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DC Products

- The lowest-cost system for basic variable speed applications
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- The highest starting torque per motor size for intermittent applications

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DC Technical Information

PM Advantages

Permanent magnet DC (PMDC) motors and gearmotors are compact, mathematically predictable, can produce high starting torque and can be decelerated rapidly.

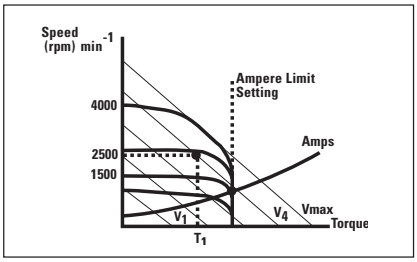
CE certification

Bodine PMDC motors and gearmotors have CE marks. See page 2 for more information.

Speed Regulation

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 lines in Figure 1 illustrate motor performance without the aid of a regulating electronic control. The heavy lines illustrate performance from a control with "excellent" (1-3%) speed regulation.

Figure 1: Speed Regulation



Regulated speed curves for a typical DC motor and speed control.

Speed controls such as those presented on page 86 provide several functions: (a) converting input AC voltage to DC for the motor, (b) a potentiometer enables the user to select the motor operating speed, (c) "automatic" circuitry regulates the motor speed, (d) other functions, such as braking/reversing, temperature and line voltage compensation, can be provided at additional cost.

The design of the electronic speed control has a dramatic effect on motor speed performance and life. SCR speed controls can be: (a) 1/2 wave or full-wave; (b) filtered or unfiltered. Most industrial controls are full-wave. We will assume full-wave rectification and discuss differences between filtered and unfiltered.

Form Factor (FF)

Form Factor for a DC voltage electronic control is a measure of the amount of current (ampere) filtering (smoothing) provided by the control to a motor. Form Factor cannot be determined until a motor and control combination are driving a load. However, most control manufacturers catalog their controls with a FF rating. Most small motor and control combinations exhibit FF=1.0 to 1.05 with a filtered control and FF=1.6-1.8 with an unfiltered control at rated torque.

Most Bodine permanent magnet DC motors in this catalog are rated for continuous duty on 130 VDC, FF=1.05 current as supplied by Bodine type FPM and WPM controls. These motors and gearmotors can be successfully operated from unfiltered controls at FF=approximately 1.6, at speed not less than 1700 rpm. For intermittent duty operation, full nameplate torque may be available. The designers should test for each individual application.

Peak torque

Peak torque indicates the maximum torques above rated that are acceptable when gearmotors are used with Bodine Controls. Peak torque is based on the load causing the motor portion to briefly exceed its rated horsepower and are limited by either 200% of rated torque or the approximate short term capacity of the gearhead. The user is cautioned that output torques higher than rated will reduce the life of the gearhead below its "design life." Also, winding life will be reduced when rated load (rated temperature rise) is exceeded.

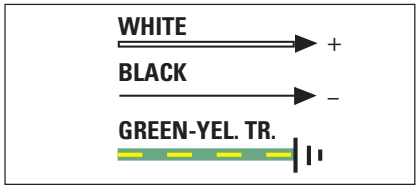
Motor Insulation Ratings

All Bodine PMDC motors are built with Class "F" insulation material (155°C total) for greater torque capability. However, the performance ratings of some models in this catalog are based on Class "B" (130°C total) for extended life.

Speed Controls

Speed Controls for Bodine PMDC motors and gearmotors are featured beginning on page 86.

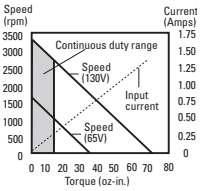
DC Connection Diagram 074 10101



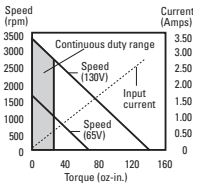
Connect as shown for clockwise rotation while viewing output shaft. To reverse direction, transpose white and black leads.

Performance Curves

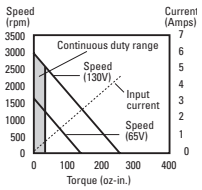
The performance curves below show motor performance on pure DC (FF=1.0).



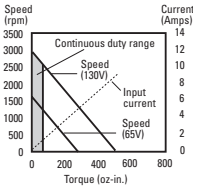
24A2BEPM, model 0041



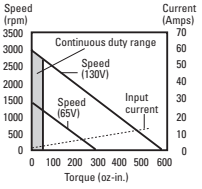
24A4BEPM, models 0043/0047



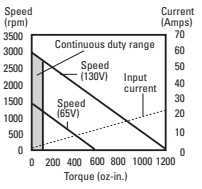
33A3BEPM, models 6016, N6416



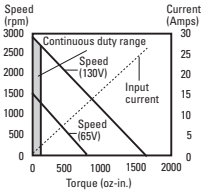
33A5BEPM, model 6020, 6420



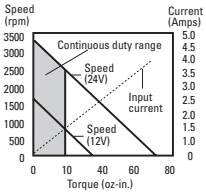
42A3BEPM



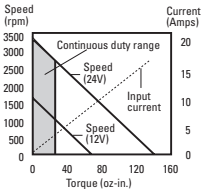
42A5BEPM, models 4035, 4435



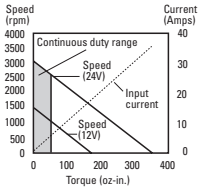
42A7BEPM, model 4037



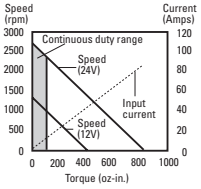
24A0BEPM, model 0040



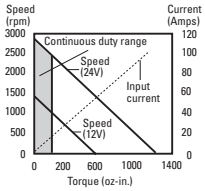
24A4BEPM, model 0044



33A5BEPM, model 6019



42A5BEPM, model 4021



42A7BEPM, model N4022

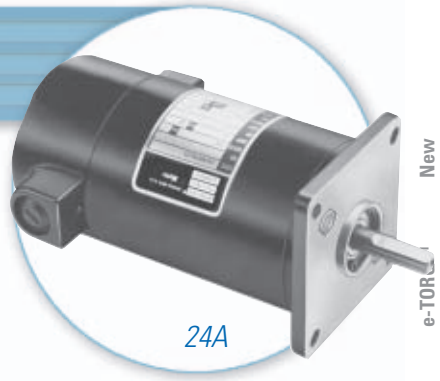
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Permanent Magnet DC Motors

1/50 - 1/7 HP



Standard Features

- Totally Enclosed, Non-Ventilated (IP-40)
- Class "F" insulation, Class "B" rating
- External brush access for easy inspection and replacement
- Oversized brushes for long life
- Skewed armature for smooth low speed operation
- Oversized magnets resist demagnetization, stabilized to common strength for consistent performance
- High starting torque and self-braking
- Noise-tested ball bearings permanently lubricated
- Locked bearing minimizes endplay

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Flange mount or base mount

Optional Accessories

- Encoder model 0940, see page 101
- "L" bracket mount kit model 0990 available, see page 100

Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

90 COMPATIBLE WITH 90 V CONTROLS

SEE PAGES 98 & 99

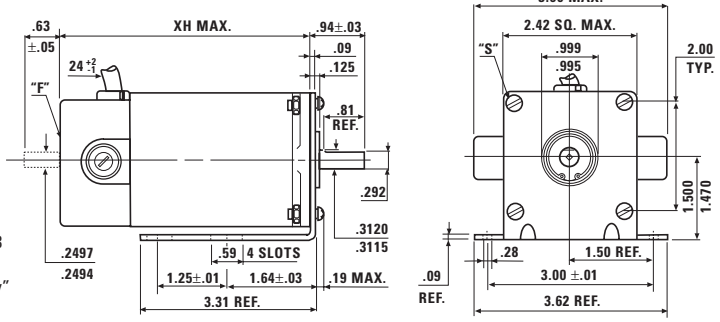
Speed (rpm)	Rated Torque (oz-in.)	Rated Amp	HP	K_T (oz-in/A)	K_E (V/krpm)	Winding Resistance (ohms)	Winding Inductance (mH)	Rotor Inertia (oz-in-sec.^{2})	Radial Load (lbs.)	Length XH (inch)	Wt. (lbs.) Shaft	Product Type Shaft	Model Number[1] 24 V. Winding Acc'y. Shaft	24 V. Winding No Acc'y. Shaft	130 V. Winding Base No Acc'y. Shaft	130 V. Winding Flange Acc'y.	130 V. Winding Flange No Acc'y.
2500	8	1.2	1/50	8.3	6.1	5.7	6.7	.003	25	3.31	2.0	24A0BEPM	N4440	N0040	–	–	–
2500	8	.22	1/50	42	31	176	220	.003	25	3.31	2.0	24A0BEPM	–	–	–	N4439	N0039
2500	16	1.8	1/29	10	7.5	2.5	3.6	.005	25	3.93	2.5	24A2BEPM	N4445	**0045**	–	–	–
2500	14	.30	1/29	55	41	84	133	.005	25	3.93	2.5	24A2BEPM	–	–	**0042**	N4441	**0041**
2500	22	2.6	1/18	9.2	6.8	2	6.7	.007	25	4.68	3.0	24A4BEPM	N4444	**0044**	–	–	–
2500	24	.45	1/17	55	40	5	184	.007	25	4.68	3.0	24A4BEPM	–	–	–	**0047**	**0043**
11,500	12	1.1	1/7	14	10	3.15	4.5	.007	25	4.68	3.0	24A4BEPM	–	–	**0049**[2]	–	–

[1] NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.

[2] NOTE: Ratings for model 0049 are based on 115 V, not 130 V.

24A Motor

Flange Mount 24A Motor shown with optional "L" bracket (model 0990)

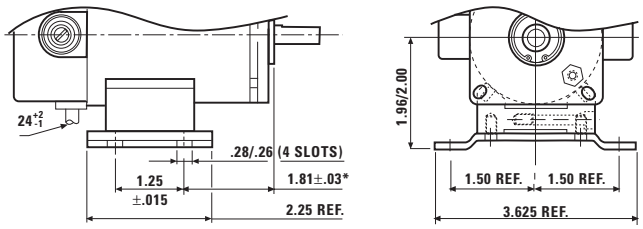


"S" (4) slots .186 in. wide on a 2.7 to 2.83 bolt circle

"F" See page 101 for "accessory ready" mounting dimensions.

BODINE THREE DIMENSIONS ONLINE

Base Mount 24A Motor shown with standard base (for motor model 0042 and 0049 only)

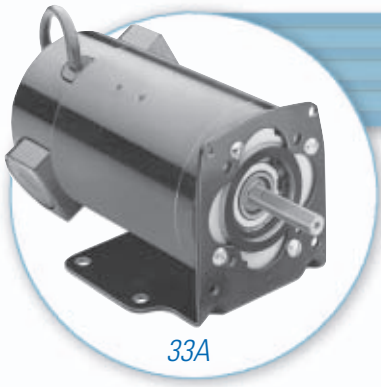


* 1.62 ±.03 for model 0042

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Permanent Magnet DC Motors

1/12 - 1/3 HP



33A

Shown with optional L-bracket

90 COMPATIBLE WITH 90 V CONTROLS

SEE PAGES 98 & 99

Standard Features

- Totally Enclosed, Non-Ventilated (IP-40)
- Class "F" insulation
- External brush access for easy inspection and replacement
- Constant force brush springs for long life and quietness
- Skewed armature for smooth low speed operation
- Oversized magnets resist demagnetization, stabilized to common strength for consistent performance
- High starting torque and self-braking
- Noise-tested ball bearings permanently lubricated
- Locked bearing minimizes endplay

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Face mount is standard

Optional Accessories

- Encoder model 0941, see page 101
- Brake model 0997, see page 100
- IP-44 achieved with terminal box model 0984 or 1984, see page 100
- "L" bracket mount kit model 5968 available, see page 100

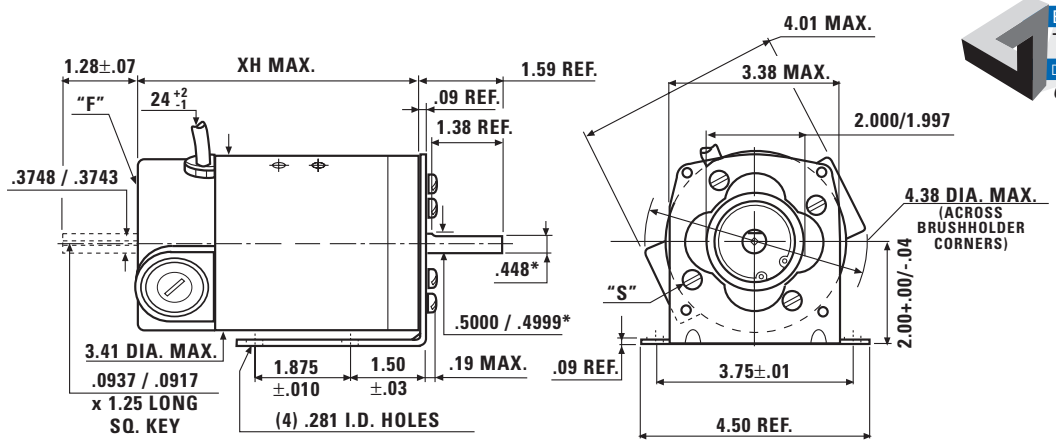
Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

Speed	Torque	Current	HP	FF	K_T (oz-in/A)	K_E (V/krpm)	Winding Resist.	Winding Induct.	Arm. Inertia	Radial Load	XH (in.)	Wt. (lbs.)	Product Type	Model Number[1] Acc'y. Shaft	Model Number[1] No Shaft
24V, Class F Temperature Rating															
2500	50	5.5	1/8	1.0	10.2	7.5	.66	1.9	.031	55	5.22	5.1	33A3BEPM	N6424	**6024**
2500	95	9.2	1/4	1.0	11.1	8.2	.29	0.98	.043	55	6.28	6.9	33A5BEPM	–	**6021**
2500	134	12	1/3	1.0	11.5	8.5	.31	0.59	.075	–	7.45	8.25	33A7BEPM	N6422	**6022**
90 / 130V, Class F Temperature Rating															
1725 / 2500	36/50	.78 / 1.0	1/16 / 1/8	1.4 / 1.0	56	42	22	.57	.031	55	5.22	5.1	33A3BEPM	**6434**	**6034**
1725 / 2500	73/95	1.4 / 1.8	1/8 / 1/4	1.4 / 1.0	60	44	11	.28	.043	55	6.28	6.9	33A5BEPM	**6435**	**6035**
1725 / 2500	97/134	1.8 / 2.4	1/6 / 1/3	1.4 / 1.0	66	49	8.8	.18	.075	55	7.45	8.25	33A7BEPM	–	**6037**

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

33A Motor shown with optional "L" bracket (model 5968)



BODINE THREE DIMENSIONS ONLINE

"S" (4) 10-32, UNF-2B, .25 in. deep minimum on 2.750±.015 in. bolt circle
"F" See page 101 for "accessory ready" mounting dimensions.
* Shaft diameter is .3750/.3745 in. for models 6024 and N6424 with .347 in. dimension on flat.

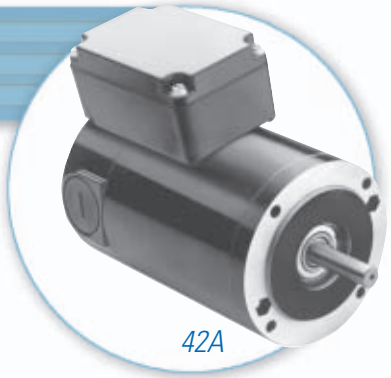
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Permanent Magnet DC Motors

1/4 - 1/2 HP



Shown with optional terminal box

90 COMPATIBLE WITH 90 V CONTROLS

SEE PAGES 98 & 99

Standard Features

- Totally Enclosed Non-Ventilated (IP-40)
- Class "F" insulation
- External brush access for easy inspection and replacement
- Constant force brush springs for long life and quietness
- Skewed armature for smooth low speed operation
- Oversized magnets resist demagnetization, stabilized to common strength for consistent performance
- High starting torque and self-braking
- Noise-tested ball bearings permanently lubricated
- Locked bearing minimizes endplay

Application Information

- For connection diagram 074 10101, see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Face mount is standard

Optional accessories

- Encoder model 0941, see page 101
- Brake model 0997, see page 100
- IP-44 achieved with terminal box model 0984 or 1984, see page 100
- IP-44 achieved with boot kit model 0978, see page 100
- Base mount kit model 0991, see page 100

Matching Controls

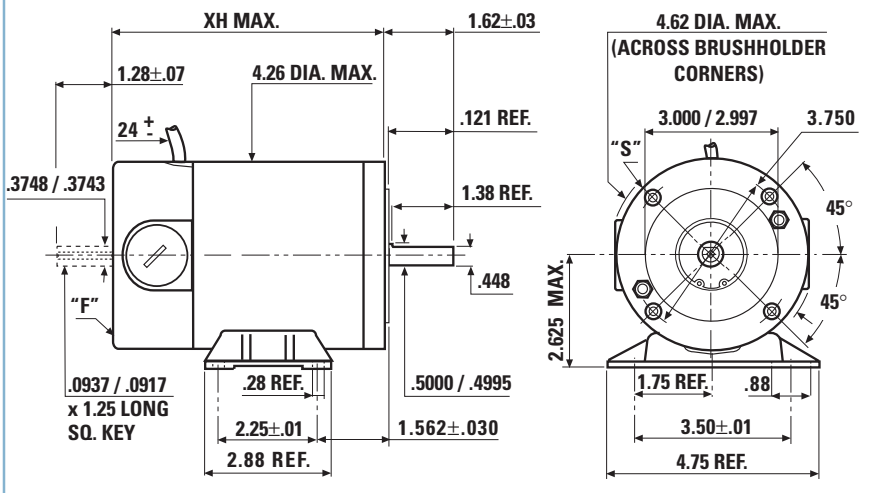
- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

													Model Number[1]			
													24 Volt Winding		130 Volt Winding	
Speed (rpm)	Rated Torque (oz.-in.)	Rated Amp	HP	K_T (oz-in/A)	K_E (V/krpm)	Winding Resistance (ohms)	Winding Inductance (mH)	Rotor Inertia (oz-in-sec.^{2})	Radial Load (lbs.)	Length XH (inch)	Wt. (lbs.)	Product Type	Acc'y. Shaft	No Acc'y. Shaft	Acc'y. Shaft	No Acc'y. Shaft
NEMA 42C Face Mount, Class B Temperature Rating																
2500	101	8.8	1/4	12	9.2	.27	.64	.082	90	6.72	11.3	42A5BEPM	N4421	N4021	–	–
2500	101	1.8	1/4	60	44	5.5	20	.082	90	6.72	11.3	42A5BEPM	–	–	**4435**	**4035**
2500	135	12	1/3	12	9	.16	.45	.120	90	7.87	14.5	42A7BEPM	N4422	N4022	–	–
2500	135	2.3	1/3	64	47	4.2	17	.120	90	7.87	14.5	42A7BEPM	–	–	N4437	**4037**
NEMA 42CZ Face Mount, Class F Temperature Rating																
2500	150	15	1/3	11	8	.18	.61	.082	90	6.72	11.3	42A5BEPM	N4800	N4601	–	–
2500	150	2.7	1/3	60	45	3.2	–	.082	90	6.72	11.3	42A5BEPM	–	–	N4430	N4031
2500	180	19	1/2	11.5	8.5	.12	.54	.12	90	7.87	14.5	42A7BEPM	N4802	N4603	–	–
2500	180	3.4	1/2	57	42	2.7	–	.12	90	7.87	14.5	42A7BEPM	–	–	N4432	**4033**

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

42A Motor

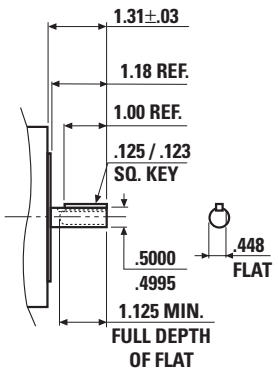
NEMA 42C Face shown with optional base kit (model 0991)



"S" (4) 1/4-20 UNC-2B: .30/.40 in. deep minimum
"F" See page 101 for "accessory ready" mounting dimensions.

NEMA 42CZ Face

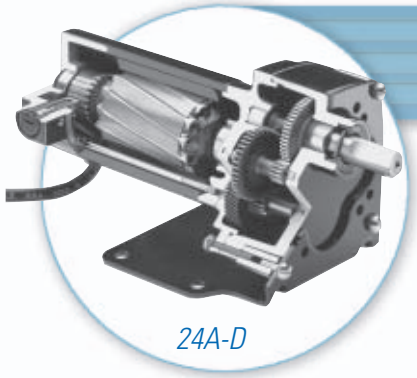
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Parallel Shaft DC Gearmotors

Up to 40 lb-in. continuous



24A-D

Cutaway view

90 COMPATIBLE WITH 90 V CONTROLS

SEE PAGES 98 & 99

Standard Features

- 24A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 67 for more details)
- Industrial lip type seals on motor and output shafts
- Needle bearing on output shaft for increased radial load capacity and long life
- Permanently lubricated with high-performance lubricant
- Reinforced thermoplastic helical gear on input stage for quietness and hardened steel spur gears on subsequent stages for high output torque and long life
- Helical pinion accurately cut on motor shaft for maximum strength and minimum noise

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Face mount is standard

Optional Accessories

- Encoder model 0940, see page 101
- "L" bracket mount kit model 5968, see page 100

Matching Controls

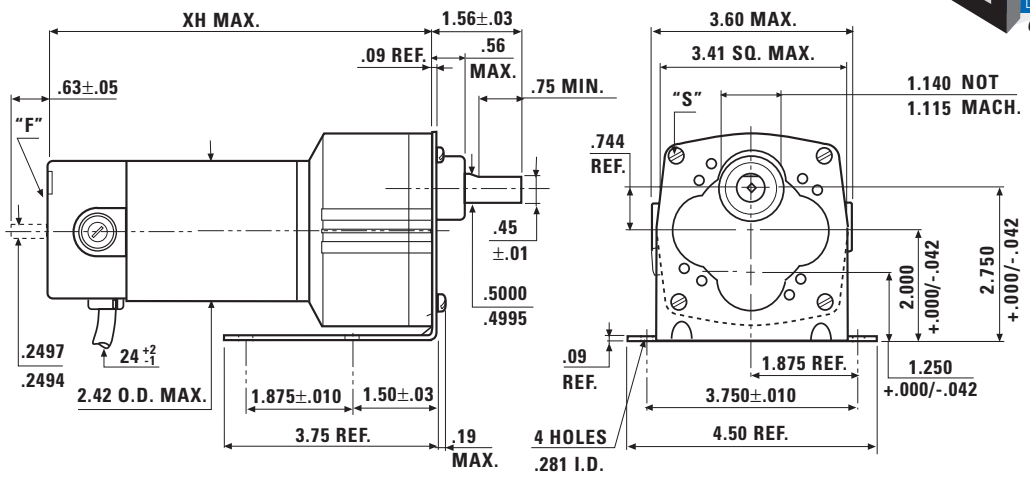
- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

		Current @ Rated Torque (Amps)									Model Number[1]			
											24 Volt Winding		130 Volt Winding	
Speed (rpm)	Rated Torque (lb-in.)	24 Volt Winding	130 Volt Winding	Peak Torque (lb-in.)	Motor HP	Gear Ratio	Radial Load (lbs.)	Length XH (inch)	Weight (lbs.)	Product Type	Accessory Shaft	No Accessory Shaft	Accessory Shaft	No Accessory Shaft
5.6	40	1.8	.3	55	1/29	450	65	5.97	4	24A2BEPM-D5	N4999	N4799	N4499	**0199**
8.3	40	1.8	.3	55	1/29	300	65	5.97	4	24A2BEPM-D5	N4998	N4798	N4498	**0198**
14	40	1.8	.3	55	1/29	180	65	5.97	4	24A2BEPM-D4	N4997	N4797	N4497	**0197**
28	40	1.8	.3	55	1/29	90	65	5.97	4	24A2BEPM-D4	N4996	N4796	N4496	**0196**
42	40	2.6	.48	55	1/17	60	65	6.72	4.5	24A4BEPM-D3	–	**4690**	–	**0190**
42	36	1.8	.3	55	1/29	60	65	5.97	4	24A2BEPM-D3	N4995	N4795	N4495	**0195**
83	29	2.6	.48	33	1/17	30	65	6.72	4.5	24A4BEPM-D3	–	–	–	**0189**
83	18	1.8	.3	33	1/29	30	65	5.97	4	24A2BEPM-D3	N4994	N4794	N4494	**0194**
139	17	2.6	.48	20	1/17	18	65	6.72	4.5	24A4BEPM-D3	–	–	–	**0188**
139	11	1.8	.3	20	1/29	18	65	5.97	4	24A2BEPM-D3	N4993	N4793	N4493	**0193**
208	12	2.6	.48	13	1/17	12	65	6.72	4.5	24A4BEPM-D3	–	–	–	**0187**
208	7.1	1.8	.3	13	1/29	12	65	5.97	4	24A2BEPM-D3	N4992	N4792	N4492	**0192**
417	5.4	2.6	.48	6.2	1/17	6	65	6.72	4.5	24A4BEPM-D3	–	–	–	**0186**
417	3.3	1.8	.3	6.2	1/29	6	65	5.97	4	24A2BEPM-D3	N4991	N4791	N4491	**0191**

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

24A-D Gearmotor shown with optional "L" bracket (model 5968)

BODINE THREE DIMENSIONS ONLINE



"S" (4) 10-32 UNF-2B, .38 in. deep minimum on a 3.75" bolt circle
"F" See page 101 for "accessory ready" mounting dimensions.

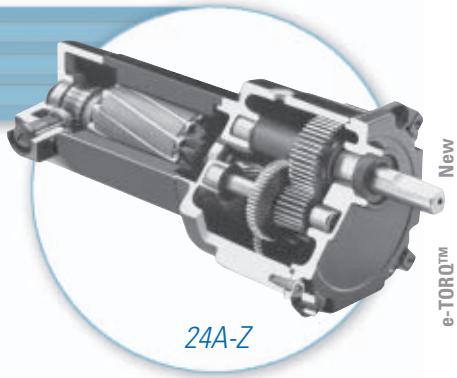
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Parallel Shaft DC Gearmotors

Up to 100 lb-in. continuous



24A-Z

Cutaway view

Standard Features

- 24A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 67 for more details)
- Industrial lip type seals on motor and output shafts
- Needle bearing on output shaft for increased radial load capacity and long life
- Permanently lubricated with high-performance lubricant
- Wide reinforced thermoplastic helical gear on input stage of most models for quietness and wide hardened steel spur gears on subsequent stages for high output torque and long life
- Helical pinion accurately cut on motor shaft for maximum strength and minimum noise

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Face mount is standard

Optional Accessories

- Encoder model 0940, see page 101
- "L" bracket mount kit model 5968, see page 100

Matching Controls

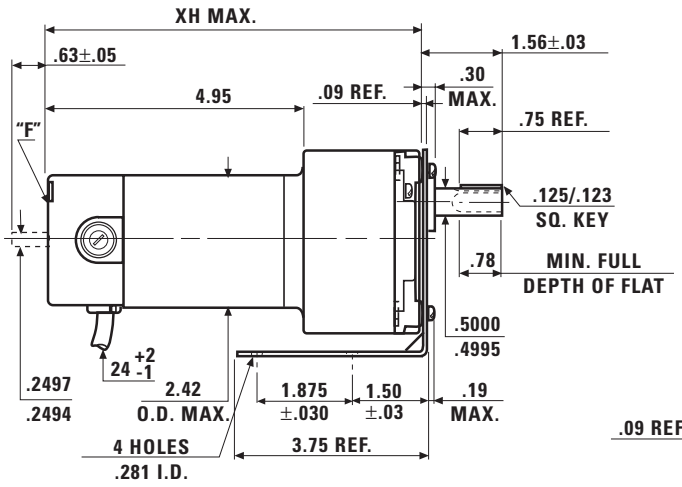
- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

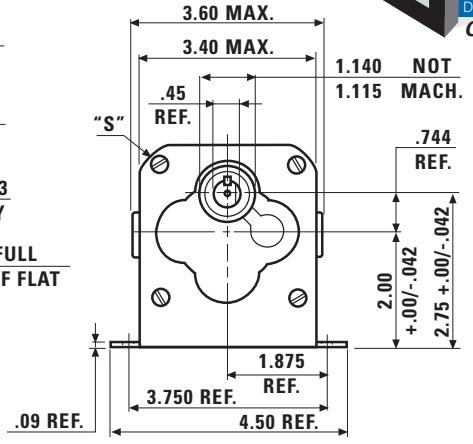
90 COMPATIBLE WITH 90 V CONTROLS
SEE PAGES 98 & 99

		Current @ Rated Torque (Amps)									Model Number[1]			
											24 Volt Winding		130 Volt Winding	
Speed (rpm)	Rated Torque (lb-in.)	24 Volt Winding	130 Volt Winding	Peak Torque (lb-in.)	Motor HP	Gear Ratio	Radial Load (lbs.)	Length XH (inch)	Weight (lbs.)	Product Type	Accessory Shaft	No Accessory Shaft	Accessory Shaft	No Accessory Shaft
14	100	2.6	.48	115	1/17	180	125	7.82	5	24A4BEPM-Z4	N4963	**4663**	N4563	**0163**
28	92	2.6	.48	115	1/17	90	125	7.82	5	24A4BEPM-Z4	N4962	N4662	N4562	**0162**
42	65	2.6	.48	115	1/17	60	125	7.82	5	24A4BEPM-Z3	N4961	N4661	N4561	**0161**
83	33	2.6	.48	59	1/17	30	125	7.82	5	24A4BEPM-Z3	N4960	**4660**	N4560	**0160**
139	21	2.6	.48	38	1/17	18	100	6.92	5	24A4BEPM-Z2	N4959	N4659	N4559	**0159**
208	14	2.6	.48	25	1/17	12	100	6.92	5	24A4BEPM-Z2	N4958	N4658	N4558	**0158**
417	7	2.6	.48	13	1/17	6	100	6.92	5	24A4BEPM-Z2	N4957	N4657	N4557	N0157
Steel First-Stage Gear and Class F Ratings														
139	34	—	.81	—	1/11	18	100	6.92	5	24A4BEPM-Z2	—	—	—	**7159**

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

24A-Z Gearmotor shown with optional "L" bracket (model 5968)





BODINE THREE DIMENSIONS ONLINE

"S" (4) 10-32 UNF-2B, .38 in. deep minimum on a 3.75" bolt circle
"F" See page 101 for "accessory ready" mounting dimensions.

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Parallel Shaft DC Gearmotors

Up to 95 lb-in. continuous

Standard Features

- 33A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 68 for more details)
- Industrial lip type seals on motor and output shafts
- Needle bearing on output shaft for increased radial load capacity and long life
- Permanently lubricated with high-performance lubricant
- Wide reinforced thermoplastic helical gear on input stage for quietness and wide hardened steel spur gears on subsequent stages for high output torque and long life
- Helical pinion accurately cut on motor shaft for maximum strength and minimum noise

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Face mount is standard

Optional Accessories

- Encoder model 0941, see page 101
- Brake model 0997, see page 100
- IP-44 achieved with terminal box model 0984 or 1984, see page 100
- "L" bracket kit model 5968, see page 100

Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

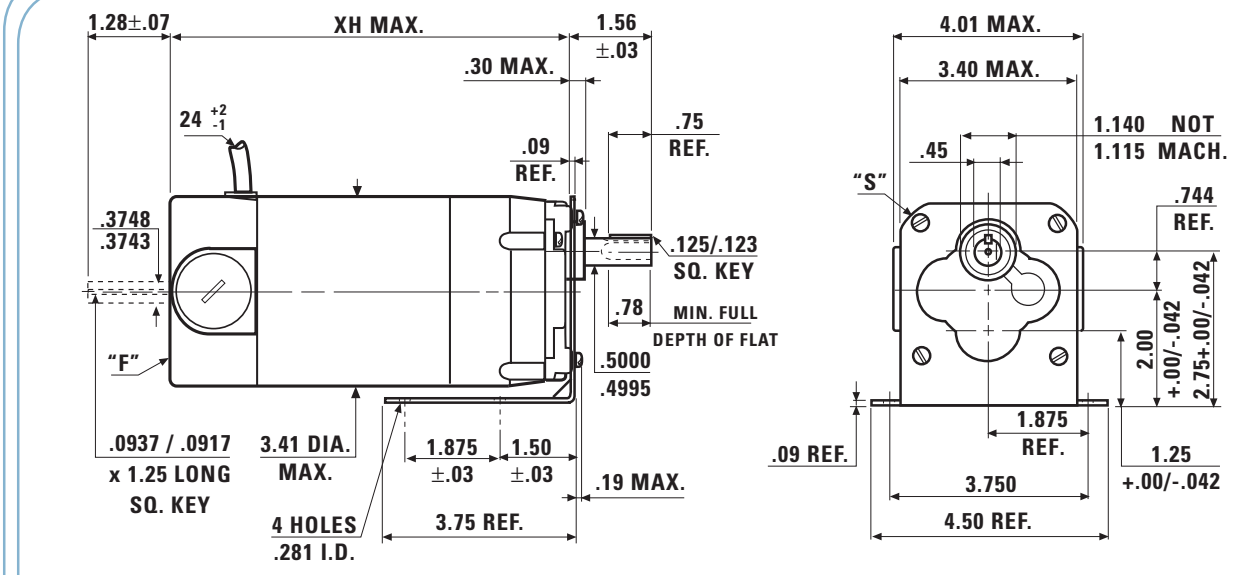
90 COMPATIBLE WITH 90 V CONTROLS
SEE PAGES 98 & 99

		Current @ Rated Torque (Amps)									Model Number[1]			
											24 Volt Winding		130 Volt Winding	
Speed (rpm)	Rated Torque (lb-in.)	24 Volt Winding	130 Volt Winding	Peak Torque (lb-in.)	Motor HP	Gear Ratio	Radial Load (lbs.)	Length XH (inch)	Weight (lbs.)	Product Type	Accessory Shaft	No Accessory Shaft	Accessory Shaft	No Accessory Shaft
42	95	3.7	.74	115	1/12	60	125	7.90	5.8	33A3BEPM-Z3	N6969	N6669	N6569	**6169**
83	47	3.7	.74	59	1/12	30	125	7.90	5.8	33A3BEPM-Z3	N6968	N6668	N6568	**6168**
139	31	3.7	.74	38	1/12	18	100	7.00	5.8	33A3BEPM-Z2	N6967	N6667	N6567	**6167**
208	20	3.7	.74	25	1/12	12	100	7.00	5.8	33A3BEPM-Z2	N6966	N6666	N6566	**6166**
417	10	3.7	.74	13	1/12	6	100	7.00	5.8	33A3BEPM-Z2	N6965	N6665	N6565	**6165**

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

BODINE THREE DIMENSIONS ONLINE

33A-Z Gearmotor shown with optional "L" bracket (model 5968)



"S" (4) 10-32 UNF-2B, .38 in. deep maximum on a 3.75" bolt circle
"F" See page 101 for "accessory ready" mounting dimensions.

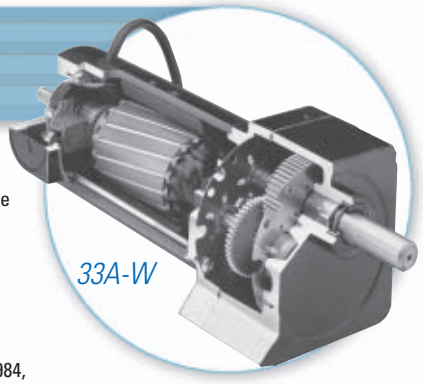
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Parallel Shaft DC Gearmotors

Up to 200 lb-in. continuous



Cutaway view

Standard Features

- 33A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 68 for more details)
- Industrial lip type seals on motor and output shafts
- Needle bearing on output shaft for increased radial load capacity and long life
- Permanently lubricated gearing utilizing semi-fluid grease for long life
- Wide reinforced thermoplastic helical gear on input stage of most models for quietness and hardened steel spur gears on subsequent stages for high output torque and long life
- Helical pinion accurately cut on motor shaft for maximum strength and minimum noise

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Face mount is standard

Optional Accessories

- Encoder model 0941, see page 101
- Brake model 0997, see page 100
- IP-44 achieved with terminal box model 0984 or 1984, see page 100
- "L" bracket kit model 0970, see page 100
- Adaptor plate kit model 0995 provides for drop-in replacement of competitive gearmotors

Matching Controls

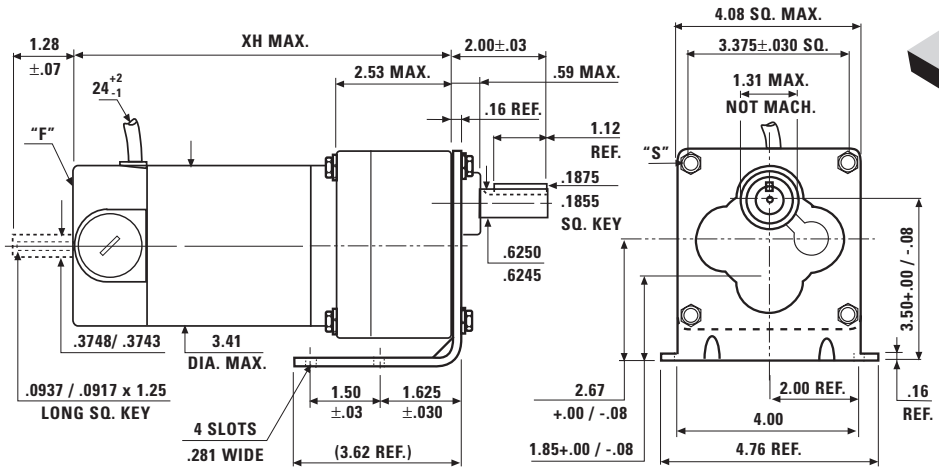
- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

90 COMPATIBLE WITH 90 V CONTROLS
SEE PAGES 98 & 99

		Current @ Rated Torque (Amps)									Model Number[1]			
											24 Volt Winding		130 Volt Winding	
Speed (rpm)	Rated Torque (lb-in.)	24 Volt Winding	130 Volt Winding	Peak Torque (lb-in.)	Motor HP	Gear Ratio	Radial Load (lbs.)	Length XH (inch)	Weight (lbs.)	Product Type	Accessory Shaft	No Accessory Shaft	Accessory Shaft	No Accessory Shaft
8	175	3.7	.74	210	1/12	312.4	130	7.75	7.9	33A3BEPM-W4	N6947	**6647**	N6547	**6147**
15	166	3.7	.74	207	1/12	172.1	130	7.75	7.9	33A3BEPM-W4	N6946	N6646	N6546	**6146**
26	155	5.5	.91	190	1/8	97.5	130	8.81	9.7	33A5BEPM-W4	N6956	**6656**	N6556	**6156**
38	143	5.5	.91	157	1/8	65.5	130	8.81	9.7	33A5BEPM-W3	N6955	N6655	N6555	**6155**
57	96	5.5	.91	105	1/8	43.9	130	8.81	9.7	33A5BEPM-W3	N6954	**6654**	N6554	**6154**
84	65	5.5	.91	71	1/8	29.7	130	8.81	9.7	33A5BEPM-W3	N6953	N6653	N6553	**6153**
123	46	5.5	.91	52	1/8	20.4	65	8.81	9.7	33A5BEPM-W2	N6952	**6652**	N6552	**6152**
181	31	5.5	.91	35	1/8	13.8	65	8.81	9.7	33A5BEPM-W2	N6951	N6651	N6551	**6151**
266	21	5.5	.91	24	1/8	9.4	65	8.81	9.7	33A5BEPM-W2	N6950	N6650	N6550	**6150**
456	12	5.5	.91	14	1/8	5.5	65	8.81	9.7	33A5BEPM-W2	N6949	N6649	N6549	**6149**
660	6	5.5	.91	7	1/8	3.8	65	8.81	9.7	33A5BEPM-W2	N6948	N6648	N6548	**6148**
Steel First-Stage Gear and Class F Ratings														
219	39	—	1.84	—	1/4	11.4	65	8.81	9.7	33A5FEPM-W2	—	—	**6757**	—

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

33A-W Gearmotor shown with optional "L" bracket (model 0970)



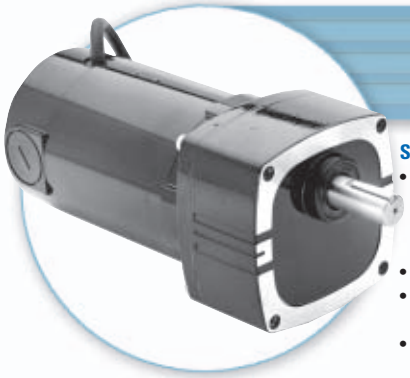
BODINE THREE DIMENSIONS ONLINE

"S" (4)1/4-28 UNF-2B, 0.5 in. deep minimum on a 4.78" bolt circle
"F" See page 101 for "accessory ready" mounting dimensions.

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Parallel Shaft DC Gearmotors

Up to 341 lb-in. continuous



42A-E & 42A-F

90 COMPATIBLE WITH 90 V CONTROLS

SEE PAGES 98 & 99

Standard Features

- 42A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 69 for more details)
- Industrial lip type seals on motor and output shafts
- Needle bearing on output shaft for increased radial load capacity and long life
- Permanently lubricated gearing utilizing semi-fluid grease for long life
- Selectively hardened steel helical gearing for quietness and high output to size ratio
- Helical pinion accurately cut on motor shaft for maximum strength and minimum noise

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Face mount is standard

Optional Accessories

- Encoder model 0941, see page 101
- Brake model 0997, see page 100
- IP-44 achieved with terminal box model 0984 or 1984, see page 100
- IP-44 achieved with boot kit model 0978, see page 100
- "L" bracket kit model 0969, see page 100
- Adaptor plate kit model 0995 provides for drop-in replacement of competitive gearmotors

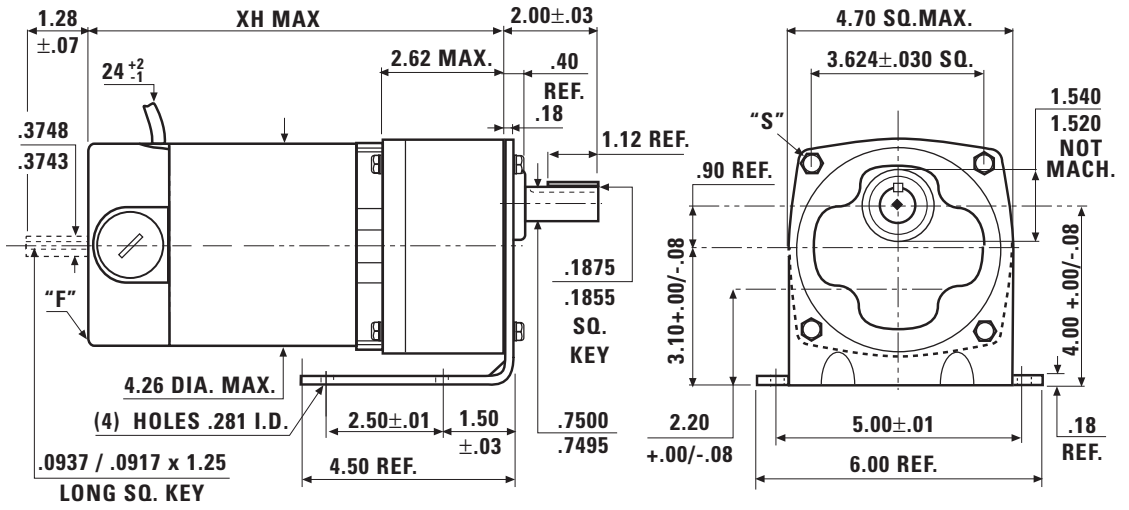
Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

		Current @ Rated Torque (Amps)									Model Number[1]			
											24 Volt Winding		130 Volt Winding	
Speed (rpm)	Rated Torque (lb-in.)	24 Volt Winding	130 Volt Winding	Peak Torque (lb-in.)	Motor HP	Gear Ratio	Radial Load (lbs.)	Length XH (inch)	Weight (lbs.)	Product Type	Accessory Shaft	No Accessory Shaft	Accessory Shaft	No Accessory Shaft
8.3	310	5.8	1.0	475	1/8	300	200	8.25	12.7	42A3BEPM-E4	N4975	N4675	N4575	**4175**
14	341	5.8	1.0	475	1/8	180	200	8.25	12.7	42A3BEPM-E4	N4974	N4674	N4574	**4174**
21	283	5.8	1.0	475	1/8	120	200	8.25	12.7	42A3BEPM-E4	N4973	N4673	N4573	**4173**
42	270	8.8	1.8	421	1/4	60	200	9.37	14.9	42A5BEPM-E3	N4985	**4685**	**4585**	**4185**
62	220	12	2.3	440	1/3	40	300	10.5	18.1	42A7BEPM-F3	N4984	N4684	N4584	**4193**
62	180	8.8	1.8	280	1/4	40	200	9.37	14.9	42A5BEPM-E3	N4976	N4676	N4576	**4184**
83	135	8.8	1.8	318	1/4	30	300	9.37	14.9	42A5BEPM-E3	N4983	N4683	**4583**	**4183**
125	145	—	2.3	—	1/3	20	300	10.5	18.1	42A7BEPM-F3	—	—	—	**4192**
125	90	8.8	1.8	212	1/4	20	300	9.37	14.9	42A5BEPM-E3	N4982	N4682	N4582	**4182**
165	109	—	2.3	—	1/3	15	300	10.5	18.1	42A7BEPM-F2	—	—	—	**4191**
165	68	8.8	1.8	160	1/4	15	300	9.37	14.9	42A5BEPM-E2	N4981	N4681	N4581	**4181**
250	72	12	2.3	144	1/3	10	300	10.5	18.1	42A7BEPM-F2	N4978	N4678	N4578	**4190**
250	45	8.8	1.8	106	1/4	10	300	9.37	14.9	42A5BEPM-E2	N4980	N4680	**4580**	**4180**
500	25	8.8	1.8	55	1/4	5	300	9.37	14.9	42A5BEPM-E1	N4979	N4679	N4579	**4179**

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

42A-E/42A-F Gearmotor shown with optional "L" bracket (model 0969)



"S" (4)1/4-28 UNF -2B, 0.5 in. deep minimum on a 5.13" bolt circle
"F" See page 101 for "accessory ready" mounting dimensions.

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Parallel Shaft DC Gearmotors

Up to 341 lb-in. continuous



33A-E & 33A-F

Standard Features

- 33A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 68 for more details)
- Industrial lip type seals on motor and output shafts
- Needle bearing on output shaft for increased radial load capacity and long life
- Permanently lubricated gearing utilizing semi-fluid grease for long life
- Selectively hardened steel helical gearing for quietness and high output to size ratio
- Helical pinion accurately cut on motor shaft for maximum strength and minimum noise

Application Information

- For connection diagram 074 10101 see page 66
- Face mount is standard

Optional Accessories

- Encoder model 0941, see page 101
- Brake model 0997, see page 100
- IP-44 achieved with terminal box model 0984 or 1984, see page 100
- "L" bracket kit model 0969, see page 100
- Adaptor plate kit model 0995 provides for drop-in replacement of competitive gearmotors

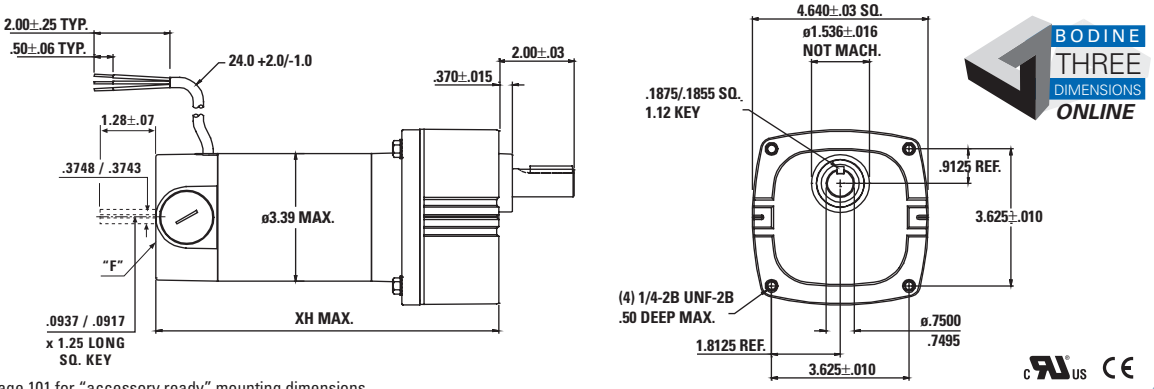
Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

Speed (rpm)	Rated Torque (lb-in.)	Rated Current (Amps)	Peak Torque (lb-in.)	HP	FF	Gear Ratio (lbs.)	Radial Load	Length (XH) (inch)	Wt. (lbs.)	Product Type	Model Number[1] Acc'y. Shaft	Model Number[1] No Acc'y. Shaft
24V, Class F Temperature Rating												
21	280	5.5	475	1/8	1.0	120:1	195	8.06	8.7	33A3BEPM-E4	N6973	N6673
42	270	9.2	421	1/4	1.0	60:1	240	9.12	10.5	33A5BEPM-E3	N6985	**6685**
62	220	12	440	1/3	1.0	40:1	250	10.32	11.9	33A7BEPM-F3	N6984	**6684**
250	72	12	144	1/3	1.0	10:1	300	10.32	11.9	33A7BEPM-F2	N6978	N6678
250	45	9.2	106	1/4	1.0	10:1	300	9.12	10.5	33A5BEPM-E2	N6980	**6680**
500	37	12	74	1/3	1.0	5:1	60	10.32	11.9	33A7BEPM-F1	N6991	N6691
500	24	9.2	55	1/4	1.0	5:1	60	9.12	10.5	33A5BEPM-E1	N6979	N6679
90 / 130V, Class F Temperature Rating												
5.8 / 8.3	310 / 310	.78 / 1.0	475	1/16 / 1/8	1.4 / 1.0	300:1	220	8.06	8.7	33A3BEPM-E4	–	**6175**
9.6 / 14	279 / 341	.78 / 1.0	475	1/16 / 1/8	1.4 / 1.0	180:1	200	8.06	8.7	33A3BEPM-E4	–	**6174**
14 / 21	198 / 280	.78 / 1.0	475	1/16 / 1/8	1.4 / 1.0	120:1	195	8.06	8.7	33A3BEPM-E4	N6573	**6173**
29 / 42	226 / 270	1.4 / 1.8	421	1/8 / 1/4	1.4 / 1.0	60:1	240	9.12	10.5	33A5BEPM-E3	**6585**	**6185**
43 / 62	205 / 220	1.8 / 2.4	440	1/6 / 1/3	1.4 / 1.0	40:1	250	10.32	11.9	33A7BEPM-F3	–	**6193**
43 / 62	151 / 180	1.4 / 1.8	280	1/8 / 1/4	1.4 / 1.0	40:1	250	9.12	10.5	33A5BEPM-E3	N6584	**6184**
58 / 83	113 / 135	1.4 / 1.8	318	1/8 / 1/4	1.4 / 1.0	30:1	300	9.12	10.5	33A5BEPM-E3	**6583**	**6183**
86 / 125	75 / 90	1.4 / 1.8	212	1/8 / 1/4	1.4 / 1.0	20:1	300	9.12	10.5	33A5BEPM-E3	–	**6182**
115 / 165	57 / 68	1.4 / 1.8	160	1/8 / 1/4	1.4 / 1.0	15:1	300	9.12	10.5	33A5BEPM-E2	–	**6181**
173 / 250	51 / 72	1.8 / 2.4	144	1/6 / 1/3	1.4 / 1.0	10:1	300	10.32	11.9	33A7BEPM-F2	N6578	**6190**
173 / 250	38 / 45	1.4 / 1.8	106	1/8 / 1/4	1.4 / 1.0	10:1	300	9.12	10.5	33A5BEPM-E2	**6580**	**6180**
345 / 500	26 / 37	1.8 / 2.4	74	1/6 / 1/3	1.4 / 1.0	5:1	60	10.32	11.9	33A7BEPM-F1	N6591	**6191**
345 / 500	19 / 24	1.4 / 1.8	55	1/8 / 1/4	1.4 / 1.0	5:1	60	9.12	10.5	33A5BEPM-E1	N6579	**6179**

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

33A-E/33A-F Gearmotor



"F" See page 101 for "accessory ready" mounting dimensions.

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Right Angle DC Gearmotors

Up to 22 lb-in. continuous



24A-3F,
Motor Base Mount

90 COMPATIBLE WITH 90 V CONTROLS

Standard Features

- 24A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 67 for more details)
- Industrial lip type seals on motor and output shafts
- Bronze sleeve bearing on output shaft for quietness
- Permanently lubricated gearing utilizing semi-fluid grease lubrication for long life
- Bronze gear for high shock load capability
- Hardened and ground worm for strength and long life

Application Information

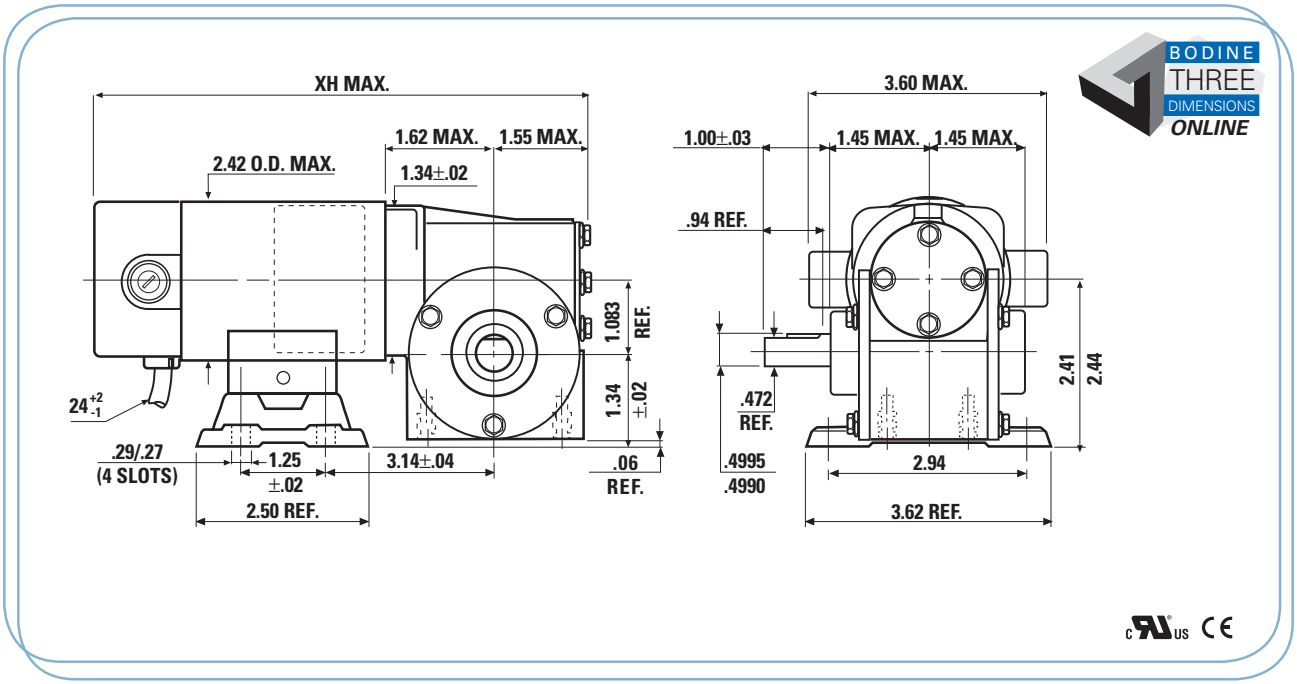
- For connection diagram 074 10101, see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Gearmotors can be mounted via four holes in motor base
- Hollow shaft configurations are available. See Web site for mounting and shaft details. These models require lead time and minimum quantities.

Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

Speed (rpm)	Rated Torque (lb-in.)	Rated Current (Amps)	Peak Torque (lb-in.)	HP	FF	Gear Ratio	Radial Load (lbs.)	Length (XH) (inch)	Wt. (lbs.)	Product Type	Model Number
130V Models With Class B Ratings											
42	22	.48	46	1/17	1.0	60	40	7.44	5.3	24A4BEPM-3F	N0089
63	19	.48	46	1/17	1.0	40	40	7.44	5.3	24A4BEPM-3F	**0088**
125	16	.48	32	1/17	1.0	20	5	7.44	5.3	24A4BEPM-3F	**0087**
250	10	.48	20	1/17	1.0	10	5	7.44	5.3	24A4BEPM-3F	**0086**
500	5.2	.48	10	1/17	1.0	5	5	7.44	5.3	24A4BEPM-3F	N0084

24A-3F Gearmotor



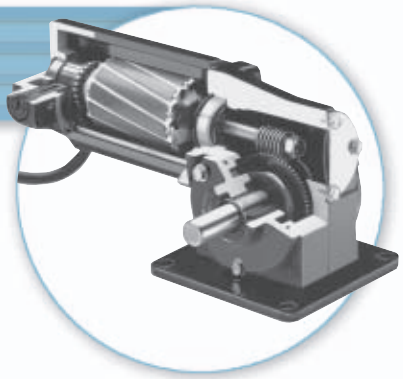
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Right Angle DC Gearmotors

Up to 22 lb-in. continuous



Standard Features

- 24A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 67 for more details)
- Industrial lip type seals on motor and output shafts
- Bronze sleeve bearing on output shaft for quietness
- Permanently lubricated gearing utilizing semi-fluid grease lubrication for long life
- Bronze gear for high shock load capability
- Hardened and ground worm for strength and long life

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Gearmotors can be mounted via four tapped holes in bottom of gearhead
- Hollow shaft configurations are available. See page 14 for mounting and shaft details. Some models require lead time and minimum quantities.

Optional Accessories

- Encoder model 0940, see page 101
- Baseplate kit model 0967, see page 100

Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

24A-3F, Gearhousing Base Mount (shown with optional baseplate kit)

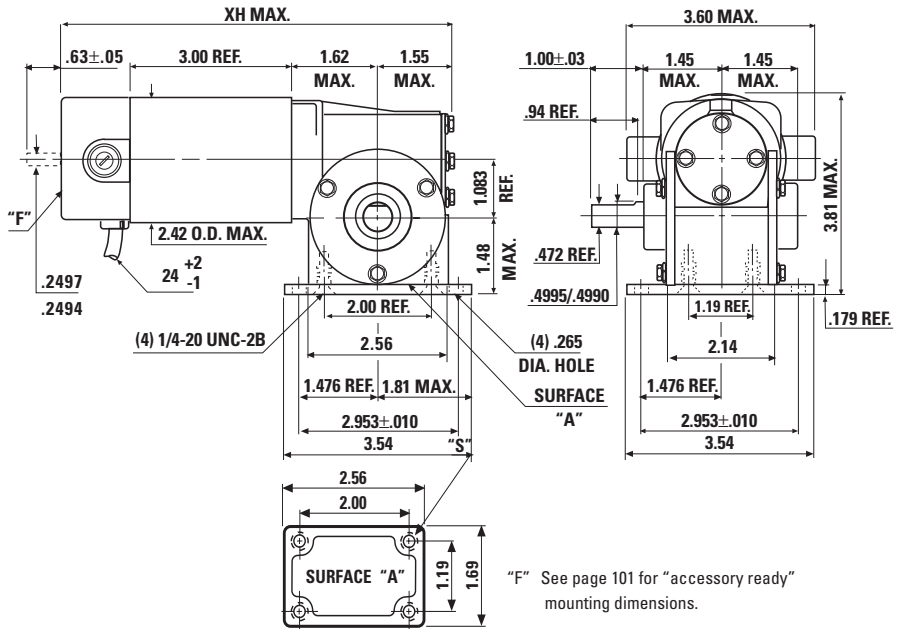
90 COMPATIBLE WITH 90 V CONTROLS

SEE PAGES 98 & 99

		Current @ Rated Torque (Amps)									Model Number[1]			
											24 Volt Winding		130 Volt Winding	
Speed (rpm)	Rated Torque (lb-in.)	24 Volt Winding	130 Volt Winding	Peak Torque (lb-in.)	Motor HP	Gear Ratio	Radial Load (lbs.)	Length XH (inch)	Weight (lbs.)	Product Type	Accessory Shaft	No Accessory Shaft	Accessory Shaft	No Accessory Shaft
42	22	2.6	.48	46	1/17	60	40	7.44	5.3	24A4BEPM-3F	N4899	N4699	N4099	**0099**
63	19	2.6	.48	46	1/17	40	40	7.44	5.3	24A4BEPM-3F	N4898	N4698	N4098	**0098**
125	16	2.6	.48	32	1/17	20	5	7.44	5.3	24A4BEPM-3F	N4896	N4696	N4096	**0096**
250	10	2.6	.48	20	1/17	10	5	7.44	5.3	24A4BEPM-3F	N4894	**4694**	N4094	**0094**
500	5.2	2.6	.48	10	1/17	5	5	7.44	5.3	24A4BEPM-3F	N4893	N4693	N4093	**0093**

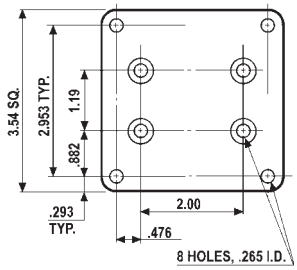
[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

24A-3F Gearmotor shown with optional baseplate kit (model 0967)



"F" See page 101 for "accessory ready" mounting dimensions.

Optional baseplate (model 0967)
Mounts to surface "A"



BODINE THREE DIMENSIONS ONLINE

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Right Angle DC Gearmotors

Up to 77 lb-in. continuous



33A-5R, Motor Base Mount

Standard Features

- 33A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 68 for more details)
- Industrial lip type seals on motor and output shaft
- Bronze sleeve bearing on output shaft for quietness
- Permanently lubricated with high-performance lubricant
- Bronze gear for high shock load capability
- Hardened and ground worm for strength and long life

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Gearmotors can be mounted via four holes in motor base
- Hollow shaft configurations are available. See Web site for mounting and shaft details. These models require lead time and minimum quantities.

Optional Accessories

- IP-44 achieved with terminal box model 0984 or 1984, see page 100

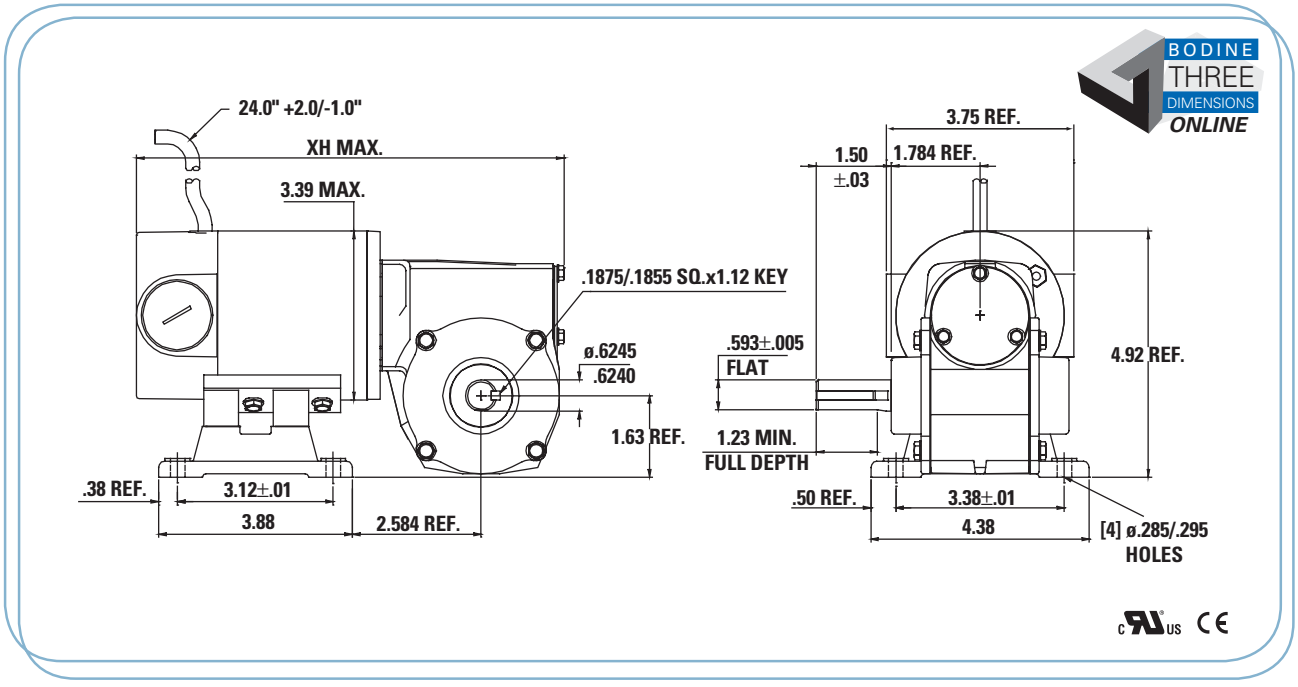
Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

90 COMPATIBLE WITH 90 V CONTROLS

Speed (rpm)	Rated Torque (lb-in.)	Rated Current (Amps)	Peak Torque (lbs-in.)	HP	FF	Gear Ratio	Radial Load (lbs.)	Length (XH) (inch)	Wt. (lbs.)	Product Type	Model Number
130V Models, Class B, Grease Lubrication											
50	45	0.71	118	1/12	1.0	40	80	8.96	9	33A3BEPM-5R	**6128**
67	41	0.71	83	1/12	1.0	30	80	8.96	9	33A3BEPM-5R	**6127**
100	29	0.71	44	1/12	1.0	20	80	8.96	9	33A3BEPM-5R	**6126**
200	17	0.71	23	1/12	1.0	10	80	8.96	9	33A3BEPM-5R	**6125**
130V Models, Class F, Oil Lubrication											
50	77	1.4	179	1/6	1.0	40	80	9.76	10.8	33A5BEPM-5L	**6119**
67	75	1.4	169	1/6	1.0	30	80	9.76	10.8	33A5BEPM-5L	**6118**
100	63	1.4	159	1/6	1.0	20	80	9.76	10.8	33A5BEPM-5L	**6117**
200	37	1.4	91	1/6	1.0	10	80	9.76	10.8	33A5BEPM-5L	**6116**

33A-5R / 33A-5L Gearmotor



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Right Angle DC Gearmotors

Up to 109 lb-in. continuous



Standard Features

- 33A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 68 for more details)
- Industrial lip type seals on motor and output shaft
- Bronze sleeve bearing on output shaft for quietness
- Permanently lubricated with high-performance lubricant
- Bronze gear for high shock load capability
- Hardened and ground worm for strength and long life

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Mounting feet are located on gearhead
- Hollow shaft configurations are available. See page 15 for mounting and shaft details. Some models require lead time and minimum quantities.

Optional Accessories

- Encoder model 0941, see page 101
- Brake model 0997, see page 100
- IP-44 achieved with terminal box model 0984 or 1984, see page 100

Matching Controls

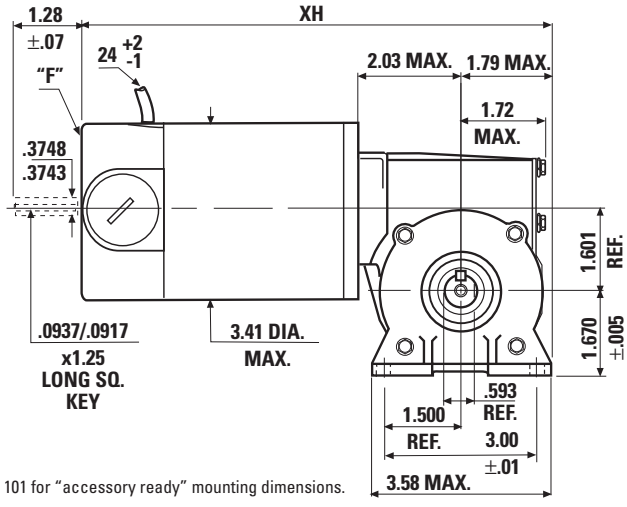
- Bodine stocks a full line of speed controls for Bodine PMDC motors.
  See pages 86-99

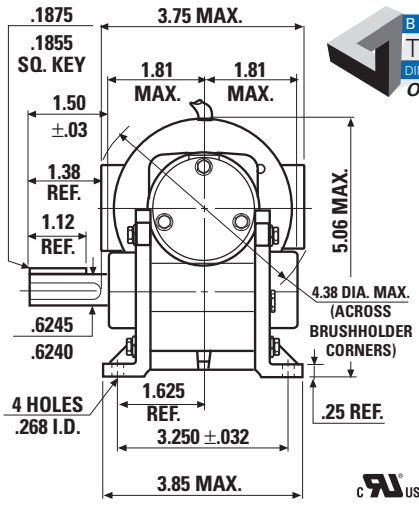
90 COMPATIBLE WITH 90 V CONTROLS
SEE PAGES 98 & 99

Speed (rpm)	Rated Torque (lb-in.)	Rated Current (Amps)	Peak Torque (lb-in.)	HP	FF	Gear Ratio	Radial Load (lbs.)	Length (XH) (inch)	Wt. (lbs.)	Product Type	Model Number: Acc'y. Shaft	Model Number: No Acc'y. Shaft
24V Models With Class F Rating and Needle Bearings on Drivshaft												
62	79	9.2	177	1/4	1.0	40	120	9.87	9.9	33A5BEPM-5N	**6835**	–
125	73	9.2	159	1/4	1.0	20	120	9.87	9.9	33A5BEPM-5N	–	**6636**
250	39	9.2	91	1/4	1.0	10	120	9.87	9.9	33A5BEPM-5N	–	N6638
90V / 130V Models With Class F Ratings and Needle Bearings on Driveshaft												
43 / 62	84 / 109	1.4 / 1.8	177	1/8 / 1/4	1.4 / 1.0	40	120	9.87	9.9	33A5BEPM-5N	–	**6138**
58 / 83	75 / 100	1.4 / 1.8	169	1/8 / 1/4	1.4 / 1.0	30	120	9.87	9.9	33A5BEPM-5N	–	**6137**
86 / 125	54 / 78	1.4 / 1.8	159	1/8 / 1/4	1.4 / 1.0	20	120	9.87	9.9	33A5BEPM-5N	–	**6136**
173 / 250	31 / 42	1.4 / 1.8	91	1/8 / 1/4	1.4 / 1.0	10	120	9.87	9.9	33A5BEPM-5N	**6535**	**6135**
345 / 500	17 / 22	1.4 / 1.8	49	1/8 / 1/4	1.4 / 1.0	5	120	9.87	9.9	33A5BEPM-5N	–	**6134**

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

33A-5N Gearmotor





BODINE THREE DIMENSIONS ONLINE

"F" See page 101 for "accessory ready" mounting dimensions.

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Right Angle DC Gearmotors

Up to 77 lb-in. continuous



42A-5L, Motor Base Mount

90 COMPATIBLE WITH 90 V CONTROLS

Standard Features

- 42A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 69 for more details)
- Industrial lip type seals on motor and output shafts
- Permanently lubricated with high-performance lubricant
- Bronze gear for high shock load capability
- Hardened and ground worm for strength and long life

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Gearmotors mounted via four holes in motor base

Optional Accessories

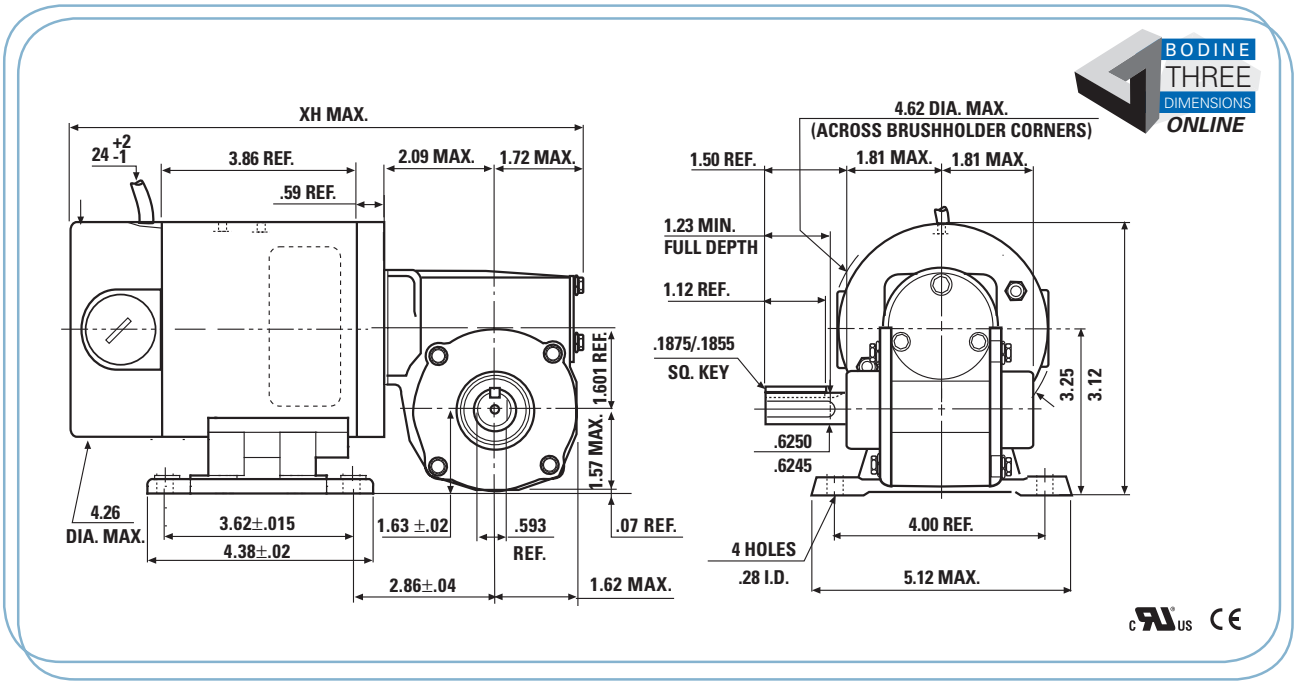
- IP-44 achieved with terminal box model 0984 or 1984, see page 100
- IP-44 achieved with boot kit model 0978, see page 100
- Hollow shaft configurations are available. See Website for mounting and shaft details. These models require lead time and minimum quantities.

Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

Speed (rpm)	Rated Torque (lb-in.)	Rated Current (Amps)	Peak Torque (lb-in.)	HP	FF	Gear Ratio	Radial Load (lbs.)	Length (XH) (inch)	Wt. (lbs.)	Product Type	Model Number
130V Models With Class B Ratings											
50	77	1.3	177	1/6	1.0	40	80	9.97	14.1	42A4BEPM-5L	**4119**
67	75	1.3	169	1/6	1.0	30	80	9.97	14.1	42A4BEPM-5L	**4118**
100	63	1.3	159	1/6	1.0	20	80	9.97	14.1	42A4BEPM-5L	**4117**
200	37	1.3	91	1/6	1.0	10	80	9.97	14.1	42A4BEPM-5L	**4116**

42A-5L Gearmotor



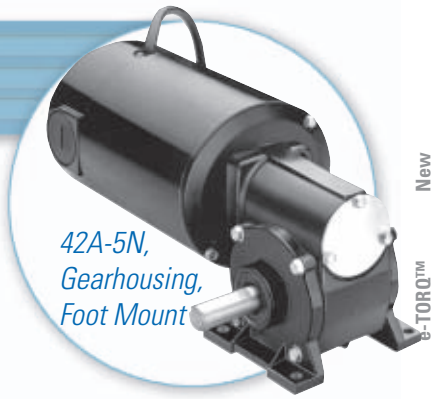
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Right Angle DC Gearmotors

Up to 79 lb-in. continuous



Standard Features

- 42A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 69 for more details)
- Industrial lip type seals on motor and output shafts
- Needle bearing on hardened output shaft journals for increased radial load capacity
- Permanently lubricated with high-performance lubricant
- Bronze gear for high shock load capability
- Hardened and ground worm for strength and long life

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Mounting feet are located on gearhead
- Hollow shaft configurations are available. See page 16 for mounting and shaft details.

Optional Accessories

- Encoder model 0941, see page 101
- Brake model 0997, see page 100
- IP-44 achieved with terminal box model 0984 or 1984, see page 100
- IP-44 achieved with boot kit model 0978, see page 100

Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

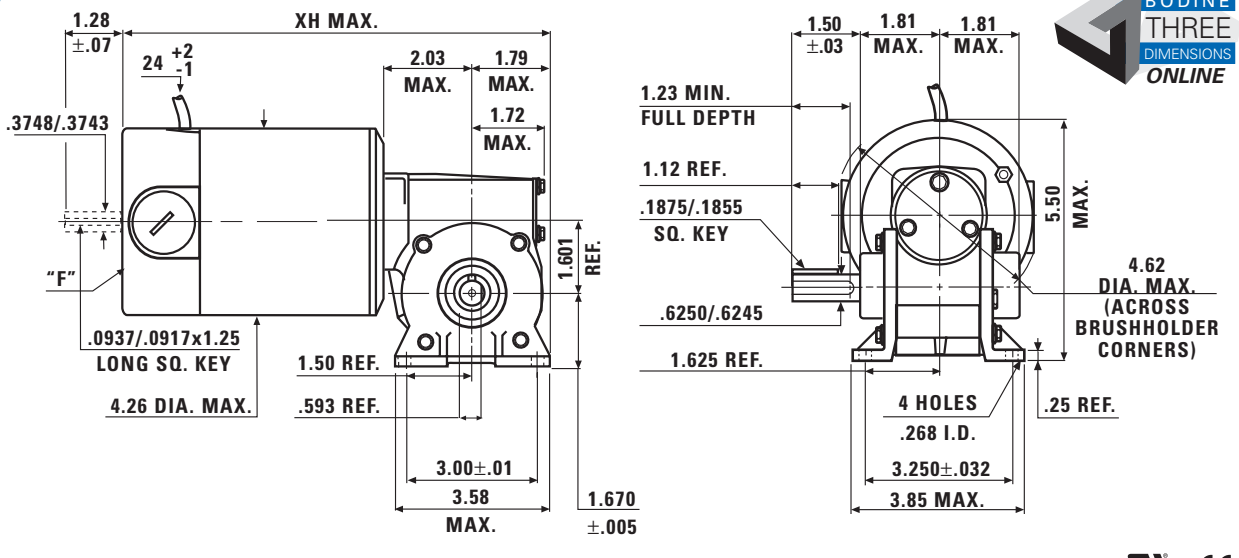
90 COMPATIBLE WITH 90 V CONTROLS

SEE PAGES 98 & 99

		Current @ Rated Torque (Amps)									Model Number[1]			
											24 Volt Winding		130 Volt Winding	
Speed (rpm)	Rated Torque (lb-in.)	24 Volt Winding	130 Volt Winding	Peak Torque (lb-in.)	Motor HP	Gear Ratio	Radial Load (lbs.)	Length XH (inch)	Weight (lbs.)	Product Type	Accessory Shaft	No Accessory Shaft	Accessory Shaft	No Accessory Shaft
62	79	8.8	1.8	177	1/4	40	120	10.37	14.3	42A5BEPM-5N	N4838	N4638	N4538	**4138**
83	75	8.8	1.8	169	1/4	30	120	10.37	14.3	42A5BEPM-5N	N4837	N4637	N4537	**4137**
125	75	8.8	1.8	159	1/4	20	120	10.37	14.3	42A5BEPM-5N	N4836	**4636**	**4536**	**4136**
250	42	8.8	1.8	91	1/4	10	120	10.37	14.3	42A5BEPM-5N	N4835	N4635	**4535**	**4135**
500	24	8.8	1.8	49	1/4	5	120	10.37	14.3	42A5BEPM-5N	N4834	N4634	N4534	**4134**

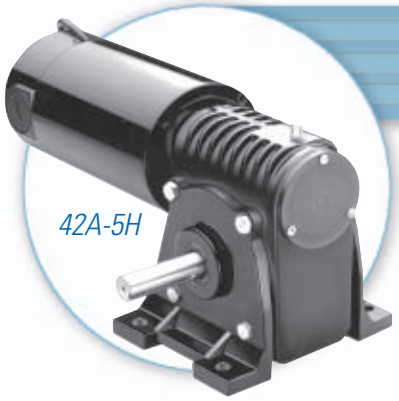
[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

42A-5N Gearmotor



"F" See page 101 for "accessory ready" mounting dimensions.

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Right Angle DC Gearmotors

Up to 264 lb-in. continuous

90 COMPATIBLE WITH 90 V CONTROLS

SEE PAGES 98 & 99

Standard Features

- 42A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 69 for more details)
- Rugged gearhead designed for heavy continuous loads with ample strength for shock loads
- Industrial lip type seals on motor and output shaft
- Ball bearing on output shaft for high radial and axial load capacity
- Permanently lubricated with high-performance lubricant
- Bronze gear for high shock load capability
- Hardened and ground worm for strength and long life

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Mounting feet are located on gearhead

Optional Accessories

- Encoder model 0941, see page 101
- Brake model 0997, see page 100
- IP-44 achieved with terminal box model 0984 or 1984, see page 100
- IP-44 achieved with boot kit model 0978, see page 100

Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

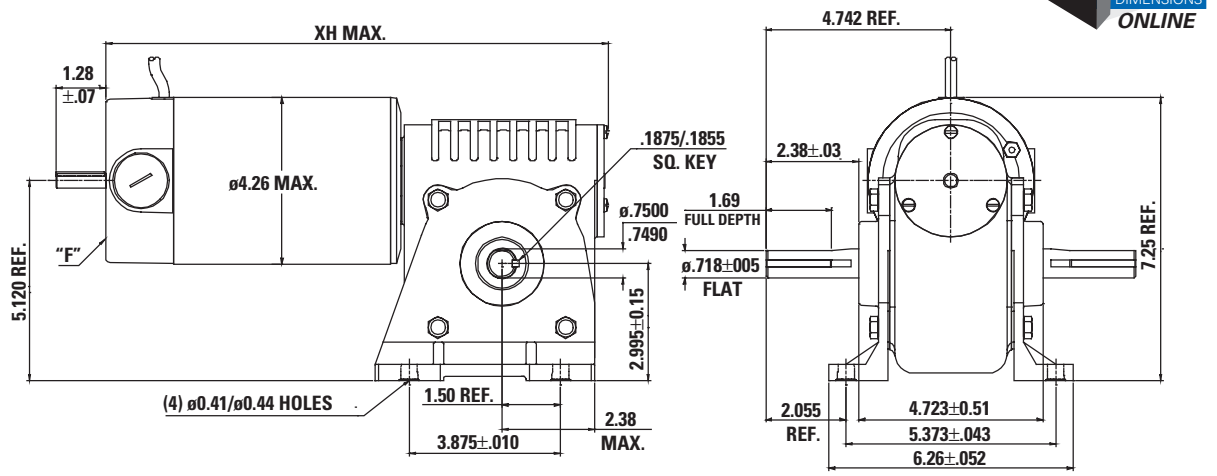
		Current @ Rated Torque (Amps)									Model Number[1]			
											24 Volt Winding		130 Volt Winding	
Speed (rpm)	Rated Torque (lb-in.)	24 Volt Winding	130 Volt Winding	Peak Torque (lb-in.)	Motor HP	Gear Ratio	Radial Load (lbs.)	Length XH (inch)	Weight (lbs.)	Product Type	Accessory Shaft	No Accessory Shaft	Accessory Shaft	No Accessory Shaft
Single Shaft Gearhead														
52	189	12	2.3	340	1/3	48	150	13.00	24.4	42A7BEPM-5H	N4829	N4729	N4599	**4199**
69	151	12	2.3	316	1/3	36	150	13.00	24.4	42A7BEPM-5H	N4828	N4728	N4598	**4198**
139	87	12	2.3	186	1/3	18	150	13.00	24.4	42A7BEPM-5H	N4827	N4727	N4596	N4196
250	52	12	2.3	104	1/3	10	150	13.00	24.4	42A7BEPM-5H	N4826	N4726	N4594	**4194**
Double Shaft Gearhead														
52	264	15	3.4	340	1/2	48	150*	13.00	24.4	42A7BEPM-5H	N4833	N4733	N4503	N4103
69	218	15	3.4	340	1/2	36	150*	13.00	24.4	42A7BEPM-5H	N4832	N4732	N4502	**4102**
139	129	15	3.4	286	1/2	18	150*	13.00	24.4	42A7BEPM-5H	N4831	N4731	N4501	**4101**
250	71	15	3.4	158	1/2	10	150*	13.00	24.4	42A7BEPM-5H	**4830**	N4730	N4500	N4100

[1] NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.

*** On only one of the two shafts.**

42A-5H Gearmotor (model with accessory shaft and double shaft gearhead shown)

BODINE THREE DIMENSIONS ONLINE



"F" See page 101 for "accessory ready" mounting dimensions.

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Right Angle DC Gearmotors

Up to 192 lb-in. continuous



Standard Features

- 33A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 68 for more details)
- Rugged gearhead designed for heavy continuous loads with ample strength for shock loads
- Industrial lip type seals on motor and output shaft
- Ball bearing on output shaft for high radial and axial load capacity
- Permanently lubricated with high-performance lubricant
- Bronze gear for high shock load capability
- Hardened and ground worm for strength and long life

Application Information

- For connection diagram 074 10101 see page 66
- Mounting feet are located on gearhead

Optional Accessories

- Encoder model 0941, see page 101
- Brake model 0997, see page 100
- IP-44 achieved with terminal box model 0984 or 1984, see page 100
- Hollow shaft configurations are available. See Website for mounting and shaft details. These models require lead time and minimum quantities.

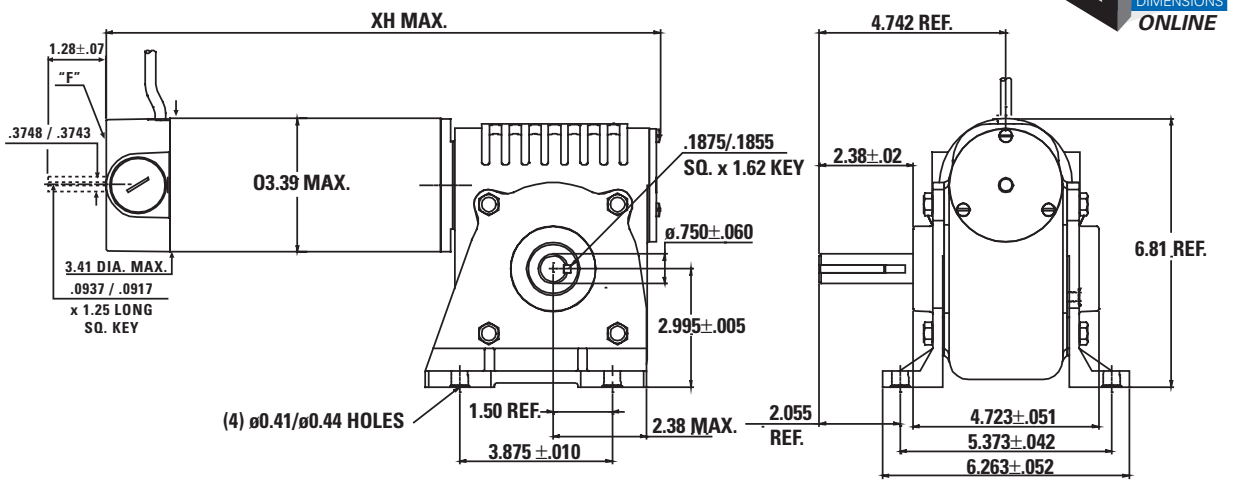
Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

90 COMPATIBLE WITH 90 V CONTROLS

Speed (rpm)	Rated Torque (lb-in.)	Rated Current (Amps)	Peak Torque (lb-in.)	HP	FF	Gear Ratio	Radial Load (lbs.)	Length (XH) (inch)	Wt. (lbs.)	Product Type	Model Number: Acc'y. Shaft	Model Number: No Acc'y. Shaft
90V / 130V Models With Class F Ratings												
36 / 52	137 / 192	1.8 / 2.4	340	1/6 / 1/3	1.4 / 1.0	48	150	12.53	18.2	33A7BEPM-5H	—	**6199**
48 / 69	113 / 158	1.8 / 2.4	316	1/6 / 1/3	1.4 / 1.0	36	150	12.53	18.2	33A7BEPM-5H	—	**6198**
96 / 139	67 / 93	1.8 / 2.4	186	1/6 / 1/3	1.4 / 1.0	18	150	12.53	18.2	33A7BEPM-5H	—	**6196**
173 / 250	37 / 52	1.8 / 2.4	104	1/6 / 1/3	1.4 / 1.0	10	150	12.53	18.2	33A7BEPM-5H	**6594**	**6194**

33A-5H Gearmotor

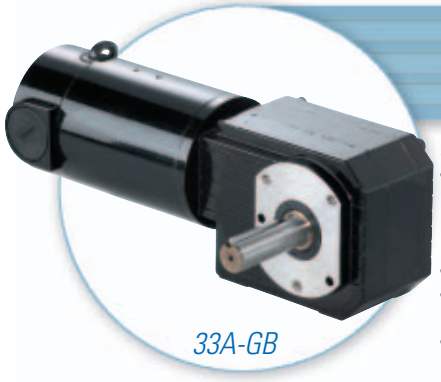


"F" See page 101 for "accessory ready" mounting dimensions.

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Right Angle DC Gearmotors

Up to 380 lb-in. continuous



90 COMPATIBLE WITH 90 V CONTROLS

Standard Features

- 33A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 68 for more details)
- Industrial lip type seals on motor and output shafts
- Ball bearing on output shaft for increased radial load capacity and long life
- Permanently lubricated with high-performance lubricant
- Hardened helical output gearing for quietness and high output torque
- Bronze primary worm gear for high shock load capability
- Hardened and ground worm hobbed on the motor shaft for high strength and long life

Application Information

- For connection diagram 074 10101 see page 66
- Mounting is via four tapped holes under the gearhead or three tapped holes in the face of the gearhead
- Hollow shaft configurations are available. See page 17 for mounting and shaft details.

Optional Accessories

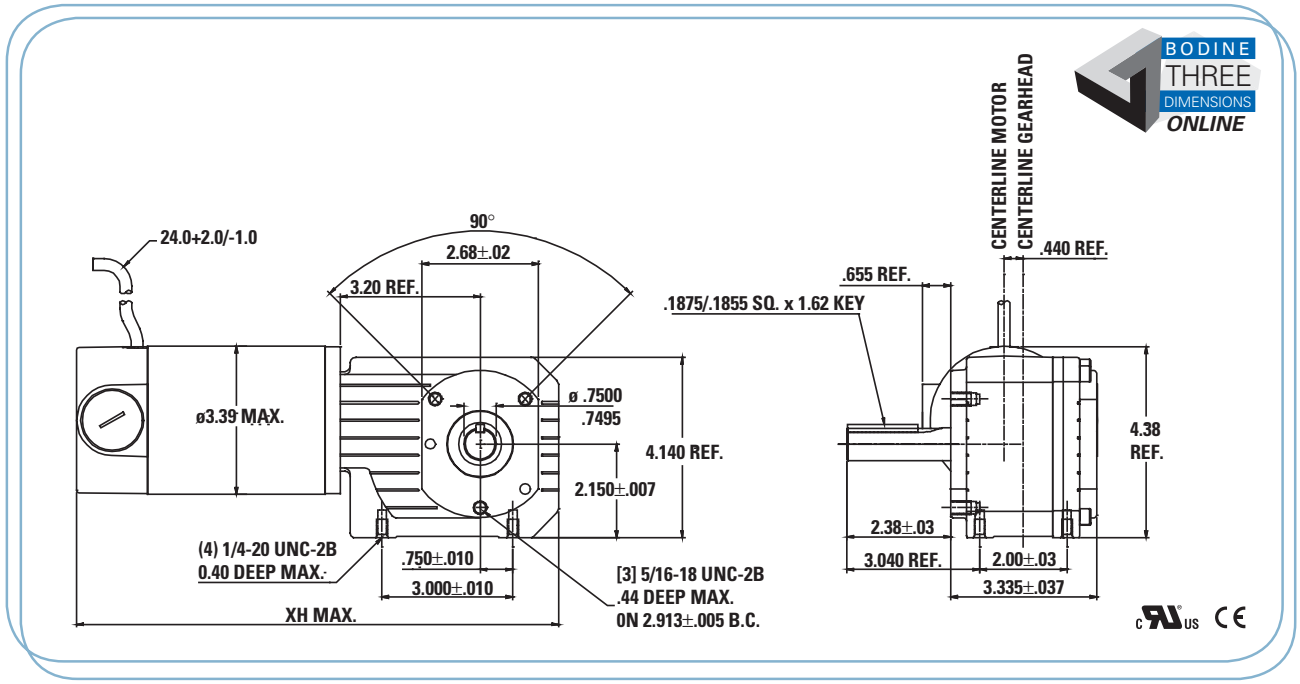
- IP-44 achieved with terminal box model 0984 or 1984, see page 100

Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

Speed (rpm)	Rated Torque (lb-in.)	Rated Current (Amps)	Peak Torque (lb-in.)	HP	FF	Gear Ratio	Radial Load	Length (XH) (inch)	Wt. (lbs.)	Product Type	Model Number
90V / 130V Models With Class F Ratings											
6.2 / 8.9	380 / 380	1.4 / 1.8	600	1/8 / 1/4	1.4 / 1.0	280	200	11.3	13.6	33A5BEPM-GB	**6066**
9.1 / 13	358 / 375	1.4 / 1.8	600	1/8 / 1/4	1.4 / 1.0	190	200	11.3	13.6	33A5BEPM-GB	**6064**
14 / 21	251 / 290	1.4 / 1.8	464	1/8 / 1/4	1.4 / 1.0	120	200	11.3	13.6	33A5BEPM-GB	**6062**
29 / 42	151 / 200	1.4 / 1.8	368	1/8 / 1/4	1.4 / 1.0	60	200	11.3	13.6	33A5BEPM-GB	**6060**

33A-GB Gearmotor



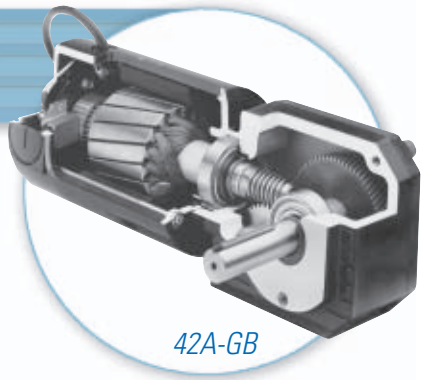
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Right Angle DC Gearmotors

Up to 380 lb-in. continuous



42A-GB

Cutaway view

Standard Features

- 42A motor provides high starting torque, adjustable speed, and predictable performance under a range of operating conditions. (see page 69 for more details)
- Industrial lip type seals on motor and output shafts
- Ball bearing on output shaft for increased radial load capacity and long life
- Permanently lubricated with high-performance lubricant
- Hardened helical output gearing for quietness and high output torque
- Bronze primary worm gear for high shock load capability
- Hardened and ground worm hobbed on the motor shaft for high strength and long life

Application Information

- For connection diagram 074 10101 see page 66
- Performance ratings of 130 V models based on use with filtered controls
- Mounting is via four tapped holes under the gearhead or three tapped holes in the face of the gearhead
- Hollow shafts available. See page 18

Optional Accessories

- Encoder model 0941, see page 101
- Brake model 0997, see page 100
- IP-44 achieved with terminal box model 0984 or 1984, see page 100
- IP-44 achieved with boot kit model 0978, see page 100

Matching Controls

- Bodine stocks a full line of speed controls for Bodine PMDC motors. See pages 86-99

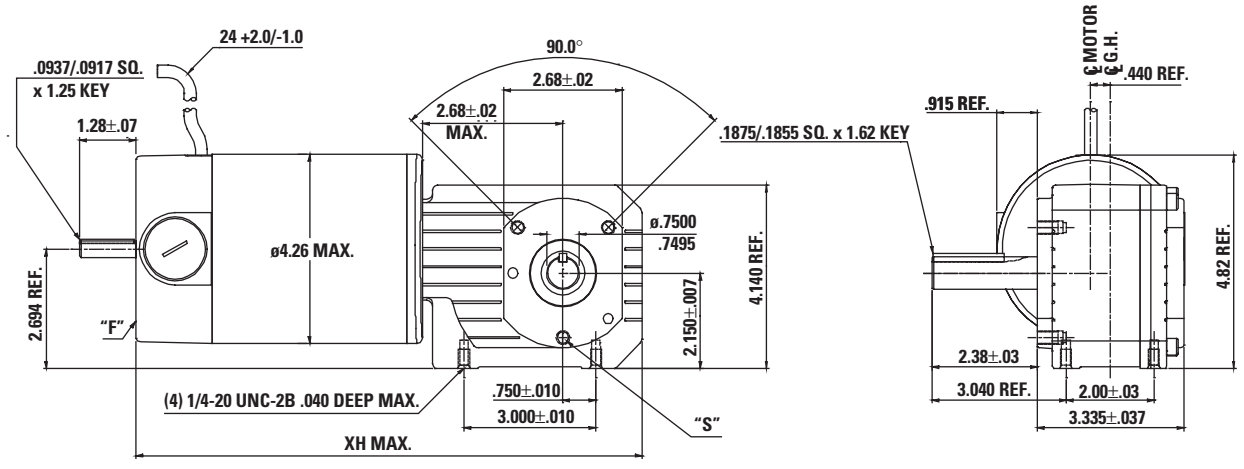
90 COMPATIBLE WITH 90 V CONTROLS
SEE PAGES 98 & 99

		Current @ Rated Torque (Amps)									Model Number[1]			
											24 Volt Winding		130 Volt Winding	
Speed (rpm)	Rated Torque (lb-in.)	24 Volt Winding	130 Volt Winding	Peak Torque (lb-in.)	Motor HP	Gear Ratio	Radial Load (lbs.)	Length XH (inch)	Weight (lbs.)	Product Type	Accessory Shaft	No Accessory Shaft	Accessory Shaft	No Accessory Shaft
8.9	380	8.8	1.8	600	1/4	280	200	11.69	18	42A5BEPM-GB	N4866	N4766	N4466	**4066**
13	375	8.8	1.8	600	1/4	190	200	11.69	18	42A5BEPM-GB	N4864	N4764	N4464	**4064**
21	290	8.8	1.8	464	1/4	120	200	11.69	18	42A5BEPM-GB	N4862	N4762	N4462	**4062**
42	213	8.8	1.8	368	1/4	60	200	11.69	18	42A5BEPM-GB	N4860	N4760	N4460	**4060**

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

BODINE THREE DIMENSIONS ONLINE

42A-GB Gearmotor



"S" (3) 5/16-18 UNC-2B, .44/.50 deep on a 2.913 bolt circle

"F" See page 101 for "accessory ready" mounting dimensions.

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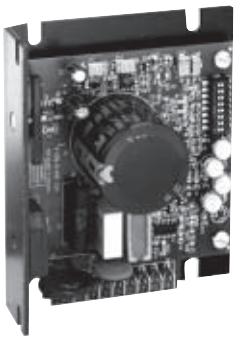
DC Motor Controls

Open Chassis Controls

See pages 88, 90, 94

Types WPM, UPM and FPM

For lowest cost and when an enclosure is already available



NEMA 1 Enclosures

See pages 89, 91, 92, 93, and 95

Types WPM, UPM and FPM

With a convenient user interface and basic environmental protection



NEMA 4 Enclosures

See page 87

Type UPM

For superior environmental protection against spraying water and windblown dust



Advanced Interface Options

See pages 92, 93

Type FPM

For direction control or remote speed control

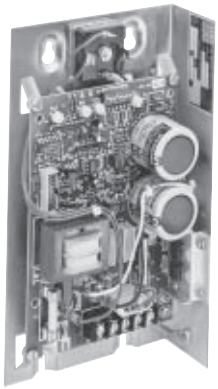


Filtered Controls

See pages 88-93

Type FPM and WPM

For cooler motor operation and wider speed range



Unfiltered Controls

See pages 87, 94, 95

Type UPM

Produce less EMI and draw less AC current



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Unfiltered SCR Motor Speed Control

NEMA 4, Waterproof Enclosure



2 YEAR SYSTEM WARRANTY
SEE PAGE 128

Standard Features

- Operates from 115 Volt AC or 230 Volt AC line
- Switchable output for 0–90 Volt DC or 0–180 Volt DC
- Back EMF feedback maintains better than 2% speed regulation
- Dip switches to easily calibrate control for different motor sizes
- NEMA 4 enclosure for wet or dirty environments
- Trim pots on PC board to adjust torque limit, minimum speed limit, maximum speed limit, acceleration time, deceleration time, and speed regulation
- Speed can be adjusted manually using speed pot on front of enclosure
- Terminal block inside enclosure for quick line and motor connection
- Line fuses inside enclosure
- Toggle switch on front panel to turn AC power on/off
- Lamp on enclosure indicates when power is on
- Line filter inside enclosure to reduce conducted EMI

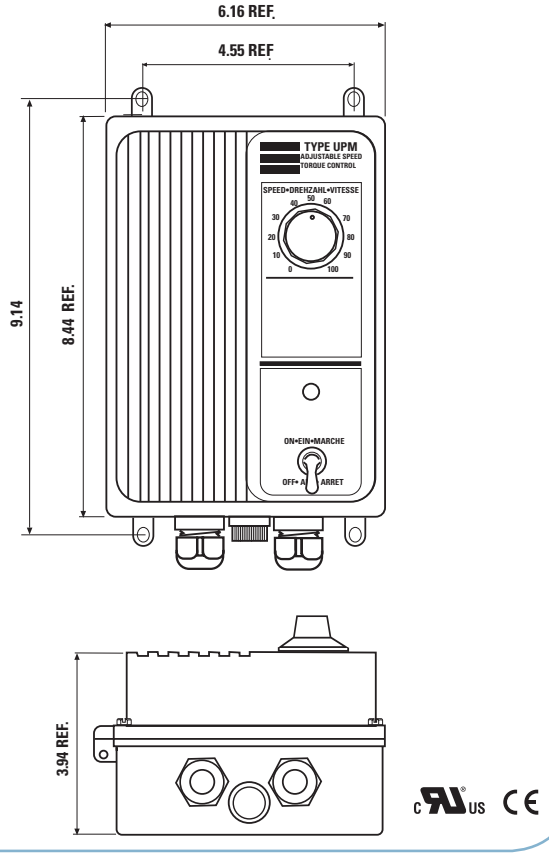
Application Information

- Rated for continuous operation in 40^0 C ambient
- Drives Bodine 90/130 Volt and 180 Volt permanent magnet DC motors, or similar motors made by other manufacturers

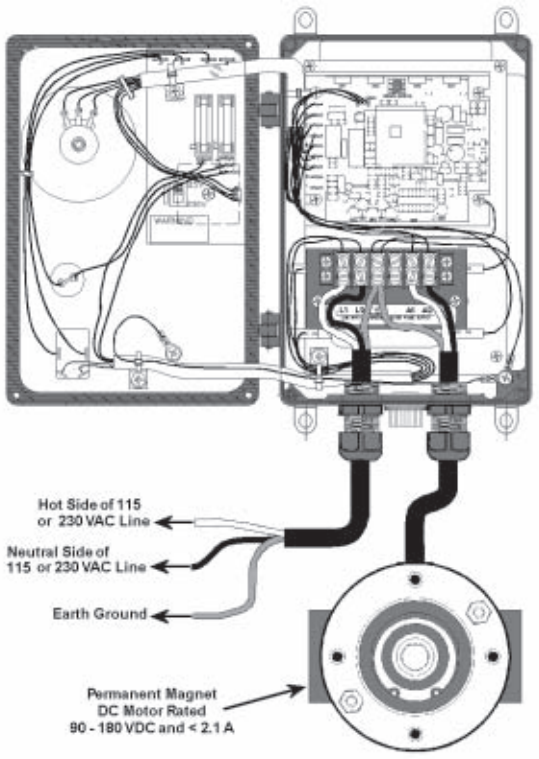
HP Rating	Input Voltage (VAC, 50/60 Hz)	Output Voltage (VDC)	Continuous Output Current (Amps)	Peak Output Current (Amps)	Form Factor	Weight (lbs.)	Product Type	Model Number
1/5 @ 90V /1/3 @ 180V	115 / 230	0 – 90 / 0 – 180	2.1	4.2	1.4	8.0	UPM-3318E4	**1865**

BODINE THREE DIMENSIONS ONLINE

Dimensions



Connection Diagram



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Filtered PWM DC Controls

Chassis, Basic Speed Control



2 YEAR SYSTEM WARRANTY

SEE PAGE 128

Standard Features

- Operates off 115 Volt AC line, 50/60 Hz
- Filtered DC output for cooler motor operation, longer brush life, lower audible noise, and wider speed range
- Back EMF feedback maintains better than 2% speed regulation
- Dip switches to easily calibrate control for different motor sizes
- Two diagnostic LEDs indicate when power is on and when current output is at limit set by TORQ pot
- Five on-board user-adjustable pots for torque limit, minimum speed limit, maximum speed limit, acceleration time, and speed regulation
- Speed can be adjusted manually using a remote 10k speed pot (included with control)
- Connections for optional user-supplied inhibit switch

Application Information

- Rated for continuous operation in 40° C ambient with no additional heat sink
- Drives Bodine 130 Volt permanent magnet DC motors
- Drives 90 Volt "SCR rated" and 130 Volt "PWM rated" PM DC motors made by other manufacturers
- Connections made to models 0780 and 0781 with 0.25" quick connect tabs. Seven mating terminals supplied with control. Connections made to models 0783 and 0784 with pluggable terminal block (supplied with control)
- For selection tables see pages 96-99
- Line filter required to meet conditions for CE mark

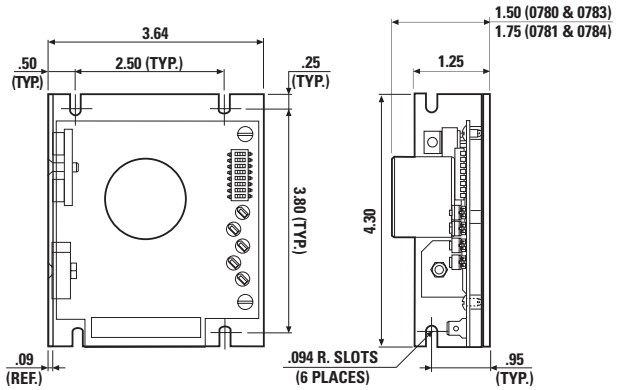
Optional Accessories

- Analog interface board and isolation module model 3984, see page 101

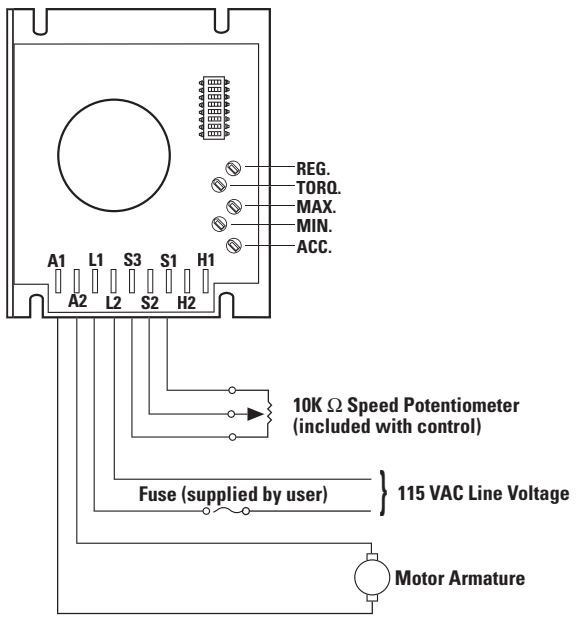
HP Rating	Input Voltage (VAC, 50/60 Hz)	Output Voltage (VDC)	Continuous Output Current (Amps)	Peak Output Current (Amps)	Form Factor	Weight (lbs.)	Product Type	Model Number: 1/4 in. QC tab connection	Model Number: Terminal block connection
1/6	115	0-130	1.25	2.50	1.0	1.0	WPM-2109C	**0780**	**0783**
7/16	115	0-130	3.20	5.00	1.0	1.0	WPM-2137C	**0781**	**0784**

BODINE THREE DIMENSIONS ONLINE

Dimensions



Connection Diagram



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Filtered PWM DC Controls

NEMA 1, Basic Speed Control



2 YEAR SYSTEM WARRANTY

SEE PAGE 128

Standard Features

- Operates from 115 Volt AC line
- Filtered DC output for cooler motor operation, longer brush life, lower audible noise and wider speed range
- Dip switches to easily calibrate control for different motor sizes
- Line voltage compensation minimizes speed drift
- NEMA 1 enclosure for environmental protection
- Trim pots on PC board to adjust torque limit, minimum speed limit, maximum speed limit, acceleration time and speed regulation
- Speed can be adjusted manually using speed pot mounted on enclosure
- Terminal block inside enclosure for motor connection
- Back EMF feedback maintains better than 2% speed regulation
- Fuseholder for line on front panel
- Toggle switch on enclosure to turn AC power on/off
- Lamp on enclosure indicates AC power on
- AC line cable factory installed

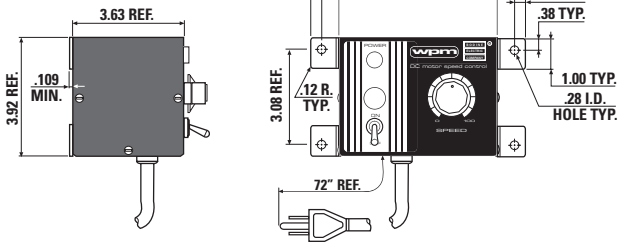
Application Information

- Rated for continuous operation in 40°C ambient with no additional heat sink
- Drives Bodine 130 Volt permanent magnet DC motors, see pages 67-85
- Drives 90 Volt "SCR duty" and 130 Volt "PWM duty" permanent magnet DC motors made by other manufacturers
- For selection tables see pages 96-99

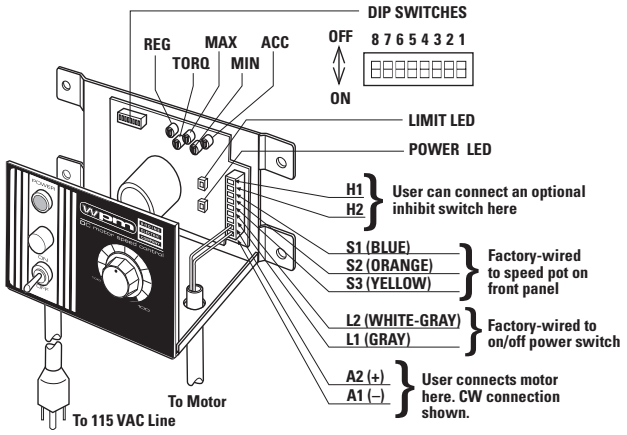
HP Rating	Input Voltage (VAC, 50/60 Hz)	Output Voltage (VDC)	Continuous Output Current (Amps)	Peak Output Current (Amps)	Form Factor	Weight (lbs.)	Product Type	Model Number
1/6	115	0-130	1.25	2.50	1.0	2.0	WPM-2109E1	**0790**
7/16	115	0-130	3.2	5.00	1.0	2.0	WPM-2137E1	**0791**

BODINE THREE DIMENSIONS ONLINE

Dimensions



Connection Diagram

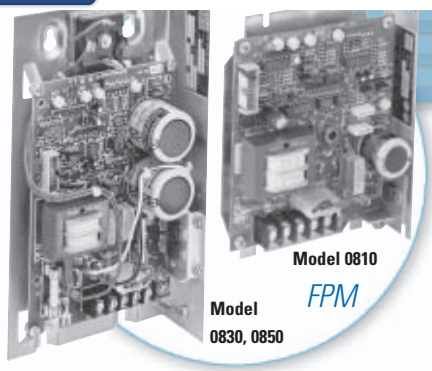


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Filtered SCR DC Controls

Chassis, Basic Speed Control



2 YEAR SYSTEM WARRANTY
SEE PAGE 128

Standard Features

- Operates off 115 Volt AC line
- Filtered DC output for cooler motor operation, longer brush life, lower audible noise, and wider speed range
- Dip switches to easily calibrate control for different motor sizes
- Line voltage and temperature compensation minimize speed drift
- Trim pots on PC board to adjust torque limit, minimum speed limit, maximum speed limit, acceleration time and speed regulation
- Back EMF feedback maintains better than 2% speed regulation
- 10k ohm remote speed pot and 24" connecting wire supplied with each control
- Connections for optional user-supplied inhibit switch
- Terminal block for quick line and motor connection
- Plug-in connector for speed pot and optional user-supplied inhibit switch
- Flexibility in adding plug-in interface boards, see optional accessories
- Built-in line and motor fuseholders (both fuses supplied)

Application Information

- Rated for continuous operation in 50° C ambient with no additional heat sink
- Designed to be mounted in separate enclosure supplied by user
- Drives Bodine 130 Volt permanent magnet DC motors, see pages 67-85
- Drives 90 Volt "SCR duty" and 130 Volt "PWM duty" permanent magnet DC motors made by other manufacturers
- See page 96 for selection tables

Optional Accesories

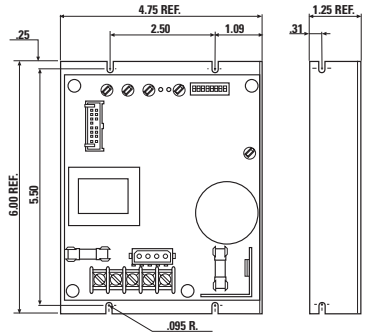
- Analog interface board model 0888, see page 101
- Digital Interface Board model 0889, see page 101
- Electronic Direction and Braking Board model 0890, see page 101
- Local/Remote Switch Kit model 0893, see page 101

HP Rating	Input Voltage (VAC, 50/60 Hz)	Output Voltage (VDC)	Continuous Output Current (Amps)	Peak Output Current (Amps)	Form Factor	Weight (lbs.)	Product Type	Model Number
1/17	115	0-130	0.50	1.0	1.0	2.5	FPM-0810C	**0810**
1/6	115	0-130	1.25	2.5	1.0	3.4	FPM-0830C	**0830**
1/3	115	0-130	2.30	4.6	1.0	4.0	FPM-0850C	**0850**

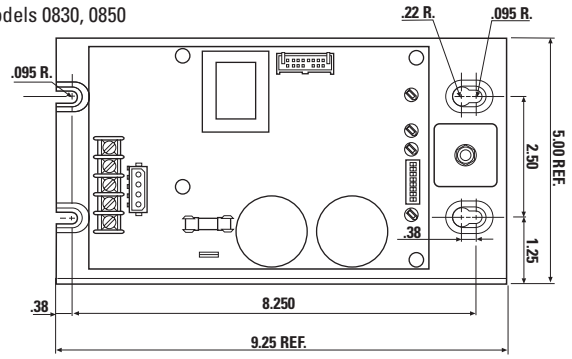
BODINE THREE DIMENSIONS ONLINE

Dimensions

Model 0810

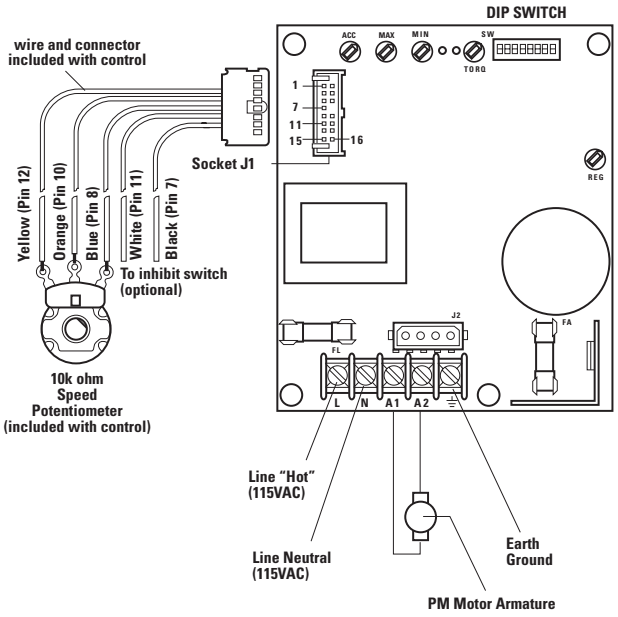


Models 0830, 0850



Connection Diagram

Model 0810 shown. Models 0830 and 0850 are similar



Note: Wire for line and motor connections must be supplied by user

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Filtered SCR DC Controls

NEMA 12, Basic Speed Control



SEE PAGE 128

Standard Features

- Operates from 115 Volt AC line
- Filtered DC output for cooler motor operation, longer brush life, lower audible noise and wider speed range
- Dip switches to easily calibrate control for different motor sizes
- Line voltage and temperature compensation minimize speed drift
- NEMA 12 enclosure for environmental protection
- Trim pots on PC board to adjust torque limit, minimum speed limit, maximum speed limit, acceleration time and speed regulation
- Speed can be adjusted manually using speed pot mounted on enclosure
- Terminal block inside enclosure for quick line and motor connection
- Back EMF feedback maintains better than 2% speed regulation
- Fuseholders for line and motor inside enclosure (both fuses supplied)
- Toggle switch on enclosure to turn AC power on/off
- Lamp on enclosure indicates AC power on

Application Information

- Rated for continuous operation in 40° C ambient with no additional heat sink
- Drives Bodine 130 Volt permanent magnet DC motors, see pages 67-85
- Drives 90 Volt "SCR duty" and 130 Volt "PWM duty" permanent magnet DC motors made by other manufacturers
- For selection tables see page 96

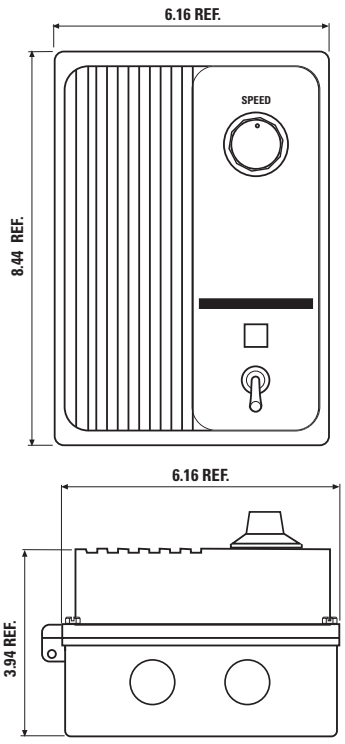
Optional Accesories

- IP-44 sealing kit model 0895 for protection against splashing water, see page 101

HP Rating	Input Voltage (VAC, 50/60 Hz)	Output Voltage (VDC)	Continuous Output Current (Amps)	Peak Output Current (Amps)	Form Factor	Weight (lbs.)	Product Type	Model Number
1/17	115	0-130	0.50	1.00	1.0	8.0	FPM-0815E	**0815**
1/6	115	0-130	1.25	2.50	1.0	8.0	FPM-0835E	**0835**
1/3	115	0-130	2.30	4.60	1.0	8.0	FPM-0855E	**0855**

BODINE THREE DIMENSIONS ONLINE

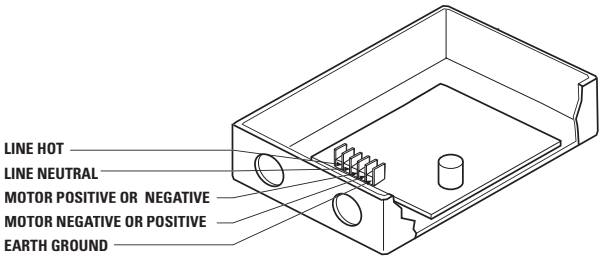
Dimensions



Accepts .5 in. liquid tight fittings

Connection Diagram

Shown with enclosure door removed



Note: All wires external to control must be supplied by user

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Filtered SCR DC Controls

NEMA 12, Speed and Direction Control



FPM

2 YEAR SYSTEM WARRANTY

SEE PAGE 128

Standard Features

- Operates from 115 Volt AC line
- Filtered DC output for cooler motor operation, longer brush life, lower audible noise and wider speed range
- Dip switches to easily calibrate control for different motor sizes
- Line voltage and temperature compensation minimize speed drift
- NEMA 12 enclosure for environmental protection
- Dynamic braking for quick stops
- Trim pots on PC board to adjust torque limit, minimum speed limit, maximum speed limit, acceleration time and speed regulation
- Speed can be adjusted manually using speed pot mounted on enclosure
- Toggle switch on enclosure to turn AC power on/off
- Rotary switch on enclosure for direction
- Lamp on enclosure indicates AC power on
- Terminal block inside enclosure for quick line and motor connection
- Back EMF feedback maintains better than 2% speed regulation
- Fuseholders for line and motor inside enclosure (fuses included)

Application Information

- Rated for continuous operation in 40° C ambient with no additional heat sink
- Drives Bodine 130 Volt permanent magnet DC motors, see pages 67-85
- Drives 90 Volt "SCR duty" and 130 Volt "PWM duty" permanent magnet DC motors made by other manufacturers
- For selection table, see page 96

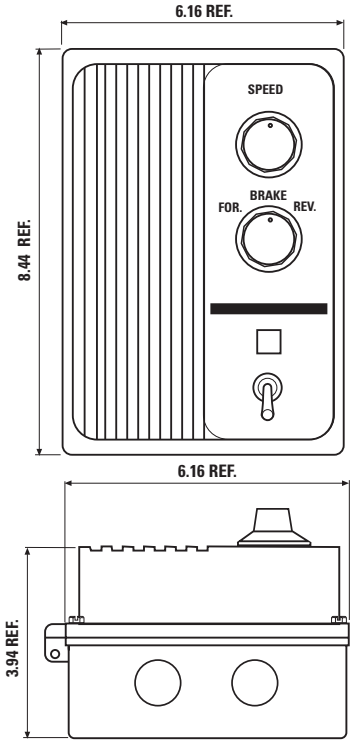
Optional Accesories

- IP-44 sealing kit model 0895 for protection against splashing water, see page 101

HP Rating	Input Voltage (VAC, 50/60 Hz)	Output Voltage (VDC)	Continuous Output Current (Amps)	Peak Output Current (Amps)	Form Factor	Weight (lbs.)	Product Type	Model Number
1/17	115	0-130	0.50	1.00	1.0	8.0	FPM-0818E	**0818**
1/6	115	0-130	1.25	2.50	1.0	8.0	FPM-0838E	**0838**
1/3	115	0-130	2.30	4.60	1.0	8.0	FPM-0858E	**0858**

BODINE THREE DIMENSIONS ONLINE

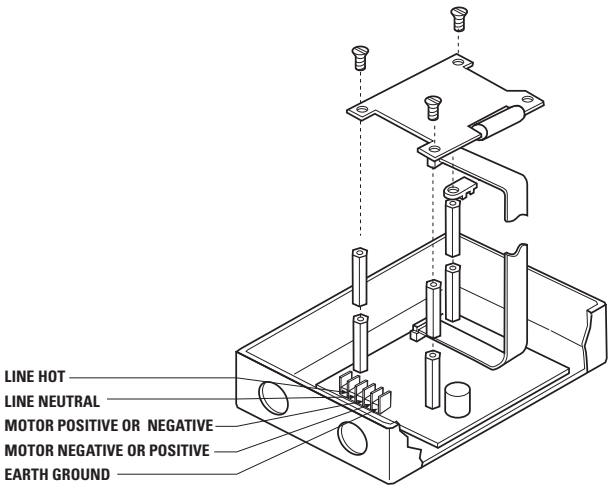
Dimensions



Accepts .5 in. liquid tight fittings

Connection Diagram

Assembly shown exploded for clarity



Note: All wires external to control must be supplied by user

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Filtered SCR DC Controls

NEMA 12, Remote Speed Control



2 YEAR SYSTEM WARRANTY

SEE PAGE 128

Standard Features

- Operates from 115 Volt AC line
- Filtered DC output for cooler motor operation, longer brush life, lower audible noise and wider speed range
- Dip switches to easily calibrate control for different motor sizes
- Line voltage and temperature compensation minimize speed drift
- NEMA 12 enclosure for environmental protection
- Trim pots on PC board to adjust torque limit, minimum speed limit, maximum speed limit, acceleration time, and speed regulation
- Speed can be adjusted manually using speed pot mounted on enclosure
- Terminal block inside enclosure for quick line and motor connection
- Back EMF feedback maintains better than 2% speed regulation
- Fuseholders for line and motor inside enclosure (fuses included)

Application Information

- Rated for continuous operation in 40° C ambient with no additional heat sink
- Drives Bodine 130 Volt permanent magnet DC motors, see pages 67-85
- Drives 90 Volt "SCR duty" and 130 Volt "PWM duty" permanent magnet DC motors made by other manufacturers
- For selection table, see page 96

Optional Accesories

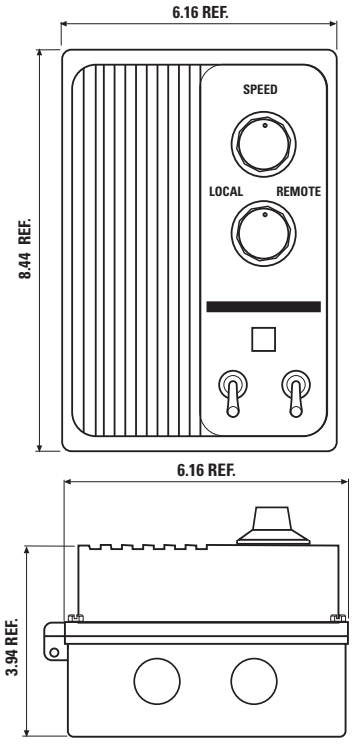
- IP-44 sealing kit model 0895 for protection against splashing water, see page 101

BODINE THREE DIMENSIONS ONLINE

HP Rating	Input Voltage (VAC, 50/60 Hz)	Output Voltage (VDC)	Continuous Output Current (Amps)	Peak Output Current (Amps)	Form Factor	Weight (lbs.)	Remote Signal	Product Number	Model Number[1]
1/17	115	0-130	0.50	1.00	1.0	8.0	Analog	FPM-0816E	**0816**
1/17	115	0-130	0.50	1.00	1.0	8.0	Digital	FPM-0817E	N0817
1/6	115	0-130	1.25	2.50	1.0	8.0	Analog	FPM-0836E	**0836**
1/6	115	0-130	1.25	2.50	1.0	8.0	Digital	FPM-0837E	N0837
1/3	115	0-130	2.30	4.60	1.0	8.0	Analog	FPM-0856E	**0856**
1/3	115	0-130	2.30	4.60	1.0	8.0	Digital	FPM-0857E	N0857

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

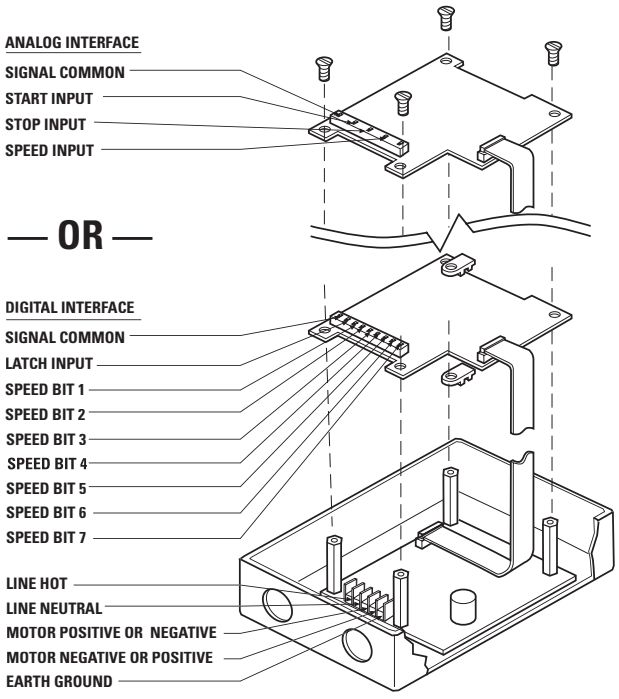
Dimensions



Accepts .5 in. liquid tight fittings

Connection Diagram

Assembly shown exploded for clarity

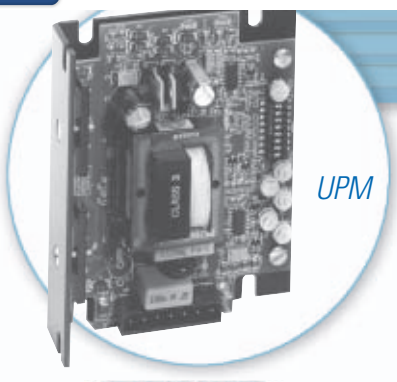


All wires external to control must be supplied by user

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Unfiltered SCR DC Controls

Chassis, Basic Speed Control



2 YEAR SYSTEM WARRANTY
SEE PAGE 128

Standard Features

- Operates from 115 Volt AC or 230 Volt AC line, selectable with plug-in jumper
- Switchable output for 0-90 Volt DC or 0-180 Volt DC
- Back EMF feedback maintains better than 2% speed regulation
- Dip switches to easily calibrate control for different motor sizes
- Two diagnostic LEDs indicate when power is on and when current output is at limit set by TORQ pot
- Six on-board user-adjustable pots for torque limit, minimum speed limit, maximum speed limit, acceleration time, deceleration time and speed regulation
- Speed can be adjusted manually using a remote 10K speed pot (included with control)
- Unfiltered drive draws lower AC line current as compared to SCR filtered controls
- Connections for optional user-supplied inhibit switch

Application Information

- Rated for continuous operation in 50° C ambient with no additional heat sink
- Drives Bodine 130 Volt and 180 Volt permanent magnet DC motors, see pages 67-85
- Drives 90 Volt and 180 Volt "SCR rated" and 130 Volt "PWM rated" permanent magnet DC motors made by other manufacturers
- Connections made to model 0865 with 0.25" quick connect tabs. Seven mating terminals supplied with control. Connections made to model 0866 with plug-gable terminal block (supplied with control)
- For selection table, see pages 98-99

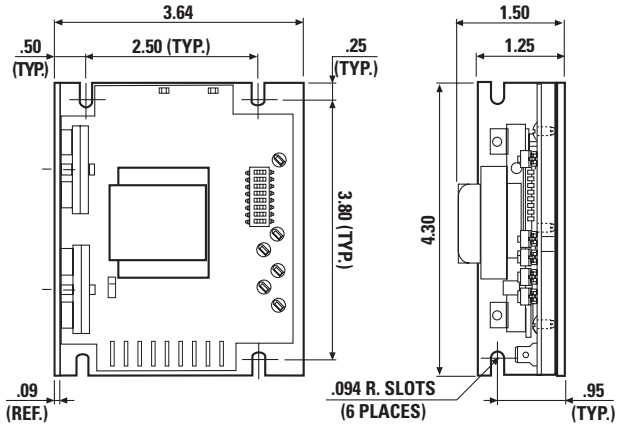
Optional Accesories

- Analog interface board and isolation module model 3984, see page 101

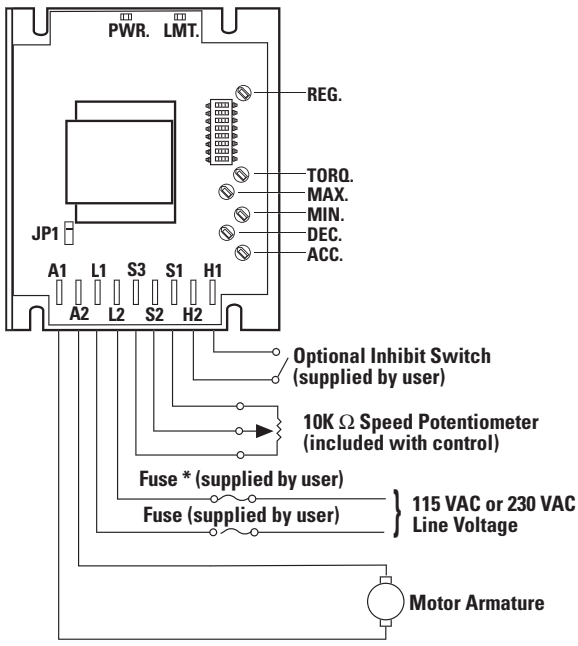
HP Rating	Input Voltage (VAC, 50/60 Hz)	Output Voltage Voltage (VDC)	Continuous Output Current (Amps)	Peak Output Current (Amps)	FF	Weight (lbs.)	Product Type	Model Number: 1/4 inch QC tab connection	Model Number: Terminal block connection
1/5 @ 90 V	115/230	0-90/0-180	2.1	4.2	1.6	1.0	UPM-3318C	**0865**	**0866**
1/3 @ 180 V	115/230	0-90/0-180	2.1	4.2	1.6	1.0	UPM-3318C	**0865**	**0866**

BODINE THREE DIMENSIONS ONLINE

Dimensions



Connection Diagram



All wires external to control must be supplied by user
* This fuse should only be used when L2 is not neutral (such as for 230 VAC operation in USA)

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Unfiltered SCR DC Controls

NEMA 1, Basic Speed Control



UPM

2 YEAR SYSTEM WARRANTY

SEE PAGE 128

Standard Features

- Operates from 115 Volt AC line
- Dip switches to easily calibrate control for different motor sizes
- Line voltage compensation minimizes speed drift
- NEMA 1 enclosure for environmental protection
- Trim pots on PC board to adjust torque limit, minimum speed limit, maximum speed limit, acceleration time, deceleration time and speed regulation
- Speed can be adjusted manually using speed pot mounted on enclosure
- Terminal block inside enclosure for quick motor connection
- Back EMF feedback maintains better than 2% speed regulation
- Fuseholder for line on front panel
- Toggle switch on enclosure to turn AC power on/off
- Lamp on enclosure indicates AC power on
- AC Line cord factory installed

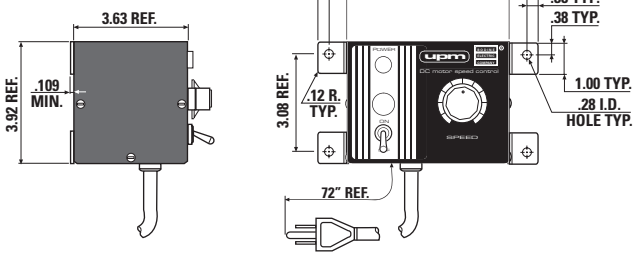
Application Information

- Rated for continuous operation in 40° C ambient with no additional heat sink
- Drives Bodine 130 Volt permanent magnet DC motors at reduced speed, see pages 67-85
- Drives 90 Volt "SCR duty" and 130 Volt "PWM duty" permanent magnet DC motors made by other manufacturers
- For selection tables see pages 98-99

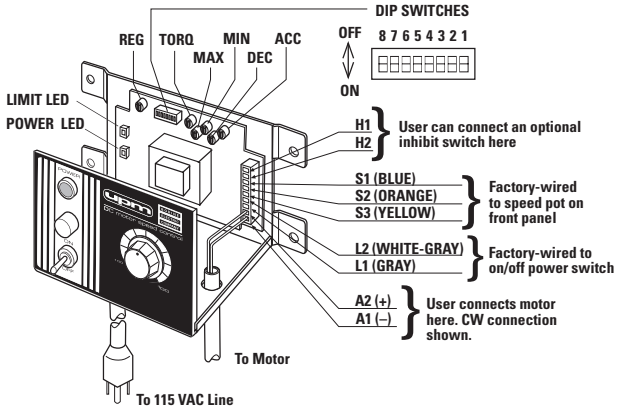
HP Rating	Input Voltage (VAC, 50/60 Hz)	Output Voltage (VDC)	Continuous Output Current (Amps)	Peak Output Current (Amps)	Form Factor	Weight (lbs.)	Product Type	Model Number
1/5	115	0-90	2.1	4.2	1.6	2.0	UPM-3318E1	**0867**

BODINE THREE DIMENSIONS ONLINE

Dimensions



Connection Diagram



c UL us

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Filtered DC Controls

FPM and WPM Selection Table

SYSTEM PERFORMANCE WHEN USING BODINE 130V PM MOTORS WITH FILTERED CONTROLS

Motor/Gearmotor Specifications							Matching Control Model Numbers							
		Model Number					Encased						Chassis	
Speed Range (rpm)	Cont. Torque (lb-in.)	Accessory Shaft	No Accessory Shaft	Product Type Shaft	Nameplate Rating (HP)	Ref. Page	Basic		Direction + Braking	Analog Signal	Digital Signal	SCR	PWM	
							SCR	PWM					Quick Connect Tabs	Term. Block
Motors Without Gear Reducers														
40 - 2500	0.5	N4439	N0039	24A0BEPM	1/50	67	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
50 - 2500	0.88	N4441	**0041**	24A2BEPM	1/29	67	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
50 - 2500	1.5	**0047**	**0043**	24A4BEPM	1/17	67	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
60 - 2500	2.1	N6416	**6016**	33A3BEPM	1/12	68	**0835**	**0790, 0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
60 - 2500	3.1	N6420	**6020**	33A5BEPM	1/8	68	**0835**	**0790, 0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
60 - 2500	6.3	**4435**	**4035**	42A5BEPM	1/4	69	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
60 - 2500	8.4	N4437	**4037**	42A7BEPM	1/3	69	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
60 - 2500	9.4	N4430	**4031**	42A5BEPM	1/3	69	–	**0791**	–	–	–	–	**0781**	**0784**
60 - 2500	11.2	N4432	**4033**	42A7BEPM	1/2	69	–	**0791**	–	–	–	–	**0781**	**0784**
Parallel Shaft Gearmotors														
0.11 - 5.6	40	N4499	**0199**	24A2BEPM-D5	1/29	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
0.17 - 8.3	40	N4498	**0198**	24A2BEPM-D5	1/29	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
0.28 - 14	40	N4497	**0197**	24A2BEPM-D4	1/29	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
0.56 - 28	40	N4496	**0196**	24A2BEPM-D4	1/29	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
0.83 - 42	36	N4495	**0195**	24A2BEPM-D3	1/29	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
1.7 - 83	18	N4494	**0194**	24A2BEPM-D3	1/29	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
2.8 - 139	11	N4493	**0193**	24A2BEPM-D3	1/29	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
4.2 - 208	7.1	N4492	**0192**	24A2BEPM-D3	1/29	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
8.3 - 417	3.3	N4491	**0191**	24A2BEPM-D3	1/29	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
0.22 - 14	100	N4563	**0163**	24A4BEPM-Z4	1/17	71	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
0.44 - 28	92	N4562	**0162**	24A4BEPM-Z4	1/17	71	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
0.67 - 42	40	–	**0190**	24A4BEPM-D3	1/17	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
0.67 - 42	65	N4561	**0161**	24A4BEPM-Z3	1/17	71	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
1.3 - 83	29	–	**0189**	24A4BEPM-D3	1/17	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
1.3 - 83	33	N4560	**0160**	24A4BEPM-Z3	1/17	71	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
2.2 - 139	17	–	**0188**	24A4BEPM-D3	1/17	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
2.2 - 139	21	N4559	**0159**	24A4BEPM-Z2	1/17	71	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
3.3 - 208	12	–	**0187**	24A4BEPM-D3	1/17	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
3.3 - 208	14	N4558	**0158**	24A4BEPM-Z2	1/17	71	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
6.7 - 417	5.4	–	**0186**	24A4BEPM-D3	1/17	70	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
6.7 - 417	7	N4557	**0157**	24A4BEPM-Z2	1/17	71	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
0.19 - 8	175	N6547	**6147**	33A3BEPM-W4	1/12	73	**0835**	**0791**	**0838**	**0836**	N0837	**0830**	**0781**	**0784**
0.35 - 15	166	N6546	**6146**	33A3BEPM-W4	1/12	73	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
1 - 42	95	N6569	**6169**	33A3BEPM-Z3	1/12	72	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
2 - 83	47	N6568	**6168**	33A3BEPM-Z3	1/12	72	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
3.3 - 139	31	N6567	**6167**	33A3BEPM-Z2	1/12	72	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
5 - 208	20	N6566	**6166**	33A3BEPM-Z2	1/12	72	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
10 - 417	10	N6565	**6165**	33A3BEPM-Z2	1/12	72	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
0.2 - 8.3	310	N4575	**4175**	42A3BEPM-E4	1/8	74	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
0.33 - 14	341	N4574	**4174**	42A3BEPM-E4	1/8	74	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
0.5 - 21	283	N4573	**4173**	42A3BEPM-E4	1/8	74	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
0.62 - 26	155	N6556	**6156**	33A5BEPM-W4	1/8	73	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
0.92 - 38	143	N6555	**6155**	33A5BEPM-W3	1/8	73	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
1.4 - 57	96	N6554	**6154**	33A5BEPM-W3	1/8	73	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
2 - 84	65	N6553	**6153**	33A5BEPM-W3	1/8	73	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
2.9 - 123	46	N6552	**6152**	33A5BEPM-W2	1/8	73	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
4.3 - 181	31	N6551	**6151**	33A5BEPM-W2	1/8	73	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
6.4 - 266	21	N6550	**6150**	33A5BEPM-W2	1/8	73	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
11 - 456	12	N6549	**6149**	33A5BEPM-W2	1/8	73	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
16 - 660	6	N6548	**6148**	33A5BEPM-W2	1/8	73	**0835**	**0790,0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
1 - 42	270	**4585**	**4185**	42A5BEPM-E3	1/4	74	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
1.5 - 62	180	N4576	**4184**	42A5BEPM-E3	1/4	74	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
2 - 83	135	**4583**	**4183**	42A5BEPM-E3	1/4	74	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
3 - 125	90	N4582	**4182**	42A5BEPM-E3	1/4	74	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
4 - 165	68	N4581	**4181**	42A5BEPM-E2	1/4	74	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
6 - 250	45	**4580**	**4180**	42A5BEPM-E2	1/4	74	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
12 - 500	25	N4579	**4179**	42A5BEPM-E1	1/4	74	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
1.5 - 62	220	N4584	**4193**	42A7BEPM-F3	1/3	74	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
6 - 250	72	N4578	**4190**	42A7BEPM-F2	1/3	74	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**

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Filtered DC Controls

FPM and WPM Selection Table

SYSTEM PERFORMANCE WHEN USING BODINE 130V PM MOTORS WITH FILTERED CONTROLS

Motor/Gearmotor Specifications							Matching Control Model Numbers							
		Model Number					Encased					Chassis		
Speed Range (rpm)	Cont. Torque (lb-in.)	Accessory Shaft	No Accessory Shaft	Product Type Shaft	Nameplate Rating (HP)	Ref. Page	Basic		Direction + Braking	Analog Signal	Digital Signal	SCR	PWM	
							SCR	PWM					Quick Connect Tabs	Term. Block
Right Angle Gearmotors														
0.67 - 42	22	N4099	**0099**	24A4BEPM-3F	1/17	77	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
1 - 63	19	N4098	**0098**	24A4BEPM-3F	1/17	77	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
2 - 125	16	N4096	**0096**	24A4BEPM-3F	1/17	77	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
4 - 250	10	N4094	**0094**	24A4BEPM-3F	1/17	77	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
8 - 500	5.2	N4093	**0093**	24A4BEPM-3F	1/17	77	**0815**	**0790**	**0818**	**0816**	N0817	**0810**	**0780**	**0783**
1.5 - 62	109	—	**6138**	33A5BEPM-5N	1/4	79	**0835**	**0790, 0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
3 - 125	78	—	**6136**	33A5BEPM-5N	1/4	79	**0835**	**0790, 0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
6 - 250	42	**6535**	**6135**	33A5BEPM-5N	1/4	79	**0835**	**0790, 0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
12 - 500	22	—	**6134**	33A5BEPM-5N	1/4	79	**0835**	**0790, 0791**	**0838**	**0836**	N0837	**0830**	**0780, 0781**	**0783, 0784**
0.2 - 8.6	380	N4466	**4066**	42A5BEPM-GB	1/4	85	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
0.3 - 13	375	N4464	**4064**	42A5BEPM-GB	1/4	85	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
0.5 - 21	290	N4462	**4062**	42A5BEPM-GB	1/4	85	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
1 - 42	213	N4460	**4060**	42A5BEPM-GB	1/4	85	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
1.5 - 62	79	N4538	**4138**	42A5BEPM-5N	1/4	81	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
2 - 83	75	N4537	**4137**	42A5BEPM-5N	1/4	81	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
3 - 125	75	N4536	**4136**	42A5BEPM-5N	1/4	81	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
6 - 250	42	**4535**	**4135**	42A5BEPM-5N	1/4	81	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
12 - 500	24	N4534	**4134**	42A5BEPM-5N	1/4	81	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
1.3 - 52	189	N4599	N4199	42A7BEPM-5H	1/3	82	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
1.7 - 69	151	N4598	**4198**	42A7BEPM-5H	1/3	82	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
3.3 - 139	87	N4596	N4196	42A7BEPM-5H	1/3	82	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
6 - 250	52	N4594	**4194**	42A7BEPM-5H	1/3	82	**0855**	**0791**	**0858**	**0856**	N0857	**0850**	**0781**	**0784**
1.3 - 52	264	N4503	N4103	42A7BEPM-5H	1/2	82	–	**0791**	–	–	–	–	**0781**	**0784**
1.7 - 69	218	N4502	**4102**	42A7BEPM-5H	1/2	82	–	**0791**	–	–	–	–	**0781**	**0784**
3.3 - 139	129	N4501	**4101**	42A7BEPM-5H	1/2	82	–	**0791**	–	–	–	–	**0781**	**0784**
6 - 250	71	N4500	N4100	42A7BEPM-5H	1/2	82	–	**0791**	–	–	–	–	**0781**	**0784**

[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

NOTE: Some of the newer DC motors shown in this catalog do not yet appear in these tables. Refer to www.bodine-electric.com for the most up-to-date information.

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Unfiltered DC Controls

UPM Selection Table

SYSTEM PERFORMANCE WHEN USING BODINE 130V PM MOTORS WITH UNFILTERED CONTROLS (90 VDC OUTPUT)

Motor/Gearmotor Specifications							Matching Chassis Control Model Numbers		
		Model Number					Chassis		Encased
Speed Range (rpm)	Continuous Torque (lb-in.)	Accessory Shaft	No Accessory Shaft	Product Type	Nameplate Rating (HP)	Reference Page	Quick Connect Tabs	Terminal Block	
Motors Without Gear Reducers									
50 - 1725	0.45	N4439	N0039	24A0BEPM	1/50	67	–	–	–
50 - 1725	0.80	N4441	**0041**	24A2BEPM	1/29	67	**0865**	**0866**	**0867**
40 - 1725	1.3	**0047**	**0043**	24A4BEPM	1/17	67	**0865**	**0866**	**0867**
60 - 1725	2.1	N6416	**6016**	33A3BEPM	1/12	68	**0865**	**0866**	**0867**
60 - 1725	3.1	N6420	**6020**	33A5BEPM	1/8	68	**0865**	**0866**	**0867**
60 - 1725	5.7	**4435**	**4035**	42A5BEPM	1/4	69	**0865**	**0866**	**0867**
60 - 1725	7.6	N4437	**4037**	42A7BEPM	1/3	69	**0865**	**0866**	**0867**
Parallel Shaft Gearmotors									
0.11 - 3.8	40	N4499	**0199**	24A2BEPM-D5	1/29	70	**0865**	**0866**	**0867**
0.17 - 5.8	40	N4498	**0198**	24A2BEPM-D5	1/29	70	**0865**	**0866**	**0867**
0.28 - 9.6	40	N4497	**0197**	24A2BEPM-D4	1/29	70	**0865**	**0866**	**0867**
0.56 - 19	40	N4496	**0196**	24A2BEPM-D4	1/29	70	**0865**	**0866**	**0867**
0.83 - 29	32	N4495	**0195**	24A2BEPM-D3	1/29	70	**0865**	**0866**	**0867**
1.7 - 58	16	N4494	**0194**	24A2BEPM-D3	1/29	70	**0865**	**0866**	**0867**
2.8 - 96	9.5	N4493	**0193**	24A2BEPM-D3	1/29	70	**0865**	**0866**	**0867**
4.2 - 144	6.4	N4492	**0192**	24A2BEPM-D3	1/29	70	**0865**	**0866**	**0867**
8.3 - 288	3.0	N4491	**0191**	24A2BEPM-D3	1/29	70	**0865**	**0866**	**0867**
0.22 - 9.6	100	N4563	**0163**	24A4BEPM-Z4	1/17	71	**0865**	**0866**	**0867**
0.44 - 19	83	N4562	**0162**	24A4BEPM-Z4	1/17	71	**0865**	**0866**	**0867**
0.67 - 29	59	N4561	**0161**	24A4BEPM-Z3	1/17	71	**0865**	**0866**	**0867**
0.67 - 29	40	–	**0190**	24A4BEPM-D3	1/17	70	**0865**	**0866**	**0867**
1.3 - 58	29	N4560	**0160**	24A4BEPM-Z3	1/17	71	**0865**	**0866**	**0867**
1.3 - 58	29	–	**0189**	24A4BEPM-D3	1/17	70	**0865**	**0866**	**0867**
2.2 - 96	19	N4559	**0159**	24A4BEPM-Z2	1/17	71	**0865**	**0866**	**0867**
2.2 - 96	17	–	**0188**	24A4BEPM-D3	1/17	70	**0865**	**0866**	**0867**
3.3 - 144	12	N4558	**0158**	24A4BEPM-Z2	1/17	71	**0865**	**0866**	**0867**
3.3 - 144	12	–	**0187**	24A4BEPM-D3	1/17	70	**0865**	**0866**	**0867**
6.7 - 288	6.3	N4557	**0157**	24A4BEPM-Z2	1/17	71	**0865**	**0866**	**0867**
6.7 - 288	5.4	–	**0186**	24A4BEPM-D3	1/17	70	**0865**	**0866**	**0867**
0.19 - 5.5	175	N6547	**6147**	33A3BEPM-W4	1/12	73	**0865**	**0866**	**0867**
0.35 - 10	166	N6546	**6146**	33A3BEPM-W4	1/12	73	**0865**	**0866**	**0867**
1 - 29	95	N6569	**6169**	33A3BEPM-Z3	1/12	72	**0865**	**0866**	**0867**
2 - 58	47	N6568	**6168**	33A3BEPM-Z3	1/12	72	**0865**	**0866**	**0867**
3.3 - 96	31	N6567	**6167**	33A3BEPM-Z2	1/12	72	**0865**	**0866**	**0867**
5 - 144	20	N6566	**6166**	33A3BEPM-Z2	1/12	72	**0865**	**0866**	**0867**
10 - 288	10	N6565	**6165**	33A3BEPM-Z2	1/12	72	**0865**	**0866**	**0867**
0.2 - 5.8	310	N4575	**4175**	42A3BEPM-E4	1/8	74	**0865**	**0866**	**0867**
0.33 - 9.6	341	N4574	**4174**	42A3BEPM-E4	1/8	74	**0865**	**0866**	**0867**
0.5 - 14	249	N4573	**4173**	42A3BEPM-E4	1/8	74	**0865**	**0866**	**0867**
0.62 - 18	155	N6556	**6156**	33A5BEPM-W4	1/8	73	**0865**	**0866**	**0867**
0.92 - 26	141	N6555	**6155**	33A5BEPM-W3	1/8	73	**0865**	**0866**	**0867**
1.4 - 39	95	N6554	**6154**	33A5BEPM-W3	1/8	73	**0865**	**0866**	**0867**
2 - 58	64	N6553	**6153**	33A5BEPM-W3	1/8	73	**0865**	**0866**	**0867**
2.9 - 84	46	N6552	**6152**	33A5BEPM-W2	1/8	73	**0865**	**0866**	**0867**
4.3 - 125	31	N6551	**6151**	33A5BEPM-W2	1/8	73	**0865**	**0866**	**0867**
6.4 - 184	21	N6550	**6150**	33A5BEPM-W2	1/8	73	**0865**	**0866**	**0867**
11 - 314	12	N6549	**6149**	33A5BEPM-W2	1/8	73	**0865**	**0866**	**0867**
16 - 454	6	N6548	**6148**	33A5BEPM-W2	1/8	73	**0865**	**0866**	**0867**
1 - 29	270	**4585**	**4185**	42A5BEPM-E3	1/4	74	**0865**	**0866**	**0867**
1.5 - 43	180	N4576	**4184**	42A5BEPM-E3	1/4	74	**0865**	**0866**	**0867**
2 - 58	135	**4583**	**4183**	42A5BEPM-E3	1/4	74	**0865**	**0866**	**0867**
3 - 86	90	N4582	**4182**	42A5BEPM-E3	1/4	74	**0865**	**0866**	**0867**
4 - 115	68	N4581	**4181**	42A5BEPM-E2	1/4	74	**0865**	**0866**	**0867**
6 - 172	45	**4580**	**4180**	42A5BEPM-E2	1/4	74	**0865**	**0866**	**0867**
12 - 345	25	N4579	**4179**	42A5BEPM-E1	1/4	74	**0865**	**0866**	**0867**
1.5 - 43	220	N4584	**4193**	42A7BEPM-F3	1/3	74	**0865**	**0866**	**0867**
6 - 172	65	N4578	**4190**	42A7BEPM-F2	1/3	74	**0865**	**0866**	**0867**

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Unfiltered DC Controls

UPM Selection Table

SYSTEM PERFORMANCE WHEN USING BODINE 130V PM MOTORS WITH UNFILTERED CONTROLS (90 VDC OUTPUT)

Motor/Gearmotor Specifications							Matching Chassis Control Model Numbers		
		Model Number					Chassis		Encased
Speed Range (rpm)	Continuous Torque (lb-in.)	Accessory Shaft	No Accessory Shaft	Product Type	Nameplate Rating (HP)	Reference Page	Quick Connect Tabs	Terminal Block	
Right Angle Gearmotors									
.67 - 29	22	N4099	**0099**	24A4BEPM-3F	1/17	77	**0865**	**0866**	**0867**
1 - 43	19	N4098	**0098**	24A4BEPM-3F	1/17	77	**0865**	**0866**	**0867**
2 - 86	15	N4096	**0096**	24A4BEPM-3F	1/17	77	**0865**	**0866**	**0867**
4 - 172	8.6	N4094	**0094**	24A4BEPM-3F	1/17	77	**0865**	**0866**	**0867**
8 - 345	4.6	N4093	**0093**	24A4BEPM-3F	1/17	77	**0865**	**0866**	**0867**
1.5 - 43	84	—	**6138**	33A5BEPM-5N	1/8	79	**0865**	**0866**	**0867**
3 - 86	54	—	**6136**	33A5BEPM-5N	1/8	79	**0865**	**0866**	**0867**
6 - 172	31	**6535**	**6135**	33A5BEPM-5N	1/8	79	**0865**	**0866**	**0867**
12 - 345	17	—	**6134**	33A5BEPM-5N	1/8	79	**0865**	**0866**	**0867**
0.2 - 6.2	380	N4466	**4066**	42A5BEPM-GB	1/4	85	**0865**	**0866**	**0867**
0.3 - 9.1	375	N4464	**4064**	42A5BEPM-GB	1/4	85	**0865**	**0866**	**0867**
0.5 - 14	290	N4462	**4062**	42A5BEPM-GB	1/4	85	**0865**	**0866**	**0867**
1 - 29	195	N4460	**4060**	42A5BEPM-GB	1/4	85	**0865**	**0866**	**0867**
1.5 - 43	79	N4538	**4138**	42A5BEPM-5N	1/4	81	**0865**	**0866**	**0867**
2 - 58	75	N4537	**4137**	42A5BEPM-5N	1/4	81	**0865**	**0866**	**0867**
3 - 86	69	N4536	**4136**	42A5BEPM-5N	1/4	81	**0865**	**0866**	**0867**
6 - 172	40	**4535**	**4135**	42A5BEPM-5N	1/4	81	**0865**	**0866**	**0867**
12 - 345	21	N4534	**4134**	42A5BEPM-5N	1/4	81	**0865**	**0866**	**0867**
1.3 - 36	173	N4599	N4199	42A7BEPM-5H	1/3	82	**0865**	**0866**	**0867**
1.7 - 48	143	N4598	**4198**	42A7BEPM-5H	1/3	82	**0865**	**0866**	**0867**
3.3 - 96	84	N4596	N4196	42A7BEPM-5H	1/3	82	**0865**	**0866**	**0867**
6 - 172	47	N4594	**4194**	42A7BEPM-5H	1/3	82	**0865**	**0866**	**0867**
1.3 - 36	164	N4503	N4103	42A7BEPM-5H	1/2	82	**0865**	**0866**	**0867**
1.7 - 48	137	N4502	**4102**	42A7BEPM-5H	1/2	82	**0865**	**0866**	**0867**
3.3 - 96	81	N4501	**4101**	42A7BEPM-5H	1/2	82	**0865**	**0866**	**0867**
6 - 172	45	N4500	N4100	42A7BEPM-5H	1/2	82	**0865**	**0866**	**0867**

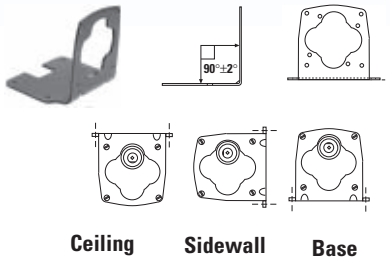
[1] **NOTE: Model numbers shown in bold type are in stock. "N" model numbers require lead time and minimum quantities.**

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Accessories

For Permanent Magnet Motors and Controls

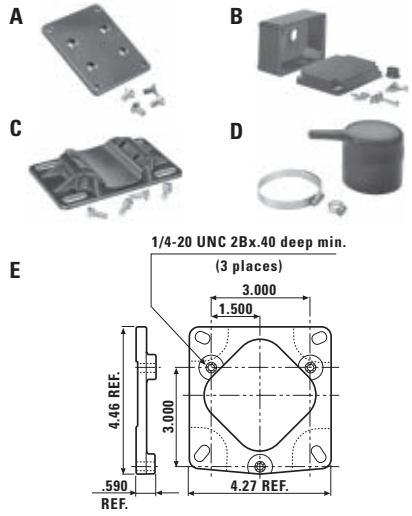


Ceiling Mount | Sidewall Mount | Base Mount

Motor and Gearmotor "L" Brackets

Model No.	Description	lbs.	Dimensions	Deflection lbs.
0969	Kit for "E" and "F" gearmotors	2.5	Page 74	200
0970	Kit for "W" gearmotors	1.75	Page 73	125
0990	Kit for 24A motors	1	Page 67	25
5968	Kit for 33A motors and 24A-D, 24A-Z, 33A-Z gearmotors	1.25	Page 68 70, 71, 72	50

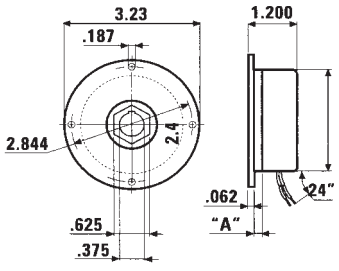
Parallel shaft, stock gearmotors are designed for universal horizontal mounting only. See "Mounting Positions" on page 2.



Other Motor and Gearmotor Kits

Item	Model No.	Description	lbs.	Dimensions
A	0967	Base mounting kit for 3F gearmotors	.5	Page 77
B	0984	Die cast terminal box kit for 33A, and 42A motors and gearmotors	1	Page 50
B	1984	Die cast terminal box kit with terminal block for 33A and 42A motors and gearmotors		Page 50
C	0991	Die cast base kit for 42A motors	.33	Page 69
D	0978	IP-44 kit for 42A		–
E	0995	Adaptor plate kit for E, F and W gearheads provides drop-in replacement of competitive gearmotors.	.5	At left





"A" Nominal air gap .010 preset at factory

DC Motor and Gearmotor Brake Kit

Model No.	Static Torque (lb-in.)	Volt AC	Ohms	Weight (oz.)
0997	17.7	115	1067	11

- Spring applied brake
- Hex drive with anti-rattle feature
- Kit includes mounting hardware
- Kit fits 33A and 42A permanent magnet motors and gearmotors only

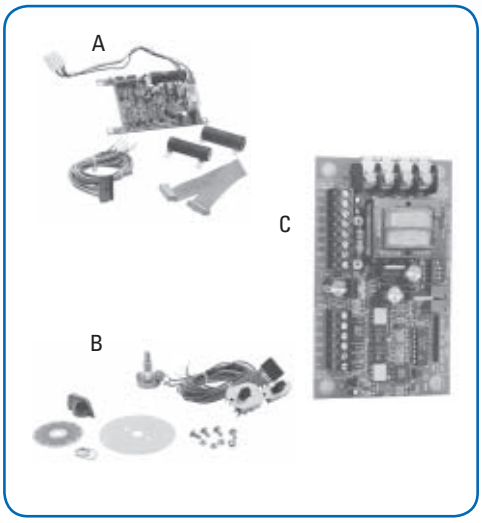
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Accessories

For Permanent Magnet Motors and Controls

Items for Type FPM Controls

Item	Model No.	Accessory Description
	0888	Analog Interface Board for use with Control Models 0810, 0830, and 0850. Allows control to accept a variable voltage or current signal from user's host controller in order to automatically control motor speed. Inputs are optically isolated.
	0889	Digital Interface Board for use with Control Models 0810, 0830, and 0850. Allows control to accept 8 parallel TTL signals from user's host controller in order to automatically control motor speed. Inputs are optically isolated.
A	**0890**	Electronic Direction & Braking Board for use with Control Models 0810, 0830, and 0850. Allows user to change motor direction and to dynamically brake motor to a quick stop. Inputs are not optically isolated.
B	**0893**	Local/Remote Switch for use with Control Models 0810, 0830, and 0850 when used with Accessory Models 0888 and 0889. Allows user to switch between automatic and manual operation.
	0895	Sealing Kit for use with any type FPM encased control in order to upgrade standard NEMA 12 enclosure for IP-44 rating
C	**3984**	Analog interface and isolation module model 3984 provides Analog interface and isolates controls from system controller input signals which may be at different potentials.



Encoder Kits

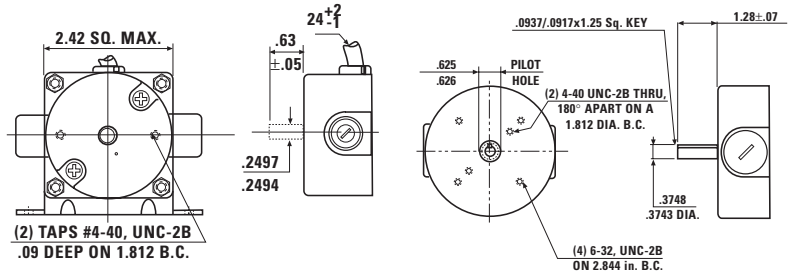
Model Number	Renco Number	Resolution (Pulses per Revolution)	Fits Permanent Magnet Bodine Types
0940	RM15D-360-1/4-G6-5CA24-LD-1-C4	360	24A,
0941	RM15D-360-3/8-G6-5CA24-LD-1-H4	360	33A, 42A



- Kits are designed for quick and easy installation to accessory ready models.
- Incremental encoder output may be used for speed verification or readout.
- 5 VDC, 135 mA input, TTL/CMOS compatible, 20 mA sink output
- Quadrature, 2 channel output, with 1 index pulse per revolution
- Encoder cable is 24 inches long, terminated with AMP 103650-7 connector.
- 1.50 inches in diameter, 0.82 inches long

Motor Mounting Holes for Accessories

(See detail "F" on dimension drawings)



24A frame Accessory Ready Models

No adaptor plate required for mounting encoder model 0940.

33A and 42A frames Accessory Ready Models

No adaptor plate required for mounting encoder model 0940 or brake model 0977.

Above drawings show accessory mounting holes reflected on motor dimension drawings. See "F".

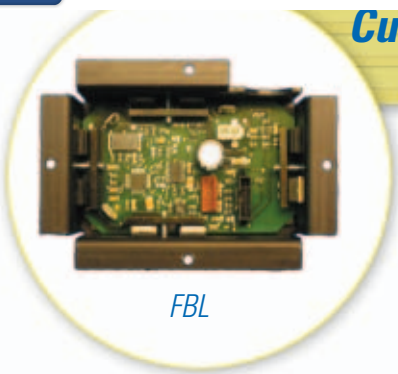
Brake, Encoder, And Tachometer (B.e.t.) Ready Models

Model **0992** adaptor plate is designed to attach accessories requiring a mounting bolt pattern or machining other than that provided on motors and gearmotors with accessory ready shaft extensions. These plates may be modified with either a lathe or drill press. IP-44 protection is maintained when using this adaptor plate. It is not necessary to disassemble the motor or gearmotor.

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Custom Solution: Low Voltage PWM BLDC Control

Chassis, Speed and Direction Control



FBL

Standard Features

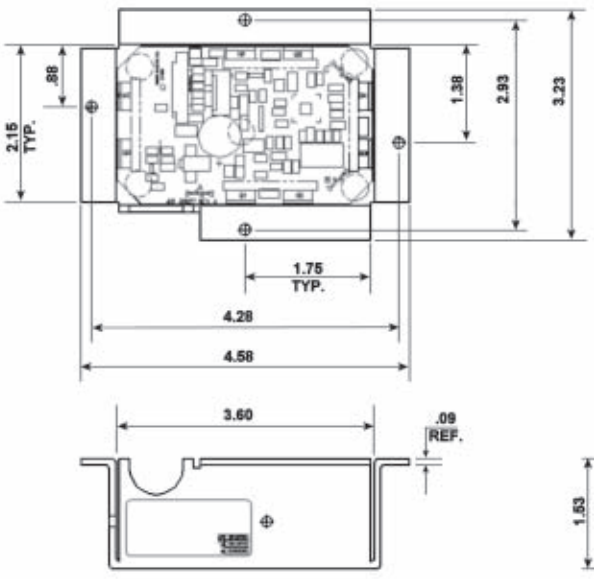
- 24 Volt power requirement makes this control ideal for portable, battery-powered applications or applications where safety standards dictate a low operating voltage
- Compact size allows installation in cramped quarters
- Accepts remote digital PWM signal for speed control
- Accepts high/low input for direction
- Built-in shunt regulator for handling regenerative energy during dynamic braking
- Heat sink provides protection against people and large objects when installed with the open side against the mounting surface
- 1/4" QC tabs for power connections and plug-in connectors for logic connections
- Contact your Bodine **MotionPro** sales representative or authorized distributor with application information or for technical questions (minimum annual quantities apply)

NEW FROM BODINE!

Preliminary Specifications:

HP Rating	Input Voltage (VDC)	Output Voltage (VDC)	Continuous Output Current (Amps)	Peak Output Current (Amps)	Product Type
1/10	24	0 - 24	5.0	7.5	FBL-6009C

Dimensions



BODINE ELECTRIC
TYPE FBL-6009C
DIMENSION DRAWING

BODINE THREE DIMENSIONS ONLINE

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