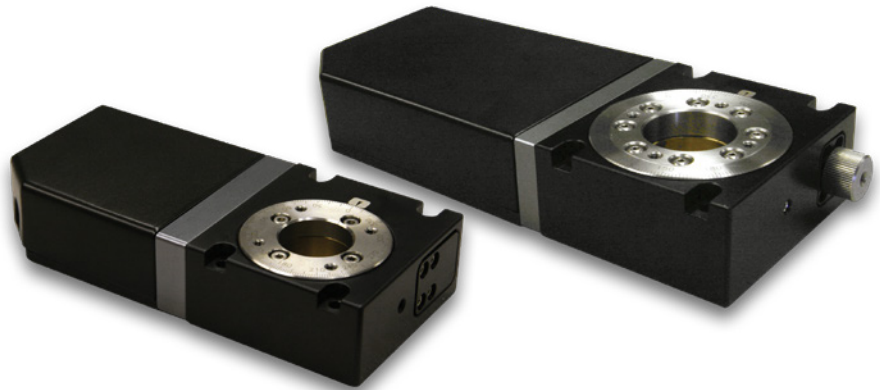




Miniature Gear-Driven Rotary Stage

MPS-GR



Compact, Precise Rotary Motion

MPS50GR and MPS75GR stages provide reliable rotary positioning performance in a low-profile design and with a compact footprint. Ideal for use in both laboratory and manufacturing environments, MPS-GR stages integrate easily with optical process equipment as well as other products in the MPS family, including MPS-SL linear stages and MPS-SV lift stages.

Key Applications

MPS-GR stages are ideal for a variety of applications in laboratory, research and production environments, including:

- ◆ Optics positioning, alignment, and adjustment
- ◆ Inspection and metrology
- ◆ Laboratory research
- ◆ Precision rotary indexing
- ◆ Electronics manufacturing and assembly
- ◆ Laser microprocessing

KEY FEATURES:

- ◆ Provides **REPEATABLE POSITIONING** with worm-gear drive mechanism
- ◆ Includes **DC SERVOMOTOR** with integral square-wave encoder or stepper motor
- ◆ Equipped with **LARGE APERTURE** for optical path or cable routing
- ◆ Configurable with **APERTURE LENS MOUNT & OPTICAL TABLE MOUNTING PLATE** for convenient integration
- ◆ Mounts easily with other MPS-series stages for **COMPACT MULTI-AXIS CONFIGURATIONS**
- ◆ Available with optional **VACUUM PREPARATION**

MPS-GR SERIES SPECIFICATIONS

Mechanical Specifications		MPS50GR	MPS75GR
Travel		360° Continuous	
Accuracy-Calibrated ⁽¹⁾		80 arc sec	
Resolution (Minimum Incremental Motion)	DC Servomotor (-M1)	2 arc sec	1 arc sec
	Stepper Motor (-M2)	2 arc sec	1 arc sec
Unidirectional Repeatability	DC Servomotor (-M1)	8 arc sec	6 arc sec
	Stepper Motor (-M2)	20 arc sec	10 arc sec
Tilt Error Motion		40 arc sec	
Worm Gear Ratio		80:1	100:1
Maximum Speed	DC Servomotor (-M1)	23 deg/s	180 deg/s
	Stepper Motor (-M2)	4.5 deg/s	100 deg/s
Aperture		20 mm	30 mm
Maximum Torque (Continuous)		0.4 N·m	0.6 N·m
Load Capacity ⁽²⁾	Axial	4 kg	12 kg
	Radial	1 kg	5 kg
	Moment	0.25 N·m	1.5 N·m
Rotor Inertia (Unloaded)		0.000031 kg·m ²	0.000141 kg·m ²
Stage Mass		0.8 kg	1.7 kg
Material		Anodized Aluminum Body	

Notes:

1. Requires -PL2 metrology option.
2. Payload specifications are single-axis system.
3. Excessive duty cycle may impact stage accuracy.
4. Performance of multi-axis systems is payload and workpoint dependent. Consult factory for multi-axis or non-standard applications.

Electrical Specifications	MPS50GR	MPS75GR
Drive System	DC Servomotor (-M1): DC Brush Servomotor with 14:1 Gearbox Stepper Motor (-M2): 24 VDC Bipolar Stepper Motor with 43:1 Gearbox	DC Servomotor (-M1): DC Brush Servomotor Stepper Motor (-M2): 24 VDC Bipolar Stepper Motor
Feedback	DC Servomotor (-M1): 512 lines/rev Rotary Encoder Stepper Motor (-M2): N/A	DC Servomotor (M1): 10,000 lines/rev Rotary Encoder Stepper Motor (-M2): N/A
Electronic Resolution	DC Servomotor (-M1): 0.565 arc sec (0.000157°) Stepper Motor (-M2): 0.785 arc sec (0.000218°) @ 480 steps/rev motor resolution	DC Servomotor (-M1): 0.324 arc sec (0.00009°) Stepper Motor (-M2): 0.324 arc sec (0.00009°) @ 40000 steps/rev motor resolution
Maximum Bus Voltage	DC Servomotor (-M1) 48 VDC Stepper Motor (-M2): 48 VDC*	
Home Marker	Optical Switch	

* With Aerotech control system.

MPS-GR SERIES ORDERING INFORMATION

MPS-GR Series Miniature Gear-Driven Rotary Stage

MPS50GR MPS50GR miniature gear-driven rotary stage with 20 mm aperture

MPS75GR MPS75GR miniature gear-driven rotary stage with 30 mm aperture

Vacuum Preparation (Optional)

-HV High vacuum preparation to 10^{-6} torr

Motor (Required)

-M1 DC servomotor

-M2 Stepper motor

Mounting Plate (Optional)

-MP Optical table mounting plate

Lens Mount (Optional)

-LMO Aperture lens mount

Metrology (Required)

-PL0 No metrology performance plots

-PL1 Metrology, uncalibrated with performance plots

-PL2 Metrology, calibrated (HALAR) with performance plots

Integration (Required)

Aerotech offers both standard and custom integration services to help you get your system fully operational as quickly as possible. The following standard integration options are available for this system. Please consult Aerotech if you are unsure what level of integration is required, or if you desire custom integration support with your system.

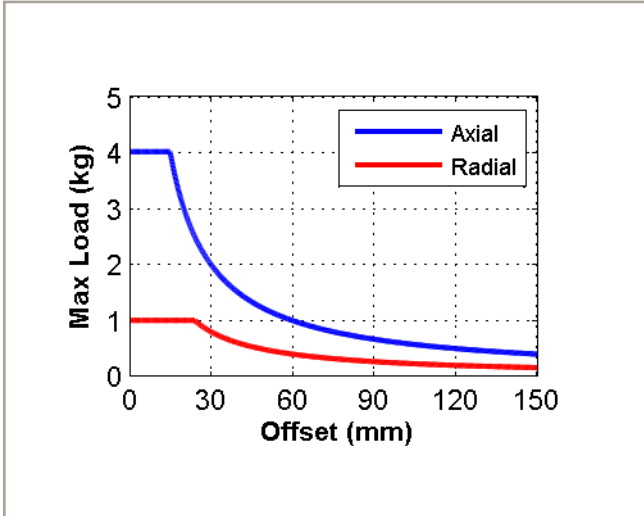
-TAS **Integration - Test as system**

Testing, integration, and documentation of a group of components as a complete system that will be used together (ex: drive, controller, and stage). This includes parameter file generation, system tuning, and documentation of the system configuration.

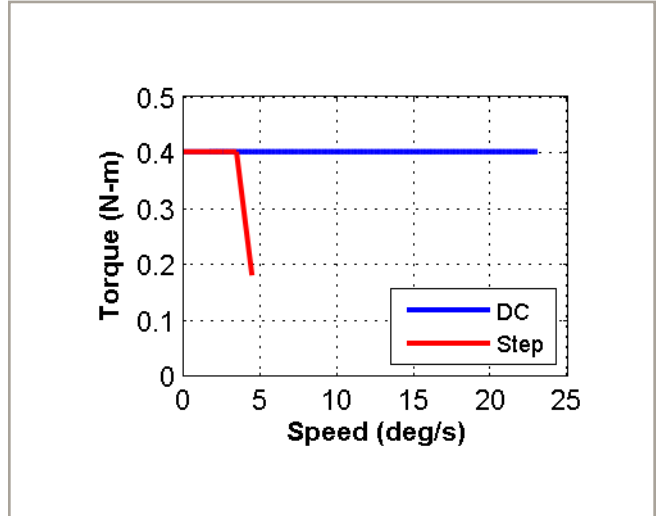
-TAC **Integration - Test as components**

Testing and integration of individual items as discrete components that ship together. This is typically used for spare parts, replacement parts, or items that will not be used together. These components may or may not be part of a larger system.

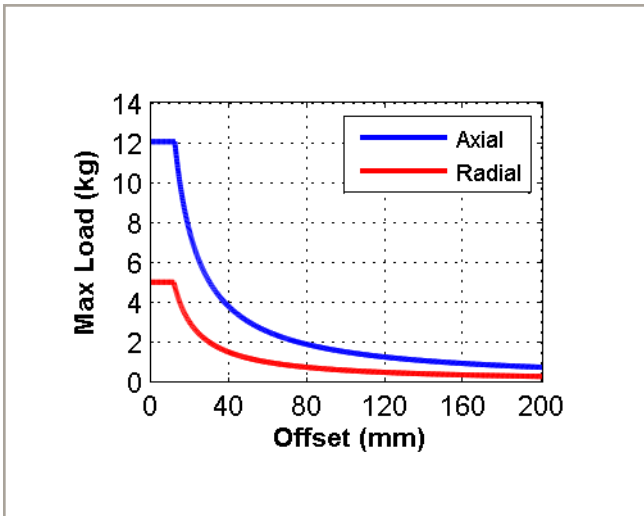
MPS-GR SERIES SPECIFICATIONS



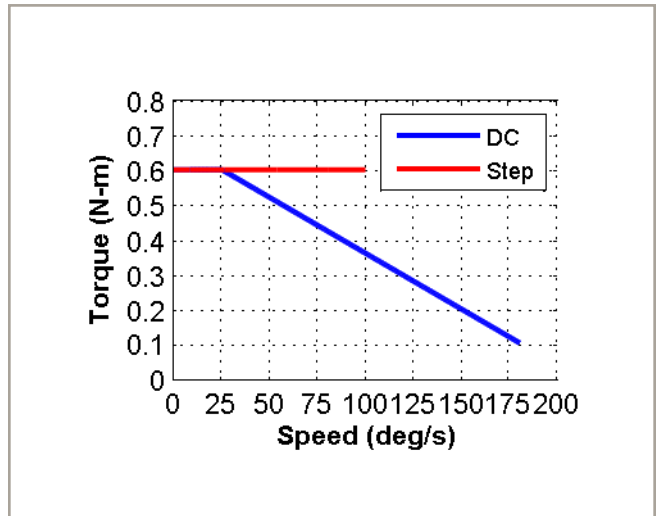
MPS50GR maximum load versus offset.



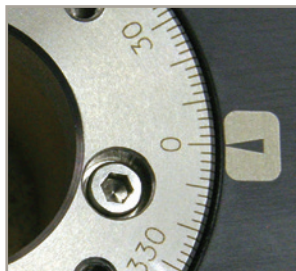
MPS50GR continuous torque versus speed.



MPS75GR maximum load versus offset.



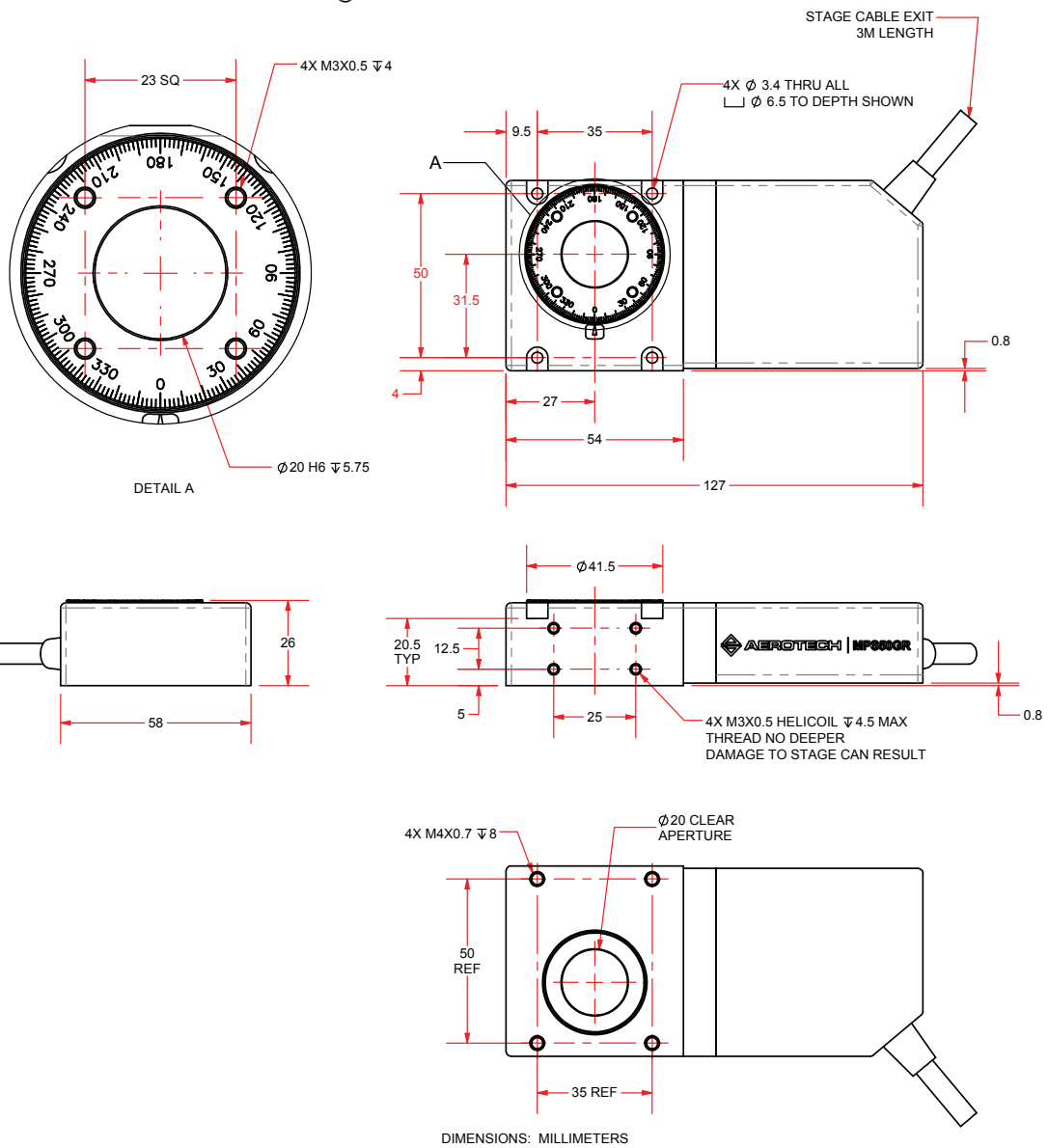
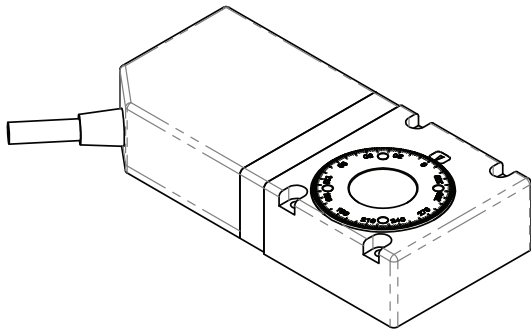
MPS75GR continuous torque versus speed.



The MPS-GR series includes a graduated tabletop.

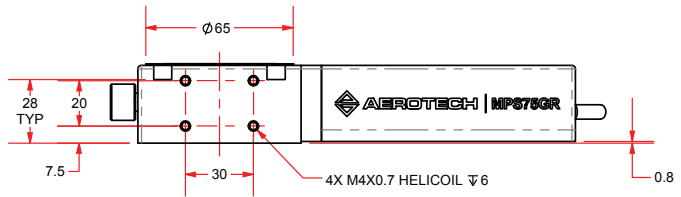
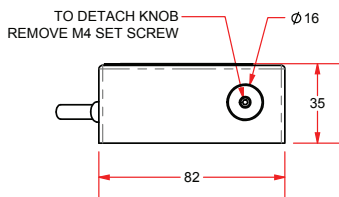
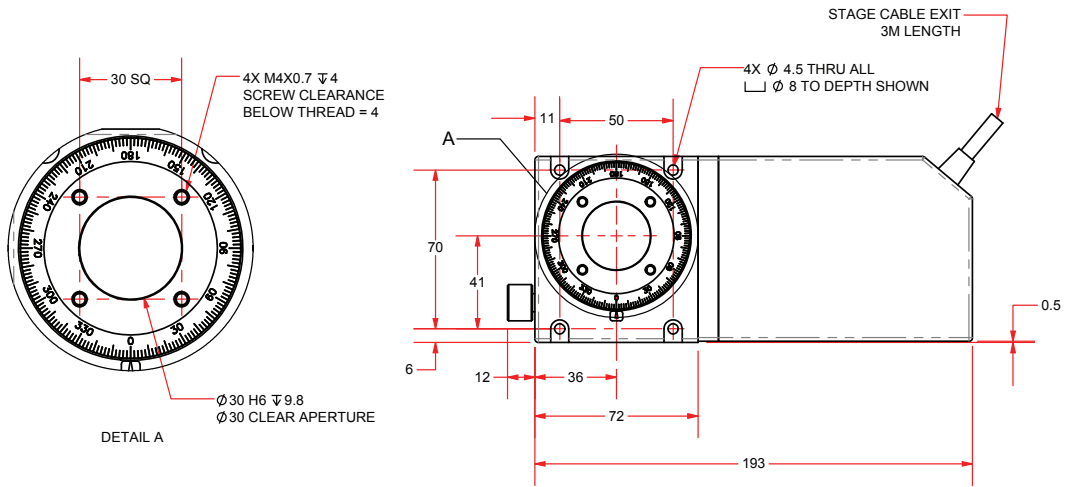
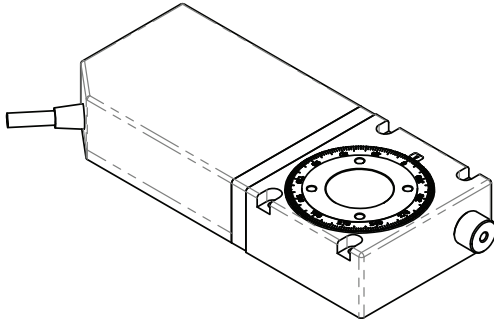
MPS-GR SERIES DIMENSIONS

MPS50GR



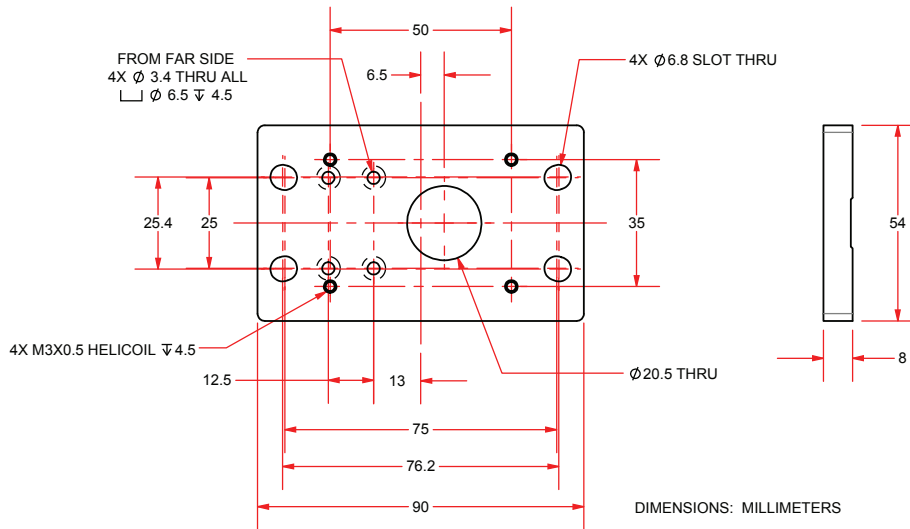
MPS-GR SERIES DIMENSIONS

MPS75GR

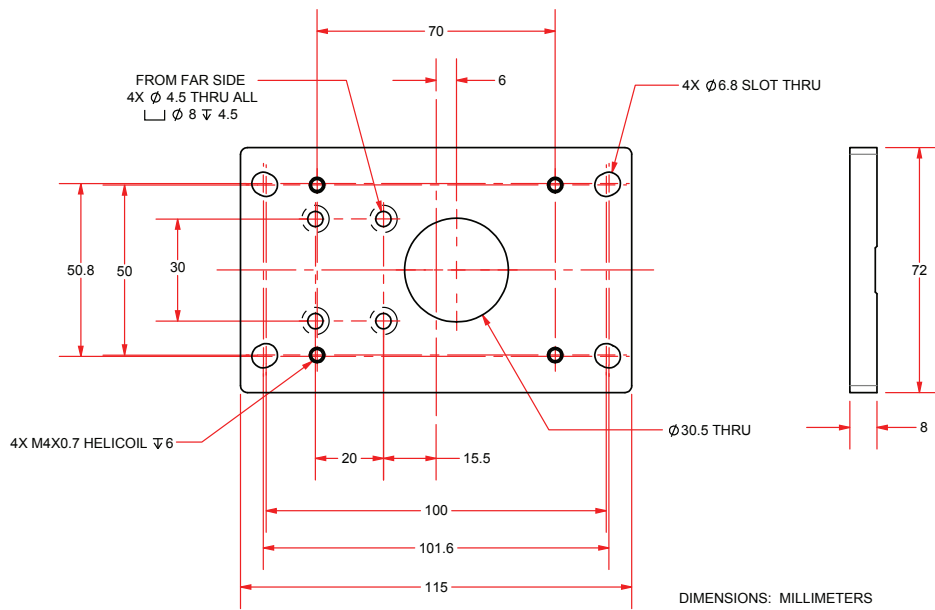


DIMENSIONS: MILLIMETERS

MPS-GR SERIES DIMENSIONS
MPS50GR MOUNTING PLATE

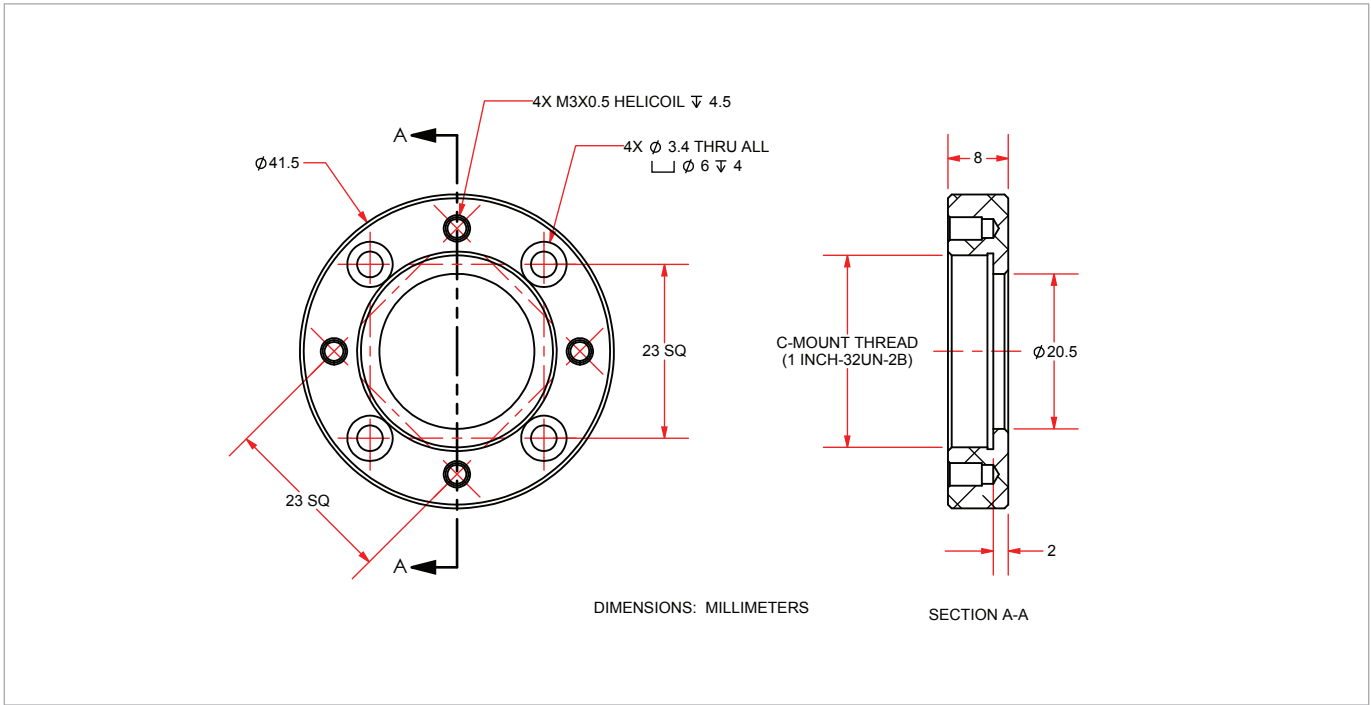


MPS75GR MOUNTING PLATE

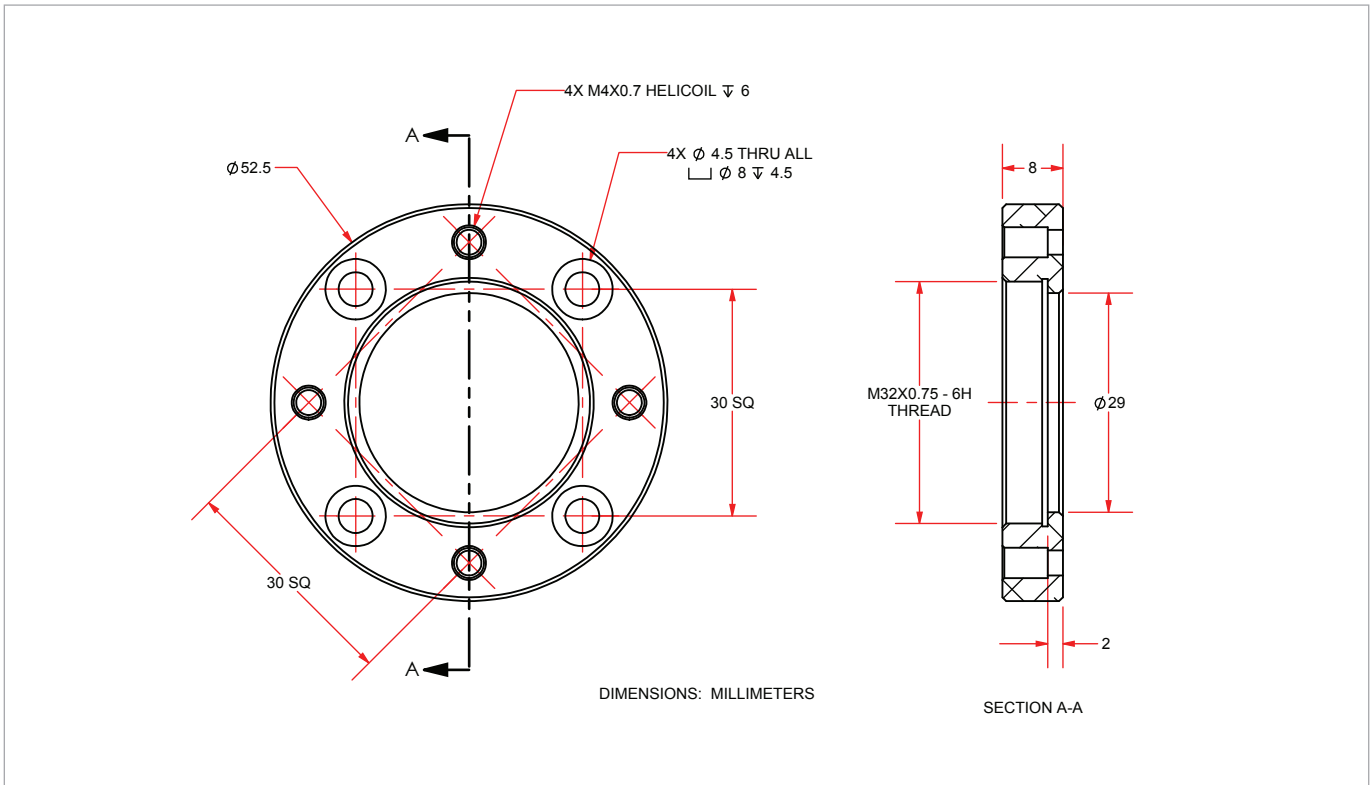


MPS-GR SERIES DIMENSIONS

MPS50GR-LM0

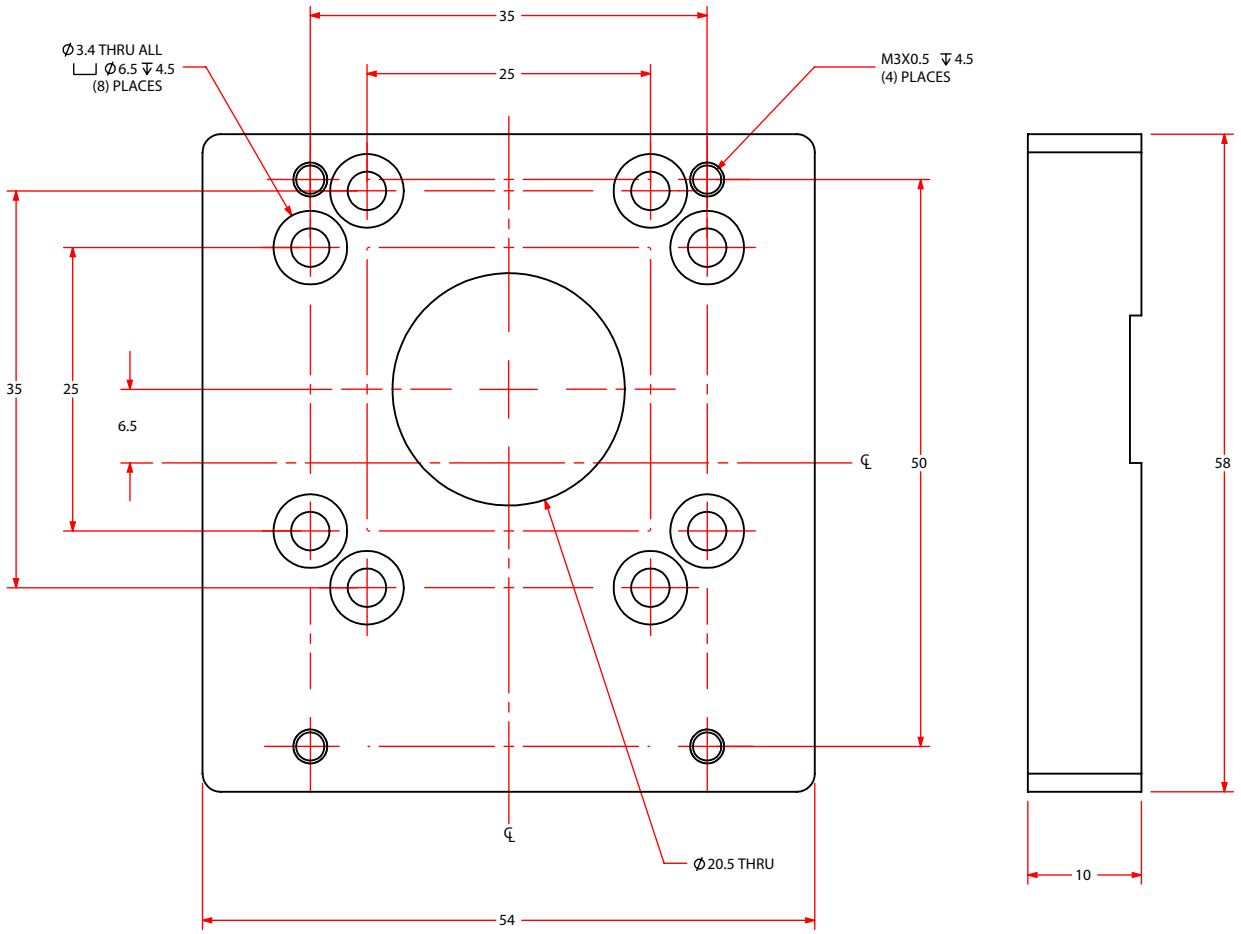


MPS75GR-LM0



MPS-GR SERIES DIMENSIONS

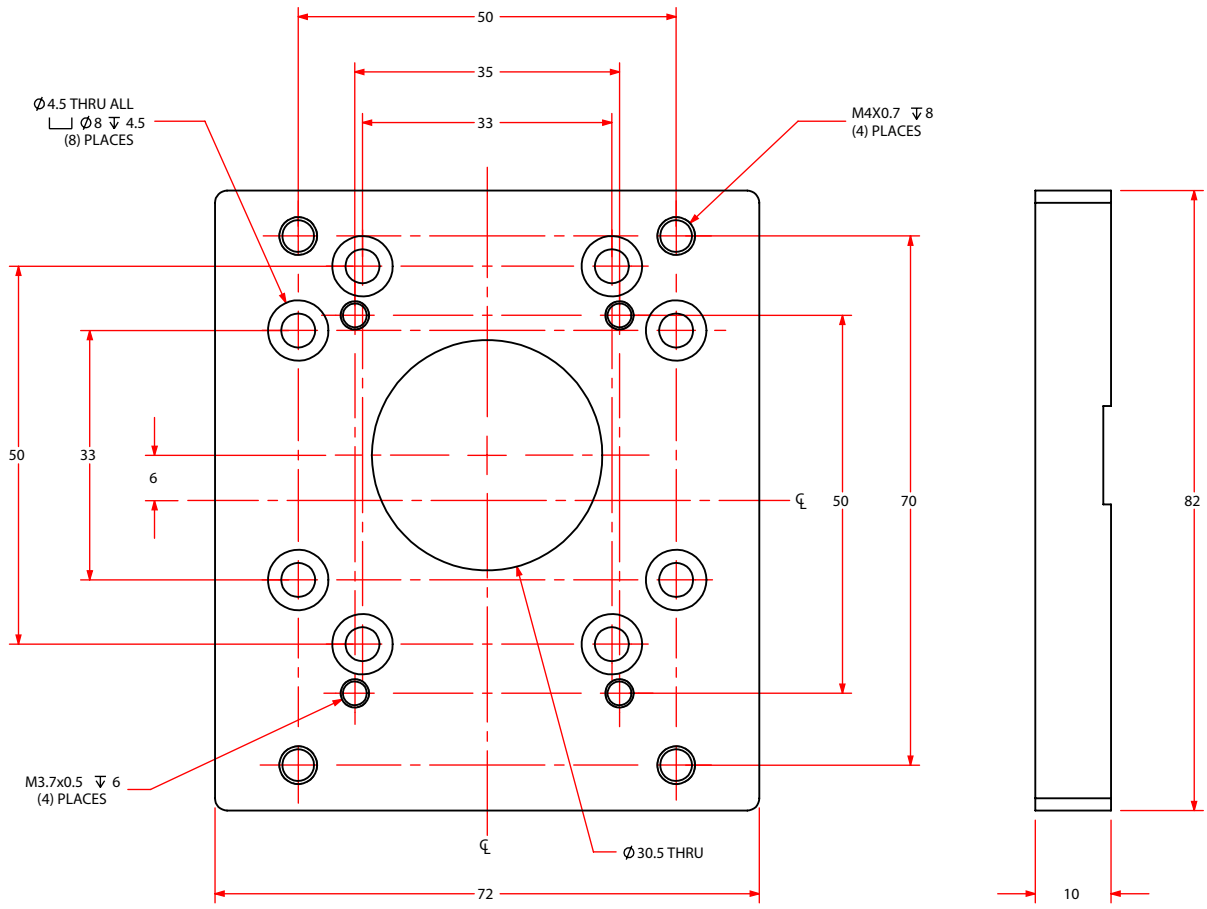
AP1-MPS



DIMENSIONS: MILLIMETERS

MPS-GR SERIES DIMENSIONS

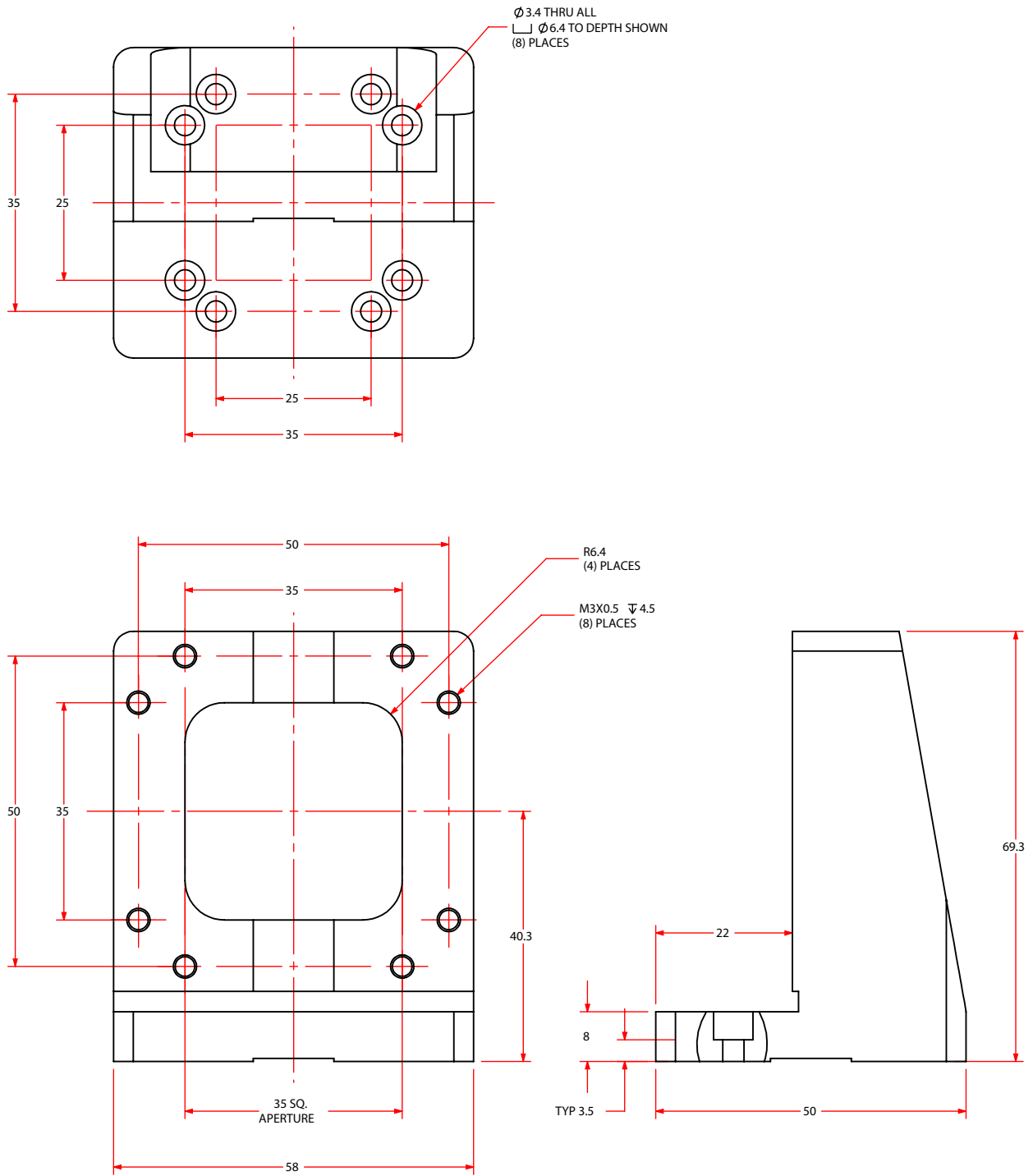
AP2-MPS



DIMENSIONS: MILLIMETERS

MPS-GR SERIES DIMENSIONS

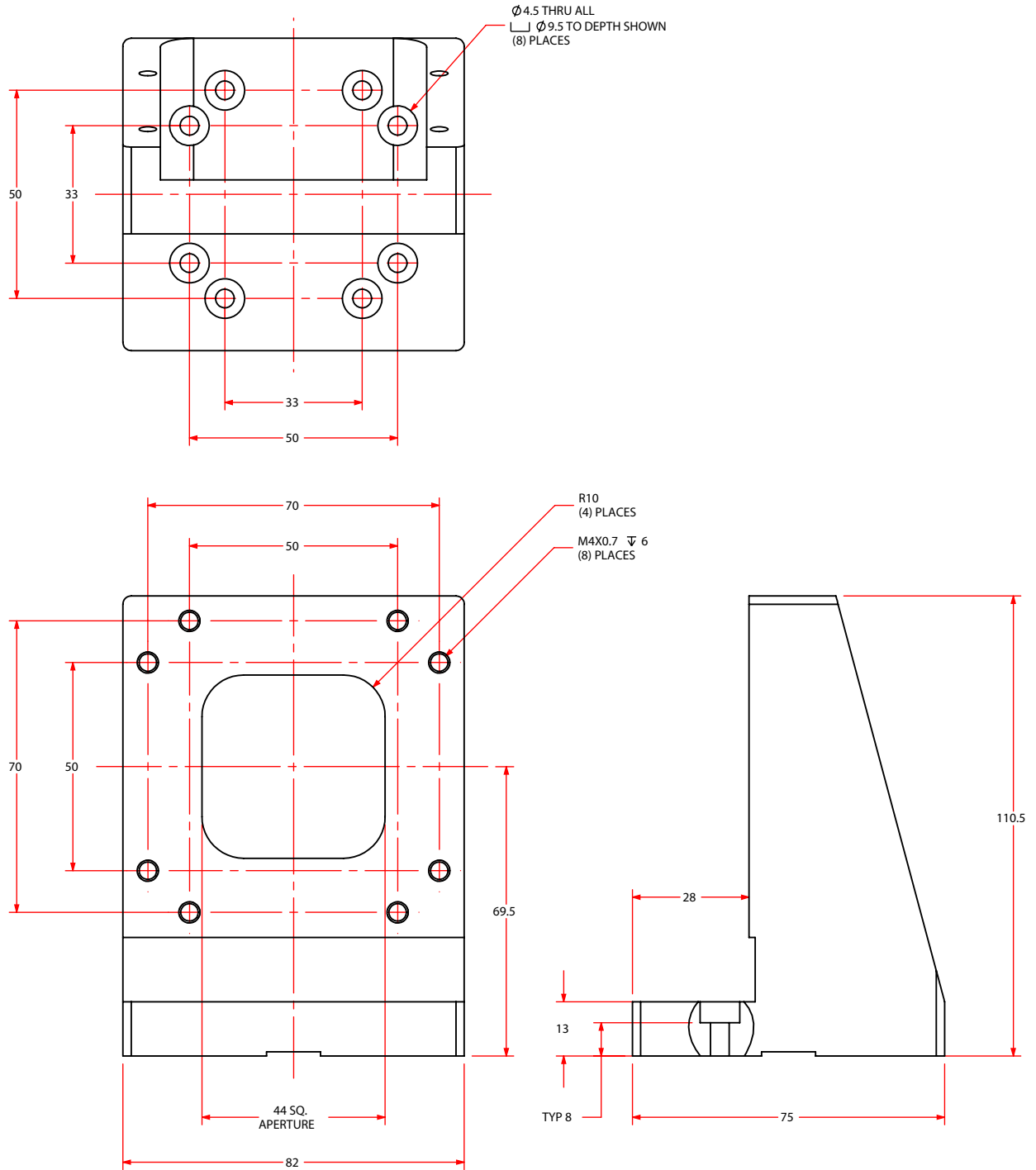
HDZ-MPS50GR



DIMENSIONS: MILLIMETERS

MPS-GR SERIES DIMENSIONS

HDZ-MPS75GR



DIMENSIONS: MILLIMETERS