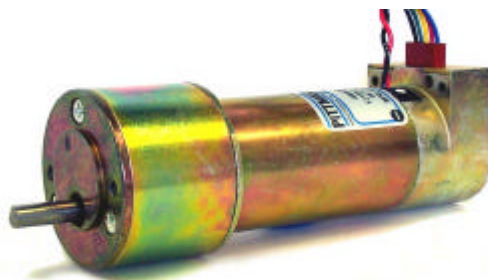




GM9236S019

Lo-Cog® DC Servo Gearmotor



Assembly Data	Symbol	Units	Value
Reference Voltage	E	V	12
No-Load Speed	S_{NL}	rpm (rad/s)	236 (24.7)
Continuous Torque (Max.) ¹	T_C	oz-in (N-m)	153 (1.1E+00)
Peak Torque (Stall) ²	T_{PK}	oz-in (N-m)	860 (6.1E+00)
Weight	W_M	oz (g)	23.3 (661)
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/ \sqrt{W} (N-m/ \sqrt{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			19.7
Efficiency ³			0.84
Maximum Allowable Torque		oz-in (N-m)	500 (3.53)
Encoder Data			
Channels			3
Resolution		CPR	500

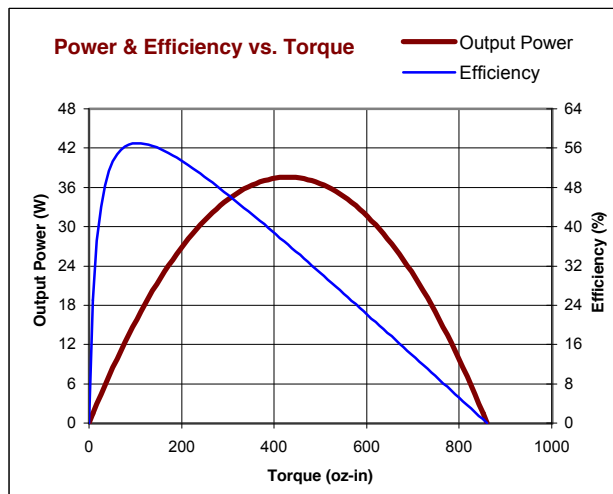
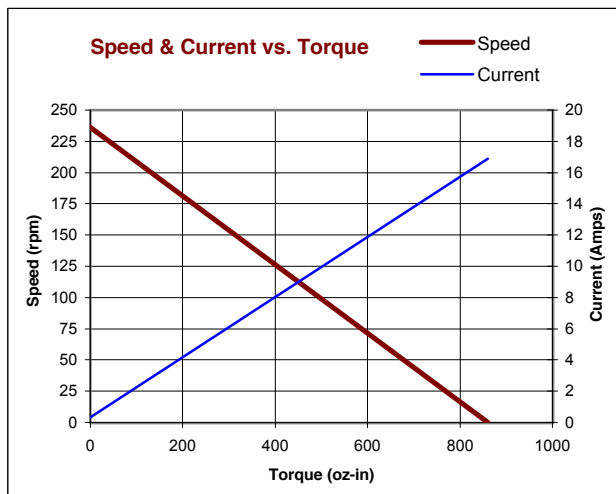
1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.
3 - Effective gearbox efficiency for this unit improved by use of ball bearings.

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



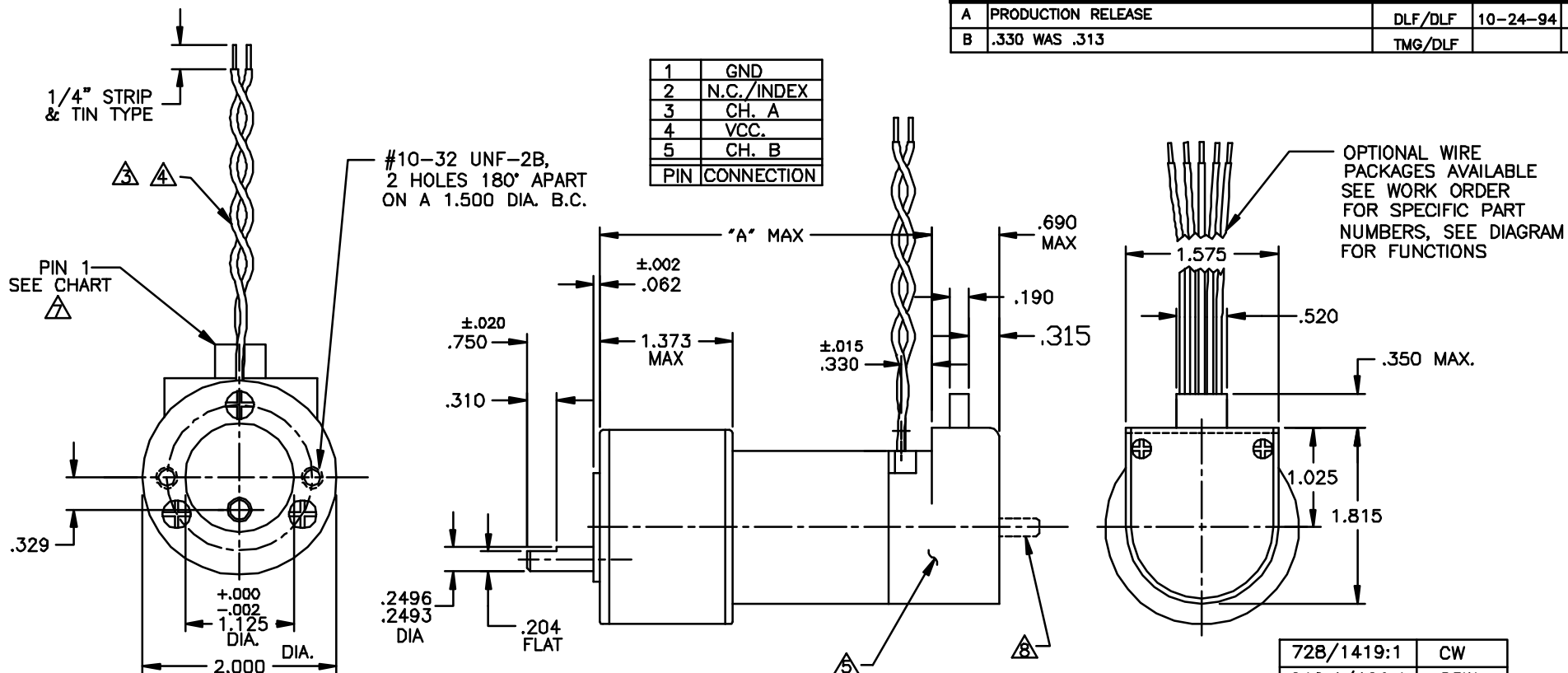
All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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REVISIONS				
LTR	DESCRIPTION	DRFT/ENGR	DATE	APPR
A	PRODUCTION RELEASE	DLF/DLF	10-24-94	JRM
B	.330 WAS .313	TMG/DLF		

1	GND
2	N.C./INDEX
3	CH. A
4	VCC.
5	CH. B
PIN CONNECTION	



NOTES:

- OUTPUT SHAFT ROTATION IS PER CHART, FIGURED WHILE VIEWING MOUNTING END WITH (+) POSITIVE VOLTAGE APPLIED TO RED MOTOR WIRE.
- ENDPLAY .020 MAX. ON OUTPUT SHAFT, .015 MAX. ON MOTOR SHAFT.
- STANDARD LEADS ARE 22 AWG. (7X30), PVC INSULATION, UL STYLE 1569/1007 ONE LEAD IS RED, ONE BLACK.
- STANDARD LEAD LENGTH IS 18 ±1/2".
- ENCLOSED IS A HEDS-91X0 OPTICAL ENCODER MODULE. INDEX PULSE OPTIONAL. SEE DATA SHEET FOR LINE COUNT.
- MAX TORQUE GEARBOX IS TO 175 oz.in. STANDARD GEARING, 300 oz.in. HIGH-TORQUE GEARING, AND 500 oz.in. WIDE FACE GEARING.
- MOLEX CENTER CRIMP TERMINAL HOUSING 2695 SERIES, WILL ACCEPT MOLEX MATING TERMINALS 2759, PITTMAN P/N: 81-54-1.
- OPTIONAL REAR SHAFT EXTENSION AVAILABLE (.1564/.1561 DIA.).

GM92X6	4.289
GM92X5	3.939
GM92X4	3.639
GM92X3	3.439
GM92X2	3.064
MODEL No.	"A" MAX

728/1419:1	CW
218.4/426:1	CCW
65.5/127.7:1	CW
19.7/38.3:1	CCW
5.9/11.5:1	CW
GEAR RATIO	SHAFT ROTATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTION DECIMAL ANGLES ±1/64 ±.015 ±1° ±.010 ±.010 ±.005 ±.005 BREAK ALL SHARP EDGES		FILE: 150\413	
DRAFTED BY: DLF	DATE: 15 AUG 94	PITTMAN 1700 North 10th Street, Allentown, PA 18106	
ENGINEERED BY: DLF	15 AUG 94		
APPROVED BY: JR MELA	10-24-94		
MATERIAL:	NEXT ASSY:	TITLE: OUTLINE & MOUNTING DIMENSIONS GM9200 SERIES MOTOR WITH H.P. ENCODER MODULE 9100	
FINISH:	USED ON:	DWG. NO. 150-413 B- REV. B	
		SCALE: NONE SHEET 1 OF 1	