



GM9236S012

Lo-Cog® DC Gearmotor

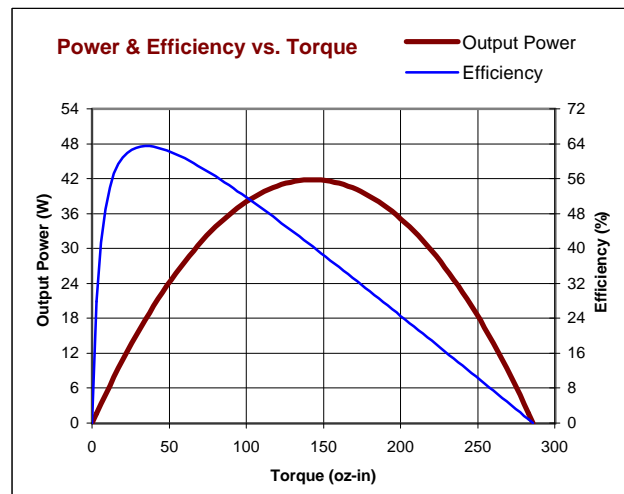
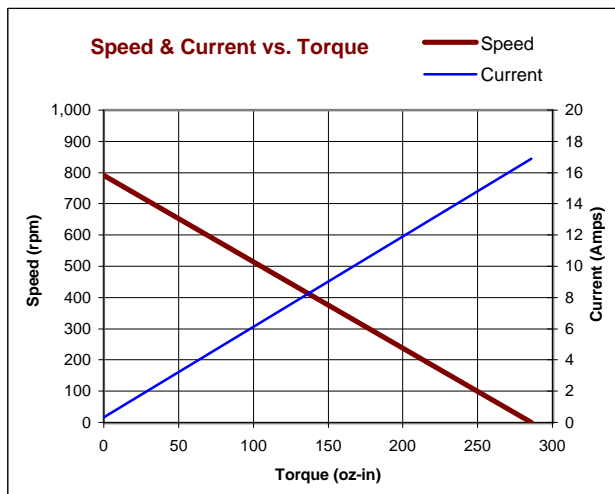
Assembly Data	Symbol	Units	Value	
Reference Voltage	E	V	12	
No-Load Speed	S _{NL}	rpm (rad/s)	790	(82.7)
Continuous Torque (Max.) ¹	T _C	oz-in (N-m)	48	(3.4E-01)
Peak Torque (Stall) ²	T _{PK}	oz-in (N-m)	286	(2.0E+00)
Weight	W _M	oz (g)	19.7	(558)
Motor Data				
Torque Constant	K _T	oz-in/A (N-m/A)	3.25	(2.29E-02)
Back-EMF Constant	K _E	V/krpm (V/rad/s)	2.40	(2.29E-02)
Resistance	R _T	Ω	0.71	
Inductance	L	mH	0.66	
No-Load Current	I _{NL}	A	0.33	
Peak Current (Stall) ²	I _P	A	16.9	
Motor Constant	K _M	oz-in/√W (N-m/√W)	4.11	(2.90E-02)
Friction Torque	T _F	oz-in (N-m)	0.80	(5.6E-03)
Rotor Inertia	J _M	oz-in-s ² (kg-m ²)	1.0E-03	(7.1E-06)
Electrical Time Constant	τ _E	ms	1.06	
Mechanical Time Constant	τ _M	ms	8.5	
Viscous Damping	D	oz-in/krpm (N-m-s)	0.053	(3.5E-06)
Damping Constant	K _D	oz-in/krpm (N-m-s)	12.5	(8.5E-04)
Maximum Winding Temperature	θ _{MAX}	°F (°C)	311	(155)
Thermal Impedance	R _{TH}	°F/watt (°C/watt)	56.3	(13.5)
Thermal Time Constant	τ _{TH}	min	13.5	
Gearbox Data				
Reduction Ratio			5.9	
Efficiency ³			0.90	
Maximum Allowable Torque		oz-in (N-m)	300	(2.12)
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
- 7-Slot Armature
- Silicon Steel Laminations
- Stainless Steel Shaft
- Copper-Graphite Brushes
- Diamond Turned Commutator
- Motor Ball Bearings
- Output Ball Bearing
- High Torque 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



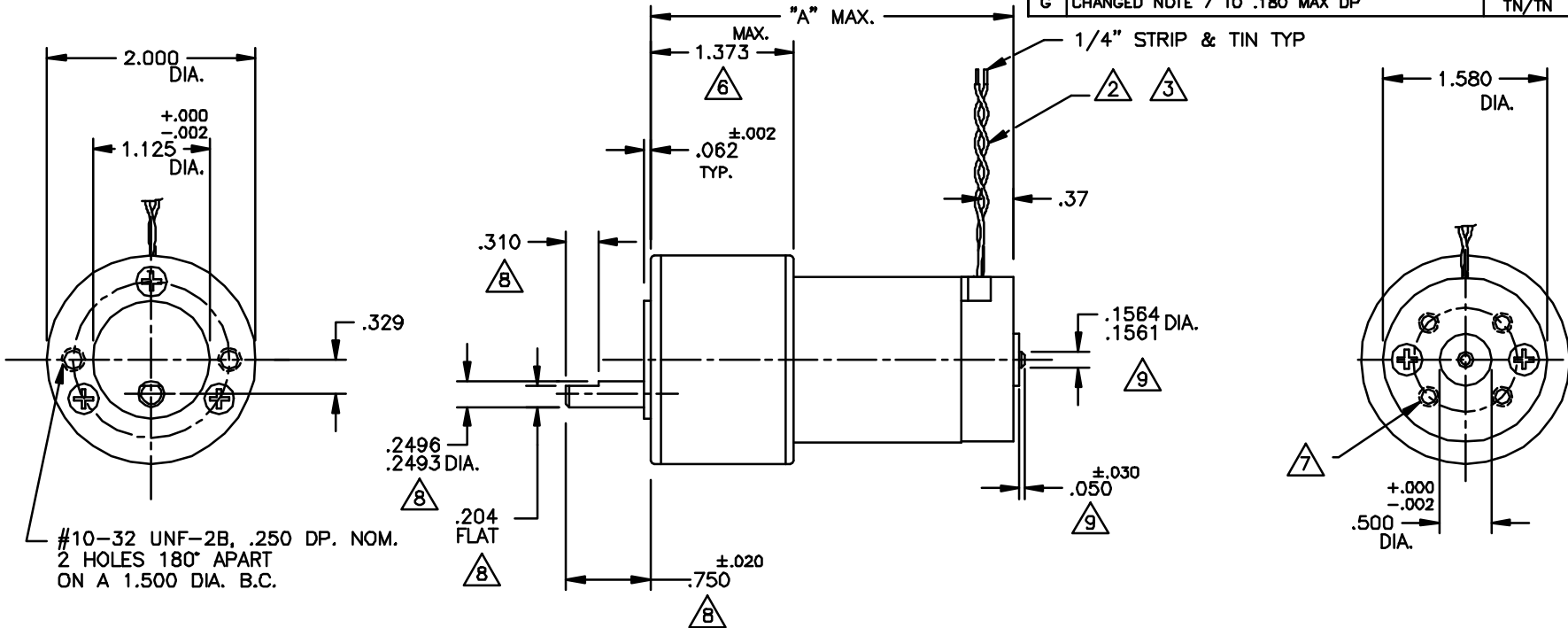
All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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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:	