

CYCLE LIFE EXPECTANCY

The number of cycles a clutch or brake will produce before it ceases to function is largely dependent on the following factors: (1) duration of slip while accelerating or decelerating a given load, (2) ability of individual unit to dissipate heat generated at friction faces, (3) thickness of friction material (used to retard wear), (4) thickness of armature plate, (5) type of bearing system used in clutch, (6) environmental conditions contributing to bearing and friction face degradation (dust, lint, grit, toner, oil, etc.).

Units that are required to accelerate or stop small inertial loads at low shaft speeds (under 500 rpm) will experience little slip before lock-in at time of engagement, hence minimal wear and extremely long life, commonly in the tens of millions of cycles (typical of copy machine applications). The bearing system is usually the life limiting factor in these applications. Units that are required to accelerate or stop loads with large inertia (such as punch press fly wheels) will experience a longer duration of slip before lock-in, resulting in faster wear and the shortened life. Friction face wear only occurs while the units are slipping differentially.