**Haydon kerk** ®
Motion Solutions

AMETEK ®

Z26000 Series
Ø 26 mm (1-in) Can-Stack
Stepper Motor Linear Actuators

Designed to accommodate high volume applications

Z26000 Series motors utilize rare earth (neodymium) magnets. Also, available in a special "earless" configuration without a mounting flange. All units are built with durable dual ball bearings.

Multiple versions available

– Captive   – Non-Captive   – External Linear

Ø 26mm (1-in) Non-Captive

Ø 26mm (1-in) External Linear
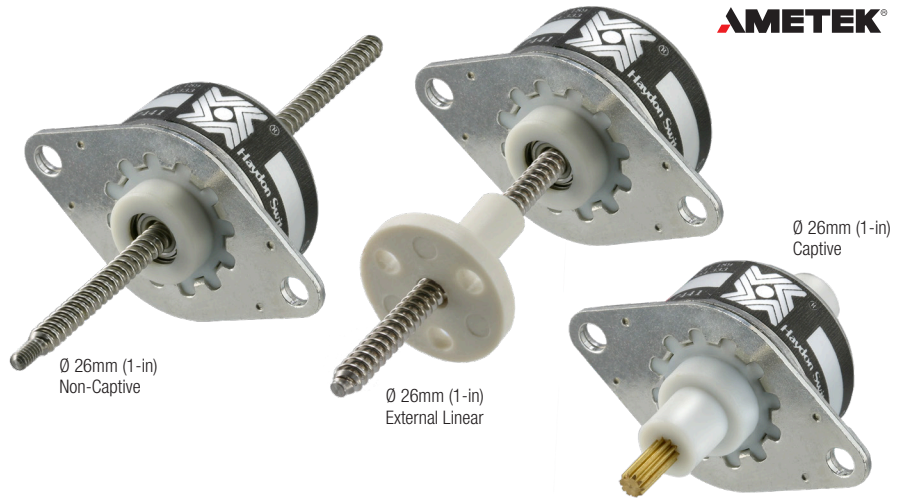
Ø 26mm (1-in) Captive

Specifications

Ø 26 mm (1-in) Z-Series Motor									
Part No.	Captive	Z2644 ▢ – ▢ – ▢▢ †		Z2654 ▢ – ▢ – ▢▢ †		Z2646 ▢ – ▢ – ▢▢ †		Z2656 ▢ – ▢ – ▢▢ †	
	Non-Captive	Z2634 ▢ – ▢ – ▢▢ †		Z2684 ▢ – ▢ – ▢▢ †		Z2636 ▢ – ▢ – ▢▢ †		Z2686 ▢ – ▢ – ▢▢ †	
	External Linear*	Z2644 ▢ – ▢ – 9 ▢ †**		Z2654 ▢ – ▢ – 9 ▢ †**		Z2646 ▢ – ▢ – 9 ▢ †**		Z2656 ▢ – ▢ – 9 ▢ †**	
Wiring		Bipolar				Unipolar*			
Step angle		7.5°		15°		7.5°		15°	
Winding Voltage		5 VDC	12 VDC	5 VDC	12 VDC	5 VDC	12 VDC	5 VDC	12 VDC
Current (RMS)/phase		340 mA	140 mA	340 mA	140 mA	340 mA	140 mA	340 mA	140 mA
Resistance/phase		14.7 Ω	84 Ω	14.7 Ω	84 Ω	14.7 Ω	84 Ω	14.7 Ω	84 Ω
Inductance/phase		8.5 mH	55 mH	6.7 mH	44 mH	4.3 mH	24 mH	3.4 mH	19 mH
Power Consumption		3.4 W							
Rotor Inertia		1.4 gcm^2							
Insulation Class		Class B							
Weight		1.2 oz (34 g)							
Insulation Resistance		20 MΩ							

†Part numbering information on page 4. *Unipolar drive gives approximately 40% less thrust compared to bipolar drive. ** When ordering Z-Series External Linear motors, add –900 to end of the Part Number.

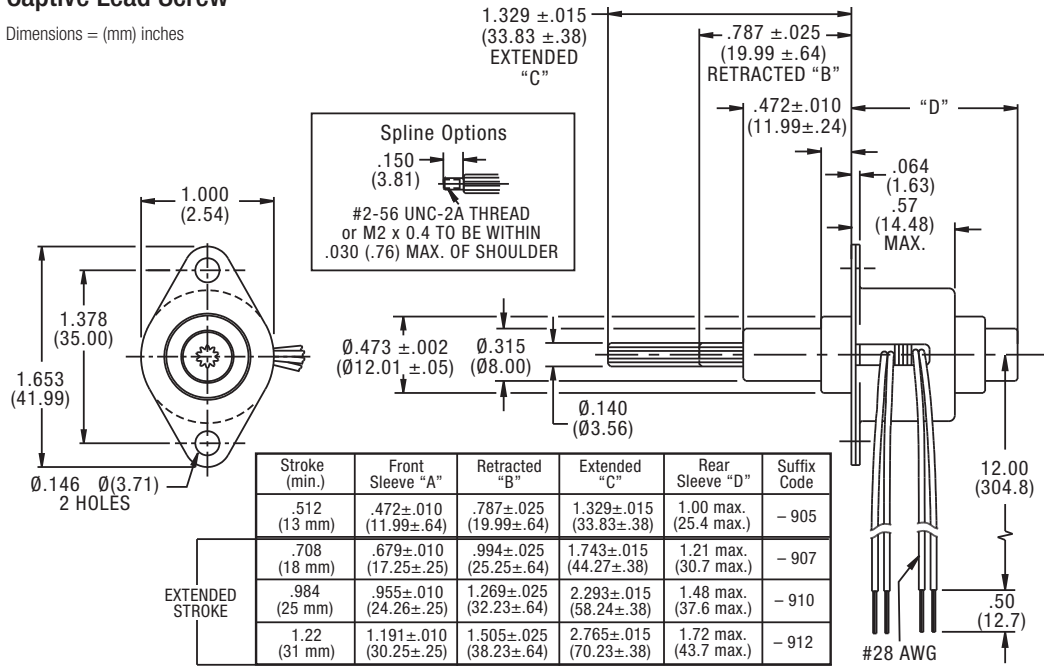| Linear Travel / Step 15° Step Angle			Order Code I.D.
step	inches	mm	
7.5° Angle	0.0005	0.013	3
	0.001	0.0254	1
	0.002	0.051	2
15° Angle	0.00164	0.04166	AS
	0.002	0.051	2
	0.004	0.102	4

Special drive considerations may be necessary when leaving shaft fully extended or fully retracted. Standard motors are Class B rated for maximum temperature of 130° C (266° F).

Also available, specially engineered Z26000 (Ø 26 mm, 1-in) linear actuators that extend captive lead screw travel beyond 12.7 mm (1/2-in).
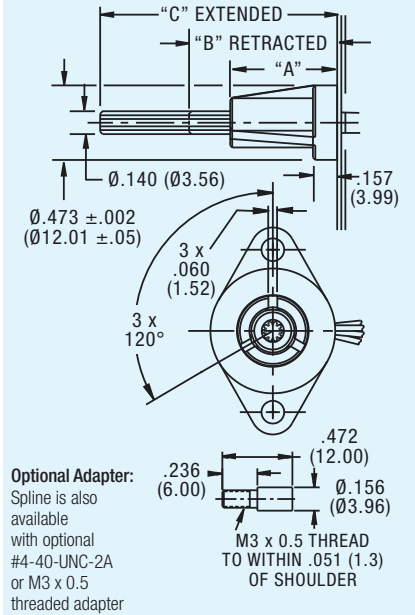
18 mm (.708-in) Captive Extended

25 mm (.984-in) Captive Extended

31mm (1.22-in) Captive Extended

Captive Lead Screw

Dimensions = (mm) inches

Spline Options

.150 (3.81)

#2-56 UNC-2A THREAD or M2 x 0.4 TO BE WITHIN .030 (.76) MAX. OF SHOULDER

1.329 ±.015 (33.83 ±.38) EXTENDED "C"

.787 ±.025 (19.99 ±.64) RETRACTED "B"

.472 ±.010 (11.99 ±.24)

"D"

.064 (1.63)

.57 (14.48) MAX.

1.000 (2.54)

1.378 (35.00)

1.653 (41.99)

Ø.146 Ø(3.71) 2 HOLES

Ø.473 ±.002 (Ø12.01 ±.05)

Ø.315 (Ø8.00)

Ø.140 (Ø3.56)

12.00 (304.8)

.50 (12.7)

#28 AWG

Stroke (min.)	Front Sleeve "A"	Retracted "B"	Extended "C"	Rear Sleeve "D"	Suffix Code
.512 (13 mm)	.472±.010 (11.99±.64)	.787±.025 (19.99±.64)	1.329±.015 (33.83±.38)	1.00 max. (25.4 max.)	– 905
.708 (18 mm)	.679±.010 (17.25±.25)	.994±.025 (25.25±.64)	1.743±.015 (44.27±.38)	1.21 max. (30.7 max.)	– 907
.984 (25 mm)	.955±.010 (24.26±.25)	1.269±.025 (32.23±.64)	2.293±.015 (58.24±.38)	1.48 max. (37.6 max.)	– 910
1.22 (31 mm)	1.191±.010 (30.25±.25)	1.505±.025 (38.23±.64)	2.765±.015 (70.23±.38)	1.72 max. (43.7 max.)	– 912

EXTENDED STROKE

Extended Stroke Sleeve

Dimensions = (mm) inches

"C" EXTENDED

"B" RETRACTED

"A"

Ø.140 (Ø3.56)

.157 (3.99)

Ø.473 ±.002 (Ø12.01 ±.05)

3 x .060 (1.52)

3 x 120°

.472 (12.00)

.236 (6.00)

Ø.156 (Ø3.96)

M3 x 0.5 THREAD TO WITHIN .051 (1.3) OF SHOULDER

Optional Adapter: Spline is also available with optional #4-40-UNC-2A or M3 x 0.5 threaded adapter

Non-Captive Lead Screw

Dimensions = (mm) inches

1.000 (25.4)

1.378 (35.00)

1.653 (41.99)

.146 (3.71) 2 HOLES

3.00 ±.03 (76.2 ±.8)

1.875 (47.63) TRAVEL

.728 (18.49) MAX.

.157 (3.99)

.064 (1.63)

.150 (3.81)

.57 (14.48) MAX.

Ø.473 ±.002 (Ø12.01 ±.05)

#2–56 UNC–2A THREAD OR OPTIONAL M2 x 0.4 TO BE WITHIN .030 (.76) MAX. OF SHOULDER

ø.130 (ø3.30)

12.00 (304.8)

.50 (12.7)

#28 AWG

Up to 6-in (152 mm) standard screw lengths. Longer screw lengths are available.

Extended Stroke Sleeve

Dimensions = (mm) inches

.472 (12.00)

.236 (6.00)

ø.156 (ø3.96)

M3 x 0.5 THREAD TO WITHIN .051 (1.3) OF SHOULDER

0.215 (5.46)

0.46 (11.7)

#4–40 UNC–2A THREAD or M3 x 0.5 TO WITHIN .06 (1.52) OF SHOULDER

External Linear

Dimensions = (mm) inches
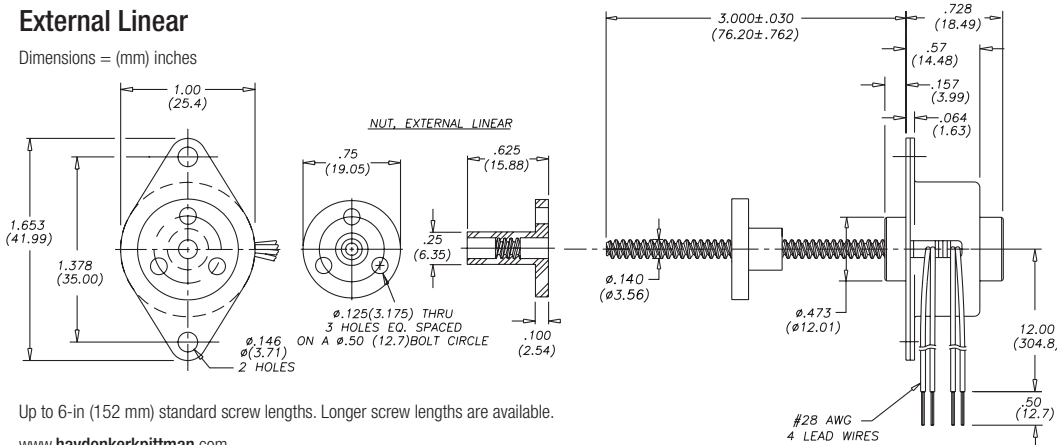
1.00 (25.4)

1.653 (41.99)

1.378 (35.00)

Ø.146 (Ø3.71) 2 HOLES

NUT, EXTERNAL LINEAR

.75 (19.05)

.625 (15.88)

.25 (6.35)

ø.125(3.175) THRU 3 HOLES EQ. SPACED ON A ø.50 (12.7) BOLT CIRCLE

.100 (2.54)

3.000±.030 (76.20±.762)

.728 (18.49)

.57 (14.48)

.157 (3.99)

.064 (1.63)

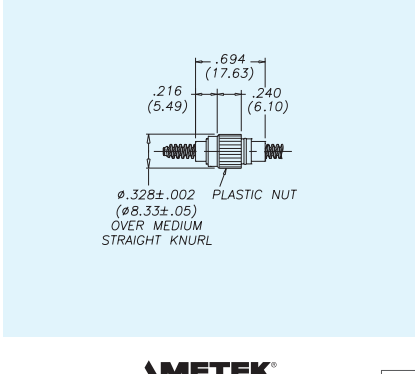ø.140 (ø3.56)

ø.473 (ø12.01)

12.00 (304.8)

.50 (12.7)

#28 AWG 4 LEAD WIRES

Up to 6-in (152 mm) standard screw lengths. Longer screw lengths are available.

Linear Series Z26000 Nut Option

Dimensions = (mm) inches

.694 (17.63)

.216 (5.49)

.240 (6.10)

Ø.328±.002 (Ø8.33±.05) OVER MEDIUM STRAIGHT KNURL

PLASTIC NUT
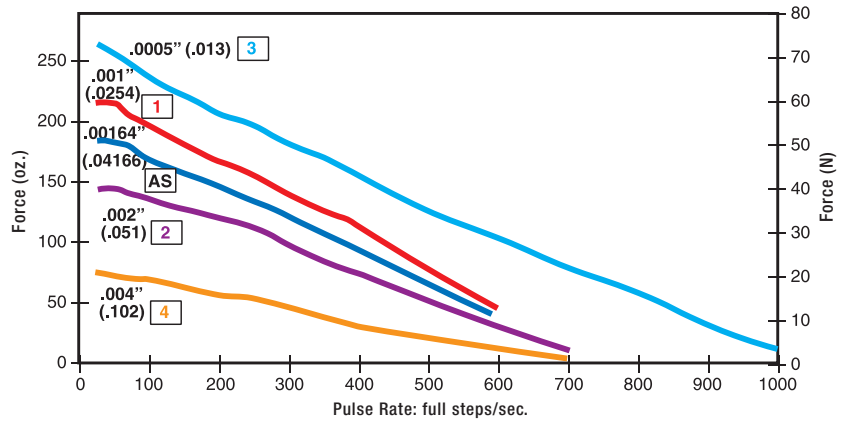
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FORCE vs. PULSE RATE

– L/R Drive

– Bipolar
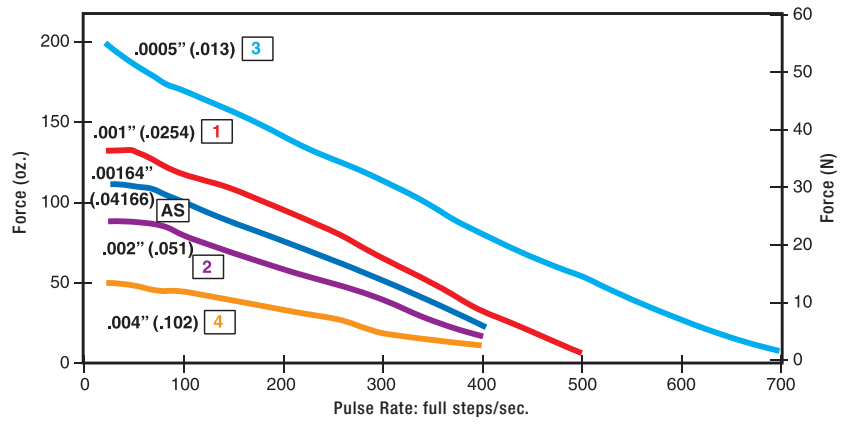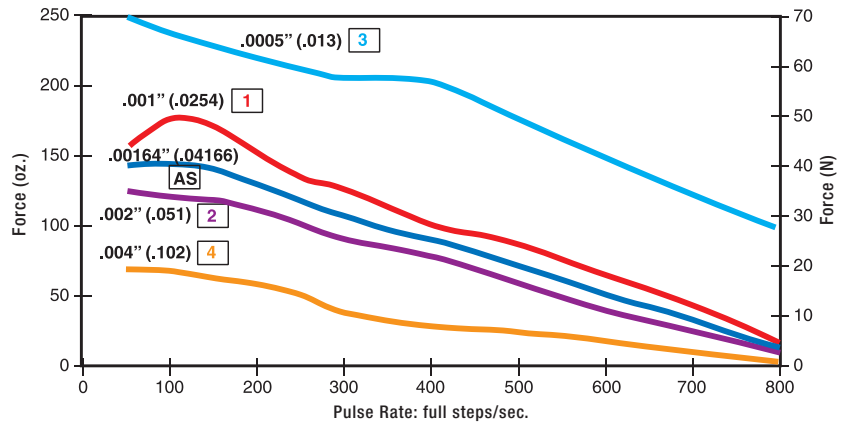
– 100% Duty Cycle

FORCE vs. PULSE RATE

– L/R Drive

– Bipolar

– 25% Duty Cycle

Obtained by a special winding or by running a standard motor at double the rated current.
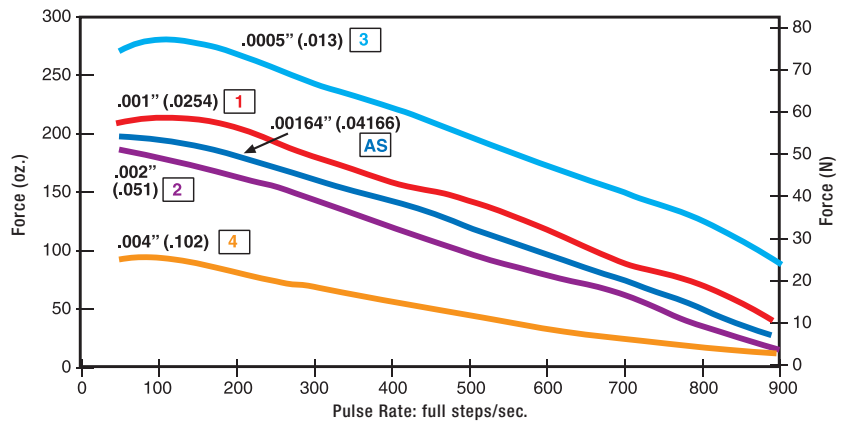

FORCE vs. PULSE RATE

– Chopper Drive

– Bipolar

– 100% Duty Cycle

FORCE vs. PULSE RATE

– Chopper Drive

– Bipolar

– 25% 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.

Identifying the Can-Stack Number Codes when Ordering

Z	26	4	4	2	— 05 —	900
Prefix	**Series Number Designation**	**Style**	**Coils**	**Code ID Resolution Travel/Step**	**Voltage**	**Suffix**
Z = Series Code	26 = 26000 (Series numbers represent approximate diameters of motor body)	3 = 7.5° Non-Captive 4 = 7.5° Captive or External (use "E" or "K" Prefix for External version) 5 = 15° Captive or External (use "E" or "K" Prefix for External version 8 = 15° Non-Captive	4 = Bipolar (4 wire) 6 = Unipolar (6 wire)	1 = .001-in (.0254) 2 = .002-in (.051) 3 = .0005-in (.013) 4 = .004-in (.102) AS = .04166-in (.00164)	05 = 5 VDC 12 = 12 VDC Custom V available	**Stroke** Example: –900 used to code Z-Series external linear –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.

Can-Stacks: **Wiring**
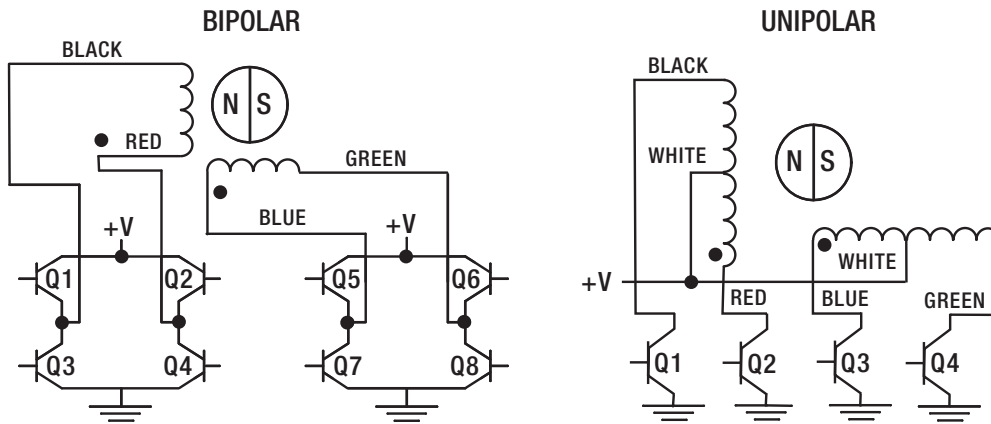
BIPOLAR

UNIPOLAR

Can-Stacks: **Stepping Sequence**

Bipolar	Q2-Q3	Q1-Q4	Q6-Q7	Q5-Q8
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

EXTEND CW

RETRACT CCW

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

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