

43000 Series Size 17 Double Stack Hybrid Linear Actuators with integrated IDEA™ Drive

High performance in a compact package

The 43000 Series Double Stack actuator is available in a wide variety of resolutions – from 0.000625-in (.0158 mm) per step to 0.005-in (.127 mm) per step. Delivers output force of up to 75 lbs (337N).

43000 Series with IDEA™ Drive features:

- Fully Programmable
- RoHS Compliant
- USB or RS-485 Communication
- Microstepping Capability: Full, 1/2, 1/4, 1/8, 1/16, 1/32, 1/64
- Graphic User Interface
- Auto-population of Drive Parameters
- Programmable Acceleration/Deceleration and Current Control

3 Available Designs

- Captive – Non-Captive – External Linear



Size 17 Double Stack: 43 mm (1.7-in) Hybrid Linear Actuator (1.8° Step Angle)			
		RS-485*	USB**
Part No.	Captive	43MJ – – – †	43MG – – – †
	Non-Captive	43LJ – – – †	43LG – – – †
	External Linear	E43MJ – – – †	E43MG – – – †
Wiring		Bipolar	
Winding Voltage		2.33 VDC***	

Linear Travel / Step		Order Code I.D.
Screw Ø .250" (6.35 mm)		
inches	mm	B C Y AG Z
.000625	.0158*	
.00125	.0317*	
.0025	.0635*	
.00375	.0953*	
.005	.127*	

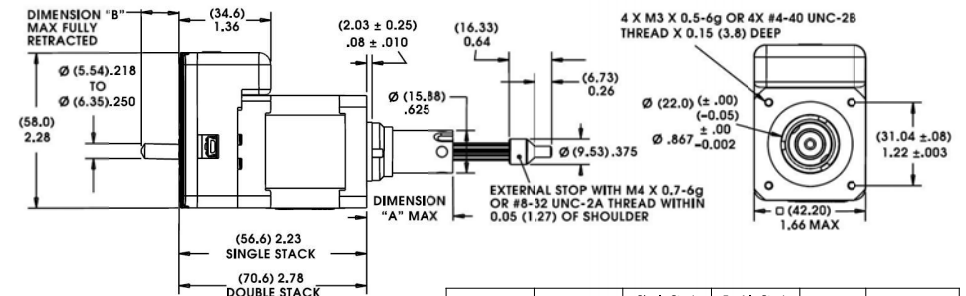
Simple to use IDEA™ Drive software with on-screen buttons and easy-to-understand programming guides

Software program generates motion profiles directly into the system and also contains a "debug" utility allowing line-by-line execution of a motion program for easy troubleshooting.



Captive Lead Screw

Dimensions = (mm) inches

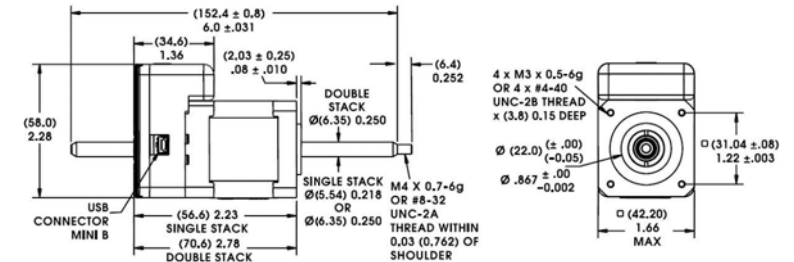


Stroke	Dim, "A"	Single Stack Dim, "B"	Double Stack Dim, "B"	Suffix #	M4x0,7 Thread
0.500 (12.7)	0.78 (19.8)	0	0	-905	-805
0.750 (19.05)	1.03 (26.2)	0	0	-907	-807
1.000 (25.4)	1.28 (32.5)	0	0	-910	-810
1.250 (31.8)	1.53 (38.9)	0	0	-912	-812
1.500 (38.1)	1.78 (45.2)	0.232 (5.9)	0.091 (2.5)	-915	-815
2.00 (50.8)	2.28 (57.9)	0.732 (18.6)	0.591 (15.0)	-920	-820
2.500 (63.5)	2.78 (70.6)	1.232 (31.3)	1.091 (27.7)	-925	-825

Non-Captive Lead Screw

Dimensions = (mm) inches

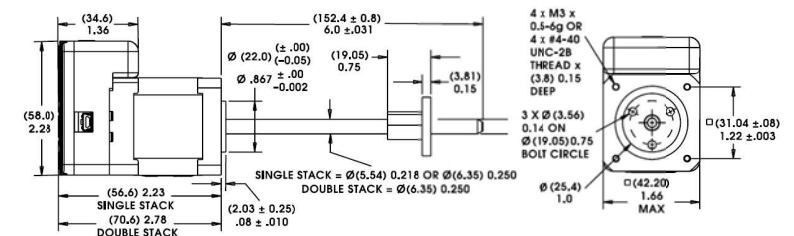
Up to 10-in (254 mm) standard screw lengths. Longer screw lengths are available.



External Linear

Dimensions = (mm) inches

Up to 10-in (254 mm) standard screw lengths. Longer screw lengths are available.

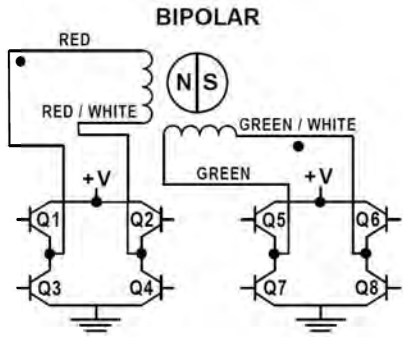


Identifying the Hybrid Part Number Codes when Ordering

E	43	M	G	C	2.33	910
Prefix (include only when using the following) A = A Coil (See AC Synchronous Data Sheet) E = External K = External with 40° thread form P = Proximity Sensor S = Home Position Switch	Series Number Designation 43 = 43000 (Series numbers represent approximate width of motor body)	Style L = 1.8° Non-captive M = 1.8° Captive or External (use "E" or "K" Prefix for External version)	Coils 4 = Bipolar (4 wire) G = IDEA Drive (Size 17, 43000 Series, Bipolar only)	Code ID Resolution Travel/Step B = .000625-in (.0158) C = .00125-in (.0317) Y = .0025-in (.0635) AG = .00375-in (.0953) Z = .005-in (.127)	Voltage 2.33 = 2.33 VDC 05 = 5 VDC 12 = 12 VDC Custom V available	Suffix Stroke Example: -910 = 1-in (Refer to Stroke chart on Captive motor series product page.) Suffix also represents: -800 = Metric -900 = External Linear with grease and flanged nut -XXX = 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 203 756 7441.

Hybrids: Wiring

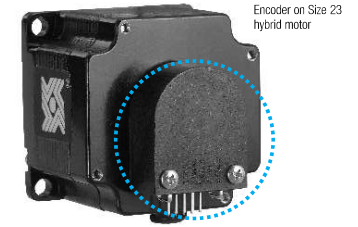


Hybrids: Stepping Sequence

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

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

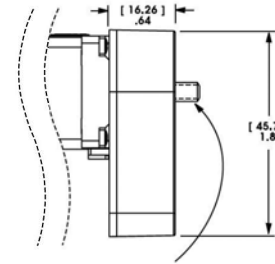
Encoders Designed for All Sizes of Hybrid Linear Actuators



All Haydon Hybrid Linear Actuators are available with specifically designed encoders for applications that require feedback. The compact optical incremental encoder design is available with two channel quadrature TTL squarewave outputs. An optional index is also available as a 3rd channel. The Size 17 encoder provides resolutions for applications that require 200, 400 and 1,000 counts per revolution. Encoders are available for all motor configurations.

Simplicity and low cost make the encoders ideal for both high and low volume motion control applications. The internal monolithic electronic module converts the real-time shaft angle, speed, and direction into TTL compatible outputs. The encoder module incorporates a lensed LED light source and monolithic photodetector array with signal shaping electronics to produce the two channel bounceless TTL outputs.

30 mm 43000 Series Size 17



NOTE: Lead Screw extends beyond encoder on specific captive and non-captive motors. External linear shaft extension is available upon request.

Electrical Specifications				
	Minimum	Typical	Maximum	Units
Input Voltage	4.5	5.0	5.5	VDC
Output Signals	4.5	5.0	5.5	VDC

2 channel quadrature TTL squarewave outputs.
Channel B leads A for a clockwise rotation of the rotor viewed from the encoder cover.
Tracks at speeds of 0 to 100,000 cycles/sec.
Optional index available as a 3rd channel (one pulse per revolution).

Operating Temperature		
Size 17	Minimum	Maximum
	- 40°C (- 40°F)	100°C (212°F)

Mechanical Specifications		Maximum
Acceleration		250,000 rad/sec ²
Vibration (5 Hz to 2 kHz)		20 g

Resolution				
4 Standard Cycles Per Revolution (CPR) or Pulses Per Revolution (PPR)				
Size 17	CPR	200	400	1000*
	PPR	800	1600	4000*

*Index Pulse Channel not available. Contact us for additional resolution options

Single Ended Encoder - Pinout - Size 17			
Connector Pin #	Description	Connector Pin #	Description
1	Ground	4	+5 VDC Power
2	Index (optional)	5	Channel B
3	Channel A		

Integrated Connector for Hybrid Size 17

Hybrid Size 17 linear actuators are available with an integrated connector. Offered alone or with a harness assembly, this connector is RoHS compliant and features a positive latch in order for high connection integrity. The connector is rated up to 3 amps and the mating connector will handle a range of wire gauges from 22 to 28. This motor is ideal for those that want to plug in directly to pre-existing harnesses.

Motor Connector:
JST part # S06B-PASK-2

Mating Connector:
JST part # PAP-06V-S
Haydon Kerk Part #56-1210-5 (12 in. Leads)

Wire to Board Connector:
JST part number SPHD-001T-P0,5

Pin #	Bipolar	Unipolar	Color
1	Phase 2 Start	Phase 2 Start	G/W
2	Open	Phase 2 Common	-
3	Phase 2 Finish	Phase 2 Finish	Green
4	Phase 1 Finish	Phase 1 Finish	R/W
5	Open	Phase 1 Common	-
6	Phase 1 Start	Phase 1 Start	Red

