



QUICK TIPS FOR SUCCESSFUL DC MOTOR & GEARMOTOR OPERATION

- **Know your load values, and operate the unit within the recommended parameters:** If you're not sure of your exact torque, measure the current draw, let us know your measured values and we'll calculate your torque requirements for you. If you are not sure how to measure the Current, please go to [this link](#) for a helpful tutorial.
- **Protect the unit from accidental overloads:** Proper fusing, circuit breakers or electronic current limiting is a must. Every application has the potential of inadvertent overload conditions.
- **Protect the unit from mechanical damage:** Is the coupling for the output shaft properly aligned? Is the unit properly sized for the radial and/or axial loads which will be applied? Have you considered vibration and shock loads in your mounting scheme?
- **Be aware of the environment:** Is the operating environment such that the unit could be damaged over time? If so, protect the unit from temperature extremes, or extreme dirt, dust and moisture conditions.
- **Back driving:** Are inadvertent reversals possible in the application? If so, a failsafe brake may be required. (If using a brake, please see the following topic at bottom of page) When back-driving is permissible or expected, be aware of the voltage (BEMF) that will be generated, resulting in potential damage to your drive electronics.
- **Wiring:** Are the conductors being employed of sufficient size to carry the current over the distance required? Many applications fail because the unit is "starved" of power. See [this link](#) for details regarding voltage drop:
- **Power Source:** Is the power supply and/or speed control of sufficient wattage to provide the power required?
- **Drives and Controls:** "Knowing your load values" as discussed above, is also necessary to ensure that the Motor Control or Servo Drive you intend to use is properly sized for the job at hand. There are many choices on the Market, among them are "SCR" Drives. In many cases, MMP does not recommend the use of SCR Drives, as we discuss in the data found [HERE](#), on our website.
- **Longevity:** Most intermittent duty applications are well served by brushed motors or gearmotors. Depending on the relative duty, accessibility and power required, some applications are better served by brushless motors or gearmotors. You may wish to contact our sales office to further discuss these specific application requirements.

INSTRUCTIONS FOR DC MOTOR OR GEARMOTOR WITH FAILSAFE BRAKE OPTION

In order to prevent potential damage to the Motor or the Brake, the correct DC Voltage, and current, must be applied to the Failsafe Holding Brake either before, or simultaneously*, with the power being applied to the Motor. Be aware that our Standard Brakes are NOT dynamic brakes - they're intended only for holding a static load in place.

The brake is not polarity sensitive, so its coil can be energized, along with the Motor Power, for either direction of operation. Note that when the coil is properly energized, an audible click can be heard, when applying the DC Voltage to the brakes lead-wires. If this audible click is not heard when applying power to the brake, it is likely that the brake has not properly disengaged. If this happens, double check to ensure that the proper power is being applied to the brake, again, to avoid damage to the unit. To Calculate the acceleration current required, simply employ Ohm's Law by dividing the armature resistance into the input voltage ($I=E/R$) ... This will provide the acceleration current.

***IMPORTANT NOTE:** If you intend to connect the Motor and Brake to the same power source, please be aware that your power supply must have sufficient current capacity to provide enough power to initiate rotation of the Motor/Gearmotor, as well as the brake. Even though the brake requires only "milliamps" to excite the coil, if the Motor/gearmotor requires as much or more than your power supply's capacity, the brake may not release, and you may not have an OPERABLE System as a result. This is typically not the case with most systems powered by a Battery, as there's normally plenty of current available from most battery sources.

These are only the very basic fundamentals, but a good checklist before you begin to apply your new gearmotor.
If you have any questions or concerns, please contact us directly at 320-490-7060 or email: support@midwestmotion.com