

M^{DRIVE} 23™ LINEAR SLIDE

MOTOR+DRIVER Plus

FEATURES

- Screw driven slide offering exceptional linear speed, accurate positioning and long life at a compelling value
- High bidirectional repeatability of up to 50 micro-inches (1.25 microns)
- Positional lead accuracy of 0.0006"/in. – accuracies to 0.0001"/in. available
- Linear speeds not limited by critical screw speed
- Standard leads:
 - 0.10" travel per revolution - 0.50" travel per revolution
 - 0.20" travel per revolution - 1.00" travel per revolution
- Achieve speeds that exceed 60.0"/second while offering excellent repeatability, accuracy and axial stiffness
- Optional sensor flag kit available for home, limits and general purpose inputs
- Assembly includes a precision aluminum guide and carriage which is driven by a precision rolled stainless steel lead screw
- Sliding contact areas coated with TFE (Teflon) permanent lubrication to offer a low 0.09 coefficient of friction
- Exceptional torsional stiffness and stability
- Standard lengths from 12.0" to 36.0", longer sizes available upon request*
- Comes standard with wear-compensating, anti-backlash driven carriage
- Additional passive carriages or slides available to support cantilevered loads
- Easily mountable with provided mounting flange and holes
- Extrusions provided for sensor mounts

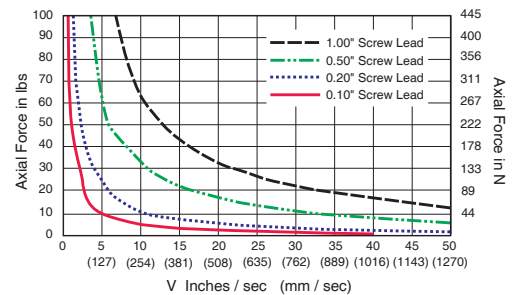
* Consult Factory for Availability.

LINEAR SLIDE SPECIFICATIONS

Screw Lead	Screw Efficiency	Nom. Screw Diam.	Inch Lead	Max Drag Torque	Life @ ¼ Axial Design Load	Torque to Move Load	Axial Design Load	Screw Inertia
	%	inches (mm)	inches (mm)	oz inch (Nm)	inches (cm)	oz inch/lb (Nm/kg)	lbs (kg)	oz.in.sec ² /inch (Kgm ² /m)
0.10"	40	0.625" (15.9)	0.100 (2.54)	5.0 (0.03)	100,000,000 (254,000,000)	1.3 (0.020)	100 (46)	14.2 x 10 ⁻⁵ (3.9 x 10 ⁻⁵)
0.20"	53	0.625" (15.9)	0.200 (5.08)	6.0 (0.04)	100,000,000 (254,000,000)	2.0 (0.031)	100 (46)	14.2 x 10 ⁻⁵ (3.9 x 10 ⁻⁵)
0.50"	76	0.625" (15.9)	0.500 (12.70)	7.0 (0.05)	100,000,000 (254,000,000)	3.0 (0.047)	100 (46)	14.2 x 10 ⁻⁵ (3.9 x 10 ⁻⁵)
1.00"	81	0.625" (15.9)	1.000 (25.40)	8.5 (0.06)	100,000,000 (254,000,000)	6.5 (0.101)	100 (46)	14.2 x 10 ⁻⁵ (3.9 x 10 ⁻⁵)

ORDER INFORMATION		
Linear Slide  Screw Lead (inches/rev) A = 0.10" C = 0.50" B = 0.20" D = 1.00"	Example: [MDrive P/N] - RA12 Adds a Linear Slide with a lead of 0.10"/rev, 12" long to a specified MDrive23Plus.	
Optional Sensor Flag Kit RSM10-K	Kit includes: flag for optical sensor, 3 - sensor holders, 6 - #2-56 X 1/4" long BHCS screws, 3 - #4-40 X 1/2" long SHCS screws, 2 - #6-32 X 1/2" long SHCS screws.	

LINEAR SLIDE SPEED-FORCE LIMITATIONS†



†Speed/Force correlating equations:

- $$\text{Axial Force} = F_{\text{friction}} + F_{\text{acceleration}} + F_{\text{gravity}}$$

$$F_{\text{friction}} = (\text{Weight})(0.09)$$

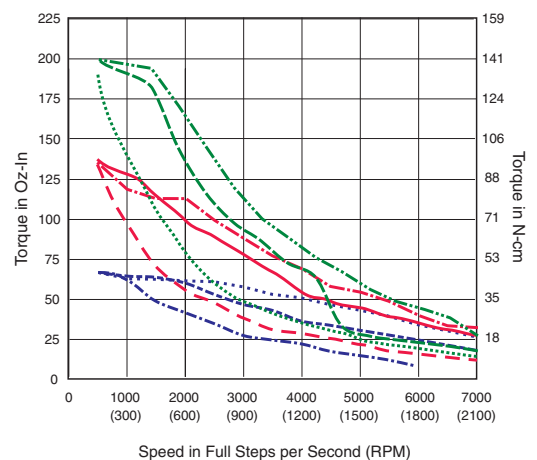
$$F_{\text{acceleration}} = (\text{Weight})(\text{Acceleration}) / \text{Accel. of gravity}$$

$$F_{\text{gravity}} = 0 \text{ for horizontal application and Weight for vertical application}$$
- $$\text{Torque} = \frac{(\text{Axial Force})(\text{Screw Lead})}{(0.393)(\text{Screw Efficiency})}$$

Force in lbs; Torque in oz-in, Lead in inches/rev
- $$\frac{\text{Full steps}}{\text{Second}} = \frac{(200 \text{ Full steps/Rev})(\text{Velocity})}{\text{Lead}}$$

Lead in inches/rev; Velocity in inches/second

M^{DRIVE} SPEED-TORQUE CURVES



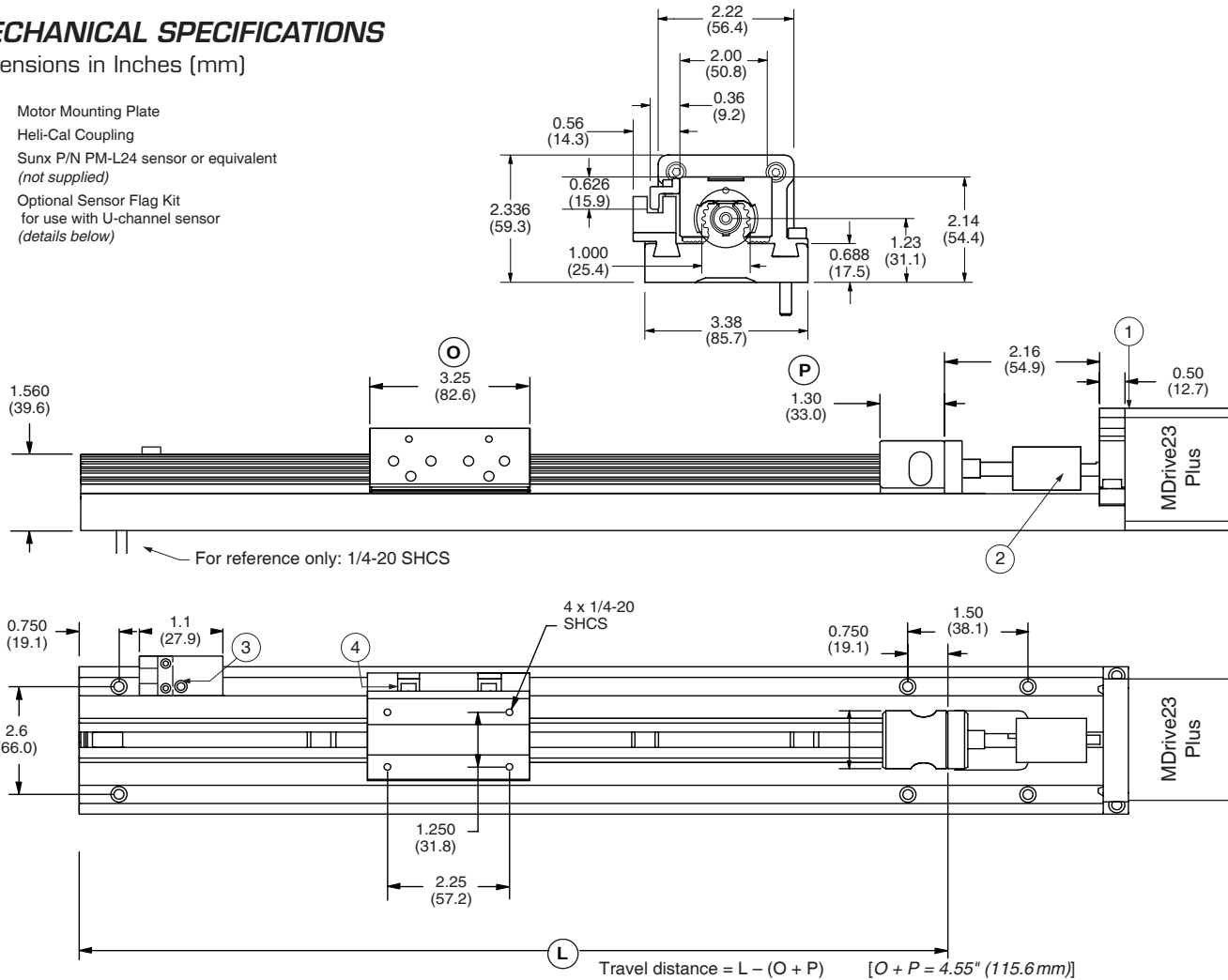
Single Length Rotary Motor Double Length Rotary Motor Triple Length Rotary Motor

--- 24 VDC --- 24 VDC 24 VDC
 --- 45 VDC --- 45 VDC 45 VDC
 --- 75 VDC --- 75 VDC 75 VDC

MECHANICAL SPECIFICATIONS

Dimensions in Inches (mm)

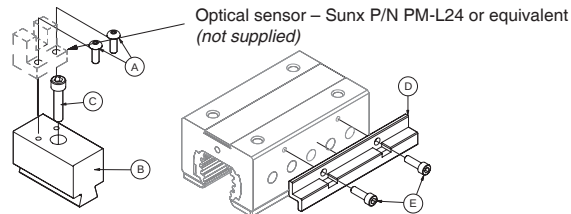
- 1 Motor Mounting Plate
- 2 Heli-Cal Coupling
- 3 Sunx P/N PM-L24 sensor or equivalent
(not supplied)
- 4 Optional Sensor Flag Kit
for use with U-channel sensor
(details below)



Sensor Flag Kit Option

P/N RSM10-K Includes:

- A #2-56 X 1/4" Long BHCS
- B Sensor Holder (Qty. 3)
- C #4-40 X 1/2" Long SHCS
- D Flag for Optical Sensor
- E #6-32 X 1/2" Long SHCS



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