Permanent Magnet DC Motors

C23, 34, 42 Series

Available with integrated tachometers, resolvers and encoders for closed-loop control

Moog Components Group offers a complete line of 2.25 to 4 inches diameter permanent magnet motors. Integrated feedback devices (tachometers and encoders) are available for closed-loop control.

We offer a variety of standard sizes. If mechanical modifications are needed, custom options are available for your specific application. Our engineering department is prepared to discuss your application to help tailor a permanent magnet motor to fit your needs.

TYPICAL APPLICATIONS

Robotics and factory automation
- Pick-and-place robots
- Positioning tables
- Welding wire feeders
- Automatic guided vehicles
- Barcoding equipment

Computer and office equipment
- Copier and microfilm machines
- Printers / plotters
- Tape drives

Industrial equipment
- Automatic door actuators
- Material handling equipment
- Packaging, marking and sorting equipment
- Machine tools
- Web drives
- Gimbal controlled cameras for security systems
- Antenna drives

Medical equipment
- Electric wheelchairs and scooters
- Bio-analytical equipment
- Medical pumps
- Centrifuges

FEATURES

- Long-life, externally replaceable brushes; various grade materials available for high / low voltage applications
- Superior protection provided by totally enclosed, high strength, zinc-plated steel housing
- Shaft configuration optional
- Machined aluminum end-cap for precise locating; round or square. Precision-tapped mounting holes provided to your specifications
- Silicon steel laminations
- Diamond turned commutator for quiet operation and long brush life
- Skewed rotors available for minimal cogging torque
- Rotors are dynamically balanced to ISO G2.5
- Available with standard NEMA mountings
- Polyester resin impregnated insulated windings
- Double-shielded, permanently lubricated ball bearings, ABEC 5 standard; others optional

BENEFITS

- Optional pre-aligned encoders provide accurate positioning
- Tachometers are available – 7, 10, 14 V / KRPM
- These motors offer continuous torques from 16.5 to 560 oz-in, peak torques from 125 to 3500 oz-in
- Motor lengths – 3.33 to 9.0 inches
- Diameter – 2.25 to 4.0 inches
- Permanently lubricated bearings
- Available with carbon steel or stainless steel shafts; single or double ended extensions
- Custom shaft and end cap configurations are also available

Note: *This catalog contains basic marketing information and general part descriptions of Moog Components Group product lines. With respect to the U.S. export regulations, the products described herein are controlled by the U.S. Commerce Department or the U.S. State Department. Contact Moog Components Group for additional detail on the export controls that are applicable to your part.*

SPECIFICATION AND NUMBERING SYSTEM

Part Numbering System

C□□-L□□ W□□M□□ □□□-□□□

FRAME
COMMERCIAL DC MOTOR
23 – Size 23
34 – Size 34
42 – Size 42

LENGTH
33 –
40 –
45 –
50 –
55 –
60 –
70 –
80 –
90 –
Refer to motor data table for standard offerings.

WINDING
10 –
20 –
30 –
40 –
50 –
Refer to motor data table for standard offerings. Call factory for custom windings.

MECHANICAL OPTIONS
00 – Standard Shaft
Refer to Index for standard motor options offered. Many other custom mechanical options are available.

FEEDBACK OPTIONS
FEEDBACK OPTIONS
T – Tachometer
R – Resolver
E – Encoder

FACTORY OPTIONS
For custom unit types.

C23 SERIES SPECIFICATIONS – *Continuous Stall Torque 16.5 - 27 oz-in (0.117 - 0.191 Nm)*
Peak Torque 125 - 250 oz-in (0.883 - 1.765 Nm)

Part Number*		C23-L33					C23-L40				
Winding Code**		10	20	30	40	50	10	20	30	40	50
L = Length	inches	3.33					4				
	millimeters	84.6					101.6				
Peak Torque	oz-in	125.0	125.0	125.0	125.0	125.0	250.0	250.0	250.0	250.0	250.0
	Nm	0.883	0.883	0.883	0.883	0.883	1.765	1.765	1.765	1.765	1.765
Continuous Stall Torque	oz-in	16.5	16.5	16.5	16.5	16.5	27.0	27.0	27.0	27.0	27.0
	Nm	0.117	0.117	0.117	0.117	0.117	0.191	0.191	0.191	0.191	0.191
Rated Terminal Voltage	volts DC	12 -24	12 - 24	12 -36	12 - 60	12 - 60	12 - 24	12 - 48	12 - 60	12 - 60	12 - 60
Terminal Voltage	volts DC	12	12	24	36	48	12	24	36	48	60
Rated Speed	RPM	4700	2150	4200	3750	3000	2300	3600	3500	2850	2250
	rad/sec	492	225	440	393	314	241	377	367	298	236
Rated Torque	oz-in	7.5	12.6	12.7	14.4	15.8	17.3	25.5	25.3	25.6	24.2
	Nm	0.05	0.09	0.09	0.10	0.11	0.12	0.18	0.18	0.18	0.17
Rated Current	Amps	4.75	4.3	3	2	1.4	4.9	4.3	2.75	1.8	1.1
Rated Power	Watts	26.1	20.0	39.5	40.0	35.1	29.4	67.9	65.5	54.0	40.3
	Horsepower	0.03	0.03	0.05	0.05	0.05	0.04	0.09	0.09	0.07	0.05
Torque Senstivity	oz-in/amp	2.65	4.25	6.2	10.25	15.75	4.84	7.74	12	18.5	28.75
	Nm/amp	0.0187	0.0300	0.0438	0.0724	0.1112	0.0342	0.0547	0.0847	0.1306	0.2030
Back EMF	volts/KRPM	2	3.15	4.6	7.6	11.5	3.58	5.72	8.82	13.82	21.22
	volts/rad/sec	0.0191	0.0301	0.0439	0.0726	0.1098	0.0342	0.0546	0.0842	0.1320	0.2026
Terminal Resistance	ohms	0.60	1.00	1.70	4.00	9.00	0.70	0.96	2.30	5.50	12.00
Terminal Inductance	mH	0.35	0.94	2.00	5.50	13.00	0.50	1.30	3.10	7.36	18.00
Motor Constant	oz-in/watt^1/2	3.4	4.3	4.8	5.1	5.3	5.8	7.9	7.9	7.9	8.3
	Nm/watt	0.024	0.030	0.034	0.036	0.037	0.041	0.056	0.056	0.056	0.059
Rotor Inertia	oz-in-sec^2	0.0022	0.0022	0.0022	0.0022	0.0022	0.004	0.004	0.004	0.004	0.004
	g-cm^2	155.4	155.4	155.4	155.4	155.4	282.5	282.5	282.5	282.5	282.5
Friction Torque	oz-in	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Nm	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Thermal Resistance	°C/watt	6.2	6.2	6.2	6.2	6.2	5.4	5.4	5.4	5.4	5.4
Damping Factor	oz-in/KRPM	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Nm/KRPM	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Weight	oz	27	27	27	27	27	38	38	38	38	38
	g	765	765	765	765	765	1077	1077	1077	1077	1077
Electrical Time Constant	millisecond	0.5833	0.9400	1.1765	1.3750	1.4444	0.7143	1.3584	1.3478	1.3382	1.5000
Mech. Time Constant	millisecond	26.07623	17.2056	13.72994	11.82747	11.44547	16.91906	9.052773	9.100907	9.00927	8.237676
Speed/Torque Gradient	rpm/oz-in	-113.2075	-74.69655	-59.60729	-51.34788	-49.68944	-40.39891	-21.61598	-21.73091	-21.51211	-19.66971

(continued on next page)

Notes:
1. For MS (military style) connector, please specify connector housing and terminal.
2. Data for informational purposes only. Should not be considered a binding performance agreement. For specific applications, please contact the factory.

*Many other custom mechanical options are available – consult factory.
**Many other winding options are available – consult factory.

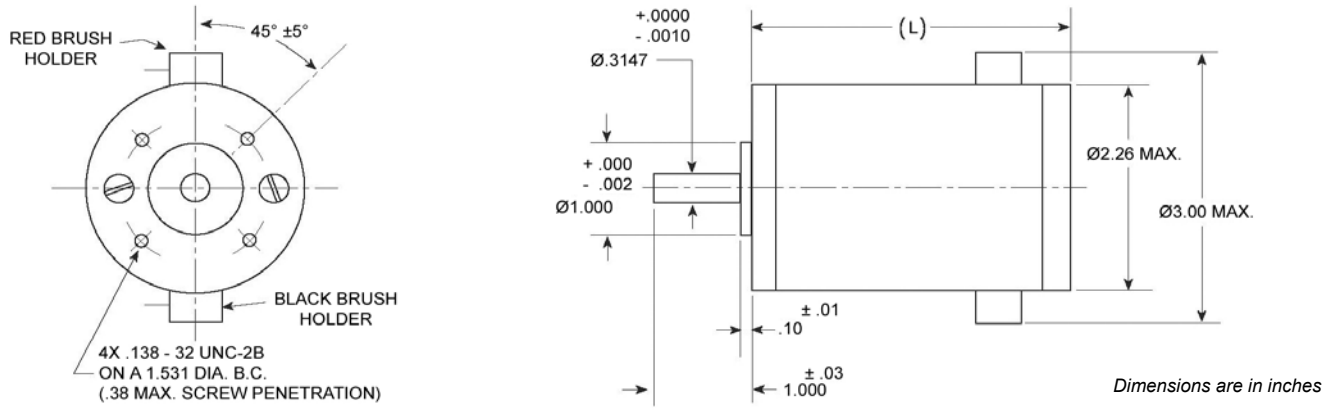
C23 SERIES SPECIFICATIONS – *Continuous Stall Torque 34 - 50 oz-in (0.240 - 0.353 Nm)*
Peak Torque 310 - 430 oz-in (2.189 - 3.037 Nm)

Part Number*		C23-L45					C23-L50					C23-L55				
Winding Code**		10	20	30	40	50	10	20	30	40	50	10	20	30	40	50
L = Length	inches	4.5					5					5.45				
	millimeters	114.3					127.0					138.4				
Peak Torque	oz-in	310.0	310.0	310.0	310.0	310.0	360.0	360.0	360.0	360.0	360.0	430.0	430.0	430.0	430.0	430.0
	Nm	2.189	2.189	2.189	2.189	2.189	2.542	2.542	2.542	2.542	2.542	3.037	3.037	3.037	3.037	3.037
Continuous Stall Torque	oz-in	34.0	34.0	34.0	34.0	34.0	42.0	42.0	42.0	42.0	42.0	50.0	50.0	50.0	50.0	50.0
	Nm	0.240	0.240	0.240	0.240	0.240	0.297	0.297	0.297	0.297	0.297	0.353	0.353	0.353	0.353	0.353
Rated Terminal Voltage	volts DC	12 -24	12 - 48	12 -60	12 - 60	12 - 60	12 - 24	12 - 60	12 - 60	18 - 60	24 - 60	12 - 24	12 - 60	12 - 60	18 - 60	24 - 60
Terminal Voltage	volts DC	12	24	36	48	60	12	24	36	48	60	12	24	36	48	60
Rated Speed	RPM	1950	2600	2600	2100	1555	1600	2150	2150	1800	1283	1350	1800	1700	1300	887
	rad/sec	204	272	272	220	163	168	225	225	188	134	141	188	178	136	93
Rated Torque	oz-in	25.3	26.5	25.8	23.3	23	27.1	30.1	32	31.5	34.3	36.4	39.3	40.5	40.9	43.5
	Nm	0.18	0.19	0.18	0.16	0.16	0.19	0.21	0.23	0.22	0.24	0.26	0.28	0.29	0.29	0.31
Rated Current	Amps	5.8	3.75	2.4	1.4	0.95	5.1	3.5	2.4	1.5	1.05	5.6	3.75	2.5	1.6	1.1
Rated Power	Watts	36.5	51.0	49.6	36.2	26.5	32.1	47.9	50.9	42.0	32.6	36.4	52.3	50.9	39.3	28.6
	Horsepower	0.05	0.07	0.07	0.05	0.04	0.04	0.06	0.07	0.06	0.04	0.05	0.07	0.07	0.05	0.04
Torque Senstivity	oz-in/amp	6.06	9.75	14.9	23.5	36	7.32	11.7	18	28.3	43.4	8.78	14.04	21.6	34	52.1
	Nm/amp	0.0428	0.0689	0.1052	0.1659	0.2542	0.0517	0.0826	0.1271	0.1998	0.3065	0.0620	0.0991	0.1525	0.2401	0.3679
Back EMF	volts/KRPM	4.5	7.2	11	17.25	26.5	5.41	8.65	13.3	20.9	32	6.49	10.38	16	25.14	38.5
	volts/rad/sec	0.0430	0.0688	0.1050	0.1647	0.2531	0.0517	0.0826	0.1270	0.1996	0.3056	0.0620	0.0991	0.1528	0.2401	0.3676
Terminal Resistance	ohms	0.54	1.40	3.27	8.13	19.0	0.63	1.60	3.20	7.00	16.50	0.56	1.43	3.39	8.40	19.10
Terminal Inductance	mH	0.72	1.75	4.26	10.24	24.20	0.77	1.96	4.66	11.44	27.00	0.97	2.38	5.50	13.73	32.28
Motor Constant	oz-in/watt^1/2	8.2	8.2	8.2	8.2	8.2	9.3	9.2	10.1	10.7	10.7	11.7	11.7	11.7	11.7	11.7
	Nm/watt	0.058	0.058	0.058	0.058	0.058	0.065	0.065	0.071	0.076	0.075	0.083	0.083	0.083	0.083	0.083
Rotor Inertia	oz-in-sec^2	0.0052	0.0052	0.0052	0.0052	0.0052	0.0065	0.0065	0.0065	0.0065	0.0065	0.0078	0.0078	0.0078	0.0078	0.0078
	g-cm^2	367.2	367.2	367.2	367.2	367.2	459.0	459.0	459.0	459.0	459.0	550.8	550.8	550.8	550.8	550.8
Friction Torque	oz-in	5	5	5	5	5	5	5	5	5	5	6	6	6	6	6
	Nm	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Thermal Resistance	°C/watt	4.7	4.7	4.7	4.7	4.7	4.3	4.3	4.3	4.3	4.3	3.9	3.9	3.9	3.9	3.9
Damping Factor	oz-in/KRPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
	Nm/KRPM	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002
Weight	oz	46	46	46	46	46	56	56	56	56	56	65	65	65	65	65
	g	1304	1304	1304	1304	1304	1588	1588	1588	1588	1588	1843	1843	1843	1843	1843
Electrical Time Constant	millisecond	1.3309	1.2500	1.3028	1.2595	1.2670	1.2300	1.2250	1.4563	1.6343	1.6364	1.7321	1.6643	1.6224	1.6345	1.6386
Mech. Time Constant	millisecond	10.80095	10.85778	10.86223	10.91902	10.90021	10.75786	10.75915	9.096742	8.054255	8.085451	8.025833	8.013327	8.010641	8.025579	8.020641
Speed/Torque Gradient	rpm/oz-in	-19.83865	-19.94302	-19.95119	-20.0555	-20.02096	-15.8076	-15.8095	-13.36675	-11.83492	-11.88076	-9.82763	-9.812617	-9.809028	-9.82732	-9.821273

Notes:
1. For MS (military style) connector, please specify connector housing and terminal.
2. Data for informational purposes only. Should not be considered a binding performance agreement. For specific applications, please contact the factory.

*Many other custom mechanical options are available – consult factory.
**Many other winding options are available – consult factory.

C23 Typical Outline Drawing

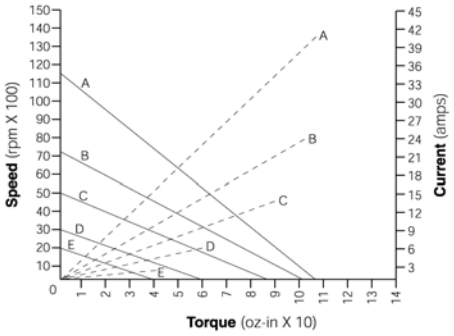


Dimensions are in inches

IMPORTANT
Typical performance characteristics at 25°C. The operational life of any motor is dependent upon individual operating parameters, environment, temperature and other factors. Your specific application results may vary. Please consult the factory to discuss your requirements.

C23 Torque / Speed Curves

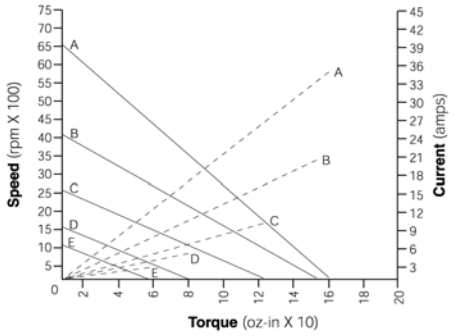
C23-L33: 24 Volt input



A = C23-L33-W10
B = C23-L33-W20
C = C23-L33-W30
D = C23-L33-W40
E = C23-L33-W50

OPERATING CURRENT
OPERATING SPEED

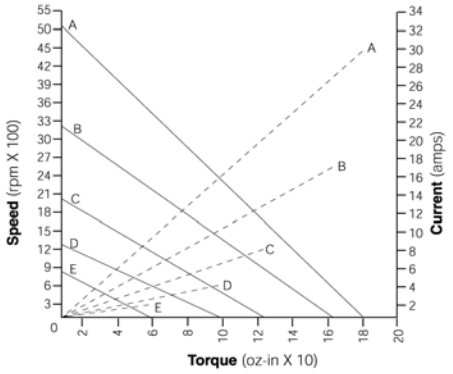
C23-L40: 24 Volt input



A = C23-L40-W10
B = C23-L40-W20
C = C23-L40-W30
D = C23-L40-W40
E = C23-L40-W50

OPERATING CURRENT
OPERATING SPEED

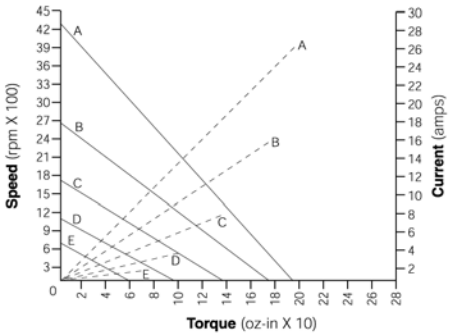
C23-L45: 24 Volt input



A = C23-L45-W10
B = C23-L45-W20
C = C23-L45-W30
D = C23-L45-W40
E = C23-L45-W50

OPERATING CURRENT
OPERATING SPEED

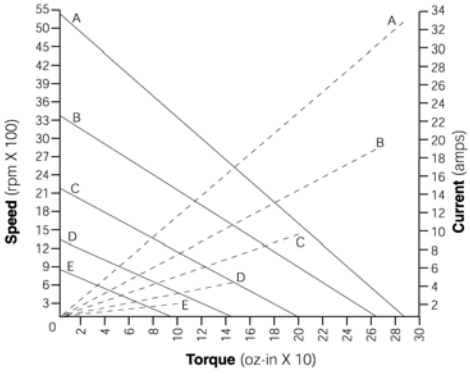
C23-L50: 24 Volt input



A = C23-L50-W10
B = C23-L50-W20
C = C23-L50-W30
D = C23-L50-W40
E = C23-L50-W50

OPERATING CURRENT
OPERATING SPEED

C23-L55: 36 Volt input



A = C23-L55-W10
B = C23-L55-W20
C = C23-L55-W30
D = C23-L55-W40
E = C23-L55-W50

OPERATING CURRENT
OPERATING SPEED

• Skewed Armatures standard on C13 series - available on all other series upon request.

Note:
A skewed armature is one in which the laminations do not line up, but rather are on a skew for the length of the armature stack. There are some distinct advantages to a motor utilizing a skewed armature, the greatest being a REDUCTION OF COGGING.

C34 SERIES SPECIFICATIONS –

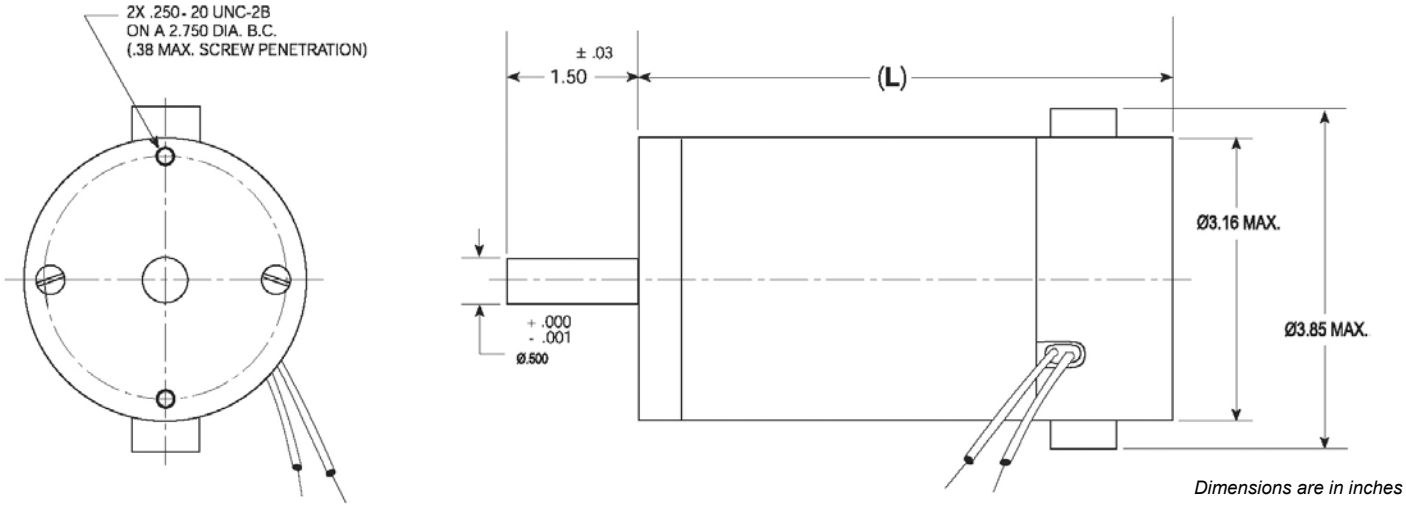
Continuous Stall Torque 63 - 125 oz-in (0.445 - 0.883 Nm)
Peak Torque 580 - 1110 oz-in (4.096 - 7.838 Nm)

Part Number*		C34-L60				C34-L70				C34-L80			
Winding Code**		10	20	30	40	10	20	30	40	10	20	30	40
L = Length	inches	6.00					7.00			8.00			
	millimeters	152.40					177.80			203.20			
Peak Torque	oz-in	580.0	580.0	580.0	580.0	855.0	855.0	855.0	855.0	1110.0	1110.0	1110.0	1110.0
	Nm	4.096	4.096	4.096	4.096	6.038	6.038	6.038	6.038	7.838	7.838	7.838	7.838
Continuous Stall Torque	oz-in	63.0	63.0	63.0	63.0	95.0	95.0	95.0	95.0	125.0	125.0	125.0	125.0
	Nm	0.445	0.445	0.445	0.445	0.671	0.671	0.671	0.671	0.883	0.883	0.883	0.883
Rated Terminal Voltage	volts DC	12 - 30	12 - 48	18 - 60	30 - 72	12 - 30	12 - 48	18 - 78	30 - 120	12 - 30	12 - 48	18 - 90	30 - 132
Terminal Voltage	volts DC	24	36	60	72	24	36	48	72	12	24	48	72
Rated Speed	RPM	2700	1900	1447	952	4450	2720	1800	1313	1800	1750	1847	1424
	rad/sec	282.74	198.97	151.53	99.69	466.00	284.84	188.50	137.50	188.50	183.26	193.42	149.12
Rated Torque	oz-in	60.7	55.1	63.9	76.1	75.0	110.0	85.0	96.1	81.7	94.9	80.4	115.0
	Nm	0.43	0.39	0.45	0.54	0.53	0.78	0.60	0.68	0.58	0.67	0.57	0.81
Rated Current	Amps	8.20	3.70	2.05	1.55	13.00	7.00	3.75	2.15	15.00	8.50	3.70	2.50
Rated Power	Watts	121.3	77.5	68.4	53.6	247.0	221.4	113.2	93.4	108.8	122.9	109.9	121.2
	Horsepower	0.16	0.10	0.09	0.07	0.33	0.30	0.15	0.13	0.15	0.16	0.15	0.16
Torque Senstivity	oz-in/amp	10.90	21.80	43.60	68.00	7.79	15.58	31.20	59.00	7.50	15.00	30.00	60.00
	Nm/amp	0.08	0.15	0.31	0.48	0.06	0.11	0.22	0.42	0.05	0.11	0.21	0.42
Back EMF	volts/KRPM	8.00	16.10	32.20	50.30	5.76	11.50	23.00	43.60	5.50	11.00	22.00	44.40
	volts/rad/sec	0.08	0.15	0.31	0.48	0.06	0.11	0.22	0.42	0.05	0.11	0.21	0.42
Terminal Resistance	ohms	0.43	1.72	6.80	14.50	0.14	0.56	2.24	7.40	0.15	0.60	2.40	4.90
Terminal Inductance	mH	0.90	4.80	18.00	35.00	0.24	1.12	4.50	14.50	0.18	0.72	3.10	11.20
Motor Constant	oz-in/watt^1/2	16.62	16.62	16.72	17.86	20.82	20.82	20.85	21.69	19.36	19.36	19.36	27.11
	Nm/watt	0.12	0.12	0.12	0.13	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.19
Rotor Inertia	oz-in-sec^2	0.030	0.030	0.030	0.030	0.042	0.042	0.042	0.042	0.055	0.055	0.055	0.055
	g-cm^2	2118.45	2118.45	2118.45	2118.45	2965.83	2965.83	2965.83	2965.83	3883.83	3883.83	3883.83	3883.83
Friction Torque	oz-in	15	15	15	15	17	17	17	17	20	20	20	20
	Nm	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.14	0.14	0.14	0.14
Thermal Resistance	°C/watt	3.90	3.90	3.90	3.90	3.70	3.70	3.70	3.70	3.50	3.50	3.50	3.50
Damping Factor	oz-in/KRPM	2.50	2.50	2.50	2.50	3.00	3.00	3.00	3.00	3.80	3.80	3.80	3.80
	Nm/KRPM	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03
Weight	oz	100.00	100.00	100.00	100.00	128.00	128.00	128.00	128.00	152.00	152.00	152.00	152.00
	g	2834.95	2834.95	2834.95	2834.95	3628.74	3628.74	3628.74	3628.74	4309.12	4309.12	4309.12	4309.12
Electrical Time Constant	millisecond	2.0930	2.7907	2.6471	2.4138	1.7143	2.0000	2.0089	1.9595	1.2000	1.2000	1.2917	2.2857
Mech. Time Constant	millisecond	15.48888	15.39267	15.21369	13.31555	13.72031	13.74418	13.72656	12.64996	20.94	20.94	20.94	10.59184
Speed/Torque Gradient	rpm/oz-in	-4.931193	-4.900564	-4.843581	-4.23927	-3.120097	-3.125523	-3.121516	-2.876691	-3.636364	-3.636364	-3.636364	-1.839339

Notes:
1. For MS (military style) connector, please specify connector housing and terminal.
2. Data for informational purposes only. Should not be considered a binding performance agreement. For specific applications, please contact the factory.

*Many other custom mechanical options are available – consult factory.
**Many other winding options are available – consult factory.

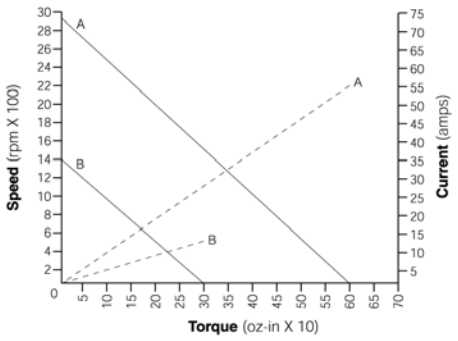
C34 Typical Outline Drawing



Dimensions are in inches

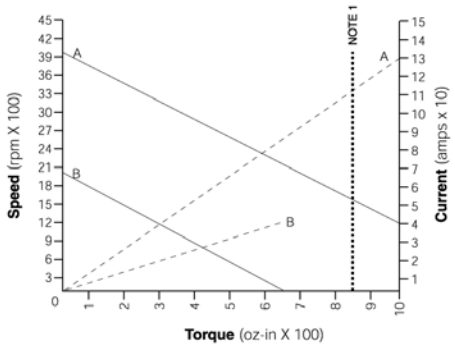
C34 Torque / Speed Curves

C34-L60: 24 Volt input



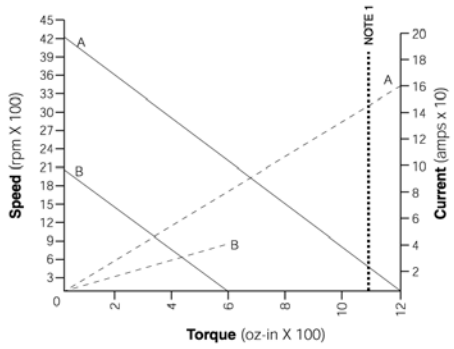
A = C34-L60-W10 ------ OPERATING CURRENT
B = C34-L60-W20 ——— OPERATING SPEED

C34-L70: 24 Volt input



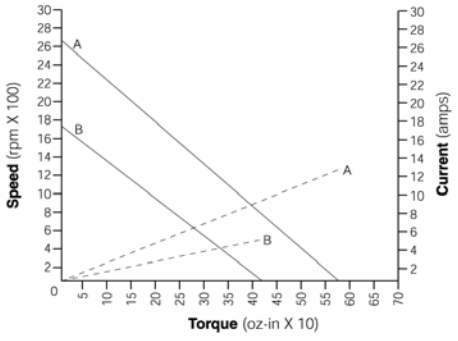
A = C34-L70-W10 ------ OPERATING CURRENT
B = C34-L70-W20 ——— OPERATING SPEED

C34-L80: 24 Volt input



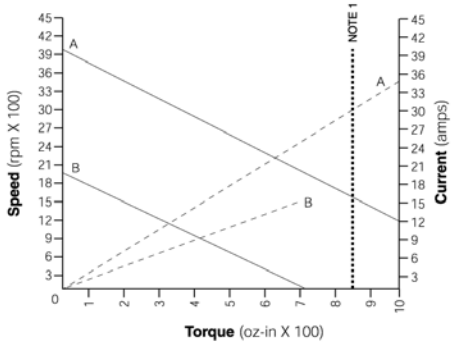
A = C34-L80-W10 ------ OPERATING CURRENT
B = C34-L80-W20 ——— OPERATING SPEED

C34-L60: 90 Volt input



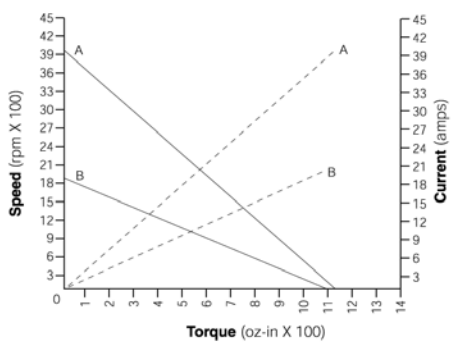
A = C34-L60-W30 ------ OPERATING CURRENT
B = C34-L60-W40 ——— OPERATING SPEED

C34-L70: 90 Volt input



A = C34-L70-W30 ------ OPERATING CURRENT
B = C34-L70-W40 ——— OPERATING SPEED

C34-L80: 90 Volt input



A = C34-L80-W30 ------ OPERATING CURRENT
B = C34-L80-W40 ——— OPERATING SPEED

• Skewed Armatures standard on C13 series - available on all other series upon request.

Note:
A skewed armature is one in which the laminations do not line up, but rather are on a skew for the length of the armature stack. There are some distinct advantages to a motor utilizing a skewed armature, the greatest being a REDUCTION OF COGGING.

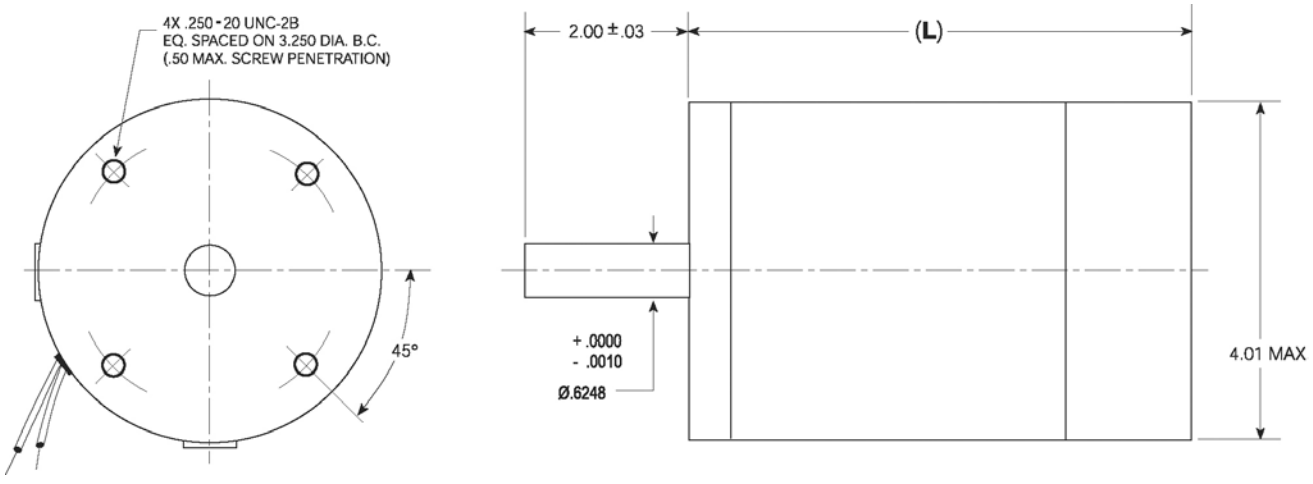
C42 SERIES SPECIFICATIONS – *Continuous Stall Torque 145 - 560 oz-in (1.024 - 3.955 Nm)*
Peak Torque 1100 - 3500 oz-in (7.768 - 24.716 Nm)

Part Number*		C42-L50			C42-L70			C42-L90		
Winding Code**		10	20	30	10	20	30	10	20	30
L = Length	inches	5.00			7.00			9.00		
	millimeters	127.0			177.8			228.6		
Peak Torque	oz-in	1100.0	1100.0	1100.0	2400.0	2400.0	2400.0	3500.0	3500.0	3500.0
	Nm	7.768	7.768	7.768	16.948	16.948	16.948	24.716	24.716	24.716
Continuous Stall Torque	oz-in	145.0	145.0	145.0	400.0	400.0	400.0	560.0	560.0	560.0
	Nm	1.024	1.024	1.024	2.825	2.825	2.825	3.955	3.955	3.955
Rated Terminal Voltage	volts DC	12 - 48	24 - 72	36 - 96	12 - 48	24 - 72	36 - 96	24 - 60	24 - 84	36 - 96
Terminal Voltage	volts DC	48	72	84	36	48	72	48	60	90
Rated Speed	RPM	3226	1885	1526	1160	1130	1060	1273	1238	1517
	rad/sec	338	197	160	121	118	111	133	130	159
Rated Torque	oz-in	80.3	98.2	126.7	249	237	263	336	341	320
	Nm	0.57	0.69	0.89	1.76	1.67	1.86	2.37	2.41	2.26
Rated Current	Amps	5.3	2.7	2.4	8	5.75	3.9	8.5	6.7	5
Rated Power	Watts	192	137	143	214	198	206	317	312	359
	Horsepower	0.26	0.18	0.19	0.29	0.27	0.28	0.42	0.42	0.48
Torque Senstivity	oz-in/amp	20	46	65	39	52.8	85	50	64.3	82
	Nm/amp	0.1412	0.3248	0.4590	0.2754	0.3729	0.6002	0.3531	0.4541	0.5791
Back EMF	volts/KRPM	14.8	34	48	28.8	39	62.85	37	47.5	60
	volts/rad/sec	0.1413	0.3247	0.4584	0.2750	0.3724	0.6002	0.3533	0.4536	0.5730
Terminal Resistance	ohms	0.7	4	5.7	0.62	1.2	2.6	0.6	0.95	1.45
Terminal Inductance	mH	1.3	6.6	13.5	2	3.7	9.6	2	3.3	5.4
Motor Constant	oz-in/watt^1/2	23.9	23.0	27.2	49.5	48.2	52.7	64.5	66.0	68.1
	Nm/watt	0.169	0.162	0.192	0.350	0.340	0.372	0.456	0.466	0.481
Rotor Inertia	oz-in-sec^2	0.09	0.09	0.09	0.21	0.21	0.21	0.31	0.31	0.31
	g-cm^2	6355.4	6355.4	6355.4	14829.2	14829.2	14829.2	21890.7	21890.7	21890.7
Friction Torque	oz-in	14.0	14.0	14.0	20.0	20.0	20.0	24	24	24
	Nm	0.10	0.10	0.10	0.14	0.14	0.14	0.17	0.17	0.17
Thermal Resistance	°C/watt	2.20	2.20	2.20	1.30	1.30	1.30	0.85	0.85	0.85
Damping Factor	oz-in/KRPM	5.25	5.25	5.25	10.00	10.00	10.00	10.00	10.00	10.00
	Nm/KRPM	0.037	0.037	0.037	0.071	0.071	0.071	0.071	0.071	0.071
Weight	oz	110	110	110	200	200	200	262	262	262
	g	3118	3118	3118	5670	5670	5670	7428	7428	7428
Electrical Time Constant	millisecond	1.8571	1.6500	2.3684	3.2258	3.0833	3.6923	3.3333	3.4737	3.7241
Mech. Time Constant	millisecond	22.28412	24.09974	17.2151	12.1367	12.81294	10.70077	10.52659	10.09549	9.565579
Speed/Torque Gradient	rpm/oz-in	-2.36486	-2.55754	-1.82692	-0.55199	-0.58275	-0.48669	-0.32432	-0.31104	-0.29472

Notes:
1. For MS (military style) connector, please specify connector housing and terminal.
2. Data for informational purposes only. Should not be considered a binding performance agreement. For specific applications, please contact the factory.

*Many other custom mechanical options are available – consult factory.
**Many other winding options are available – consult factory.

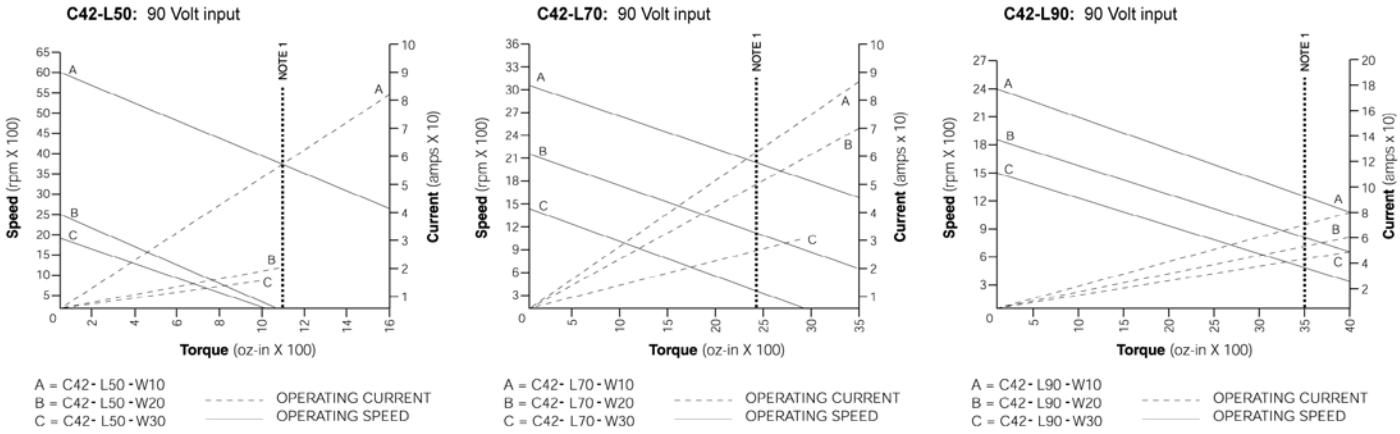
C42 Typical Outline Drawing



Dimensions are in inches

C42 Performance Curves

C42 Torque / Speed Curves



NOTE 1: Do not operate motor beyond this line. Maximum current and torque must be limited to data sheet values to avoid possibility of magnet demagnetization.

INTEGRAL FEEDBACK DEVICES FOR CLOSED-LOOP CONTROL

All feedback devices are pre-assembled, aligned and fully tested, with output requirements matched (even custom designed) to your application. They are ideal for sensing rotary speed and angular position where space is a premium and low inertia is required.

Encoders

High resolution, high reliability, and state-of-the-art technology in a small package.

- Bidirectional incremental code
- Up to 1024 cycles standard
- Up to 3 channels: A, B, and index
- TTL / CMOS compatible
- Other configurations and resolutions available

Tachometers

Analog tachometers are an economical and efficient choice for applications requiring velocity feedback. These tachometers are integral to the motor on a common shaft, eliminating coupling or mounting irregularities.

- Voltage gradient: 7, 10, 14 V / Krpm
- Ripple voltage: 20% max peak to peak

Note: Tachometers not available for C34 and C42 models.

HOW TO SELECT A MOTOR

The motor you require can be customized to your application. Review the motor data tables shown above to determine the size and winding that most closely matches your needs. Then supply us with the following information:

- ❑ Maximum voltage and current available
- ❑ Load torque required
- ❑ Load inertia, oz-in / sec^2
- ❑ Velocity profile: speed vs time
- ❑ Maximum motor dimensions
- ❑ Shaft and endcap configuration
- ❑ Feedback options