HELIX™
LINEAR TECHNOLOGIES

26 MM CAN STACK STEPPER MOTOR LINEAR ACTUATOR

Can-stack linear actuators from Helix Linear Technologies leverage permanent magnets and stepper motor operation to convert rotary motion into linear motion in applications requiring a small footprint and high torque-to-size ratios. Our can stack linear actuators use neodymium magnets and incorporate tight tolerances to minimize air gaps for improved performance over traditional can stack linear actuators. Available in captive, non-captive, and external configurations, typical applications include medical equipment, laboratory instrumentation, and printing equipment.

Series	–	Motor	Style	Step Length	Coils	Screw Code ID	–	Voltage (VDC)	–	Stroke Code
CLA		26	C = Captive	F = 7.5°	4 Bipolar (4 wire)	1=.001in (.0254 mm)		5		See tables below.
			N = Non-Captive			2=.002 in (.0508 mm)				
			E = External	E = 15°		3=.0005 in (.0127 mm)		12		
						4=.004 in (.1016 mm)				

Example Part Number: CLA – 26CF43 – 12 – 303

Captive Stroke Code	Stroke (mm)	Size A (mm)	Size B (mm)
302	12.7	11.99	12.9
303	18	17.28	18.28
304	25	24.26	25.26
305	31	30.25	31.25

Non-Captive & External Stroke Codes	Stroke (in)	Stroke (mm)
302	0.5	12.7
303	0.7087	18
304	0.9843	25
305	1.2204	31

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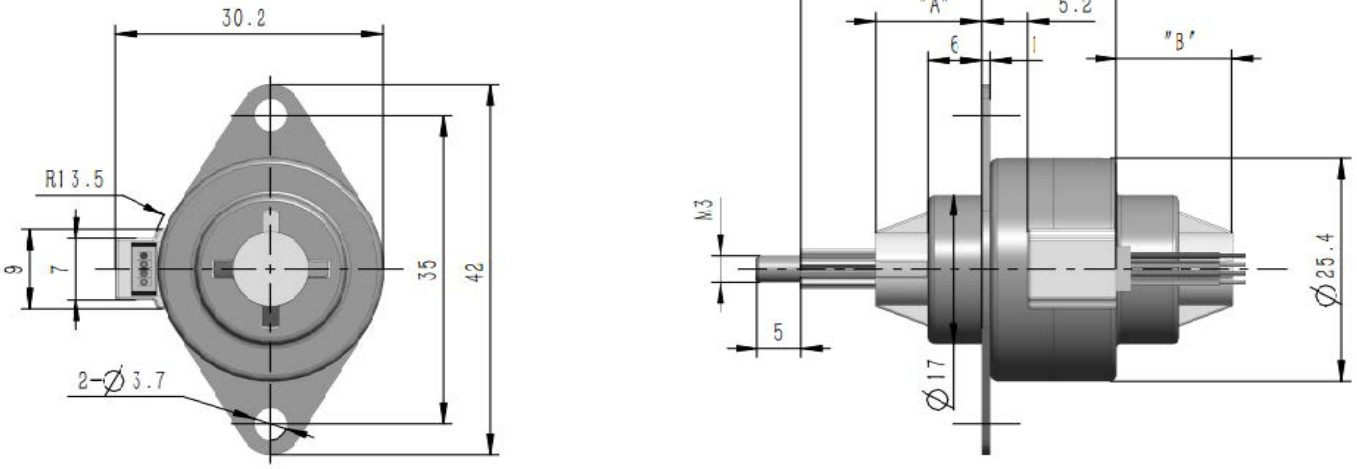
TRAVEL PER STEP					
Step Angle	**Lead (in)**	**Lead (mm)**	**Travel Per Step (in)**	**Travel Per Step (mm)**	**Code ID**
7.5°	.024	.6096	.0005	.0127	3
	.028	.7008	.000574	.0146	B
	.039	.9984	.0008	.0208	7
	.048	1.2192	.001	.0254	1
	.078	1.9997	.0016	.04166	8
	.096	2.4384	.002	.0508	2
	.12	.3048	.00025	.00635	C
	.157	3.9984	.0032	.0833	9
	.192	4.8768	.004	.1016	4
	.314	7.9997	.0065	.16666	A
	.384	9.7536	.008	.2032	5
	.768	19.5072	.016	.4064	6
15°	0.024	.6096	.001	.0254	1
	0.048	1.2192	.002	.0508	2
	0.096	2.4384	.004	.1016	4

FEATURES					
Part No.	**Captive**	CLA-26CF4		CLA-26CE4	
	Non-Captive	CLA-26NF4		CLA-26NE4	
	External	CLA-26EF4		CLA-26EF4	
Wiring	Units	Bipolar			
Step Angle	Degree	7.5°		15°	
Winding Voltage	VDC	5	12	5	12
Current/Phase	A rms	.0385	0.16	.0385	0.16
Resistance/Phase	Ω	13	72	13	72
Inductance/Phase	mH	10.6	60	10.6	48
Power Input	Watts	3.85			
Rotor Inertia	gcm^2	1.07			
Insulation Class		Level B (75°C Temperature Rise)			
Weight	oz (g)	1.74 (49)			
Insulation Resistance	MΩ	20			

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

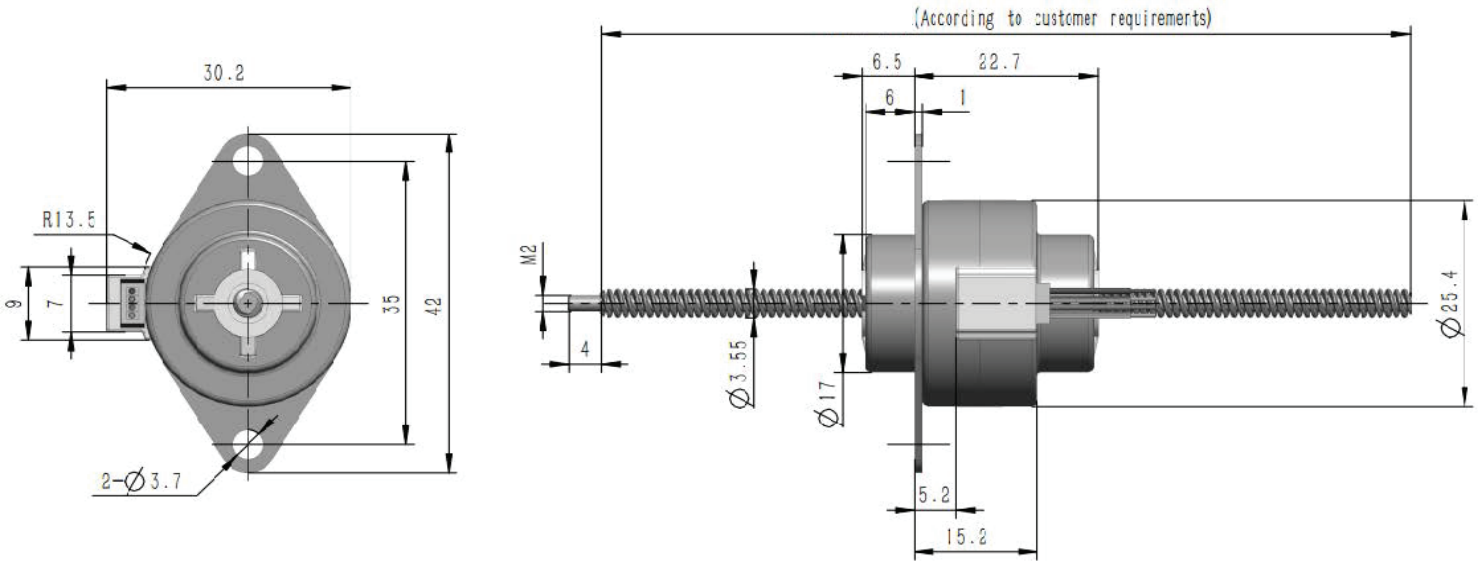
DIMENSIONAL DRAWINGS

Captive



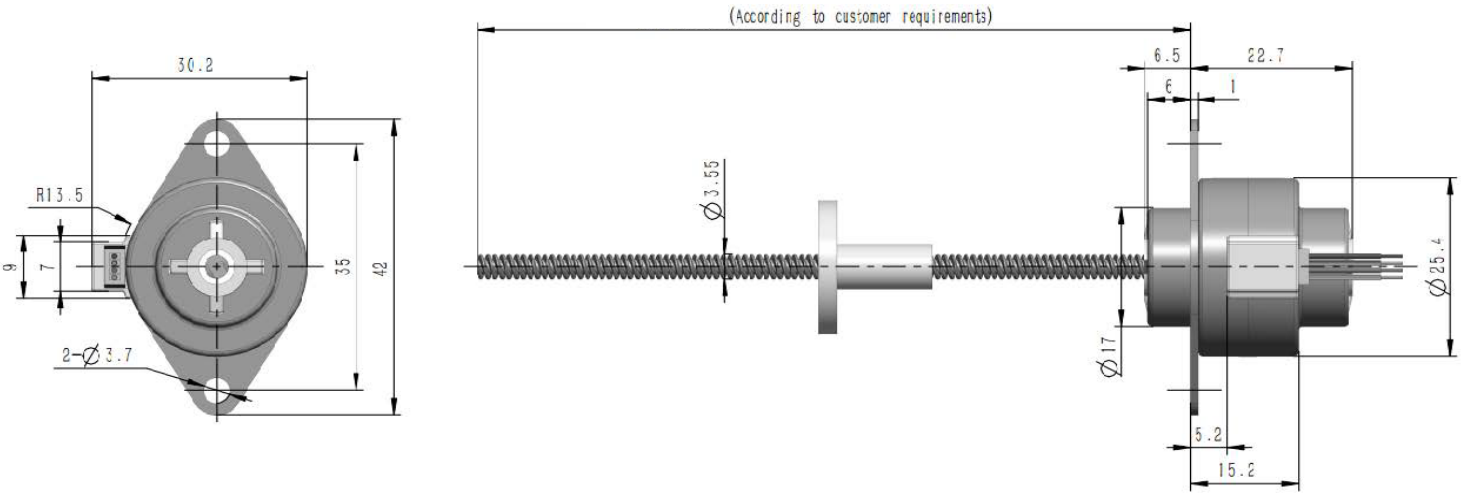
DIMENSIONAL DRAWINGS

Non-Captive



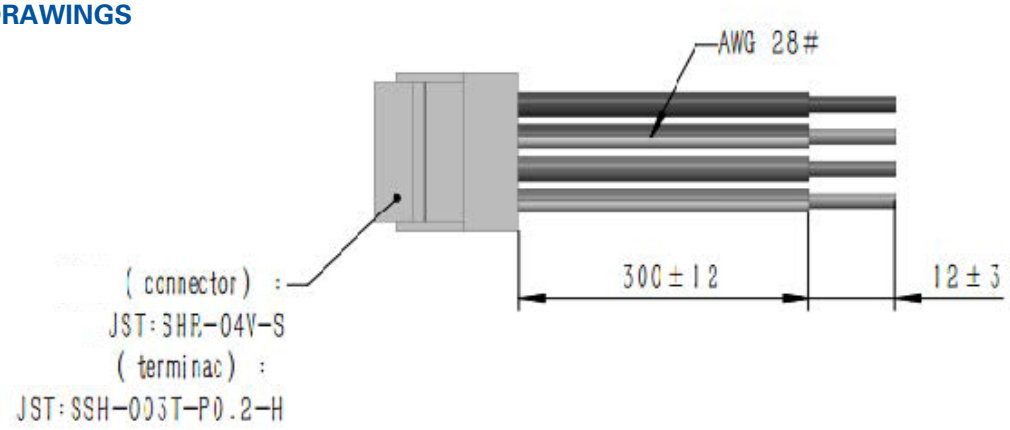
DIMENSIONAL DRAWINGS

External Linear



DIMENSIONAL DRAWINGS

Motor Outlet

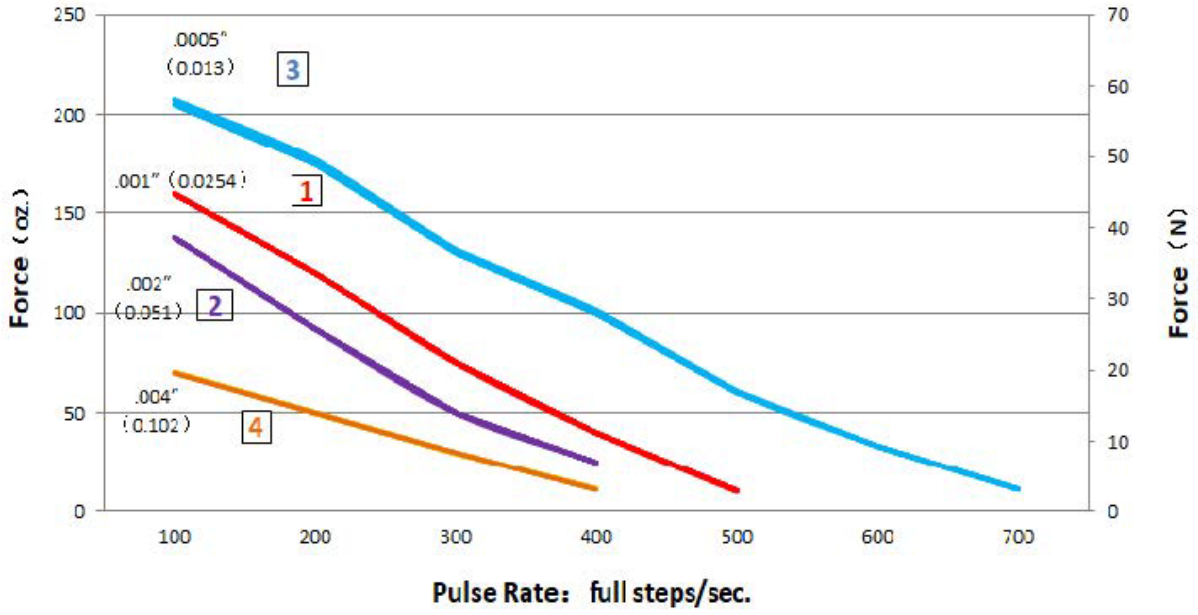


Pin	Color
1	Red
2	Red/White
3	Green
4	Green/White

PERFORMANCE CURVES

Force vs. Pulse Rate

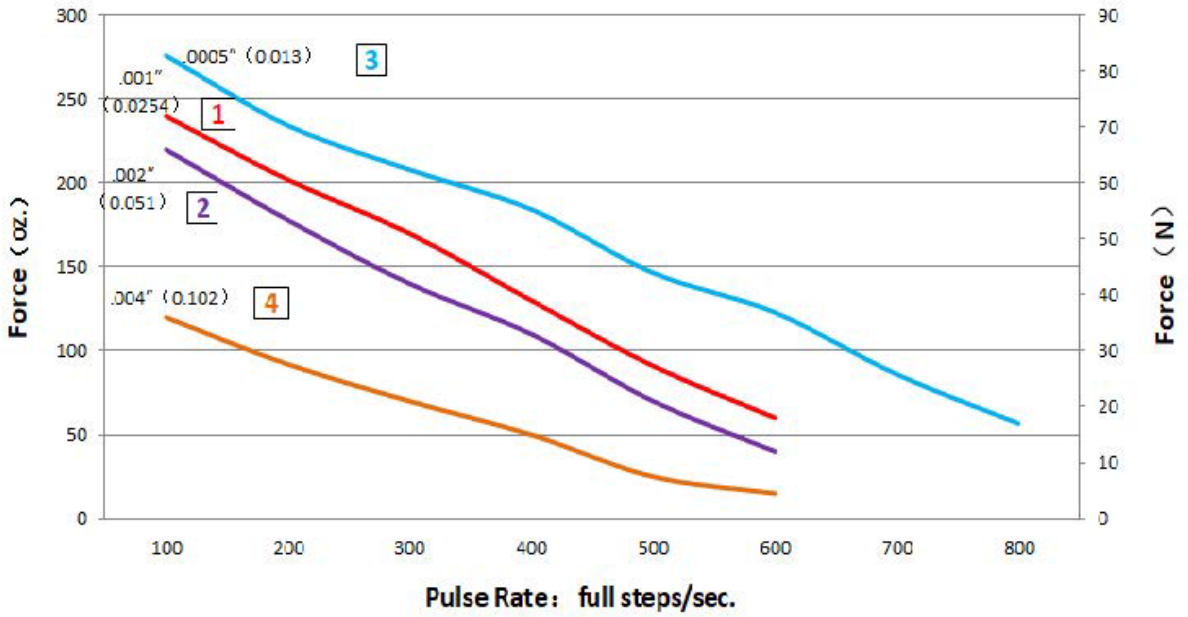
L/R Drive, Bipolar, 100% Duty Cycle



PERFORMANCE CURVES

Force vs. Pulse Rates

L/R Drive, Bipolar, 25% Duty Cycle



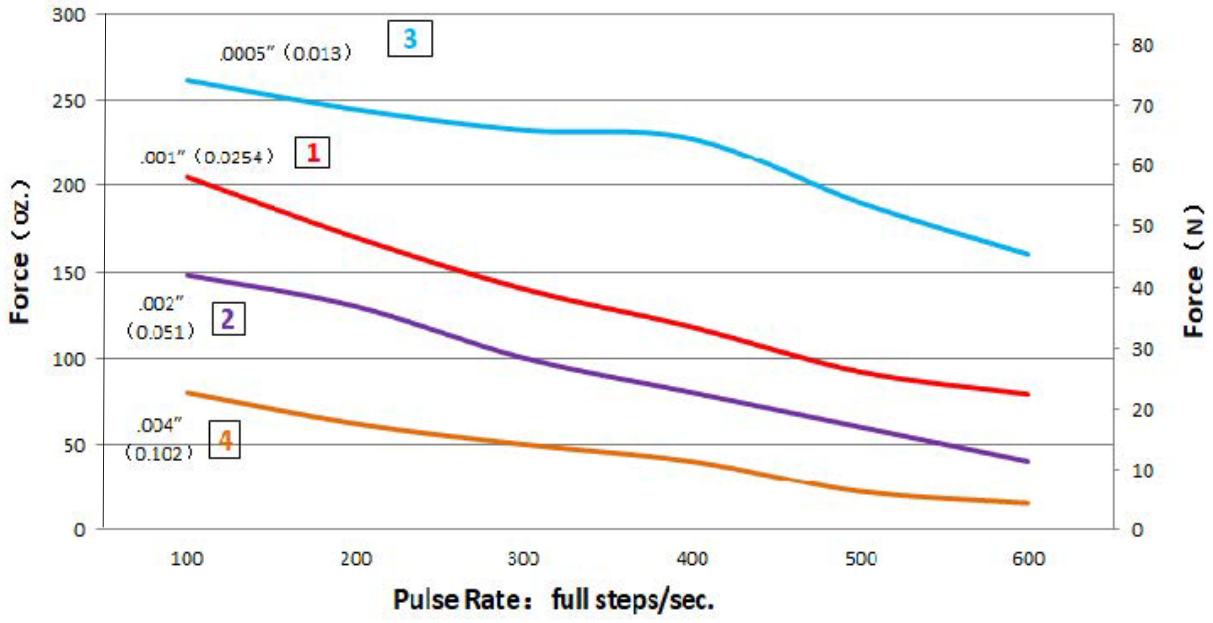
25% Duty cycle is obtained by a special winding or by running a standard motor at double the rated current.

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

PERFORMANCE CURVES

Force vs. Pulse Rate

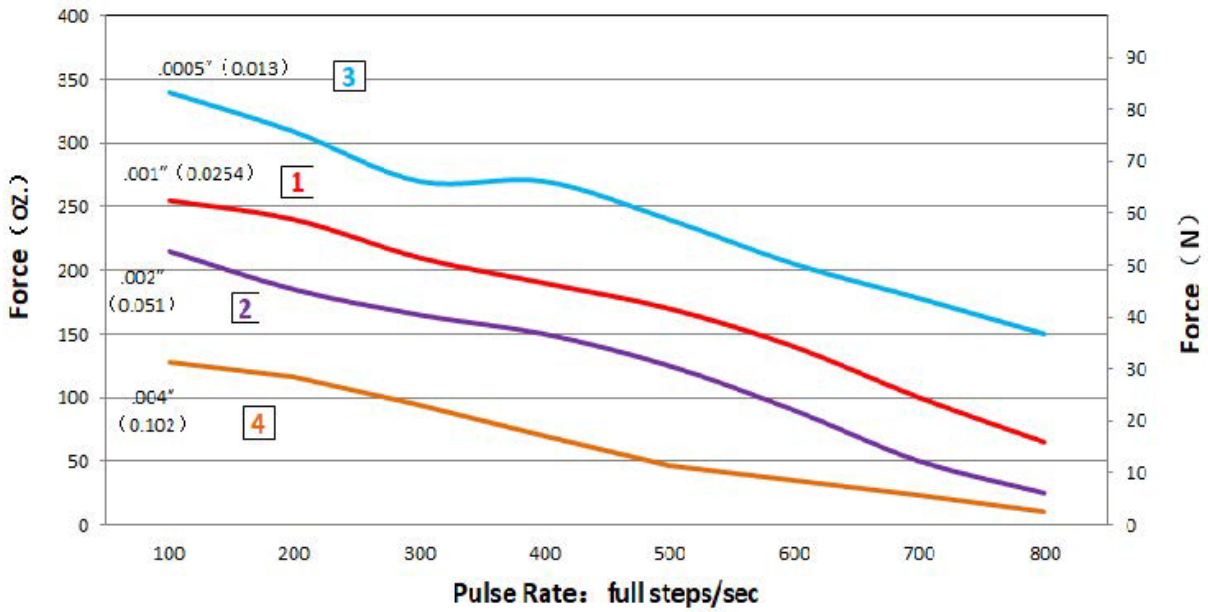
Chopper Drive, Bipolar, 100% Duty Cycle



PERFORMANCE CURVES

Force vs. Pulse Rates

Chopper Drive, Bipolar, 25% Duty Cycle



25% Duty cycle is obtained by a special winding or by running a standard motor at double the rated current.

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.