

# Moteur pas à pas -TPP23

## ELECTROCRAFT RapidPower Plus – Stepper Motor

[www.rosier.fr](http://www.rosier.fr)

Size	Holding Torque oz-in (Ncm)	Speeds up to RPS
Nema 23, 0.9° or 1.8°	240 (169)	90



### Powerful. Precise.

This 1.8° degree size 23 hybrid DC stepping motor has permanently lubricated ball bearings. The bi-directional size 23 has holding torque up to 240 oz-in with a step angle accuracy of  $\pm 3\%$ .

### To build your own motor, choose the:

**1 - Frame Size**  
( Metric or Imperial )

**2 - Torque**  
( Stack Length )

**3 - Winding**

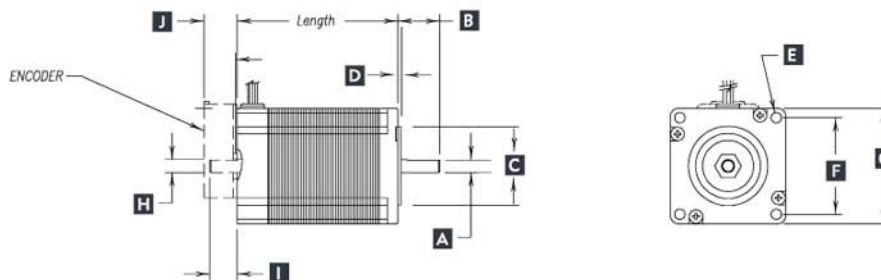
**4 - Features**  
( See page 27 )

a. **TPP23** — **90** — **A 30** — **1100** — **X**  
 Product Name Frame Size Holding Torque (oz-in) Bipolar Current (Amps x 10) Step Angle Front Shaft Rear Shaft Lead Option Encoder

b. **TPP23M** — **64** — **V 60** — **1100** — **X**  
 Product Name Frame Size Optional Metric Holding Torque (Ncm) Bipolar Voltage (Volts x 10) Step Angle Front Shaft Rear Shaft Lead Option Encoder

### Step 1: TPP11M Frame Size Drawing Key

Model	MAX Length	A Front Shaft Diameter	B Front Shaft Length	C Pilot Diameter	D Pilot Length (Ref)	E Mount Hole Callout (Ref)	F Mount Hole Spacing (Ref)	G Flange External Dimension (Ref)	H Rear Shaft Diameter	I Rear Shaft Length	J Encoder Length (max)
TPP23-90	1.75 in $\pm 0.03$										
TPP23-150	2.21 in $\pm 0.03$	0.2500 in 0.2495 in	0.81 in $\pm 0.03$	1.502 in 1.498 in	0.06 in	[4] 0.205 $\pm 0.10$ Through	1.86 in	2.22 in	0.2500 in 0.2495 in	0.53 in $\pm 0.04$	0.68
TPP23-240	3.09 in $\pm 0.03$										
TPP23M-64	44.5 mm $\pm 0.8$										
TPP23M-106	56.1 mm $\pm 0.8$	7.988 mm 7.976 mm	20.5 mm $\pm 0.08$	38.15 mm 38.05 mm	1.5 mm	(4) 5.08 mm $\pm 0.25$ Through	47.1 mm	56.4 mm	4.998 mm 4.986 mm	16.5 mm $\pm 1.0$	17 mm
TPP23M-170	78.5 mm $\pm 0.8$										

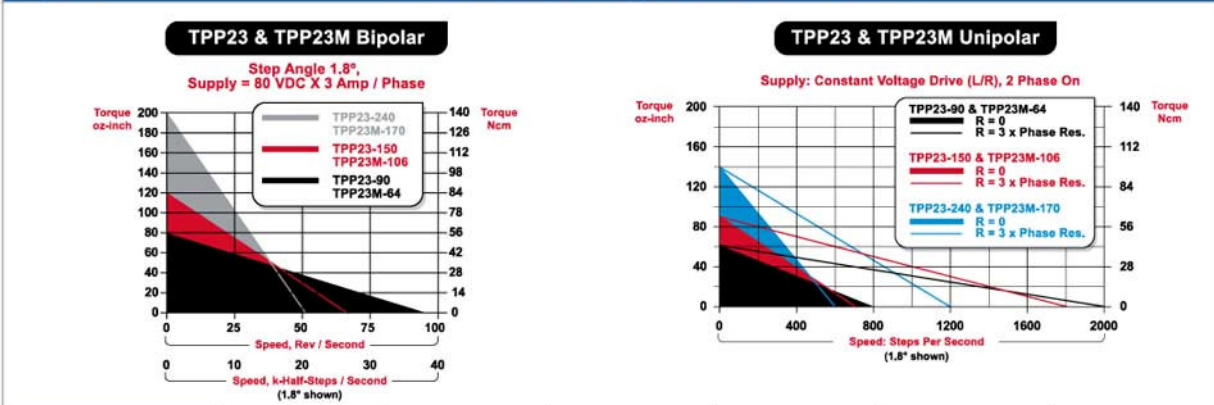


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### Step 2: TPP23 & TPP23M Torque and Mechanical Data



Stack Size Models	90A	90V	150A	150V	240A	240V
Holding Torque Bipolar oz-in (Ncm)	90.0 (63.55)	90.0 (63.55)	150.0 (105.92)	150.0 (105.92)	240.0 (169.46)	240.0 (169.46)
Holding Torque Unipolar oz-in (Ncm)	N/A	72.0 (50.8)	N/A	120.0 (84.7)	N/A	168.0 (118.66)
Step Angle (°/step)	0.9° or 1.8°	0.9° or 1.8°	0.9° or 1.8°	0.9° or 1.8°	0.9° or 1.8°	0.9° or 1.8°
Rotor Inertia (oz-in-sec <sup>2</sup> )	0.002	0.002	0.0035	0.0035	0.0061	0.0061

### Step 3: Available Windings

Bipolar														
Imperial	90A10	90A20	90A30	150A10	150A20	150A30	240A10	240A20	240A30					
Metric	64A10	64A20	64A30	106A10	106A20	106A30	170A10	170A20	170A30					
Current Bipolar (A/Phase)	1.0	2.0	3.0	1.0	2.0	3.0	1.0	2.0	3.0					
Phase Resistance (ohm)	5.78	1.5	0.6	7.92	1.9	0.8	9.13	2.33	1					
Phase Inductance (mH)	20.3	5.2	2	35	8.6	3.5	45.4	11.5	4.8					
Unipolar														
Imperial	90V18	90V30	90V60	90V120	150V23	150V38	150V60	150V76	150V154	240V28	240V45	240V60	240V92	240V179
Metric	64V18	64V30	64V60	64V120	106V23	106V38	106V60	106V76	106V154	170V28	170V45	170V60	170V92	170V179
Unipolar (V/Phase)	1.8	3.0	6.0	11.9	2.3	3.8	6.0	7.6	15.4	2.8	4.5	6.0	9.2	17.9
Unipolar (A/Phase)	3.0	2.0	1.0	0.5	3.0	2.0	1.3	1.0	0.5	3.0	2.0	1.5	1.0	0.5
Phase Resistance (ohm)	0.61	1.57	6	23.5	0.76	1.91	4.73	7.59	30.9	0.92	2.24	4	9.23	35.7
Phase Inductance (mH)	1	2.6	10.8	41.4	1.6	4.2	11	17.7	67.3	2.1	5.2	9.25	22.5	93.8
Bipolar (A/Phase)*	2.1	1.4	0.7	0.4	2.1	1.4	0.9	0.7	0.4	2.1	1.4	1.1	0.7	0.4

\*Data represents Unipolar windings configured as Bipolar



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