

- Totally Enclosed, Non-Ventilated (IP-40)
- Class F insulation, Class B rating
- Skewed armature for smooth low speed operation
- High starting torque and self-braking
- Oversized magnets resist demagnetization, stabilized to common strength for consistent performance
- Locked bearing minimizes endplay
- Models with accessory shafts are ideal for mounting encoders or brakes
- See page 34 for accessories
- See pages 41 and 42 for reference dimensions

PMDC Type 24A | 1/50-1/7 HP



Speed (rpm)	Rated Torque (oz-in.)	Current (Amps)	HP	FF	K _T (oz-in/A)	K _E (V/krpm)	Wdg. Res. (Ohms)	Winding Ind. (mH)	Inertia (oz-in-sec. ²)	Radial Load (lbs.)	Product Type ²	24V Winding		130V Winding		
												Accy Shaft	No Accy Shaft	Base ¹	Flange	
2500	8	1.2	1/50	1.0	8.3	6.1	5.7	6.7	0.003	25	24A0BEPM	N4440	N0040	—	—	
2500	8	0.22	1/50		42	31	176	220	0.003		24A0BEPM	—	—	—	N4439	N0039
2500	16	1.8	1/29		10	7.5	2.5	3.6	0.005		24A2BEPM	N4445	0045	—	—	—
2500	14	0.3	1/29		55	41	84	133	0.005		24A2BEPM	—	—	0042	N4441	0041
2500	22	2.6	1/18		9.2	6.8	2	6.7	0.007		24A4BEPM	N4444	0044	—	—	—
2500	24	0.48	1/17		55	40	5	184	0.007		24A4BEPM	—	—	—	0047	0043
11,500	12	1.1	1/7		14	10	3.15	4.5	0.007		24A4BEPM	—	—	0049 ²	—	—

¹ Models 0042 and 0049 ship with a factory installed base mounting kit.

² Model 0049 rated V is 115VDC.

PMDC Type 33A | 1/16-1/3 HP



Speed (rpm)	Rated Torque (oz-in.)	Current (Amps)	HP	FF	K _T (oz-in/A)	K _E (V/krpm)	Wdg. Res. (Ohms)	Winding Ind. (mH)	Inertia (oz-in-sec. ²)	Radial Load (lbs.)	Product Type ²	24V Winding		130V Winding	
												Accy Shaft	No Accy Shaft	Accy Shaft	No Accy Shaft
24V, Class F Temperature Rating															
2500	50	5.5	1/8	1.0	10.2	7.5	0.66	1.9	0.031	55	33A3BEPM	N6424	6024	—	—
	95	9.2	1/4		11.1	8.2	0.29	0.98	0.043		33A5BEPM	—	6021	—	—
	134	12	1/3		11.5	8.5	0.31	0.59	0.075		33A7BEPM	N6422	6022	—	—
90/130 V Class F Temperature Rating															
1725/2500	36/50	.78 / 1.0	1/16 / 1/8	1.4 / 1.0	56	42	22	0.57	0.031	55	33A3BEPM	—	—	6434	6034
	73/95	1.4 / 1.8	1/8 / 1/4		60	44	11	0.28	0.043		33A5BEPM	—	—	6435	6035
	97/134	1.8 / 2.4	1/6 / 1/3		66	49	8.8	0.18	0.075		33A7BEPM	—	—	—	6037
130V, Class B Temperature Rating															
2500	34	.71	1/12	1.0	54	40	23	67	0.031	55	33A3BEPM	—	—	—	6016
	50	.91	1/8		57	42	13	41	0.043		33A5BEPM	—	—	—	6020

PMDC Type 42A | 1/4-1/2 HP

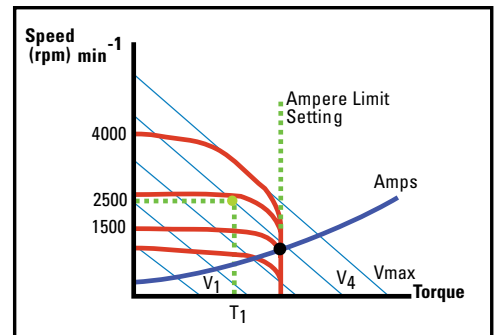


Speed (rpm)	Rated Torque (oz-in.)	Current (Amps)	HP	FF	K _T (oz-in/A)	K _E (V/krpm)	Winding Res. (Ohms)	Winding Ind. (mH)	Inertia (oz-in-sec. ²)	Radial Load (lbs.)	Product Type ³	24V Winding		130V Winding	
												Accy Shaft	No Accy Shaft	Accy Shaft	No Accy Shaft
NEMA 42C Face Mount, Class B Temperature Rating															
2500	101	8.8	1/4	1.0	12	9.2	0.27	0.64	0.082	90	42A5BEPM	N4421	N4021	—	—
	101	1.8	1/4		60	44	5.5	20	0.082		42A5BEPM	—	—	4435	4035
	135	12	1/3		12	9	0.16	0.45	0.12		42A7BEPM	N4422	N4022	—	—
	135	2.3	1/3		64	47	4.2	17	0.12		42A7BEPM	—	—	N4437	4037
NEMA 42CZ Face Mount, Class F Temperature Rating															
2500	150	15	1/3	1.0	11	8	0.18	0.61	0.082	90	42A5BEPM	N4800	N4601	—	—
	150	2.7	1/3		60	45	3.2	—	0.082		42A5BEPM	—	—	N4430	N4031
	180	19	1/2		11.5	8.5	0.12	0.54	0.12		42A7BEPM	N4802	N4603	—	—
	180	3.3	1/2		57	42	2.7	—	0.12		42A7BEPM	—	—	N4432	4033

³ The fifth digit of the product type changes from "B" to "F" for accessory ready models. "N" model numbers require lead time and minimum quantities.

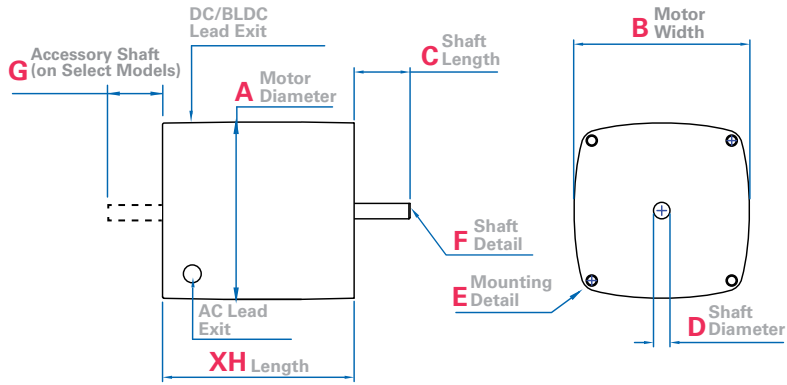
Speed Regulation of Permanent Magnet DC Motors

In a PMDC motor, speed is proportional to voltage and torque is proportional to current. When voltage is held constant, the amount that speed drops due to increasing torque is called "speed regulation." The thin blue lines illustrate motor performance without the aid of a regulating electronic control. The heavy red lines illustrate performance from a control with "excellent" (1-3%) speed regulation.



Motor Dimensions

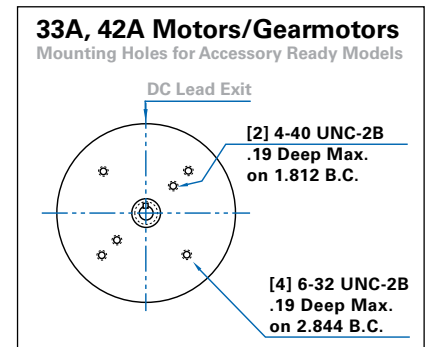
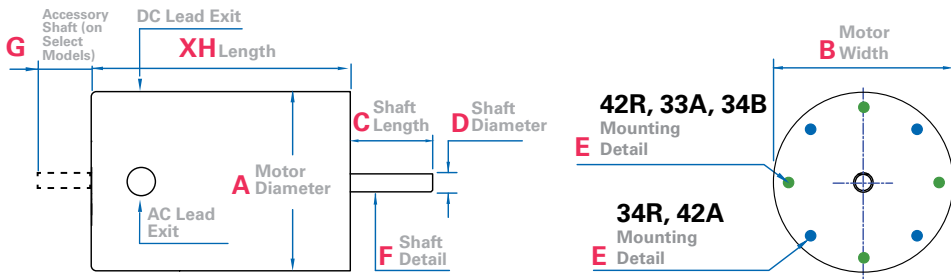
Dimensions (in inches) are for reference only. For CAD drawings and up-to-date specifications, please visit www.bodine-electric.com.



Motor Type K-2, 30R, 22B, pages 18-19, 23

	Product Type	Weight (lbs.)	XH Length	A Diameter Square	B Width	C Shaft Length	D Shaft Diameter	E Mounting Detail	F Shaft Detail	G Acc'y Shaft	Lead/Cord Length (in.)
K-2	K2-23	1.6	1.827	2.38	2.38	.62	.188	[4] 8-32 UNC-2B x .18 Deep Max. on 2.687 B.C.	Flat	No	12
	K2-24	1.9	2.20								
	K2-26	2.2	2.50								
K-2 Torque Motor	Model 0621	2.2	2.484								
30R	30R2	4.75	3.665	3.34	3.34	1.06	.313	[4]10-32 UNF-2B x .32 deep Max. on 3.75 B.C.	Flat	Yes	12
	30R4										
30R Torque Motor	Model 5625										
22B	22B2	2.5	3.610	2.378	2.378	.94	.375	[4] 8-32 UNC-2B x .35 Deep Max. on 2.625 B.C.	Flat	Yes	12 or 24
	22B4	3.5	4.570							No	None
22B INTEGRA	22B2	2.5	4.719	2.93	2.93						
	22B4	3.5	5.679								

Only the first four characters of the product type are relevant to dimensions



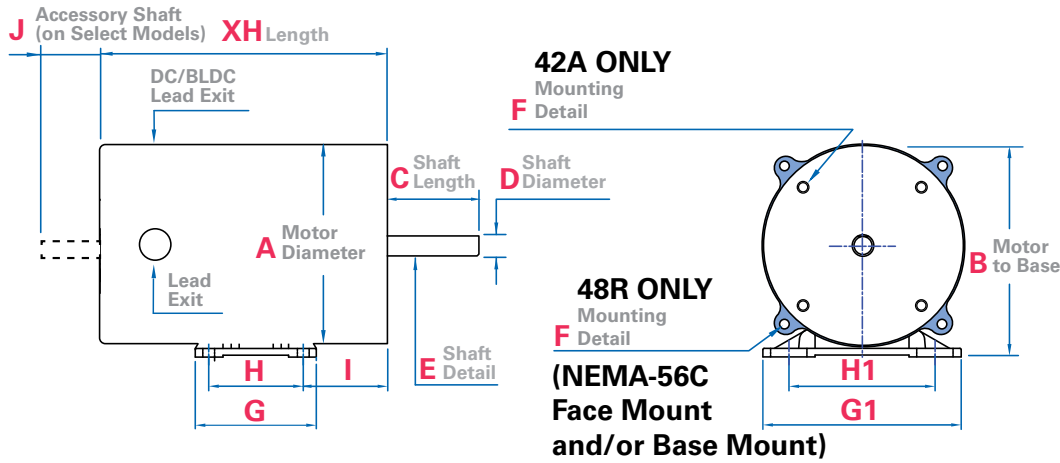
Motor Type 34R, 42R, 33A, 42A, 34B, pages 19-23 (Face Mount)

	Product Type	Weight	XH Length	A Diameter	B Width (PMDC)	C Shaft Length	D Shaft Diameter	E Mounting Detail	F Shaft Detail	G Acc'y Shaft	Lead/Cord Length (in.)
34R	34R4	9.0	5.526	4.02	—	1.25	.375	[4] 1/4-20 UNC-2B x .31 Min. Deep on 2.75 B.C.	Flat	No	12
	34R6		6.526								
42R	42R3	7.75	5.616	4.73	—	1.38	.375	[4] 1/4-20 UNC-2B x .31 Min. Deep on 3.75 B.C.	Flat	No	12
	42R5	11.0	6.679								
	42R6	13.0	7.116								
33A	33A3	5.1	5.140	3.39	3.75	1.48	.375	[4] 10-32 UNF-2B x .25 Min. Deep on 2.75 B.C.	Flat	Yes	24
	33A5	6.28	6.200	3.39	3.75	1.48	.500				
	33A7	7.45	7.401								
42A NEMA 42C	42A5	11.3	6.656	4.26	4.25	1.62	.500	[4] 1/4-20 UNC-2B x .31 Min. Deep on 3.75 B.C.	Flat	Yes	24
	42A7	14.5	7.781			1.31			Flat/Key		
42A NEMA 42CZ	42A5	11.3	6.656								
	42A7	14.5	7.781								
34B	34B3	6.0	4.043	4.02	—	1.625	.500	[4] 1/4-20 UNC-2B x .31 Min. Deep on 2.75 B.C.	Flat	Yes	12 or 24
	34B4	7.0	4.543								
	34B6	9.0	5.543								

Only the first four characters of the product type are relevant to dimensions

Motor Dimensions

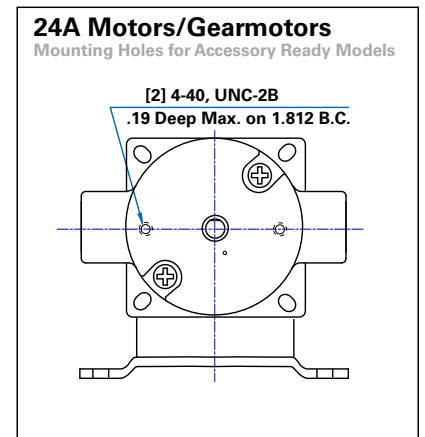
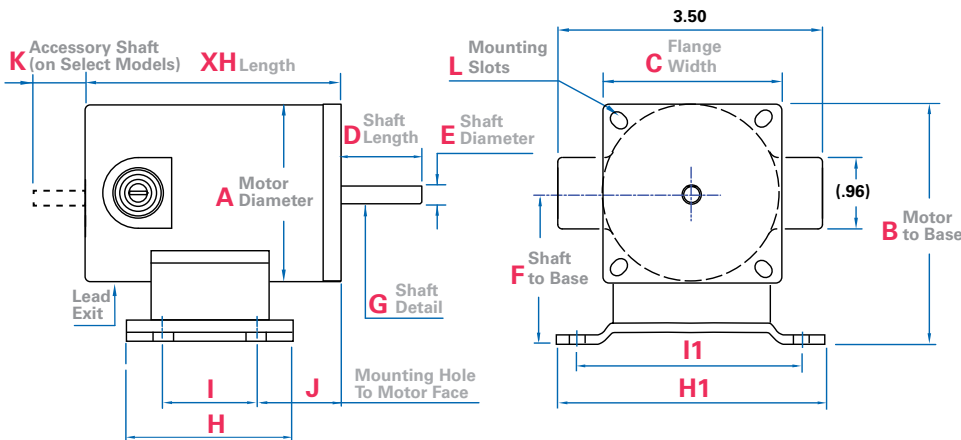
Dimensions (in inches) are for reference only. For CAD drawings and up-to-date specifications, please visit www.bodine-electric.com.



Motor Type 42R, 48R, 42A, pages 18-22 (Base Mount)

	Product Type	Weight (lbs.)	XH Length	A Diameter	B Motor to Base	C Shaft Length	D Shaft Diameter	E Shaft Detail	F Face Mount Detail	G Base Length	G1 Base Width	H Mtg. Hole Length	H1 Mtg. Hole Width	I Base Mtg. to Face	J Acc'y Shaft	Lead/Cord Length (in.)
42R	42R3	7.8	5.616	4.73	4.999	1.38	.375	Flat	Base mount 42R motors have no face mounting holes	2.88	4.75	2.25	3.50	1.572	None	12
	42R5	11	6.679													
	42R6	13	7.116													
42R Torque Motor	Model 2628	12.5	6.201	4.62	4.93	1.31	.375	Flat	[4] 1/4-20 UNC-2B x .31 Max. Deep on 3.75 B.C.	2.88	4.75	2.25	3.50	1.569	1.56	12
48R	48R5	17.0	7.329	5.90	5.85	2.06	.625	Key	[4] 3/8-16 UNC-2B x .50 Max. Deep on 5.875 B.C.	3.50	5.75	2.75	4.25	1.446	None	12
	48R6	20.0	7.797													
48R Torque Motor	Model 0632	20.5	6.676	5.73	5.85	2.06	.625	Key	[4] 3/8-16 UNC-2B x .50 Max. Deep on 5.875 B.C.	3.50	5.75	2.75	4.25	1.446	2.00	12
42A	42A5	11.3	6.656	4.26	4.77	1.62	.500	Flat	[4] 1/4-20 UNC-2B x .31 Max. Deep on 3.75 B.C.	2.88	4.75	2.25	3.50	1.471	1.28	24
	42A7	14.5	7.781													

Only the first four characters of the product type are relevant to dimensions



Motor Type 24A, page 22 (Base/Flange Mount)

	Product Type	Wt. (lbs.)	XH Length	A Diameter	B Motor to Base	C Flange Width	D Shaft Length	E Shaft Diameter	F Shaft to Base	G Shaft Detail	H Base Length	H1 Base Width	I Base Mounting Hole Length	I1 Base Mounting Hole Width	J	K Acc'y Shaft	L Mounting Slots	Lead/Cord Length (in.)
24A	24A0	2.0	3.240	2.42	3.185	2.41	.94	0.312	1.98	Flat	2.25	3.62	1.25	3.00	.625	Yes	0.181W x 0.257L on 2.764 B.C.	24
	24A2	2.5	3.870												1.62			
	24A4	3.0	4.620												1.81			

Only the first four characters of the product type are relevant to dimensions