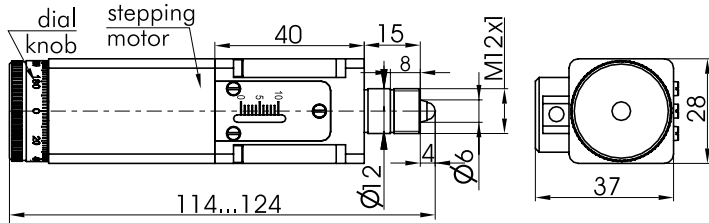


# Motorized Actuator

**8CMA28-10**



- Compact
- Manual drive with a knob
- Two limit switches
- Step motor controllers 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**



**8SMC4-USB-B8-1**  
1 axis Controller in box

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



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

*Modified  
Manual Stages with  
Motorized Actuators  
are available*



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



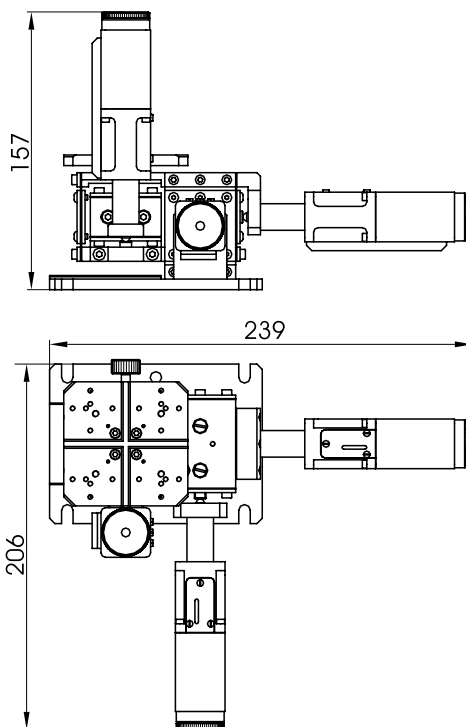
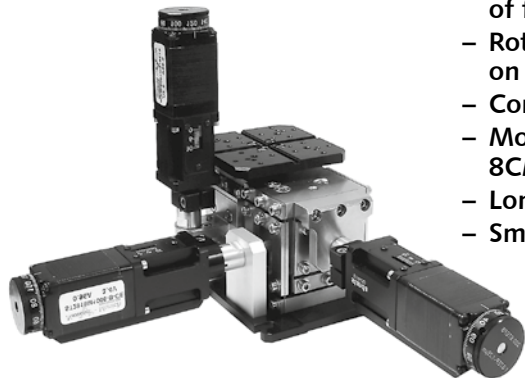
**8MR170-190**  
(rotation stage **7R170-190**  
with motorized actuator  
**8CMA28-10**)



# 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



Other dimensions such as 7TF2 (page 7-27)

## SPECIFICATIONS

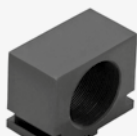
Travel range in each XYZ direction	2 mm
Resolution	0.2 $\mu$ m
Cross-Talk	20 $\mu$ m/mm
Mechanical stability	flexure design with Stainless Steel Spring
Load capacity	1.5 kg
Type of actuator	8CMA28-10
Cable	1.2 m length cable included
Motor connector	HDB15(M)
Weight	1.6 kg

## Accessories for Fiber Coupling Stage

page 7-27



7FA1



7FA2



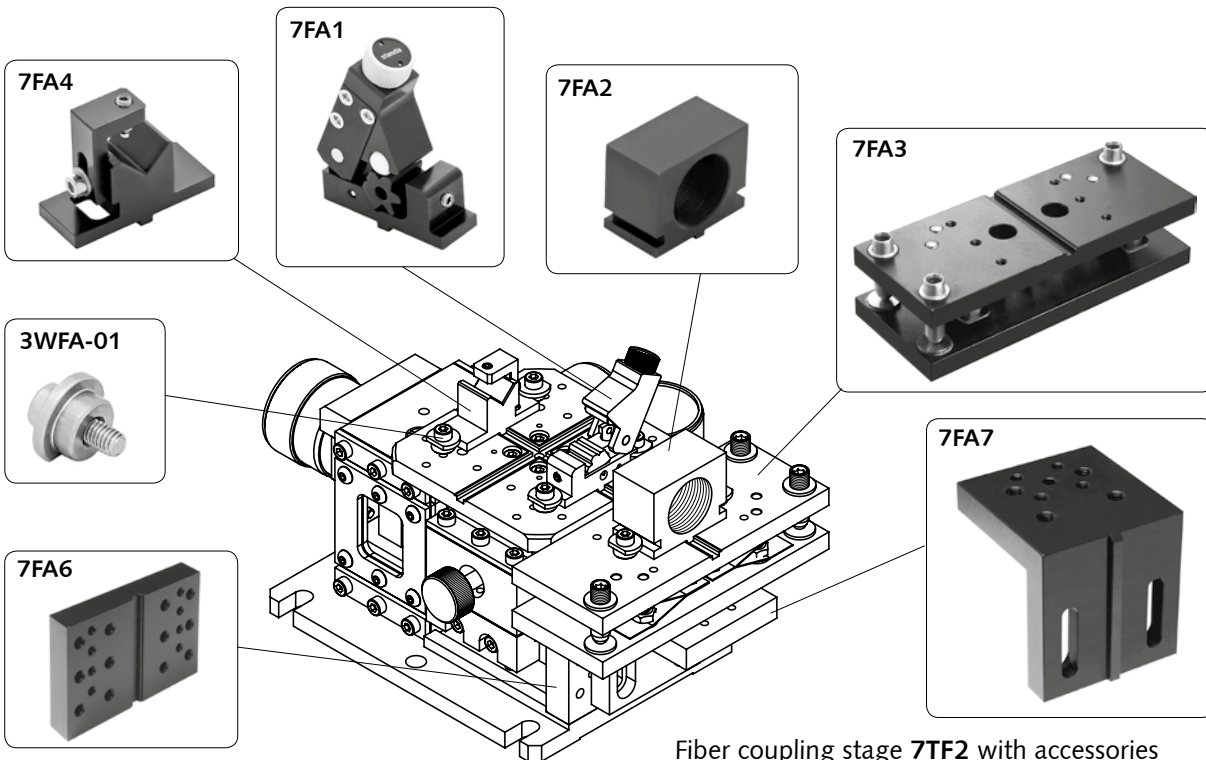
7FA3



7FA4



7FA5



Fiber coupling stage 7TF2 with accessories



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# Motorized YZ Translation Stage

## 8MTP116



### SPECIFICATIONS

Tilt y	±2°
Rotation z	±2,5°
Resolution	
in full step	1,25 μm
in 1/8 step	0,156 μm
Lead screw pitch	0.25 mm
Repeatability	1 μm
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



Manual Multi-Axis Tilt platform  
**6TP116**



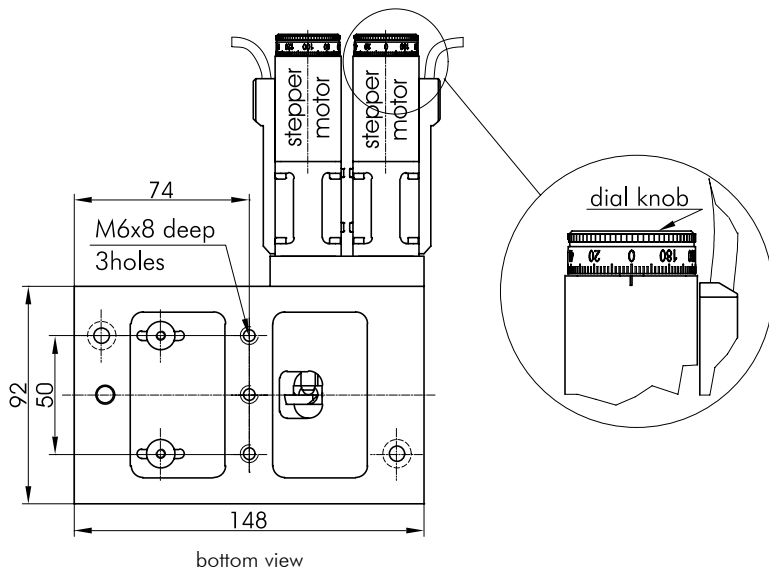
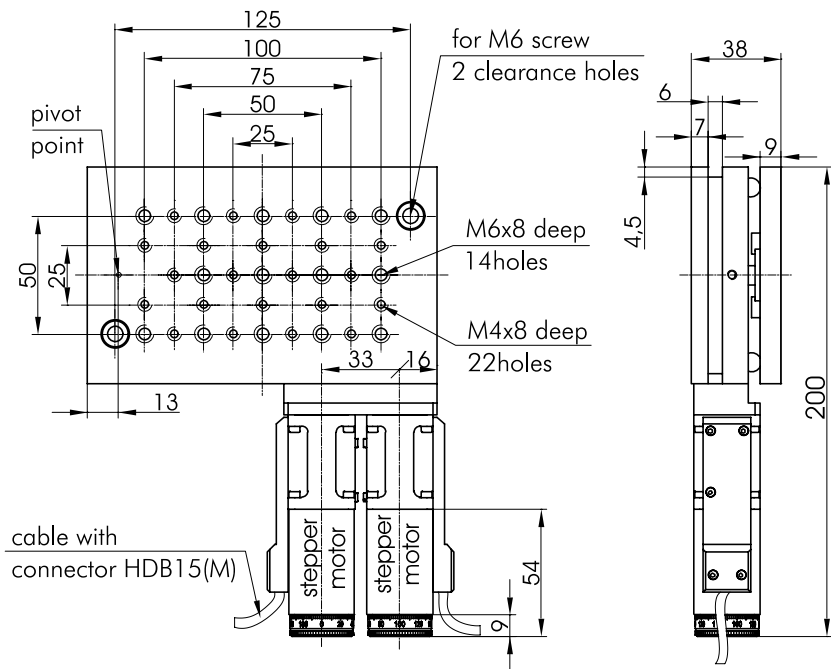
Motorized Actuator  
**8CMA28-10**



Stepper, BLDC and DC Motor Controller with USB Interface  
2 axis Controller in box  
**8SMC4-USB-B9-2**



Assembly kit to fix two or more controller boxes together  
**5AK-B9-B9**



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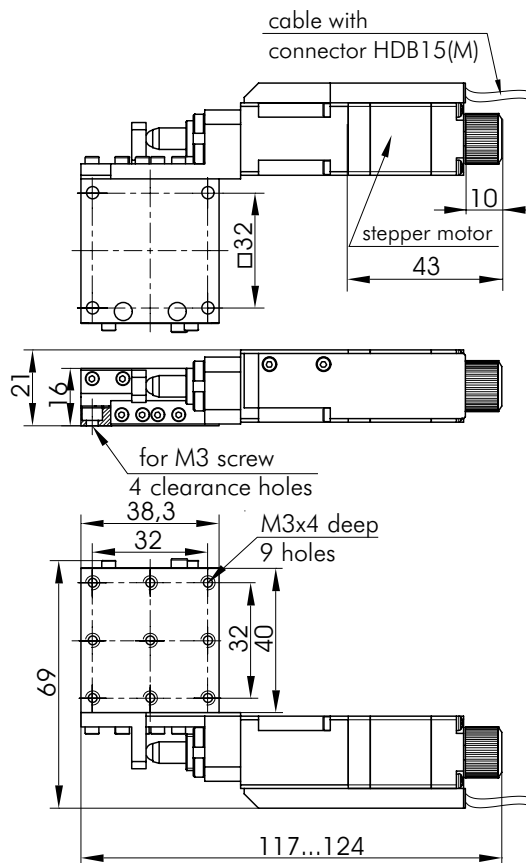


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# Motorized Translation Stage

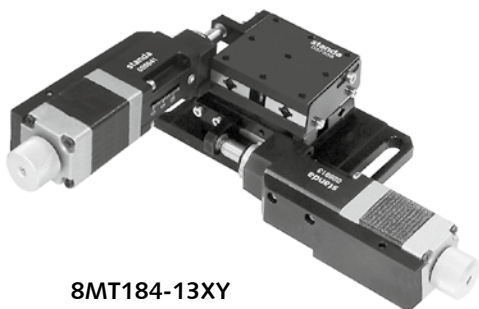
## 8MT184-13



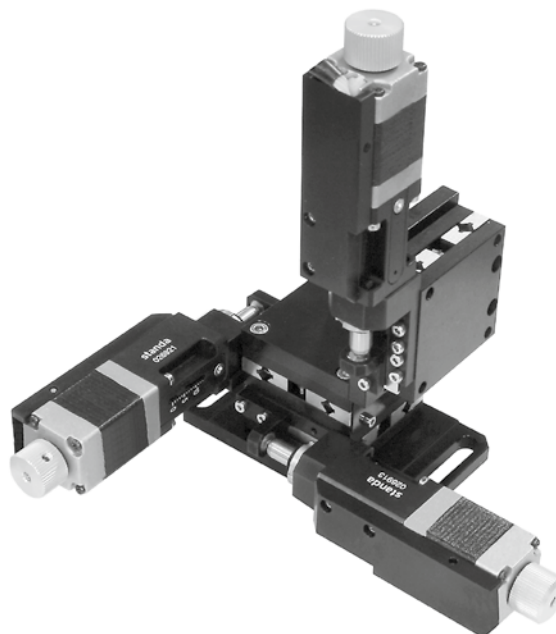
- Compact design
- Precise movement
- 13 mm travel range
- X-Y-Z direct stacking
- Stacks directly with stages of 174 series
- Motorized Actuator 8CMA06-13/15
- Lockable
- Black anodized aluminium
- Angle bracket 2AB174 for vertical mounting



**3UBP-04**  
Universal base plate  
for stacking the translation  
stages to STANDA optical  
tables or to another stages



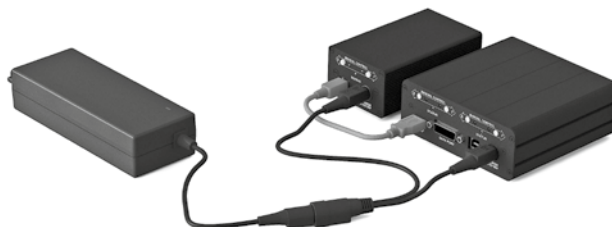
8MT184-13XY



8MT184-13XYZ

### Recommended Controller

Three Axis Stepper, BLDC and DC Motor  
Controller 8SMC4-USB-B8-B9  
with Power Supply



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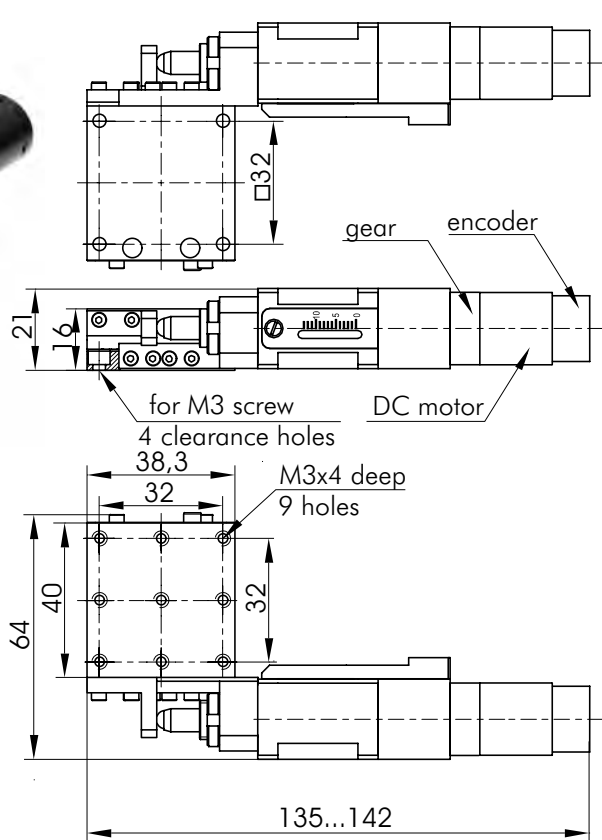
Lasers &  
Accessories

12



# Motorized Translation Stage

**8MT184-13DC**



- 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<sup>-6</sup> Torr Compatible DC motor  
**8MT184V-13DC***

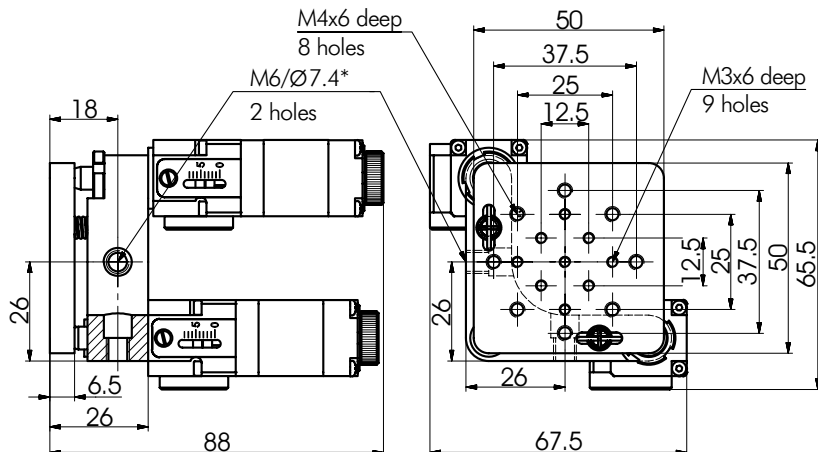
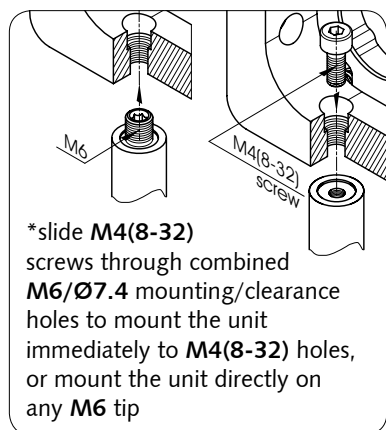
# Motorized Optical Mount

**8MUP21-2**



**SPECIFICATIONS**

Travel range	4 mm
Resolution	<1 arcsec
Tilt range	9°(about two axes)
Speed (Standa SMC1-USBh controller)	from 1 arcsec/sec to 1°/sec
Type of actuator	8CMA20-8/15
Optocoupler end limit switches	2 per actuator
Cable	1.2 m length cable included
Motor connector	HDB15(M)
Recommended controllers	8SMC4-USBh







# Motorized Gimbal Mount

## 8MGM25T-1

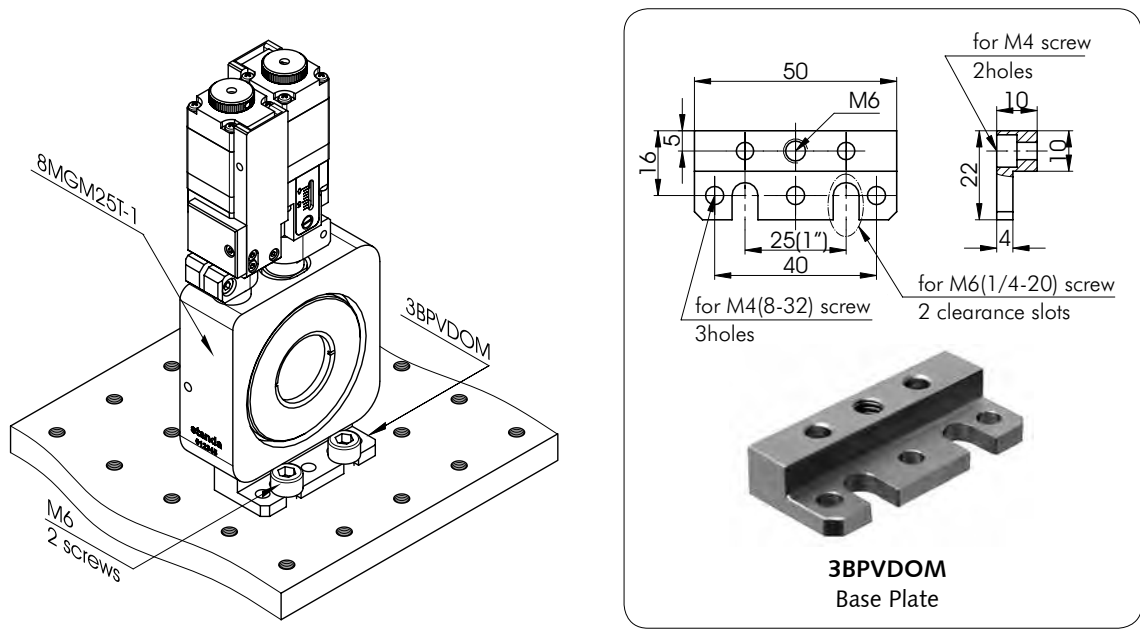
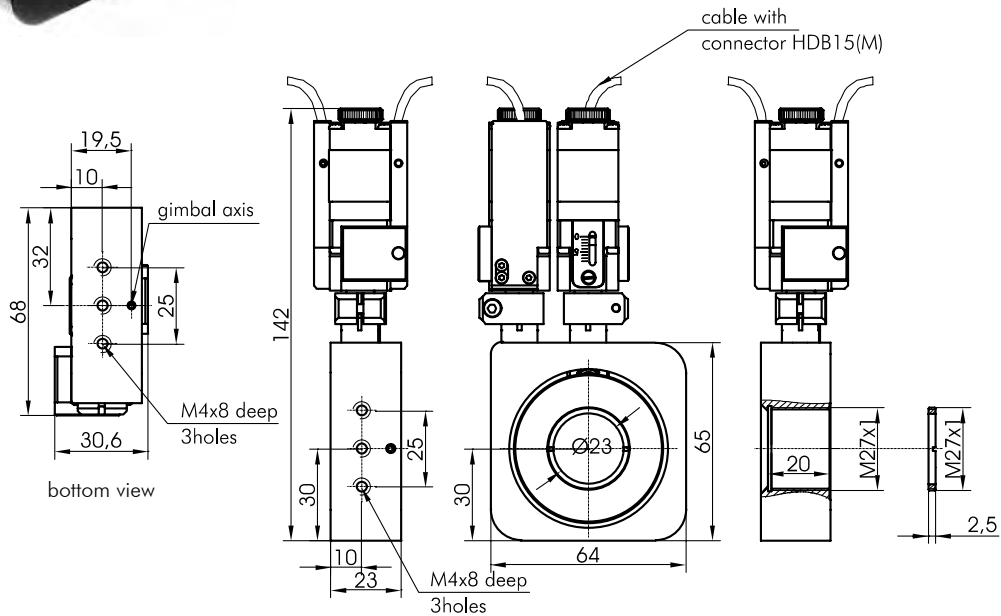
- 1 Optical Tables
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### SPECIFICATIONS

Optics diameter	25,4 mm
Clear aperture	23 mm
Angular range	±2,5°
Type of actuator	8CMA20-8/15
Resolution*	
in full step	1,25 μm
in 1/8 step	0,156 μm
Lead screw pitch	0.25 mm
Repeatability	1 μm
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.



*DC motor based Actuators are available on request*



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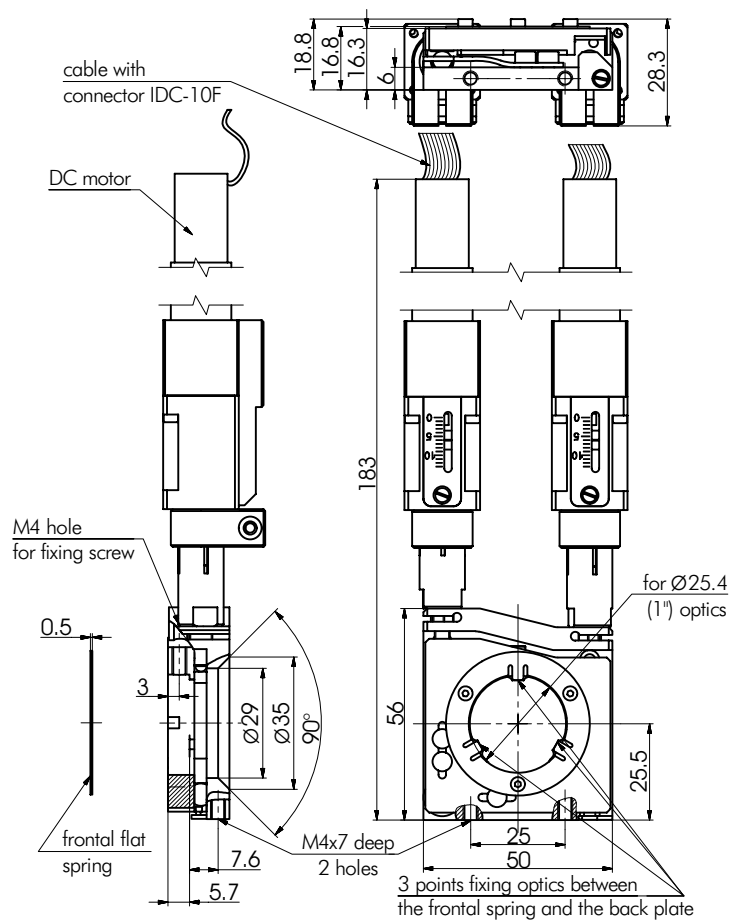
## Motorized Vertical Drive Optical Mount with DC motor

## 8MKVDOM-1-DC

## 8MKVDOMV-1



**8MKVDOMV-1  
available for Vacuum!**



SPECIFICATIONS	8MKVDOM-1-DC	8MKVDOMV-1
Optics diameter, mm		25.4
Clear aperture, mm		23
Tilt/tip range, °		±2.5
Angular Resolution:		
by horizontal, arcsec.		1.5
by vertical, arcsec.		1.75 arcsec. in the middle tilt of platform
Type of actuator	8CMA16DC-13/15	8CMA16DCV-13/15
Lead screw pitch, mm		0.25
Cable		integrated, 1.2 m length
Motor connector		HDB15(M)
Type of motor	DC motor DCE1524	Vacuum compatible DC motor DCE1841
Recommended controller		8SMC4-USB

### ORDERING INFORMATION

<b>8MKVDOM-1</b>	Mount with <b>stepper motor</b> for Ø25.4 mm (1 inch)
<b>8MKVDOM-1-DC</b>	Mount with <b>DC motor</b> for Ø25.4 mm (1 inch)
<b>8MKVDOMV-1</b>	<b>Vacuum Compatible</b> Mount with <b>DC motor</b> for Ø25.4 mm (1 inch)
<b>8MKVDOM-2</b>	Mount with <b>stepper motor</b> for Ø50.8 mm (2 inch) and <b>8 mm thickness</b> optics
<b>8MKVDOM-2-DC</b>	Mount with <b>DC motor</b> for Ø50.8 mm (2 inch) and <b>8 mm thickness</b> optics
<b>8MKVDOMV-2</b>	<b>Vacuum Compatible</b> Moun with <b>DC motor</b> for Ø50.8 mm (2 inch) and <b>8 mm thickness</b> optics
<b>8MKVDOM-2-05</b>	Mount with <b>stepper motor</b> for Ø50.8 mm (2 inch) and <b>12.7 mm thickness</b> optics
<b>8MKVDOM-2-05-DC</b>	Mount with <b>DC motor</b> for Ø50.8 mm (2 inch) and <b>12.7 mm thickness</b> optics
<b>8MKVDOMV-2-05</b>	<b>Vacuum Compatible</b> Moun with <b>DC motor</b> for Ø50.8 mm (2 inch) and <b>12.7 mm thickness</b> optics





# Motorized Flipper Mount

**8MFM-1**

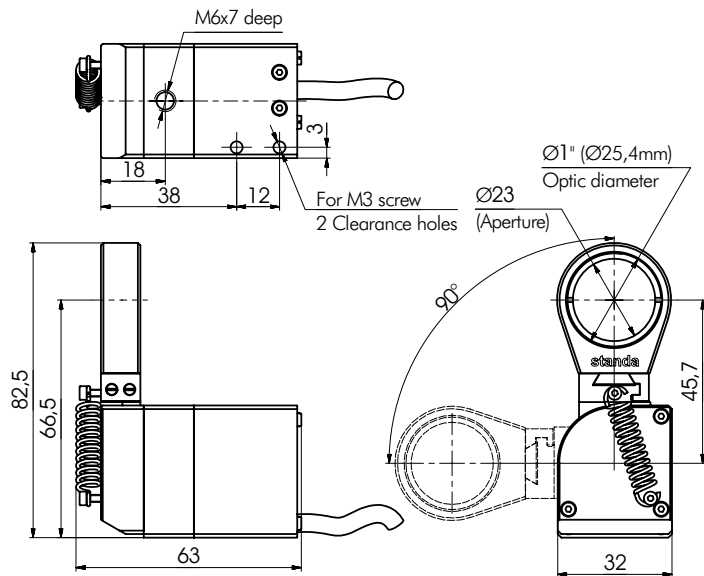


- Controlled with button, handset, external trigger or 8SMC4-USB controller
- Mechanical hard stops ensure repeatable positioning
- M6x7 threaded hole for post mounting
- Remote handset with SMA I/O connectors
- Single cable solution for space saving
- Ø2" optical mount on request

**Motorized Flipper Mount 8MFM-1** is designed for fast and precise Ø1" (25.4 mm) optical components flip in and flip out of beam path. Reaching 90° flip position takes less than 0.4 s. Mechanical hard stops ensure repeatable positioning. **Flipper mount 8MFM-1** performs with great

repeatability, stability and long lifetime. Filters, mirrors or pinholes can be easily mounted into the holder and fastened using two fluoroplastic rings and retaining nut. Optics holders for fast switching between different optics can be ordered separately. Due its fast flip time the 8MFM-1 can be used as beam shutter.

**Flipper Mount** has two M3 clearance holes on the side and M6x7 deep threaded mounting hole at the bottom, which aligns with optical axis.



**NEW**



## SPECIFICATIONS

Flip positions	0 and 90°
Flip time	<0.4 s
Optic diameter	Ø25.4 mm (1")
Optics thickness, max	7 mm
Flip to flip repeatability	≤50 µrad
Maximum torque	0.33 Nm
Digital I/O Connector type	SMA (2 places)
Power input	9 V-12 V
Weight	160 g

## ORDERING INFORMATION

<b>8MFM-1</b>	- Motorized Flipper Mount
<b>K1011007</b>	- Power Supply (12 V; 0.7 A)
<b>4FOM-1</b>	- Optics holder (additional)





MANUAL CONTROL  
STATUS  
POWER DC12-36V

- by PC using **8SMC4-USB controller** or customer's own device
- or by PC via external SMA connectors



- by the button on the top of the flipper

## Motorized flipper mount can be controlled



- **remote handset** (included with **8MFM-1**)



Flipper Handset

TRIGGER  
IN OUT

**Remote handset** itself is equipped with SMA input and output connectors\*.

\*The I/O connectors use TTL signal levels (from 0 V to 5 V). Via input user can control holder position and via output determine position of it.

**K1011007 – power supply 12 V; 0,7 A**



This flipper mount requires **9 – 12 V power supply** unit to operate.



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# Motorized Mirror Mount

**8MMA60**

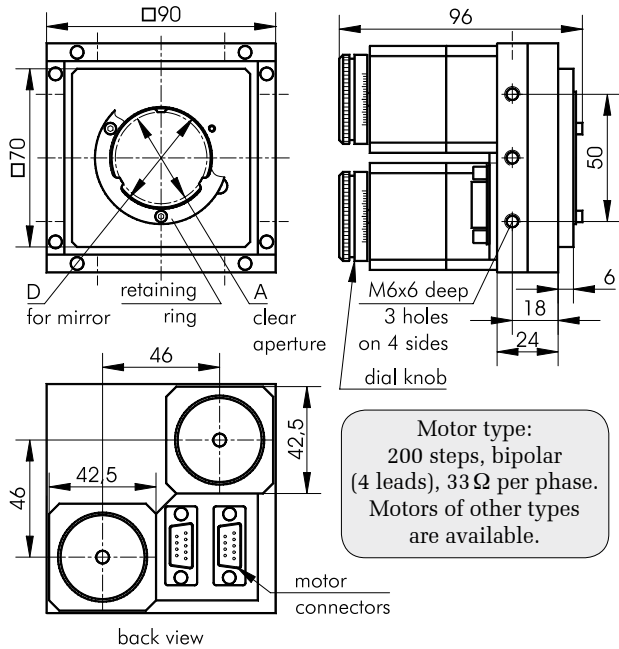

**Motorized Mirror Mounts 8MMA60** are designed for precise angular alignment of optical elements. Platform is **tilted** about **two axes**. A **retaining ring** keeps optics in a non-through mounting opening of the platform.

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)
	<b>diameter (D)</b> , and <b>clear aperture (A)</b> :
	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



# Motorized Vertical Translation Stage

**8MVT188-20**


**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.

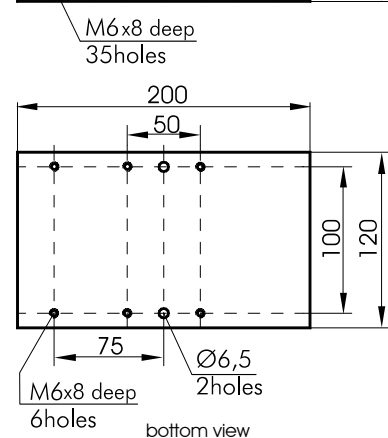
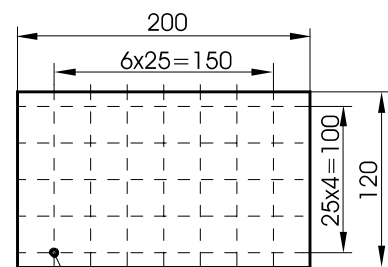
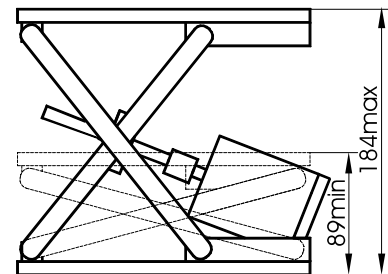
Examples of use: making up for height differences during the set up; automation of technological processes, like laser welding.

A stepper motor type – **5918**, 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 aluminium.



- 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

## 8MVT40-13



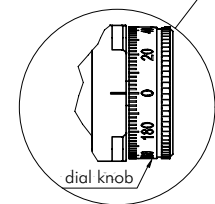
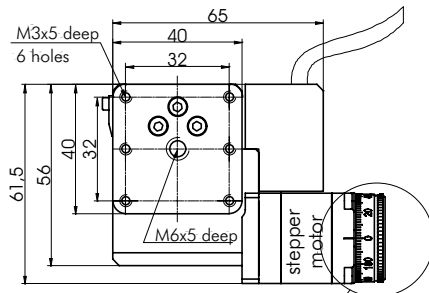
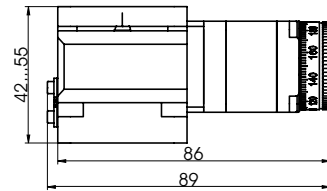
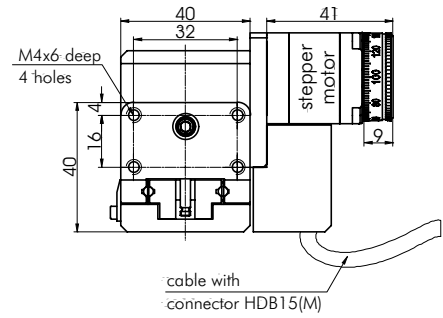
- Travel range 13 mm
- Stacks directly with stages of 174 and 184 series

### SPECIFICATIONS

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

**\*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

### Related Controller for DC, BLDC and Stepper Motors



8SMC4-USB-B8-1  
1 axis Controller in box



8SMC4-USB-B9-2  
2 axis Controller in box

More info on [www.standa.it](http://www.standa.it)



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# Motorized Z Stage

## 8MVT70-13-1

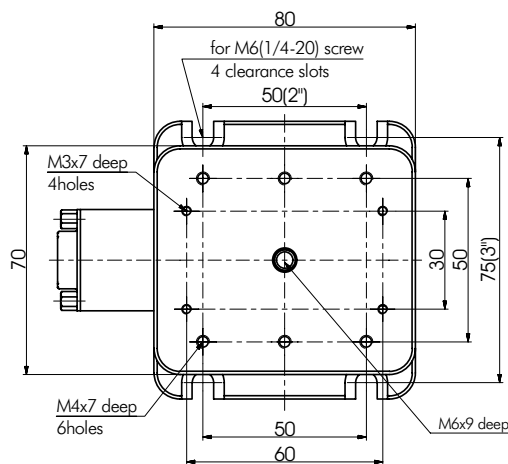
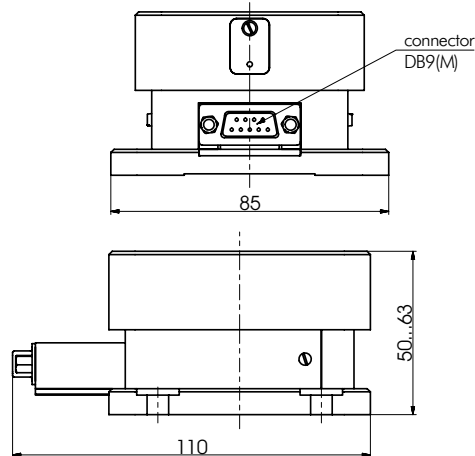


- Travel range 13 mm
- 8MR151 series rotation stages stacks directly on top of 8MVT70-13-1

**Compact Motorized Z Stage** of original Standa design provides 13 mm of reliable vertical motion. The stage ideally fits many Standa motorized linear stages.

### SPECIFICATIONS

Travel range	13 mm
Resolution in full step	5 μm
Resolution in 1/8 step	0.625 μm
Lead screw pitch	1 mm
Maximum speed	20 mm/sec
Load capacity	4 kg
Unidirectional repeatability	1 μm
Bi-directional repeatability	2 μm
Motor	2 phase stepper actuator
Weight	0.75 kg
Limit switches	2 pc mechanical
Switch polarity	pushed is open
Recommended controllers	8SMC4-USBh



**8MR151 series motorized rotation stages can be directly mounted on top of 8MVT70-13-1.**



8MR151-1

### Recommended Controllers

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

Joystick developed for manual control of one or two-axis all Stepper motor equipped motorizes stages



**8JXY-03**  
Joystick for 8SMC4-USB controller

Stepper, BLDC and DC Motor Controller with USB Interface

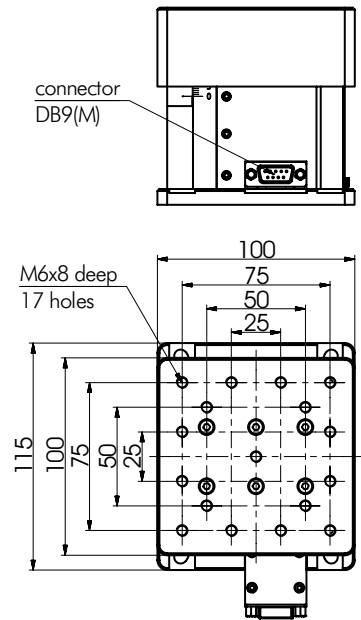
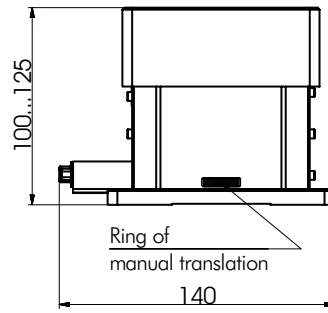
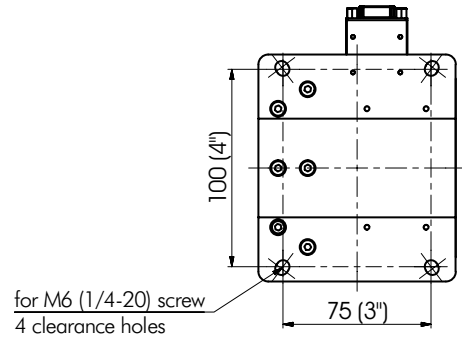


**8SMC4-USB-B8-1**  
1 axis Controller in box

# Motorized Vertical Stage

## 8MVT100-25-1

- High precision
- High speed (up to 20 mm/sec)
- Loads up to 8 kg
- Compact design
- Direct drive actuator
- Perfectly stacks with 8MR190, 8MR191-2 rotators and 8MT167 translators



### SPECIFICATIONS

Travel range	25 + 1 mm
Resolution in full step	5 μm
Resolution in 1/8 step	0.625 μm
Lead screw pitch	1 mm
Maximum speed	20 mm/sec
Load capacity	8 kg
Unidirectional repeatability	1 μm
Bi-directional repeatability	2 μm
Motor	2 phase stepper actuator
Weight	2.2 kg
Optocoupler end limit switches	2
Switch polarity	pushed is open
Recommended controllers	8SMC4-USBh

### Recommended Controllers

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

Four Axis Stepper, BLDC and DC Motor Controller with Power Supply



8SMC4-USB-B9-B9



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- 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
- Lasers & Laser Accessories 12

# Vertical Positioning Stage

**NEW**

**8MVT120**



8MVT120-12-4247



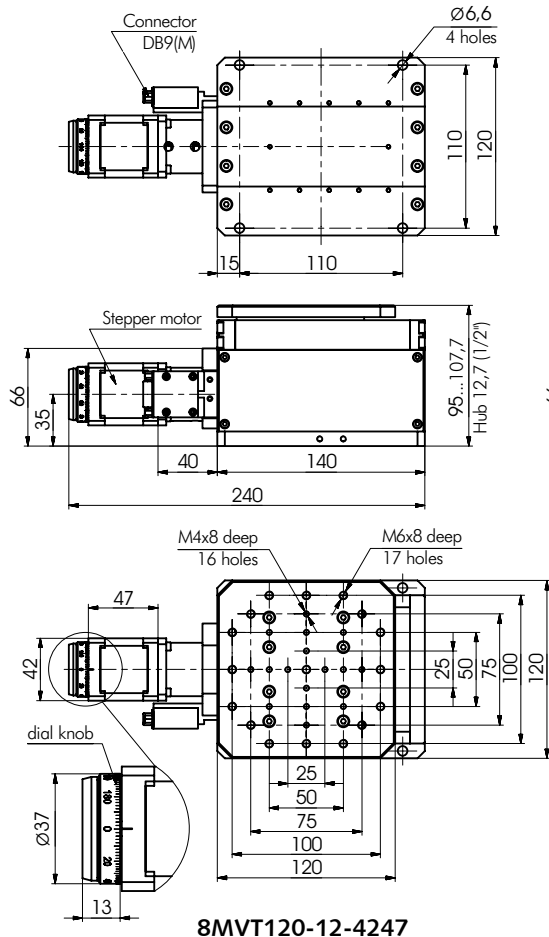
8MVT120-25-4247

- True vertical elevation of the platform
- Compact design
- Travel range – 12.7 mm and 25.4 mm
- Long life time \*
- Vacuum version available

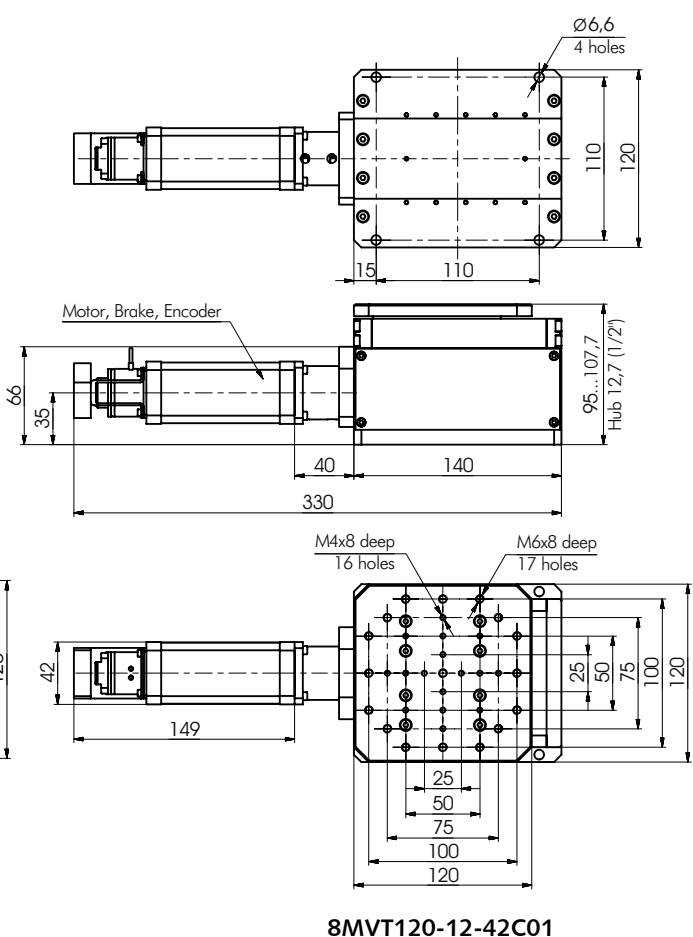
\* Screw coated with BlackIce TFE coating and equipped with plastic anti-backlash self-lubricating nut, which provide up time equal to 7 million cycles, is used in the "42C01" models.

**Vertical positioning stage** provides high-precision positioning and smooth travel for loads up to 10 kg. The wedge design, driven by precision rolled leadscrew, converts horizontal motion into vertical. Together with high quality linear bearing guide the system ensures rigid and smooth movement across all range of travel and long lifetime. Precision bearings provide platform stiffness and stability while the screw mechanism assures positioning accuracy. For protection of mechanics, optical limit switches are installed.

**8MVT120-XX-42C01** model is designed for use in clean room class 100 conditions. This model also equipped with vacuum sleeve for dust removal from inside the stage, which accumulates during stage operation.



8MVT120-12-4247



8MVT120-12-42C01

- 1 Optical Tables
- 2 Brackets & Rails
- 3 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
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- 12 Lasers & Laser Accessories

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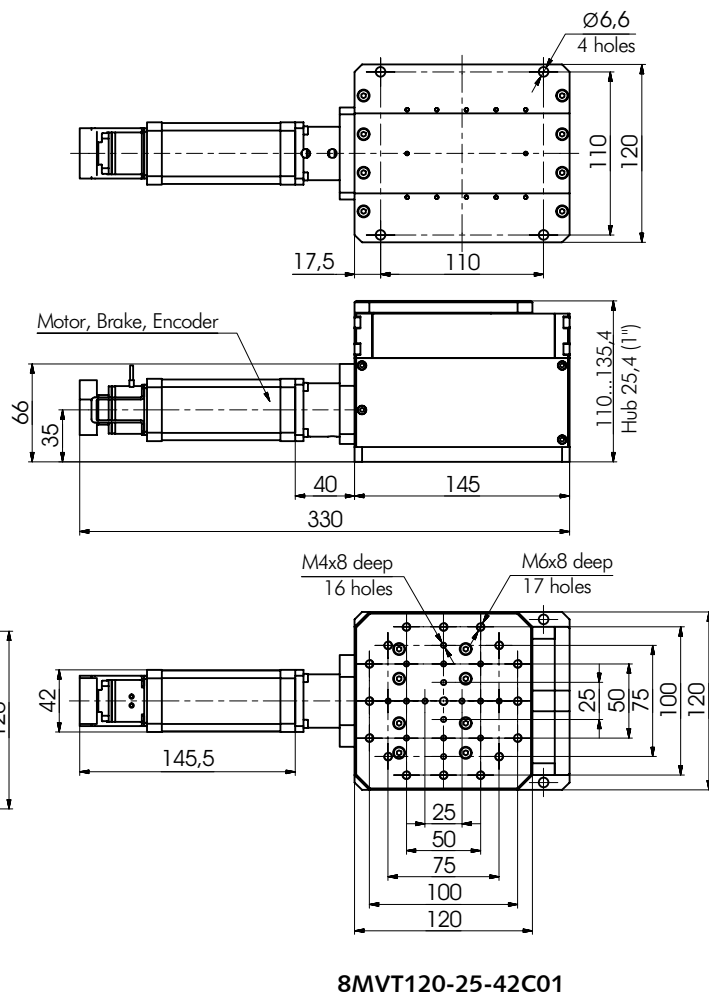
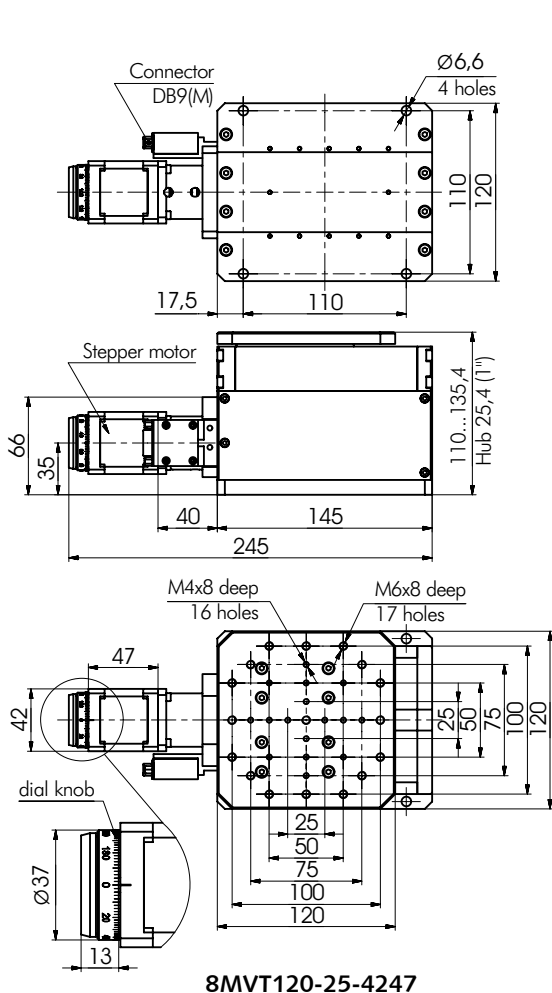


## SPECIFICATIONS

	8MVT120-12-4247	8MVT120-12-42C01	8MVT120-25-4247	8MVT120-25-42C01
Travel range, mm	12.7	12.7	25.4	25.4
Resolution in full step, $\mu\text{m}$	2.5	-	5	-
in 1/256 step, $\mu\text{m}$	0.018 *	-	0.019 *	-
Encoder pulses per revolution	by request	4000	by request	4000
Travel per 1 pulse, $\mu\text{m}$	-	0.18	-	0.36
Lead screw pitch, mm	1	1.44 **	1	1.44 **
Wedge reduction rate	2:1	2:1	1:1	1:1
Unidirectional Repeatability, $\mu\text{m}$	1,5	1,5	1,5	1,5
Bi-direction repeatability, $\mu\text{m}$	3	3	3	3
Accuracy, $\mu\text{m}$	10	10	10	10
Lift parallelism (to the base), $\mu\text{m}$		35 (by request up to 10 $\mu\text{m}$ )		35 (by request up to 15 $\mu\text{m}$ )
Maximum speed, mm/s	10	12	20	25
Maximum load capacity, kg	10 (15 kg by request)	10	10 (20 kg by request)	10
Stepper motor	4247	-	4247	-
Brushless DC motor	-	DB42-100	-	DB42-100
Brake	by request	+	by request	+
Optocoupler end limit switches	2	3	2	3
Switch polarity		Pushed is open		
Motor connector	DB9(M)	by request	DB9(M)	by request
Material		Aluminium		
Finish		Black anodize hard cover		
Weight, kg	3,5	3,9	4,05	4,5
Recommended Controller		8SMC4-USB		

\* With Standa 8SMC4-USB controller

\*\* Screw coated with BlackIce TFE coating and equipped with plastic anti-backlash self-lubricating nut, which provide up time equal to 7 million cycles, is used in the "42C01" models.



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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

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Opto-  
Mechanics &  
Sets

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Light Test &  
Measurement  
Instruments

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Lasers &  
Accessories

12

# Motorized Vertical Lift Stage

## 8MVT120-5

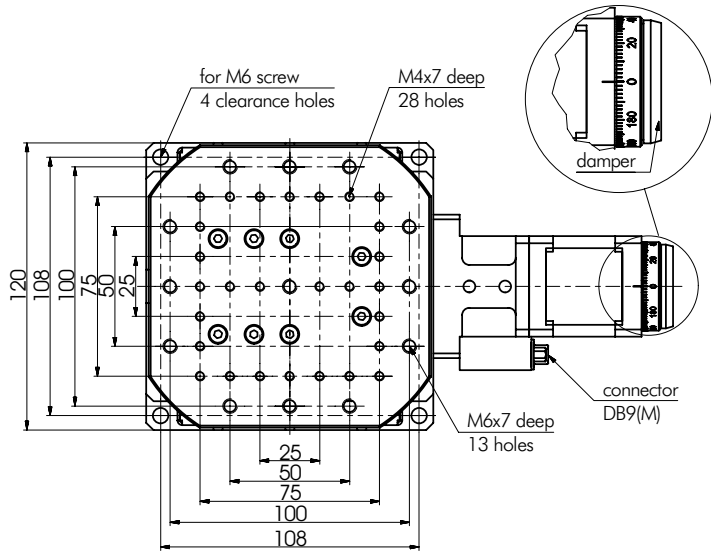
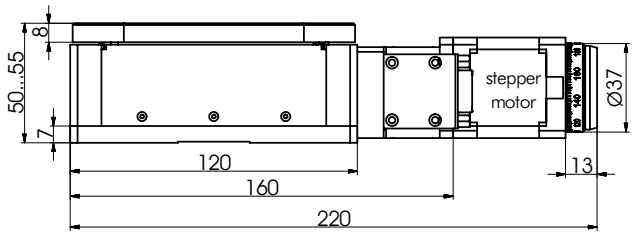


- Compact
- Stiff and stable
- Two optical limit switches
- Clean room grease

**Standa Motorized Vertical Lift Stage** offers precise vertical translation for elevating object **up to 8 kg**. An optional 1000-line rotary encoder is available for the stepper motor.

### SPECIFICATIONS

Travel range	5 mm
Resolution in full step	0,625 $\mu$ m
Resolution in 1/8 step	0.078 $\mu$ m
Lead screw pitch	0,5 mm
Wedge reduction rate	4:1
Repeatability	3 $\mu$ m
Accuracy	10 $\mu$ m
Lift parallelism (to the base)	20 $\mu$ m
Mounting surface flatness	10 $\mu$ m
Position stability (max)	3 $\mu$ m
Maximum speed	2.5 mm/s
Maximum load capacity	8 kg
Motor connector	DB9(M)
Stepper motor	4247
Recommended controllers	8SMC4-USB
Optocoupler end limit switches	2
Switch polarity	pushed is open



**Base plate 3BP120** is designed for fastening **8MVT120** series Motorized Vertical Lift Stages on optical tables and other surfaces.

See page 3-7.

### Recommended Controllers

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

#### 8SMC4-36 Universal motion controller/driver

**Universal motion controller/driver 8SMC4-36** is designed especially to control up to 36 mechatronic systems based on standard **DC, Servo, Stepper** or **BLDC technologies**. The housing of **8SMC4-36** has 7U height and can be mounted in standard 19 inch industrial cabinets. Up to six **8SMC4-36** systems can be installed in a standard 42U 19 inch cabinet. This allows to have 216 axes per cabinet which saves space and lets avoid cable clutter.



# Motorized Goniometers

## 8MG99 • 8MG00



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.

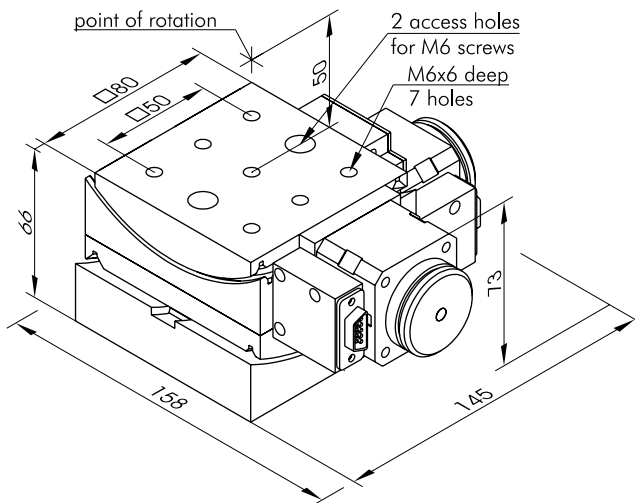
The mechanism rolls smoothly on ball bearings.

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.

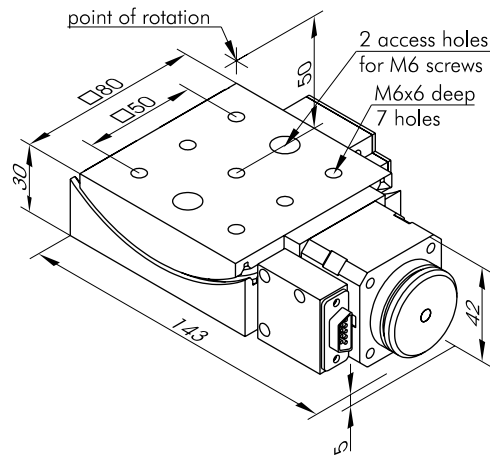
Goniometers have two **limit switches** to signal an “out of limits” error situation. The switches may also be used to **roughly** establish a zero reference.

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), 33Ω per phase. A customer can order motors of other types. We offer our Stepper Motor Controllers to control the motorized stages.

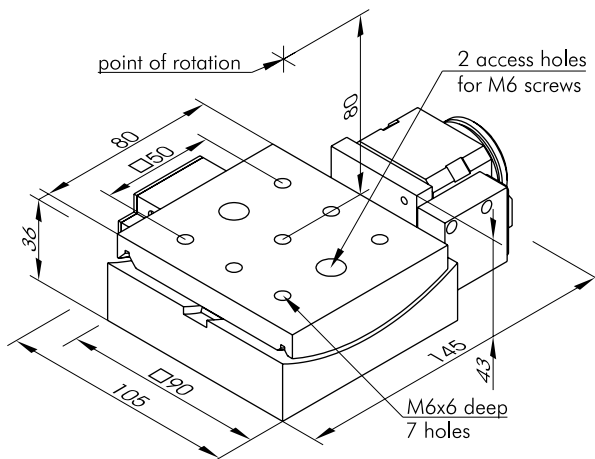
- Rotates an object without obscuring the optical path
- Smooth operation with ball bearings
- 1 or 2 axes of rotation (stackable)
- Superb stability
- Compact square body



8MG00; 8MG99 stacked



8MG00-50; 8MG99-50



8MG00-80; 8MG99-80



8MG99-80

SPECIFICATIONS	8MG99	8MG00
Travel range	±2.5°	0.5°
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



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Optical Mounts

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Optical Positioners

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Base Positioners

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Translation & Rotation Stages

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Motorised Positioners & Controllers

8

Fine Adjustment Screws

9

Opto-Mechanics & Sets

10

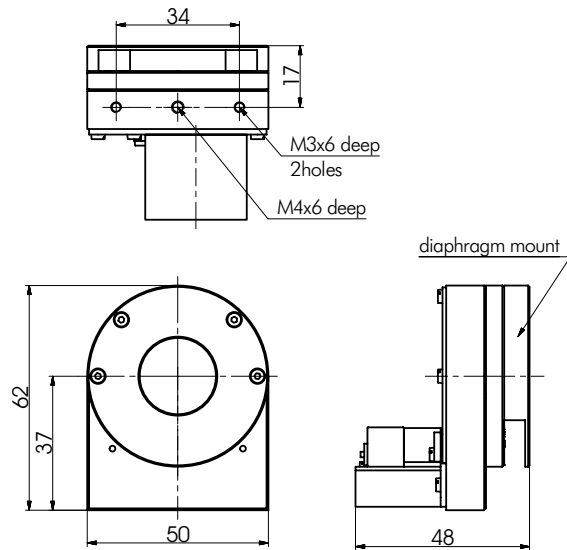
Light Test & Measurement Instruments

11

Lasers & Laser Accessories

12

# Motorized Iris Diaphragm

**8MID10-40**


**8MID Motorized Iris Diaphragms** are available with various aperture ranges, with max. apertures from 5 mm to 98 mm.

Iris with max. apertures from 5 mm to 27 mm are shown on this page. For irises with max. apertures from 30 mm to 50 mm see page 8-70. Motorized iris with max. aperture of 98 mm is shown on page 8-71.

Iris with max. apertures up to 27 mm close from min. to max. in 1.2 seconds with resolution depending on aperture size (see table below).

Zero aperture motorized iris diaphragms are available on request, max. aperture sizes from 12 mm to 40 mm.

### SPECIFICATIONS

Closing speed (min to max)	1.2 seconds
Stepper motor/gear	50:1
Limit switch	2 mechanical
Switch polarity	pushed is closed
Recommended controllers	8SMC4-USB

Model	Diaphragm used	dmax. aperture, mm	dmin. aperture, mm	average number of steps 1 mm of aperture
8MID5-0.5-AR	10IBS10-5-0.5-AR	5	0.5	385
8MID5-0.5-N	10IBS10-5-0.5-N	5	0.5	385
8MID7-0.5-AR	10IBS12-7-0.5-AR	7	0.5	301
8MID7-0.5-N	10IBS12-7-0.5-N	7	0.5	301
8MID8-1-N	10IBS14.8-8-1-N	8	1	244
8MID8.2-0.8-N	10IBS14-8.2-0.8-N	8.2	0.8	240
8MID12-1-AR	10IBS19.8-12-1-AR	12	1	180
8MID12-1-H	10IBS19.8-12-1-H	12	1	180
8MID12-1-N	10IBS19.8-12-1-N	12	1	180
8MID14-1-AR	10IBS22-14-1-AR	14	1	161
8MID14-1-N	10IBS22-14-1-N	14	1	161
8MID15-1-H	10IBS24-15-1-H	15	1	141
8MID15-1-N	10IBS24-15-1-N	15	1	141
8MID18-1-AR	10IBS28-18-1-AR	18	1	118
8MID20-1.2-AR	10IBS30-20-1.2-AR	20	1.2	106
8MID20-1.2-H	10IBS30-20-1.2-H	20	1.2	106
8MID20-1.2-N	10IBS30-20-1.2-N	20	1.2	106
8MID22-1.5-N	10IBS33-22-1.5-N	22	1.5	102
8MID25-1.5-N	10IBS37-25-1.5-N	25	1.5	89
8MID27-1.5-AR	10IBS40-27-1.5-AR	27	1.5	79
8MID27-1.5-H	10IBS40-27-1.5-H	27	1.5	79
8MID27-1.5-N	10IBS40-27-1.5-N	27	1.5	79

Temperature limits:

**AR** - leaves with AR coating, for temperatures up to 180 °C

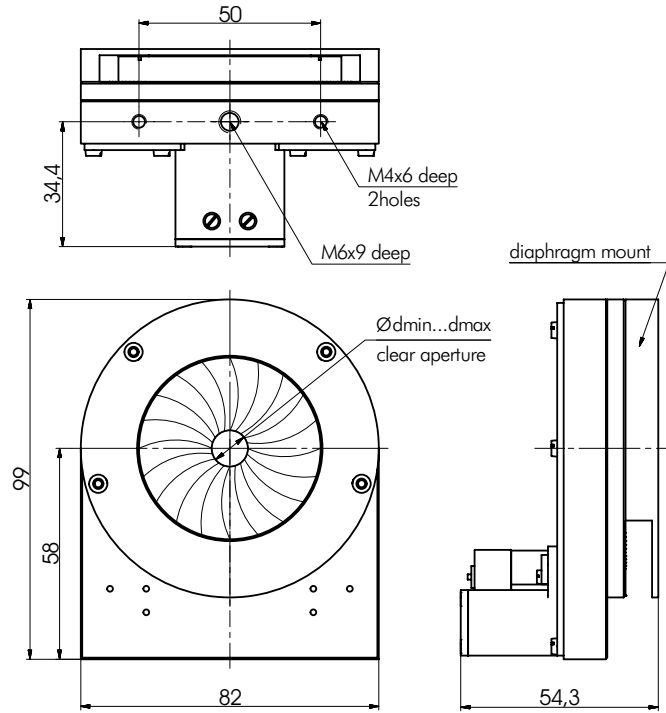
**N** - springsteel, black finished, for temperatures up to 250 °C

**H** - stainless steel, for temperatures up to 400 °C



# Motorized Iris Diaphragm

**8MID40-70**



**8MID Motorized Iris Diaphragms** are available with various aperture ranges, with max. apertures from 5 mm to 98 mm.

Iris with max. apertures from 5 mm to 27 mm are shown on page 8-69. For irises with max. apertures from 30 mm to 50 mm see this page. Motorized iris with max. aperture of 98 mm is shown on page 8-71.

Iris with max. apertures from 30 mm to 50 mm close from min. to max. in 2 seconds with resolution depending on aperture size (see table below).

Zero aperture motorized iris diaphragms are available on request, max. aperture sizes from 12 mm to 40 mm.

### SPECIFICATIONS

Closing speed (min to max)	2 seconds
Stepper motor/gear	50:1
Limit switch	2 mechanical
Switch polarity	pushed is closed
Recommended controllers	8SMC4-USB

Temperature limits:	Model	Diaphragm used	dmax. aperture, mm	dmin. aperture, mm	average number of steps 1 mm of aperture
AR - leaves with AR coating, for temperatures up to 180 °C	8MID30-1.5-H	10IBS43-30-1.5-H	30	1.5	125
	8MID30-1.5-N	10IBS43-30-1.5-N	30	1.5	125
N - springsteel, black finished, for temperatures up to 250 °C	8MID34-2-AR	10IBS49-34-2-AR	34	2	111
	8MID34-2-H	10IBS49-34-2-H	34	2	111
H - stainless steel, for temperatures up to 400 °C	8MID36-2.5-N	10IBS50-36-2.5-N	36	2.5	106
	8MID37-2.5-N	10IBS53-37-2.5-N	37	2.5	100
	8MID40-2.5-N	10IBS60-40-2.5-N	40	2.5	90
	8MID42-2.5-N	10IBS58-42-2.5-N	42	2.5	91
	8MID45-2.5-H	10IBS64-45-2.5-H	45	2.5	84
	8MID45-2.5-N	10IBS64-45-2.5-N	45	2.5	84
	8MID50-2.5-N	10IBS70-50-2.5-N	50	2.5	75

## Recommended Controllers

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

Four Axis Stepper, BLDC and DC Motor Controller with Power Supply



8SMC4-USB-B9-B9



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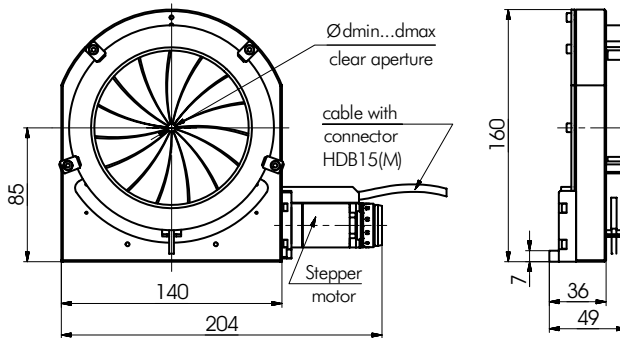
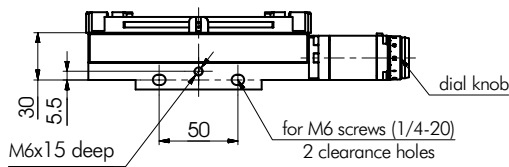
# Motorized Iris Diaphragm

**8MID70-130**



- Smooth and fast operation
- Continuously adjustable light attenuation
- Compact design
- Control via PC through USB or RS232
- Adjustable inserts

**8MID70-130 Motorized Iris Diaphragm Mount** was developed due to interest in our previously presented motorized iris **8MID98-4**. Motorized Iris Diaphragm is designed for our small medium family, more information about fitted iris diaphragms can be found on 10-3 page. Unfortunately it is impossible to interchange iris diaphragms at home since every diaphragm has its own adapter ring and requires calibration.



### SPECIFICATIONS

Closing speed (min to max)	3 sec
Stepper motor/gear	195:1
Limit switch	2, mechanical
Switch polarity	pushed is closed
Recommended controllers	8SMC4-USB

### Temperature limits:

- AR** - leaves with AR coating, for temperatures up to 180 °C
- N** - springsteel, black finished, for temperatures up to 250 °C
- H** - stainless steel, for temperatures up to 400 °C

Model	Diaphragm used	dmax. aperture, mm	dmin. aperture, mm	average number of steps 1mm of aperture
8MID60-4-H	10IBS82-60-4-H	60	4	178
8MID60-4-N	10IBS82-60-4-N	60	4	178
8MID75-4-H	10IBS100-75-4-H	75	4	143
8MID75-4-N	10IBS100-75-4-N	75	4	143
8MID81-3-AR	10IBS110-81-3-AR	81	3	132
8MID90-3.5-AR	10IBS120-90-3.5-AR	90	3.5	122
8MID98-4-H	10IBS130-98-4-H	98	4	112
8MID98-4-N	10IBS130-98-4-N	98	4	112

## Recommended Controllers

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



2 axis Controller in box  
**8SMC4-USB-B9-2**

**Stepper, BLDC and DC Motor Controller with USB Interface**



Assembly kit  
**5AK-B9-B9**

Assembly kit to fix two or more controller boxes together

# Laser Beam Shutters

**8MDS**

- Ultra thin (only 15 mm)
- 25 - 100 mm Diameter Shutters Available

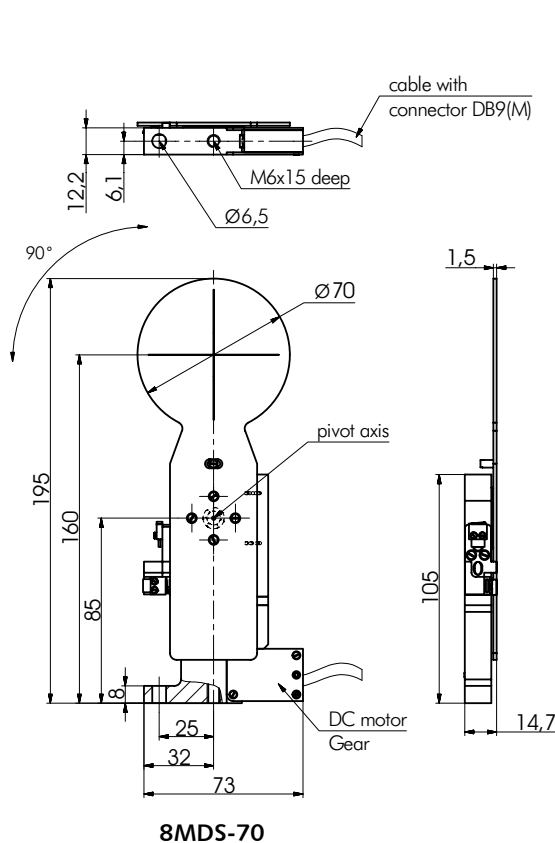
**Laser Beam Shutters** are designed in a very thin way thus enabling usage in extremely dense optical assemblies and narrow spaces. Our shutters are **equipped with DC motors**. Shutters are used to block laser beam and prevent equipment or eyes from taking damage due to unpredicted circumstances or laser malfunction. For instance, laboratory doors can be connected a series of shutters that will block the laser beam once doors are opened.

### SPECIFICATIONS

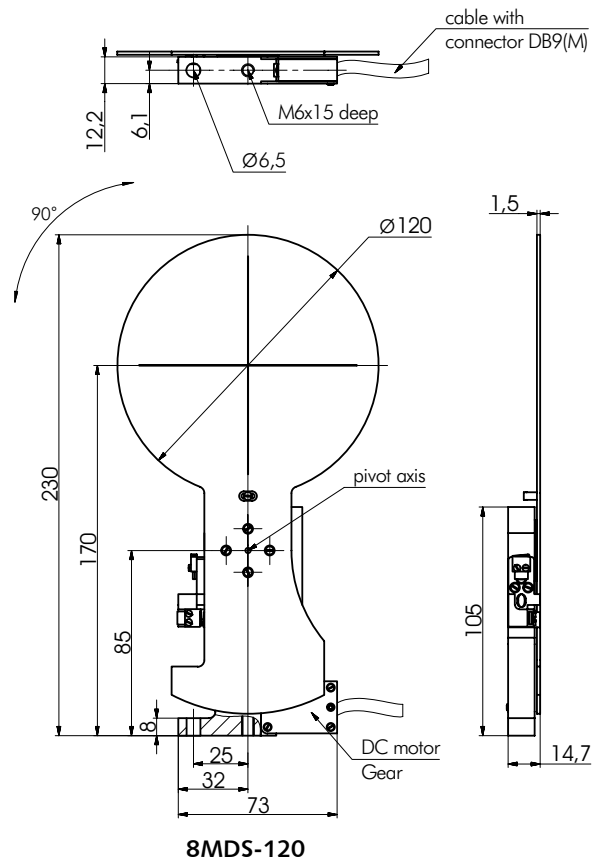
Turning angle	90°
Turning time	1 sec
Cable	1.6 m length
Motor connector	DB9(M)
DC Motor size	Ø10 mm
Gear	4:1
Power	12V, 0.176 A
Limit switches	2 pc mechanical
Recommended controllers	8SMC4-USB



**8MDS-70**



**8MDS-70**



**8MDS-120**

### Recommended Controller

Stepper, BLDC and DC Motor Controller with USB Interface



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

**8SMC4-USB-B8-1**  
1 axis Controller in box



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Optical Tables

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Base Mounts & Accessories

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Optical Mounts

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Optical Positioners

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Base Positioners

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Fine Adjustment Screws

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Lasers & Laser Accessories

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# Piezo Scanning Nano-Stages, Positioners and Controllers



**8NTS-X**  
Compact Single Axis  
Piezo Actuator



**8NTS-XYZ-200**  
2(3)D Piezo Scanning Stage



**8NTS-XYZ-200-A**  
Piezo Scanning Stage  
with Central Hole



**8NTS-XYZ-40-SPM**  
Plane-Parallel Nano Piezo  
Scanning Stage



**8NTS-Z**  
Z Axis Piezo Potioning Stage



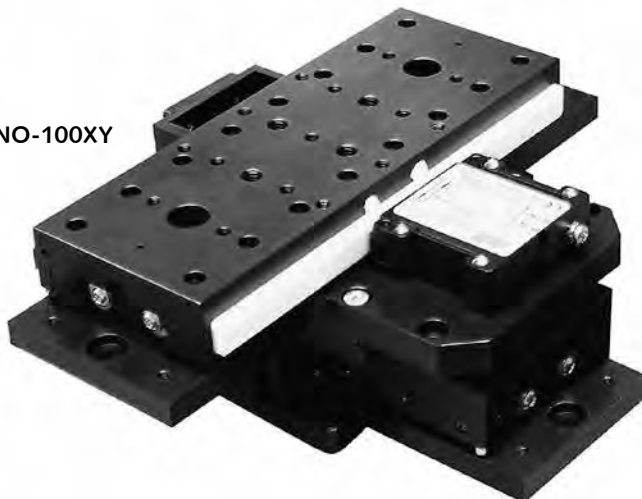
**8NSC**  
Nano Stage Controllers

*Pages 8-73...8-77*

## Nano Positioners

### 8NANO-100

8NANO-100XY



#### 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



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## Piezo Scanning Nano-Stages

**8NTS**

Piezo scanning stages are perfectly suitable for very accurate and low inertia automated systems. Because of compact design and low weight, designers can easily incorporate positioners to the projects without high weight and volume efficiency losses.

control algorithm it is possible to reach 100 picometers resolution. Stability in closed-loop control algorithm guarantees double capacity sensor technic. On request we could prepare stages compatible to work in vacuum and high temperatures (since -40 up to 80 °C).

NTS series nano stages have wide spectrum of strokes (from 20 μm to 200 μm). Using open-loop

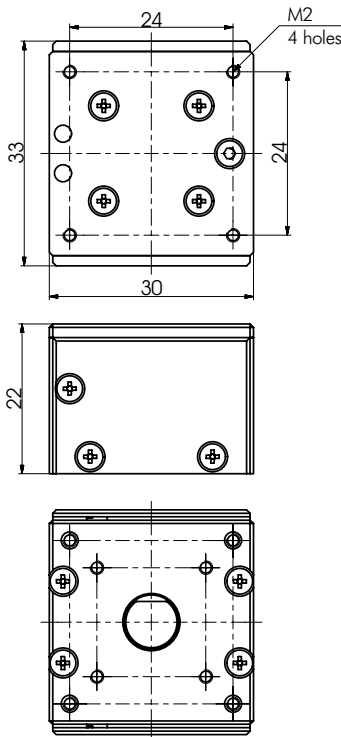
## Compact Single Axis Piezo Actuator

**8NTS-X**



- Double capacity sensor technology for feedback
- Travel range up to 120 μm
- Ultra high resolution 0.1 nm
- Low cost
- Compact design and low weight
- Suitable for universal applications
- High stiffness
- Compensated creep effect of piezoceramics
- Low frequency noise resistance
- Ideal capable for microscopic application
- Vacuum version available

**NEW**



### SPECIFICATIONS

#### Motion properties

Active axis	X
Z range, μm	120
Resolution (closed loop), nm	1
Resolution (open loop), nm	0.1
Angle tilting over the full range, deg	<0.01
Maximum scanning speed, Hz	10

#### Control Properties

Electrical capacity, pF	20
-------------------------	----

#### Mechanical Properties

Resonant frequency Z, kHz	3
Load capacity, g	100
Operating temperature range, °C	-40...80
Dimensions, mm	30×30×22
Material	Aluminum

## 2(3)D Piezo Scanning Stage

**8NTS-XYZ-200**

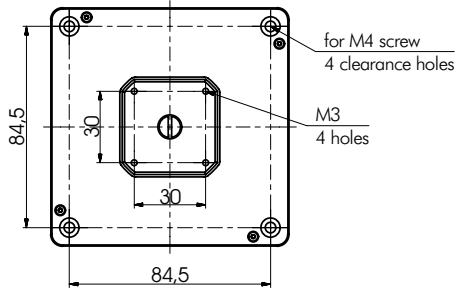
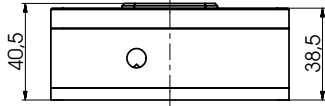
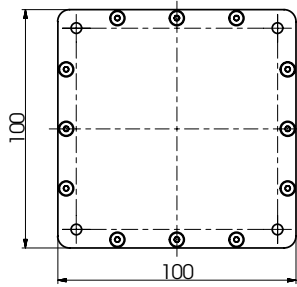


- Double capacity sensor technology for feedback
- Travel range in horizontal directions up to 200 μm
- Travel range in vertical direction up to 20 μm
- Ultra high resolution 0.1 nm
- Low cost
- Compact design and low weight
- Suitable for universal applications
- High stiffness
- Compensated creep effect
- Low frequency noise resistance
- Ideal capable for microscopic application
- Vacuum version available

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## SPECIFICATIONS

### Motion properties

Active axis	XY(Z)
XY range, $\mu\text{m}$	200 × 200
Z range, $\mu\text{m}$	20
Resolution (closed loop), nm	1
Resolution (open loop), nm	0.1
Angle tilting over the full range, deg	<0.01
Maximum scanning speed, Hz	10

### Control Properties

Electrical capacity XY axes, pF	30
Electrical capacity Z axis, pF	35

### Mechanical Properties

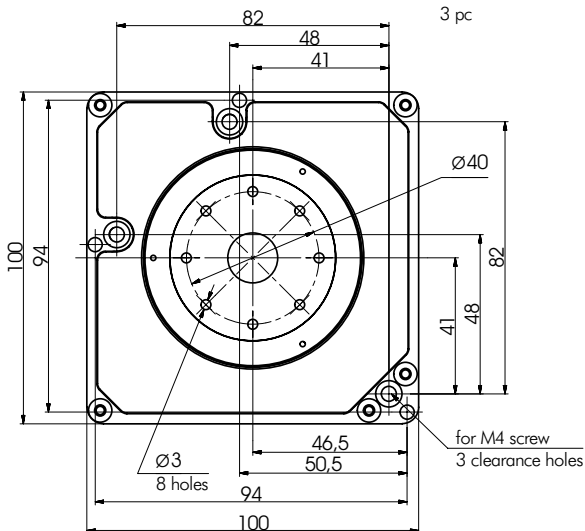
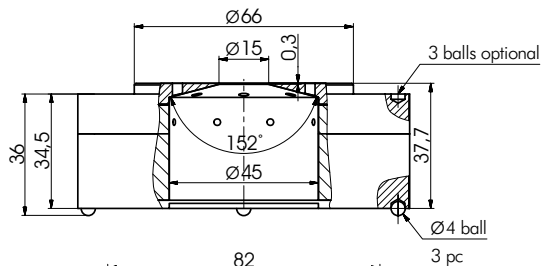
Resonant frequency Z, kHz	30
Resonant frequency XY, kHz	1
Load capacity, g	100
Operating temperature range, °C	-40...80
Dimensions, mm	100×100×33 mm
Material	Aluminum

## Piezo Scanning Stage with Central Hole

## 8NTS-XYZ-200-A



- Double capacity sensor technology for feedback
- Travel range in horizontal directions up to 200  $\mu\text{m}$
- Travel range in vertical direction up to 20  $\mu\text{m}$
- Ultra high resolution 0.1 nm
- Clear aperture diameter 45 mm
- Low cost
- Compact design and low weight
- Suitable for universal applications
- High stiffness
- Compensated creep effect
- Low frequency noise resistance
- Ideal capable for microscopic application
- Vacuum version available



## SPECIFICATIONS

### Motion properties

Active axis	XYZ
XY range, $\mu\text{m}$	200 × 200
Z range, $\mu\text{m}$	20
Resolution (closed loop), nm	1
Resolution (open loop), nm	0.1
Angle tilting over the full range, deg	<0.01
Maximum scanning speed, Hz	10

### Control Properties

Electrical capacity XY axes, pF	10
Electrical capacity Z axis, pF	10

### Mechanical Properties

Clear aperture diameter, mm	45
Resonant frequency Z, kHz	3
Resonant frequency XY, kHz	1
Load capacity, g	100
Operating temperature range, °C	-40...80
Dimensions, mm	100×100×35 mm
Material	Aluminum



# Plane-Parallel Nano Piezo Scanning Stage

**8NTS-XYZ-40-SPM**

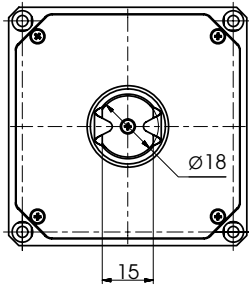
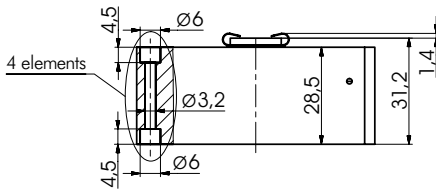
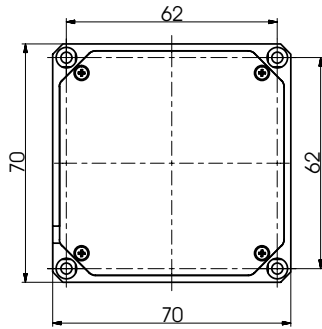


- Double capacity sensor technology for feedback
- Travel range up to 40  $\mu\text{m}$
- Ultra high resolution 0.1 nm
- Low cost
- Compact design and low weight
- Suitable for universal applications
- High stiffness
- Compensated creep effect of piezoceramics
- Low frequency noise resistance
- Ideal capable for microscopic application
- Vacuum version available

**NEW**

### SPECIFICATIONS

XY travel range, $\mu\text{m}$	40 × 40
Z range, $\mu\text{m}$	5
Resonant frequency XY, kHz	5
Resonant frequency Z, kHz	50
Resolution (closed loop), nm	1
Resolution (open loop), nm	0.1
Angle tilting over the full range, deg	<0.01
Maximum scanning speed, Hz (line/sec)	50
Base sample weight, g	50
Dimensions, mm	70 × 62 × 32.2
Material	Aluminium



# Z Axis Piezo Positioning Stage

**8NTS-Z**



- Double capacity sensor technology for feedback
- Travel range in vertical direction up to : 100  $\mu\text{m}$
- Ultra high resolution: 0.1 nm
- Sample weight up to : 300 g
- Low cost
- Compact design and low weight
- Suitable for universal applications
- High stiffness
- Compensated creep effect
- Low frequency noise resistance
- Ideal capable for microscopic application
- Vacuum version available



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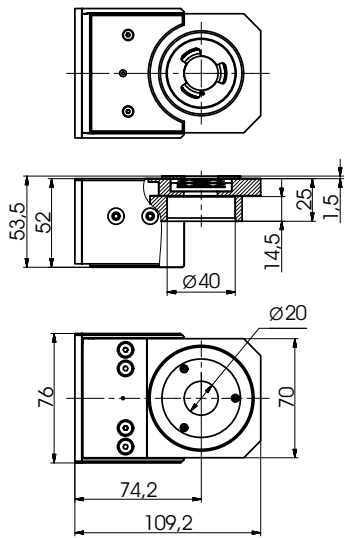
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## SPECIFICATIONS

### Motion properties

Active axis	Z
Resolution (closed loop), mm	1
Resolution (open loop), mm	0.1
Angle tilting over the full range, deg	<0.01
Maximum scanning speed, Hz	10

### Control Properties

Electrical capacity Z axis, pF	15
--------------------------------	----

### Mechanical Properties

Resonant frequency Z, kHz	0.5
Load capacity, g	300
Operating temperature range, °C	-40...80
Dimensions, mm	108×73×67.5
Material	Aluminum

## Nano Stages Controllers

## 8NSC



**8NSC-1000**  
3 axis controller



**8NSC-3061**  
9 axis controller

*Single Channel Controller Available!*

### 8NSC controllers lineup

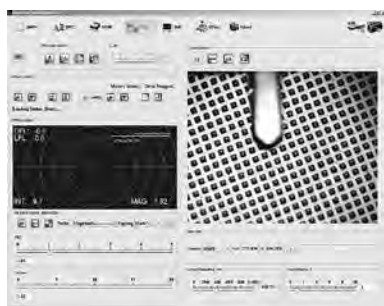
- Closed Loop Feedback
- DAC
- USB / RS-232C communication
- Synchronization OUT
- High Voltage Amplifier -5/150 V
- NSpec Software

Electronic controllers 8NSC is designed to control piezo positioners of 8NTS series.

**8NSC-1000** is able to control 3 piezo stages.

**8NSC-3061** can control 9 piezo stages and up to 4 stepper motor translation stages with micro step option, for instance, for rough adjustment of scanning head (stage).

8NSC-3061 SPM controller contains 2-channel lock-in amplifier to provide resonant SPM techniques, for example non-contact SPM mode. Lock in amplifier includes high stable voltage generator based on digital frequency synthesizer. High speed data processing is implemented using programmable logic (FPGA). This allows to perform high quality lock-in detection up to 1.5 MHz band.



**Software:**  
Basic Nspec software, SDK for Windows, Linux, Mac OS, Android for Tablet PC.

## SPECIFICATIONS

CPU	32 bit; RISC
PC interface	USB 2.0
Other interfaces	RS 232, RS 485, SYNC I/O
Voltage	-10 – 150 V
Noise	<5 ppm
Bit (digital-analog converters)	18 bit

### 8NSC-3061

Piezo control	
Number of channels max	9
Stepper motor control	
Number of channels	4
Power supply	24 V, 3 A
Support microstepping mode	up to 1/16 step
Lock-in amplifier	
Number of channels	2
Coefficient preamplifier	1 – 100
Voltage range	±10 V
Bit ADC	16 bit
Amplitude of the output voltage	10 mV – 10 V
Stability of the main oscillator	<5 ppm

### 8NSC-1000

Piezo control	
Number of channels max	3







8MR174V-11-VSS42



8CMA16DCV-25/15

*Available for vacuum!*

*more info on  
www.standa.it*



8MR190V-2-VSS42



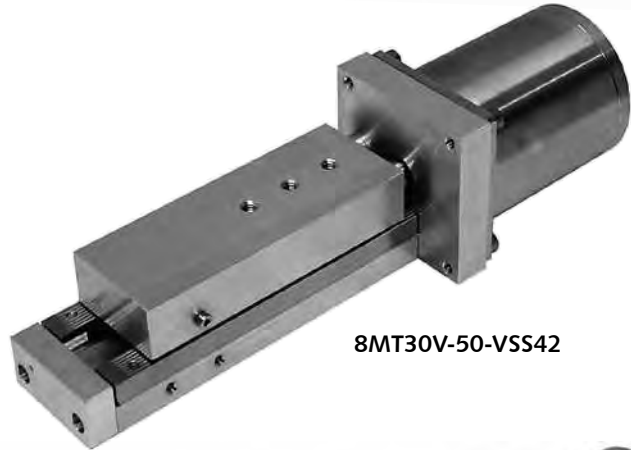
8MS00V-10-VSS42



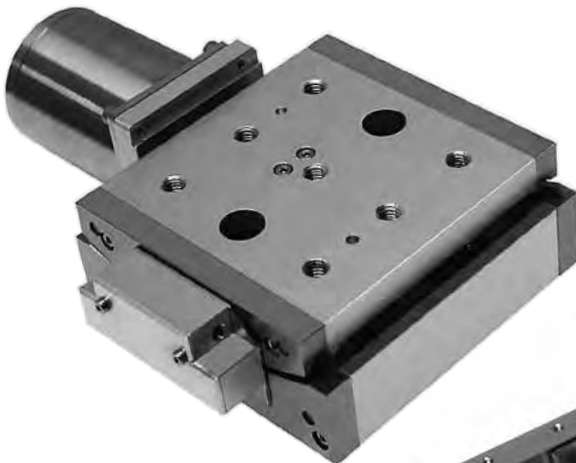
8MT173V-20-VSS42



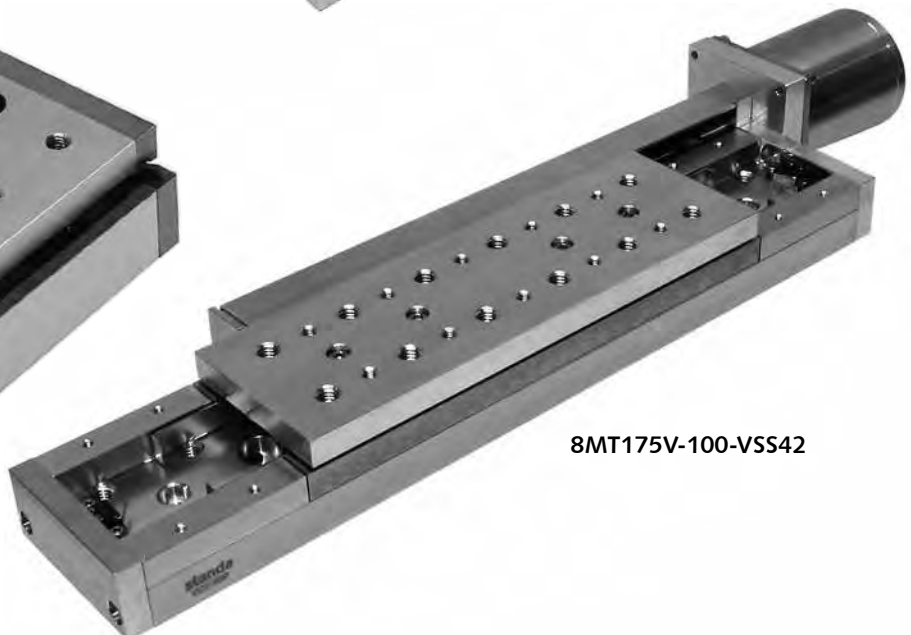
8MR191V-VSS42



8MT30V-50-VSS42



8MG99V-80-VSS42



8MT175V-100-VSS42



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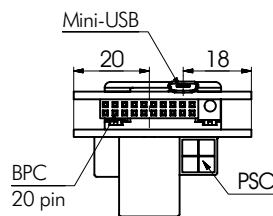
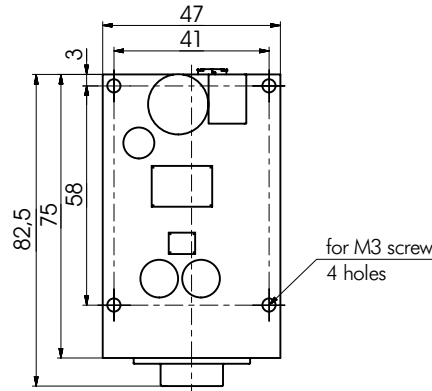
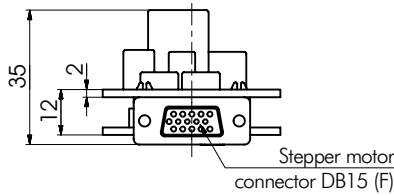
# Stepper, BLDC and DC Motor Controller

## 8SMC4-USB series

**NEW**



**8SMC4-USB-B8-1**  
One Axis Controller



**8SMC4-USB**  
Circuit Card Assembly

- Compatible with Windows XP/Vista/7/8, Linux, Mac OS
- Saving settings files to flash/file
- Precise home positioning
- Synchronization I/O
- User Friendly XILab Interface
- Step Mode Up to 1/256
- Rated current up to 3 A for stepper; 6 A for DC motor
- Voltage 5 V – 36 V
- Code Examples for Visual Basic, C, C#, C++, Matlab, Labview
- Ready to use Configuration files for Standa stages
- Status LEDs
- Max. speed – 35000 steps/s (stepper); 800000 encoder counts per second (DC)
- Encoder Input
- Compatibility with 8SMC1-USBhF
- Supports up to 32 axes in single USB port (more on request)
- Manual control buttons
- USB Interface



### Brief description

An overview of today's approaches for flexible motion control in lab experiments is given. With modern controller design even simple and inexpensive positioners can be utilized to achieve high speed and precision. It doesn't matter which motor technology you prefer: stepper, DC, or BLDC because one controller can drive them all. Multi-axis control, developing custom motion control software for any OS, automatic positioners recognition and using various peripherals are all easy now.

### Supported types of motors

The controller is great at driving bipolar stepper motors with a rated winding current of up to 3 A (by request up to 6 A, 48 V) and DC motors with rated current up to 6 A. All you need to do is plug it in, no assembly required. Multiple controllers can be connected to one computer either via USB ports or through a special hub that provide axis synchronization.

The controller's software is fully compatible with almost all operating systems, e.g., Windows, Mac OS X, Linux, etc. You can test the software with virtual controllers simulated by the software. The software provides javascript like scripting language to quickly automate your task or you can use a cross platform library with code examples on C, Visual Basic, Matlab, Labview, C# to build your own software.

Optionally the controller can be managed with the same instructions set, as from USB interface, by using many of popular serial interfaces like Bluetooth, Ethernet, RS422 or RS232 – requires converters from TTL logic signals RX and TX. These signals are located on the backplane connector of the controller circuit board. Communication speed, parity and stop bits are wide configurable. Default interface is USB, but on request Standa can produce controllers with required interface. Test the controller 8SMC4 instantly as it comes with the manual control buttons, they could be used for ease testing of your equipment or controller itself even without a PC.

### Software

XILab features two user-friendly graphical interfaces, which are designed for positioners control, diagnostic and fine tuning of the motors driven by the controllers. The control process can be automated with the scripting option that can be used either directly or to speed up the process of customized control program development. XiLab supports multiaxial mode and multidimensional control scripts. It is possible to output motor and controller status in form of charts and save them to a file. XILab software has two types of interfaces: Single-axis control and Multi-axis control.

Single-axis and Multi-axis control interfaces contain motor and controller parameters: position, speed, voltage, current and temperature. Advanced joystick and units conversion block are only available in Multi-axis interface. You can choose any of these interfaces that fits your application the best.

**SPECIFICATIONS**

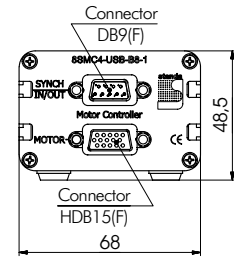
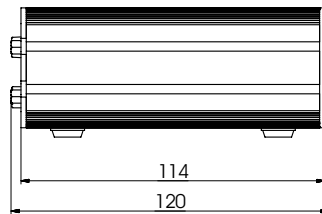
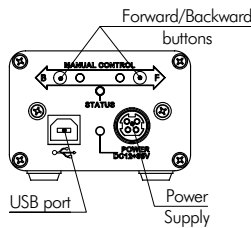
Winding current	
stepper	0.25 – 3 A
DC	0.25 – 6 A
Power supply	12 – 36 V
Step division	1 – 1/256
Max speed	
stepper	35000 steps/s
DC	800000 encoder counts per second
Motor connector	DB15F
Synchronization	YES
ESD protection	YES
Interface	USB, COM port
Operating Temperature,	up to 70 °C
LED indication	YES

**One controller!**  
**One interface for any type of motor!**

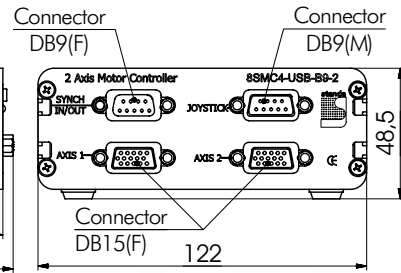
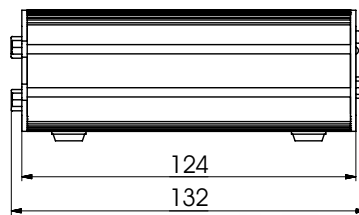
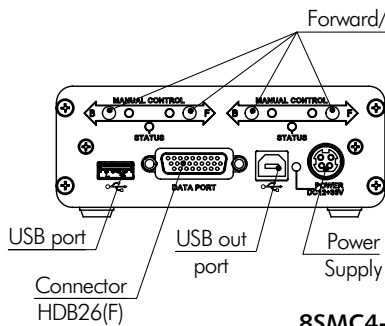
**Bipolar Stepper**  
*(rotational/linear)*

**DC**

**BLDC**  
*(rotational/linear)*



**8SMC4-USB-B8-1**  
One Axis Controller



**8SMC4-USB-B9-2**  
Two Axis Controller

**8SMC4-USB-B8-B9**  
Three Axis Controller



**8SMC4-USB-B9-B9**  
Four Axis Controller



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## Ordering information

<p>1 Optical Tables</p>	<p>8SMC4-USB 8SMC4-USB-B8-1 8SMC4-USB-B9-1 8SMC4-USB-B8-1BR 8SMC4-USB-B9-1BR 8SMC4-USB-B9-2 8SMC4-USB-B9-2BR 8SMC4-USB-B8-B9 8SMC4-USB-B8-B9-BR 8SMC4-USB-B9-B9 8SMC4-USB-B9-B9-BR</p>	<p>- 1-axis controller circuit card assembly - 1 axis controller / budget - 1 axis controller - 1-axis controller for brake equipped motor / budget - 1-axis controller for brake equipped motor - 2-axis controller - 2-axis controller (1-axis for brake equipped motor) - 3-axis controller - 3-axis controller (1-axis for brake equipped motor) - 4-axis controller - 4-axis controller (1-axis for brake equipped motor)</p>
<p>2 Brackets &amp; Rails</p>	<p>5AK-B9-B9 8A-KPPX-KPJX 8CA-SYNCH 8CA15F-15MR12 1.8 m 8CA15M-15F/BR/SYNCH 8CA9F-15MR 1.8 m 8HDB26M</p>	<p>- Assembly kit to fix two or more controller boxes together - Power supply output cable split - Synchronization cable - 15-pin cable to motor with rotary encoder - 15-pin cable to motor with brake and synchronization - 9-pin cable to motor - Connector HDB26(M) with backshell</p>
<p>3 Base Mounts &amp; Accessories</p>	<p>8JXY-03 Cable12-L1.8 Cable8-L1.8 USB/A-B 0.2 m USB/A-USB/B 1.8m USB/mini-USB/A</p>	<p>- 2-axis joystick for manual control - 12 core cable, lenght 1.8 m - 8 core cable, lenght 1.8 m - USB cable between controllers 0.2 m - USB cable to PC 1.8 m - mini USB cable to PC</p>

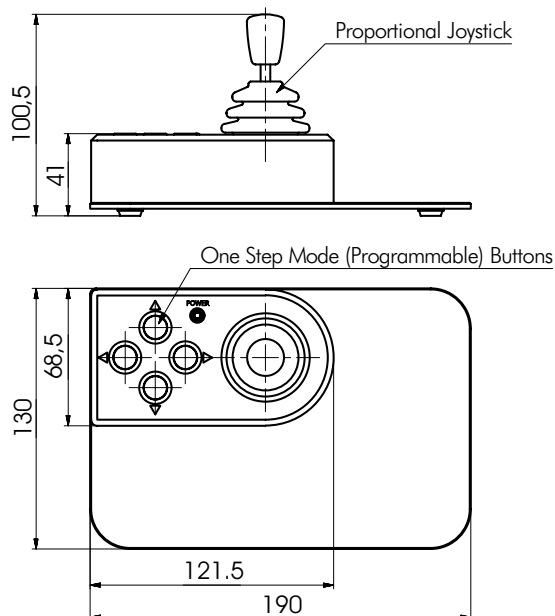
## Joystick

**NEW**

**8JXY-03**



- Easy plug in connection
- High precision
- Spring return to center position mechanism
- Hall Effect sensor type
- High Life cycles
- Operating temperature -25°C up to +70°C
- IP class is For Indoor usage
- Deflection X/Y max.  $\pm 18^\circ$



**Easy and ergonomic joystick 8JXY-03.** Joystick developed for manual control of one or two-axis all Stepper motor equipped motorizes stages, which provide smooth motion with proportional **joystick**, and one step mode (programmable) motion with **4 buttons** on top. Joystick suitable for Standa stepper motor controllers and parameters like: **acceleration, deceleration and speed changing in time** – can be programmed for your application and task. Proportional joystick's knob made of nylon and very ergonomic, what in aggregate with wide joystick base provides usage stability and comfortability during work.



## Power Supplies for Standa Controllers



**Power supply PSAA18U-120**  
 12 V; 1.5 A  
 98.5 × 55 × 31.5 mm  
 200 g  
 connector “2.1/5.5”



**Power supply PSC30U-120V**  
 12 V; 2.5 A  
 98.5 × 55 × 31.5 mm  
 250 g  
 connector “2.1/5.5”



**Power supply GS60A24-P1**  
 24 V; 2.5 A  
 125 × 50 × 31.5 mm  
 310 g  
 KPPX-4P power connector



**Power supply PUP120-17**  
 36 V; 3.34 A  
 167 × 65 × 37 mm  
 640 g  
 KPPX-4P power connector

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 motors. 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 currents 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.



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