

GM14902S019

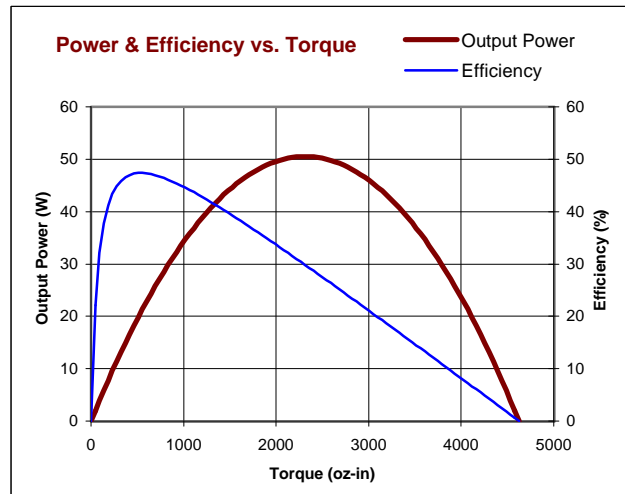
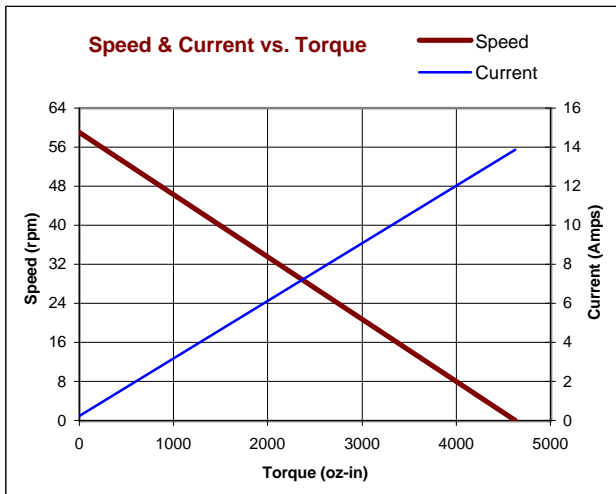
Lo-Cog® DC Gearmotor



Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	24	
No-Load Speed	S _{NL}	rpm (rad/s)	59	(6.2)
Continuous Torque (Max.) ¹	T _C	oz-in (N-m)	500	(3.5)
Peak Torque (Stall) ²	T _{PK}	oz-in (N-m)	4625	(33)
Weight	W _M	oz (g)	32.9	(932)
Motor Data				
Torque Constant	K _T	oz-in/A (N-m/A)	7.80	(5.51E-02)
Back-EMF Constant	K _E	V/krpm (V/rad/s)	5.77	(5.51E-02)
Resistance	R _T	Ω	1.73	
Inductance	L	mH	2.54	
No-Load Current	I _{NL}	A	0.24	
Peak Current (Stall) ²	I _P	A	13.9	
Motor Constant	K _M	oz-in/√W (N-m/√W)	5.93	(4.19E-02)
Friction Torque	T _F	oz-in (N-m)	1.2	(8.5E-03)
Rotor Inertia	J _M	oz-in-s ² (kg-m ²)	2.3E-03	(1.6E-05)
Electrical Time Constant	τ _E	ms	1.47	
Mechanical Time Constant	τ _M	ms	9.3	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.17	(1.1E-05)
Damping Constant	K _D	oz-in/krpm (N-m-s)	26	(1.8E-03)
Maximum Winding Temperature	θ _{MAX}	°F (°C)	311	(155)
Thermal Impedance	R _{TH}	°F/watt (°C/watt)	48.2	(9.0)
Thermal Time Constant	τ _{TH}	min	24.0	
Gearbox Data				
Reduction Ratio			65.5	
Efficiency ³			0.80	
Maximum Allowable Torque		oz-in (N-m)	500	(3.53)
Encoder Data				
<small>1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only. 3 - Effective gearbox efficiency for this unit improved by use of ball bearings.</small>				

- ### Included Features
- 2-Pole Stator
 - Ceramic Magnets
 - Heavy-Gauge Steel Housing
 - 11-Slot Armature
 - Silicon Steel Laminations
 - Stainless Steel Shaft
 - Copper-Graphite Brushes
 - Diamond Turned Commutator
 - Motor Ball Bearings
 - Output Ball Bearing
 - Wide Face Gears

- ### Customization Options
- Alternate Winding
 - Sleeve or Ball Bearings
 - Modified Output Shaft
 - Custom Cable Assembly
 - Special Brushes
 - EMI/RFI Suppression
 - Alternate Gear Material
 - Special Lubricant
 - Optional Encoder
 - Fail-Safe Brake

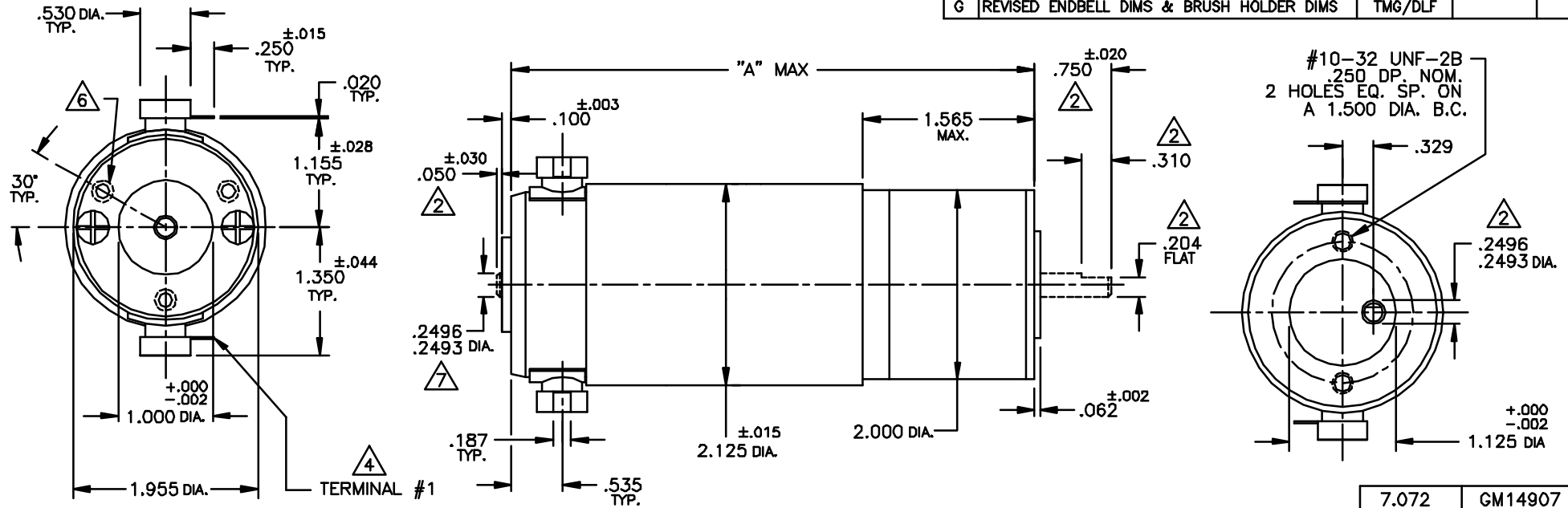


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
C	REDRAWN, UPDATED TO CURRENT STDS.	KUH/KUH	9/15/95	JRM
D	ADDED -7 LENGTH TO CHART	KUH/KUH	1/7/96	HCL
E	REVISED NOTE 3	RJS/RJS	9/5/97	HCL
F	REVISED MTG. ENDBELL/GEARPLATE PER ECO	EWS/EWS	12/12/00	JRM
G	REVISED ENDBELL DIMS & BRUSH HOLDER DIMS	TMG/DLF		



NOTES:

- SHAFT ROTATION IS FIGURED WHILE VIEWING THE MOUNTING END, WITH POSITIVE VOLTAGE (+) APPLIED TO TERMINAL #1. SEE CHART.
- ALL OUTPUT SHAFT DIMENSIONS NOTED ARE STANDARD (10-535).
- FOR ALL OTHER SHAFT CONFIGURATIONS, REFER TO DATA SHEET FOR SHAFT PART NUMBERS.
- ENDPLAY: MOTOR SHAFT PRELOADED PER P-107 (BALL BEARINGS), OR .015 MAX ENDPLAY (SLEEVE BEARINGS). OUTPUT SHAFT: .020 MAX ENDPLAY.
- TERMINALS WILL MATE WITH 187 SERIES AMP, INC., OR ETC, INC. PUSH ON RECEPTACLE.
- MAX. GEARBOX TORQUE IS 175 OZ. IN., STANDARD GEARING. MAX. GEARBOX TORQUE IS 300 OZ. IN., HI-TORQUE GEARING. MAX. GEARBOX TORQUE IS 500 OZ. IN., WIDE FACE GEARING.
- OPTIONAL REAR MOUNTING PATTERN, #6-32 UNC-2B, .200 NOM DP. ON A 1.531 DIA. B.C.
- STANDARD SHAFT DIA. FOR GM14907 IS 8MM (.3147/.3144 DIA.).

ALL TYPES	728:1	CW	7.072	GM14907
ALL TYPES	218.4:1	CCW	6.322	GM14906
ALL TYPES	65.5:1	CW	5.822	GM14905
ALL TYPES	19.7:1	CCW	5.447	GM14904
STD	5.9:1	CW	5.072	GM14903
			4.572	GM14902
			4.322	GM14901
GEARING	GEAR RATIO	ROTATION	"A" MAX	MODEL NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES ±1/64 ±.015 ±15° ±.010 ±.010 ±15° ±.005 ±.005 ±15° BREAK ALL SHARP EDGES	FILE:	150\196	
	DRAFTED BY:	KUH	DATE: 12 SEP 95
MATERIAL:	ENGINEERED BY:	KUH	12 SEP 95
	APPROVED BY:	JRM	15 SEP 95
FINISH:	NEXT ASSY:		
	USED ON:		
PITTMAN PENN ENGINEERING & MANUFACTURING CORP. 2800 Rockledge Blvd., Rockledge, FL 32955			
TITLE: OUTLINE & MOUNTING DIMENSIONS GM1490X SERIES			
DWG. NO.	B-	150-196	REV. G
SCALE: DNS	SHEET 1 OF 1		