



Systems Division, San Jose Facility
2205 Fortune Dr., San Jose CA 95131

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CONFIDENTIAL/PROPRIETARY

**TECHNICAL SPECIFICATION
FOR
AZIMUTH, ELEVATION AND THETA
DRIVE MOTORS
BICEP TELESCOPE**

Engineer _____ Date _____

C **Preliminary**

Program Manager _____ Date _____

Document Control _____ Date _____

Revision Log

Rev	Description	Writer	Check	Release

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1.0 REFERENCE

Supplier: MCG 14700 Martin Drive Eden Prairie, MN 55344 Tel: 1-888-624-3478 Fax: (612) 975-1682	Distributor: CYMATIX 1160 Industrial Ave, Suite J Petaluma, CA 94952 Tel: 1-800-913-0555
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2.0 ENVIRONMENTAL CONDITIONS

Location: South Pole – Antarctic (Inside radome)

Temperature Range:

- Operating: +30 degree F to +100 degree F
- Non Operating: -130 degree F to +100 degree F

Humidity: Extremely dry air

Altitude: 11,000 ft

3.0 MOTOR PERFORMANCE

Model: ID42001 Servo brush motor with tachometer and brake

Rated Speed: 2000 RPM

Continuous Torque: 27.6 in-lb

Peak Torque: 165 in-lb

4.0 REQUIREMENTS

Orientation: Any position (including vertical output shaft up or down)

Modification: One metallic connector for motor and tachometer

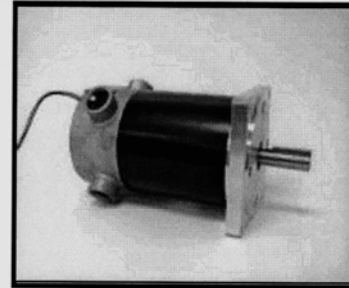
One metallic connector for brake

Brake with holding torque in the range of 9 to 15 in-lb. 24VDC nominal coil voltage. Equipped with external mechanical release.

Overall Length:	≤10.25 inch (from motor mounting face to back end of brake)
Bearing Load:	100 lb (maximum radial load transmitted by reducer to servo motor output support bearing)
Lifetime:	10 years

ID42000 DC Brush Motor

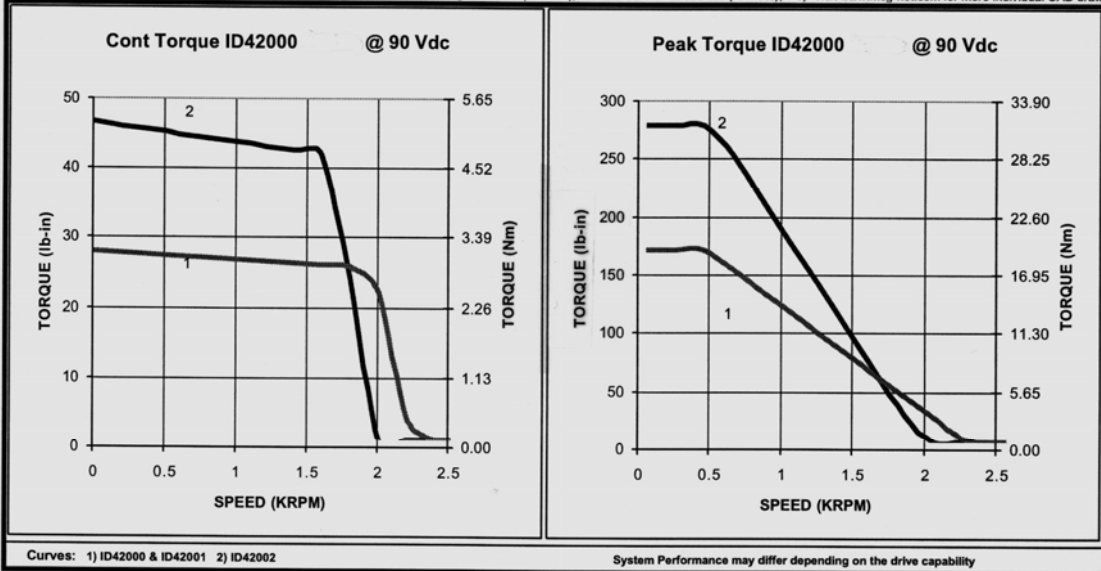
- 4.75 Inch NEMA 56 Motor
- Continuous Torque From 27 to 45 lb-in
- Speeds to 4500 rpm
- Motor Tachometer Versions (shaded in blue), 7 V/Krpm
- 100 Lb Radial Load 1/2" from Front Face
- 4 Pole Rare Earth Magnetic Structure
- Optical Encoders - High Precision, Optional
- "Bolt On" Precision Gearhead, Optional



ID42000 Instrument Grade DC Brush Motor

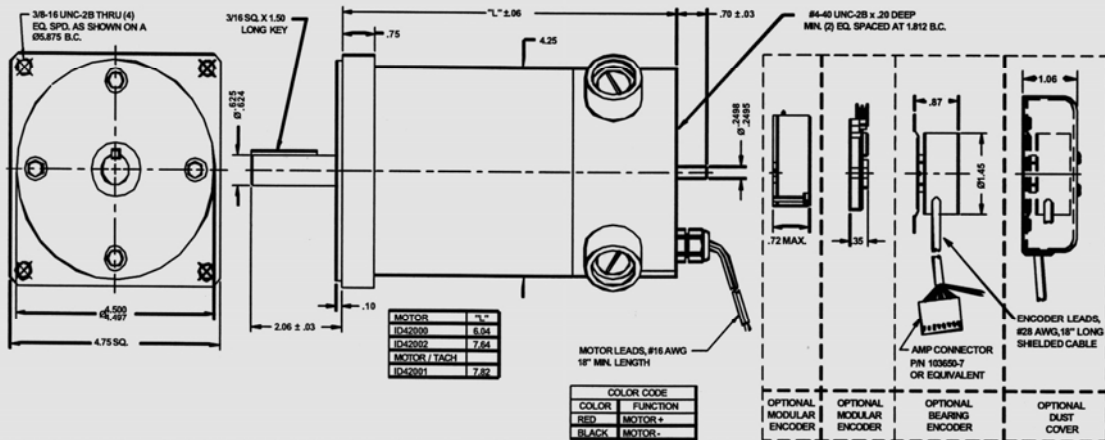
Catalog Number	Torque		Speed	Voltage	Current		Torque		Voltage	Res. Rt	Ind. L	Inertia		Weight
	Cont. Tcs	Peak Tps	@ Vt ω	Terminal Vt	Cont. Ics	Peak Ips	Constant Kt	Constant Ke	kg-cm ²			oz-in-s ²		
ID42000	3.118 / 27.6	18.64 / 165	2000	90	8.7	51.9	0.3743	3.31	39.2	1.30	6.50	9.49	0.0084	6.8 / 15
ID42001	3.118 / 27.6	18.64 / 165	2000	90	8.7	51.9	0.3743	3.31	39.2	1.30	6.50	10.73	0.0095	7.26 / 16
ID42002	5.15 / 45.6	30.85 / 273	1700	90	12.2	73.0	0.4402	3.90	46.1	0.87	3.64	13.56	0.012	7.71 / 17

Notes: 1) 155C winding temp. All others @ 25C. 2) Tolerance on winding constants (+/- 10%), Resistance and Inductance (+/- 15%). 3) Visit www.mcq-net.com for more individual CAD drawings



Curves: 1) ID42000 & ID42001 2) ID42002

System Performance may differ depending on the drive capability



Contact us at: www.mcq-net.com



