

GLENTEK BRUSHLESS SERVO MOTORS GMBM180 SERIES

Revision: 3/24/2017



Glentek's GMBM180 series of high performance, permanent magnet Brushless servo motors utilize high-energy Neodymium-Iron- Boron (NdFeB) magnets, which provide more torque in a smaller package with higher dynamic performance than traditional ferrite magnet designs. In addition, GMBM180 series have been tooled for high volume production which makes them easy to use and extremely cost effective..

- Continuous Torque Range:
89.3 Lb-in (10.1 Nm) to 371.7 Lb-in (42.0 Nm)
- Peak Torque Range:
267.9 Lb-in (30.3 Nm) to 1116.1 Lb-in (126.1 Nm)

GMBM180 SERIES FEATURES

High-energy Neodymium-Iron-Boron (NdFeB) magnet design with low inertia rotors provides a high dynamic performance.
Special design provides ultra smooth operation (i.e. low cogging torque) at all speeds.
Worldwide standard mounting configurations are available.
Optional custom mounting configurations are available to meet virtually any requirement.
Encoder with commutation tracks, brushless resolvers or Hall sensors are standard feedback devices offered
Shaft Keyway.
Standard operating temperature is dependent on the feedback device installed. Motors with resolver feedback can be specially configured to operate down to -40°C.
Optional 24VDC holding brakes are available.
Constructed to withstand the toughest industrial environment with rugged, high performance bearings and TENV construction with IP65 sealing optional
CE marked.
RoHS Compliant

GMBM180 SERIES ENVIRONMENTAL CONDITIONS

Storage Temperature:	-20°C to 70°C
Operating Temperature:	Standard: -20°C to 40°C, without derating, derate torque 10% per 10°C above 40°C Special: -40°C to 40°C, without derating, derate torque 10% per 10°C above 40°C
Humidity:	5% to 95% relative humidity, non-condensing
Altitude:	Up to 1000m without derating, derate torque 10% per 1000m above 1000m

GMBM180 SERIES SELECTION TABLE

K_T = Torque Constant • K_V = BEMF = Volts/1000 RPM • R_A = Phase to Phase Resistance • L_A = Inductance

Model Number	Rated Power	Speed, RPM		Cont. Stall Rating			Peak Stall Torque			K_T		K_V	R_A	L_A	Rotor Inertia	
	W	Max	Rated	Lb-in	Nm	Amps	Lb-in	Nm	Amps	Lb-in/A	Nm/A	V	Ω	mH	Lb-in-sec ²	Kg-m ²
GMBM1803000-37	3000	5000	3000	89.3	10.1	16.7	267.9	30.3	50.1	5.35	0.60	36.7	0.11	1.72	0.027207	0.003074
GMBM1802200-50	2200	3000	2000	98.4	11.1	13.5	295.2	33.3	40.5	7.29	0.82	49.8	0.22	3.21	0.027207	0.003074
GMBM1801800-50	1800	3000	1500	104.6	11.8	14.7	313.8	35.4	44.1	7.12	0.80	79.8	0.22	3.21	0.027207	0.003074
GMBM1801200-79	1200	2000	1000	104.3	11.8	8.4	312.9	35.4	25.2	12.41	1.40	78.5	0.57	8.24	0.027207	0.003074
GMBM1805000-36	5000	5000	3000	148.9	16.8	27.4	446.7	50.4	82.2	5.43	0.61	36.4	0.05	0.90	0.046139	0.005213
GMBM1803500-56	3500	3000	2000	152.0	17.2	18.8	456.0	51.6	56.4	8.07	0.91	55.5	0.11	2.04	0.046139	0.005213
GMBM1802900-56	2900	3000	1500	166.8	18.8	20.6	500.4	56.4	61.8	8.10	0.92	55.5	0.11	2.04	0.046139	0.005213
GMBM1802000-81	2000	2000	1000	172.5	19.5	14.4	517.5	58.5	43.2	11.98	1.35	81.0	0.24	4.53	0.046139	0.005213
GMBM1805500-56	5500	3000	2000	242.1	27.4	30.3	726.3	82.2	90.9	8.00	0.90	55.6	0.06	1.14	0.073992	0.008360
GMBM1804400-56	4400	3000	1500	256.3	29.0	31.8	768.9	87.0	95.4	8.07	0.91	55.6	0.06	1.14	0.073992	0.008360
GMBM1803000-85	3000	2000	1000	258.6	29.2	20.3	775.8	87.6	60.9	12.77	1.44	85.0	0.13	2.87	0.073992	0.008360
GMBM1807500-66	7500	2500	2000	316.9	35.8	35.8	792.4	89.5	103.8	9.50	1.07	66.3	0.05	1.13	0.107404	0.012135
GMBM1804400-84	4400	2000	1000	371.7	42.0	31.2	1116.1	126.1	93.6	12.13	1.37	84.1	0.09	1.88	0.107404	0.012135

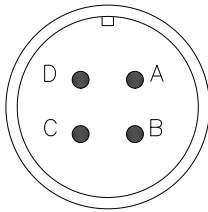
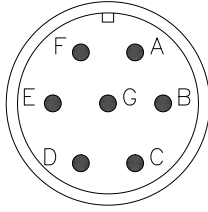
NOTE: The values for Max and Rated Speed are for motors operated with a 200 VAC power supply.

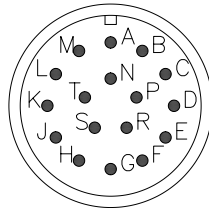
BRAKE OPTION

Brake requires 24V DC input voltage. The values for "Extension" represent the nominal maximum length that the brake will add to the motor. For some models, the extension will be less. Please contact one of our sales engineers for the exact values.

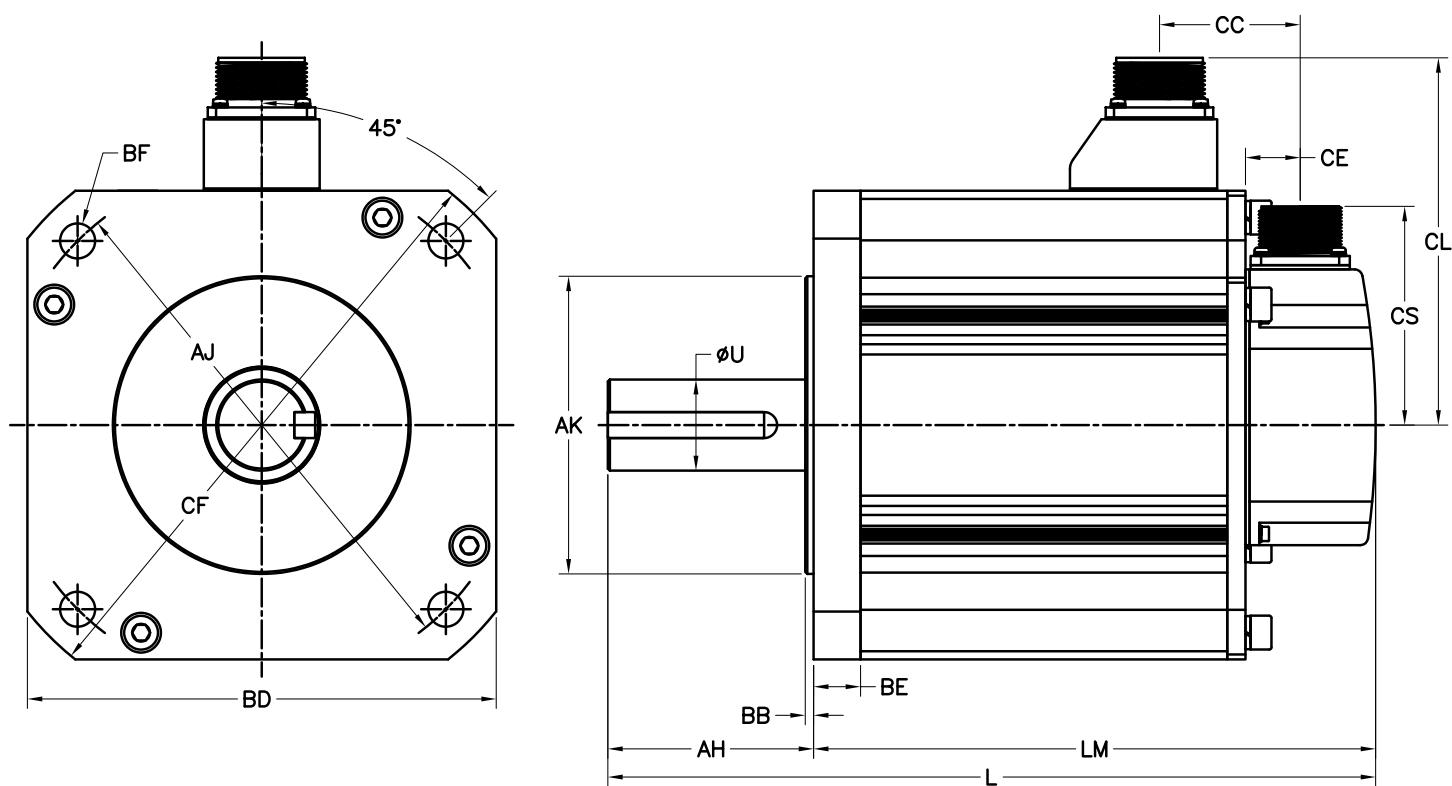
Extension	Torque		Power
mm (in.)	Lb-in	Nm	Watts
51 (2.02)	354.0	40	25

CONNECTORS & PIN-OUT INFORMATION

A - Motor Power			B - Brake		
MS Connector	Pin #	Function	MS Connector	Pin #	Function
	A	Phase T		A	Phase T
	B	Phase S		B	Phase S
	C	Phase R		C	Phase R
	D	Ground		D	Ground
				E	Brake +
				F	Brake -

C - Encoder FeedBack					
MS Connector	Pin #	Function	Pin #	Function	
	A	A +	M	Hall V +	
	B	A -	N	Hall V +	
	C	B +	P	Hall U +	
	D	B -	R	Hall U +	
	E	Z +	H	+5V	
	F	Z -	G	Common	
	K	Hall W +	J	Shield	
	L	Hall W -			

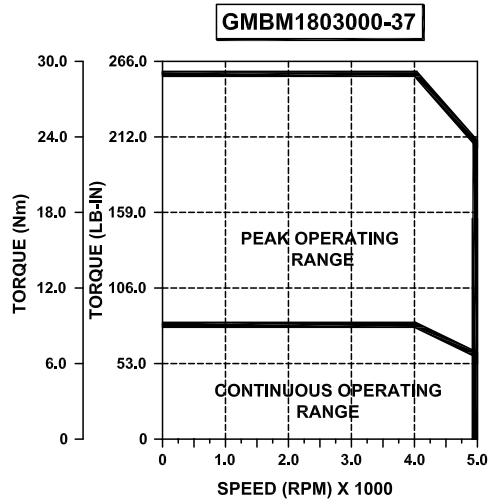
GMBM180 SERIES DIMENSIONS



Model Number	Weight	External Dimension								Shaft/Key		Flange/Face					Mounting	
	Kg	L	LM	LC	CC	CE	CS	CL	AH	U	KEY	AK	BB	BD	BE	CF	AJ	BF Ø
GMBM1803000-37	12.4	262	182	133.0	53	22.0	84.0	138.0	79.0	35.0	M10 X M8 X 60	114.3	3.2	180.0	18.0	230.0	200.0	13.5
GMBM1802200-50																		
GMBM1801800-80																		
GMBM1801200-79																		
GMBM1805000-36	17.7	296	217	167.0	53	22.0	84.0	138.0	79.0	35.0	M10 X M8 X 60	114.3	3.2	180.0	18.0	230.0	200.0	13.5
GMBM1803500-56																		
GMBM1802900-56																		
GMBM1802000-81																		
GMBM1805500-56	26.3	346	267	217.0	53	22.0	84.0	138.0	79.0	35.0	M10 X M8 X 60	114.3	3.2	180.0	18.0	230.0	200.0	13.5
GMBM1804400-56																		
GMBM1803000-85																		
GMBM1807500-66																		
GMBM1804400-84	35.6	406	327	277.0	53	22.0	84.0	138.0	79.0	35.0	M10 X M8 X 60	114.3	3.2	180.0	18.0	230.0	200.0	13.5

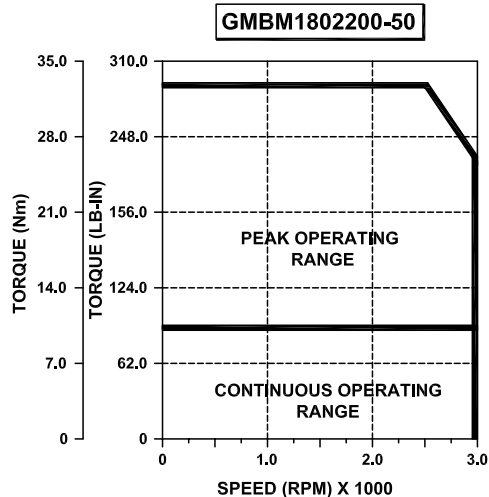
Note: Dimensions are in **mm**

GMBM1803000-37 PERFORMANCE DATA



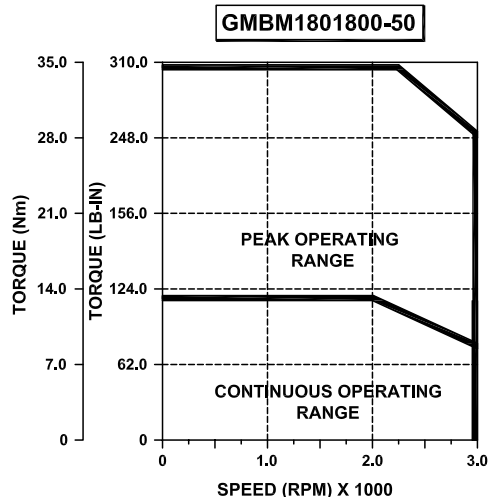
Power @ Max Speed	HP	4.023
	W	3000
Speed, RPM	Max.	5000
	Rated	3000
Cont. Stall Rating	Lb-in	89.3
	Nm	10.1
	Amps	16.7
Peak Stall Rating	Lb-in	267.9
	Nm	30.3
	Amps	50.1
Torque Constant	Lb-in/A	5.35
	Nm/A	0.60
Back EMF	V/Krpm	36.7
Resistance	Ohms	0.11
Inductance	mH	1.72
Armature Inertia	Lb-in-sec ²	0.027207
	Kg-m ²	0.003074

GMBM180220-50 PERFORMANCE DATA



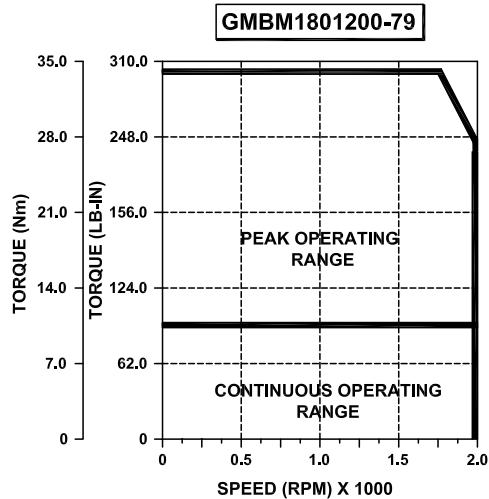
Power @ Max Speed	HP	2.950
	W	2200
Speed, RPM	Max.	3000
	Rated	2000
Cont. Stall Rating	Lb-in	98.4
	Nm	11.1
	Amps	13.5
Peak Stall Rating	Lb-in	295.2
	Nm	33.3
	Amps	40.5
Torque Constant	Lb-in/A	7.29
	Nm/A	0.82
Back EMF	V/Krpm	49.8
Resistance	Ohms	0.22
Inductance	mH	3.21
Armature Inertia	Lb-in-sec ²	0.027207
	Kg-m ²	0.003074

GMBM1801800-50 PERFORMANCE DATA



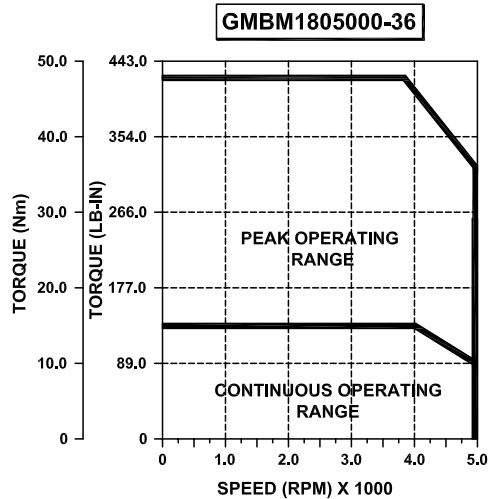
Power @ Max Speed	HP	2.414
	W	1800
Speed, RPM	Max.	3000
	Rated	1500
Cont. Stall Rating	Lb-in	104.6
	Nm	11.8
	Amps	14.7
Peak Stall Rating	Lb-in	313.8
	Nm	35.4
	Amps	44.1
Torque Constant	Lb-in/A	7.12
	Nm/A	0.80
Back EMF	V/Krpm	79.8
Resistance	Ohms	0.22
Inductance	mH	3.21
Armature Inertia	Lb-in-sec ²	0.27207
	Kg-m ²	0.003074

GMBM1801200-79 PERFORMANCE DATA



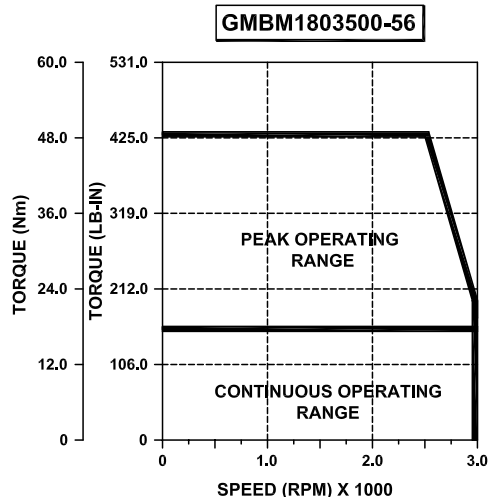
Power @ Max Speed	HP	1.609
	W	1200
Speed, RPM	Max.	2000
	Rated	1000
Cont. Stall Rating	Lb-in	104.3
	Nm	11.8
	Amps	8.4
Peak Stall Rating	Lb-in	312.9
	Nm	35.4
	Amps	25.2
Torque Constant	Lb-in/A	12.41
	Nm/A	1.40
Back EMF	V/Krpm	78.5
Resistance	Ohms	0.57
Inductance	mH	8.24
Armature Inertia	Lb-in-sec ²	0.027207
	Kg-m ²	0.003074

GMBM1805000-36 PERFORMANCE DATA



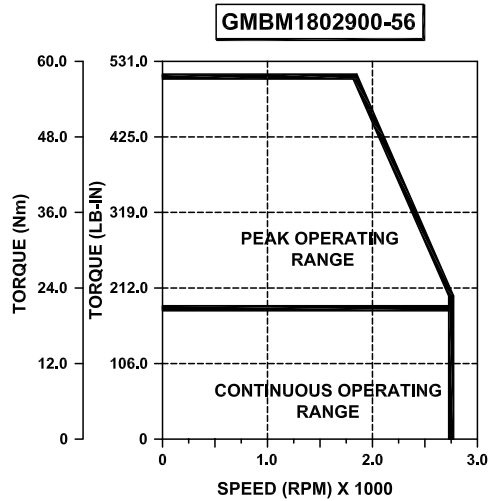
Power @ Max Speed	HP	6.705
	W	5000
Speed, RPM	Max.	5000
	Rated	3000
Cont. Stall Rating	Lb-in	148.9
	Nm	16.8
	Amps	27.4
Peak Stall Rating	Lb-in	446.7
	Nm	50.4
	Amps	82.2
Torque Constant	Lb-in/A	5.43
	Nm/A	0.61
Back EMF	V/Krpm	36.4
Resistance	Ohms	0.05
Inductance	mH	0.90
Armature Inertia	Lb-in-sec ²	0.046139
	Kg-m ²	0.005213

GMBM1803500-56 PERFORMANCE DATA



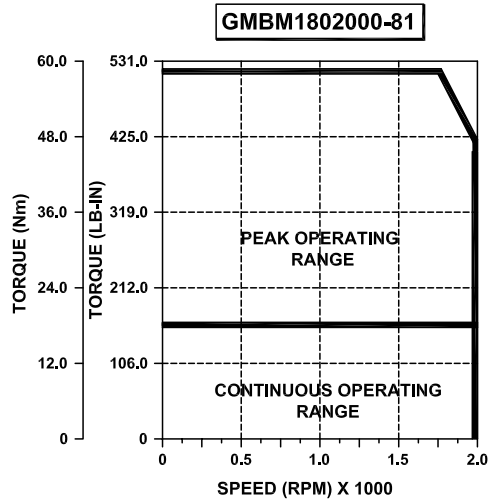
Power @ Max Speed	HP	4.693
	W	3500
Speed, RPM	Max.	3000
	Rated	2000
Cont. Stall Rating	Lb-in	152.0
	Nm	17.2
	Amps	18.8
Peak Stall Rating	Lb-in	456.0
	Nm	51.6
	Amps	56.4
Torque Constant	Lb-in/A	8.07
	Nm/A	0.91
Back EMF	V/Krpm	55.5
Resistance	Ohms	0.11
Inductance	mH	2.04
Armature Inertia	Lb-in-sec ²	0.046139
	Kg-m ²	0.005213

GMBM1802900-56 PERFORMANCE DATA



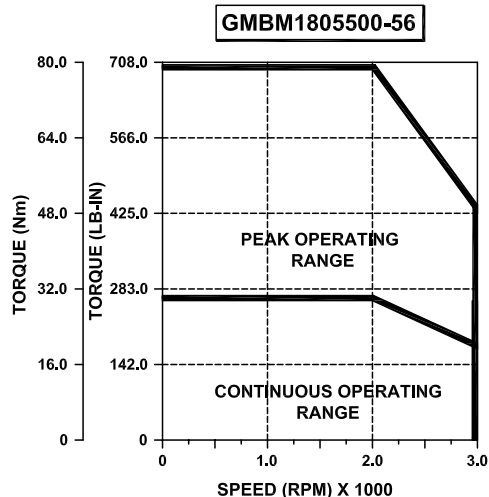
Power @ Max Speed	HP	3.889
	W	2900
Speed, RPM	Max.	3000
	Rated	1500
Cont. Stall Rating	Lb-in	166.8
	Nm	18.8
	Amps	20.6
Peak Stall Rating	Lb-in	500.4
	Nm	56.4
	Amps	61.8
Torque Constant	Lb-in/A	8.10
	Nm/A	0.92
Back EMF	V/Krpm	55.5
Resistance	Ohms	0.11
Inductance	mH	2.04
Armature Inertia	Lb-in-sec ²	0.046139
	Kg-m ²	0.005213

GMBM1802000-81 PERFORMANCE DATA



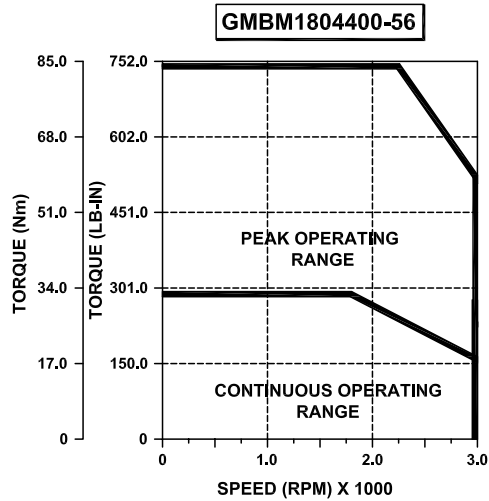
Power @ Max Speed	HP	2.682
	W	2000
Speed, RPM	Max.	2000
	Rated	1000
Cont. Stall Rating	Lb-in	172.5
	Nm	19.5
	Amps	14.4
Peak Stall Rating	Lb-in	517.5
	Nm	58.5
	Amps	43.2
Torque Constant	Lb-in/A	11.98
	Nm/A	1.35
Back EMF	V/Krpm	81.0
Resistance	Ohms	0.24
Inductance	mH	4.53
Armature Inertia	Lb-in-sec ²	0.046139
	Kg-m ²	0.005213

GMBM1805500-56 PERFORMANCE DATA



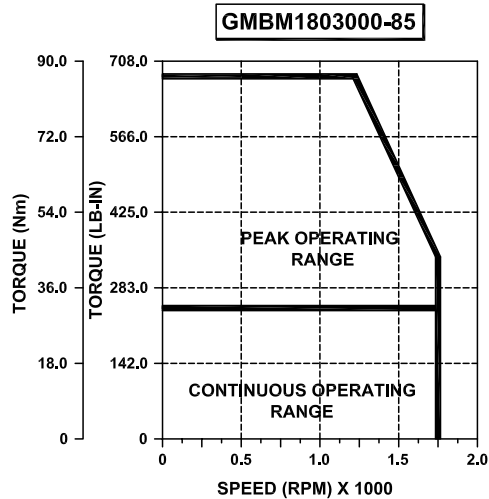
Power @ Max Speed	HP	7.376
	W	5500
Speed, RPM	Max.	3000
	Rated	2000
Cont. Stall Rating	Lb-in	242.1
	Nm	27.4
	Amps	30.3
Peak Stall Rating	Lb-in	726.3
	Nm	82.2
	Amps	90.9
Torque Constant	Lb-in/A	8.00
	Nm/A	0.90
Back EMF	V/Krpm	55.6
Resistance	Ohms	0.06
Inductance	mH	1.14
Armature Inertia	Lb-in-sec ²	0.073992
	Kg-m ²	0.008360

GMBM1804400-56 PERFORMANCE DATA



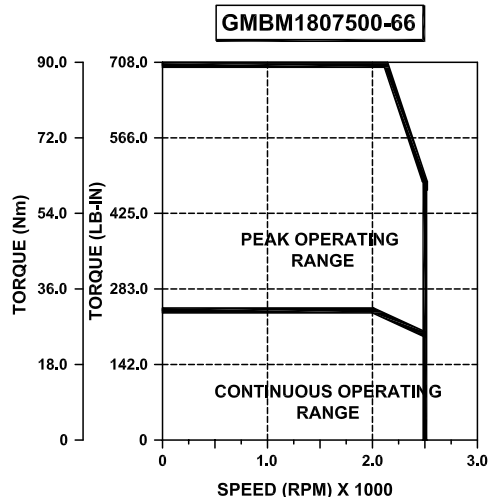
Power @ Max Speed	HP	5.900
	W	4400
Speed, RPM	Max.	3000
	Rated	1500
Cont. Stall Rating	Lb-in	256.3
	Nm	29.0
	Amps	31.8
Peak Stall Rating	Lb-in	768.9
	Nm	87.0
	Amps	95.4
Torque Constant	Lb-in/A	8.07
	Nm/A	0.91
Back EMF	V/Krpm	55.6
Resistance	Ohms	0.06
Inductance	mH	1.14
Armature Inertia	Lb-in-sec ²	0.073992
	Kg-m ²	0.008360

GMBM1803000-85 PERFORMANCE DATA



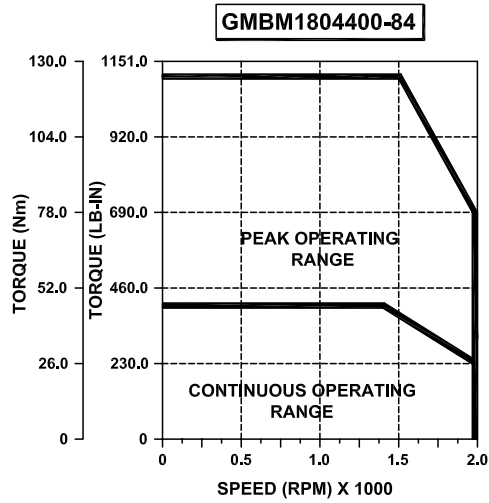
Power @ Max Speed	HP	4.023
	W	3000
Speed, RPM	Max.	2000
	Rated	1000
Cont. Stall Rating	Lb-in	258.6
	Nm	29.2
	Amps	20.3
Peak Stall Rating	Lb-in	775.8
	Nm	87.6
	Amps	60.9
Torque Constant	Lb-in/A	12.77
	Nm/A	1.44
Back EMF	V/Krpm	85.0
Resistance	Ohms	0.13
Inductance	mH	2.87
Armature Inertia	Lb-in-sec ²	0.073992
	Kg-m ²	0.008360

GMBM1807500-66 PERFORMANCE DATA



Power @ Max Speed	HP	10.058
	W	7500
Speed, RPM	Max.	2500
	Rated	2000
Cont. Stall Rating	Lb-in	316.9
	Nm	35.8
	Amps	35.8
Peak Stall Rating	Lb-in	792.4
	Nm	89.5
	Amps	103.8
Torque Constant	Lb-in/A	9.50
	Nm/A	1.07
Back EMF	V/Krpm	66.3
Resistance	Ohms	0.05
Inductance	mH	1.13
Armature Inertia	Lb-in-sec ²	0.107404
	Kg-m ²	0.012135

GMBM1804400-84 PERFORMANCE DATA



Power @ Max Speed	HP	5.900
	W	4400
Speed, RPM	Max.	2000
	Rated	1000
Cont. Stall Rating	Lb-in	371.7
	Nm	42.0
	Amps	31.2
Peak Stall Rating	Lb-in	1116.1
	Nm	126.1
	Amps	93.6
Torque Constant	Lb-in/A	12.13
	Nm/A	1.37
Back EMF	V/Krpm	84.1
Resistance	Ohms	0.09
Inductance	mH	1.88
Armature Inertia	Lb-in-sec ²	0.107404
	Kg-m ²	0.012135

GMBM180 SERIES MODEL NUMBERING

This section explains the model numbering system for Glentek's GMBM180 Series Brushless Servo Motors. The model numbering system is designed so that you, our customer, will be able to quickly and accurately create the model number for the drive that best suits your requirements. Please complete the drive configuration code you require using the information on this page. After completing your model number, please contact a Glentek Sales Engineer to confirm that the model number you have created is correct.

GMBM **180** **3000** - **37** - **0** **0** **0** **0** **0** **0** **0** **0** -

Frame Size 180 = 180mm Motor

Power at Rated RPM 3000 = 3000 Watts

Back EMF Constant 37 = 37 V/Krpm

Brake option 0 = No brake installed

Flange Type 0 = Standard

Shaft Type 0 = Standard

Lead Termination 0 = Two AMP Connectors

Wiring Diagram 0 = Glentek Standard

Encoder Option 0 = 2048 PPR

Sealing Option 0 = No Shaft Seal

Factory Assigned Option leave blank

GMBM - - -

Frame Size	
180	130mm Motor

Power at Rated RPM					
1200	1200 Watts	2900	2900 Watts	5000	5000 Watts
1800	1800 Watts	3000	3000 Watts	5500	5500 Watts
2000	2000 Watts	3500	3500 Watts	7500	7500 Watts
2200	2200 Watts	4400	4400 Watts		

Back EMF Constant					
1200 Watts	1800 Watts	2000 Watts	2200 Watts		
79 79V/Krpm	50 50V/Krpm	81 81V/Krpm	50 50V/Krpm		
2900 Watts	3000 Watts	3500 Watts	4400 Watts		
56 56V/Krpm	37 37V/Krpm	56 56V/Krpm	56 56V/Krpm		
	85 85V/Krpm		84 84V/Krpm		
5000 Watts	5500 Watts	7500 Watts			
36 36V/Krpm	56 56V/Krpm	66 66V/Krpm			

Brake Option			
0	No brake installed	1	24 VDC Brake
		2	Special

Flange Type			
0	Standard Round	1	Special

Shaft Type			
0	Standard Round	1	Special

Lead Termination Type			
1	Special	2	Two MS Connectors

Wiring Diagram			
0	Glentek Standard	1	Special

Encoder Option			
0	2048 PPR	4	2500 PPR
1	3000 PPR	5	5000 PPR
3	1024 PPR	7	Special

Sealing Option			
0	No Shaft Seal (IP54 Sealing)	2	Special
1	Shaft Seal		

Factory Assigned Option	
A numerical code will be assigned by Glentek to motors whoes specifications vary from the standard configuration	