

CUSTOMIZABLE RUGGEDIZED MILITARY MOTORS



For over 50 years, Moog's experience with innovative, high performance control systems has been recognized worldwide. Our ability to design and manufacture state-of-the-art electromechanical control systems, combined with the unique capability to develop and manufacture brushless D.C. motors, has allowed Moog to generate an unmatched expertise in the area of precision turret control, stabilization and ammunition handling.

Moog provides systems and component experience in developing and supplying electric aiming and stabilization systems as well as drives for ammunition handling systems.

The Moog all-electric drives for turrets and weapons have demonstrated high in-service reliability for main battle tanks, infantry fighting vehicles, howitzers and anti-aircraft applications around the world.

Moog's brushless motors have been designed not only to meet and exceed the demanding requirements of many combat vehicle electric control applications, but to do so with more power per dimension. Moog engineers have achieved this by combining a highly efficient magnetic circuit with energy rare earth magnets and an excellent thermal design. Operation within a wide speed range provides excellent low speed tracking, high dynamic speed tracking as well as high dynamic target acquisition.

FEATURES AND BENEFITS

- Smaller Size
- Less Weight
- Lower Cost
- Longer Thermal Time Constant
- Minimum Ripple and Cogging
- Higher Torque / Inertia Ratio
- Complies with MIL-STD-810E
- Complies with MIL-STD-461E



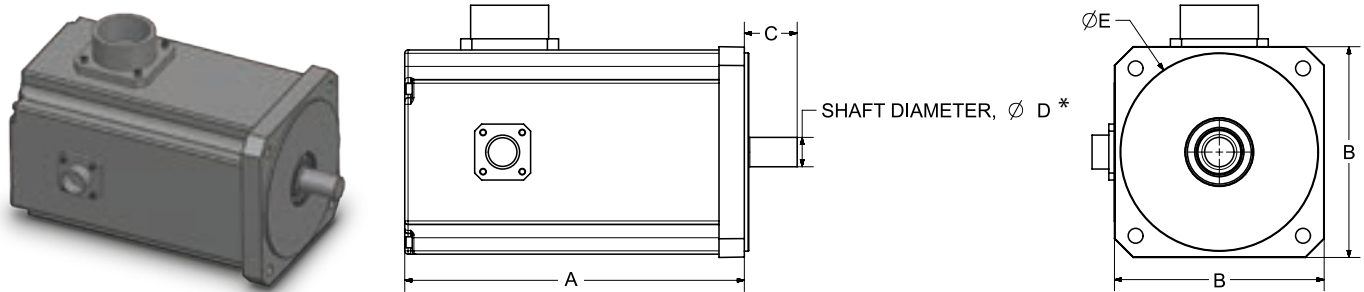
CUSTOMIZABLE RUGGEDIZED MILITARY MOTORS

LOW VOLTAGE MOTORS

| Features | Model D 323 | | | Model D 324 | | | Model D 325 | | | Model D 326 | | | Model D 326HT | | |
|------------------------------------|-------------|-------|-------|-------------|-------|-------|-------------|-------|-------|-------------|-------|-------|---------------|-------|-------|
| | L15H | L25J | L40J | L10A | L20J | L40H | L20B | L30D | L50A | L70B | L15G | L30E | L45B | L15HT | L60HT |
| Stack type | L15H | L25J | L40J | L10A | L20J | L40H | L20B | L30D | L50A | L70B | L15G | L30E | L45B | L15HT | L60HT |
| Peak stall torque (Nm) | 4.9 | 8.1 | 13.0 | 6.4 | 13.3 | 20.3 | 28.0 | 37.6 | 60.5 | 70.0 | 38.1 | 76.3 | 64.0 | 48.1 | 201.8 |
| Peak stall current (Arms) | 85.0 | 220.0 | 220.0 | 70.0 | 300.0 | 350.0 | 250.0 | 350.0 | 380.0 | 500.0 | 500.0 | 500.0 | 500.0 | 100.0 | 500.0 |
| Continuous stall torque (Nm) | 1.6 | 2.6 | 3.9 | 2.7 | 4.7 | 8.1 | 11.2 | 16.2 | 26.2 | 35.3 | 14.0 | 26.8 | 38.8 | 16.2 | 55.9 |
| Continuous stall current (Arms) | 25.4 | 61.8 | 58.1 | 24.7 | 86.8 | 127.2 | 72.1 | 120.5 | 134.8 | 224.6 | 160.8 | 153.3 | 296.0 | 27.9 | 111.1 |
| Nominal speed (rpm) | 3200 | 5200 | 3400 | 1700 | 4000 | 3500 | 1300 | 1650 | 1200 | 1400 | 2300 | 1150 | 1600 | 280 | 400 |
| Rotor inertia (kgcm ²) | 0.4 | 0.6 | 1.0 | 1.6 | 2.6 | 4.7 | 8.0 | 11.5 | 18.4 | 25.3 | 27.2 | 52.1 | 76.9 | 43.6 | 166.5 |
| Motor weight (kg) | 2.0 | 2.6 | 3.5 | 3.6 | 4.7 | 6.9 | 9.9 | 12.1 | 16.6 | 21.0 | 15.1 | 21.1 | 27.1 | 15.1 | 33.1 |
| Nominal input voltage (VDC) | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |

HIGH VOLTAGE MOTORS

| Features | Model D 323 | | | Model D 324 | | | Model D 325 | | | Model D 326 | | | Model D 326HT | | |
|------------------------------------|-------------|---------|---------|-------------|---------|---------|-------------|---------|---------|-------------|---------|---------|---------------|----------|----------|
| | L15H-HV | L25J-HV | L40J-HV | L10A-HV | L20J-HV | L40H-HV | L20B-HV | L30D-HV | L50A-HV | L70B-HV | L15G-HV | L30E-HV | L45B-HV | L15HT-HV | L60HT-HV |
| Stack type | L15H-HV | L25J-HV | L40J-HV | L10A-HV | L20J-HV | L40H-HV | L20B-HV | L30D-HV | L50A-HV | L70B-HV | L15G-HV | L30E-HV | L45B-HV | L15HT-HV | L60HT-HV |
| Peak stall torque (Nm) | 4.8 | 9.1 | 13.2 | 6.7 | 13.6 | 23.9 | 23.8 | 36.0 | 65.7 | 85.4 | 42.4 | 80.2 | 111.9 | 52.3 | 230.9 |
| Peak stall current (Arms) | 5.0 | 10.0 | 10.0 | 4.0 | 12.0 | 18.0 | 10.0 | 15.0 | 20.0 | 35.0 | 26.0 | 31.0 | 40.0 | 10.0 | 40.0 |
| Continuous stall torque (Nm) | 1.6 | 2.5 | 3.8 | 2.8 | 4.8 | 8.2 | 11.1 | 16.2 | 26.2 | 35.3 | 14.0 | 26.7 | 38.8 | 16.2 | 55.9 |
| Continuous stall current (Arms) | 1.5 | 2.3 | 2.5 | 1.4 | 4.4 | 5.3 | 3.9 | 5.6 | 6.1 | 11.8 | 7.1 | 8.8 | 12.2 | 2.4 | 6.9 |
| Nominal speed (rpm) | 5800 | 6000 | 4200 | 2700 | 4600 | 3800 | 2200 | 2200 | 1500 | 2200 | 3000 | 2000 | 1900 | 750 | 700 |
| Rotor inertia (kgcm ²) | 0.4 | 0.6 | 1.0 | 1.6 | 2.6 | 4.7 | 8.0 | 11.5 | 18.4 | 25.3 | 27.2 | 52.1 | 76.9 | 43.6 | 166.5 |
| Motor weight (kg) | 2.0 | 2.6 | 3.5 | 3.6 | 4.7 | 6.9 | 9.9 | 12.1 | 16.6 | 21.0 | 15.1 | 21.1 | 27.1 | 15.1 | 33.1 |
| Nominal input voltage (VDC) | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |



DIMENSIONS

| Model | Stack | A | B | C | D | E |
|-------|-------|------------------|-----------------|----------------|----------------|-----------------|
| D323 | L15 | 5.21" [132.4mm] | 2.76" [70.0mm] | 1.00" [25.5mm] | 0.43" [11.0mm] | 2.36" [60.0mm] |
| | L25 | 6.21" [157.8mm] | | | | |
| | L40 | 7.71" [195.9mm] | | | | |
| D324 | L10 | 5.67" [144.1mm] | 4.13" [105.0mm] | 1.69" [43.0mm] | 0.63" [16.0mm] | 3.74" [95.0mm] |
| | L20 | 6.67" [169.5mm] | | | | |
| | L40 | 8.67" [220.3mm] | | | | |
| D325 | L20 | 7.30" [185.4mm] | 5.31" [135.0mm] | 2.11" [53.5mm] | 0.87" [22.0mm] | 5.12" [130.0mm] |
| | L30 | 8.30" [210.8mm] | | | | |
| | L50 | 10.30" [261.6mm] | | | | |
| | L70 | 12.30" [312.4mm] | | | | |
| D326 | L15 | 7.09" [180.1mm] | 7.50" [190.5mm] | 2.52" [64.0mm] | 1.26" [32.0mm] | 7.09" [180.0mm] |
| | L30 | 8.59" [218.2mm] | | | | |
| | L45 | 10.09" [256.3mm] | | | | |
| | L60 | 11.59" [294.4mm] | | | | |

Note: Resolver commutation standard; encoder commutation available.

Integrated brake available upon request. Dimensional information does not reflect inclusion of brake.

* Key and spline outputs available upon request.

MOOG
SPACE AND DEFENSE GROUP

500 Jamison Rd, East Aurora, NY 14052
defense@moog.com
www.moog.com/defense



Moog Space and Defense



@MoogSDG



@MoogSDG



@MoogSDG



@MoogInc