

Application Considerations for using the Dynaserv Direct Drive Brushless Servo Systems

Sizing and Selection Considerations

- All Speed vs. Torque curves shown in Compumotor's Catalog and **Dynaserv User Guide** show peak torque. Use two-thirds of peak torque to calculate the available continuous torque.
- If you require more than two-thirds of peak torque for short periods of time (low duty cycle applications), calculate RMS (root mean square) torque. make sure RMS torque is less than 2/3 of peak torque.
- Friction torque should not exceed 30% of a motor's peak torque.
- Dynaservs operate most efficiently with a balanced load. Overhung loads cannot exceed 148 ft-lbs for the DR-B and DM-B series motors. Overhung loads cannot exceed 295 ft-lbs for DR-E, DR-A and DM-A series motors. These values should be derated by 33% for constant loads and 80–90% for intermittent loads (fatigue) to incorporate a safety margin.
- Always calculate the load-to-rotor inertia ratio before selecting a motor. The acceptable ratio is application- and motor-dependent. Applications requiring low cycle times and high accelerations need a lower ratio than slow-speed, continuous velocity applications. Refer to the acceptable inertia values for different application types on the previous page.

Cabling Considerations

- The Dynaserv is not shipped with a power cable. This cable must be provided by the end user. The Dynaserv is shipped with a 50-pin Honda connector. Use this connector to construct a cable between the Indexer, Servo controller, or other input/output devices. Prefabricated cables for Compumotor indexers and servo controllers are available.
- The motor and feedback cables cannot exceed 30 meters in length.

Mounting and Environmental Considerations

- Do not drill holes into the Dynaserv motor.
- The Dynaserv is an outer rotor motor. The rotating load must be mounted to the upper mounting surface (the rotor). The lower stator surface must be mounted to the rigid and stationary machine base.
- Install the motor in an appropriate location as the motor is not dust proof, watertight, or oil proof.

Axial Compression and Tension Load Limits

	Compression	Tension
DR-B Series	6744 lbs	2248 lbs
DR-E, DR-A	8992 lbs	4496 lbs
DM-B	6600 lbs	2200 lbs
DM-A	8800 lbs	4400 lbs

These limits should be derated to incorporate a safety margin. If the load is intermittent and repetitive, derate these values by 80–90%.

- If the motor is used with oscillating rotation movements with a small angle (50° or less), then perform a running-in operation with back-and-forth movements about 10 times, each move exceeding an angle of at least 90°. The running-in operation must be carried out every 10,000 times of back-and-forth oscillation movements in order to ensure proper lubrication of the bearings.