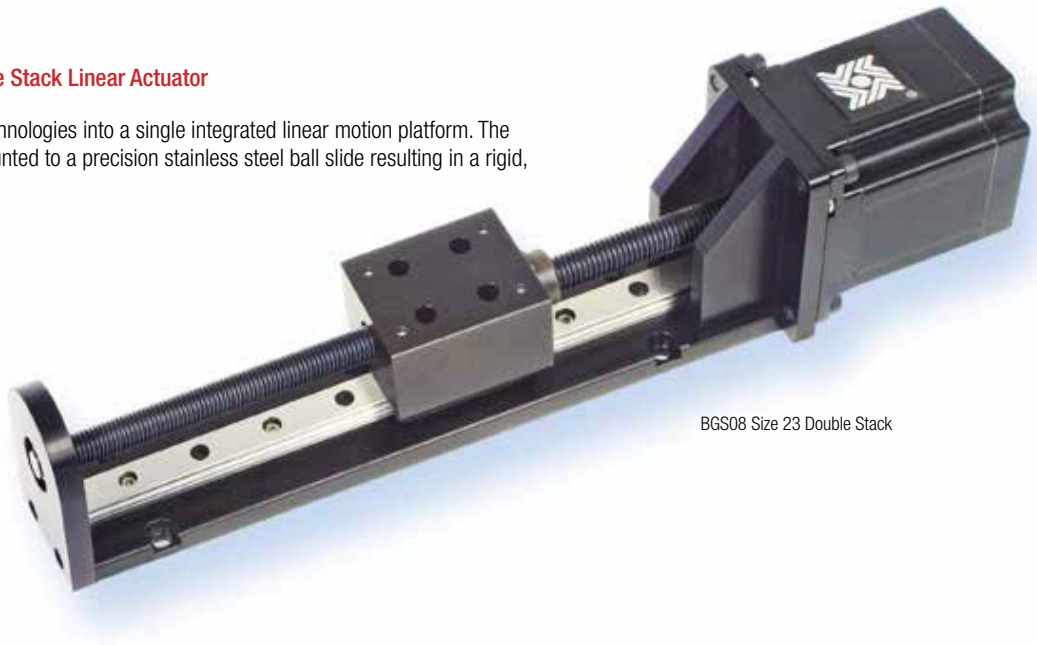
BGS08™ Linear Rail

with Hybrid 57000 Series Size 23 Single or Double Stack Linear Actuator

This BGS™ heavy-duty linear rail combines many technologies into a single integrated linear motion platform. The lead screw drives a machined aluminum carriage mounted to a precision stainless steel ball slide resulting in a rigid, smooth-operating motion system.



BGS08 Size 23 Double Stack

Specifications: BGS08

BGS with Hybrid Linear Actuator Motor	Size 23 Single and Double Stack
Max. Stroke Length	30 in (760 mm)
Max. Load (horizontal)	225 lbs (1,000 N)
Roll Moment	22.5 lbs-ft (30.5 Nm)
Pitch Moment	19.36 lbs-ft (26.25 Nm)
Yaw Moment	22.27 lbs-ft (30.20 Nm)

Nominal Thread Lead		Lead Code
inches	mm	
0.098	2.50	0098
0.100	2.54	0100
0.197	5.00	0197
0.200	5.08	0200
0.500	12.70	0500
0.630	16.00	0630
1.000	25.40	1000

To determine what is best for your application see the Linear Rail Applications Checklist.

Identifying the BGS Part Number Codes when Ordering

BG	S	08	B	—	M	—	0025	—	XXX
Prefix	**Frame Style**	**Frame Size Load***	**Lubrication**		**Drive / Mounting**		**Nominal Thread Lead Code**		**Unique Identifier**
BG = Ball Guide System	**S** = Standard	**08** = Max.static load 225 lbs (1,000 N)	**B** = TFE wear resist, dry lubricant Black Ice®		**M = Motorized**		**0197** = .197-in (5.0) (see Lead Code charts above)		Proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part.

NOTE: Dashes must be included in Part Number (–) as shown above. For assistance call our Engineering Team at 603 213 6290.

Carriage holes available in Metric sizes M5 and M6

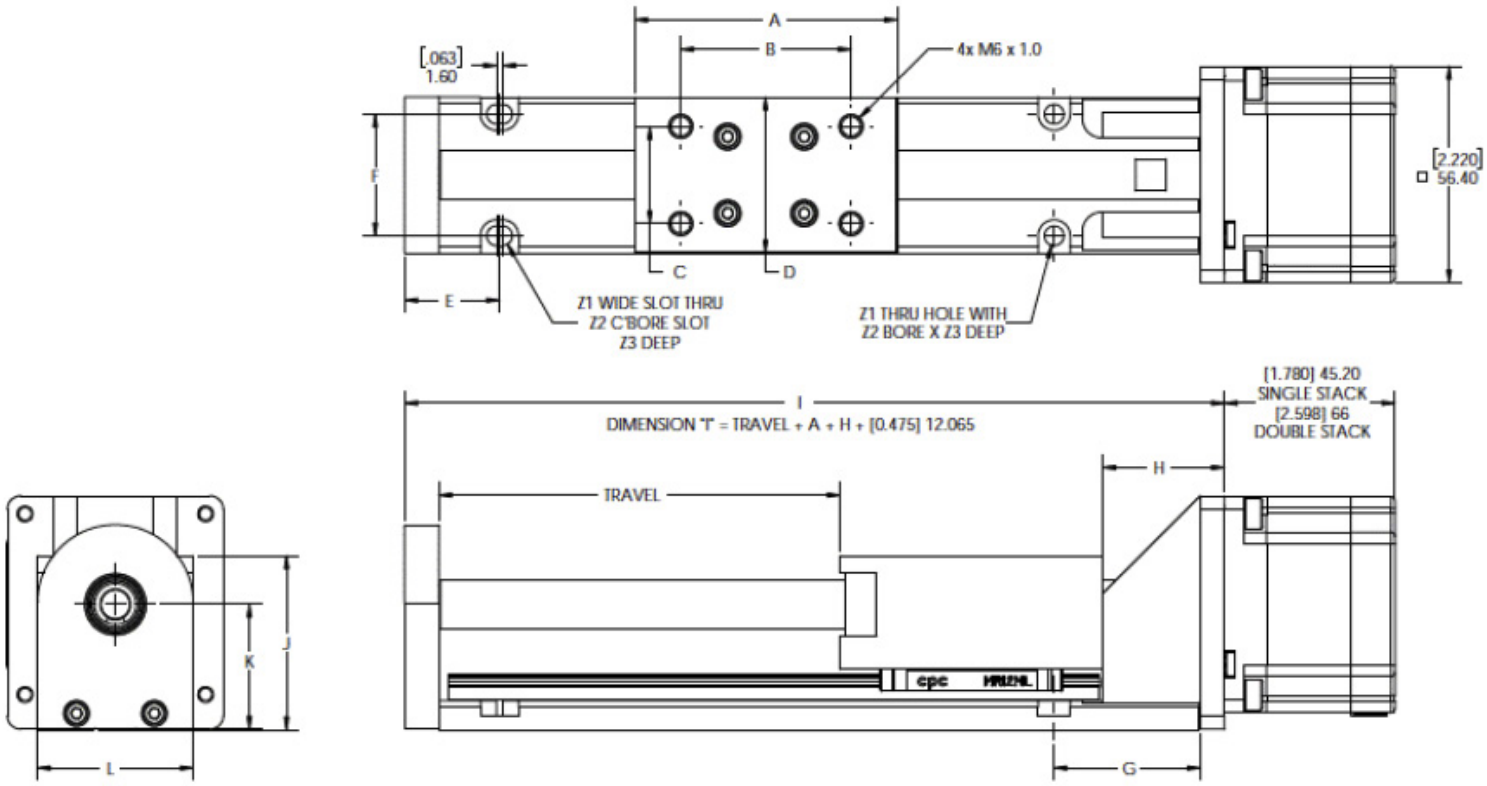
BGS08 Linear Rail with Hybrid 57000 Size 23 Linear Motors

Recommended for horizontal loads up to 225 lbs (1,000 N)

	A	B	C	D	E	F	G	H	I	J	K	L	Z1	Z2	Z3
(inch)	(2.70)	(1.75)	(1.00)	1.60	(0.98)	(1.25)	(1.50)	(1.25)	*	(1.79)	(1.29)	(1.60)	(0.20)	(0.33)	(0.19)
mm	68.58	44.45	25.40	40.64	24.89	31.75	38.10	31.85	*	45.39	32.69	40.64	5.1	8.4	4.8

* Dimension "I" is a function of required travel distance.

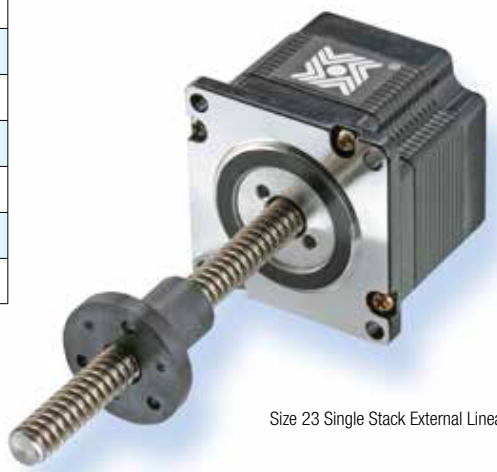
Dimensions = (inches) mm



Single Stack

Size 23: 57 mm (2.3-in) Hybrid Linear Actuator (1.8° Step Angle)					
Wiring	Bipolar			Unipolar**	
Winding Voltage	3.25 VDC	5 VDC	12 VDC	5 VDC	12 VDC
Current (RMS)/phase	2.0 A	1.3 A	.54 A	1.3 A	.54 A
Resistance/phase	1.63 Ω	3.85 Ω	22.2 Ω	3.85 Ω	22.2 Ω
Inductance/phase	3.5 mH	10.5 mH	58 mH	5.3 mH	23.6 mH
Power Consumption	13 W				
Rotor Inertia	166 gcm^2				
Insulation Class	Class B (Class F available)				
Weight	18 oz (511 g)				
Insulation Resistance	20 MΩ				

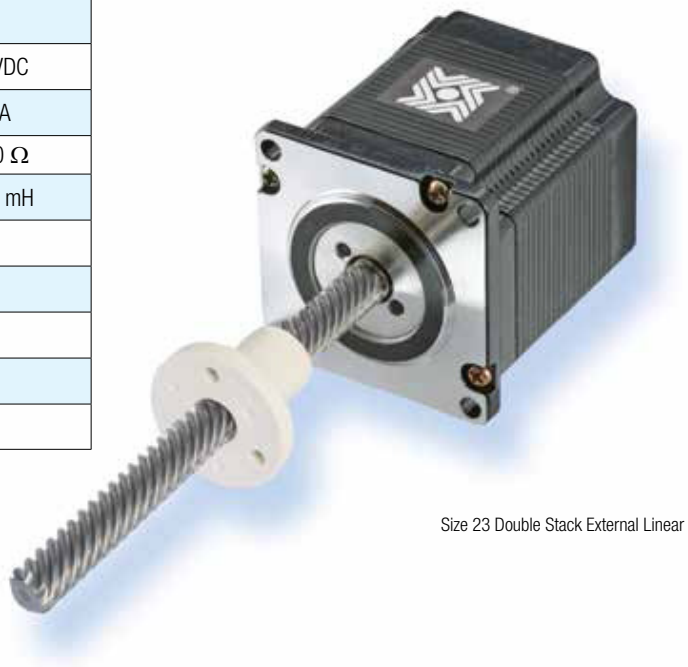
** Unipolar drive gives approximately 30% less thrust than bipolar drive.



Size 23 Single Stack External Linear

Double Stack

Size 23 Double Stack: 57 mm (2.3-in) Hybrid Linear Actuator (1.8° Step Angle)			
Wiring	Bipolar		
Winding Voltage	3.25 VDC	5 VDC	12 VDC
Current (RMS)/phase	3.85 A	2.5 A	1 A
Resistance/phase	0.98 Ω	2.0 Ω	12.0 Ω
Inductance/phase	2.3 mH	7.6 mH	35.0 mH
Power Consumption	25 W Total		
Rotor Inertia	321 gcm^2		
Insulation Class	Class B (Class F available)		
Weight	32 oz (958 g)		
Insulation Resistance	20 MΩ		

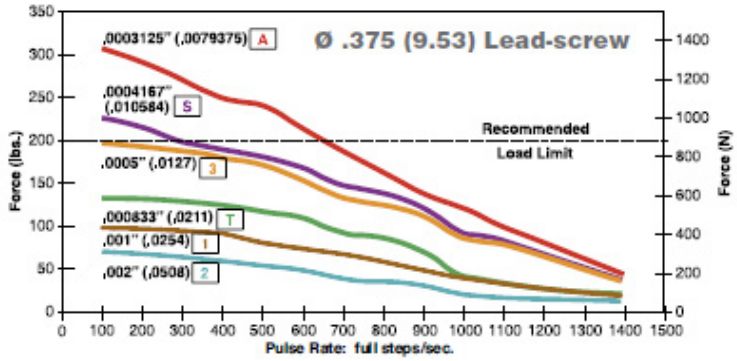


Size 23 Double Stack External Linear

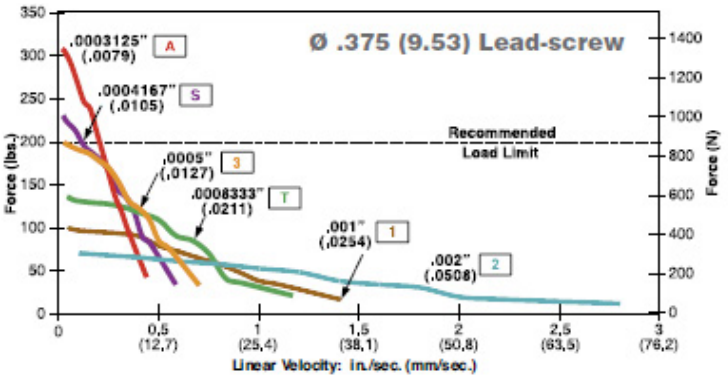
Single Stack

■ **57000 Series Size 23 Linear Actuator**

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



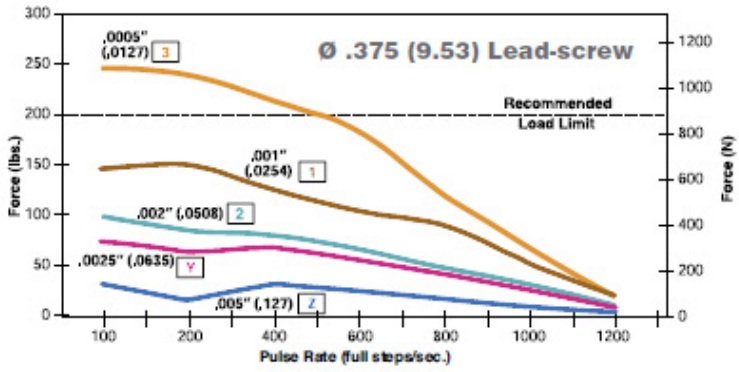
FORCE vs. LINEAR VELOCITY
– Chopper – Bipolar – 100% Duty Cycle



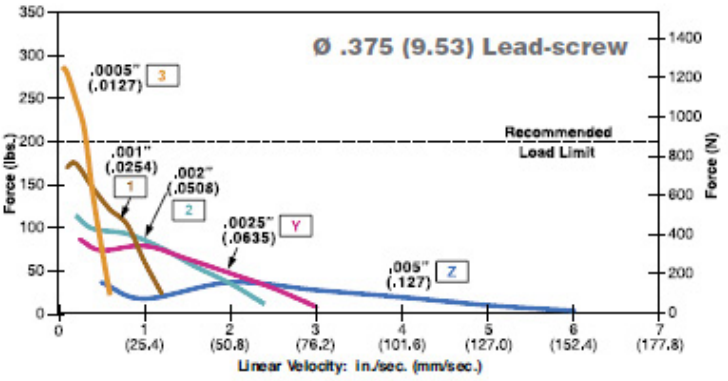
Double Stack

■ **57000 Series Size 23 Linear Actuator**

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



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



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.

Size 23 57000 Series • Stepping Sequence & Wiring

■ **57000 Series Size 23 Linear Actuator**

Hybrids: Stepping Sequence

EXTEND CW ⟵ ⟶ RETRACT CCW

Bipolar	Q2-Q3	Q1-Q4	Q6-Q7	Q5-Q8
Unipolar	Q1	Q2	Q3	Q4
Step				
1	ON	OFF	ON	OFF
2	OFF	ON	ON	OFF
3	OFF	ON	OFF	ON
4	ON	OFF	OFF	ON
1	ON	OFF	ON	OFF

Note: Half stepping is accomplished by inserting an off state between transitioning phases.

Hybrids: Wiring