

Large Motorized Rotation Stage

8MRB240-152-59


- 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.

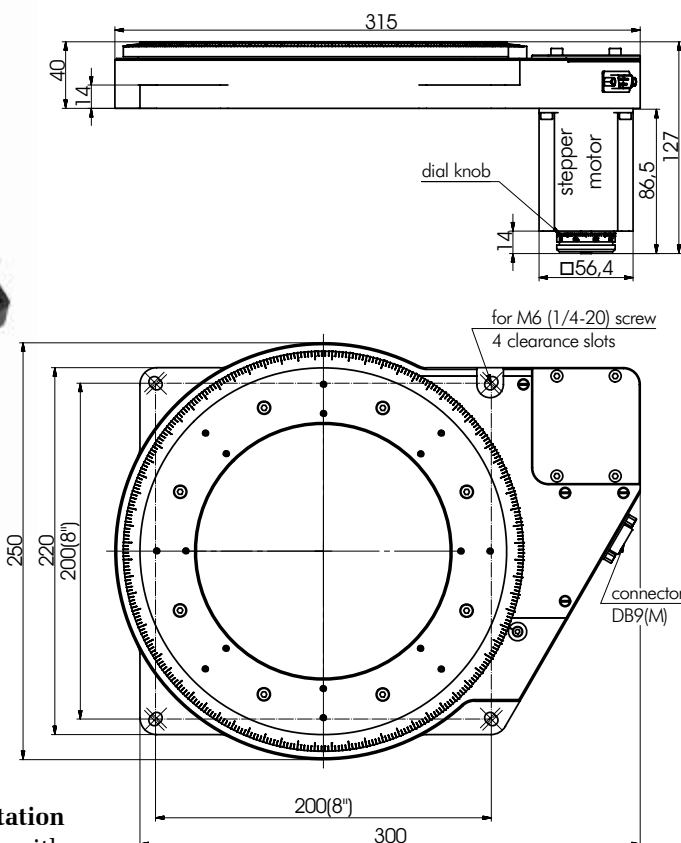
Two modifications are available:

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

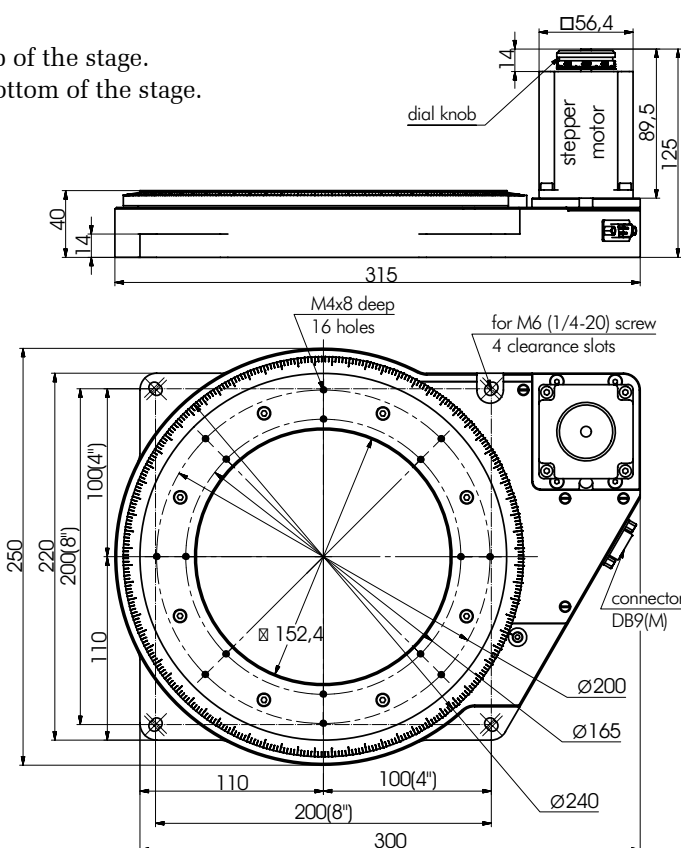
8MRB250-152-59D – motor is fixed to the bottom of the stage.

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



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



8MRB240-152-59

Optical
Tables
1

Brackets
& Rails
2

Base
Mounts &
Accessories
3

Optical
Mounts
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Optical
Positioners
5

Base
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6

Translation &
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Motorised
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Fine
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Light Test &
Measurement
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Lasers &
Accessories
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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 μ 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.

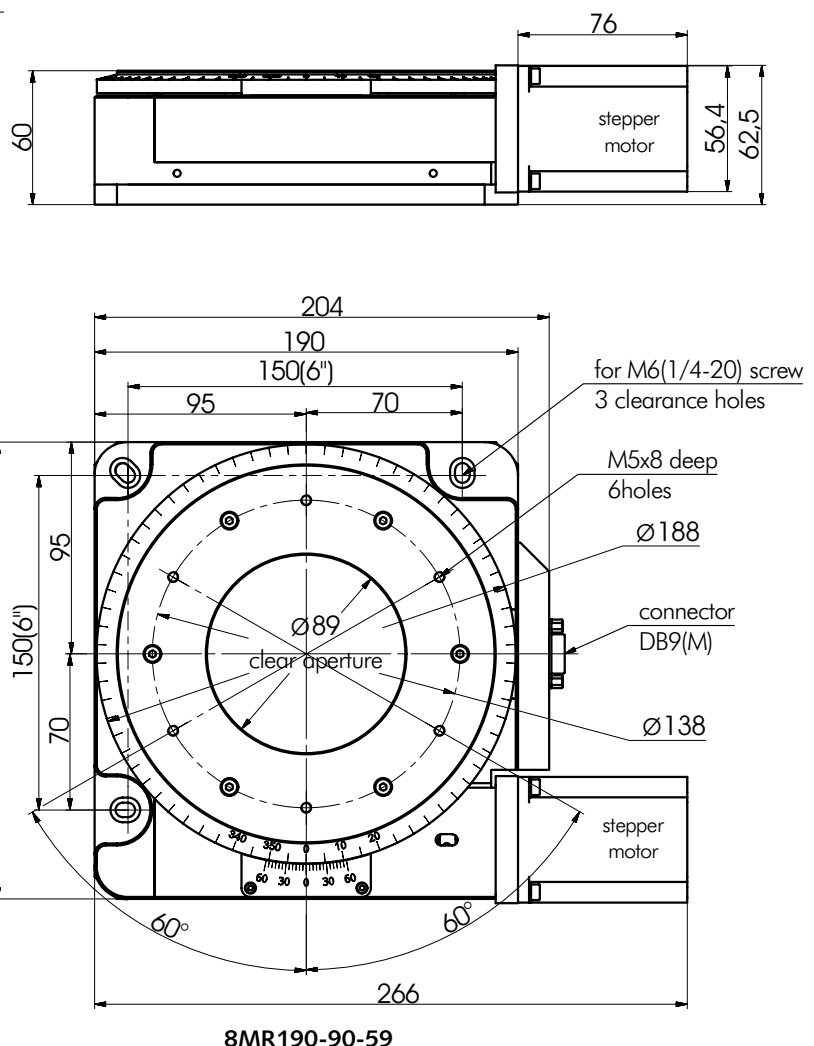
ORDERING INFORMATION

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)



8MR190-90-59

Large Motorized Rotation Stage

8MR190-90-4247

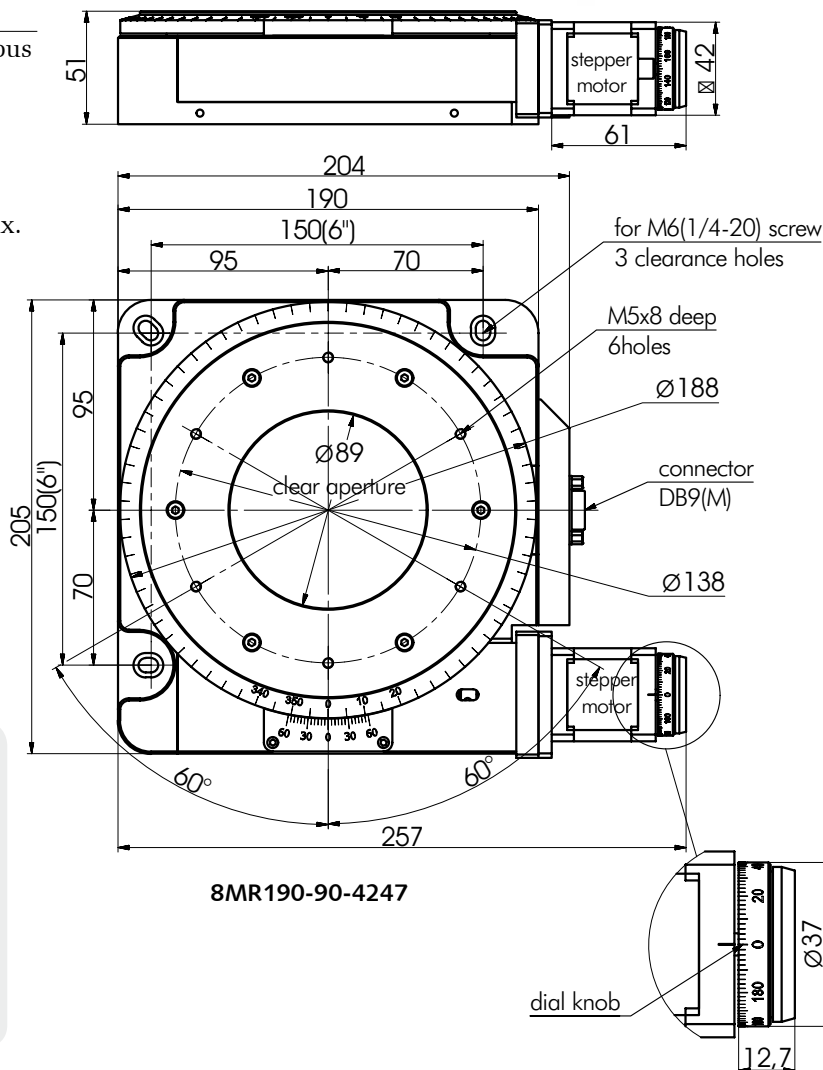


SPECIFICATIONS

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

*Test condition:

- STANDA controllers;
- Power supply – 36V.



Vacuum 10⁻⁶ Torr Compatible

ORDERING INFORMATION

8MR190V-90-VSS43

Rotation Stage with stepper vacuum motor **VSS43**

8MR190V-90-VSS42G6

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

SPECIFICATIONS for 8MR190V-90-VSS43

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

*Test condition:

- STANDA controllers;
- Power supply – 36V.



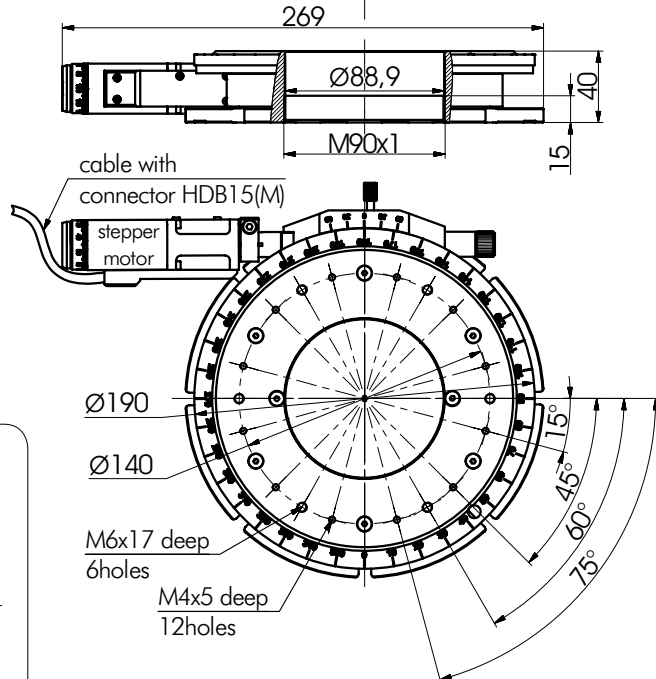
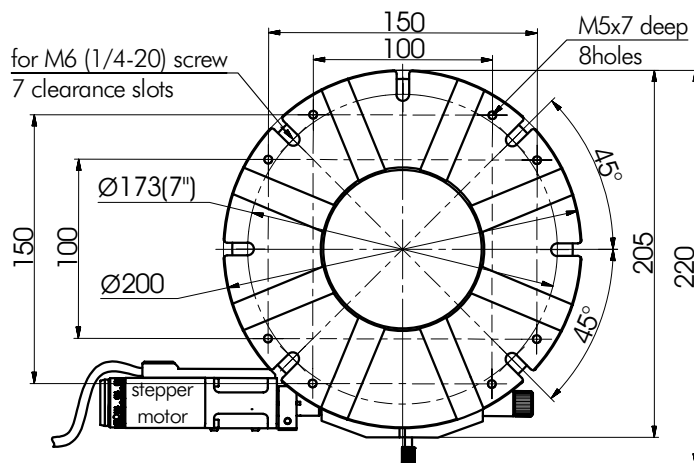
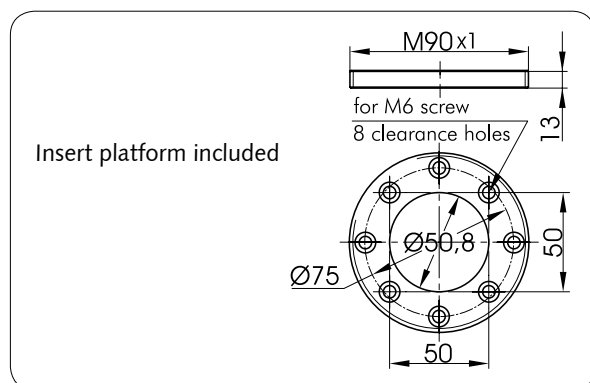
Motorized Rotary Stage

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

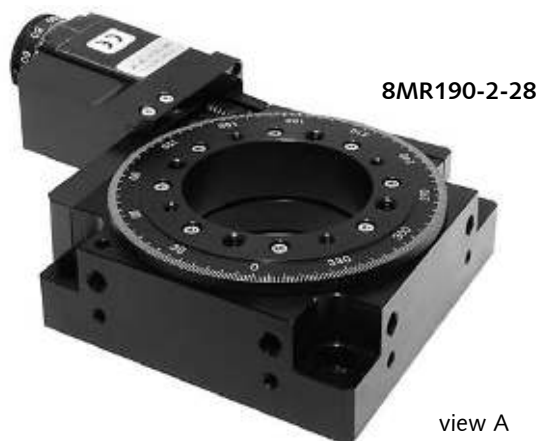


8JXY-03
Joystick for
8SMC4-USB controller

more info on www.standa.it

Motorized Rotation Stages

8MR190-2



8MR190-2-28

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

SPECIFICATIONS

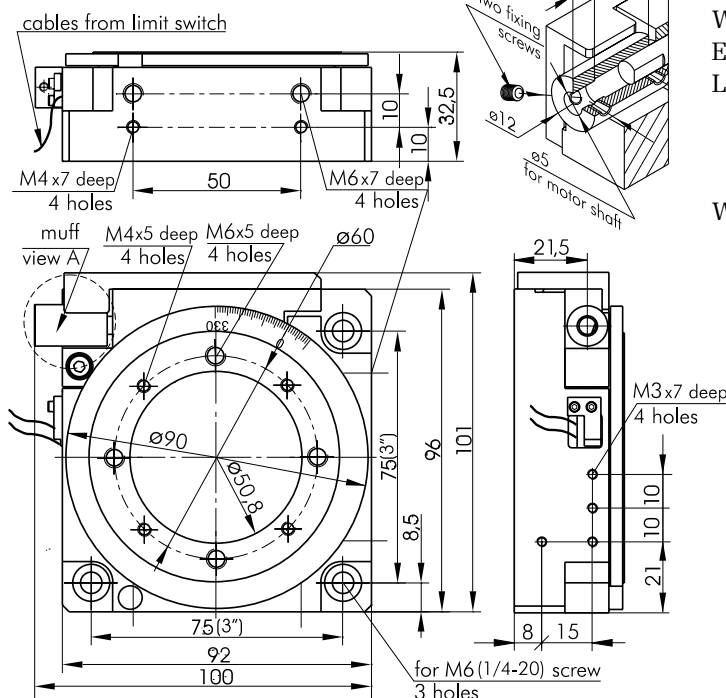
Rotation range	360°
Resolution in full step*	0.6 arcmin (0.01°)
Max.rotation speed*	8 turn/min
Backlash	0 µm
Wobble	0.5 arcmin
Eccentricity	10 µm
Load capacity	
Horizontal	10 kg
Radial	2 kg
Torque	1 Nm
Weight	
8MR190-2	0.65 kg

*Test condition:

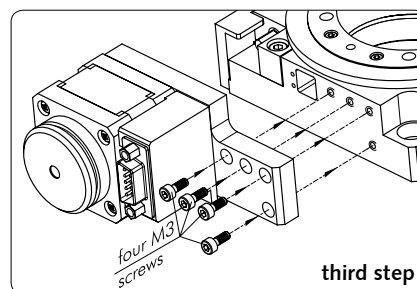
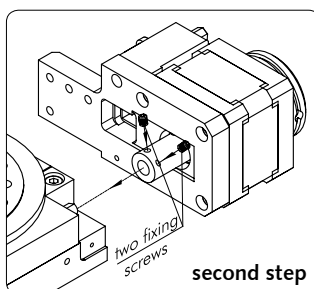
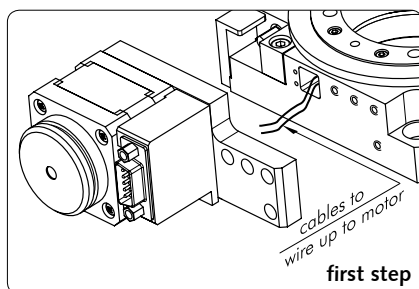
- STANDA controllers;
- Power supply – 36V.

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



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

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!!!**

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

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

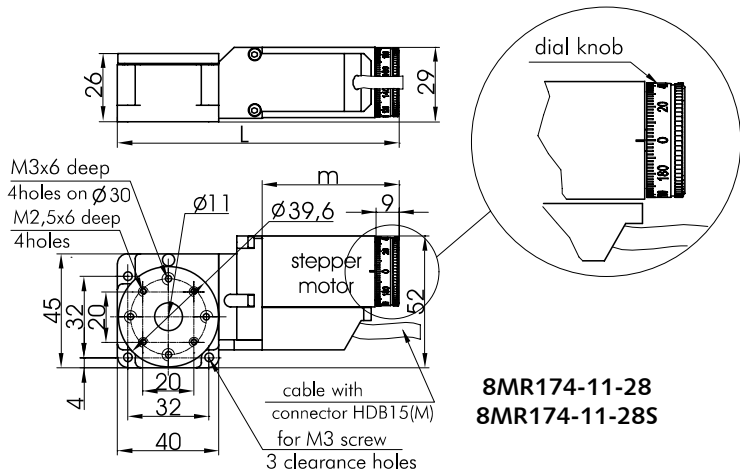


8MR174-11-28S

SPECIFICATIONS

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

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



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



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

Mini Motorized Rotation Stage

8MR174-11-20

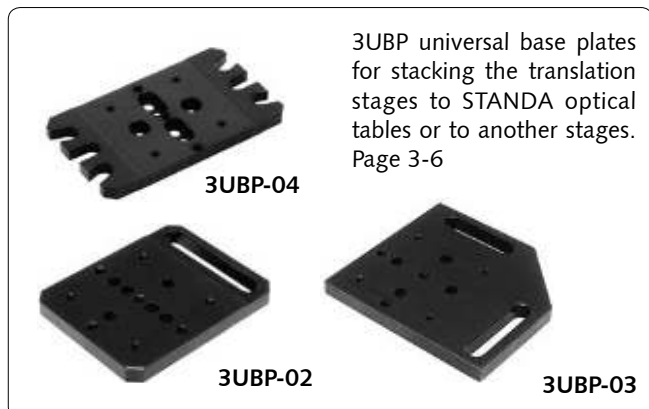
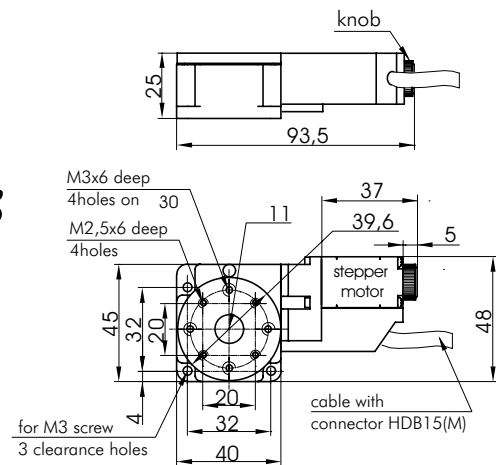


Available
INCH version
8MR174E-11-20
8MR174E-11-28
8MR174E-11-28S

SPECIFICATIONS

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

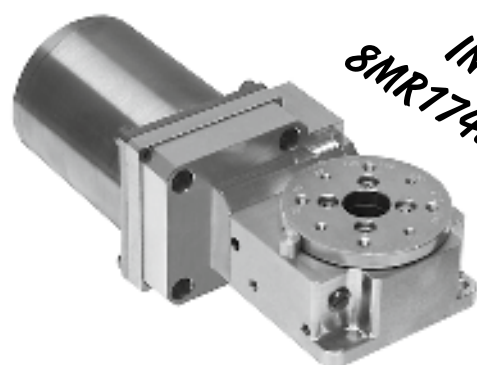
***Test condition:**
• STANDA
controllers;
• Power supply
– 36V.



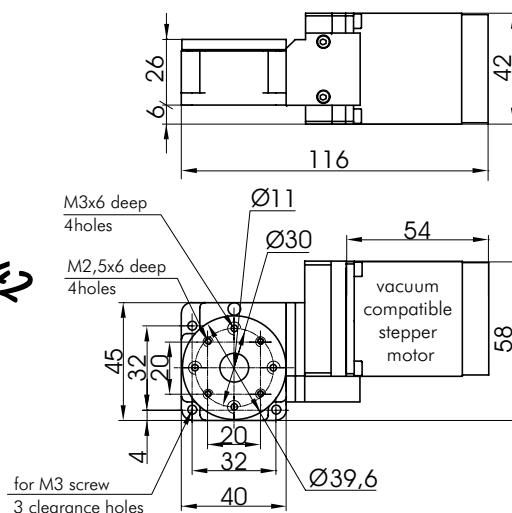
3UBP universal base plates
for stacking the translation
stages to STANDA optical
tables or to another stages.
Page 3-6

Mini Motorized Rotation Stage with Vacuum compatible stepper motor

8MR174V-11-VSS42



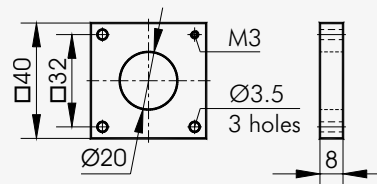
Available
INCH version
8MR174EV-11-VSS42



*Compatible with
10⁻⁶ Torr vacuum*

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	*Test condition: • STANDA controllers; • Power supply – 36V.
Horizontal	
Radial	
Torque	
Fluoroplastic cable	integrated, 1.6 m lengths
Motor connector	HDB15(M)
Vacuum compatible	VSS42
stepper motor	
Weight	0.45 kg



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.

ORDERING INFORMATION

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

Recommended Controllers

more info on **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

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

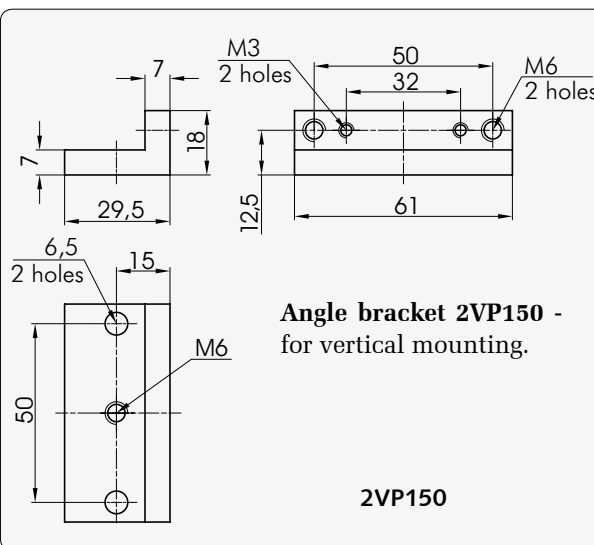
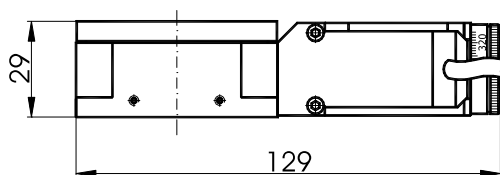


8MR151-1

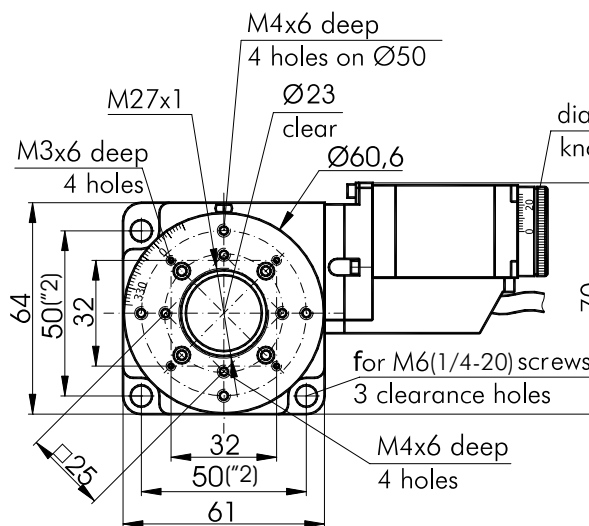


8MR151-30

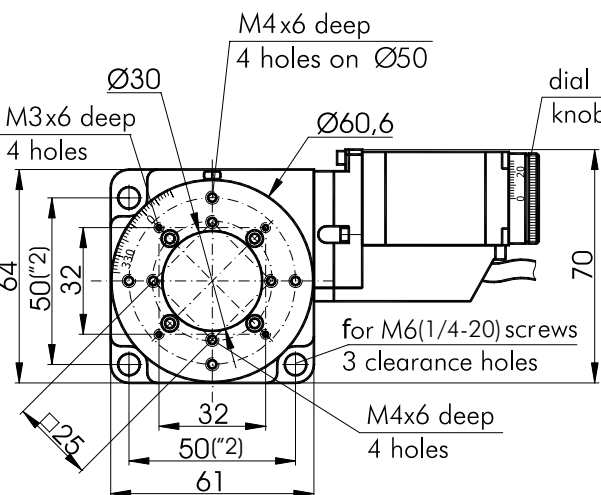
*Available
INCH version
8MR151E*



**Angle bracket 2VP150 -
for vertical mounting.**



8MR151-1



8MR151-30



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

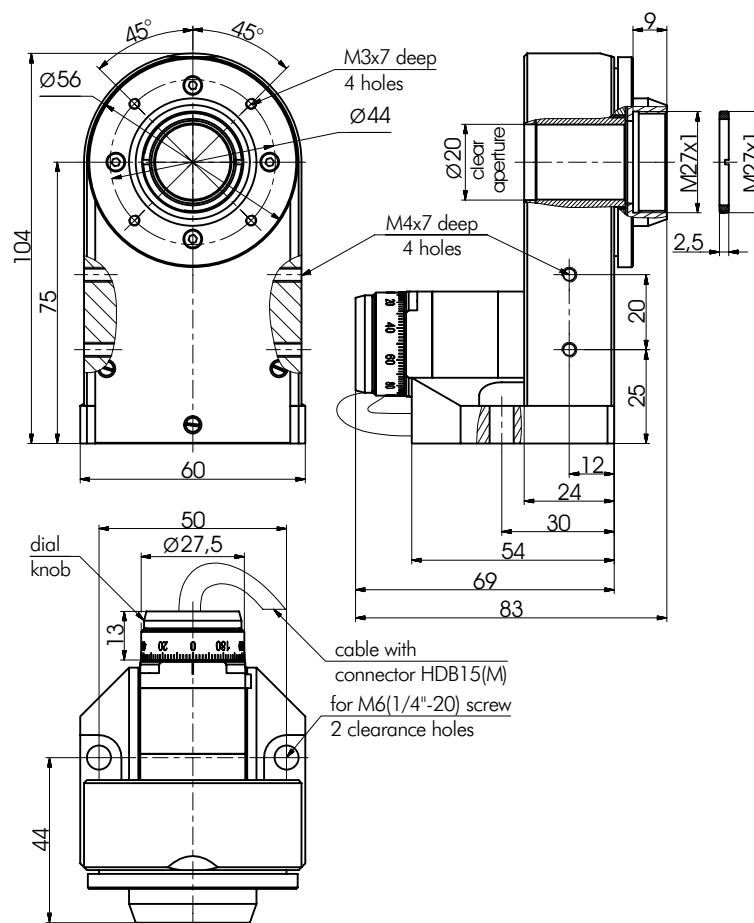
SPECIFICATIONS

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 ⁻³ Nm
Cable	integrated, 1.6 m length
Motor connector	HDB15(M)
Stepper motor	28S

*Test condition:

- STANDA controllers;
- Power supply – 36V.

Custom accessories
are manufactured
on request!



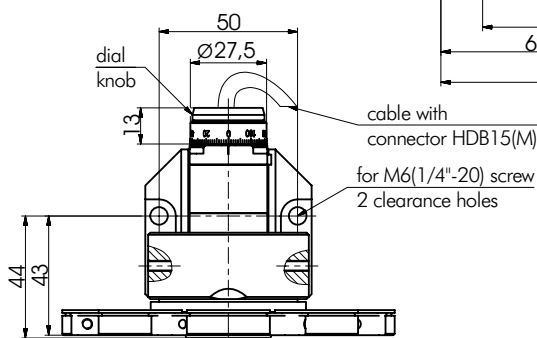
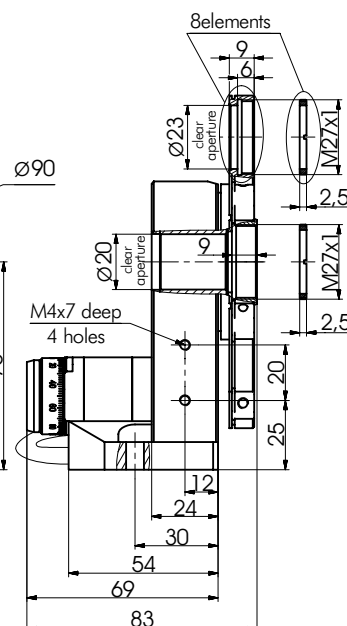
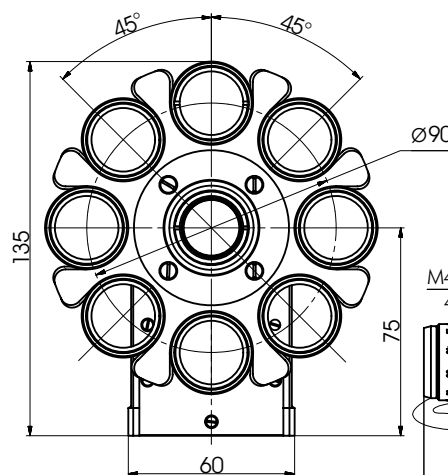
8MRU-1 is a basic rotation stage that can rotate 1" optical elements. Various accessories and custom parts can be mounted on provided M3x7 mounting holes.

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

Weight 0.55 kg

Universal Motorized Rotation Stage

8MRU-1WA



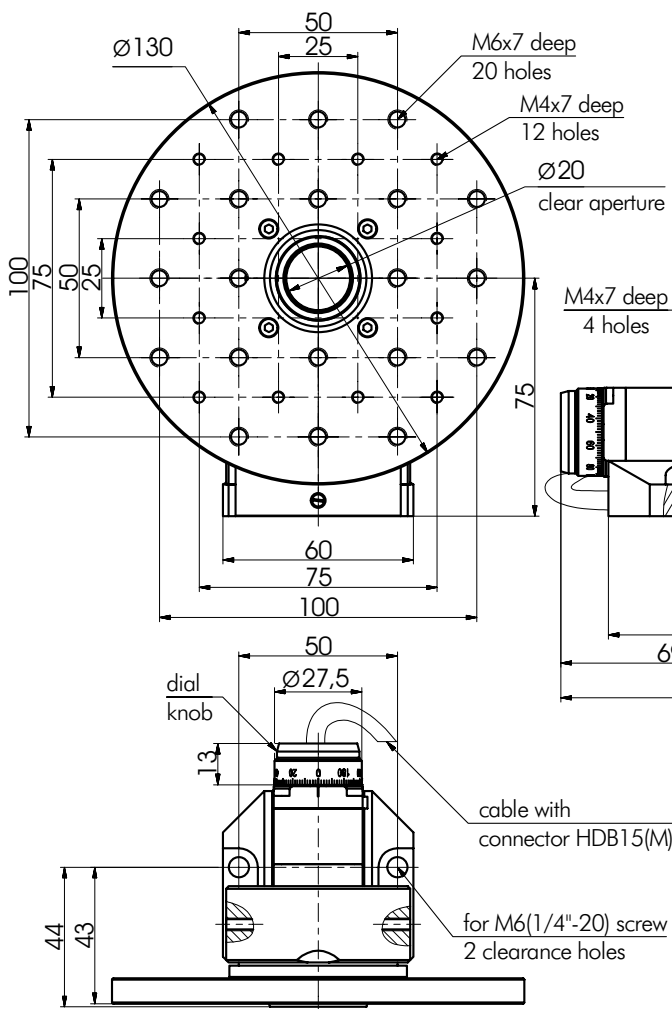
A **filter wheel version** of universal rotation stage 8MRU. Accepts up to **eight 1" filters**.

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



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.

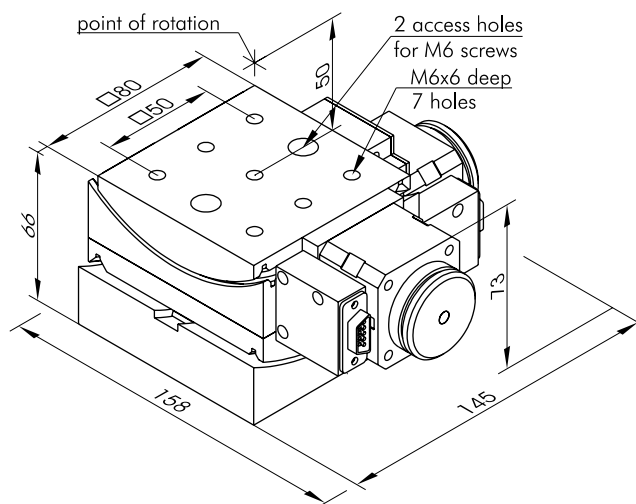
The stage is driven by a **stepping motor**. A **dial knob** on its axle allows **manual drive**. As standard, we use stepping motors of these parameters: 200 steps, bipolar (4 leads), 33 Ω per phase. A customer can order motors of other types. We offer our Stepper Motor Controllers to control the motorized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

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

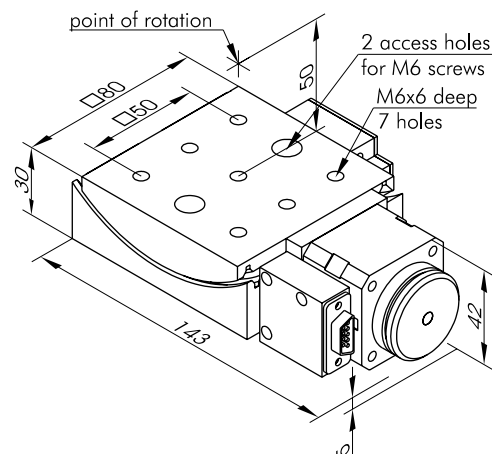


8MG99-80

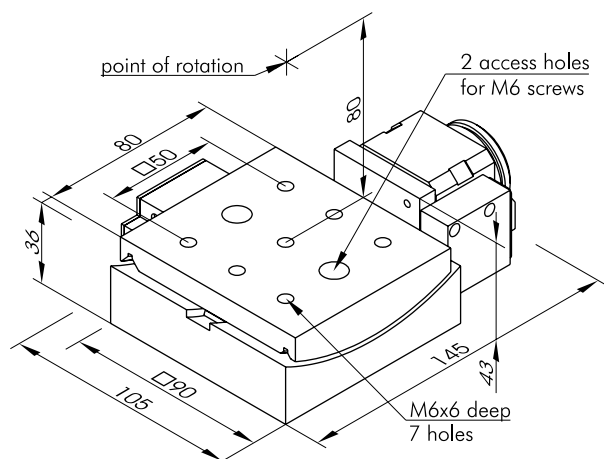
- Rotates an object without obscuring the optical path
- Smooth operation with ball bearings
- 1 or 2 axes of rotation (stackable)
- Superb stability
- Compact square body



8MG00; 8MG99 stacked



8MG00-50; 8MG99-50



8MG00-80; 8MG99-80

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