

# Actuator Comparison Chart



		HLD60 with Internal Rollers				HLD60 with External Rail				HLD60 with Twin External Rails			
Type of Actuator		Harmonic Belt				Harmonic Belt				Harmonic Belt			
Standard Stroke Lengths	mm	100 – 600 mm in 50 mm steps				100 – 600 mm in 50 mm steps				100 – 600 mm in 50 mm steps			
		600 – 1000 mm in 100 mm steps				600 – 1000 mm in 100 mm steps				600 – 1000 mm in 100 mm steps			
		1000 – 3200 mm in 200 mm steps				1000 – 2800 mm in 200 mm steps				1000 – 2800 mm in 200 mm steps			
Unidirectional Repeatability	µm	<20											
Bi-directional Repeatability	µm	60 - 180											
Linear Accuracy	mm/mm	0.5 / 300				0.5 / 300				0.5 / 300			
Displacement/rev	mm/rev	2.5	5	10	12.5	2.5	5	10	12.5	2.5	5	10	12.5
Max linear speed <sup>(1)</sup> (no load)	mm/sec	200	391	782	977	200	391	782	977	200	391	782	914
Continuous Thrust <sup>(2)</sup>	N	450	420	185	135	450	420	185	135	450	400	160	105
Payload Mass	kg	45	42	18	13	45	42	18	13	45	40	16	10
<b>Carriage Moments, Dynamic <sup>(3)</sup>, (Static)</b>													
Carriage Moments, M.a <sup>(3)</sup>	Nm	1.0 (2.4)	0.80 (2.4)	0.6 (2.4)	0.55 (2.4)	19 (24)	15 (24)	12 (24)	11 (24)	180 (200)	144 (200)	114 (200)	106 (200)
Carriage Moments, M.b <sup>(3)</sup>	Nm	3.2 (8)	2.5 (8)	2.0 (8)	1.9 (8)	72 (200)	57 (200)	45 (200)	42 (200)	144 (200)	113 (200)	89 (200)	84 (200)
Carriage Moments, M.c <sup>(3)</sup>	Nm	3.2 (12)	2.5 (12)	2.0 (12)	1.9 (12)	72 (150)	57 (150)	45 (150)	42 (150)	144 (200)	113 (200)	89 (200)	84 (200)
Overall Length	mm	Stroke + 332				Stroke + 332				Stroke + 332			
Over-Travel	mm	25				25				25			
Unit Mass	kg	2.3 + 0.0031*(stroke, mm) + (motor mass, kg)				2.7 + 0.0044* (stroke, mm) + (motor mass, kg)				3.4 + 0.0057*(stroke, mm) + (motor mass, kg)			

Note: For part numbers please refer to our Website at [www.oemdynamics.com](http://www.oemdynamics.com)

<sup>(1)</sup> Based on using SM2316DT @ 48V at no load. Please see pages 109-126 for details of thrust curves

<sup>(2)</sup> Based on using SM2316DT @ 48V @ 3800 RPM. Please see pages 109-126 for details of thrust curves.

<sup>(3)</sup> Based on a 15000 hr service life @ 75/150/300 & 375mm/s (1800 RPM) average speed at the given payload subject to routine lubrication.

# Actuator Comparison Chart



		L70		XL100		VL-ST				VL-CT		
Type of Ball Screw Actuator		Rodless Type		Rodless Type		Rodless Type				Rod Type		
Standard Stroke Lengths	mm	50 – 600 mm in 50 mm steps		50 – 600 mm in 50 mm steps		50 – 600 mm in 50 mm steps + 700mm				50 – 300 mm in 50 mm steps		
Unidirectional Repeatability	µm	3		3		20				20		
Bi-directional Repeatability	µm	16		16		40				40		
Ball Screw Lead Accuracy	mm/mm	0.1/300		0.1/300		0.21/300				0.21/300		
Displacement/rev	mm/rev	5	10	5	10	VL-ST45		VL-ST60		12		
						6	12	6	12			
Max linear speed <sup>(4)</sup>	mm/sec	350 <sup>(4)</sup>	910 <sup>(4)</sup>	350 <sup>(4)</sup>	910 <sup>(4)</sup>	500 <sup>(4)</sup>	1000 <sup>(4)</sup>	500 <sup>(4)</sup>	1000 <sup>(4)</sup>	1000 <sup>(4)</sup>		
Continuous Thrust <sup>(5)</sup>	N	587	294	587	294	489	245	489	245	Pulley Reduction		
										1:1	2:1	3:1 <sup>(6)</sup>
										262	524	786 <sup>(6)</sup>
Payload Mass	kg	25	20	25	20	8	6.5	13	10	VL-CT35	VL-CT45	VL-CT55
										5.6	5.6	22
<b>Carriage moments, Dynamic <sup>(7)</sup>, (Static)</b>												
Carriage Moments, M.a <sup>(7)</sup>	Nm	5 (20)		25 (500)		4.47 (31)	3.44 (31)	11.47 (58)	9 (58)	0		
Carriage Moments, M.b <sup>(7)</sup>	Nm	5 (20)		25 (500)		1.64 (12)	1.33 (12)	3.57 (25)	2.75 (25)	0		
Carriage Moments, M.c <sup>(7)</sup>	Nm	5 (20)		25 (500)		1.64 (12)	1.33 (12)	3.57 (25)	2.75 (25)	0		
Overall Length	mm	Stroke + 182.5 + Motor		Stroke + 223.5 + Motor		See pages 16, 18, 20, 24, 26						
Over-Travel	mm	24.5		24		10				None		
Unit Mass	kg	1.29 + 0.00414*(stroke, mm) + (motor mass, kg)		2.657 + 0.0049*(stroke, mm) + (motor mass, kg)		See pages 16, 18, 20, 24, 26						

Note: For part numbers please refer to our Website at [www.oemdynamics.com](http://www.oemdynamics.com)

<sup>(4)</sup> Please see Ball Screw CRITICAL SPEED limitations on p.90 (L70) & p.92 (XL100), p.98 (VL-CT35), p.100(VL-CT45), p.102 (VL-CT55), p.94 (VL-ST45), p.96 (VL-ST60).

<sup>(5)</sup> Based on using SM2316DT @ 48V @ 2000 RPM. Please see pages 109-126 for details of thrust curves.

<sup>(6)</sup> Based on using the VL-CT55 with SM2316DT. Max thrust for the VL-CT35/45 is 565N.

<sup>(7)</sup> Based on a 15000 hr service life @ 167mm/s & 333 mm/s (2000 RPM) average speed at the given payload for L70 and XL100 subject to routine lubrication.

<sup>(7)</sup> Based on a 15000 hr service life @ 200 mm/s & 400mm/s (2000 RPM) average speed at the given payload for VL series subject to routine lubrication.

