

## VL-ST45 Product Specifications

Parameter	Value	Units	
<b>Configuration &amp; Physical Parameters</b>			
Motor	23 Frame SmartMotors, D and M series	-	
Coupling	Beam	-	
Displacement/rev	6, 12	mm/rev	
Position Sensors	Consult factory	-	
Stroke Lengths	50 – 500mm in 50mm steps	mm	
Overall Length	Stroke + 164 + motor	mm	
Overtravel	10	mm	
Unit Mass	1.38 + 0.0021 x (stroke, mm) + (motor mass, kg)	kg	
<b>Performance</b>			
Unidirectional Repeatability	20	µm	
Bidirectional Repeatability	40	µm	
Linear Accuracy	0.21/300	mm/mm	
Max Velocity	Up to 1000 (stroke dependent)	mm/s	
Max Acceleration	0.3	G	
Displacement/rev	6	12	mm/rev
Payload Mass	8	6.5	kg
Rated Velocity	200	400	mm/s
Lifetime*	15000	hr	
<b>Load Rating, Dynamic** (Static)</b>			
Displacement/rev	6	12	mm/rev
Max Continuous Thrust	260	135	N
Max Peak Thrust	660	330	N
<b>Carriage moments, Dynamic** (Static)</b>			
M.a, Carriage Moment***	4.47 (31)	3.44 (31)	N*m
M.b, Carriage Moment***	1.64 (12)	1.33 (12)	N*m
M.c, Carriage Moment***	1.64 (12)	1.33 (12)	N*m

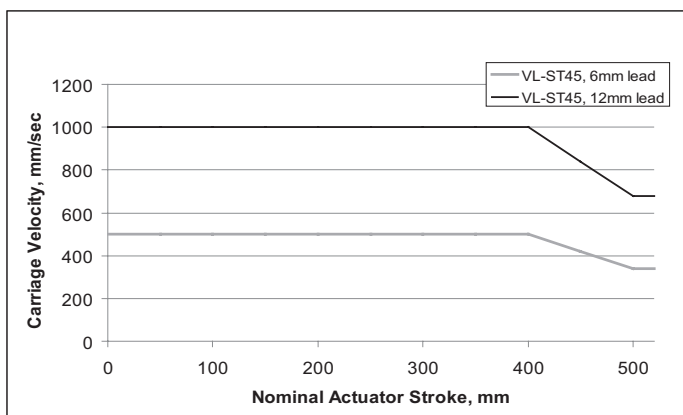
\*Based on 15000 hr service life @ 200 mm/s and 400 mm/s (2000 RPM) average speed at the given payload, subject to routine lubrication.

\*\*Based on using SM23165DT @ 48V @ 2000 RPM. Refer to corresponding thrust curves for details.

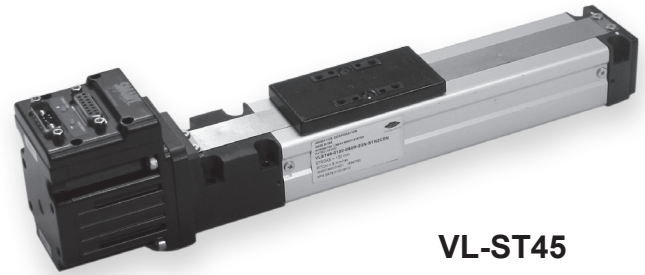
Consult the factory if your application exceeds these values.

\*\*\*Moment capacities given about center of carriage mounting surface.

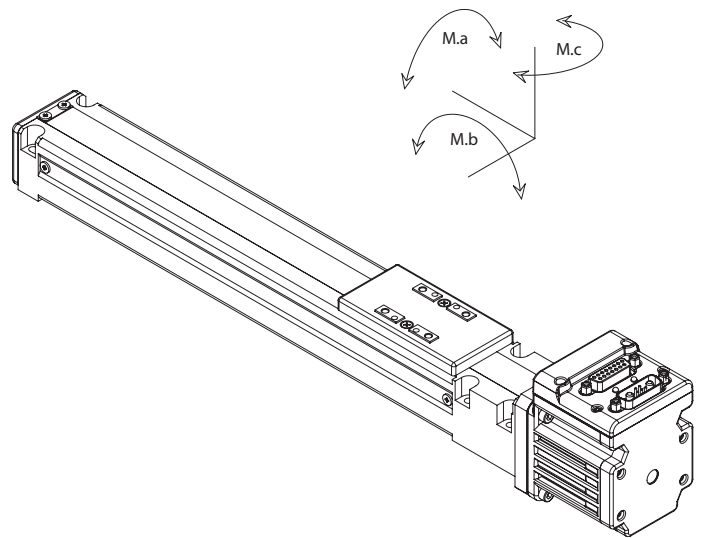
### VL-ST45 - Maximum Permissible Carriage Velocity



**WARNING: Exceeding thrust, speed, or moment loading specifications could result in immediate damage to the actuators. Doing so will void the warranty.**

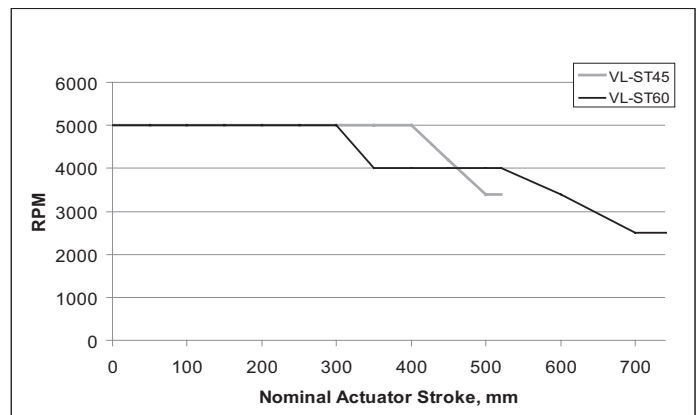


**VL-ST45**



**WARNING: Do not exceed these limits**

### VL-ST series - Maximum Permissible Screw Speed



OVERVIEW

SOFTWARE

D-STYLE MOTORS

D-STYLE CONNECTIVITY

PERIPHERALS

M-STYLE MOTORS

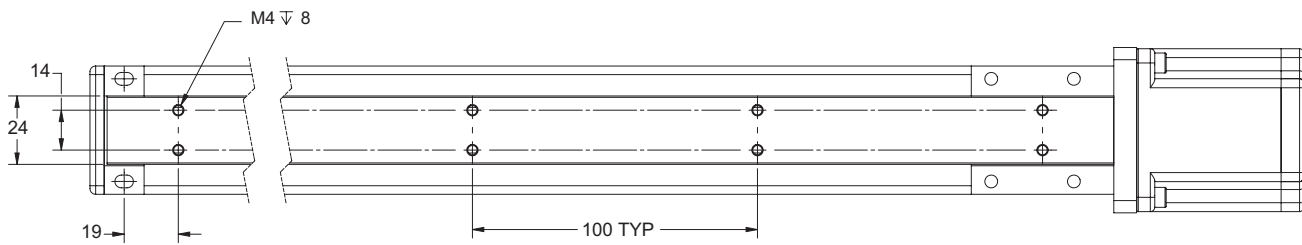
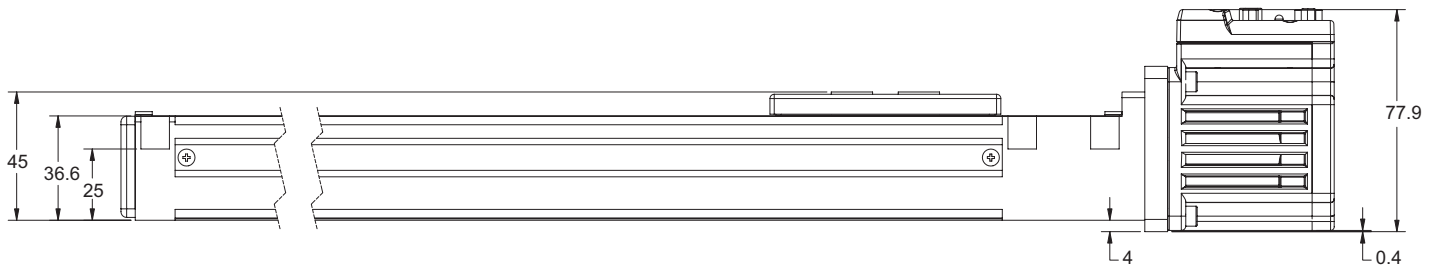
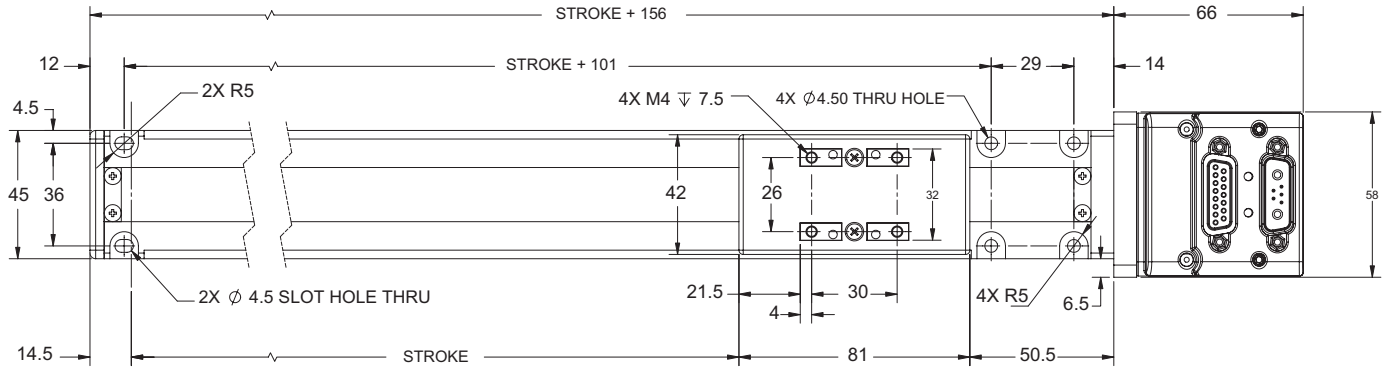
M-STYLE CONNECTIVITY

LINEAR SYSTEMS

POWER SUPPLIES & SHUNTS

GEAR HEADS

APPENDIX



Dimensions in millimeters

**NOTE:** For part numbers please refer to our website at [www.animatics.com](http://www.animatics.com)

For Thrust Curve performance data, see pages 158–173.