



Acceleration / Deceleration Device Guidelines

Acceleration and deceleration controls limit the forces (shock) that are applied to accelerate or decelerate a load. Under certain conditions, the addition of an acceleration / deceleration device will help improve the life expectancy of critical conveyor parts on Portec equipment.

The majority of applications for Portec equipment *do not* require acceleration / deceleration devices. They should only be included as part of a drive package when the following conditions exist:

1. 5 Horsepower Motor or Higher
2. 350+ fpm at the Centerline of the Conveyor
3. 10+ Start/Stop Cycles Per Minute

Any “shock” situation can harm critical conveyor parts. Mechanical shock can cause damage to the bearings in the motor or the load, the rotor of the motor or to the mechanical coupling method which connects the motor to the load. If the load is started too quickly, the belts of the conveyor can be stretched. Critical conveyor parts for a Portec unit that can be affected by shock may include, but are not limited to the following: drive components; shafts; hubs; sprockets; chain and belt assembly.

Smooth acceleration and deceleration control can be an important element of many conveyor applications. By applying the force gradually, the mechanical shock is limited and provides smoother starts and stops.

Other means of avoiding mechanical shock can be achieved by:

- VFD controller with soft start function
- Mechanical clutch-brake adjusted to absorb energy
- Special motor that “ramps up” to operating speed

Whatever device chosen, it should be integrated into the control system. Customers should request advice from Portec if and when conditions exist that would suggest use of an acceleration / deceleration device.

Portec will likely recommend the use of taperlok type hubs on the sprockets when this type of control is applied.

These guidelines apply to all Portec powered equipment, including the Portec SG, Spiral-Lift®, Spiral-Curve® and previous models.