

MGV Series Miniature Guide Voice Coil Modules

- *Direct drive, zero cogging, zero backlash voice coil actuator*
- *Stroke from 15mm to 25mm*
- *Standard linear encoder resolution 1 μ m (0.1 μ m optional)*
- *Miniature Rexroth linear guidance rails*
- *Very fast response; high accelerations are possible*
- *Smooth motion even at low speeds (low velocity ripple)*
- *Precise homing through encoder index pulse*



MGV38 / MGV41 / MGV52 / MGV84 Series

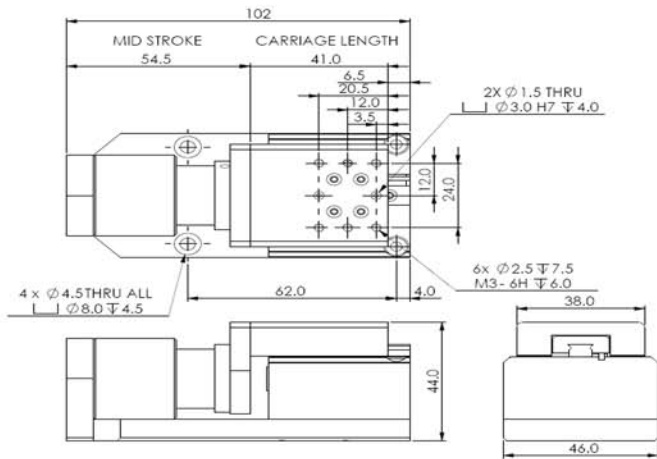
Datasheet

Specifications	Model	MGV38 (driven by AVM30)	MGV41 (driven by AVM40)	MGV52 (driven by AVM60)	MGV84 (driven by AVM90)
Effective stroke from mid position, mm		±6.5	±9.0	±11.5	±14.0
Full stroke from mid position, mm		±7.5	±10.0	±12.5	±15.0
End limit from mid position, mm		±7.0	±9.5	±12.0	±14.5
Force constant (at mid stroke), N/A		7.5	13.1	15.7	19.6
Back EMF, V/ms ⁻¹		7.5	13.1	15.7	19.6
¹ Continuous force (at 100°C), N		4.7	10.1	24.3	64.7
¹ Continuous force (at 155°C), N		6.0	13.4	31.4	84.3
Peak force, N		18.0	40.1	94.2	252.8
Resistance, Ohms		10.6	11.0	5.2	2.9
Inductance, mH		2.9	6.2	6.4	6.6
Recommended Bus Voltage, V		24.0	24.0	24.0	48.0
Continuous current (at 100°C), A		0.63	0.77	1.55	3.30
Continuous current (at 155°C), A		0.8	1.0	2.0	4.3
Peak current, A		1.9	2.3	4.7	9.9
Power at peak force, W		38.0	58.0	112.0	284.0
Maximum Coil Temperature, °C		155.0	155.0	155.0	155.0
Moving Mass, g		88.0	170.0	408.0	1422.0
Total Mass, g		393.0	787.0	1848.0	5767.0
² Dynamic Load Capacity of bearing, N		860.0	1180.0	2310.0	5285.0
Moment (roll), Nm		3.1	5.4	13.7	107.0
Moment (pitch and yaw), Nm		1.9	3.6	7.9	30.0
Friction, N		0.1	0.5	0.9	1.5

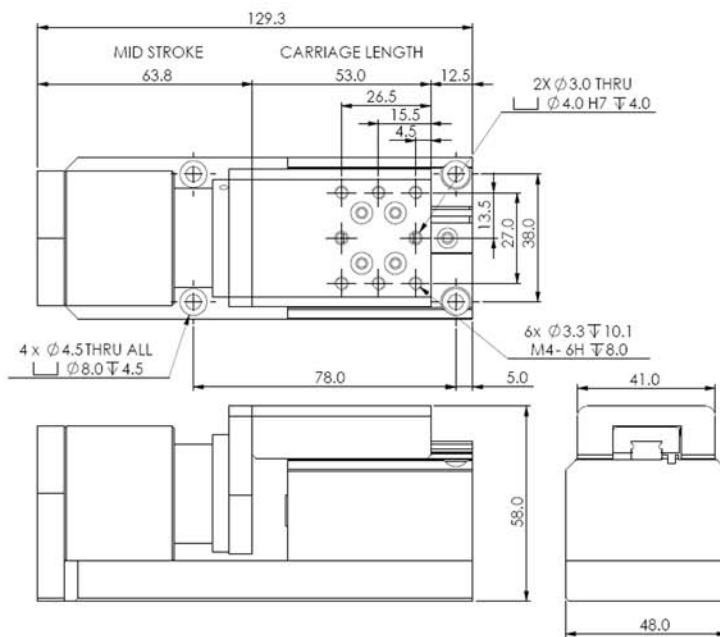
¹ Continuous force measured is for bare coil only. Addition of heat sink will increase the force.

² The radial loading of constant magnitude and direction which a linear rolling bearing can theoretically endure for a nominal life of 105 meters distance traveled (to DIN 636 Part 2). Note that this load should not be taken as the load in which the module should be carrying for actual applications. The load for these modules should be kept to a minimum and as low as possible in order to exploit the full potential of the voice coil actuators.

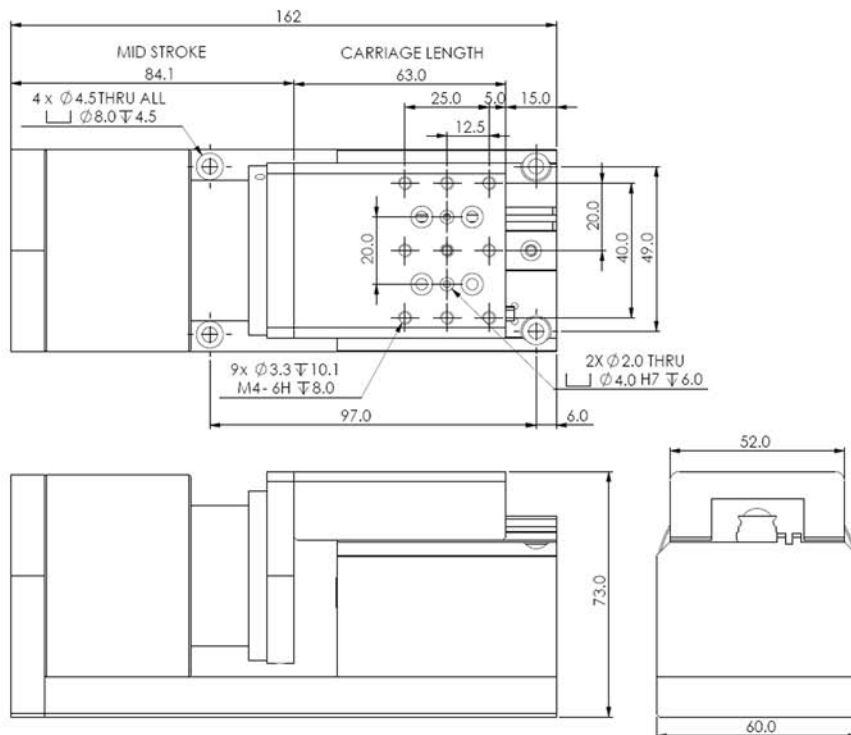
Dimensional Drawing



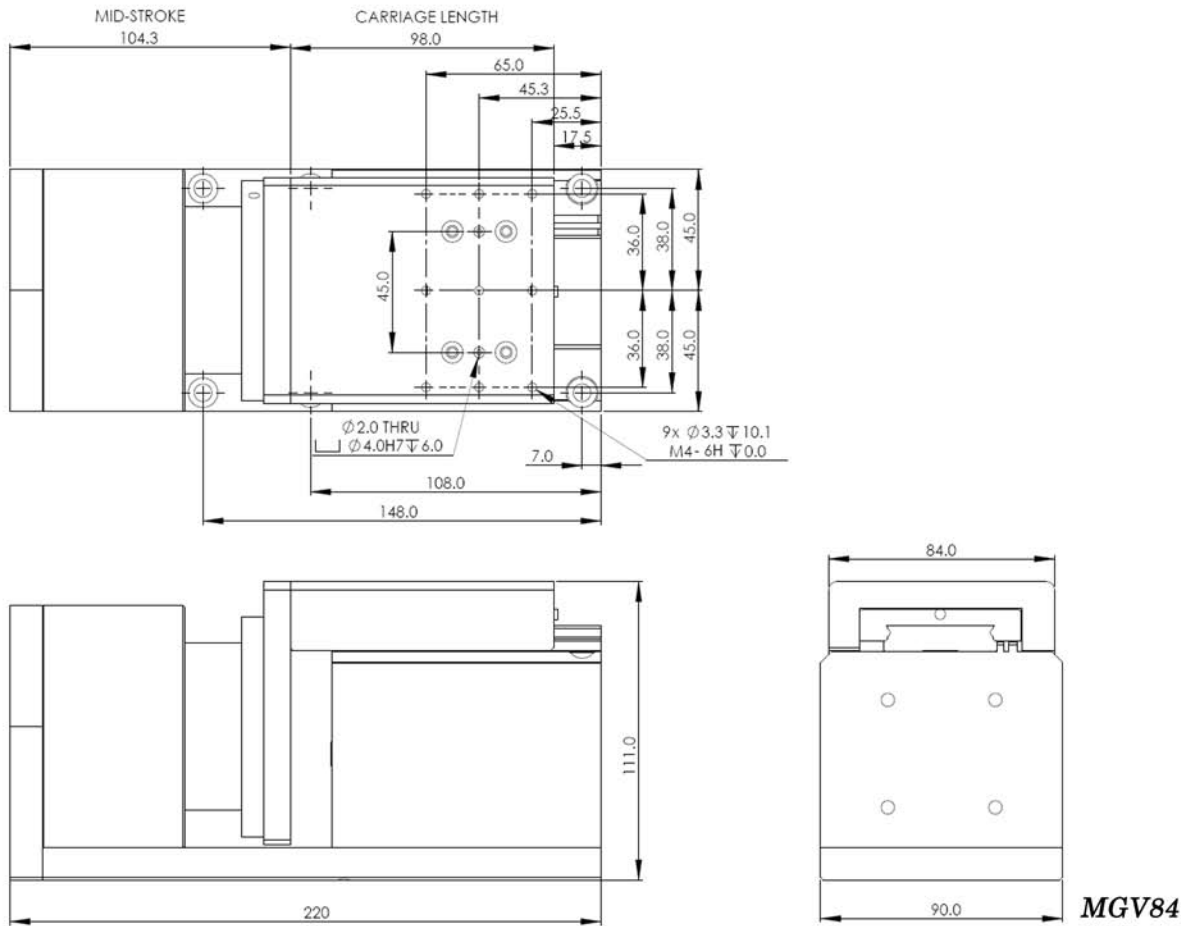
MGV38



MGV41



MGV52



Part Numbering

	Motor size (type)		Encoder resolution (μm)
MGV	38, 41, 52, or 84	-	1.0, 0.1

Example : *MGV38-1.0*

Matching Drivers / Amplifiers

DAP31, DDP21, DDP51, ADL43

Notes

- The maximum recommended speed is 3m/s
- The maximum recommended acceleration is 250m/s²
- All runner blocks are with 2% preload