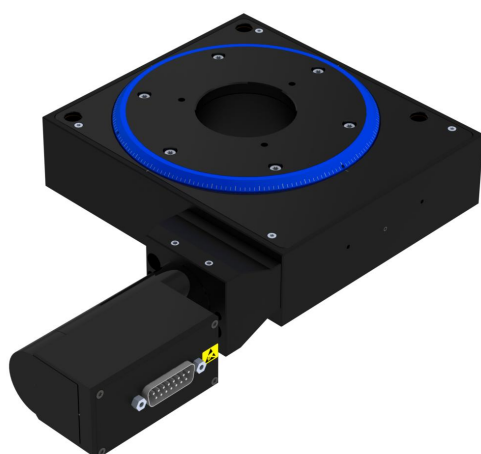


Precision Rotation Stage

Unlimited Travel Range



M-060 • M-061 • M-062

- Unlimited travel range
- High resolution
- Maximum velocity 16°/s
- Backlash-compensated worm drive
- DC gear motor
- Direction-sensing reference switch

Precision rotation stage with worm drive

The M-06x series rotation stages feature high-precision and extremely low friction, backlash-compensated worm drives. This enables an unlimited travel range in both directions of rotation. The precision rotation stages are available with three different diameters: 60 mm (20 mm aperture), 100 mm (35 mm aperture), and 120 mm (45 mm aperture).

Application fields

Research and development, semiconductor testing, mass storage tests, metrology, photonics, quality assurance.

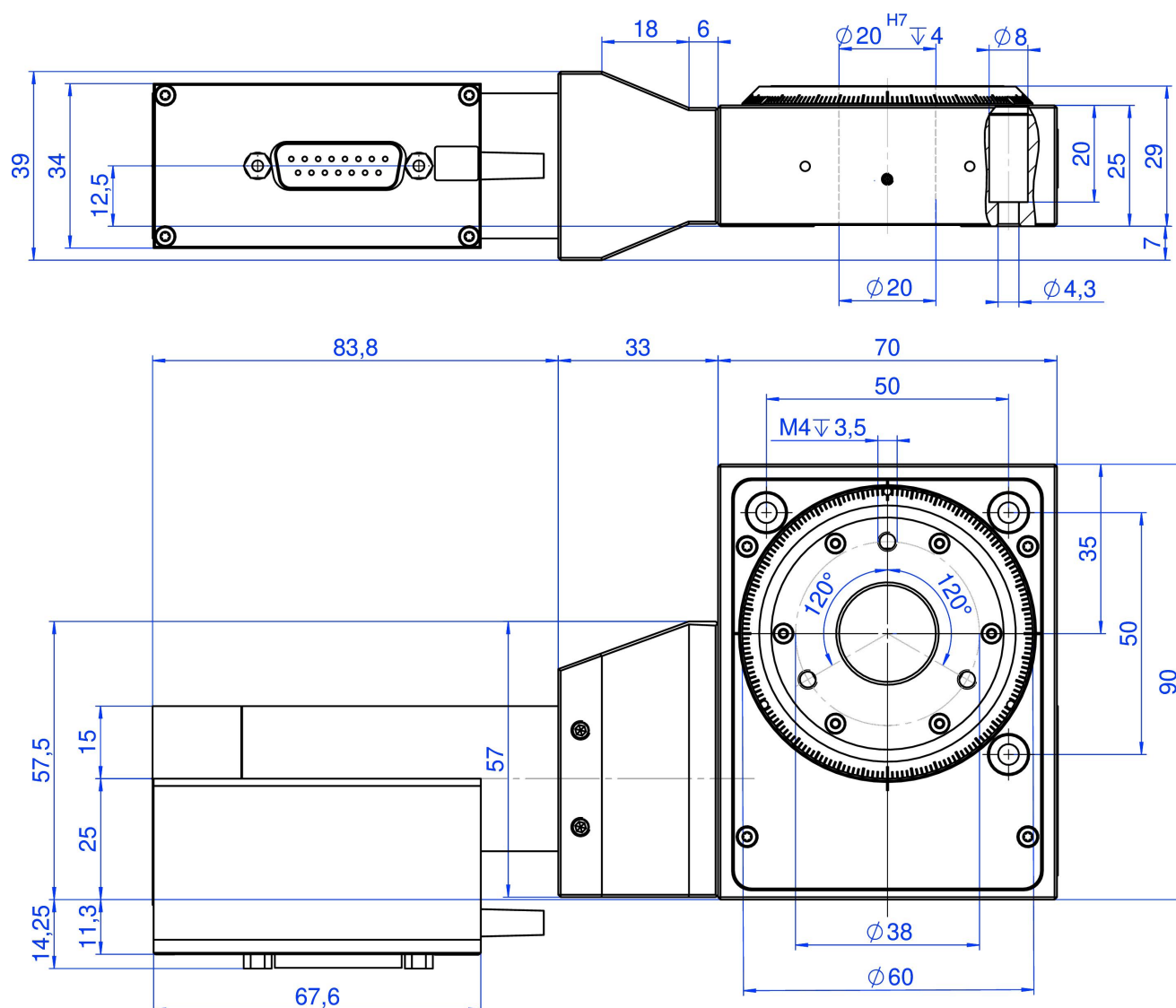
Motion	Unit		M-060.DG	M-061.DG	M-062.DG
Active axes			θZ	θZ	θZ
Rotation range in θZ	°		360	360	360
Maximum angular velocity in θZ, unloaded	°/s		16	9	7.5

Positioning	Unit	Tolerance	M-060.DG	M-061.DG	M-062.DG
Integrated sensor			Incremental rotary encoder	Incremental rotary encoder	Incremental rotary encoder
Unidirectional repeatability in θZ	μrad	Typ.	50	50	60
Bidirectional repeatability in θZ	μrad	Typ.	± 300	± 300	± 350
Minimum incremental motion in θZ	μrad	Typ.	6.3	6	5
Backlash in θZ	μrad	Typ.	200	200	240
Sensor signal			A/B quadrature, RS-422	A/B quadrature, RS-422	A/B quadrature, RS-422
Sensor resolution	Cts./rev.		2000	2000	2000
Reference switch			Hall effect	Hall effect	Hall effect

Drive Properties	Unit	Tolerance	M-060.DG	M-061.DG	M-062.DG
Drive type			DC gear motor	DC gear motor	DC gear motor
Nominal voltage	V		12	12	12
Drive torque counterclockwise in θZ	N·m	Max.	1.5	2.7	3.3
Drive torque clockwise in θZ	N·m	Max.	1.5	2.7	3.3
Peak torque counterclockwise in θZ	N·m	Max.	1.5	2.7	3.3
Peak torque clockwise in θZ	N·m	Max.	1.5	2.7	3.3

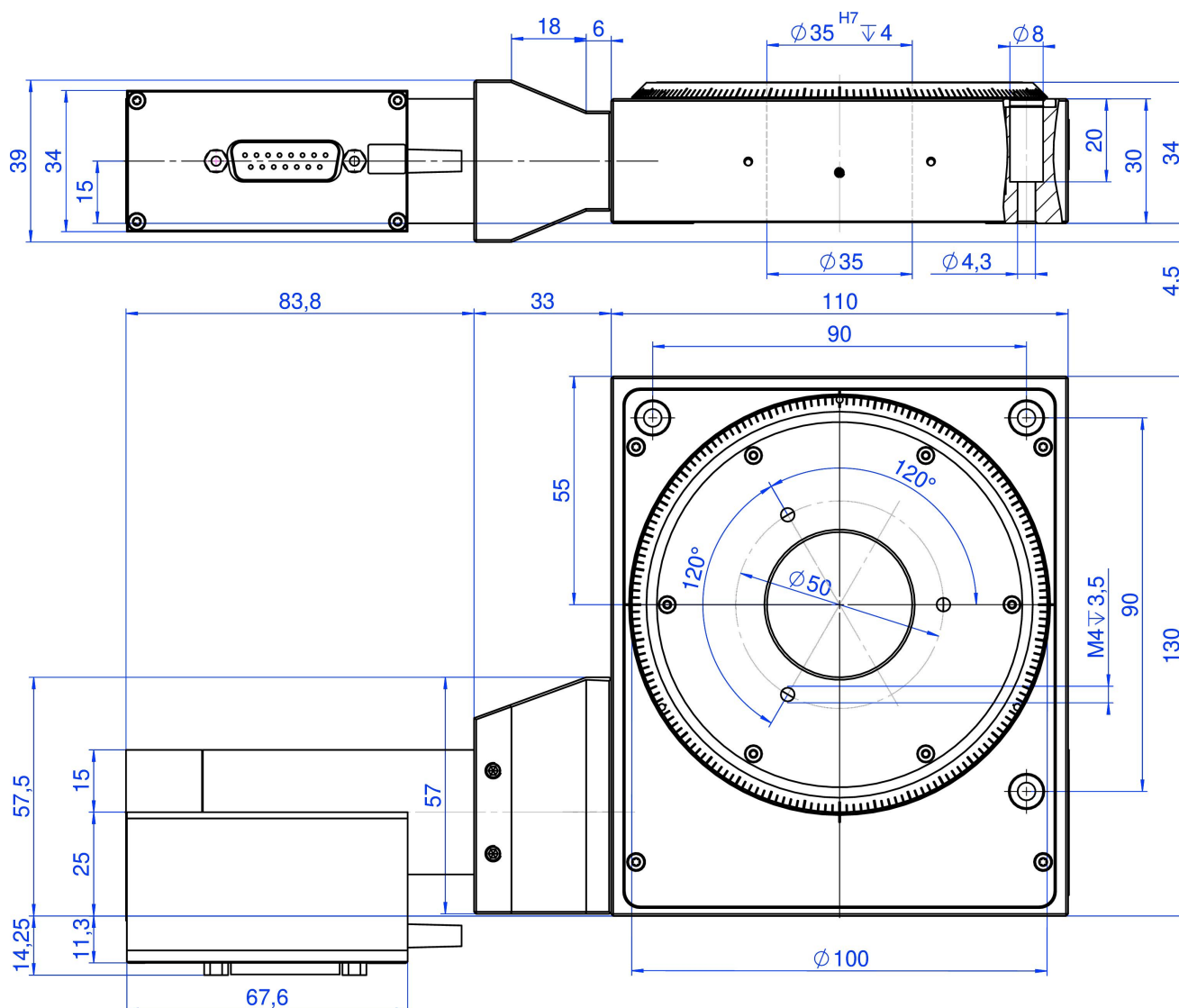
Mechanical Properties	Unit	Tolerance	M-060.DG	M-061.DG	M-062.DG
Bearing type			Crossed roller bearings	Crossed roller bearings	Crossed roller bearings
Gear ratio i			(28/12)E4 : 1	(28/12)E4 : 1	(28/12)E4 : 1
Worm gear reduction			50 : 1	90 : 1	110 : 1
Permissible push force in Z	N	Max.	500	550	650
Permissible torque in θx	N·m	Max.	6	6	7
Permissible torque in θY	N·m	Max.	6	6	7
Permissible torque in θZ	N·m	Max.	4	6	8
Overall mass	g		940	1880	2760
Material			Aluminum	Aluminum	Aluminum

Miscellaneous	Unit		M-060.DG	M-061.DG	M-062.DG
Connector			D-sub 15-pin (m)	D-sub 15-pin (m)	D-sub 15-pin (m)
Recommended controllers / drivers			C-863 (single axis) C-884 (up to 6 axes)	C-863 (single axis) C-884 (up to 6 axes)	C-863 (single axis) C-884 (up to 6 axes)
Operating temperature range	°C		-10 to 40	-10 to 40	-10 to 40



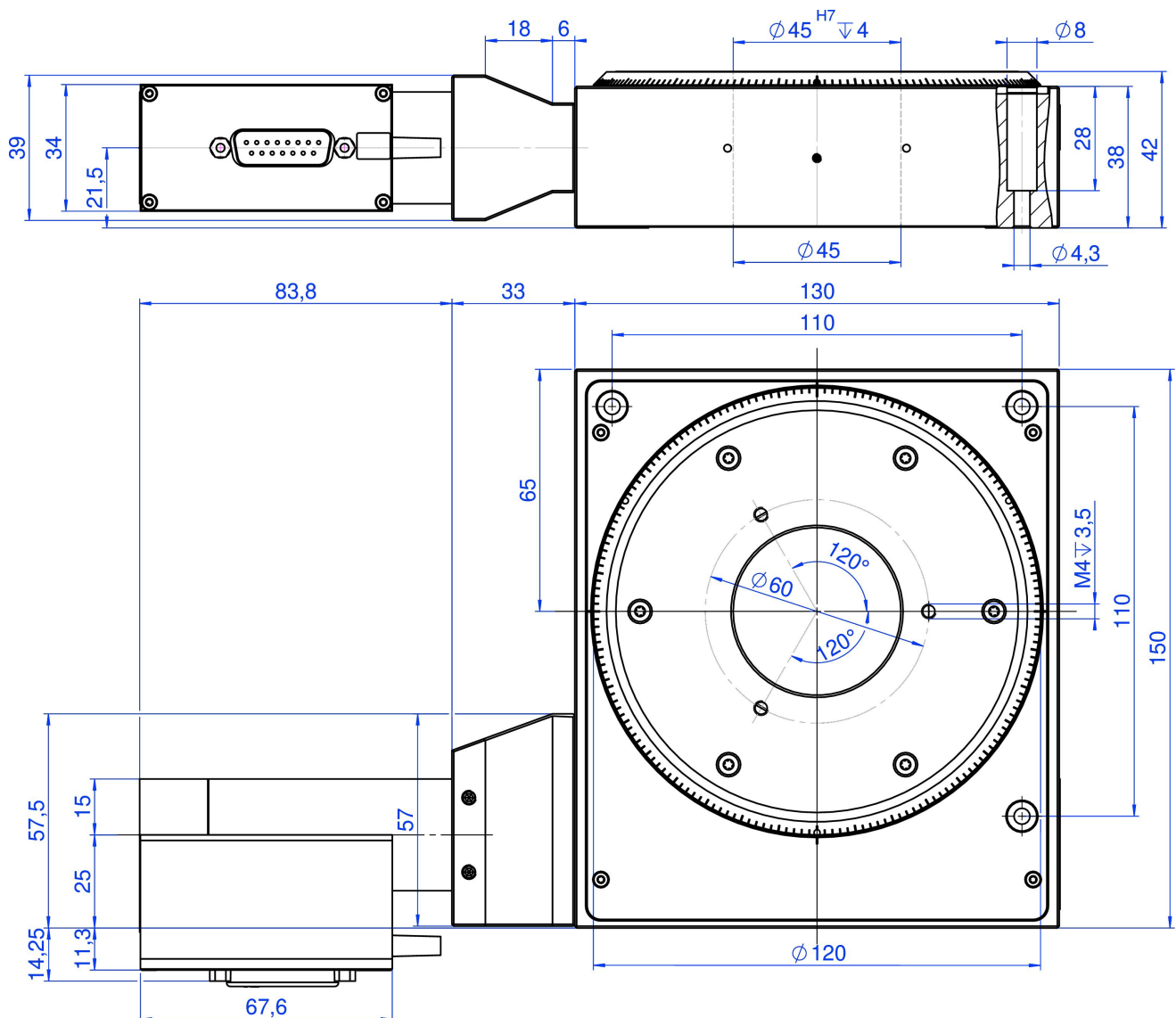
M-060.DG, dimensions in mm. Note that a comma is used in the drawing instead of a decimal point.

Drawings / Images



M-061.DG, dimensions in mm. Note that a comma is used in the drawing instead of a decimal point.

Drawings / Images



M-062.DG, dimensions in mm. Note that a comma is used in the drawing instead of a decimal point.

Order Information

M-060.DG

Precision rotation stage, $\varnothing$ 60 mm, 20 mm $\varnothing$ aperture, 360°, closed-loop DC gear motor

M-061.DG

Precision rotation stage, $\varnothing$ 100 mm, 35 mm $\varnothing$ aperture, 360°, closed-loop DC gear motor

M-062.DG

Precision rotation stage, $\varnothing$ 120 mm, 45 mm $\varnothing$ aperture, 360°, closed-loop DC gear motor