

21000 Series: Size 8 Linear Actuator

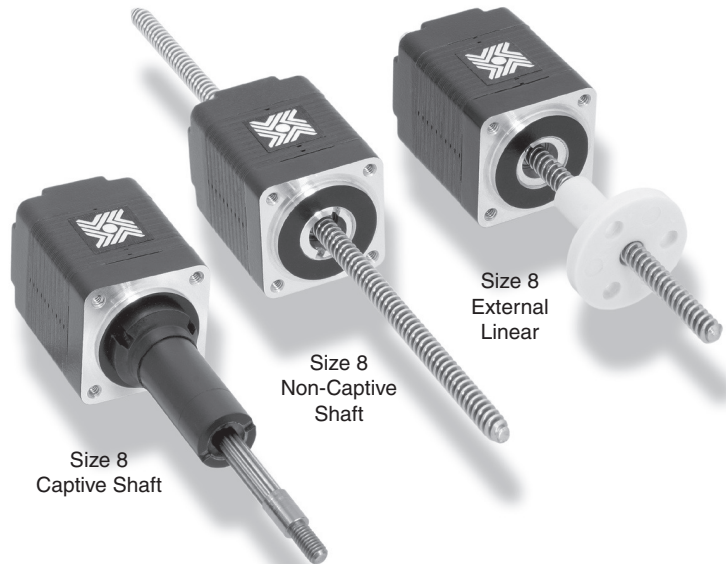
Haydon Kerk Motion Solutions, Inc. • www.HaydonKerk.com • Phone: 800.243.2715 • International: 203.756.7441

One of the world's smallest linear actuators, the Size 8 precision motor is a recent addition to our extensive, award winning miniature stepper motor product line.

Equipment designers and engineers now have an even more compact option for their motion applications. The Haydon™ 21000 Series Size 8 linear actuator occupies a minimal 0.8" (21 mm) space and includes numerous patented innovations that provide customers high performance and endurance in a very small package.

Three designs are available, captive, non-captive and external linear versions. The 21000 Series is available in a wide variety of resolutions - from 0.00006" (.0015 mm) per step to 0.00157" (0.04 mm) per step. The Size 8 actuator delivers thrust of up to 10 lbs. (44 N).

HYBRID LINEAR ACTUATOR
STEPPER MOTORS



Salient Characteristics

Size 8: 21 mm (0.8-in) Hybrid Linear Actuator (1.8° Step Angle)			
Part No.	Captive	21H4(X)-V	
	Non-captive	21F4(X)-V	
	External Lin.	E21H4(X)-V	
Wiring		Bipolar	
Winding voltage	2.5 VDC	5 VDC	7.5 VDC
Current/phase	.49 A	.24 A	.16 A
Resistance/phase	5.1 Ω	20.4 Ω	45.9 Ω
Inductance/phase	1.5 mH	5.0 mH	11.7 mH
Power consumption	2.45 W Total		
Rotor inertia	1.4 gcm ²		
Insulation Class	Class B (Class F available)		
Weight	1.5 oz (43 g)		
Insulation resistance	20 MΩ		

Linear Travel / Step		Order Code I.D.
Screw Ø.138" (3.50 mm)		
.00006 inches	.0015* mm	U
.000098*	.0025	AA
.00012	.0030*	N
.00019*	.005	AB
.00024	.006*	K
.00039*	.01	AC
.00048	.0121*	J
.00078*	.02	AD
.00157*	.04	AE

*Values truncated

Standard motors are Class B rated for maximum temperature of 130°C.

Special drive considerations may be necessary when leaving shaft fully extended or fully retracted.

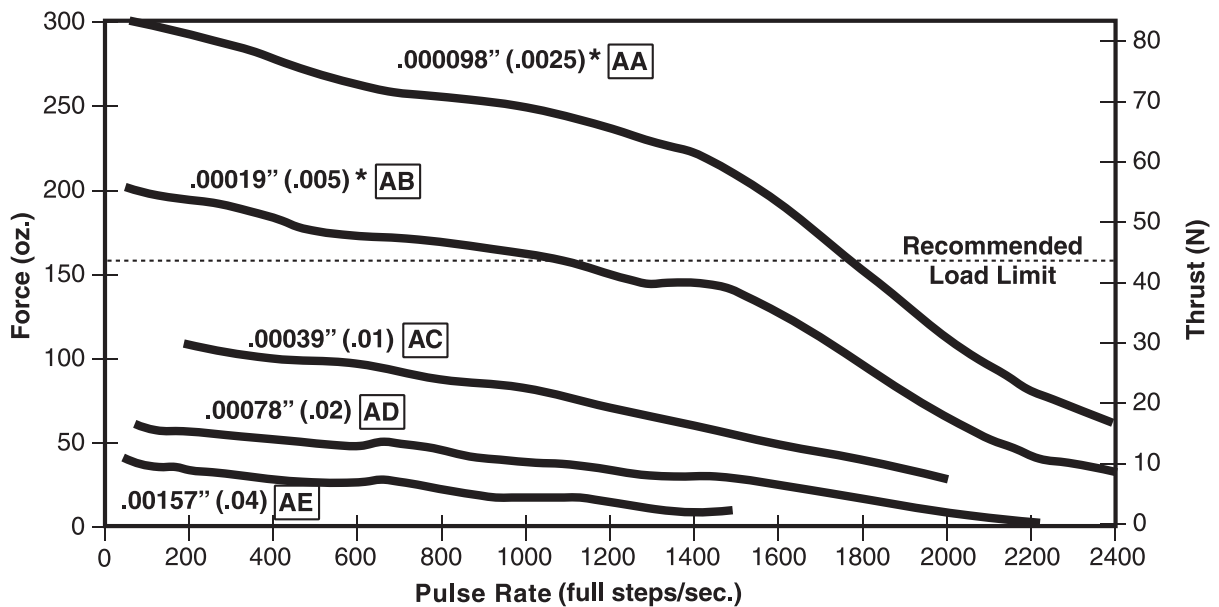
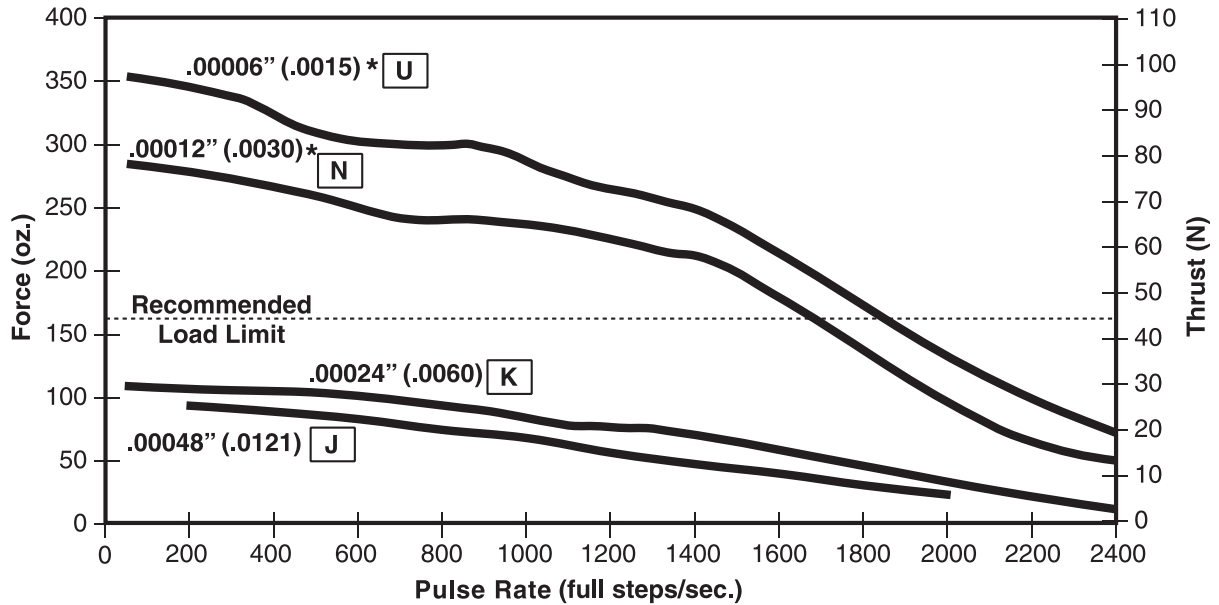
21000 Series: Size 8 Performance Curves

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FORCE vs. PULSE RATE Bipolar • Chopper • 100% Duty Cycle

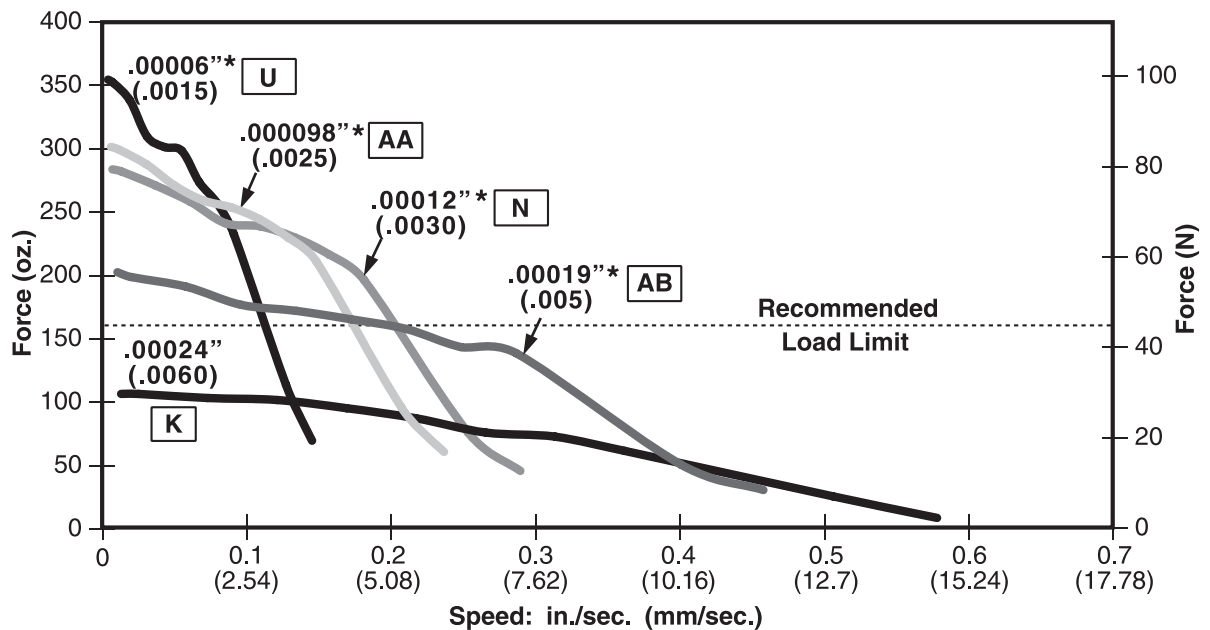
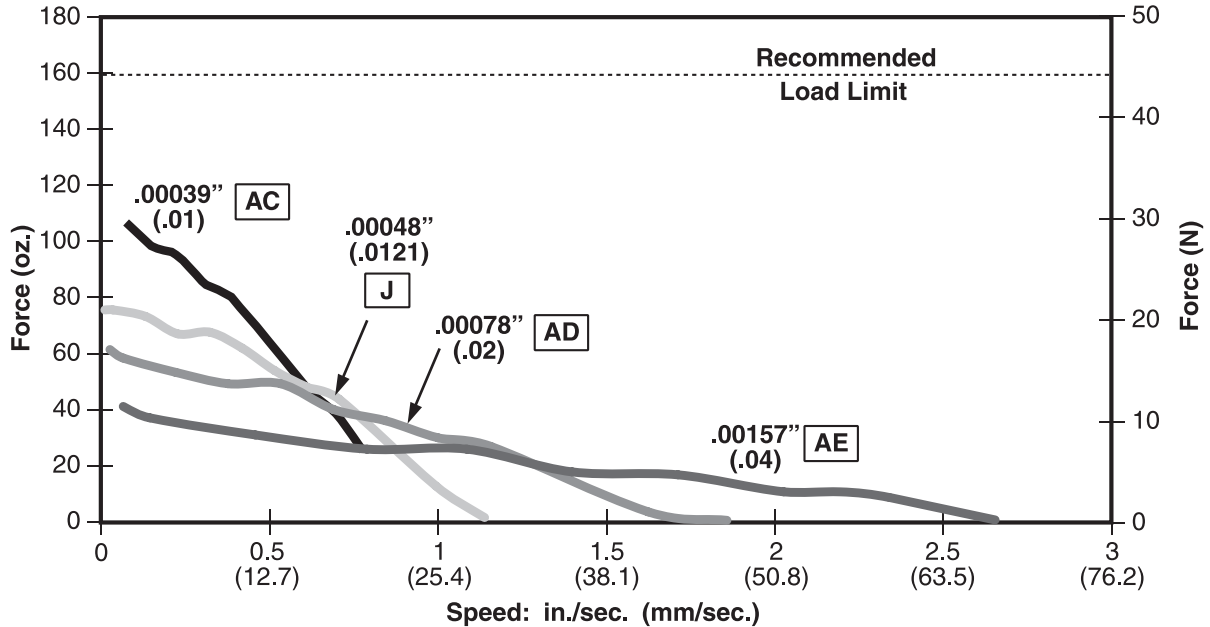
Ø .138 (3.50) Lead-screw

HYBRID LINEAR ACTUATOR
STEPPER MOTORS



FORCE vs. LINEAR VELOCITY Bipolar • Chopper • 100% Duty Cycle

Ø .138 (3.50) Lead-screw



*Care should be taken when utilizing these screw pitches to ensure that the physical load limits of the motor are not exceeded. Please consult the factory for advice in selecting the proper pitch for your application.

NOTE: All chopper drive curves were created with a 5 volt motor and a 40 volt power supply.

Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

With L/R drives peak force and speeds are reduced, using a unipolar drive will yield a further 30% force reduction.