

## **2600** SERIES

### Performance Benefits

Torque Systems specializes in the design of high performance brush servo motors that provide efficiency, flexibility of application, and a long and trouble-free service life. Our TORQUEMASTER® 2600 series is no exception.

With fast response, accurate control and high torque-to-inertia ratios, you can count on the TORQUEMASTER 2600 Series of brush servo motors to provide smooth operation throughout a full speed range. The 2600 Series delivers smooth and superior low speed performance, and maximum power ratings with low thermal resistance for high speed performance. In addition, with maximum torque in a smaller package, you can count on better pricing for a better overall value.

When integrated with high performance brush amplifiers, TORQUEMASTER 2600 Series brush servo motors provide effective and highly efficient motion control solutions for a wide range of applications including factory automation, packaging, robotics, machine tools, medical instrumentation and more.

### Design Features

TORQUEMASTER 2600 Series brush servo motors are rated from 17 oz.-in. to 90 oz.-in. with speeds and torque stability up to 6500 RPM. They utilize the latest in high performance permanent magnet technology, and are available in eight standard windings (as well as custom windings) to meet your most demanding applications.

Each brush servo motor in the TORQUEMASTER 2600 Series is ruggedly designed and manufactured for reliable performance.

Motors can be customized to fit your exact application with tachometers, encoders, brakes and other options.

**Series 2600, is a high performance, permanent magnet brush servo motor for use in various industrial direct drive or geared servo systems**

- Rugged industrial construction
- Continuous torque ratings up to 90 oz.-in.  
— with speeds up to 6500 RPM (no load)
- Peak torque ratings up to 450 oz.-in.
- High torque-to-inertia ratio delivers maximum torque per frame size
- Superior low speed performance
- Numerous custom options available







**VOLTAGE EQUATION FOR MOTORS**

$$\text{Volts} = \frac{K_T \times \text{RPM}}{1,350} + \frac{T \times R_A}{K_T} + V_B$$

Where:  
 $K_T$  = torque constant, oz.-in. per amp  
 $T$  = load torque plus motor friction torque-oz.-in.  
 $R_A$  = armature resistance + brush resistance  
 $V_B$  = brush voltage drop = 2 volts  
*Note: For armature resistance at maximum temperature rating, multiply catalog value of R by 1.5*

---

**MOTOR TORQUE RATING VS. SPEED**

$$T_R = .94K_T \left[ \frac{130 - \frac{\text{RPM} \times T_F}{1,350} - \frac{\text{RPM}^2 \times F_i}{1,350,000}}{1.5 R_A} \right]^{1/2} - T_F - \left[ \frac{\text{RPM} \times F_i}{1000} \right]$$

Where:  
 $T_R$  = rated torque (25°C ambient)-oz.-in.  
 $K_T$  = torque sensitivity-oz.-in./amp  
 $R_A$  = armature resistance  
 $\text{RPM}$  = revolutions per minute  
 $T_F$  = static friction torque-oz.-in.  
 $F_i$  = viscous friction-oz.-in.  
 $R_{TH}$  = thermal resistance

---

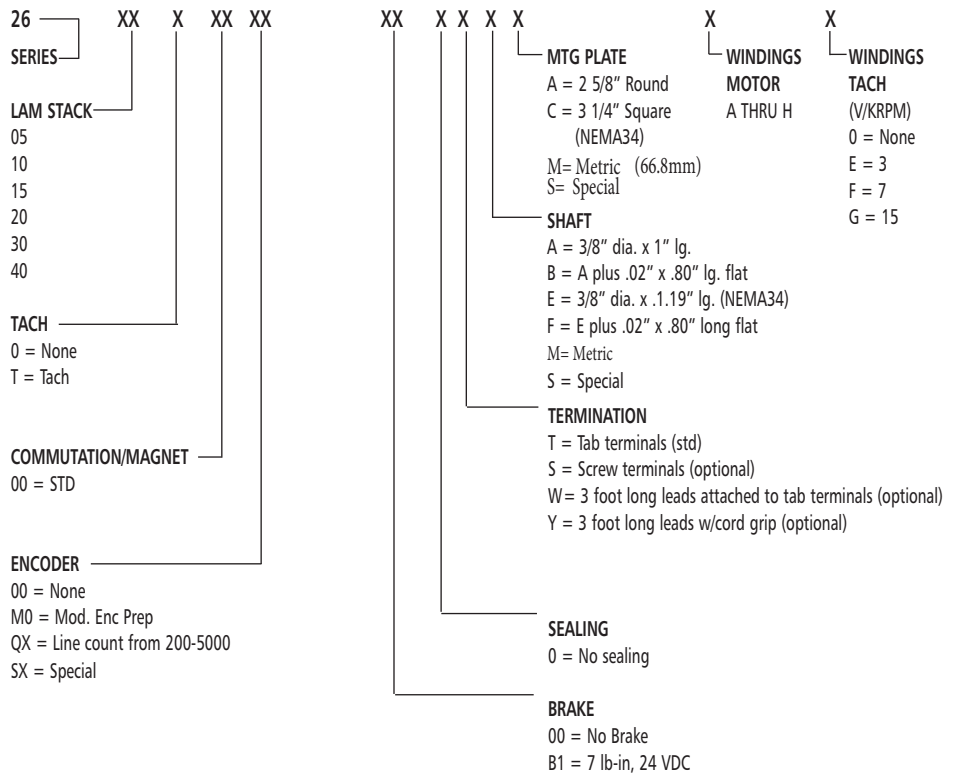
**To Find: Higher Torque Rating for Intermittent Duty**

Let  $A = \frac{\text{total cycle time in seconds}}{\text{thermal time constant of motors in seconds}}$   
 Let  $B = \frac{\text{"on" time in seconds per cycle}}{\text{thermal time constant of motor in seconds}}$

then with  $T_R$  = Rated torque for 100% duty  
 and  $T_{MAX}$  = Rated torque for intermittent duty

$$T_{MAX} = T_R \times \left[ \frac{1 - e^{-A}}{1 - e^{-B}} \right]^{1/2}$$

## ORDERING INFORMATION (For Standard Options)



## CUSTOMIZE THE 2600 SERIES TO YOUR EXACT REQUIREMENTS

To satisfy various applications with cost-effective solutions, 2600 Series motors are readily available with a wide range of standard capabilities. Final designs are often the result of cooperative efforts between the customer's engineering department and Torque Systems. For assistance, call your local distributor or Torque Systems direct. We look forward to meeting your custom requirements.

## ASK ABOUT OTHER MOTION CONTROL SOLUTIONS & CAPABILITIES FROM TORQUE SYSTEMS

- Brushless TorqueMaster® Servo Motors
- Shaft-mounted DataTorque™ Encoders
- Gearboxes/Brakes
- Expert application engineering
- Complete repair & refurbishing services



Torque Systems  
 6 Enterprise Road  
 Billerica, MA 01821  
 Tel: 978.667.5100 or 1.800.669.5112  
 Fax: 978.600.0280  
 sales: customer@slmti.com  
 www.torquesystems.com