

TGV Series

Thru Hole Voice Coil with Cross Roller



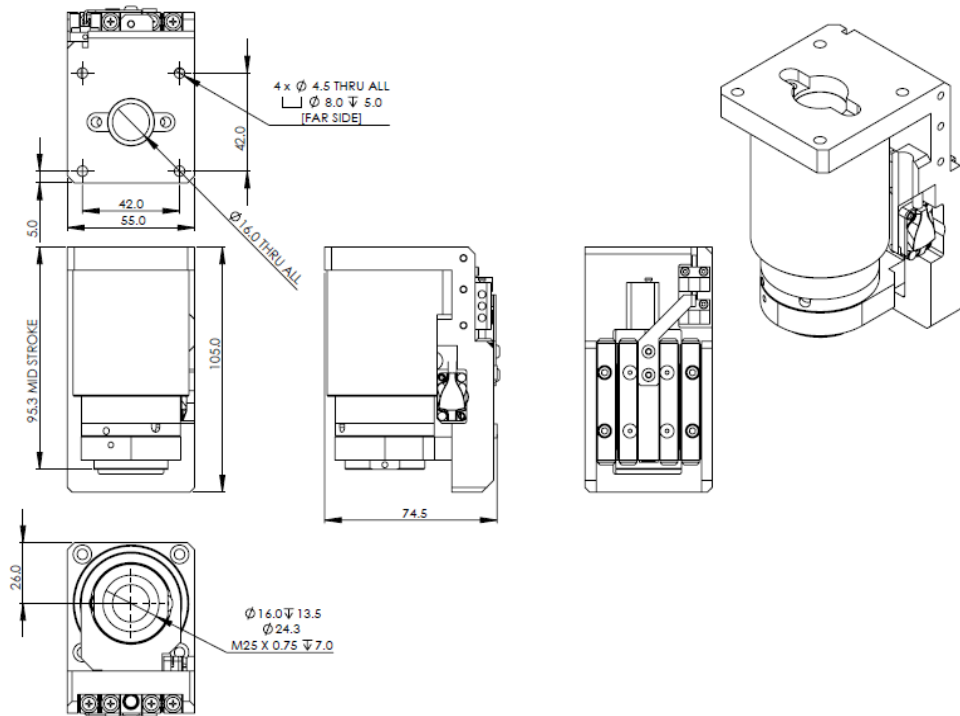
- Thru hole voice coil feature
- Low friction
- High precision

TGV Series Specifications

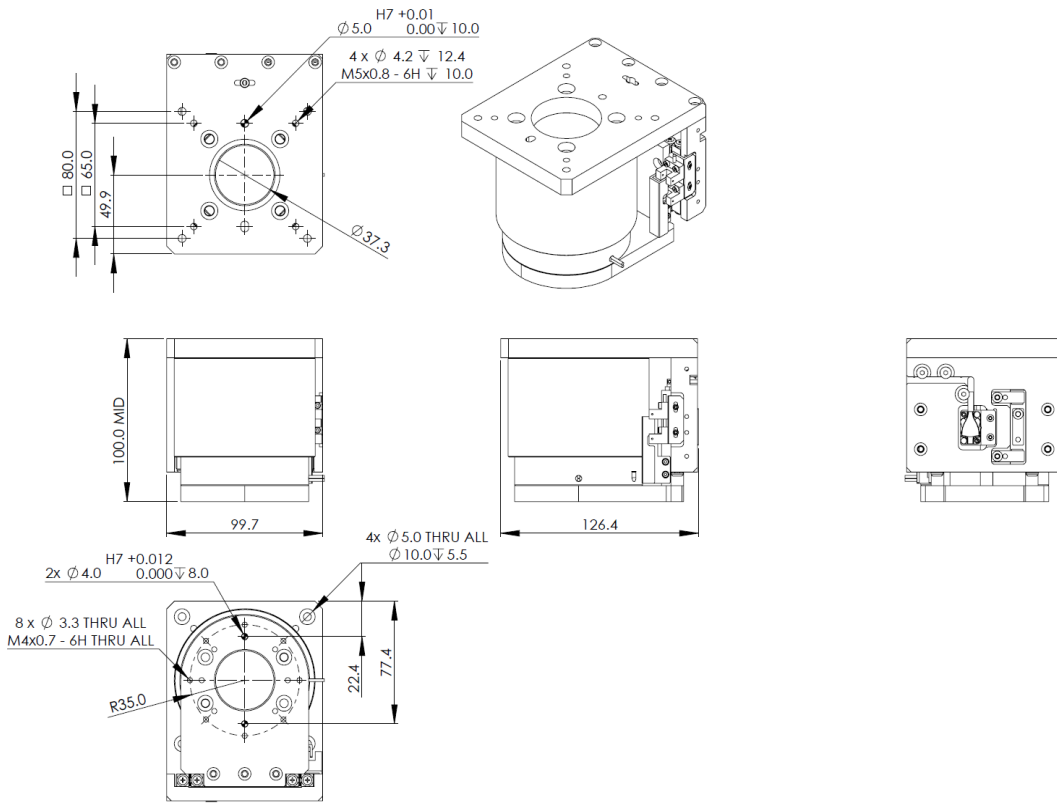
TGV	Model	TGV50	TGV90	TGV130
Performance Parameter	Unit	AVM50-HF-10-C15	AVM90-HF-5-C40	AVM130-HF-10-C29
Stroke *	mm	10	5	10
Force Sensitivity	N/A	21	15.78	46.4
Back EMF Constant	V/m/s	21	15.78	46.4
Continuous Force, coil @100°C	N	25.2	62.49	162.4
Peak Force	N	105	220.9	482.6
Resistance	Ohms	7.8	2.9	2.4
Inductance	mH	4.4	0.76	0.82
Voltage at peak force	V	39	40.6	25
Continuous current @ 100°C	A	1.2	4	3.5
Peak Current	A	5	14	10.4
Actuator Constant	N/SqRt(W)	7.52	9.27	29.95
Continuous Power @ 100°C	W	11.23	46.4	29.4
Electrical time constant	ms	0.6	0.26	0.34
Mechanical time constant	ms	2.5	5.31	1.2
Clearance of coil	mm	0.6	0.65	0.55
Power at peak force	W	195	568.4	259.6
Thermal dissipation constant	W/°C	0.151	0.619	0.392
Max coil temperature	°C	155	155	155
Coil assembly mass	g	140	456	1080
Core assembly mass	g	576	1449	5300

* Stroke refers to hardstop-to-hardstop. The limit sensors are positioned 0.5mm from the hardstops.

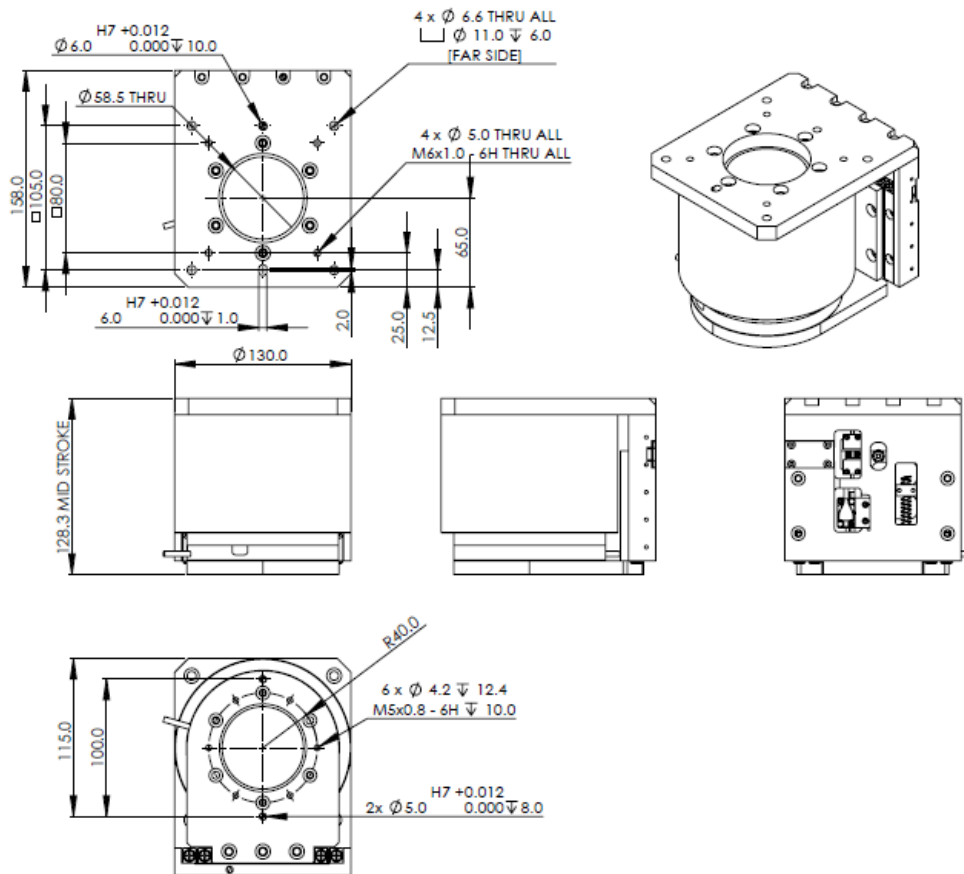
TGV 50



TGV 90



TGV 130



Module Configuration

Model	Effective stroke	Moving mass	Total mass	Hard Stopper position
	(mm)	(Kg)	(Kg)	(mm)
TGV 130	8	1.55	7.91	10
TGV 90	4	0.74	2.86	5
TGV 50	8	0.68	1.98	10

Performance Parameter

Specification Parameter	Unit	
Straightness	μm	± 2.5
Flatness		± 2.5
Bidirectional Repeatability		± 0.5
Linearity without mapping		± 5
Linearity with mapping		± 1

Bearing Parameter

		TGV130	TGV90	TGV50
Maximum static load capacity	N	389	792	792
Recommended maximum load	N	3.09	0.83	1.42
Recommended Row moment	Nm	0.6	0.6	0.6
Recommended pitch moment	Nm	0.5	0.5	0.5
Recommended yaw moment	Nm	0.3	0.3	0.3

Recommended maximum load is based on the load in which the acceleration of the moving mass is at least 1G

Part Numbering

TGV	Motor Size	Motor Cable	Encoder Type	Encoder Resolution (micron, μ)	Encoder Cable
	130-HF-10-C23	0.3	'M1500, 'M1600, 'M3000, 'M3500	1.0 – 0.005	1.0-5.0
	90-HF-5-C40				
	50-HF-10-C15				

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

Example: TGV130-HF-10-C23-M3000-0.02-3.0