

# VRG-I SERIES

- ▶ Direct drive, zero backlash linear motor
- ▶ Three configurations H (dual motor dual encoder), J (dual motor single encoder), T (single motor single encoder)
- ▶ High peak and continuous force
- ▶ High efficiency

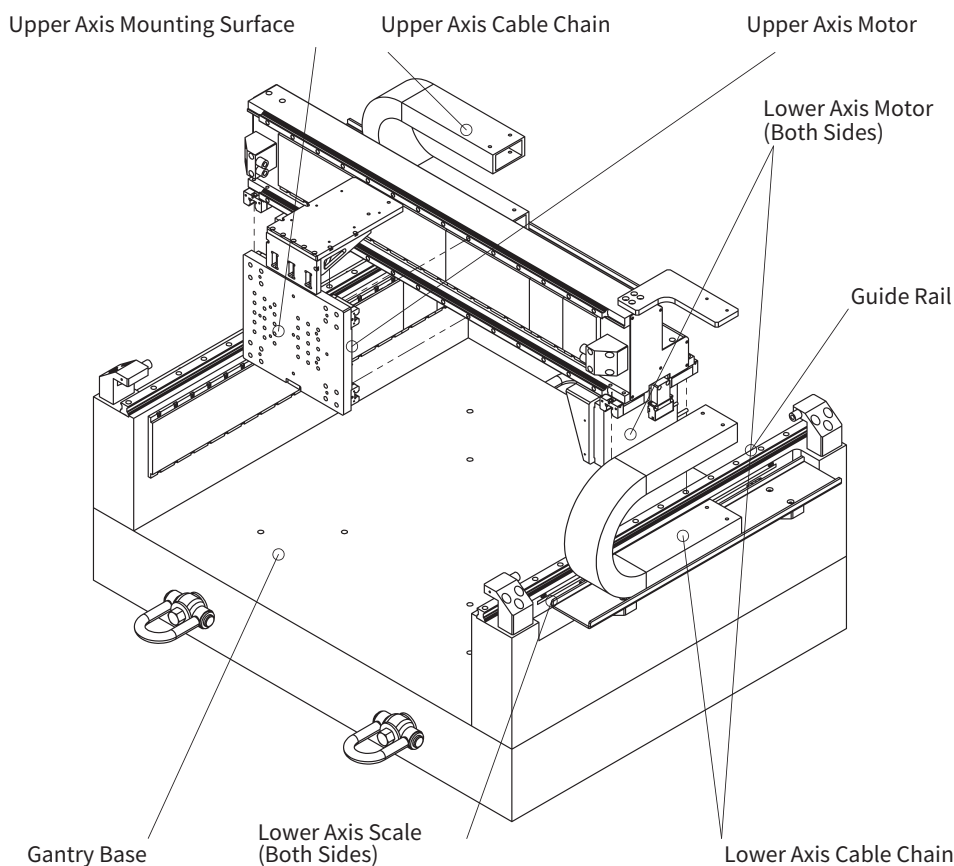
## VRG-I

Basic Model	Unit	VRG1-H- L300N-U300N	VRG1-H- L400N-U400N	VRG1-H- L500N-U500N	VRG1-H- L600N-U600N
Effective Stroke	mm	300×300	400×400	500×500	600×600
Maximum Travel Speed	m/s	2	2	2	2
Maximum Linear Acceleration	g	3	3	3	3
Motor	Lower Axis	-	AJM100-B4*2	AJM100-B4*2	AJM100-B4*2
	Upper Axis	-	AJM100-B4	AJM100-B4	AJM100-B4
Continuous Force	Lower Axis	N	893.6	893.6	893.6
	Upper Axis	N	446.8	446.8	446.8
Repeatability	μm	±3	±3	±3	±3
Orthogonality	arc-sec	10	10	10	10
Nominal System Weight (Base not included)	kg	103	116	131	148
No-load Moving Mass	Lower Axis	kg	41.0	45	52.0
	Upper Axis	kg	7.0	7.0	7.0
Material	-	Aluminum, Granite Optional	Aluminum, Granite Optional	Aluminum, Granite Optional	Aluminum, Granite Optional
Finish	-	Black Anodized	Black Anodized	Black Anodized	Black Anodized

Note:

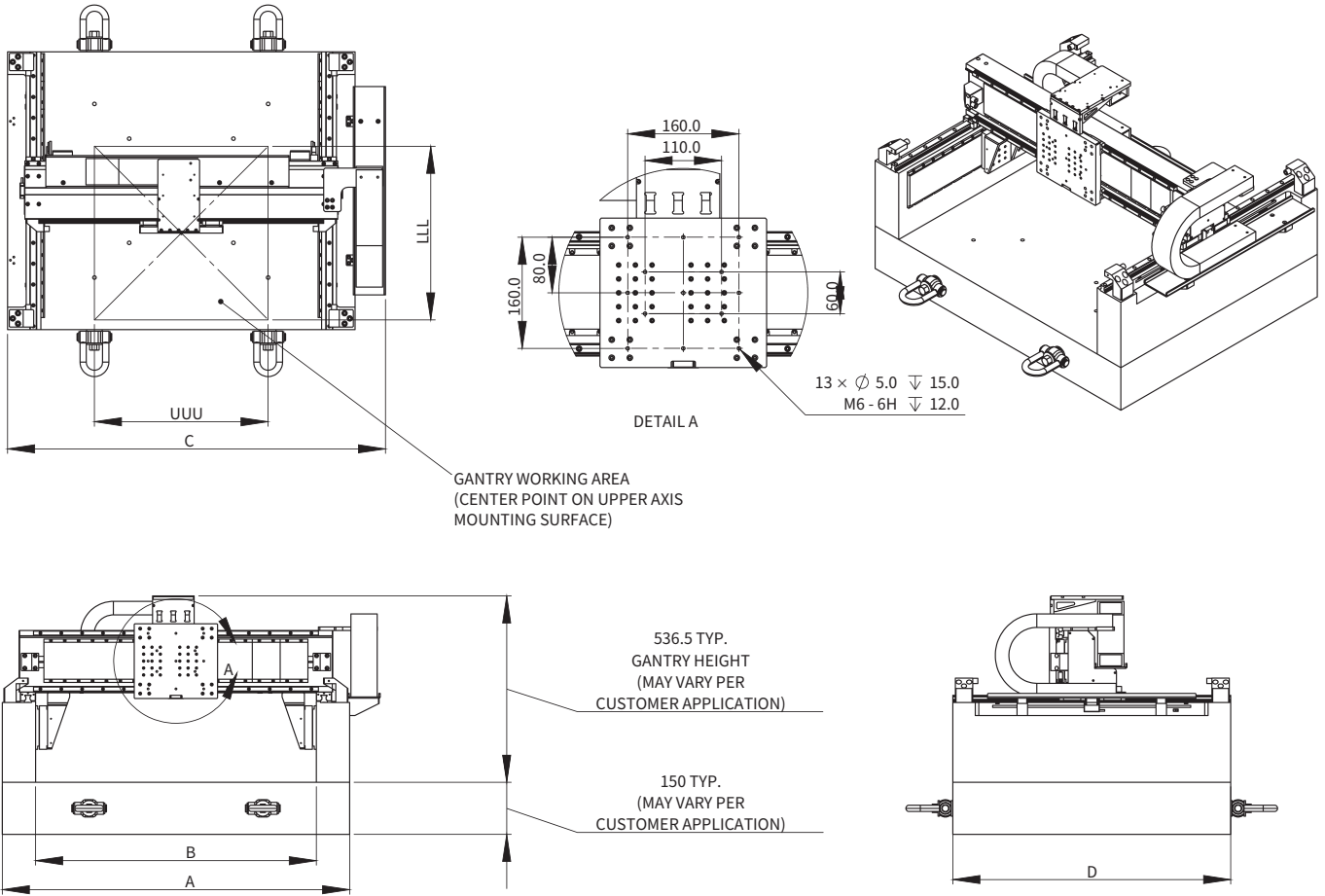
- Values of velocity, acceleration and no-load moving mass are approximations only and may vary based on customer applications and requirements.
- All specifications listed in the table are based on H-gantry design (dual motor, dual encoder). Other configurations namely I-Gantry (dual motor, single encoder) and T-gantry (single motor, single encoder) will have performance limitation.

## Exploded View



## Dimension Drawing

Introduction  
Sizing Guide  
Frequently Asked Questions  
Motion Control of Gantry Stages  
Linear Module  
Voice Coil Module  
Miniature Stages  
Stacked Stages  
Gantry Stages



“LLL” LOWER-AXIS NOMINAL TRAVEL	“UUU” UPPER-AXIS NOMINAL TRAVEL	“A” GANTRY WIDTH	“B” UPPER-AXIS GANTRY SPACING	“C” SYSTEM WIDTH	“D” SYSTEM DEPTH
300	300	800	608	888	600
400	400	900	708	988	700
500	500	1000	808	1088	800
600	600	1100	908	1188	900

- Note:
- Other nominal travel lengths and nominal travel combinations are available.
  - “A”, “B”, “C”, “D” dimensions are shown for reference only and may vary per customer application.
  - Electrical and mechanical limits included in gantry system.
  - Dimensions in millimeters.

## Ordering Part Number (OPN)

**G1 H 03 03 J01 J01 E73 1 A 1**

Model:

G1: VRG-I

Termination:

1: Flying Leads  
2: DSUB

Gantry Config:<sup>1</sup>

H: H-Gantry  
J: J-Gantry  
T: T-Gantry

Cable Length:

A: 0.5m  
B: 3.0m

Lower Axis Stroke:<sup>2</sup>

03: 300mm  
04: 400mm  
05: 500mm  
06: 600mm  
07: 700mm

Scale Type:

1: Steel tape, 11ppm/K

Upper Axis Stroke:<sup>2</sup>

03: 300mm  
04: 400mm  
05: 500mm  
06: 600mm  
07: 700mm

Encoder Type:

E73: ABA50E EnDat2.2 (0.05µm)  
E71: ABA50M Mitsubishi (0.05µm)  
EBF: Quantic (0.5µm)  
EBH: Quantic (0.1µm)  
E9F: ABI51D (0.5µm)  
E9H: ABI51D (0.1µm)  
EA0: ABI52 (SINCOS)

Lower Axis Motor:

J01: AJM30-B2-J (Peak Force: 214.7N)  
J02: AJM30-B2-K (Peak Force: 214.7N)  
J03: AJM30-B4-J (Peak Force: 429.4N)  
J04: AJM30-B4-K (Peak Force: 429.4N)  
J15: AJM50-B2-J (Peak Force: 369.0N)  
J16: AJM50-B2-K (Peak Force: 369.0N)  
J17: AJM50-B4-J (Peak Force: 738.1N)  
J18: AJM50-B4-K (Peak Force: 738.1N)  
J30: AJM80-B2-J (Peak Force: 550.2N)  
J31: AJM80-B2-K (Peak Force: 550.2N)  
J32: AJM80-B4-J (Peak Force: 1100.4N)  
J33: AJM80-B4-K (Peak Force: 1100.4N)  
J45: AJM100-B2-J (Peak Force: 704.5N)  
J46: AJM100-B2-K (Peak Force: 704.5N)  
J47: AJM100-B4-J (Peak Force: 1409.1N)  
J48: AJM100-B4-K (Peak Force: 1409.1N)

Upper Axis Motor:

J01: AJM30-B2-J (Peak Force: 214.7N)  
J02: AJM30-B2-K (Peak Force: 214.7N)  
J03: AJM30-B4-J (Peak Force: 429.4N)  
J04: AJM30-B4-K (Peak Force: 429.4N)  
J15: AJM50-B2-J (Peak Force: 369.0N)  
J16: AJM50-B2-K (Peak Force: 369.0N)  
J17: AJM50-B4-J (Peak Force: 738.1N)  
J18: AJM50-B4-K (Peak Force: 738.1N)  
J30: AJM80-B2-J (Peak Force: 550.2N)  
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Note:

- <sup>1</sup> All gantry stages are black anodized. Gantry Configuration: H= Dual motor dual encoder, J= Dual motor single encoder, T= Single motor single encoder.
- <sup>2</sup> Standard stroke in intervals of 100mm only, for more options, please contact Akribis sales engineers.