INO

QuickPOZ

OPTOMECHANICAL MOUNTS AND BREADBOARDS CATALOG

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QUICKPOZ, INO'S FAMILY OF ROBUST OPTOMECHANICAL MOUNTS FOR ACCURATE POSITIONING

The QuickPOZ optical mounts and breadboard line-up is addressing the need for robust optomechanical prototyping. Using these self-positioning optomechanical mounts is a cost-effective way of rapidly assembling prototypes that will remain aligned even under severe operating or transportation conditions. All mounts have been designed to be operated under a typical transport vehicle vibration environment up to 500 Hz while keeping their pointing stability under ±50 µrad.

The nominal positioning of all optics on the breadboard is easy with INO's QuickPOZ, since each mount can be located with high position repeatability using removeable reference balls on INO's special breadboard. These mounts integrate the patented QuickCTR-edge technology (US Patent 11,327,332) allowing the positioning of all optical components within ±50 µm @ 2 sigma from any mount assembled on the same breadboard with respect to nominal optical axis.

There are three standard heights for the mount optical axis with respect to the breadboard: 25.4 mm, 31.8 mm, and 38.1 mm.

HOW DOES IT WORK?

INO's QuickPOZ is the combination of robust optomechanical mounts and a patented technology to accurately and rapidly position them on a breadboard.

These optomechanical mounts are the fruit of more than 25 years of development of prototypes used in demanding environments. The mounts included in the QuickPOZ line-up are found in surveillance planes, severe industrial environments, and bioscience labs – to name a few. High accuracy threaded reference balls are temporarily installed on INO's proprietary breadboard to locate each mount with respect to one another. Breadboard threaded holes are accurately manufactured allowing precise positioning of all mounts. To complement the component positioning, each mount has been designed with tight tolerance reference features.

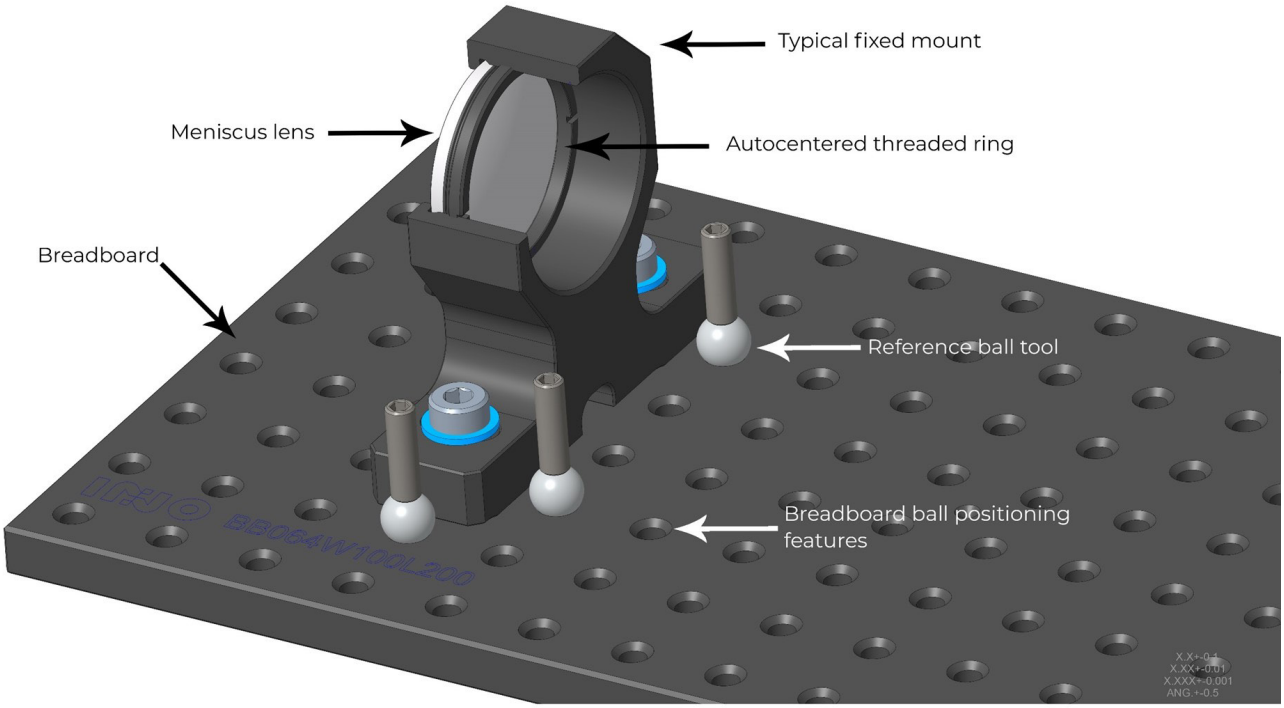


Figure. 1 - QuickPOZ breadboard reference ball positioning method

The lenses are autocentered into the mounts using INO's patented QuickCTR-edge technology which is based on the geometrical relationship between the lens chamfer and the threaded ring contact seat radius.

If needed, mounts from other vendors can be fitted on QuickPOZ breadboards.

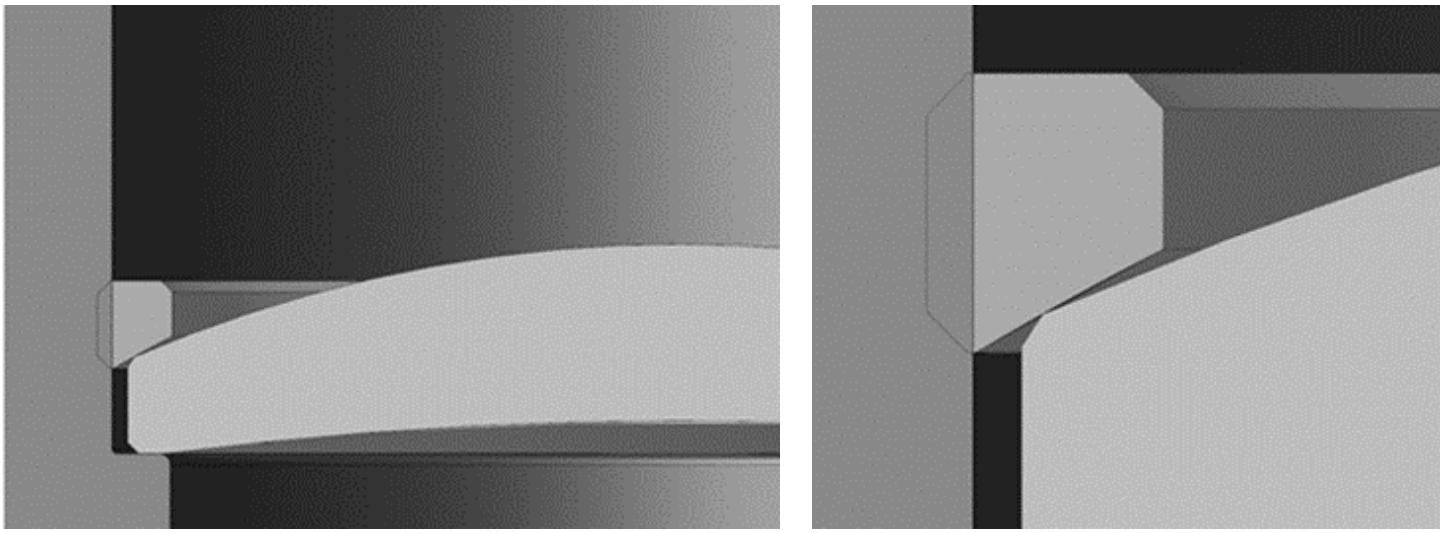


Figure. 2 - QuickCTR-edge technology principle

The technology is applicable to multiple mounting configurations like: convex, concave, and plano optical surfaces; optical subassemblies; and tube stacks.

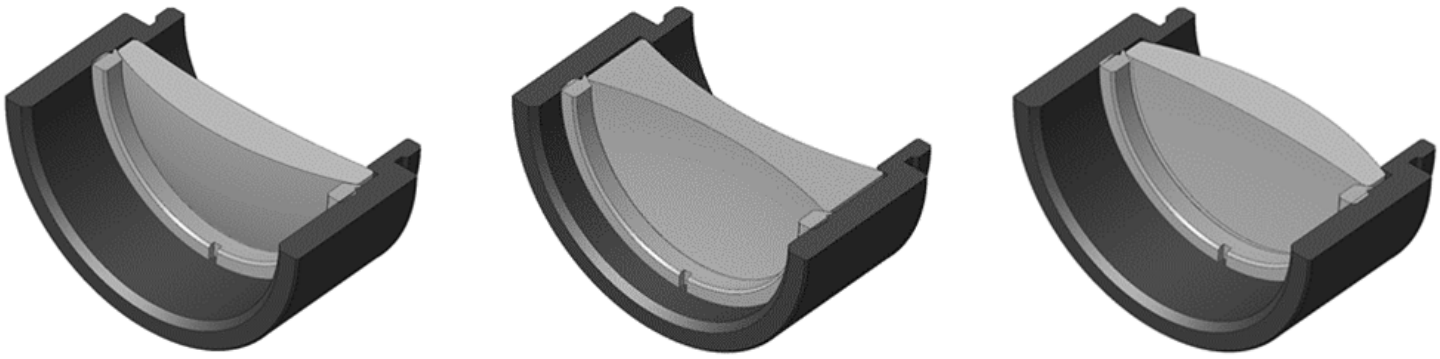


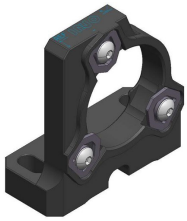
Figure. 3 - A few configurations using QuickCTR-edge technology

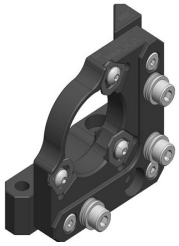
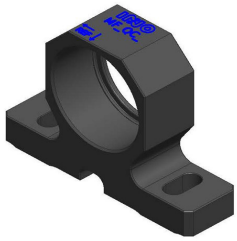
PERFORMANCE SPECIFICATIONS

FEATURE	PERFORMANCE
Optomechanical mount compatibility	Compatible with standard threads 0.535''-40, 1.035''-40, 2.035''-40 and RMS commercial accessories (Thorlabs, Edmund, Newport, ...). When a commercial accessory is used, centering and positioning performances are not met. In some cases, their robustness may also not be met.
Operating temperature	-40°C to +50°C
Storage temperature	-46°C to +63°C MIL-STD-810H Method 501.7 Procedure I, minimum 7 cycles (25°C to 63°C) with 2-hour plateau, 3°C/min MIL-STD-810H Method 502.7 Procedure I, 1 cycle (25°C to -46°C), 24-hour plateau, 3°C/min
Optical axis positioning accuracy	Statistical RSS accuracy of ±0.05 mm between optical axis of any optomechanical mount with respect to the nominal optical axis of the breadboard assembly. For breadboard dimensions up to 200 x 400 mm or 300 x 300 mm.
Mirror surface deformations induced by mount	MMA, MMH, and MMV mirror mount series induced deformations are ≤ lambda/10 PV @ 633 nm over their clear aperture. Measured on Ø25.4 mm x 6.13 mm and Ø50.8 x 12 mm mirror substrates mounted with a stack of 3x3 blades with a maximal deflection of 0.5 mm. ***Do not exceed 0.5 mm of blade deflection to avoid creeping***
Dimensional pointing stability over operating temperature range	≤ ±50 µrad (mechanical angle) Optics below Ø25 mm may exceed the ±50 µrad pointing stability due to their small size and small mounting seat.
Mounting repeatability	≤ ±0.015 mm in positioning
Shipping vibrations impact on angular positioning	Without shipping packaging: ≤ ±50 µrad (mechanical angle). MIL-STD-810H Method 514.8 C.II category 4, unknown orientation, random vibration, 20 -500Hz, 1.17 Grms. Within a typical cardboard shipping packaging: ≤ ±50 µrad (mechanical angle). MIL-STD-810H Method 514.8 E-1 category 24, all axis orientation, random vibration, 20 -2000Hz, 7.7 Grms, 1 hour/axis.
Shock survival	30 G minimum, without shipping packaging. 30 G corresponds to the limit of the most sensitive components, which are Ø50.8 mm mirror mounts.
Stress relief	If necessary, it is possible to improve dimensional stability performances by conditioning the assembly to thermal stress relief cycles. Thermal stress relief cycles are application specific and may be available upon request.

WHAT IS INCLUDED IN INO'S QUICKPOZ FAMILY?

The whole family covers nearly 150 mounts of several sizes (QC05, QC1, QC30, QC2), available in three optical axis heights (25.4 mm, 31.8 mm, and 38.1 mm), and in four different mirror diameters. Adjustable mounts are also available for transversal (normal to optical axis), axial, tip/tilt, and clocking positioning.

	PRODUCT NAME	DESCRIPTION
	Threaded rings	Autocentered threaded rings for optical components, available in QC05, QC1, QC30, and QC2 thread sizes.
	Adjustment tools	Several removable tool designed to be used with the the QuickPOZ mounts for nominal or precise alignment.
	Threaded iris	Autocentered Ø1 mm iris, available in QC05 & QC1 thread sizes. Used for alignment purposes.
	Fixed mirror mounts, horizontal	Low distortion fixed mirror mounts for horizontal beam folding, available in Ø12.7 mm, Ø25.4 mm, Ø38.1 mm, and Ø50.8 mm sizes.

	PRODUCT NAME	DESCRIPTION
	Fixed mirror mounts, vertical-bottom	Low distortion fixed mirror mounts for downwards beam folding, available in Ø12.7 mm, Ø25.4 mm, Ø38.1 mm, and Ø50.8 mm sizes.
	Adjustable mirror mounts	Low distortion adjustable mirror mounts with ±2° tip-tilt for horizontal beam folding, available in Ø12.7 mm, Ø25.4 mm, Ø38.1 mm, and Ø50.8 mm sizes. Left-hand and right-hand versions are available.
	XY adjustable mounts	X-Y adjustable mounts (±1 mm) with QC05 & QC1 threads and axial support, for submicron positioning with removable XY adjustment tool.
	XY adjustable mounts	X-Y-Z adjustable mounts with QC1 threads, for submicron positioning with removable XY adjustment tool (±1 mm), and 7mm travel in Z.
	Fixed mounts	Fixed mounts with and without flange, available in autocentered thread sizes QC05, QC1, QC30, and QC2, and microscope size 0.8”-36 (RMS).

	PRODUCT NAME	DESCRIPTION
	Lens tubes	Standard autocentered tubes of several lengths, stackable, available sizes. Some can be used with through-hole XY adjustable mounts. Tube thread adaptors and autocentered axially adjustable tubes are also available.
	Rotation mounts	Compact rotating mounts with autocentered thread sizes QC05 & QC1.
	Translation mounts	Ultra-stable and high accuracy translation stage (±1.5 mm) to be combined with adjustable and fixed mounts.

QUICKPOZ THREAD	EQUIVALENT TO INDUSTRY STANDARD
QC05	0.535"-40
QC1	1.035"-40
QC30	This thread is not compatible with the industry standard.
QC2	2.035"-40
RMS	RMS

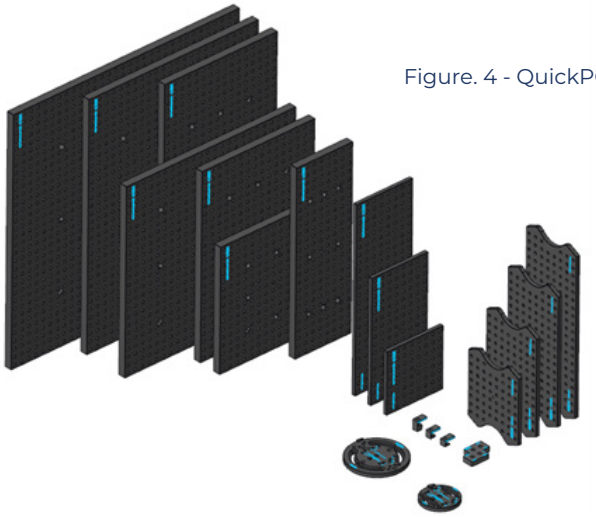


Figure. 4 - QuickPOZ mounting plates overview

WHAT CAN BE DONE WITH THESE MOUNTS ?

Any industrial optical applications where robustness and precise positioning are a concern may benefit from QuickPOZ. There are infinite ways of using these mounts, whether for an industrial laser source, a bulk fibre optical device, a spectrometer, a medical optical device, an illumination system, or an objective lens.

Figure 5 : First example of configuration

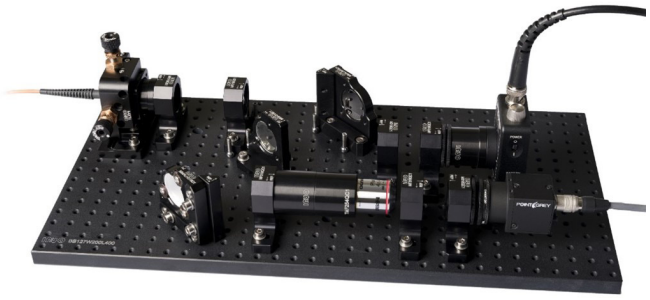


Figure 6 : Second example of configuration

NEED A CUSTOM CONFIGURATION?

INO is offering consultation services to build up your own configuration for optimum performances. INO can also fully customize your need, from a custom breadboard up to a full turnkey solution. Our specialists in optical and optomechanical design can assist you during the whole design development process and even for your production series.

GENERAL CONSIDERATIONS

All QuickPOZ mounts are designed to be attached using M4x0.7 screws which are 14 mm or 20 mm in length, depending of the mount type. In all cases, a washer Ø9 mm x 0.8 mm thick (McMaster #93475A230) must be used with the deburred side downwards to avoid damaging the mount.

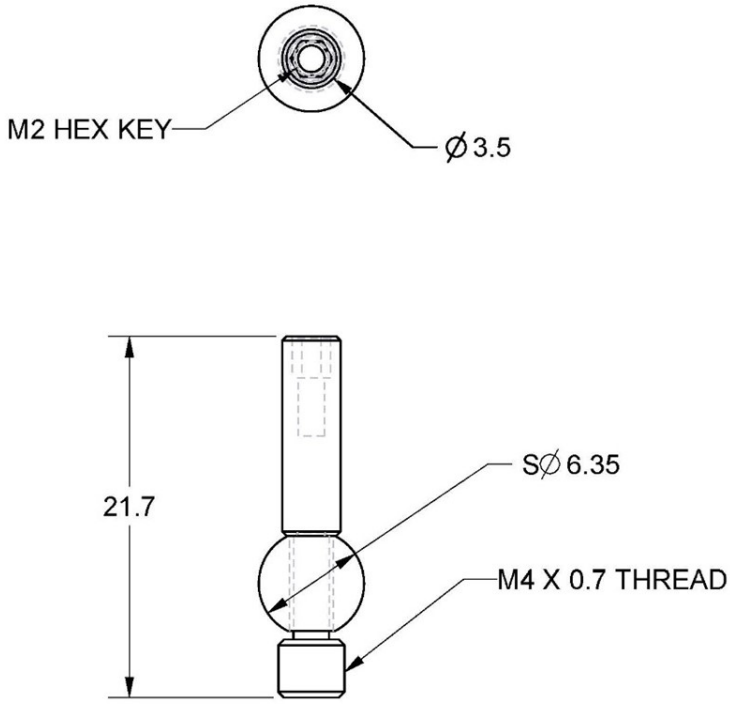
QuickPOZ specifications are guaranteed only if screws have the proper tightening torque:

SCREW SIZE DIAMETER	THREAD PITCH	TORQUE			
(mm)	(mm)	(N-m)	(ozf-in)	(lbf-in)	(lbf-ft)
1.6	0.35	0.12	17		
2	0.4	0.25	35		
2.5	0.45	0.51	72	4	
3	0.5	0.91	128	8	
4	0.7	2.11		19	
5	0.8	4.26		38	
6	1	7.24		64	
8	1	18.82			14
10	1.25	36.72			27
14	1.5	104.58			77

All QuickPOZ threaded rings are compatible with Thorlabs spanner wrenches for SM05, SM1, SM2, and SM30 formats.

TOOLING & MISCELLANEOUS

REFERENCE BALL, 6.35MM

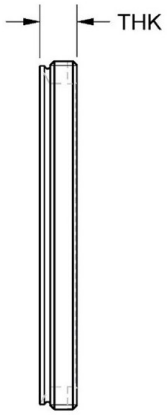


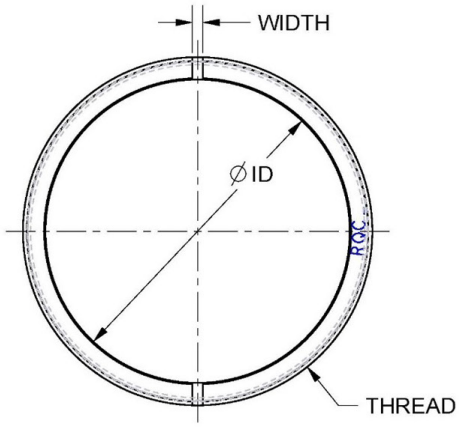
*(Units in mm)

DESCRIPTION	Positioning ball assembly
ADJUSTMENTS	n/a
REQUIRED TOOL	2mm Allen wrench, or fingers
PRODUCT NOTES	Only lightly tighten by hand; only use hex key for accessibility.

PART NO.	TLBAL1

THREADED RING

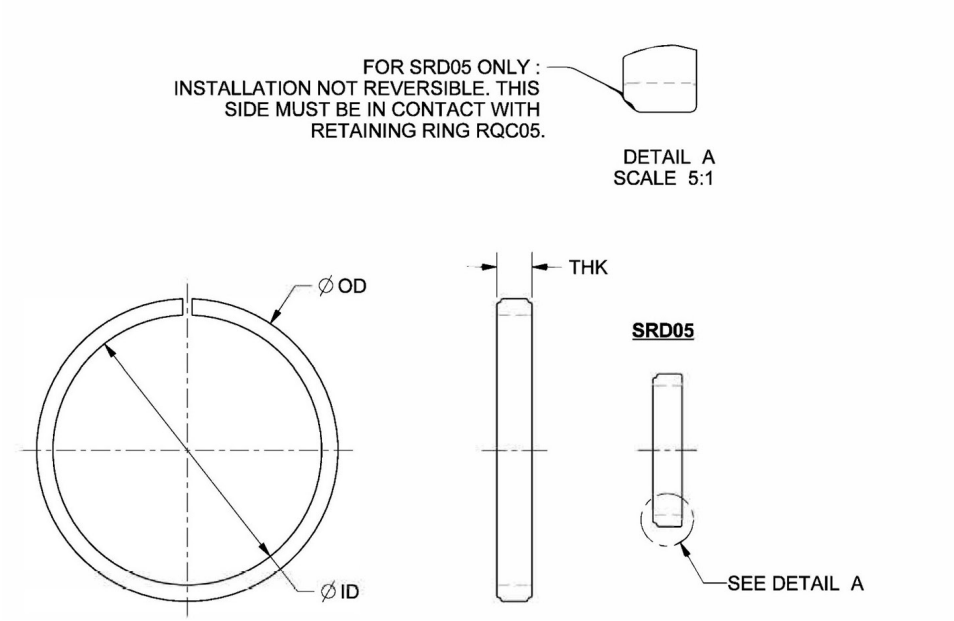




PRODUCT #	NAME	WIDTH (mm)	THREAD	ID (mm)	THK (mm)	MASS (KG)
RQC05	THREADED RING QC05	1.191	0.535”-40 CLASS 3A	11.00	2.480	0.0003
RQC1	THREADED RING QC1	0.794	1.035”-40 CLASS 3A	22.90	2.781	0.0008
RQC30	THREADED RING QC30	0.794	M31 X 0.5 - 4H	27.94	2.781	0.0009
RQC2	THREADED RING QC2	0.794	2.035” -40 CLASS 3A	48.26	3.281	0.0020

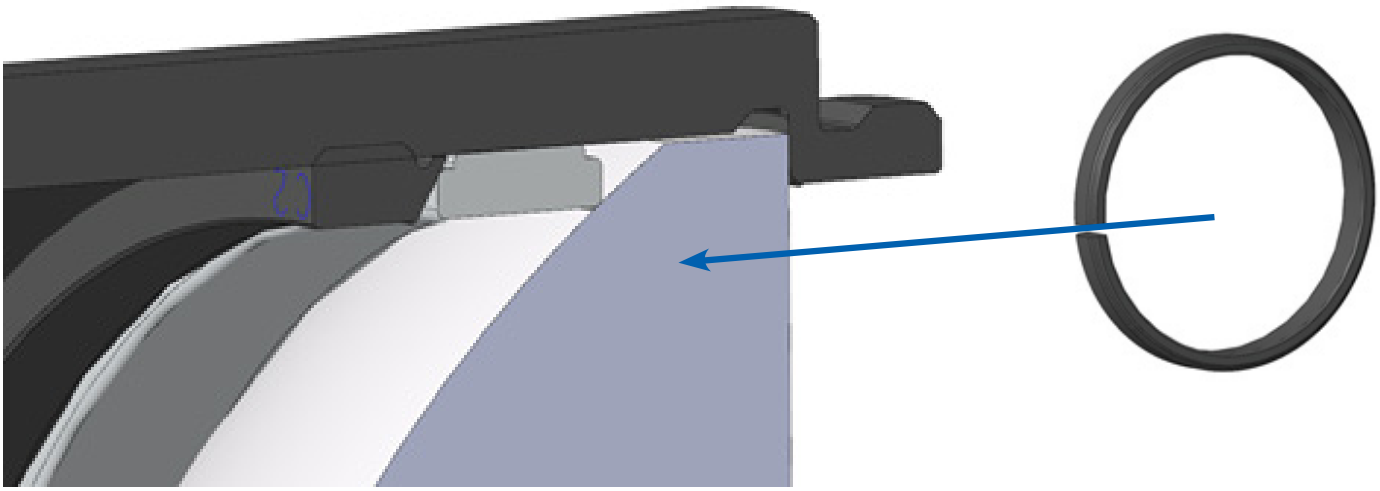
DESCRIPTION	Threaded ring for autocentered optical components
ADJUSTMENTS	n/a
REQUIRED TOOL	Compatible with Thorlabs spanner wrench for ring series SM05RR, SM1RR, SM2RR, SM30RR
PRODUCT NOTES	Compatible with QuickPOZ QC_ and commercial tube series.

SPLIT RING



PRODUCT #	NAME	OD (mm)	ID (mm)	THK (mm)	MASS (KG)
SRD05	SPLIT RING, D05	12.98	11.00	2.50	0.0002
SRD1	SPLIT RING, D1	25.68	22.90	3.00	0.0008
SRD30	SPLIT RING, D30	30.56	27.90	3.25	0.0010
SRD2	SPLIT RING, D2	51.08	48.30	4.00	0.0022

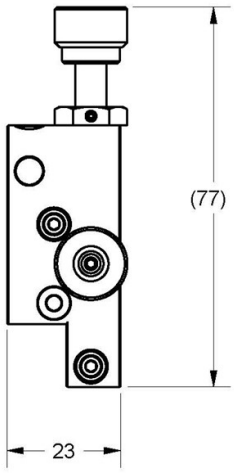
DESCRIPTION	Complementary ring for lens with small convex radius of curvature
ADJUSTMENTS	n/a
REQUIRED TOOL	n/a
Product notes	This split ring needs to be added between the lens and the QuickPOZ Threaded Ring when the radius of curvature of a convex lens is smaller than the threaded ring mounting radius. Compatible with QuickPOZ QC_ and commercial tube series.

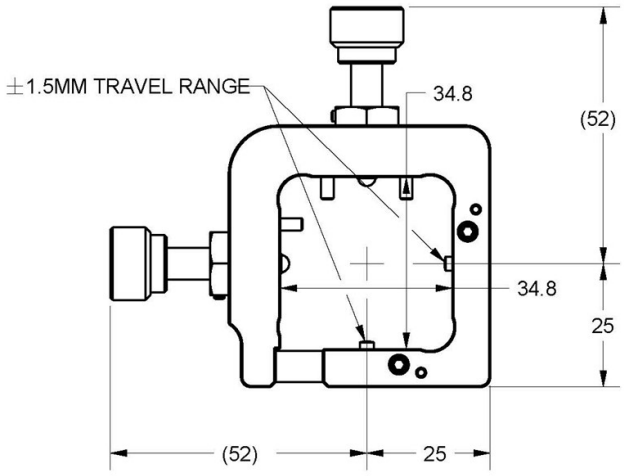


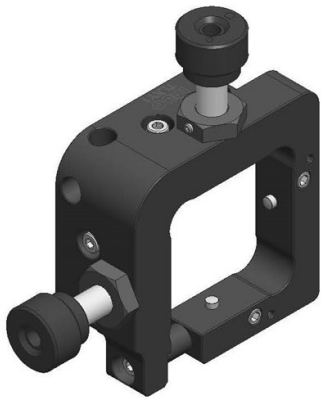
This split ring is required for convex lens radius of curvature smaller than:

Threaded ring P/N	MAX. RADIUS OF CURVATURE OF CONVEX LENS (MM)
RQC05	11.5
RQC1	23.0
RQC30	27.5
RQC2	47.0

XY ADJUSTMENT TOOLING, D05 & D1





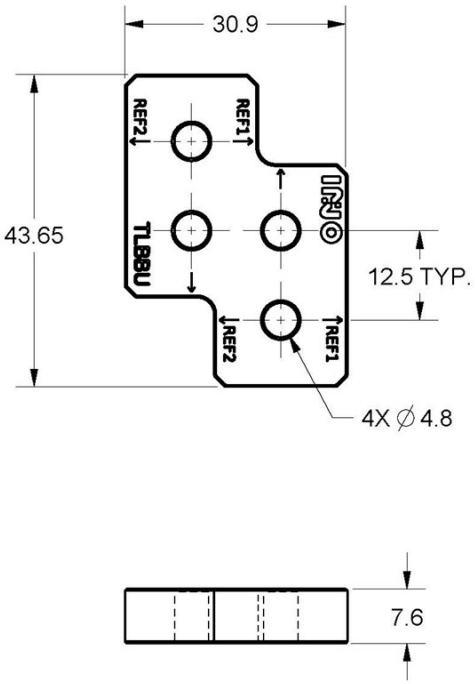


*(Units in mm)

PRODUCT #	TLXY1

DESCRIPTION	Transverse X-Y manipulator, removable with differential screws; fits with Quick-POZ mounts MA_QC05, MA_QC1, MA_TH05, MA_TH1, and MA_TAQC1.
ADJUSTMENTS	±1.5mm; coarse 318µm/rev. and fine 25µm/rev.
REQUIRED TOOL	2mm Allen wrench
PRODUCT NOTES	Can be used either with the adjuster located at right or at left. **Warning:** Do not forget to detent the spring plunger before adjustment (small set screws located in front of the mount). **Warning:** Do not forget to retract the spring plunger before removing the tool from the mount.

BREADBOARD LOCATING UNION

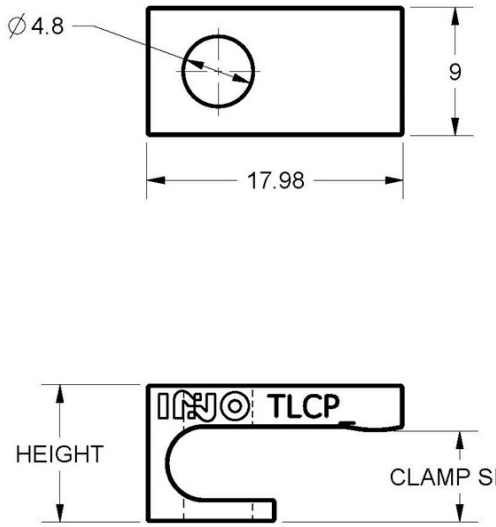


*(Units in mm)

DESCRIPTION	Tool to join 2 mounting plates together
ADJUSTMENTS	n/a
REQUIRED TOOL	n/a
PRODUCT NOTES	User instructions available upon request

PART NO.	TLBBU

BREADBOARD CLAMP TOOL

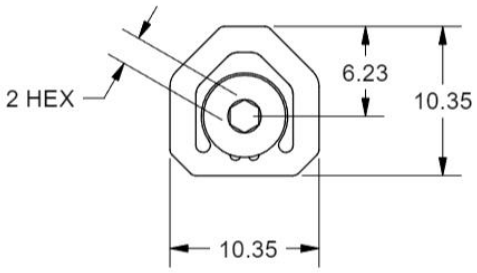


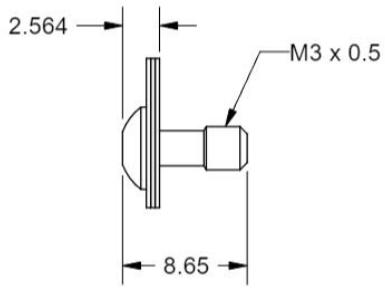
*(Units in mm)

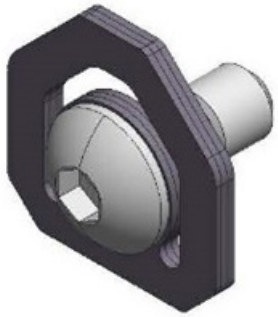
PRODUCT #	NAME	HEIGHT (mm)	CLAMP SIZE (mm)	MASS (KG)
TLCP064	CLAMP, 6.35MM	9.60	6.35	0.002
TLCP076	CLAMP, 7.60MM	10.85	7.6	0.002
TLCP127	CLAMP, 12.70MM	15.95	12.70	0.003

DESCRIPTION	Clamp tool to fix breadboard gimbals, or to fix mounts and other breadboards (6.4mm, 7.6mm, or 12.7mm thick).

MIRROR MOUNT LEAF SPRING ASSEMBLY





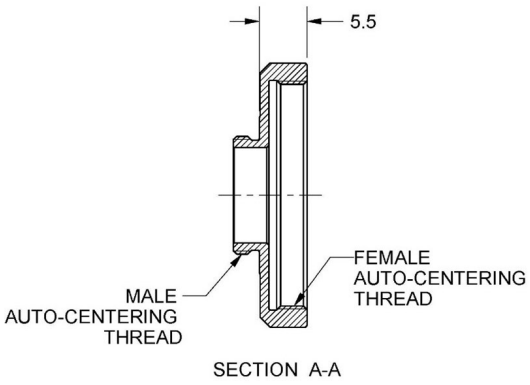


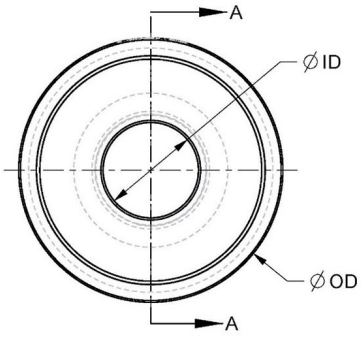
*(Units in mm)

PRODUCT #	MMLSAK

DESCRIPTION	3x 3 leaf springs with captive screws (9 leaf springs and 3 captive screws per MMLSAK)
ADJUSTMENTS	n/a
REQUIRED TOOL	2mm Allen wrench
PRODUCT NOTES	This stack of 3 leaf springs gives the following force per mounting point: · 5.9 ±0.5 N @ 0.5mm deflection · 3.9 ±0.5 N @ 0.4mm deflection · 2.9 ±0.2 N @ 0.3mm deflection · 2.0 ±0.2 N @ 0.2mm deflection **Warning** These leaf springs have been designed to be used in stack of 3 with a maximal deflection of 0.5mm at the tip.

MALE-FEMALE QC THREAD ADAPTOR



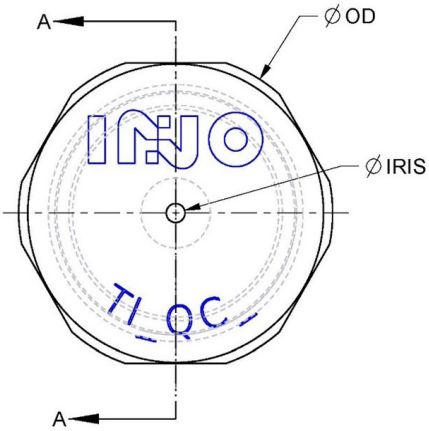


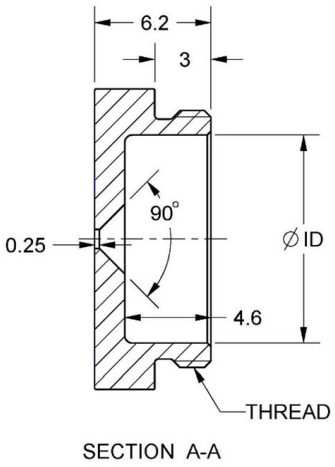
*(Units in mm)

PRODUCT #	NAME	OD (mm)	ID (mm)	MALE THREAD	FEMALE THREAD
AMFQC 05QC1	QC THREAD ADAPTOR, MALE-FEMALE, QC05 TO QC1	30.48	11.00	0.535”-40 CLASS 3A	1.035”-40 CLASS 3B
AMFQC 05QC30	QC THREAD ADAPTOR, MALE-FEMALE, QC05 TO QC30	35.00	11.00	0.535”-40 CLASS 3A	M31x0.5-4G
AMFQC 1QC05	QC THREAD ADAPTOR, MALE-FEMALE, QC1 TO QC05	30.48	23.40	1.035”-40 CLASS 3A	0.535”-40 CLASS 3B
AMFQC 1QC30	QC THREAD ADAPTOR, MALE-FEMALE, QC1 TO QC30	35.00	23.40	1.035”-40 CLASS 3A	M31 X 0.5 -4G
AMFQC 1QC2	QC THREAD ADAPTOR, MALE-FEMALE, QC1 TO QC2	55.88	23.40	1.035”-40 CLASS 3A	2.035”-40 CLASS 3B
AMFQC 30QC05	QC THREAD ADAPTOR, MALE-FEMALE, QC30 TO QC05	35.00	28.00	M31 X 0.5 - 4H	0.535”-40 CLASS 3B
AMFQC 30QC1	QC THREAD ADAPTOR, MALE-FEMALE, QC30 TO QC1	35.00	28.00	M31 X 0.5 - 4H	1.035”-40 CLASS 3B
AMFQC 2QC1	QC THREAD ADAPTOR, MALE-FEMALE, QC2 TO QC1	55.88	48.80	2.035”-40 CLASS 3A	1.035”-40 CLASS 3B

Description	Male-female thread adaptor

THREADED IRIS



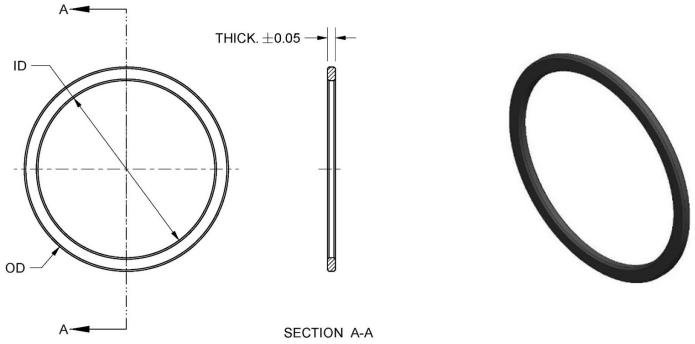


*(Units in mm)

PRODUCT #	NAME	OD (mm)	ID (mm)	THREAD	IRIS	MASS (KG)
TI100QC05	THREADED IRIS, 1.00, QC05	16.75	11.00	0.535”-40 CLASS 3A	1.000	0.002
TI100QC1	THREADED IRIS, 1.00MM, QC1	31.50	23.00	1.035”-40 CLASS 3A	1.000	0.005

DESCRIPTION	Autocentered threaded iris, QC1 or QC05, with a 1mm hole
ADJUSTMENTS	n/a
REQUIRED TOOL	2mm Allen wrench, or fingers
PRODUCT NOTES	These iris are used for alignment purposes

OPTICAL SPACER RING

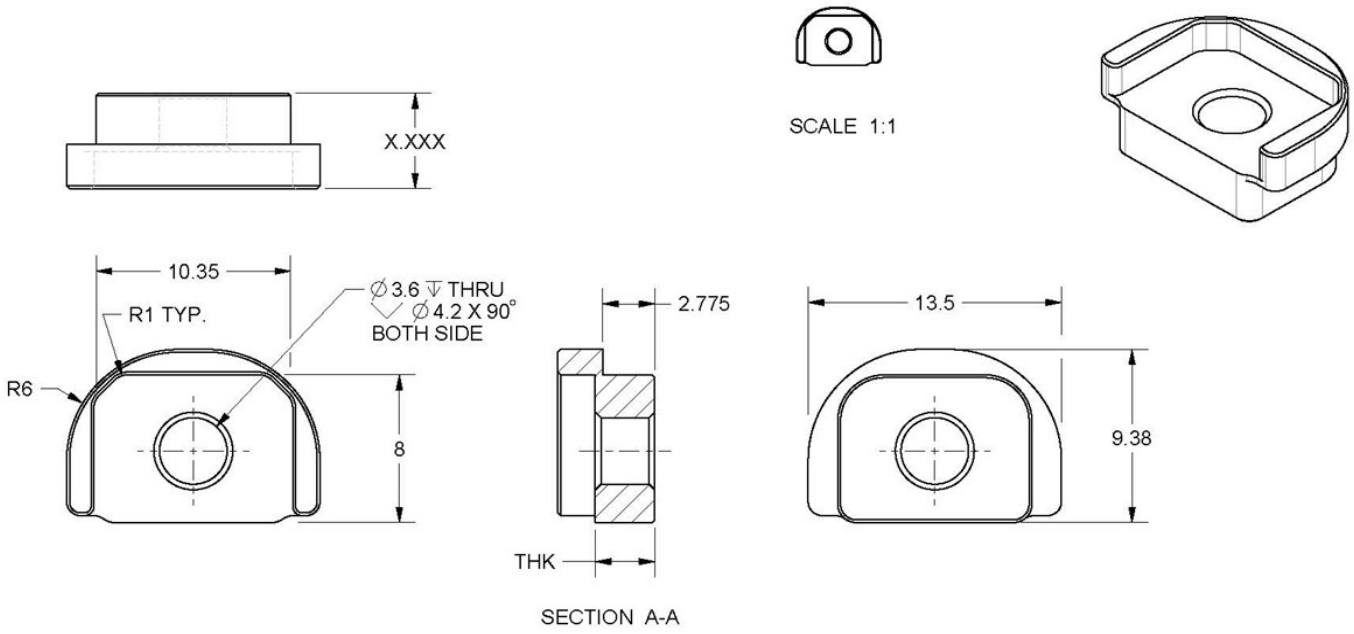


*(Units in mm)

DESCRIPTION	Shims to be used with QuickPOZ mirror mount series, to fill in the thickness gap obtained with some mirrors, filters, or dichroics

PRODUCT #	NAME	ID (mm)	OD (mm)	THK (mm)	MASS (G)
OST05D05	OPTICAL SPACER RING, 0.5MM THICK, D05	10.40	12.60	0.50	0.054
OST1D05	OPTICAL SPACER RING, 1MM THICK, D05	10.40	12.60	1.00	0.105
OST2D05	OPTICAL SPACER RING, 2MM THICK, D05	10.40	12.60	2.00	0.213
OST3D05	OPTICAL SPACER RING, 3MM THICK, D05	10.40	12.60	3.00	0.326
OST5D05	OPTICAL SPACER RING, 5MM THICK, D05	10.40	12.60	5.00	0.551
OST05D1	OPTICAL SPACER RING, 0.5MM THICK, D1	21.90	25.30	0.50	0.172
OST1D1	OPTICAL SPACER RING, 1MM THICK, D1	21.90	25.30	1.00	0.335
OST2D1	OPTICAL SPACER RING, 2MM THICK, D1	21.90	25.30	2.00	0.677
OST3D1	OPTICAL SPACER RING, 3MM THICK, D1	21.90	25.30	3.00	1.028
OST5D1	OPTICAL SPACER RING, 5MM THICK, D1	21.90	25.30	5.00	1.706
OST05D15	OPTICAL SPACER RING, 0.5MM THICK, D15	34.90	38.00	0.50	0.241
OST1D15	OPTICAL SPACER RING, 1MM THICK, D15	34.90	38.00	1.00	0.471
OST2D15	OPTICAL SPACER RING, 2MM THICK, D15	34.90	38.00	2.00	0.952
OST3D15	OPTICAL SPACER RING, 3MM THICK, D15	34.90	38.00	3.00	1.447
OST5D15	OPTICAL SPACER RING, 5MM THICK, D15	34.90	38.00	5.00	2.401
OST05D2	OPTICAL SPACER RING, 0.5MM THICK, D2	46.20	50.70	0.50	0.465
OST1D2	OPTICAL SPACER RING, 1MM THICK, D2	46.20	50.70	1.00	0.913
OST2D2	OPTICAL SPACER RING, 2MM THICK, D2	46.20	50.70	2.00	1.841
OST3D2	OPTICAL SPACER RING, 3MM THICK, D2	46.20	50.70	3.00	2.787
OST5D2	OPTICAL SPACER RING, 5MM THICK, D2	46.20	50.70	5.00	4.630

OPTICAL SPACER, SPECIAL ORDER



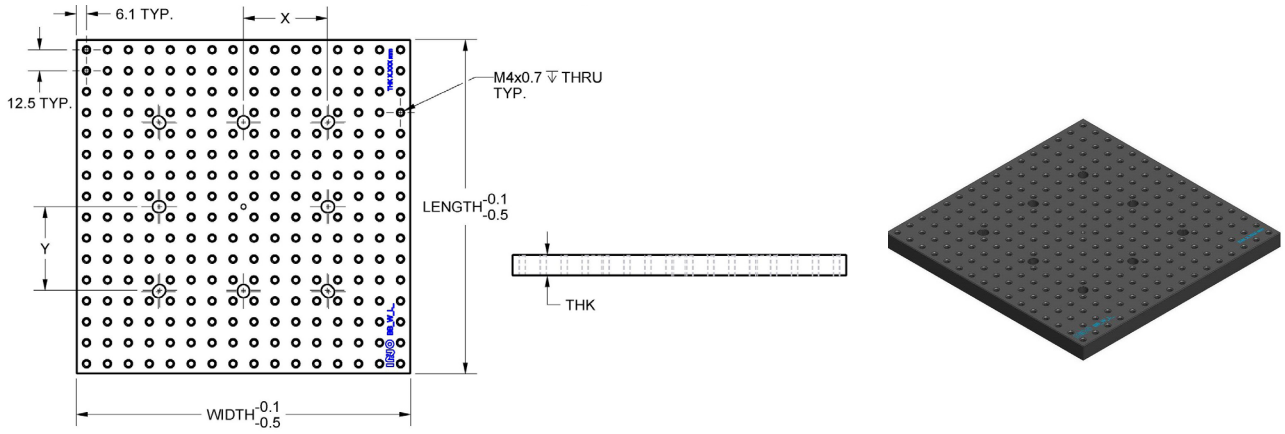
*(Units in mm)

PART NO.	OST_-S

DESCRIPTION	Custom-made spacer to hold thicker mirrors, filters, or dichroics in QuickPOZ mirror mount series
ADJUSTMENTS	n/a
REQUIRED TOOL	n/a
PRODUCT NOTES	Custom spacer available for mount sizes D05, D1, D15, and D2. Custom thickness “THK” shown in drawing section A-A will be determined upon request. Replace the _ by the desired thickness (THK) when ordering.

MOUNTING PLATES

BREADBOARD

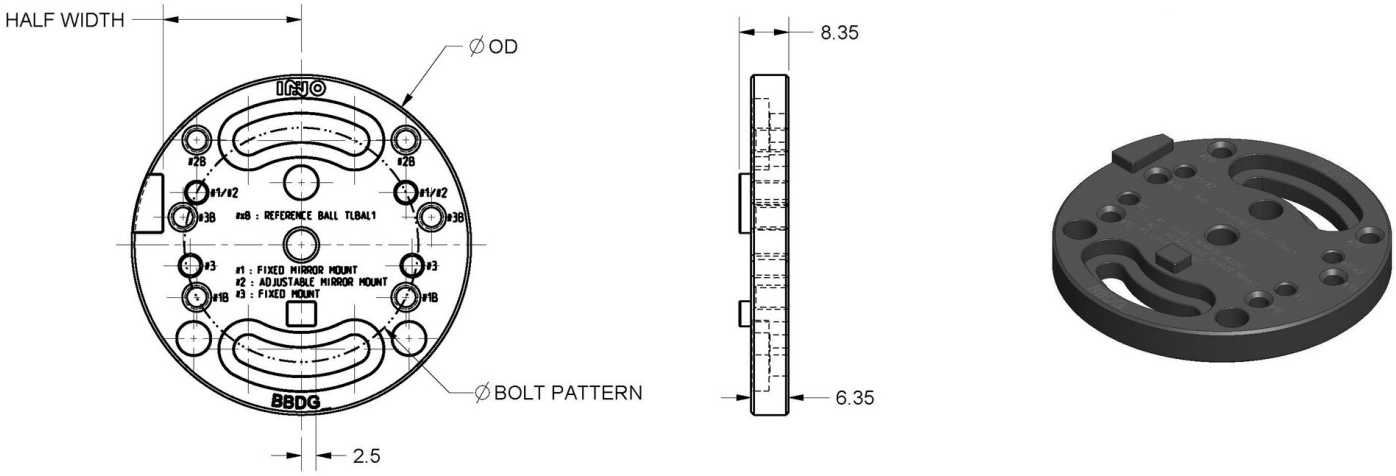


*(Units in mm)

PRODUCT #	NAME	WIDTH (mm)	LENGTH (mm)	X	Y	MASS (KG)
BB064W100L100	BREADBOARD, 6.35MM, 100X100MM	100	100	50.00	50.00	0.166
BB064W100L200	BREADBOARD, 6.35MM, 100X200MM	100	200	50.00	50.00	0.332
BB064W100L300	BREADBOARD, 6.35MM, 100X300MM	100	300	50.00	50.00	0.499
BB127W100L300	BREADBOARD, 12.7MM, 100X300MM	100	300	25.00	87.50	0.987
BB127W200L200	BREADBOARD, 12.7MM, 200X200MM	200	200	50.00	50.00	1.323
BB127W200L300	BREADBOARD, 12.7MM, 200X300MM	200	300	50.00	87.50	1.991
BB127W200L400	BREADBOARD, 12.7MM, 200X400MM	200	400	50.00	112.50	2.659
BB127W300L300	BREADBOARD, 12.7MM, 300X300MM	300	300	87.50	87.50	2.993
BB127W300L400	BREADBOARD, 12.7MM, 300X400MM	300	400	87.50	112.50	3.997

DESCRIPTION	Mounting plate, 6.35 or 12.7mm thick with M4 x 0.7 threaded holes
ADJUSTMENTS	n/a
REQUIRED TOOL	n/a
PRODUCT NOTES	Use only 3 of the 8 mounting holes for mounting otherwise the breadboard may warp.

BREADBOAD DISC, GIMBAL

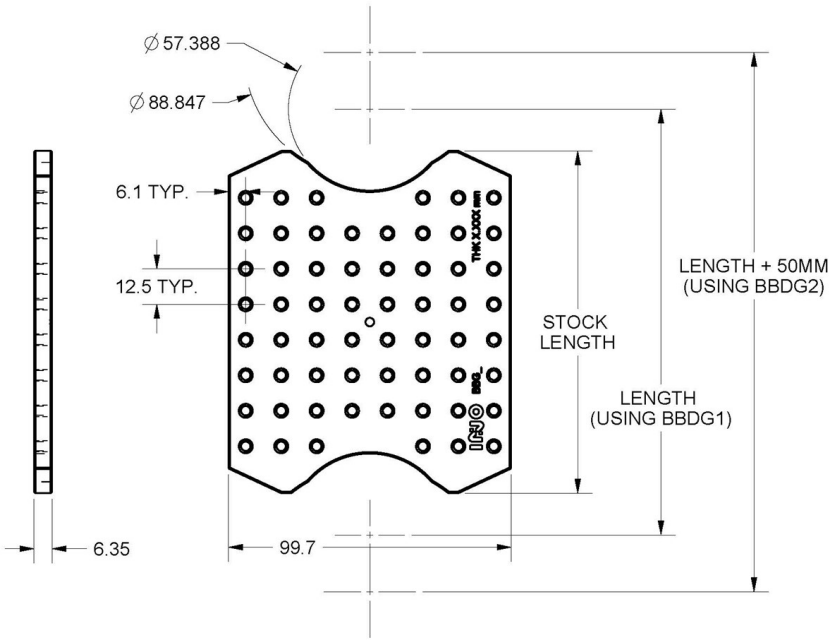


(Units in mm)

PRODUCT #	NAME	OD (mm)	HALF WIDTH (mm)	BOLT PATTERN	MASS (KG)
BBDG1	BREADBOARD DISC GIMBAL, 1	57.388	23.341	39.528	0.035
BBDG2	BREADBOARD DISC GIMBAL, 2	88.847	41.020	36.738	0.085

DESCRIPTION	Mounting disc with rotation adjustment, 6.35mm thick
ADJUSTMENTS	360°

GIMBAL ADAPTOR FOR MIRROR MOUNT AND FIXED MOUNT SERIES



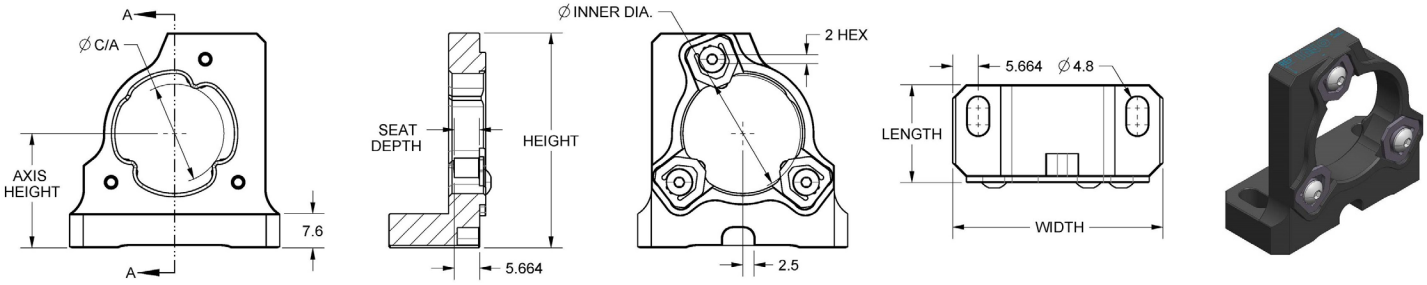
*(Units in mm)

PRODUCT #	NAME	STOCK LENGTH	MASS (KG)
BBG150	BREADBOARD GIMBAL, 150MM	120.625	
BBG200	BREADBOARD GIMBAL, 200MM	170.625	
BBG250	BREADBOARD GIMBAL, 250MM	220.625	
BBG300	BREADBOARD GIMBAL, 300MM	270.625	

DESCRIPTION	Mounting plate, 6.35mm thick with circular end
ADJUSTMENTS	360° horizontal travel

MIRROR MOUNTS

FIXED MIRROR MOUNT, HORIZONTAL



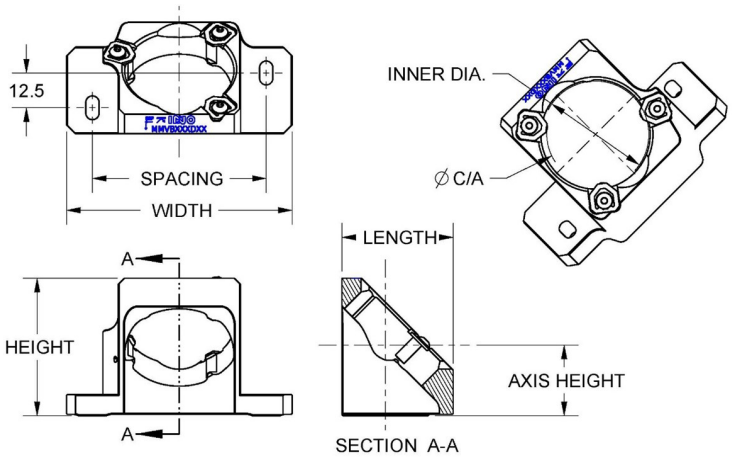
*(Units in mm)

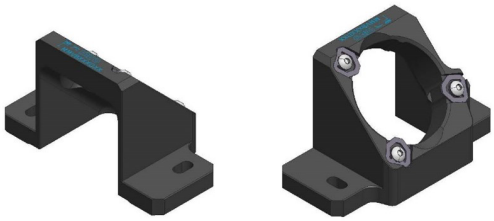
PRODUCT #	NAME	AXIS HEIGHT (mm)	INNER DIA. (mm)	CA (mm)	SEAT DEPTH
MMH254D05	FIXED MIRROR MOUNT, HORIZONTAL, D05, 25.4MM	25.40	12.90	10.40	5.600
MMH318D05	FIXED MIRROR MOUNT, HORIZONTAL, D05, 31.8MM	31.75	12.90	10.40	5.600
MMH381D05	FIXED MIRROR MOUNT, HORIZONTAL, D05, 38.1MM	38.10	12.90	10.40	5.600
MMH254D1	FIXED MIRROR MOUNT, HORIZONTAL, D1, 25.4MM	25.40	25.60	21.90	5.600
MMH318D1	FIXED MIRROR MOUNT, HORIZONTAL, D1, 31.8MM	31.75	25.60	21.90	5.600
MMH381D1	FIXED MIRROR MOUNT, HORIZONTAL, D1, 38.1MM	38.10	25.60	21.90	5.600
MMH254D15	FIXED MIRROR MOUNT, HORIZONTAL, D15, 25.4MM	25.40	38.30	34.90	9.125
MMH318D15	FIXED MIRROR MOUNT, HORIZONTAL, D15, 31.8MM	31.75	38.30	34.90	9.125
MMH381D15	FIXED MIRROR MOUNT, HORIZONTAL, D15, 38.1MM	38.10	38.30	34.90	9.125
MMH318D2	FIXED MIRROR MOUNT, HORIZONTAL, D2, 31.8MM	31.75	51.00	46.20	11.600
MMH381D2	FIXED MIRROR MOUNT, HORIZONTAL, D2, 38.1MM	38.10	51.00	46.20	11.600

LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	MASS (KG)
22.203	46.68	41.90	0.040
22.203	46.68	48.25	0.044
22.203	46.68	54.60	0.047
21.503	46.68	47.65	0.035
21.503	46.68	54.00	0.041
21.503	46.68	60.35	0.046
25.378	82.04	53.65	0.056
25.378	82.04	60.00	0.063
25.378	82.04	66.35	0.069
28.603	82.04	66.00	0.071
28.603	82.04	72.35	0.080

DESCRIPTION	Low distortion fixed mirror mount for horizontal beam folding
ADJUSTMENTS	n/a
REQUIRED TOOL	2 mm Allen wrench
PRODUCT NOTES	Nominal mirror preload is reached at 0.4mm deflection which corresponds to a mirror thickness of: •6 ±0.1 mm for Ø12-12.7mm and Ø25-25.4mm mirrors, •9.525 ±0.1 mm for Ø38.1mm mirrors, •12 ±0.1 mm for Ø50-50.8mm mirrors. The mount can accommodate other mirror thicknesses by adding optical spacer rings (OST_D_ shims) between the mirror and the blades. If the mirror is just slightly too thick, use ID Ø1/8'' x OD Ø3/16'' precision shims of the desired thickness from McMaster. For significantly thicker mirrors, use our special OST_-S optical spacer with custom thickness – contact INO for details. **Warning** Blades have been designed to be used in stack of 3 with a maximal deflection of 0.5mm at the tip.

FIXED MIRROR MOUNT, VERTICAL-BOTTOM





*(Units in mm)

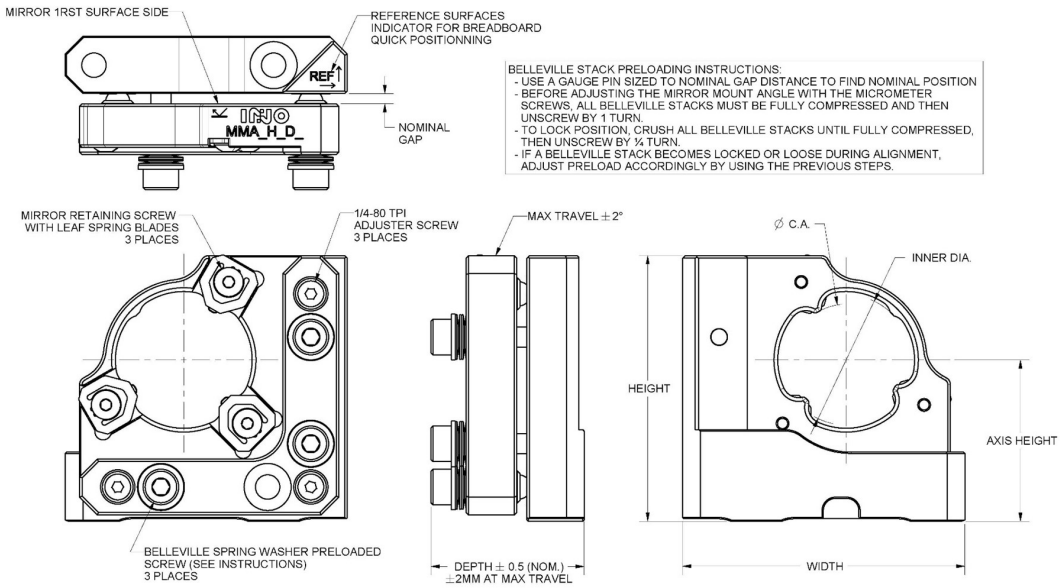
PRODUCT #	NAME	AXIS HEIGHT (mm)	INNER DIA. (mm)	CA (mm)
MMVB254D05	FIXED MIRROR MOUNT, VERTICAL BOTTOM, D05, 25.4MM	25.40	12.90	10.41
MMVB318D05	FIXED MIRROR MOUNT, VERTICAL BOTTOM, D05, 31.8MM	31.75	12.90	10.41
MMVB381D05	FIXED MIRROR MOUNT, VERTICAL BOTTOM, D05, 38.1MM	38.10	12.90	10.41
MMVB254D1	FIXED MIRROR MOUNT, VERTICAL BOTTOM, D1, 25.4MM	25.40	25.60	21.84
MMVB318D1	FIXED MIRROR MOUNT, VERTICAL BOTTOM, D1, 31.8MM	31.75	25.60	21.84
MMVB381D1	FIXED MIRROR MOUNT, VERTICAL BOTTOM, D1, 38.1MM	38.10	25.60	21.84
MMVB254D15	FIXED MIRROR MOUNT, VERTICAL BOTTOM, D15, 25.4MM	25.40	38.30	35.05
MMVB318D15	FIXED MIRROR MOUNT, VERTICAL BOTTOM, D15, 31.8MM	31.75	38.30	35.05
MMVB381D15	FIXED MIRROR MOUNT, VERTICAL BOTTOM, D15, 38.1MM	38.10	38.30	35.05

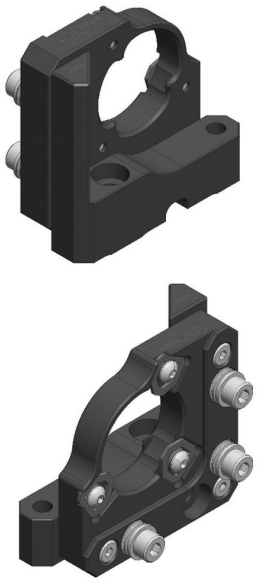
SPACING	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)	MASS (KG)
37.50	31.15	56.15	44.40	0.050
37.50	31.15	56.15	50.17	0.053
37.50	31.15	56.15	57.10	0.056
37.50	36.00	56.15	44.40	0.048
37.50	36.00	56.15	50.70	0.052
37.50	36.00	56.15	57.10	0.057
62.50	40.00	81.15	49.40	0.074
62.50	40.00	81.15	55.70	0.082
62.50	40.00	81.15	62.10	0.089

DESCRIPTION	Low distortion fixed mirror mount for vertical beam folding, downwards
ADJUSTMENTS	n/a
REQUIRED TOOL	2 mm Allen wrench
PRODUCT NOTES	Nominal mirror preload is reached at 0.4mm deflection which corresponds to a mirror thickness of: ·6 ±0.1 mm for Ø12-12.7mm and Ø25-25.4mm mirrors, ·9.525 ±0.1 mm for Ø38.1mm mirrors, ·12 ±0.1 mm for Ø50-50.8mm mirrors. The mount can accommodate other mirror thicknesses by adding optical spacer rings (OST_D_ shims) between the mirror and the blades. If the mirror is just slightly too thick, use ID Ø1/8'' x OD Ø3/16'' precision shims of the desired thickness from McMaster. For significantly thicker mirrors, use our special optical spacer OST_-S with custom thickness – contact INO for details. **Warning** Blades have been designed to be used in stack of 3 with a maximal deflection of 0.5mm at the tip. Optical axis positioning accuracy after the folding may be up to ±0.1mm RSS.

ADJUSTABLE MIRROR MOUNT, HORIZONTAL

*Left side version MMALH318D1 is shown in this drawing for illustration purpose





*(Units in mm)

PRODUCT #	NAME	AXIS HEIGHT (mm)	INNER DIA. (mm)	CA (mm)	NOMINAL GAP
MMALH318D05	ADJ. MIRROR MOUNT, LEFT-HORIZONTAL, 31.8MM, D05	31.75	12.90	10.40	2.000
MMALH318D1	ADJ. MIRROR MOUNT, LEFT-HORIZONTAL, 31.8MM, D1	31.75	25.60	21.90	2.000
MMALH381D05	ADJ. MIRROR MOUNT, LEFT-HORIZONTAL, 38.1MM, D05	38.10	12.90	10.40	2.000
MMALH381D1	ADJ. MIRROR MOUNT, LEFT-HORIZONTAL, 38.1MM, D1	38.10	25.60	21.90	2.000
MMALH381D15	ADJ. MIRROR MOUNT, LEFT-HORIZONTAL, 38.1MM, D15	38.10	38.30	34.90	2.000
MMALH381D2	ADJ. MIRROR MOUNT, LEFT-HORIZONTAL, 38.1MM, D2	38.10	51.00	46.20	2.500
MMARH318D05	ADJ. MIRROR MOUNT, RIGHT-HORIZONTAL, 31.8MM, D05	31.75	12.90	10.40	2.000
MMARH318D1	ADJ. MIRROR MOUNT, RIGHT-HORIZONTAL, 31.8MM, D1	31.75	25.60	21.90	2.000
MMARH381D05	ADJ. MIRROR MOUNT, RIGHT-HORIZONTAL, 38.1MM, D05	38.10	12.90	10.40	2.000
MMARH381D1	ADJ. MIRROR MOUNT, RIGHT-HORIZONTAL, 38.1MM, D1	38.10	25.60	21.90	2.000
MMARH381D15	ADJ. MIRROR MOUNT, RIGHT-HORIZONTAL, 38.1MM, D15	38.10	38.30	34.90	2.000
MMARH381D2	ADJ. MIRROR MOUNT, RIGHT-HORIZONTAL, 38.1MM, D2	38.10	51.00	46.20	2.500

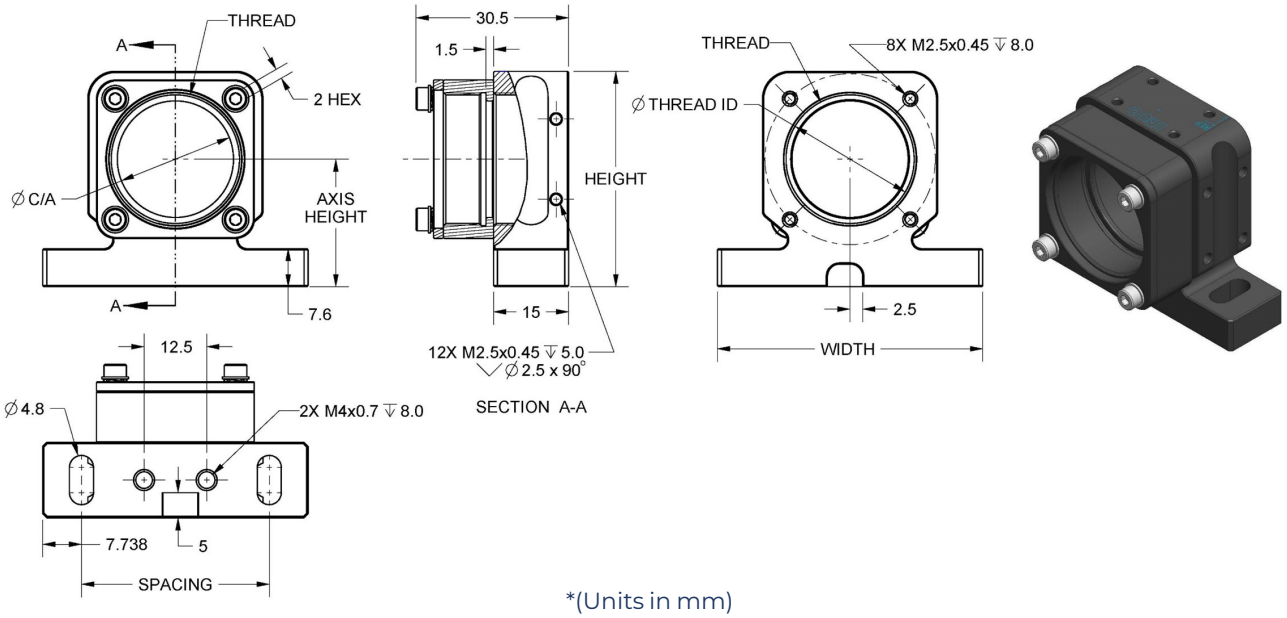
ADJUSTABLE MIRROR MOUNT, HORIZONTAL (MAIN SPECIFICATIONS CONTINUED)

WIDTH (mm)	HEIGHT (mm)	DEPTH (mm)	MASS (KG)
55.522	52.25	26.65	0.092
55.522	52.25	26.65	0.086
55.522	58.60	26.65	0.097
55.522	58.60	26.65	0.090
73.200	64.10	29.32	0.136
89.538	72.10	37.66	0.190
55.522	52.25	26.65	0.092
55.522	52.25	26.65	0.086
55.522	58.60	26.65	0.098
55.522	58.60	26.65	0.092
73.200	64.10	29.32	0.136
89.538	72.10	37.66	0.190

DESCRIPTION	Low distortion adjustable mirror mount with ±2° tip-tilt for horizontal beam folding. Left-hand and right-hand versions.
ADJUSTMENTS	D05 & D1: travel tip/tilt ±2°; Z ±1mm, 8.4 mrad/rev. D15: travel tip/tilt ±2°; Z ±1mm, 6.6 mrad/rev. D2: travel tip/tilt ±2°; Z ±1mm, 5.3 mrad/rev. Resolution after locking: 0.010-0.015 mrad.
REQUIRED TOOL	2 mm Allen wrench
PRODUCT NOTES	A 2 or 2.5 mm gage pin can be used for nominal gap axial control position. Belleville spring stack nominal position is reached at one turn of M4 screw loosening with respect to fully compress position. For locking, fully compress Belleville spring stack and then loosen for ¼ turn of M4 screw. Nominal mirror preload is reached at 0.4mm deflection which corresponds to a mirror thickness of: ·6 ±0.1 mm for Ø12-12.7mm and Ø25-25.4mm mirrors, ·9.525 ±0.1 mm for Ø38.1mm mirrors, ·12 ±0.1 mm for Ø50-50.8mm mirrors. The mount can accommodate other mirror thicknesses by adding optical spacer rings (OST_D_ shims) between the mirror and the blades. If the mirror is just slightly too thick, use ID Ø1/8'' x OD Ø3/16'' precision shims of the desired thickness from McMaster. For significantly thicker mirrors, use our special optical spacer OST_-S with custom thickness – contact INO for details. **Warning** Blades have been designed to be used in stack of 3 with a maximal deflection of 0.5mm at the tip.

GENERIC MOUNTS

XY ADJUSTABLE MOUNT

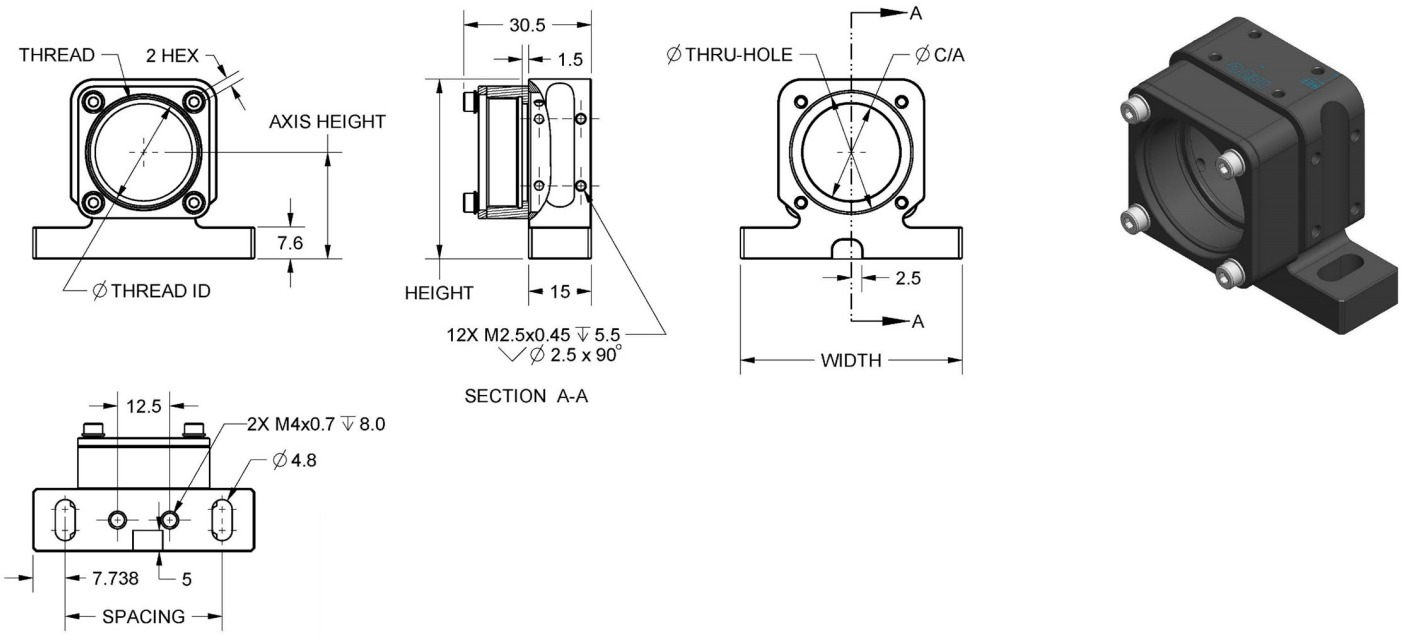


*(Units in mm)

PRODUCT #	NAME	AXIS HEIGHT (mm)	SPACING (mm)	WIDTH (mm)	THREAD ID
MA254QC05	ADJUSTABLE MOUNT, XY, QC05, 25.4MM	25.40	37.5	52.98	0.535”-40 CLASS 3B
MA318QC05	ADJUSTABLE MOUNT, XY, QC05, 31.8 MM	31.75	37.5	52.98	0.535”-40 CLASS 3B
MA381QC05	ADJUSTABLE MOUNT, XY, QC05, 38.1MM	38.10	37.5	52.98	0.535”-40 CLASS 3B
MA254QC1	ADJUSTABLE MOUNT, XY, QC1, 25.4MM	25.40	37.5	52.98	1.035”-40 CLASS 3B
MA318QC1	ADJUSTABLE MOUNT, XY, QC1, 31.8MM	31.75	37.5	52.98	1.035”-40 CLASS 3B
MA381QC1	ADJUSTABLE MOUNT, XY, QC1, 38.1MM	38.10	37.5	52.98	1.035”-40 CLASS 3B

DESCRIPTION	X-Y adjustable mount with axial support and QC threads
ADJUSTMENTS	Refer to TLXY1
REQUIRED TOOL	2mm Allen wrench
PRODUCT NOTES	Compatible with QuickPOZ TLXY1 adjustment tool, QuickPOZ Tube QC series, commercial threaded and unthreaded accessories.

THROUGH-HOLE XY ADJUSTABLE MOUNT



*(Units in mm)

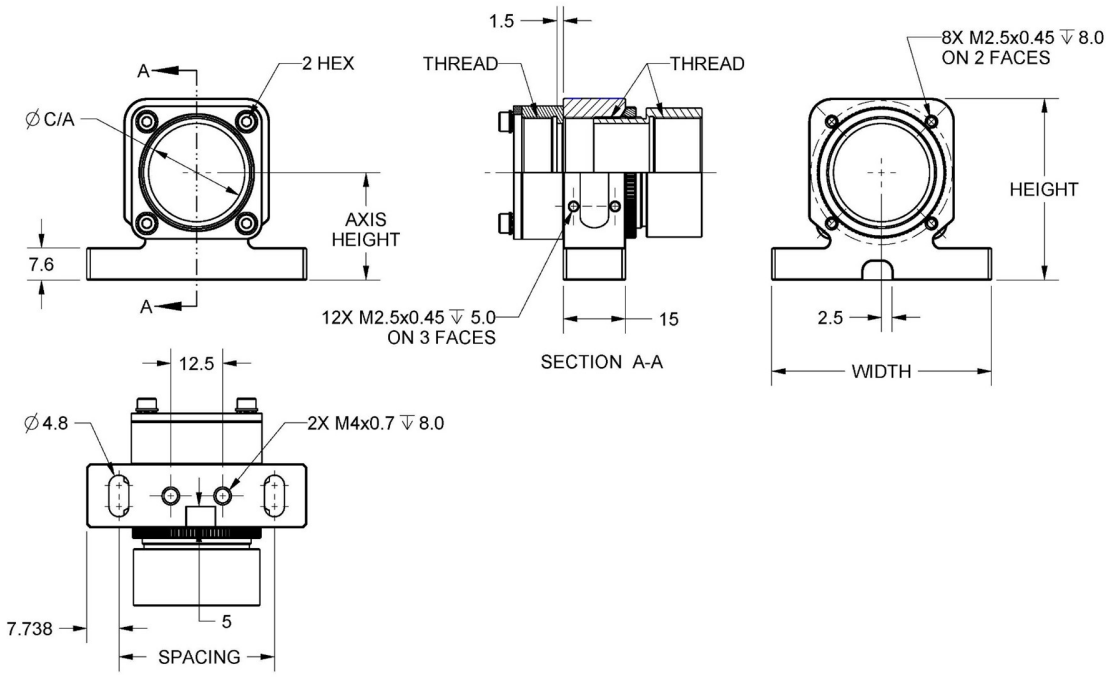
PRODUCT #	NAME	AXIS HEIGHT (mm)	THRU-HOLE (mm)	SPACING (mm)	WIDTH (mm)
MA254TH05	ADJUSTABLE MOUNT, THRU-HOLE 22MM, 25.4MM	25.40	22.00	37.5	52.98
MA318TH05	ADJUSTABLE MOUNT, THRU-HOLE 22MM, 31.8 MM	31.75	22.00	37.5	52.98
MA381TH05	ADJUSTABLE MOUNT, THRU-HOLE 22MM, 38.1MM	38.10	22.00	37.5	52.98
MA254TH1	ADJUSTABLE MOUNT, THRU-HOLE 28.5MM, 25.4MM	25.40	28.50	37.5	52.98
MA318TH1	ADJUSTABLE MOUNT, THRU-HOLE 28.5MM, 31.8MM	31.75	28.50	37.5	52.98
MA381TH1	ADJUSTABLE MOUNT, THRU-HOLE 28.5MM, 38.1MM	38.10	28.50	37.5	52.98

THROUGH-HOLE XY ADJUSTABLE MOUNT (MAIN SPECIFICATIONS CONTINUED)

HEIGHT (mm)	THREAD ID	CA (mm)	THREAD	MASS (KG)
42.90	12.901	11.00	0.535”-40 CLASS 3B	0.071
49.25	12.901	11.00	0.535”-40 CLASS 3B	0.112
55.60	12.901	11.00	0.535”-40 CLASS 3B	0.084
42.90	25.601	23.2	1.035”-40 CLASS 3B	0.050
49.25	25.601	23.2	1.035”-40 CLASS 3B	0.056
55.60	25.601	23.2	1.035”-40 CLASS 3B	0.062

DESCRIPTION	X-Y adjustable mount with axial support and through-hole
ADJUSTMENTS	Refer to TLXY1
REQUIRED TOOL	2mm Allen wrench
PRODUCT NOTES	Compatible with QuickPOZ TLXY1 adjustment tool, QuickPOZ Tube QC thread series, commercial threaded and unthreaded accessories.

XYZ ADJUSTABLE MOUNT



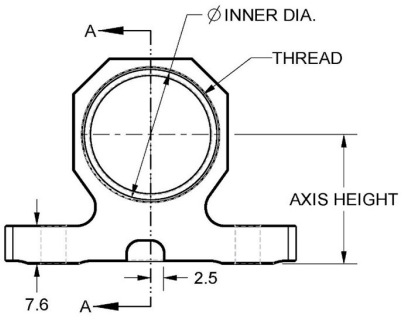
*(Units in mm)

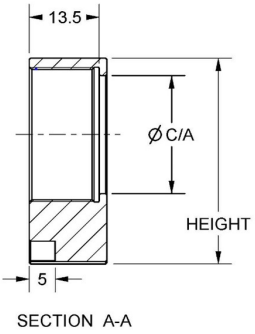
PRODUCT #	NAME	Ø CA (mm)	AXIS HEIGHT (mm)	SPACING (mm)	WIDTH (mm)
MA254TAQC1	XYZ ADJUSTABLE MOUNT W/ LENS TUBE, QC1, 25.4MM	11.00	25.40	37.5	52.98
MA318TAQC1	XYZ ADJUSTABLE MOUNT W/ LENS TUBE, QC1, 31.8 MM	11.00	31.75	37.5	52.98
MA381TAQC1	XYZ ADJUSTABLE MOUNT W/ LENS TUBE, QC1, 38.1MM	11.00	38.10	37.5	52.98

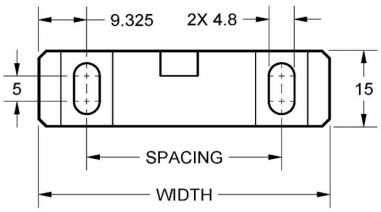
HEIGHT (mm)	THREAD ID	THREAD	MASS (KG)
42.90	25.60	1.035”-40 CLASS 3B	0.068
49.25	25.60	1.035”-40 CLASS 3B	0.074
55.60	25.60	1.035”-40 CLASS 3B	0.080

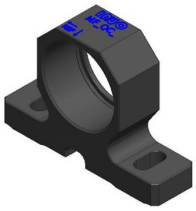
DESCRIPTION	X-Y-Z adjustable mount with QC threads
ADJUSTMENTS	Refer to TLXY1 for X & Y adjustment. For axial adjustment: 7mm travel, 2µm axial resolution (1° of adjuster rotation), Knurled locking ring.
REQUIRED TOOL	2mm Allen wrench
PRODUCT NOTES	Compatible with QuickPOZ TLXY1 adjustment tool, QuickPOZ Tube QC series, commercial threaded and unthreaded accessories.

FIXED MOUNT WITH FLANGE









*(Units in mm)

PRODUCT #	NAME	AXIS HEIGHT (mm)	INNER DIA. (mm)	CA (mm)	THREAD
MF254QC05	FIXED MOUNT, QC05 W/FLANGE, 25.4MM	25.40	12.901	11.00	0.535”-40 CLASS 3B
MF318QC05	FIXED MOUNT, QC05 W/FLANGE, 31.8MM	31.75	12.901	11.00	0.535”-40 CLASS 3B
MF381QC05	FIXED MOUNT, QC05 W/FLANGE, 38.1 MM	38.10	12.901	11.00	0.535”-40 CLASS 3B
MF254QC1	FIXED MOUNT, QC1 W/FLANGE, 25.4MM	25.40	25.601	23.20	1.035”-40 CLASS 3B
MF318QC1	FIXED MOUNT, QC1 W/FLANGE, 31.8MM	31.75	25.601	23.20	1.035”-40 CLASS 3B
MF381QC1	FIXED MOUNT, QC1 W/FLANGE, 38.1MM	38.10	25.601	23.20	1.035”-40 CLASS 3B
MF254QC30	FIXED MOUNT, QC30 W/FLANGE, 25.4MM	25.40	30.479	28.08	M31 X 0.5 -4G
MF318QC30	FIXED MOUNT, QC30 W/FLANGE, 31.8MM	31.75	30.479	28.08	M31 X 0.5 -4G
MF381QC30	FIXED MOUNT, QC30 W/FLANGE, 38.1MM	38.10	30.479	28.08	M31 X 0.5 -4G
MF318QC2	FIXED MOUNT, QC2 W/FLANGE, 31.8MM	31.75	51.001	48.60	2.035”-40 CLASS 3B
MF381QC2	FIXED MOUNT, QC2 W/FLANGE, 38.1MM	38.10	51.001	48.60	2.035”-40 CLASS 3B

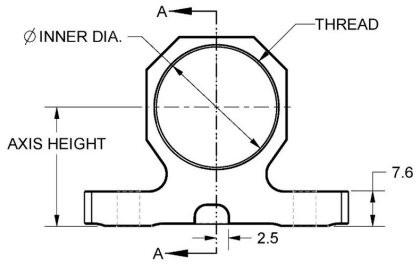
FIXED MOUNT WITH FLANGE (MAIN SPECIFICATIONS CONTINUED)

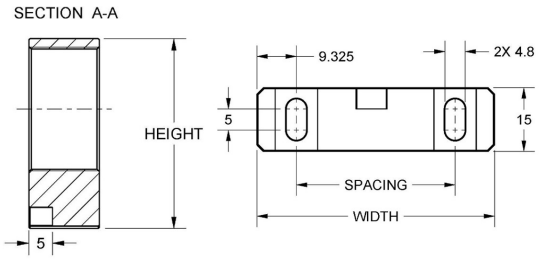
SPACING	WIDTH (mm)	HEIGHT (mm)	MASS (KG)
37.5	56.15	34.65	0.030
37.5	56.15	41.00	0.035
37.5	56.15	47.35	0.039
37.5	56.15	40.40	0.029
37.5	56.15	47.25	0.035
37.5	56.15	53.60	0.040
62.5	81.15	44.40	0.046
37.5	56.15	49.25	0.035
37.5	56.15	55.60	0.040
62.5	81.15	59.75	0.045
62.5	81.15	66.10	0.056

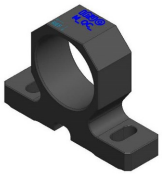
DESCRIPTION	Fixed mount with axial support and QC threads
ADJUSTMENTS	n/a
REQUIRED TOOL	n/a
Product notes	Compatible with QuickPOZ QC threads as well as commercial threads

FIXED MOUNT

*(Units in mm)







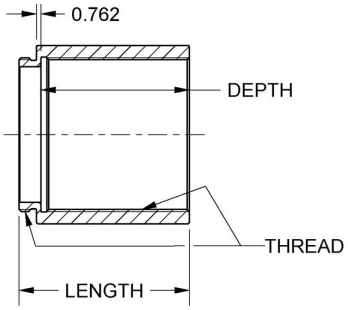
PRODUCT #	NAME	AXIS HEIGHT (mm)	INNER DIA. (mm)	THREAD	SPACING
M254QC05	FIXED MOUNT, QC05, 25.4MM	25.40	12.90	0.535”-40 CLASS 3B	37.5
M318QC05	FIXED MOUNT, QC05, 31.8MM	31.75	12.90	0.535”-40 CLASS 3B	37.5
M381QC05	FIXED MOUNT, QC05, 38.1MM	38.10	12.90	0.535”-40 CLASS 3B	37.5
M254QC1	FIXED MOUNT, QC1, 25.4MM	25.40	25.60	1.035”-40 CLASS 3B	37.5
M318QC1	FIXED MOUNT, QC1, 31.8MM	31.75	25.60	1.035”-40 CLASS 3B	37.5
M381QC1	FIXED MOUNT, QC1, 38.1MM	38.10	25.60	1.035”-40 CLASS 3B	37.5
M254QC30	FIXED MOUNT, QC30, 25.4MM	25.40	30.48	M31 X 0.5 -4G	62.5
M318QC30	FIXED MOUNT, QC30, 31.8MM	31.75	30.48	M31 X 0.5 -4G	37.5
M381QC30	FIXED MOUNT, QC30, 38.1MM	38.10	30.48	M31 X 0.5 -4G	37.5
M318QC2	FIXED MOUNT, QC2,31.8MM	31.75	51.00	2.035”-40 CLASS 3B	62.5
M381QC2	FIXED MOUNT, QC2, 38.1MM	38.10	51.00	2.035”-40 CLASS 3B	62.5
M254RMS	FIXED MOUNT, RMS, 25.4MM	25.40	19.56	0.8”-36 CLASS 3B	37.5
M318RMS	FIXED MOUNT, RMS, 31.8MM	31.75	19.56	0.8”-36 CLASS 3B	37.5
M381RMS	FIXED MOUNT, RMS, 38.1MM	38.10	19.56	0.8”-36 CLASS 3B	37.5

WIDTH (mm)	HEIGHT (mm)	MASS (KG)
56.15	34.650	0.030
56.15	41.000	0.035
56.15	47.350	0.039
56.15	40.400	0.029
56.15	47.250	0.035
56.15	53.600	0.040
81.15	44.400	0.046
56.15	49.250	0.035
56.15	55.600	0.039
81.15	59.750	0.044
81.15	66.100	0.055
56.15	39.400	0.024
56.15	45.750	0.027
56.15	52.100	0.030

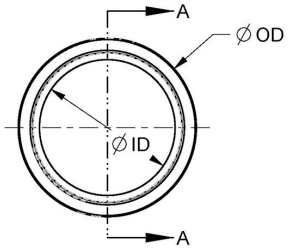
DESCRIPTION	Fixed mount with QC threads
ADJUSTMENTS	n/a
REQUIRED TOOL	n/a
PRODUCT NOTES	Compatible with QuickPOZ QC threads as well as commercial threads

TUBES

LENS TUBE, MALE-FEMALE



SECTION A-A



*(Units in mm)

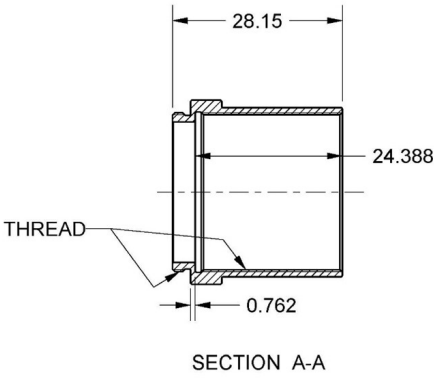
PRODUCT #	NAME	DEPTH (mm)	LENGTH (mm)
TMF064QC05	LENS TUBE MALE-FEMALE, QC05, 6.35MM	6.35	10.20
TMF127QC05	LENS TUBE MALE-FEMALE, QC05, 12.7MM	12.70	16.50
TMF254QC05	LENS TUBE MALE-FEMALE, QC05, 25.4MM	25.40	29.20
TMF381QC05	LENS TUBE MALE-FEMALE, QC05, 38.1MM	38.10	41.90
TMF508QC05	LENS TUBE MALE-FEMALE, QC05, 50.8MM	50.80	54.60
TMF064QC1	LENS TUBE MALE-FEMALE, QC1, 6.35MM	6.35	10.20
TMF127QC1	LENS TUBE MALE-FEMALE, QC1, 12.7MM	12.70	16.50
TMF254QC1	LENS TUBE MALE-FEMALE, QC1, 25.4MM	25.40	29.20
TMF381QC1	LENS TUBE MALE-FEMALE, QC1, 38.1MM	38.10	41.90
TMF508QC1	LENS TUBE MALE-FEMALE, QC1, 50.8MM	50.80	54.60
TMF064QC30	LENS TUBE MALE-FEMALE, QC30, 6.35MM	6.35	10.20
TMF127QC30	LENS TUBE MALE-FEMALE, QC30, 12.7MM	12.70	16.50
TMF254QC30	LENS TUBE, MALE-FEMALE, QC30, 25.4MM	25.40	29.20
TMF381QC30	LENS TUBE MALE-FEMALE, QC30, 38.1MM	38.10	41.90
TMF508QC30	LENS TUBE MALE-FEMALE, QC30, 50.8MM	50.80	54.60
TMF064QC2	LENS TUBE MALE-FEMALE, QC2, 6.35MM	6.35	10.20
TMF127QC2	LENS TUBE MALE-FEMALE, QC2, 12.7MM	12.70	16.50
TMF254QC2	LENS TUBE MALE-FEMALE, QC2, 25.4MM	25.40	29.20
TMF381QC2	LENS TUBE MALE-FEMALE, QC2, 38.1MM	38.10	41.90
TMF508QC2	LENS TUBE MALE-FEMALE, QC2, 50.8MM	50.80	54.60

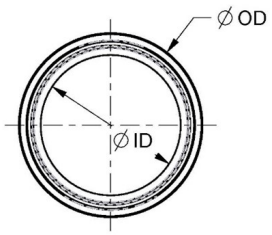
LENS TUBE, MALE-FEMALE (MAIN SPECIFICATIONS CONTINUED)

OD (mm)	ID (mm)	THREAD	MASS (KG)
17.78	11.00	0.535”-40 CLASS 3A/3B	0.003
17.78	11.00	0.535”-40 CLASS 3A/3B	0.005
17.78	11.00	0.535”-40 CLASS 3A/3B	0.009
17.78	11.00	0.535”-40 CLASS 3A/3B	0.013
17.78	11.00	0.535”-40 CLASS 3A/3B	0.017
30.48	23.20	1.035”-40 CLASS 3A/3B	0.005
30.48	23.20	1.035”-40 CLASS 3A/3B	0.009
30.48	23.20	1.035”-40 CLASS 3A/3B	0.016
30.48	23.20	1.035”-40 CLASS 3A/3B	0.023
30.48	23.20	1.035”-40 CLASS 3A/3B	0.031
35.00	28.08	M31.0 X 0.5 -4H/4G	0.005
35.00	28.08	M31.0 X 0.5 -4H/4G	0.009
35.00	28.08	M31.0 X 0.5 -4H/4G	0.017
35.00	28.08	M31.0 X 0.5 -4H/4G	0.025
35.00	28.08	M31.0 X 0.5 -4H/4G	0.033
55.88	48.60	2.035”-40 CLASS 3A/3B	0.010
55.88	48.60	2.035”-40 CLASS 3A/3B	0.017
55.88	48.60	2.035”-40 CLASS 3A/3B	0.031
55.88	48.60	2.035”-40 CLASS 3A/3B	0.045
55.88	48.60	2.035”-40 CLASS 3A/3B	0.059

DESCRIPTION	Autocentered tube with QC threads
ADJUSTMENTS	n/a
REQUIRED TOOL	n/a
PRODUCT NOTES	Compatible with QuickPOZ QC threads as well as commercial threads

LENS TUBE, MALE-FEMALE, ADAPTED FOR MA_TH_



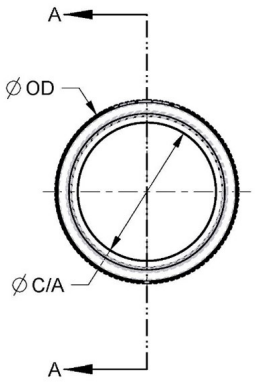


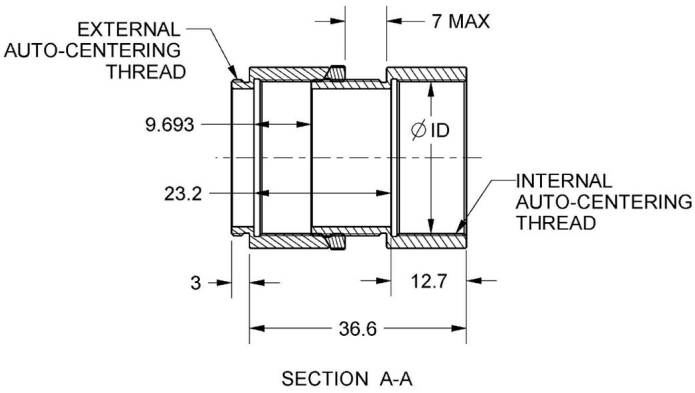
*(Units in mm)

PRODUCT #	NAME	OD (mm)	ID (mm)	THREAD	MASS (KG)
TMFR244QC05	LENS TUBE MALE-FEMALE REDUCED, QC05	17.78	11.00	0.535”-40 CLASS 3A/3B	0.008
TMFR244QC1	LENS TUBE MALE-FEMALE REDUCED, QC1	30.48	23.20	1.035”-40 CLASS 3A/3B	0.009

DESCRIPTION	Autocentered tube with QC threads, adjusted for use with MA_TH_ mount
ADJUSTMENTS	n/a
REQUIRED TOOL	n/a
PRODUCT NOTES	Compatible with QuickPOZ QC threads as well as commercial threads

LENS TUBE WITH AXIAL ADJUSTMENT





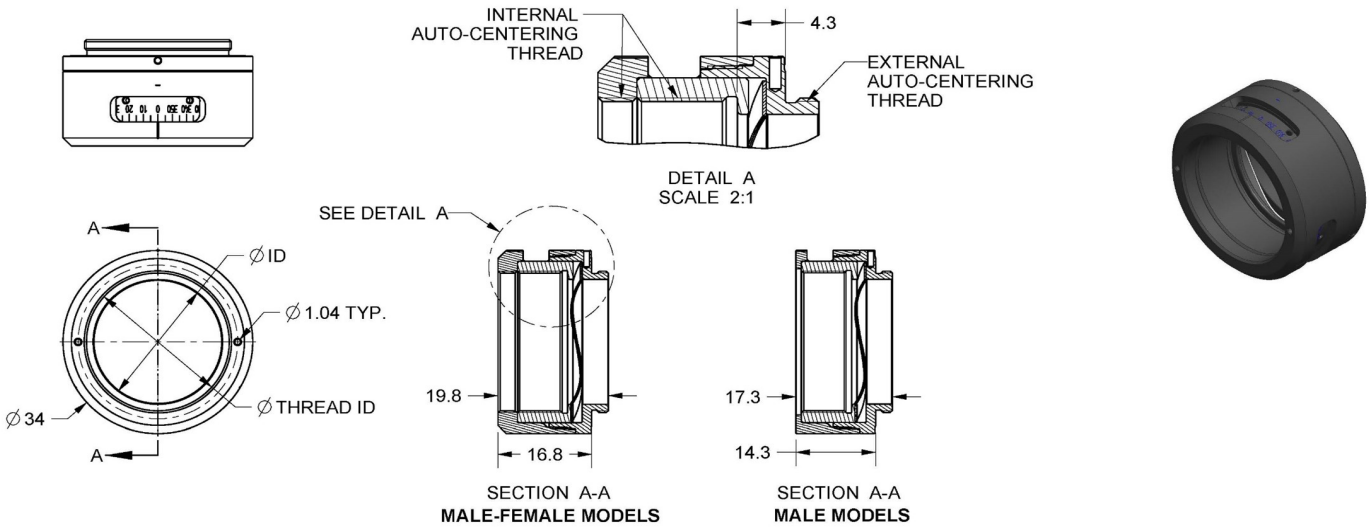
*(Units in mm)

PRODUCT #	NAME	OD (mm)	ID (mm)	Ø CA (mm)	THREAD	MASS (KG)
TAQC05	ADJUSTABLE LENS TUBE, QC05	18.28	12.901	11.00	0.535”-40 CLASS 3A/3B	0.011
TAQC1	ADJUSTABLE LENS TUBE, QC1	30.98	25.601	23.20	1.035”-40 CLASS 3A/3B	0.022
TAQC30	ADJUSTABLE LENS TUBE, QC30	35.50	30.479	28.08	M31.0 X 0.5 -4H/4G	0.024
TAQC2	ADJUSTABLE LENS TUBE, QC2	56.38	51.001	48.60	2.035”-40 CLASS 3A/3B	0.043

DESCRIPTION	Tube with axial adjustment
ADJUSTMENTS	7 mm travel, 2µm axial resolution (1° of adjuster rotation), Knurled locking ring.
REQUIRED TOOL	n/a
PRODUCT NOTES	Compatible with QuickPOZ QC threads as well as commercial threads

ROTATION MOUNTS

ROTATION MOUNT



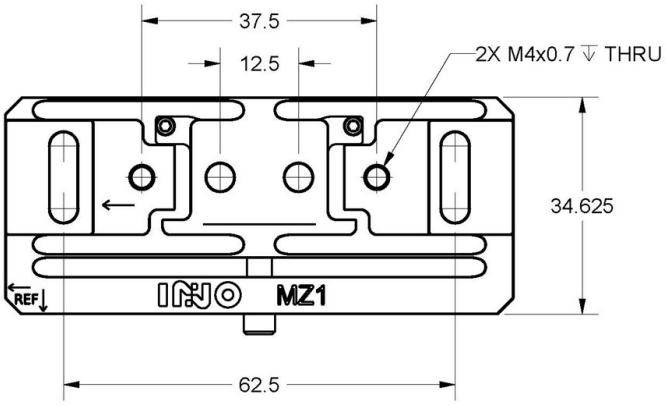
*(Units in mm)

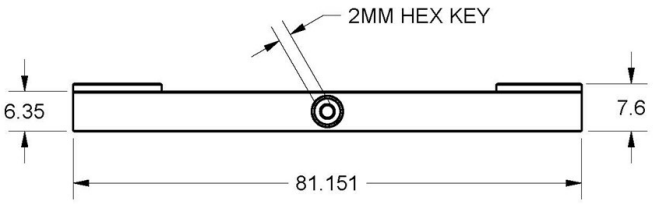
PRODUCT #	NAME	ID (mm)	THREAD ID	AUTO-CENTERING THREAD	MASS (KG)
RMQC05M	ROTATION MOUNT, QC05 MALE	11.00	12.901	0.535”-40 CLASS 3A/3B	0.026
RMQC05MF	ROTATION MOUNT, QC05 MALE-FEMALE	11.00	12.901	0.535”-40 CLASS 3A/3B	0.033
RMQC1M	ROTATION MOUNT, QC1 MALE	23.20	25.601	1.035”-40 CLASS 3A/3B	0.015
RMQC1MF	ROTATION MOUNT, QC1 MALE-FEMALE	23.20	25.601	1.035”-40 CLASS 3A/3B	0.017

DESCRIPTION	Rotation mount
ADJUSTMENTS	Travel: 360° endless; resolution ±1°, self locking.
REQUIRED TOOL	Pin Ø1 mm x 16 mm (included)
PRODUCT NOTES	Compatible with QuickPOZ QC threads as well as commercial threads

TRANSLATION MOUNTS

TRANSLATION MOUNT, 1.5MM, 62.5MM





*(Units in mm)

PART NO.	MZ1

DESCRIPTION	Translation flexure, ±1.5mm, 62.5MM
ADJUSTMENTS	±1.5mm; 300 µm/revolution, resolution of ±0.8µm
REQUIRED TOOL	2mm Allen wrench
PRODUCT NOTES	Compatible with QuickPOZ MA_QC05 & MA_QC1 mounts. The use of Belleville springs is recommended to spring load QuickPOZ MA_QC_ mount during adjustment.

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