

23L Series - High Torque Stepper Motors



FEATURES

- **NEMA 23 Frame Size**
- **1.8° or 0.9° Step Angle (see 23L9)**
- **High Torque - Up to 384 oz-in (320 for 23L9)**
- **High Step Accuracy and Resolution**
- **Low Vibration and Noise**
- **Can be Customized for**
 - **Shaft Options**
 - **Cables and Connectors**
- **RoHS Compliant**



DESCRIPTION

The 23L Series High Torque Stepper Motors offer a great value without sacrificing quality. These motors were designed to offer the highest possible torque while minimizing vibration and audible noise. A broad line of motor windings and stack lengths are available off-the-shelf. The standard 8-lead motors can be connected in all possible configurations: series, unipolar, or parallel, to allow the maximum flexibility for your application. We can also customize the winding to perfectly match voltage, current, and maximum operating speed to meet your requirements.

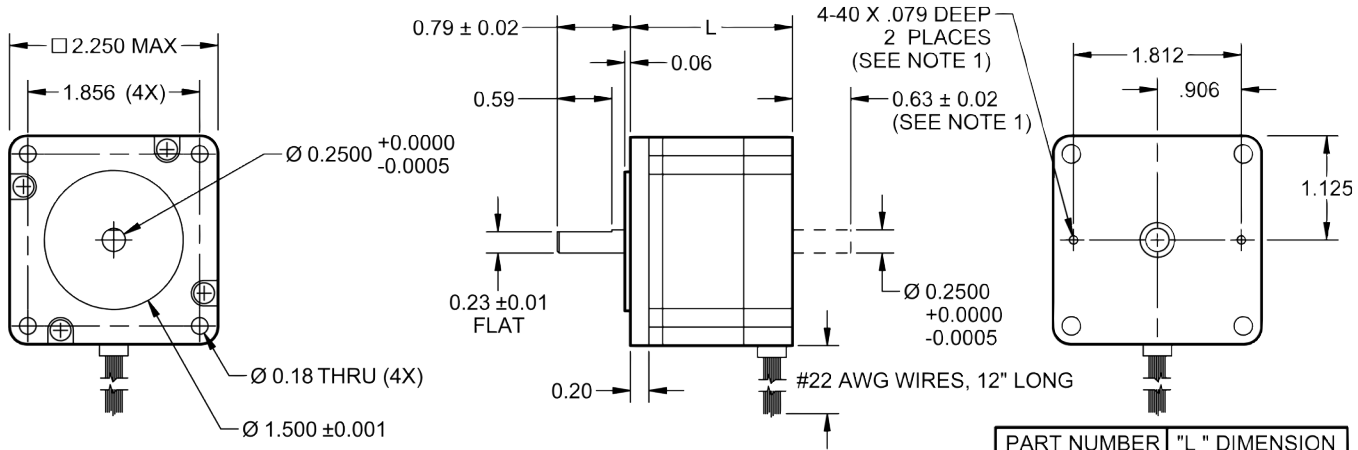
See Accessories on our website for optional motor adders such as encoders, brakes, cables, connectors, and gearboxes.

SPECIFICATIONS

Model #	NEMA Size	Bipolar Torque (oz-in)	Series Current (A)	Unipolar Current (A)	Parallel Current (A)	Series Inductance (mH)	Rotor Inertia (oz-in-sec ²)	Step Angle (degrees)	Shaft Diameter (in)	# of Lead Wires	Weight (lbs)	"L" Length (in)
23L002S-LW8	23	66.00	0.707	1.0	1.414	28.0	0.001813	1.8	0.25	8	1.05	1.70
23L004S-LW8	23	66.00	1.414	2.0	2.828		0.001813	1.8	0.25	8	1.05	1.70
23L006S-LW8	23	66.00	2.121	3.0	4.242		0.001813	1.8	0.25	8	1.05	1.70
23L102S-LW8	23	151.00	0.707	1.0	1.414	40.0	0.003885	1.8	0.25	8	1.54	2.15
23L104S-LW8	23	151.00	1.414	2.0	2.828	10.0	0.003885	1.8	0.25	8	1.54	2.15
23L106S-LW8	23	151.00	2.121	3.0	4.242	4.4	0.003885	1.8	0.25	8	1.54	2.15
23L108S-LW8	23	151.00	2.828	4.0	5.656	2.0	0.003885	1.8	0.25	8	2.20	2.15
23L202S-LW8	23	226.00	0.707	1.0	1.414		0.006734	1.8	0.25	8	2.20	3.10
23L204S-LW8	23	226.00	1.414	2.0	2.828	14.4	0.006734	1.8	0.25	8	2.20	3.10
23L206S-LW8	23	226.00	2.121	3.0	4.242	6.4	0.006734	1.8	0.25	8	2.20	3.10
23L210S-LW8	23	226.00	3.535	5.0	7.070	1.6	0.006734	1.8	0.25	8	2.20	3.10
23L303S-LW8	23	384.00	1.061	1.5	2.121	20.4	0.008288	1.8	0.25	8	3.20	4.05
23L306S-LW8	23	384.00	2.121	3.0	4.242	12.8	0.008288	1.8	0.25	8	3.20	4.05
23L310S-LW8	23	384.00	3.535	5.0	7.070	1.08	0.008288	1.8	0.25	8	3.20	4.05
23L9004S-LW8	23	66.00	1.414	2.0	2.828	4.8	0.001813	0.9	0.25	8	1.05	1.70
23L9104S-LW8	23	151.00	1.414	2.0	2.828	10.0	0.003885	0.9	0.25	8	1.54	2.15
23L9206S-LW8	23	266.00	2.121	3.0	4.242		0.006734	0.9	0.25	8	2.20	3.10
23L9304S-LW8	23	360.00	1.414	2.0	2.828	24.0	0.008288	0.9	0.25	8	3.20	3.10
23L9306S-LW8	23	360.00	2.121	3.0	4.242		0.008288	0.9	0.25	8	3.20	4.05

Notes: The 7th character "S" denotes a single shaft, use "D" for double shaft. Custom leadwires, cables, connectors, and windings are available upon request.

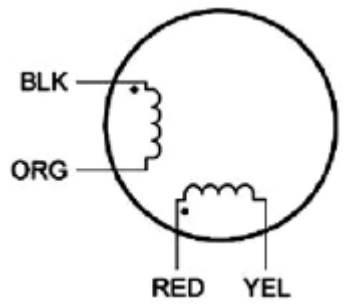
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(All units are inches)

PART NUMBER	"L" DIMENSION
23L0XXX-LWX	1.70 (43.18)
23L1XXX-LWX	2.15 (54.61)
23L2XXX-LWX	3.10 (78.74)
23L3XXX-LWX	4.05 (102.87)

Connection	Lead Wire Connection	Lead Wire Color
4-Lead Bipolar Series MBC or MLP Series	Phase 1 (A)	Black
	Phase 3 (A)	Orange
	Phase 2 (B)	Red
	Phase 4 (B)	Yellow



Step Angle Accuracy:	+/- 5% (Full Step, No Load)	Insulation Resistance:	100M Ohm Min, 500VDC
Resistance Accuracy:	+/- 10%	Dielectric Strength:	500 VAC for 1 minute
Inductance Accuracy:	+/- 20%	Shaft Radial Play:	0.00079" Max (1.0 lb load)
Temperature Rise:	80° C Max (2 Phases On)	Shaft Axial Play:	0.00315" Max (1.0 lb load)
Ambient Temperature:	-20° to +50° C	Max Radial Force:	6.3 lbs (0.79" from flange)
Insulation Type:	Class B	Max Axial Force:	2.3 lbs-Force

DIMENSIONS

WIRING INFORMATION

SPECIFICATIONS