

MGV Series

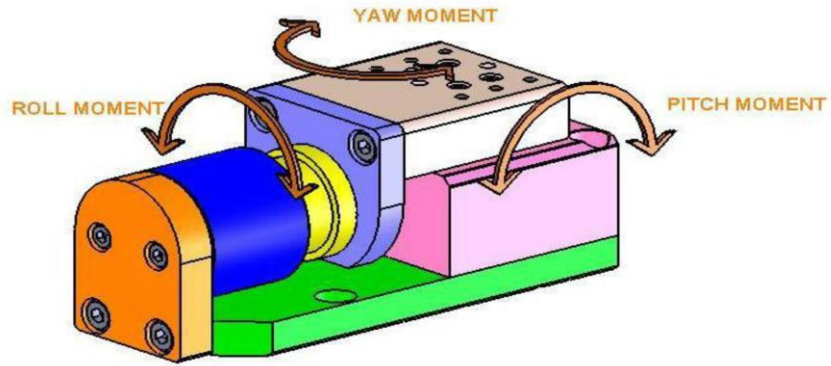
Miniature Guide Voice Motor Stage



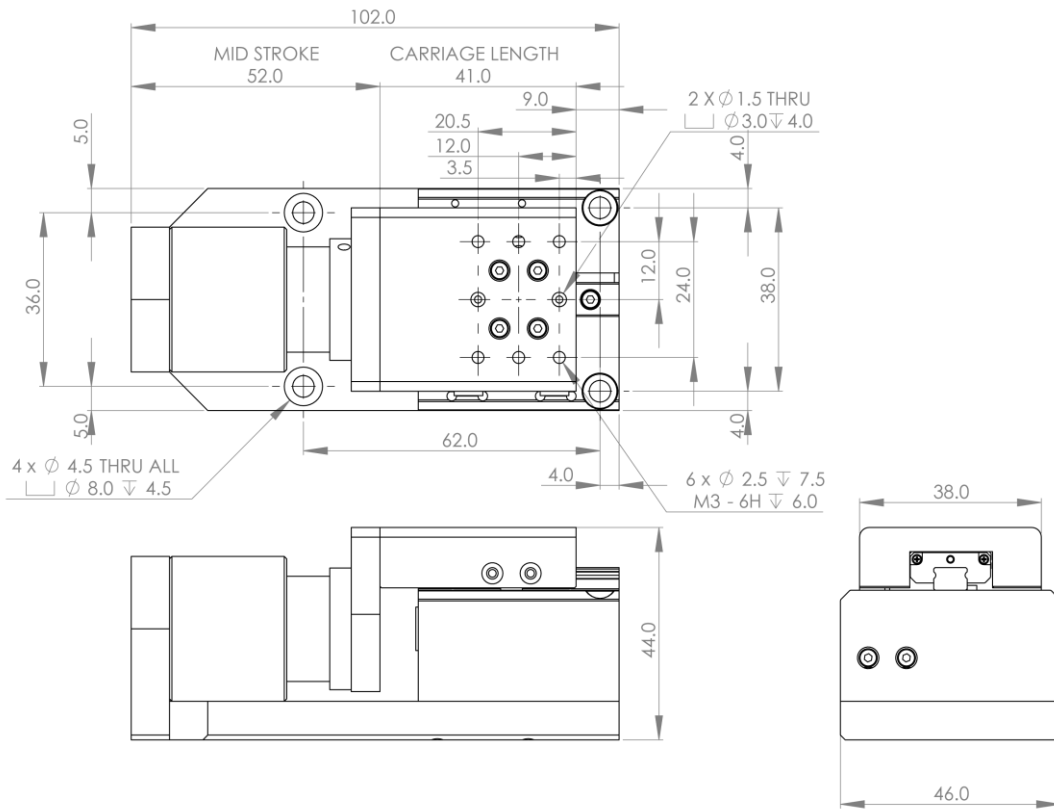
- **Direct drive**
- **Zero cogging and backlash ironless linear motor actuator**
- **Stroke from 15mm to 30mm**
- **Miniature linear guidance rails**
- **Suitable for high speed and acceleration applications**
- **Smooth motion even at low speeds (low velocity ripple)**

Motor Parameter

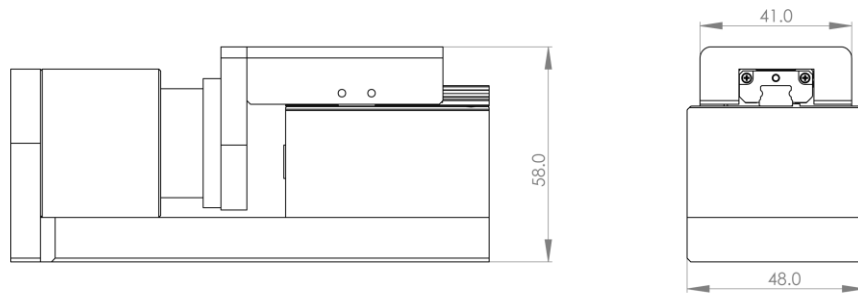
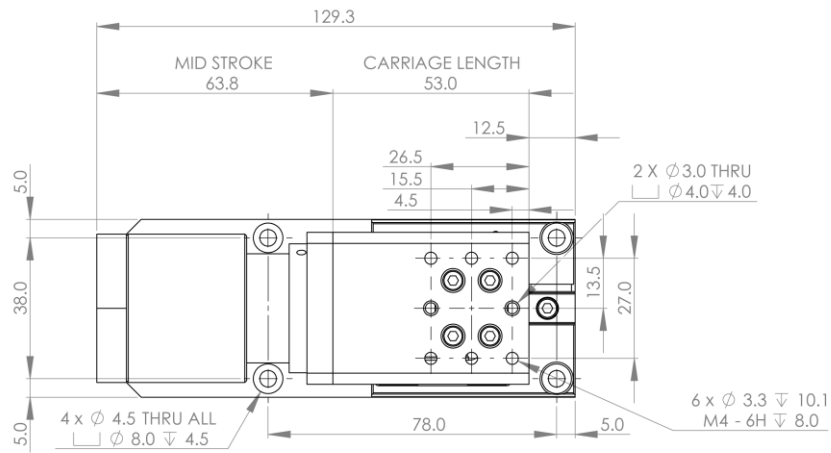
MGV	Unit	MGV 38	MGV 41	MGV 52	MGV 84
Electrical Parameters	Driven by Voice Coil	AVM30-15	AVM40-20	AVM60-25	AVM90-30
Continuous ForceCoil @100 °C	N	4.6	9.9	26.4	74.3
Peak Force	N	29.4	58.1	119.0	315.0
Motor Constant	N/SqRt (W)	2.26	3.89	7.45	13.21
Continuous Power	W	4.2	6.5	12.5	31.6
Peak Power	W	169.6	222.8	254.8	568.4
Max Bus Voltage	V	48	60	60	60
Max Coil Temperature	°C	155	155	155	155
Continuous current	A	0.63	0.77	1.55	3.30
Peak Current, I _{peak}	A	4.00	4.50	7.00	14.00
Force Constant	N/A	7.35	12.90	17.00	22.50
Back EMF Constant, V _{emf}	V/m/s	7.35	12.90	17.00	22.50
Inductance	mH	2.94	6.22	6.42	6.61
Terminal Resistance @ 25 °C	Ohms	10.6	11	5.2	2.9
Electrical Time Constant	ms	0.3	0.6	1.2	2.3
Mechanical Parameters					
Moving Mass	kg	0.084	0.162	0.391	1.386
Total Mass	kg	0.366	0.715	1.703	5.457
Recommended maximum load	kg	0.3	0.8	2.0	6.0
Stroke	mm	15	20	25	30
Note: Please contact us for customized stroke.					
Performance Parameters					
Straightness	µm	±3µm/25mm			
Flatness	µm	±3µm/25mm			
Bidirectional Repeatability	µm	±1.5µm			
Linearity without mapping	µm	±3µm/25mm			
Linearity with mapping	µm	±0.5µm/25mm			
Note: The straightness, bidirectional repeatability and linearity are qualified according to ISO 230-2:1997.					
ISO 230-2: 1997 - Bidirectional Repeatability, Bidirectional Accuracy, Bidirectional positional deviation					
Bearing Parameters					
Maximum static load capacity	N	129.0	231.0	706.0	1710.0
Maximum static row moment	Nm	5.0	10.6	23.1	176.0
Maximum static pitch moment	Nm	3.1	7.8	12.0	51.2
Maximum static yaw moment	Nm	3.7	9.0	12.0	51.2
Recommended maximum load ¹	N	2.9	7.8	19.6	58.9
Recommended row moment	Nm	1.7	3.5	7.7	58.7
Recommended pitch moment	Nm	1.0	2.6	4.0	17.1
Recommended yaw moment	Nm	1.2	3.0	4.0	17.1
1: The recommended maximum load is based on the load in which the acceleration of the moving mass is at least 1G.					



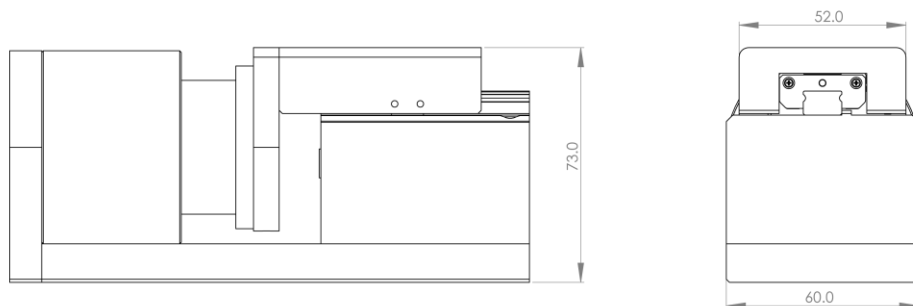
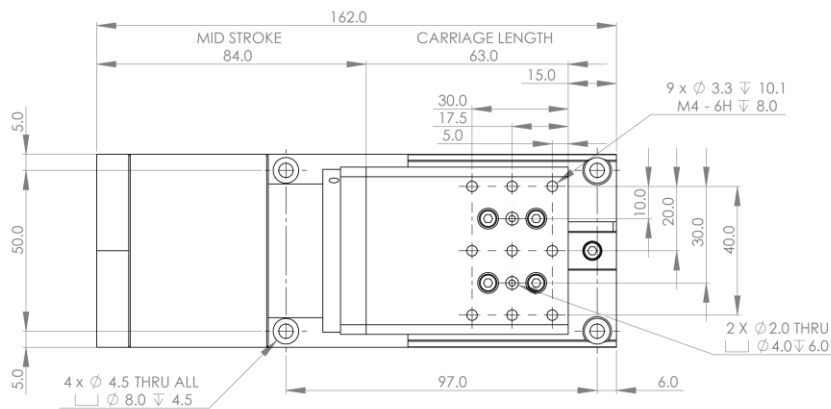
MGV 38



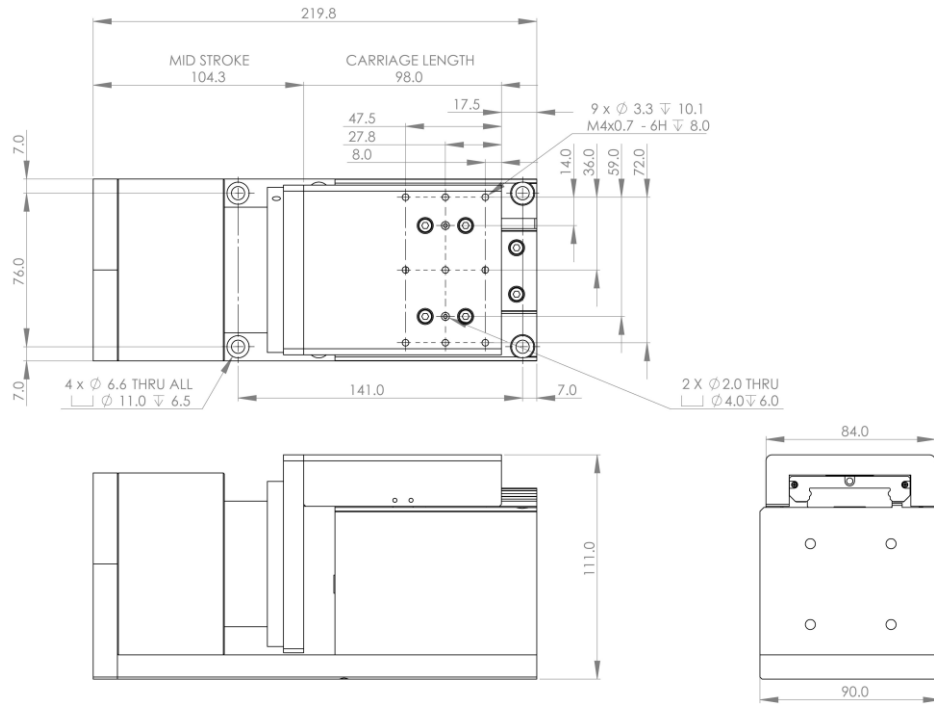
MGV 41



MGV 52



MGV 84



Part Numbering

Common Definition :

- * L0100 = 100g Payload
- * L0200 = 200g Payload
- * L0500 = 500g Payload
- * L1000 = 1000g Payload
- * E00 = Counter-balance Device activated and Resting Position at 0mm
- * E15 = Counter-balance Device activated and Resting Position at 15mm
- * E20 = Counter-balance Device activated and Resting Position at 20mm
- * E25 = Counter-balance Device activated and Resting Position at 25mm
- * E50 = Counter-balance Device activated and Resting Position at 50mm

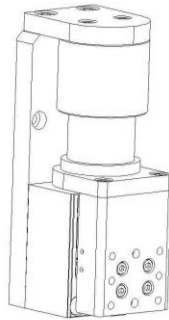
Horizontal Application:

MGV Series	Model	Coil Type	Encoder	Resolution (um)
	MGV 38	AVM30-15-0.5	M1	1500-1.0
	MGV 41	AVM40-20-0.5		1500-0.5
	MGV 52	AVM60-25-0.5		2000-0.1
	MGV 84	AVM90-30-0.5		

Module

Example: MGV84-AVM90-30-0.5-M1-1500-0.5

Vertical Application:



*Orientation of vertical application.
Pls contact factory for the other orientation.

1	MGV 38				
	Model	Coil Type	Encoder	Resolution (um)	Customer Payload *
	MGV 38	AVM30-15-0.5	¹ M1	1500-1.0	L0000 to L0100
				1500-0.5	
				2000-0.1	

Module

Example: MGV38-AVM30-15-0.5-M1-1500-0.5-L0100-E15

2	MGV 41				
	Model	Coil Type	Encoder	Resolution (um)	Customer Payload *
	MGV 41	AVM40-20-0.5	¹ M1	1500-1.0	L0000 to L0200
				1500-0.5	
				2000-0.1	

Module

Example: MGV84-AVM40-20-0.5-M1-1500-0.5-L0200-E15

3	MGV 52				
	Model	Coil Type	Encoder	Resolution (um)	Customer Payload *
	MGV 52	AVM60-25-0.5	¹ M1	1500-1.0	L0000 to L0500
				1500-0.5	
				2000-0.1	

Module

Example: MGV84-AVM60-25-0.5-M1-1500-0.5-L0500-E20

4	MGV 84				
	Model	Coil Type	Encoder	Resolution (um)	Customer Payload *
	MGV 84	AVM90-30-0.5	¹ M1	1500-1.0	L0000 to L1000
				1500-0.5	
				2000-0.1	

Module

Example: MGV84-AVM90-30-0.5-M1-1500-0.5-L1000-E15

1. With external Micro Photo sensor (Panasonic PM series)