

VL-ST45 Product Specifications

Parameter	Value	Units
Configuration & Physical Parameters		
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	$1.38 + (\text{stroke, mm}) \cdot 0.0021$	kg
Performance		
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
Load Rating, Dynamic** (Static)		
Displacement/rev	6 12	mm/rev
Max Continuous Thrust	260 135	N
Max Peak Thrust	660 330	N
Carriage moments, Dynamic** (Static)		
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.

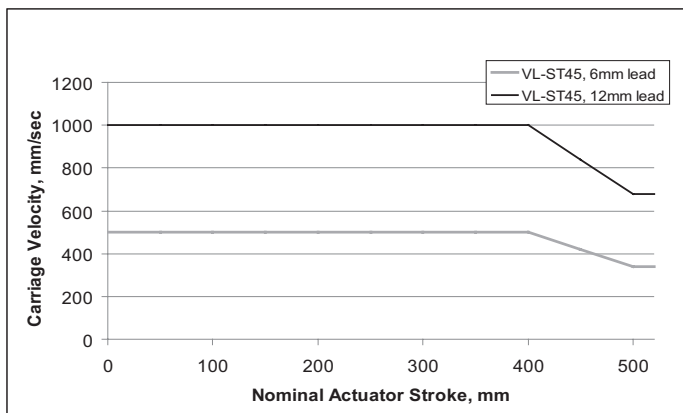
**Based on using SM23165DT @ 48V @ 2000 RPM. Refer to corresponding thrust curves for details.

Consult the factory if your application exceeds these values.

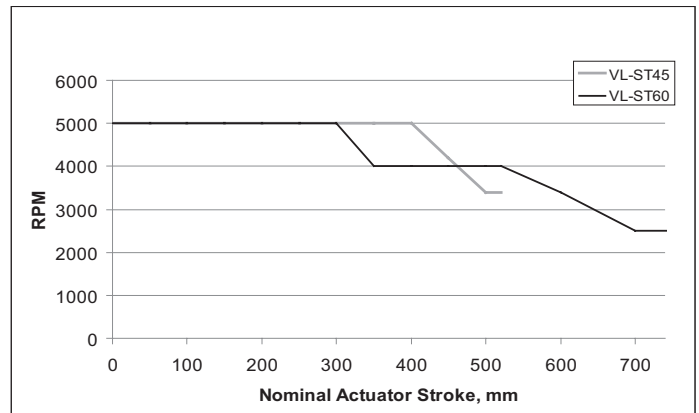
***Moment capacities given about center of carriage mounting surface.

WARNING: Do not exceed these limits

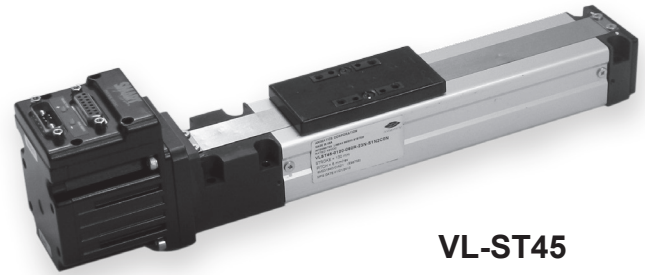
VL-ST45 - Maximum Permissible Carriage Velocity



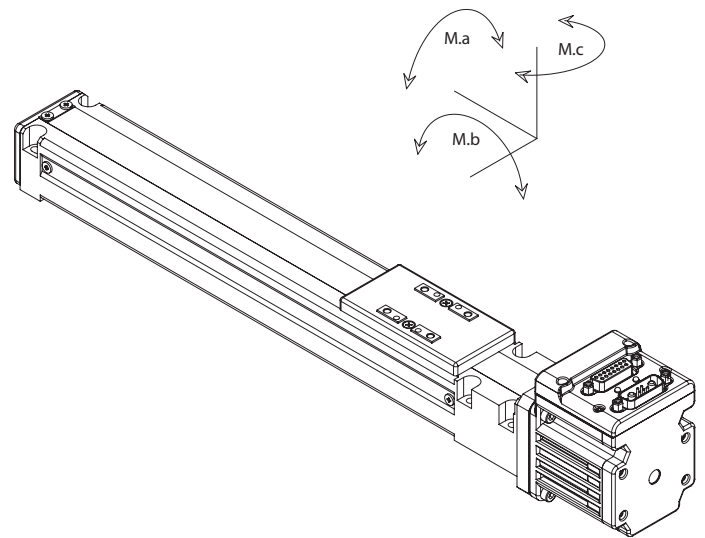
VL-ST series - Maximum Permissible Screw Speed



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



VL-ST45



OVERVIEW

SOFTWARE

D-STYLE MOTORS

D-STYLE CONNECTIVITY

PERIPHERALS

M-STYLE MOTORS

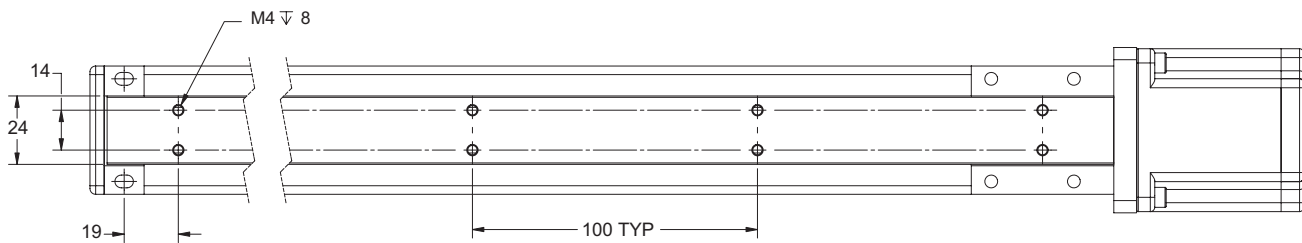
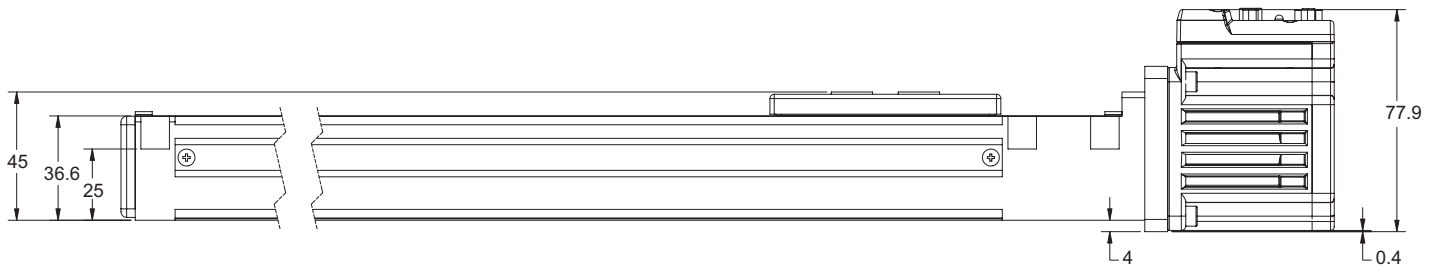
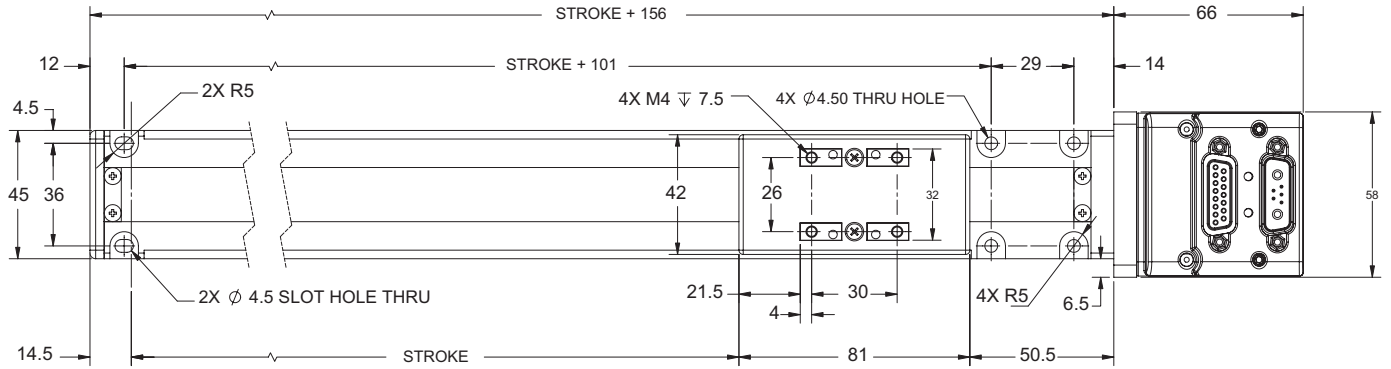
M-STYLE CONNECTIVITY

LINEAR SYSTEMS

POWER SUPPLIES & SHUNTS

GEAR HEADS

APPENDIX



Dimensions in millimeters

NOTE: For part numbers please refer to our website at www.animatics.com

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