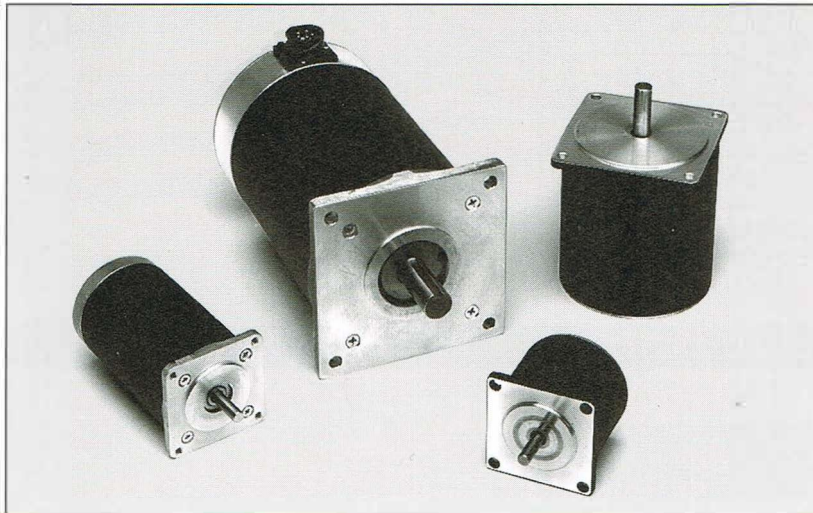


Hybrid Step Motors



NEMA 23 & 34 Sizes
Cost Efficient Designs
Brushless Construction
High Power Rate

Description

This standard series of 1.8° hybrid design step motors, available in NEMA sizes 23 and 34 is an ideal low-cost motor solution in applications that require holding torques from 60 to 450 oz-in (unipolar).

Our step motors have been manufactured

for more than 25 years. Many standard and custom designs have been produced to meet a wide variety of customer applications. Elwood specializes in producing "modi-fied standards" to meet your exact electrical, mechanical and environmental specifications.

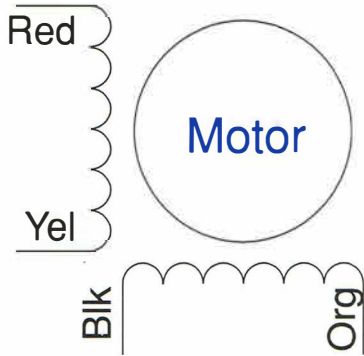
Features

- 1.8° step angle
- Long life design
- Torque to 1600 oz-in
- Compact construction
- 2.25 to 4.25 in. diameter
- Precision ball bearing construction
- ±5% noncumulative step accuracy
- Can be full, half or microstepped
- Maintenance-free

Applications

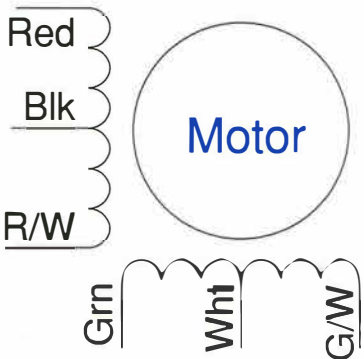
- Material handling systems
- Medical instruments
- Clean rooms
- Robotics
- Packaging equipment
- Factory automation
- Scanning devices
- Machine tools
- Pumps
- Textile machines

FOUR LEAD MOTORS



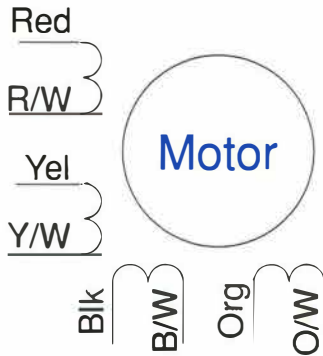
WIRE COLOR	DRIVE CONNECTION
ORANGE	A+
BLACK	A-
RED	B+
YELLOW	B-
BIPOLAR DRIVE CONNECTIONS	

SIX LEAD MOTORS



WIRE COLOR	DRIVE CONNECTION
GRN / WHITE	A+
WHITE	A COMMON
GREEN	A-
RED	B+
BLACK	B COMMON
RED / WHITE	B-
BIPOLAR & UNIPOlar SERIES CONNECTIONS	

EIGHT LEAD MOTORS

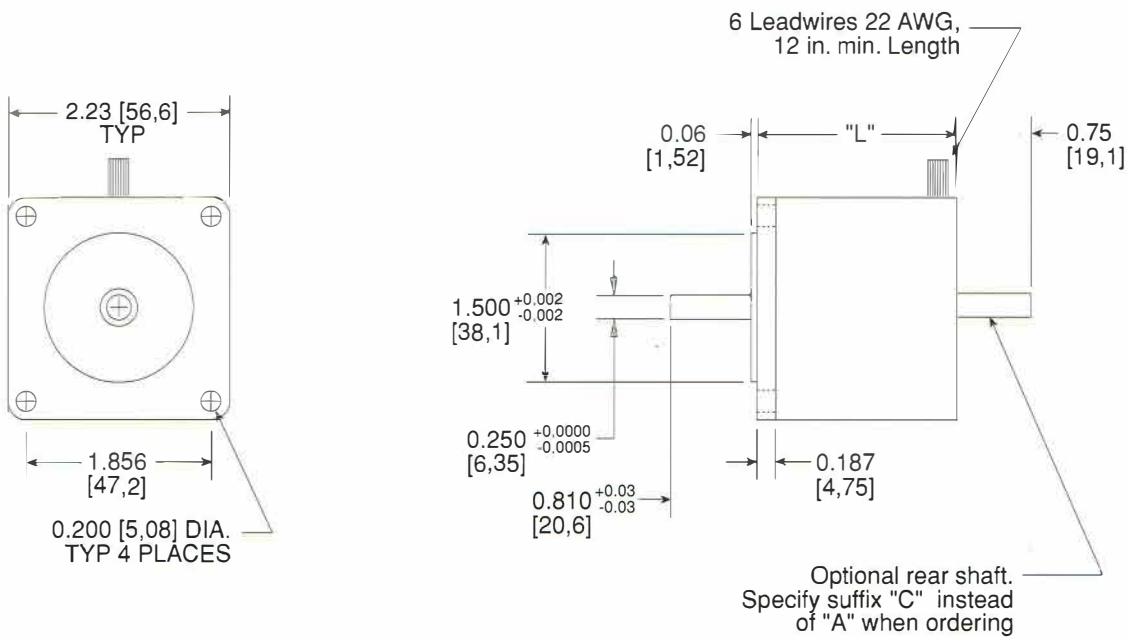


WIRE COLOR	DRIVE CONNECTION
ORANGE	A+
ORG / WHITE	A COMMON
BLK / WHITE	
BLACK	A-
RED	B+
RED / WHITE	B COMMON
YEL / WHITE	
YELLOW	B-
UNIPOlar OR BIPOlar DRIVE SERIES CONNECTIONS	

WIRE COLOR	DRIVE CONNECTION
ORANGE	A+
BLK / WHITE	
ORG / WHITE	A-
BLACK	
RED	B+
YEL / WHITE	
RED / WHITE	B-
YELLOW	
BIPOlar DRIVE PARALLEL CONNECTIONS	

SIZE 23 BASIC MOTOR MODELS AND SPECIFICATIONS

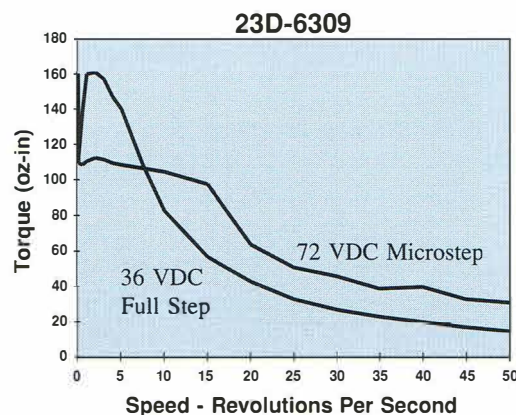
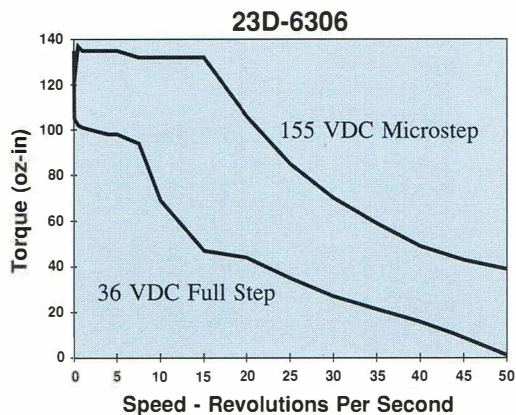
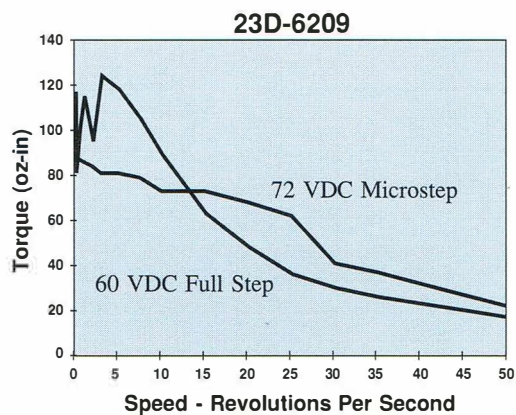
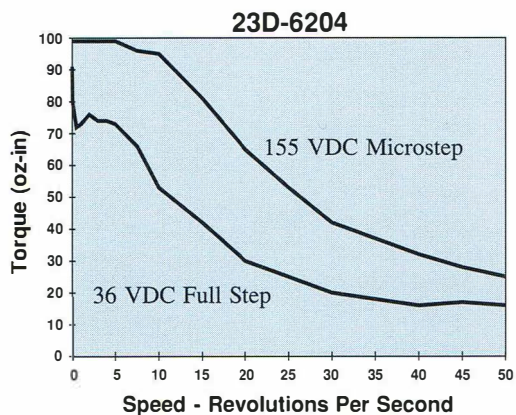
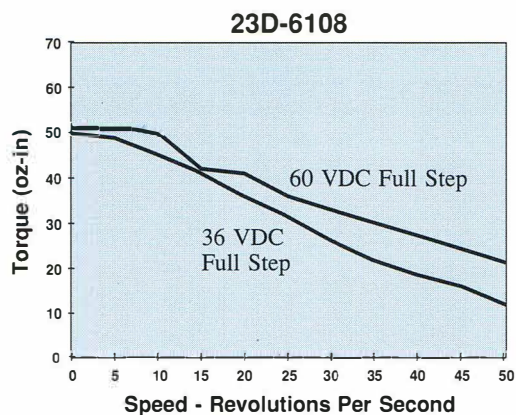
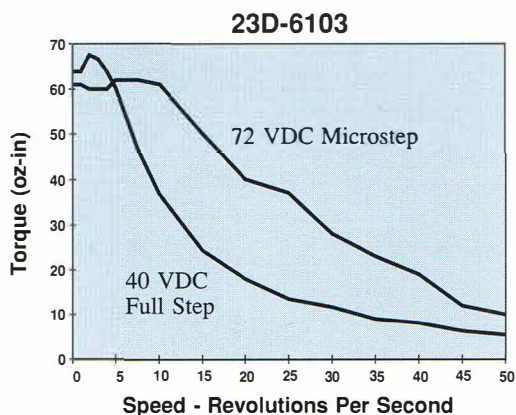
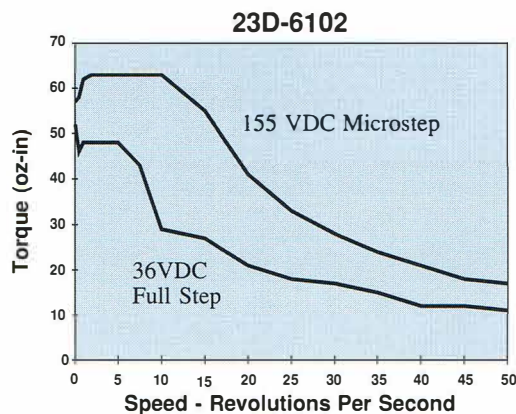
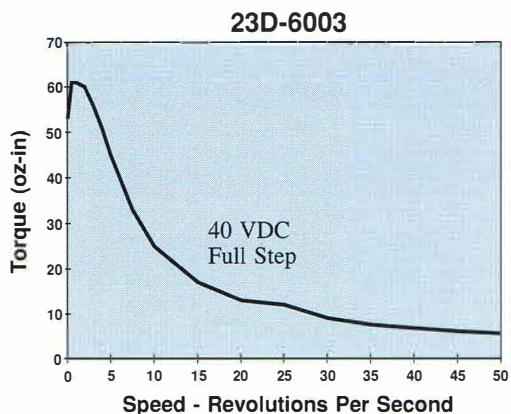
BASIC MODELS	STATIC TORQUE oz-in (N-m)	RATED CURRENT (AMPS)	RATED VOLTAGE (VDC)	RESISTANCE PER PHASE (OHMS)	INDUCTANCE PER PHASE (mH)	ROTOR INERTIA oz-in ² (Kg-cm ²)	"L" in (mm)	WEIGHT lbs (Kg)
23D-6003A	45 (.31)	1.20	6.00	5.00	5.00	0.36 (.06)	1.50 (38)	1.00 (.45)
23D-6008A	45 (.31)	0.50	10.00	20.00	20.00	0.36 (.06)	1.50 (38)	1.00 (.45)
23D-6102A	60 (.42)	1.00	5.00	5.00	8.00	0.63 (.11)	2.00 (51)	1.00 (.45)
23D-6103A	60 (.42)	2.00	3.00	1.60	2.00	.63 (.11)	2.00 (51)	1.00 (.45)
23D-6108A	60 (.42)	3.80	1.25	0.33	0.40	0.63 (.11)	2.00 (51)	1.00 (.45)
23H-501A	80 (.56)	1.20	6.00	5.00	8.00	0.66 (.12)	2.25 (57)	1.25 (.57)
23H-531A	80 (.56)	3.90	1.90	0.50	0.60	0.66 (.12)	2.25 (57)	1.25 (.57)
23D-6204A	100 (.71)	1.80	4.70	2.60	5.00	1.29 (.23)	3.25 (83)	2.00 (.91)
23D-6209A	100 (.71)	4.70	1.70	0.37	0.60	1.29 (.23)	3.25 (83)	2.00 (.91)
23D-6306A	150 (1.05)	2.90	3.40	1.16	2.90	1.75 (.32)	4.00 (102)	3.00 (1.36)
23D-6309A	150 (1.05)	4.60	2.20	0.48	0.90	1.75 (.32)	4.00 (102)	3.00 (1.36)



Electrical and mechanical modifications are available. Please consult technical support for assistance.
*Dimension "L" shown for standard grade. Lengths vary for wash down and food grade.

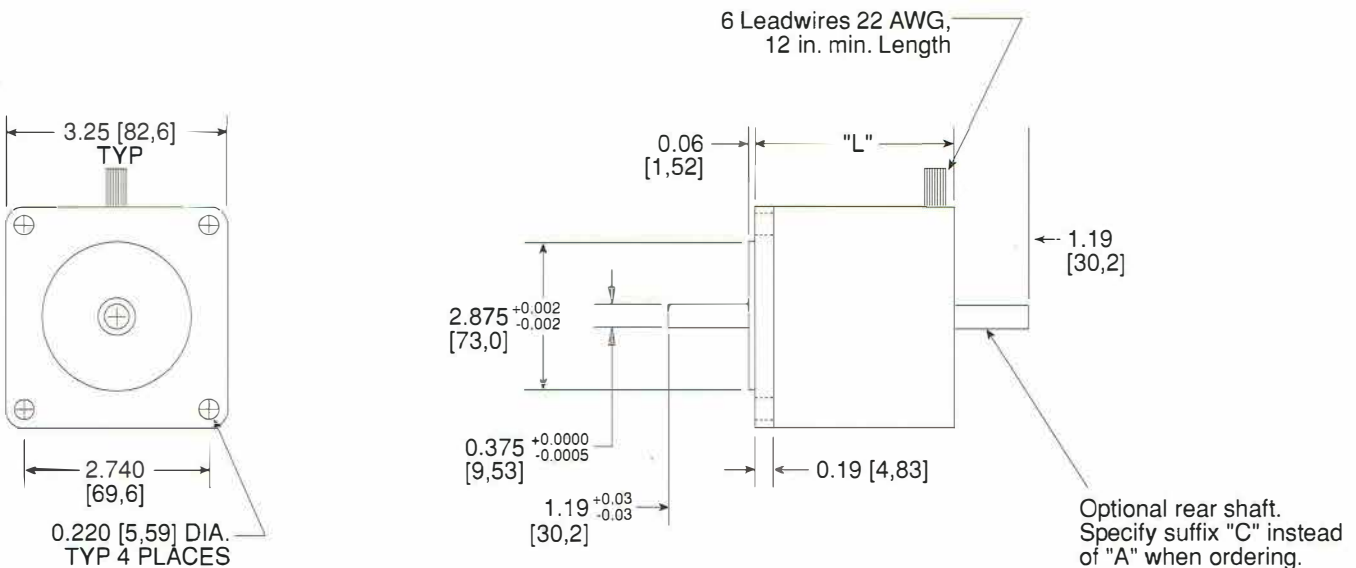
SIZE 23 SPEED/TORQUE CURVES

All motors connected in series with driver voltage, and step mode as noted in each curve.



SIZE 34 BASIC MOTOR MODELS AND SPECIFICATIONS

BASIC MODELS	STATIC TORQUE oz-in (N-m)	RATED CURRENT (AMPS)	RATED VOLTAGE (VDC)	RESISTANCE PER PHASE (OHMS)	INDUCTANCE PER PHASE (mH)	ROTOR INERTIA oz-in ² (Kg-cm ²)	"L" in (mm)	WEIGHT lbs (Kg)
34D-9106A	150 (1.05)	3.00	2.90	0.95	3.20	3.52 (0.64)	2.54 (66)	3.00 (1.36)
34D-9109A	150 (1.05)	4.80	1.90	0.39	1.20	3.52 (0.64)	2.54 (66)	3.00 (1.36)
34D-9208A	300 (2.11)	4.00	3.00	0.75	3.30	6.56 (1.19)	3.70 (94)	5.00 (2.27)
34D-9209A	300 (2.11)	4.60	2.50	0.55	2.00	6.56 (1.19)	3.70 (94)	5.00 (2.27)
34D-9212A	300 (2.11)	1.50	8.00	5.30	22.00	6.56 (1.19)	3.70 (94)	5.00 (2.27)
34D-9307A	450 (3.17)	3.50	4.50	1.20	5.40	10.11 (1.84)	5.31 (135)	8.00 (3.63)
34D-9311A	450 (3.17)	5.50	2.90	0.52	2.90	10.11 (1.84)	5.31 (135)	8.00 (3.63)
34D-9314A	450 (3.17)	7.00	2.90	0.31	1.70	10.11 (1.84)	5.31 (135)	8.00 (3.63)



Electrical and mechanical modifications are available. Please consult technical support for assistance.
*Dimension "L" shown for standard grade. Lengths vary for wash down and food grade.

SIZE 34 SPEED/TORQUE CURVES

All motors connected in series with driver voltage, and step mode as noted in each curve.

