



GM9234S030

Lo-Cog® DC Gearmotor

Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	12	
No-Load Speed	S _{NL}	rpm (rad/s)	21	(2.2)
Continuous Torque (Max.) ¹	T _C	oz-in (N-m)	500	(3.5E+00)
Peak Torque (Stall) ²	T _{PK}	oz-in (N-m)	4199	(3.0E+01)
Weight	W _M	oz (g)	17.3	(492)
Motor Data				
Torque Constant	K _T	oz-in/A (N-m/A)	3.29	(2.32E-02)
Back-EMF Constant	K _E	V/krpm (V/rad/s)	2.43	(2.32E-02)
Resistance	R _T	Ω	1.26	
Inductance	L	mH	1.02	
No-Load Current	I _{NL}	A	0.26	
Peak Current (Stall) ²	I _P	A	9.52	
Motor Constant	K _M	oz-in/√W (N-m/√W)	3.01	(2.13E-02)
Friction Torque	T _F	oz-in (N-m)	0.60	(4.2E-03)
Rotor Inertia	J _M	oz-in-s ² (kg-m ²)	5.9E-04	(4.2E-06)
Electrical Time Constant	τ _E	ms	0.85	
Mechanical Time Constant	τ _M	ms	9.3	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.039	(2.6E-06)
Damping Constant	K _D	oz-in/krpm (N-m-s)	6.7	(4.5E-04)
Maximum Winding Temperature	θ _{MAX}	°F (°C)	311	(155)
Thermal Impedance	R _{TH}	°F/watt (°C/watt)	62.8	(17.1)
Thermal Time Constant	τ _{TH}	min	12.0	
Gearbox Data				
Reduction Ratio			218.4	
Efficiency ³			0.73	
Maximum Allowable Torque		oz-in (N-m)	500	(3.53)
Encoder Data				

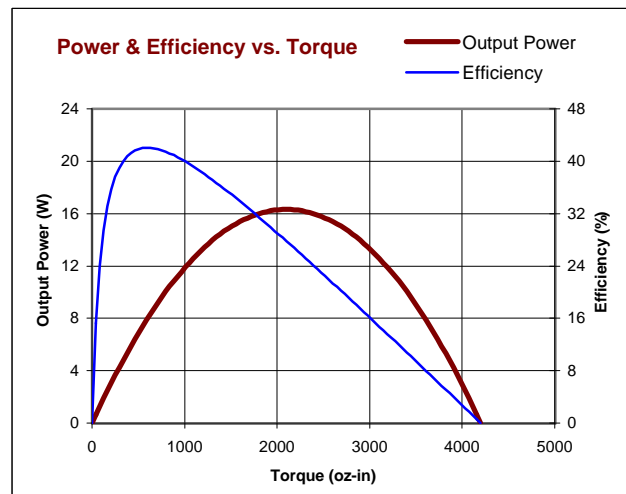
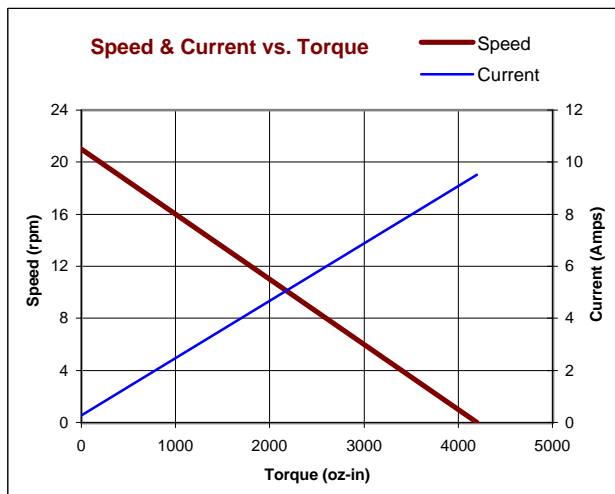
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.
3 - Effective gearbox efficiency for this unit improved by use of ball bearings.

Included Features

- 2-Pole Stator
- Ceramic Magnets
- Heavy-Gauge Steel Housing
- 7-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

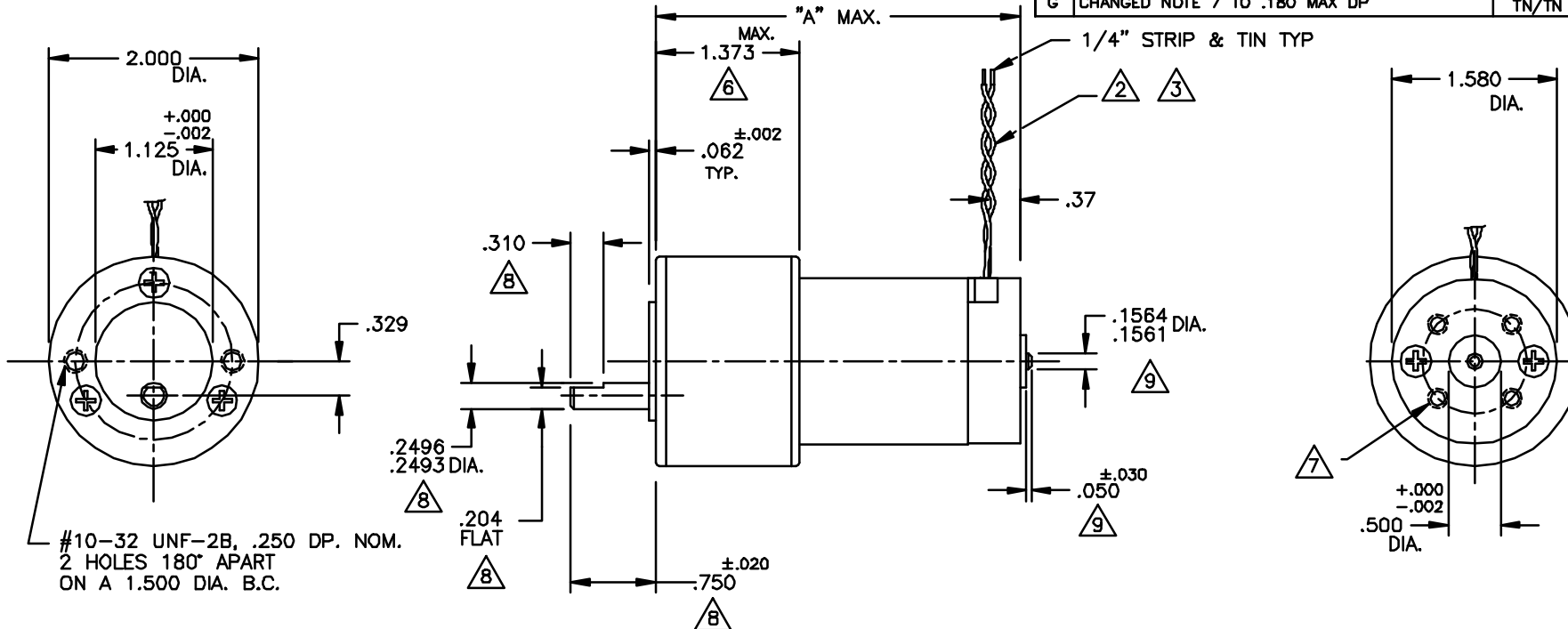


All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
E	REVISED NOTE 1	RJS/RJS	10/22/97	JRM
F	1/4" STRIP & TIN WAS "STRIP"	KUH/KUH	5/12/98	JRM
G	CHANGED NOTE 7 TO .180 MAX DP	TN/TN		



NOTES:

1. SHAFT ROTATION IS SHOWN WHILE VIEWING OUTPUT SHAFT WITH POSITIVE VOLTAGE (+) APPLIED TO RED LEAD
2. LEADS ARE 22 AWG (7x30), PVC INSULATION, UL STYLE 1569/1007. ONE LEAD IS RED, ONE BLACK
3. STANDARD LEAD LENGTH IS 18" ±1/2"
4. ENDPLAY .015 MAX. ON MOTOR SHAFT, .020 MAX. ON OUTPUT SHAFT.
5. LIMIT TORQUE ON GEARBOX TO 175 oz.in., STANDARD (STD.)GEARING LIMIT TORQUE ON GEARBOX TO 300 oz.in., HIGH TORQUE (H-T) GEARING LIMIT TORQUE ON GEARBOX TO 500 oz.in., WIDE FACE (WF) GEARING
6. FOR WIDE FACE RATIOS 728/1419:1 SEE 150-408-2 FOR 2426.9/4732.5:1 RATIOS (ALL GEAR TYPES) SEE 150-408-2
7. OPTIONAL REAR MOUNTING PATTERN AVAILABLE, #6-32 UNC-2B .180 DP. MAX., 4 HOLES ON A 1.000 DIA. B.C..
8. ALL SHAFT DIMENSIONS NOTED ARE STANDARD (10-535); FOR ALL OTHER SHAFT CONFIGURATIONS REFER TO DATA SHEET FOR PART NUMBERS.
9. OPTIONAL REAR SHAFT EXTENSIONS AVAILABLE. FOR MOTOR SHAFT CONFIG. SEE DATA SHEET.

6	728/1419:1	CW
ALL TYPES	218.4/426:1	CCW
ALL TYPES	65.5/127.7:1	CW
ALL TYPES	19.7/38.3:1	CCW
ALL TYPES	5.9/11.5:1	CW
GEARING	GEAR RATIO	DIRECTION

GM92X6	4.326
GM92X5	3.976
GM92X4	3.676
GM92X3	3.476
GM92X2	3.101
MODEL NO.	"A" MAX.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES ±1/64 .X ±.015 ±1° XX ±.010 XXX±.005 BREAK ALL SHARP EDGES	FILE: 150/408	
	DRAFTED BY: RJS DATE: 3/22/96	
MATERIAL:	ENGINEERED BY: DLF DATE: 3/22/96	DWG. NO. B-150-408
FINISH:	APPROVED BY: JRM DATE: 3/22/96	REV. G
	NEXT ASSY:	SCALE: DNS SHEET 1 OF 1
	USED ON:	