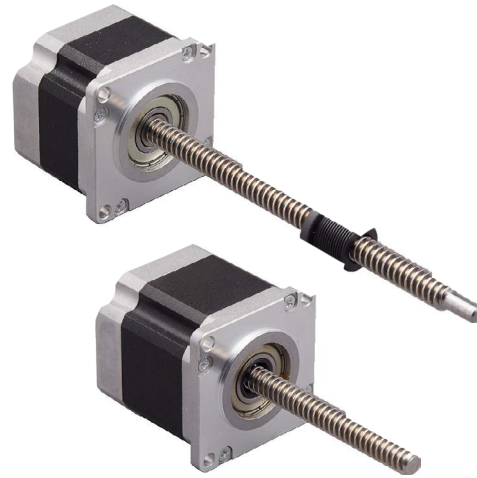


The **APES23** is a 56mm / NEMA 23 frame, hybrid stepper-based linear actuator.

The APES23 is available in standard or custom designs as a linear actuator (non-captive), leadscrew motor (external linear), or guided linear actuator (captive). A variety of resolutions are offered, ranging from 0.0127 to 0.0635 mm per step, with an output force of up to 1779 N (400 lbs.) ElectroCraft's unique motor, shaft and insert designs offer industry-leading output force per frame size while providing superior precision, speed and efficiency.

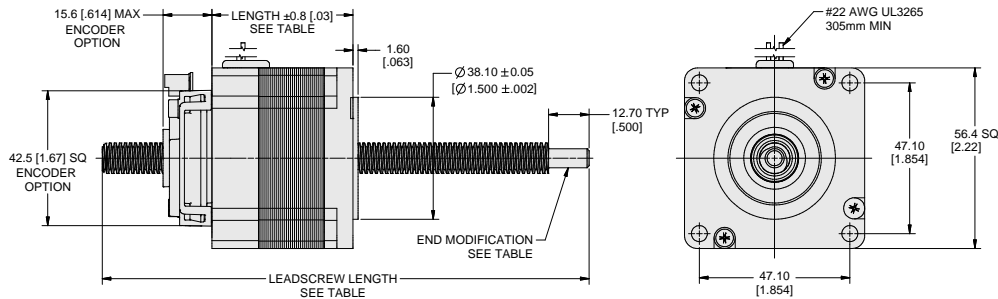


#### APES23 STEPPER LINEAR ACTUATOR

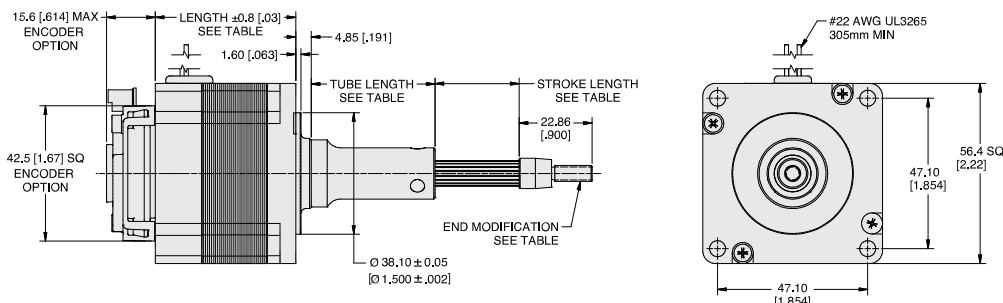
|              |                                      |
|--------------|--------------------------------------|
| <b>Size</b>  | NEMA 23                              |
| <b>Force</b> | 267 N (60 lbs.) to 1779 N (400 lbs.) |

| Stepper Motor Dimensions |                     |                                | Linear Actuator and Leadscrew Motor Models | Guided Linear Actuator Models |                        |
|--------------------------|---------------------|--------------------------------|--|-------------------------------|------------------------|
| Model Number             | Motor Length        | Motor Mounting Threads         | Leadscrew Lengths                          | Tube Lengths                  | Stroke Lengths         |
| APES23-100A              | 1.75 inch (44.5 mm) | 4-40 UNC-2B<br>(M3 x 0.5 - 6H) | X = no leadscrew                           | G = 1.028 inch (26.10mm)      | G = 0.5 inch (12.7 mm) |
| APES23-166A              | 2.21 inch (56 mm)   |                                | A = 3.0 inch (76.2 mm)                     | H = 1.528 inch (38.80 mm)     | H = 1.0 inch (25.4 mm) |
| APES23-294A              | 3.08 inch (78.2 mm) |                                | C = 12.0 inch (304.8 mm)                   | J = 2.528 inch (64.20 mm)     | J = 2.0 inch (50.8 mm) |
|                          |                     |                                | D = 18.0 inch (457.2 mm)                   | K = 3.528 inch (89.60 mm)     | K = 3.0 inch (76.2 mm) |
|                          |                     |                                | E = 24.0 inch (609.6 mm)                   |                               |                        |

#### Linear Actuator and Leadscrew Motor Models



#### Guided Linear Actuator Models



# APES23

## ElectroCraft AxialPower™ Enhanced

### STEPPER LINEAR ACTUATOR



### APES23 Model Number Example

| Thread Description      | Lead (in) | Lead (mm) | Travel/Step (in) | Travel/Step (mm) | Max Force APES23-100 (lbs) | Max Force APES23-100 (N) | Max Force APES23-166 (lbs) | Max Force APES23-166 (N) | Max Force APES23-294 (lbs) | Max Force APES23-294 (N) |
|-------------------------|-----------|-----------|------------------|------------------|----------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|
| <b>S</b> 3/8-10 (1S)    | 0.1000    | 2.540     | 0.0005000        | 0.012700         | 194                        | 863                      | 269                        | 1197                     | 400                        | 1779                     |
| <b>W</b> 3/8-10 (2S)    | 0.2000    | 5.080     | 0.0010000        | 0.025400         | 129                        | 574                      | 170                        | 756                      | 256                        | 1139                     |
| <b>R</b> 3/8-12 (6S)    | 0.5000    | 12.700    | 0.0025000        | 0.063500         | 60                         | 267                      | 84                         | 374                      | 125                        | 556                      |
| <b>L</b> 8mm x 2mm (2S) | 0.1575    | 4.000     | 0.0007874        | 0.020000         | 156                        | 694                      | 217                        | 965                      | 322                        | 1432                     |
| <b>G</b> 8mm x 2mm (4S) | 0.3150    | 8.000     | 0.0015748        | 0.040000         | 66                         | 294                      | 92                         | 409                      | 137                        | 609                      |

| Model Number       | Length (in) | Length (mm) | Weight (g) | Rotor Inertia (g-cm <sup>2</sup> ) |
|--------------------|-------------|-------------|------------|------------------------------------|
| <b>APES23-100A</b> | 1.75        | 44.5        | 500        | 150.4                              |
| <b>APES23-166A</b> | 2.21        | 56          | 700        | 266.1                              |
| <b>APES23-294A</b> | 3.08        | 78.2        | 1069       | 459                                |

APES 23 - 166 A 30 - 0 S B 0 0 - K

| Windings      | Rated Voltage (VDC) | Rated Current (A) | Phase Resistance (Ohm) | Phase Inductance (mH) |
|---------------|---------------------|-------------------|------------------------|-----------------------|
| <b>100A10</b> | 5.9                 | 1.0               | 5.9                    | 19.2                  |
| <b>100A20</b> | 3.0                 | 2.0               | 1.5                    | 4.8                   |
| <b>100A30</b> | 2.1                 | 3.0               | 0.7                    | 2.1                   |
| <b>100A40</b> | 1.5                 | 4.0               | 0.37                   | 1.0                   |
| <b>166A10</b> | 7.8                 | 1.0               | 7.8                    | 37.0                  |
| <b>166A20</b> | 3.8                 | 2.0               | 1.9                    | 9.2                   |
| <b>166A30</b> | 2.8                 | 3.0               | 0.9                    | 4.1                   |
| <b>166A40</b> | 1.9                 | 4.0               | 0.48                   | 2.3                   |
| <b>294A10</b> | 10.6                | 1.0               | 10.6                   | 57.0                  |
| <b>294A20</b> | 5.4                 | 2.0               | 2.7                    | 14.2                  |
| <b>294A30</b> | 3.6                 | 3.0               | 1.2                    | 6.4                   |
| <b>294A40</b> | 2.6                 | 4.0               | 0.66                   | 3.5                   |

| Actuator Type |                        |
|---------------|------------------------|
| <b>0</b>      | Linear Actuator        |
| <b>1</b>      | Leadscrew Motor        |
| <b>2</b>      | Guided Linear Actuator |

| Lead Termination |                   |
|------------------|-------------------|
| <b>0</b>         | Flying Leads      |
| <b>1</b>         | Leads w/Connector |

| Feedback  |                        |
|-----------|------------------------|
| <b>X</b>  | None                   |
| <b>Y*</b> | None - Rear Extension  |
| <b>H</b>  | 400 Line Single Ended  |
| <b>K</b>  | 1000 Line Single Ended |

\* Guided Models Only

| Leadscrew End Features          | Guided Linear End Features |
|---------------------------------|----------------------------|
| <b>0</b> No End Feature         | 8-32 - UNC-2A              |
| <b>4</b>                        | M4 x 0.7 - 6g              |
| <b>7</b> 1/4-28 UNF-2A x 12.7mm | 10-32 - UNF-2A             |
| <b>8</b> M6 x 1.0 x 12.7mm      | M5 x 0.8 - 6g              |
| <b>9</b> Ø.235/Ø.236 x 12.7mm   | Ø6.00 (Ø.236)              |

| Screw Length |                     |
|--------------|---------------------|
| <b>X</b>     | No Leadscrew        |
| <b>A</b>     | 76.2mm (3 inches)   |
| <b>B</b>     | 152.4mm (6 inches)  |
| <b>C</b>     | 304.8mm (12 inches) |
| <b>D</b>     | 457.2mm (18 inches) |
| <b>E</b>     | 609.6mm (24 inches) |
| <b>G*</b>    | 12.7mm (0.5 in)     |
| <b>H*</b>    | 25.4mm (1.0 in)     |
| <b>J*</b>    | 50.8mm (2.0 in)     |
| <b>K*</b>    | 76.2mm (3.0 in)     |

\* Guided Models Only



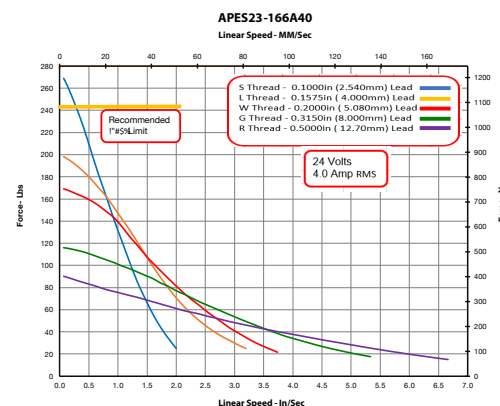
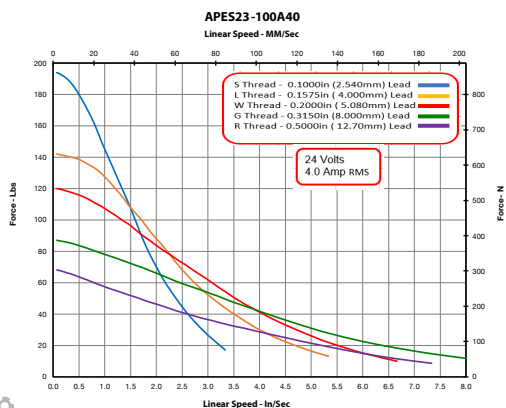
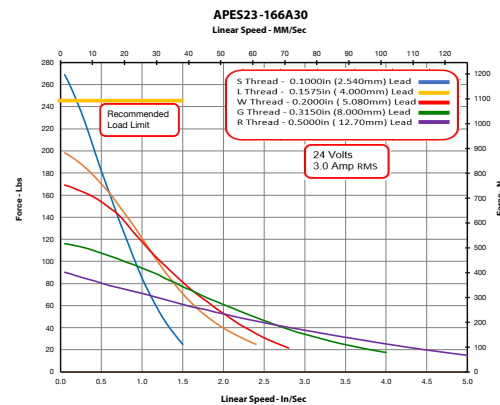
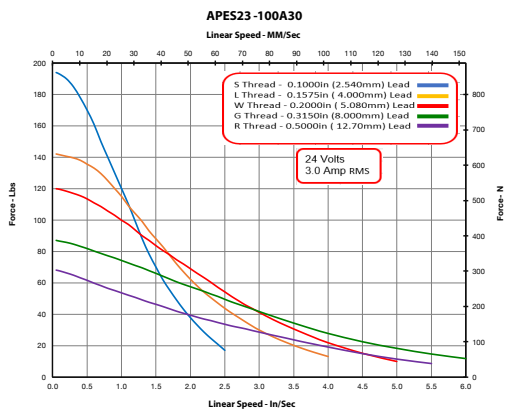
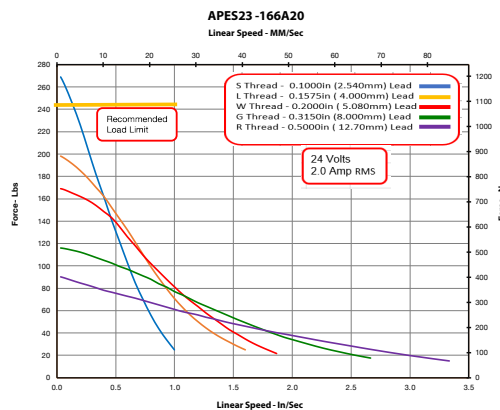
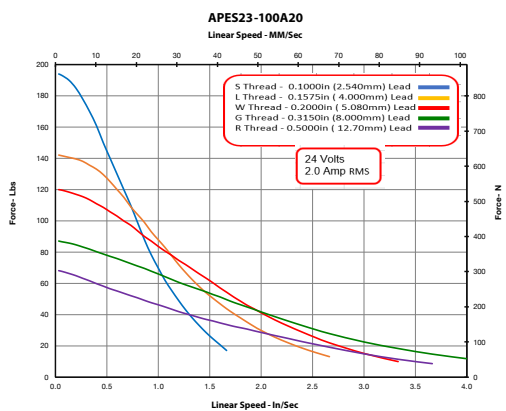
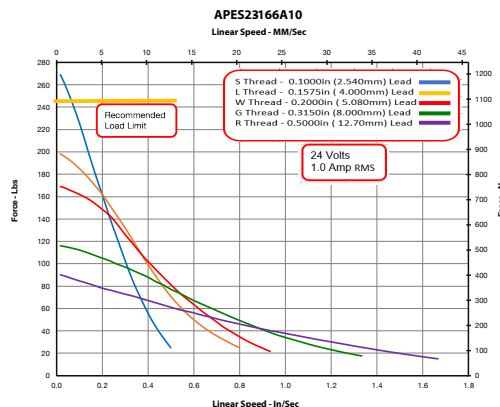
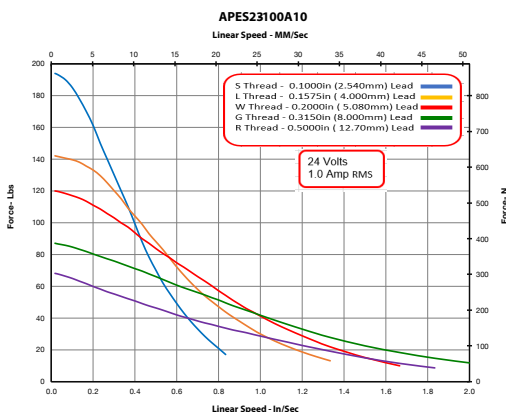
Your Genius. Our Drive.

ElectroCraft, Inc.  
250 McCormick Road,  
Gallipolis, Ohio 45631

Tel: (844) 338-8114  
Fax: (812) 385-3013

Email: sales@electrocraft.com  
www.electrocraft.com

# APES23 Performance Curves



Your Genius. Our Drive.

ElectroCraft, Inc.  
250 McCormick Road,  
Gallipolis, Ohio 45631

Tel: (844) 338-8114  
Fax: (812) 385-3013

Email: sales@electrocraft.com  
www.electrocraft.com

APES23 Performance Curves Cont.

